

ICDDR,B
BOARD OF TRUSTEES MEETING

June 3-5, 2000

**PROGRAMME OF THE
BOARD OF TRUSTEES MEETING**

June 3-5 2000

PROGRAMME
BOARD OF TRUSTEES MEETINGS

3-5 June 2000

Venue: Meetings in Dhaka will be held in the Sasakawa International Training Centre on the first floor of the hospital building.

**Programme Committee Meeting
3 June 2000**

Distribution of Minutes and opportunity for correction
(BOT members to submit corrected version to Judith before the
end of the day)

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|------------------|--|
| 08:15 – 08:30 am | Opening remarks by Chairperson (BOT)
Opening remarks by Chairperson (Programme Committee) |
| 08:30 - 09:30 am | Director's Report |
| 09:30 - 09:45 am | Discussion |
| 09:45 – 10:00 am | Tea/Coffee |
| 10:00 – 12:00 pm | Division updates |
| 12:00 – 12:30 pm | Trustees to meet with SWA representatives |
| 12:30 – 02:00 pm | Lunch in respective Conference Rooms including Trustees, donors
and chosen staff members |
| 02:00 – 03:00 pm | Review of External Review of Nutrition Centre – Dr Andrew
Tomkins |
| 03:00 – 03:30 pm | Response from Centre |
| 03:30 – 03:45 pm | Response from Director |
| 03:45 – 04:00 pm | Tea/Coffee |
| 04:00 – 5:00 pm | Discussion - - closed session (Training Room I) |
| 07:30 pm | Reception at Guest House including AC members, Trustees,
donors and invited staff |

Sunday 4 June **EXECUTIVE SESSION OF THE FULL BOARD** (includes AC)

08:30 – 09:45 am Review of November 1999 BOT retreat

09:45 – 10:00 am Tea/Coffee

FINANCE COMMITTEE

10:00 – 11:00 am Finance Committee Meeting (open) (Seminar Room I)

11:00 – 12:00 pm Finance Committee Meeting (closed) (with Division Directors)

12:00 – 01:45 pm Lunch (Board members only at Guest House)

PERSONNEL & SELECTION COMMITTEE MEETING

02:15 – 03:45 pm Personnel & Selection Committee Meeting (closed – for Trustees and Division Heads)

03:45 – 04:00 pm Tea/Coffee

04:00 – 5:00 pm Personnel & Selection Committee meeting (closed closed)
(Trustees only)
Selection of new Trustees and appointment to Committees

05:00 – 06:00 pm Completion of resolutions

06:00 pm – **Free evening**

Monday 5 June EXECUTIVE SESSION OF FULL BOARD (includes AC)

- 08:00 – 08:15 am Approval of the Agenda
- 08:15 – 08:30 am Approval of the Draft Minutes of November 1999 meeting
- 08:30 – 10:00 am Policy issues from the Director
External Reviews
- 10:00 – 10:30 pm Tea/Coffee
- 10:30 – 11:30 pm Resolutions from the Committees
- 11:30 – 01:00 pm Resolutions from the Committees (closed)
- 01:00 – 02:00 pm Dates of next meeting
Other resolutions
Any Other Business
Closure of Meeting
- 02:00 – 03:00 pm Lunch

03:00 – 05:00 pm DONORS' SUPPORT GROUP MEETING

Programme to be determined

1/BT/JUNE 2000

APPROVAL OF THE AGENDA

2/BT/JUNE 2000

**APPROVAL OF THE DRAFT MINUTES
OF THE MEETING
HELD ON 6-8 NOVEMBER 1999**

MINUTES OF THE MEETING OF THE BOARD OF TRUSTEES, ICDDR,B

HELD IN DHAKA, BANGLADESH, 6-8 NOVEMBER 1999

**OPENING SESSION OF THE BOARD OF TRUSTEES MEETING
6 NOVEMBER 1999**

The Board of Trustees meeting was scheduled to be held in the Sasakawa Training Centre of the ICDDR,B for the duration, 6-8 November. However, due to hartal which was called the previous week, the meetings' venues were changed to Programme Committee meeting, 6 Nov, at Sasakawa Training Centre and Finance Committee, Personnel and Selection Committee and Full Board Sessions on 7 and 8 at the ICDDR'B Guest House in Gulshan.

Mr Jacques Martin, Chair of the BoT, opened the first day of the Board's meetings with a welcome to all the Board Members, Executive Committee and staff members. In his opening, he spoke of the Centre coming out of its difficult days and arriving at a juncture with a new Director, Dr David Sack, bringing to the ICDDR'B his well-respected personal and professional reputation. He expressed thanks to Prof George Fuchs for his sojourn as Interim Director. Not only did he "keep the boat afloat" but was very active and successful in keeping donors abreast of changes in and needs of the Centre.

Mr Martin extended a welcome on behalf of the BOT members, to Prof Azad Khan, a renowned Bangladeshi scientist and stated that the Board is looking forward to his contribution. He pointed out that Prof Azad Khan is replacing the Maj Gen (Ret'd) M R Choudhury, whose passing was received with great sorrow by the Board.

Further, he thanked the Government of Bangladesh through Mr M M Reza for their continued support of and commitment to the Centre.

Mr Martin declared the meetings open.

He then introduced Prof Peter MacDonald, Chair of the Programme Committee.

**REPORT OF THE PROGRAMME COMMITTEE MEETING
6 NOVEMBER 1999**

PRESENT:

Programme Committee members

Mr Jacques O Martin	-	Chair of the Board
Prof Peter MacDonald	-	Chair, Programme Committee
Dr David Sack	-	Director

Board Members

Prof Marian Jacobs
Dr Tawfik A M Khoja
Dr Tikki Pang
Prof Carol Vlassoff
Prof A K Azad Khan
Mr M M Reza
Mr Rolf Carriere

Invited

Division Directors and staff members.

The Committee convened at 8:30am at the Sasakawa Auditorium of the ICDDR,B.

The Programme Committee Meeting was held on 6 November 1999 to hear the report of the Director, Dr David A Sack, as well as the presentations of the Division Directors.

Prof MacDonald, Chair of the Programme Committee, thanked Mr Martin and asked Dr David Sack to start the proceedings with his presentation of the Director's Overview. He also welcomed Dr Sack to the Centre and said that he was pleased to have such a wise individual of his excellent and international research reputation at the helm of the Centre.

Dr Sack thanked the assembly for the kind welcome. He reported that the Centre had made considerable strides in several areas and these would be highlighted by the Division Directors in their presentations. The financial situation of the Centre was considerably improved due in part to the right-sizing exercise but more markedly, to an increase in donor funding. The Centre was still however running at a deficit and further details of this and other aspects of the financial situation would be dealt with in the Finance Committee. He reported that programmatically, the Centre has been developing further its thematic approach in the conduct of its work.

He went on to highlight the themes currently being implemented in the Centre:

- Case management
- Nutrition
- Vaccine
- Population and reproductive health

- Health systems
- Environmental health
- Emerging infectious diseases

He stated that his overview would only be quick snapshots of the Centre. Board and EC members were previously handed out copies of his presentation and he would offer highlights of those projects which are major and important. Using transparencies, he gave short, in-depth details of the scientific and administrative programme of the Centre:

Over view of the Scientific Programme of ICDDR'B

- **Divisional Structure.** The organogram presented illustrated the network of the Centre, the Director/Division and Division/Division relationship.
- **Programmes and Themes**
 - **Severely Malnourished Children.** Dr Sack informed the Committee that the Centre is becoming the foremost nutrition centre in the world. He alluded to a study from the nutrition centre which was published in *The Lancet* and the following editorial in October, where the Centre got considerable mention. The protocolised management of severely malnourished children forms the basis for many opportunities for the nutrition centre, including adapting the treatment to other treatment centres, hospitals and the community while validating the method in these other sites. He stated that ICDDR,B cannot carry out nutrition treatment single-handedly, so collaborations with other national institutions, such as Shishu Hospital have been crucial to extending the new treatment to other sites and to developing the teaching modules.
 - **Low Birth Weight.** Dr Sack reported on a conference on LBW which was held in June 1999 at the Centre, the results of which will assist the Centre in defining a research agenda.
 - **Zinc.** Zinc supplements have been a major topic for research at the Centre and several studies are underway to test the efficacy and effectiveness of zinc in treatment or prevention of adverse health outcomes. Zinc is also the subject of studies in the vaccine theme.
 - **Vaccines.** The Centre has now placed on hold a planned efficacy study in Matlab of rhesus vaccine for rotavirus. This is pending an evaluation of the safety of the vaccine in the US. There are however, other vaccines that are safe and could be used in further studies. The Centre recently conducted a successful first inpatient study of a live oral shigella vaccine. Plans are being developed for a much greater effort in vaccine evaluation, including studies of vaccines for cholera, enterotoxigenic *E. coli*, rotavirus, shigella, *H. influenzae*, *S. pneumoniae*, and hepatitis B. These studies are drawing considerable interest by potential donors.
 - **Demography and Reproductive Health.** Dr Sack stated that a new scientist, Dr Kim Streatfield, was on board as Head of Demography. In addition, Dr Japhet Killewo recently joined the Centre as Head of Reproductive Health. A unified data system comprising demography and maternal child health files is almost complete.

The transition from separate to unified files involves training of staff, developing new forms and computer programmes, and once complete, should provide a better resource for linking health and demographic events.

- **Infectious Diseases.** Shigellosis remains a major threat and the bacteria causing these infections continue to be increasingly resistant to antibiotics. More worrying, there may be a major epidemic expected in the next few years, as have appeared periodically over the last decades. If this upswing re-occurs, the disease will be with strains which are totally resistant to all useful antibiotics.

Antibiotic resistance is also becoming common among some strains of other pathogens such as *H influenzae* type B, *N. gonorrhoea*. *V. cholerae* remains a constant threat in Bangladesh. Strains of *V. cholerae* 0139 continue to evolve, suggesting that it continues to adapt to its environment and could find a genetic pattern which would allow for its continued spread beyond Asia. While this has not yet occurred, Dr Sack warned against complacency in this regard. Dengue appears to be becoming more common in Dhaka and other areas of Bangladesh. A surveillance programme will soon be starting to map the incidence and serotypes of the infection. Similarly for tuberculosis, surveillance will also be implemented with emphasis on characterising the antibiotic sensitivity patterns in Bangladesh and on developing methods for early case detection.

- **Case management.** The Centre is initiating community-based studies on an evaluation of the Integrated Management of Childhood Illnesses (IMCI) in co-operation with the World Health Organisation, who is promoting this approach for their primary health care programme. In the area of STDs, the Centre's scientists have made several important findings that patients are often misdiagnosed or inaccurately treated.
- **Environmental Health.** Dr Bilqis Amin Hoque who has been developing the area of environmental health in the Centre is leaving at the end of the year, and the programme would need another scientist who can lead this activity in the future.

There are 3 areas of environmental research in which the Centre should invest: first, the relation between environmental ecology and health; second, the issue of minimising transmission of disease through cost-effective sanitation strategies; third, the study of and intervention for the problem of environmental chemical contamination. Besides these three primary areas of research, the EHP can assist the emerging infections programme on environmental questions on dengue, which could lead to major projects in the future.

Dr Sack stressed that water and sanitation were a longstanding interest at the Centre where studies continue to be carried out. He also noted that it was the intention of the Centre to look into arsenic research. Many of the tubewells in Bangladesh are contaminated and although the problem is well documented, the potential interventions have not yet been field-tested. Matlab would be the likely area to implement tests which would benefit the community, Centre staff, as well as the GoB in its efforts to deal with the problem. In addition, tubewell contamination could raise the risk of cholera as people would move away from

using tubewell water and begin using surface water which carries its own contaminations.

Added to the arsenic problem is that of lead pollutants which Bangladesh is facing, the extent of which is yet to be documented.

- **Health Systems.** The Operations Research Project (ORP) takes the lead in assisting with health programmes of the GoB. Their work is well documented in their publications, manuals and working papers, many in Bangla. Some important activities include development of the health information system (MIS), strategies for safe motherhood; and development of essential services package (ESP) especially for use in community clinics. The Centre is also assisting the GoB with its nutrition programme under the Bangladesh Integrated Nutrition Project (BINP). This activity is likely to expand under the next national nutrition programme funded by a loan from the World Bank.
- **Training.** The Centre's activities continue at a rapid pace. Workshops and short courses, including both national and international training, are held almost weekly. In addition, the Centre also carries out considerable training during the course of its work. For example, the Epidemic Control Preparedness Programme (ECP) investigates outbreaks throughout Bangladesh, during which it trains the local physicians on the management of severe diarrhoea. The clinical fellows who work at the hospital also gain experience in managing diarrhoea cases and an increasing number of providers throughout Bangladesh have received training at the Centre.

Included in the personnel folder is the request for a new position for Head of Information Sciences to consolidate the efforts of the library, training, computer information services, and to develop and expand the Centre's activities into electronic information sources, distance learning and data archiving. The Centre still has the best medical library in Bangladesh but its resources are not up-to-date in terms of access to and use of electronic information.

The Centre's publications are indexed in MedLine. The Centre's Journal of Diarrhoeal Disease Research (JDDR) would soon be changed to the Journal of Health, Population and Nutrition (JHPN). Plans are for a co-sponsor journal from South Africa and another from Korea.

Over view of the Administrative Programme of ICDDR,B

- **Finances.** The Centre has improved its position during the last year through several changes. Expenditure was minimised by severely controlling costs and down-sizing the staff. The Centre received increased funding from several new donors, such as the World Bank, EU, USAID (by way of JSI). The Netherlands also returned as a donor to the Centre.

While the financial situation is improved, the Centre still expects to run at a deficit, adding to the cumulative deficit of approx USD4m which accumulated over the past 4 years. The Centre's obvious strategy for eliminating the deficit is to receive more money than it spends, and in this regard, the Board would need to consider more specifically how to handle the accumulated deficit.

- **Project management.** Dr Sack reported that Centre costs have been already severely cut and further cost cutting would have a major impact on the essential operations of the Centre. Many of the Centre's funding sources are tied directly to spending, that is, if the Centre does not spend, it also does not collect indirect costs. The Centre did not spend according to original plans with several of the donors, which would have increased expenditure over the last 2 years by more than USD2m with a recovery of more than half a million USD in indirect costs. This slow spending rate suggests that the work is not being carried out at the rate expected at the time the agreements were made with the donors. The slow pace of work is not the result of lack of effort on the part of the scientists; in fact, many of them are overextended, assuming responsibility for more projects than they can actually complete within the timeframe of the projects.
- **Staff recruitment.** Dr Sack informed the Committee that currently there are 2 mechanisms for recruitment of new international staff: one, the usual mechanism for a position to be established, followed by an international search, a selection process (including BoT decision for high level posts) and a final offer. Second, is for the Director to use his authority to offer a short term or contract position without going through this process. The first is preferred by the Board as this better controls the number and mix of international positions. This is however a slow process which could result in losing the opportunity to recruit the individual one needs at the time, the reason being that project funds move at a faster pace than Board-approved mechanisms allow.

Dr Sack asked that the Board discuss in the Personnel and Selection Committee, ways to streamline the process, as the Centre's success depends on the quality of the scientists it can recruit.

He also touched on the recruitment of international faculty on sabbatical or recruitment of fellows. This type of position is usually through visiting scientist or trainee positions. If encouraged, it will help to enhance institutional linkages and establish new links.

Dr Sack reported that he intends to establish a position of *adjunct scientist* to recognise the contribution of many scientists to the scientific programme of the Centre. This type of position will be further developed and presented to the BoT next June.

- **Reorganisation.** The Centre has been proceeding with a reorganisation strategy to redefine its work in terms of themes rather than divisions. The description would be better understood outside the Centre and would facilitate its interdivisional work. While the thematic approach has been accepted, its implementation has not yet been determined from an administrative standpoint. Budgets and financial authority remain within the Division as well as other constraints to interdivisional research which will benefit from co-operation.
- **Administration.** There is still a need to recruit an international level staff member to lead the way in human resources. A candidate identified through the World Bank is expected to join the Centre in January. The primary responsibility would be HR as well as assistance in other areas of administration. To limit direct reporting to the

Director by the units, recruitment of Head HR and Head Information Sciences would partly solve the situation.

The role and responsibility of the External Relations and Institutional Development (ER&ID) Office needs further consideration. The office consists of 2 professional staff and two office support staff; the functions of the office are numerous and like many others in the Centre, are understaffed when compared with its responsibilities. This Office deals with the constant daily needs of the Centre but has limited ability to undertake any important aspects that will benefit the Centre, like endowment fundraising, and strategic international public relations. Additional input is needed for the Office to run at its fullest capacity.

- **Future directions**

Dr Sack outlined an agenda for new initiatives at the Centre which will require the development of a five-year strategic plan. He listed as the main areas: nutrition; vaccines; case management; environmental health; health systems; population and reproductive health; and infectious diseases. He noted that the Centre will have to consider what resources it has and needs or may have to re-allocate to realise the plan. The Centre was fortunate in its donors for providing considerable financial support for many of the programmes. Funding will have to be found for the others; each programme is high priority for one or more of the donors as well as for the Centre.

Dr Sack informed the Committee that the strategic plan will allow the Centre to move forward in many directions to further enhance its capability to deliver the best scientific research. Added to this, the Centre was, in the area of administration, solidifying its staff base in science, research and administration, to ensure the efficient running of the Centre's efforts.

Dr Sack completed his presentation with thanks to members of the Board and to the staff for their support and commitment.

His presentation was followed by those of Prof George Fuchs, Division Director, Clinical Sciences Division (CSD); Prof Barkat-e-Khuda, Division Director of HPED; Prof V I Mathan, Division Director of Laboratory Sciences Division(LSD); Prof Lars Ake Persson, Division Director of PHSD; Dr A N Alam, Head, Training and Education Dept; and Ms Vanessa Brooks and Dr Ishtiaque Zaman of the External Relations and Institutional Development (ER&ID) office.

Each gave an overview of their respective divisions outlining the main activities and highlighting issues, themes, challenges, and plans of action. These presentations were complemented by transparencies; corresponding material was distributed before the meeting which would give more in-depth information on the work being carried out in the divisions. Each presentation was followed by a question period during which members of the "audience" participated.

CSD: Prof Fuchs presented the Division's organogram. He then highlighted its main activities in the areas of: **Research** of diarrhoeal diseases, malnutrition and related areas such as ALRI; **Care** of patients with diarrhaeal disease and associated problems; and

Training in case management of diarrhoeal diseases, malnutrition and clinical research.

He reported that CSD was staffed by 2 international professionals; 31 and 147 in the National Officers and General Services categories respectively; and 3 local consultants. He further reported on the Centre personnel undergoing training abroad under the Staff Development Programme.

Prof Fuchs also made mention of the Division's collaboration with several national and international institutions such as Dhaka Medical College, Bangladesh Nutritional Council, Institute of Child Health UK, Johns Hopkins University, to name a few.

He also reported on the monthly patient visits to the Clinical Research and Service Centre for 1998 and 1999; the yearly patient visits from 1962-1999; and the etiology of diarrhoea surveillance from July 1998 to June 1999.

Prof Fuchs then underlined the research themes of the Division:

- Case management research
 - nutrition therapy
 - fluid therapy
 - pharmacologic therapy
- Pathophysiology research
- Preventive strategies/Maternal and child health

He also reported on CSD's achievements and events during the period October 1998 to September 1999 during which time there were 25 publications and 10 in press, as well as 24 protocols in progress. The Division participated in a number of international conferences in India, Malaysia, Thailand, South Africa, Australia, USA, Singapore, Switzerland, South Korea, Germany and Austria. He also listed the number of training activities conducted at the Clinical Research and Service Centre during the period Oct 1996-Sept 1997.

He further highlighted notable results of selected research projects by the Division from Oct 1998 to Sept 1999 as well as other developments in the Division. He pointed out that the Division had undergone a workforce needs assessment which indicated that the hospital was understaffed which situation has not yet been corrected due to financial restraints.

He also stated that he, as Div Director had been acting in the capacity of Interim Director for the past 11 months and was therefore not engaged full time in the Division's activities. Dr M A Salam, Chief Physician of the Hospital had been acting as Head of CSD during that time. He further noted that many CSD staff had major commitments to the Centre's Nutrition Working Group as a reflection that the nutrition theme is housed in the CSD.

Prof Fuchs completed his presentation with the highlight of published and in-press CSD journal and book publications; awards; ongoing research protocols; and protocols approved, funded and to be implemented over the next six months.

Prof MacDonald thanked Prof Fuchs for his presentation.

HPED: Dr Barkat-e-Khuda presented the Division's organogram which included Operations Research Project (ORP), Epidemic Control Preparedness Programme (ECP) and Environmental Health Programme (EHP). Of the 262 staff, 5 are international professionals; 55 National Officers and 202 General Service.

During the period Nov 98 to Oct 99, 24 journal articles were published and in press; 20 papers submitted to journals; 24 ICDDR working papers were completed and externally reviewed; 13 special reports and a total of 6 protocols, manuals, guidelines etc were published.

Dr Barkat-e-Khuda reported that HPED's primary focus was to **conduct operations research on** health and family planning, including epidemic control and environmental health; **disseminate** research findings; **assist in replication of** successful interventions; and **provide technical assistance to** strengthen the national health and population programme. He also presented a map highlighting the research sites in Bangladesh of the HPED, showing the ORP intensive and non-intensive areas; ECP and EHP areas; and areas with input from several projects.

ORP: Dr Barkat defined ORP as the research component of the USAID funded National Integrated Population and Health Programme (NIPHP). Its mission is to design and test sustainable health care service delivery interventions; provide technical assistance; and assist in replication of successful interventions. ORP's activities are focussed on meeting the needs of underserved and disadvantaged socio-demographic groups and low-performing areas. Its partners include the Government of Bangladesh, USAID and 5 of the 6 remaining NIPHP partners.

Dr Barkat listed the major ongoing interventions of ORP: Integrated Family Health Services; Management Support Services; Sustainable Service Delivery Systems and Health Financing.

He presented figures to show the daily attendance at static NGO clinics in Dhaka city, before and after introduction of the new service delivery strategy; trends in method-mix and source of supplies of family planning (FP) methods at rural sites; average monthly admissions at the THC maternity Misarai and Satkania; average household expenditure for FP methods and selected MCH services.

Dr Barkat reported that ORP assisted the Ministry of Health and Family Welfare (MOHFW) in the process of establishing community clinics and provided technical assistance to strengthen management support systems for effective delivery of the essential services package (ESP). ORP also adopted strategies for ensuring referral and linkage for essential obstetric care as well as for improving prevention and management of RTI and STDs

ECP: Dr Barkat reported that a significantly high number of acute diarrhoea cases was reported in Bangladesh during the 1999 post-epidemics than any other period since 1995. ECP assisted in the management of diarrhoea epidemics in 116 thanas during the period Sept 1998 to Oct 1999. Cholera epidemics were confirmed in 78 thanas. ECP also

assisted the national diarrhoeal diseases programme in formulating use of effective antibiotics for treatment of cholera.

He further reported that the Programme is continuing the cholera surveillance at 5 sites as an ICDDRB collaborative research project with the Univ of Maryland and the Johns Hopkins University. He stated that in 3 of the 5 sites, *V.cholerae* 0139 accounted for 40% of *V.cholerae* isolated, which implied a change in cholera epidemiology in Bangladesh.

EHP: Dr Barkat reported that EHP completed laboratory phase of developing water supply options for arsenic affected areas and provided technical assistance to the Government of Bangladesh and other stakeholders in formulating the Bangladesh vision statement (Vision 21) and broad strategies for future water supply and sanitation activities.

The Environmental Health Working Group completed a draft of environmental health bibliography and activities at the Centre and in collaboration with the Public Health Sciences Division (PHSD), completed inventory of and participated in discussion on possible proposals on arsenic-related research.

HPED collaborates with the GoB, NGOs, USAID and other donors and is a major resource to the Centre's training and dissemination activities. The Division plays a leading role in the Centre's Working Group on Health Systems Research and collaborates with other Working Groups as well as with BINP activities of the Nutrition Working Group. It conducts collaborative studies with LSD, CSD and PHSD and pursues national and international activities with various universities and research organisations.

Dr Barkat outlined the Division's major future priorities for

ORP: Continue fieldtesting ongoing interventions; design and test new interventions; continue field implementation of UMIS; provide technical assistance to SMC on pilot testing new commodities and expand social marketing activities; co-host seminar with IUSSP on Family Planning Programmes in the 21st Century; convene expert group meeting on reproductive health research capacity development with Partners in Population (PPD).

ECPP: Initiate surveillance on dengue viral fever in Bangladeshi children; initiate effectiveness trial of cholera vaccine.

EHP: Continue research on water and sanitation and on arsenic challenges; continue to pursue BOT recommendations jointly with ORP and programmes in other Divisions.

Prof MacDonald thanked Dr Barkat-e-Khuda for his presentation.

LSD: Prof V I Mathan, Division Director of the Laboratory Sciences Division (LSD) made a presentation of the Division's activities and plans. He reported on the staff, total number 150, of which 23 are scientists and 59 technologists.. He enumerated on the productivity as measured by papers (24 published, 13 in press); protocols (27 current, 11 completed, 5 proposed); inter-divisional, national and international collaboration (12 CSD, 6 HPED, 5 PHSD, 7 national institutions, 18 international and 27 int'l projects).

Prof Mathan presented LSD's thematic distribution of projects: case management; environmental health; health systems research; infectious diseases; nutrition; reproductive health; vaccine evaluation.. He also listed the Division's highlights for 1999.

He reported that there were two areas where new initiatives have been planned:

Reproductive tract infection: The plan is to continue existing studies; initiate surveillance of antimicrobial resistance of *N. gonorrhoea*; study protective immunity in genital tract infection and understand the microbial ecology of the vaginal tract to elucidate the problem of bacterial vaginosis.

Shigellosis: The plan is to predict the next epidemic outbreak due to *Shigella dysenteriae* 1 based on the *S. dysenteriae* 1/*S. flexneri* ratio and the emergence of new plasmid mediated antimicrobial resistances. A prospective surveillance strategy is proposed to understand the bioecology of shigellae and to devise methods of control and prevention.

Prof Mathan presented transparencies detailing STIs and RTIs prevalence among different population in Bangladesh; data from primary health care clinic in Dhaka; the association between clinical and laboratory diagnosis of male genital ulcer disease; and the shift in susceptibility of *N. gonorrhoeae* isolates to ciprofloxacin between 1997 and 1998.

He raised the question whether ICDDR,B can predict the next epidemic of *Shigella dysenteriae* 1. He presented data on death rates in Matlab from 1975-85 and gave further details on the application of molecular tools in studying the epidemiology of the disease; the screening of environmental water samples.

Prof Mathan drew attention to the article entitled "Research-based diagnostic facilities at ICDDR,B" published in The Independent newspaper on 25 October 1999 which made mention of the LSD's programme and its objectives: "to adopt, develop and use the best scientific technology in diagnosing diseases for the welfare of the common people of Bangladesh, in a non-profit basis".

He completed his presentation with an analysis of the Division's projects and outlined its (1) **mandate:** To apply science to promote health where disease exists; and (2) **mission statement:** To adopt, develop and utilise the best scientific technology to find answers to the infectious diseases and nutritional problems of developing countries, in collegial partnership with the other Divisions of ICDDR,B and national, regional and international partners, who share our commitment to main healthy populations".

Prof MacDonald thanked Prof Mathan for his presentation.

PHSD: Dr Lars Ake Persson presented his Division's organogram and proceeded with a highlight of the Division's events of 1999 which included international recruitment; Matlab modernisation; vaccine evaluations; impact survey on BRAC-ICDDR,B project; EOC and IMCI research in Matlab; and completion of out-patient ward in Matlab.

Dr Persson further reported on PHSD's scientific production for the period 1997-99 and ongoing protocols.

He completed his presentation highlighting the Divisions future plans: evaluating the occurrence and barriers in unmet obstetric needs; efficacy and effectiveness of low birth weight interventions; developing further vaccine evaluations looking at candidates from low-income countries; analysis and intervention in the area of arsenic and health.

Prof MacDonald thanked Dr Persson for his presentation.

TED: Dr A N Alam began the presentation of the Training and Education Division's programmes with an outline of its mandate: "Provide facilities for training to Bangladeshi and other nationals in areas of the Centre's competence in collaboration with national and international institutions". He reported that the objectives of TED were increased capacity to conduct research in developing countries; increased capabilities to manage programmes for the control of diarrhoeal diseases and family planning services and improved response to new and emerging issues in health and population.

The major components of the Divisions' training programmes were health research training; international workshops and courses; national training courses; and national and international fellowship programme.

He reported that the Division's priorities for the period Oct 99-Sept 00 were the introduction of new training courses/workshops to include distance education on management of diarrhoeal diseases; international training course in Health and Demographic Surveillance; national workshop on research methodology. The Division hopes to identify new donors to implement the future plan; and to implement the training schedule for the period January-June 2000.

Prof MacDonald thanked Dr Alam for his presentation.

ER&ID: Ms Vanessa Brooks, Grants Administrator, gave an overview of ER&ID's primary role and function. She reported that the Office has a staff of 4 personnel: Grants Administrator, Technical Cooperation Officer, Office Manager and Clerical Support Staffperson. ER&ID is the first line of communication between the Centre and public; the donors; collaborating institutions; prospective donors; and the media. In this regard, the office reports directly to the Director and works directly with the senior management team.

Engagements on behalf of the Centre include, among other things, identifying new sources of funding; assisting in the development of proposals and budgets on newly funded activities; assisting in restructuring programmes to integrate core activities in new projects and programmes; preparing requests to donors to utilise funds for institutional development, training, conference participation; hosting visitors to the Centre.

Ms Brooks reported that the ER&ID office is the repository for all grants and contracts pertaining to research, training and services. It reviews all grants and contracts to ensure that the Centre and its investigators can meet the terms of the agreements. In addition, it drafts contracts, letters of agreement and MOUs between ICDDR,B and collaborating institutions, service providers and consultants and; makes a final review of agreements and contracts before signature. The Office provides periodic updates and information to donors on the progress on special programmatic activities as well as writes grants and proposals for programmatic support.

In the area of institutional development, the ER&ID office assisted with the drafting of Centre's responses to donor and BoT requests on the Centre's' responses to the Integrated Institutional Review 1998.

On behalf of the Centre, the Office attended the USAID conference in March 1998 and the Global Forum in June 1999.

Ms Brooks stated that donor communication is the central activity of ER&ID which involves primarily responding to donors on grants and contracts; maintaining and producing the grants administration database; ensuring timely submission of technical and financial reports to donors; monitoring disbursement of grant funds; assisting scientists in understanding the terms and conditions of contracts and donor regulations; broadening the funding base and; reviewing multi-year cooperative agreements and other contracts before signature.

ER&ID is also responsible for making arrangements for the hosting of visitors to the Centre. In 1999, the Centre had visits from Dr Gro Harlem Brundtland, Director General of WHO; Mme Trix Heberlein, President of the Swiss National Council; Ms Mieko Nishimizu, World Bank Vice President for South Asia; Bill Gates Snr of the Bill and Melinda Gates Foundation; Ambassadors of Japan, the Netherlands, EU, and the US as well as a team of Japanese scientists and government officials.

In addition, the Office carries out all the Centre's press functions and organises press conferences on special events such as Annual Scientific Conference (ASCON), Low Birth Weight Seminar; 20th Anniversary celebrations. It also serves at the Secretariat of the Donor Support Group. Further, it assists in the production and dissemination of information and promotional material, for example, *Grants News*, the Centre's funding newsletter; *Glimpse*; Information brochure; the Centre's brochure; the ICDDR,B Hospital Endowment Fund brochure; IHST brochure; and the Centre's promotional video.

Ms Brooks reported that the Office co-ordinated the emergency relief efforts during the unprecedented floods of 1998 with donor appeals; press coverage; coordinating the distribution among select NGO clinics and ICDDR,B intervention areas. The office also handled the responses from the international community of donors, NGOs, oil companies, international and government agencies, banks, and the Government of Bangladesh.

ER&ID co-ordinates the Centre's Hospital Endowment Fund Initiative which involves assistance in organising the Annual Ball; it also convenes the Public Relations Committee in preparation for ASCON, drafting press releases and opening addresses for special guests.. The Office is also responsible for advancing worldwide coverage of the Centre's achievements. In addition, it prepares relevant documentation for BoT meetings; plans and executes a special reception for Board members, Centre staff, donors and well-wishers and lends technical support on issues involving fundraising and Board development initiatives.

The ER&ID team performs an expanding role in its functions and plans to further strengthen its fundraising capacity; re-integrate the functions of the Research Review Committee (RRC) and Ethics Review Committee (ERC) into the ER&ID office; integrate

staff development and expand staff development opportunities through educational/scientific exchange and formalised internship programmes.

Dr Zaman, Technical Cooperation Officer, further strengthened the ER&ID presentation, and offered transparencies and short explanations on the Office's duties and responsibilities, highlighting its achievements and outlining the expanding nature of ER&ID's work in the Centre.

Prof MacDonald thanked Ms Brooks and Dr Zaman for their presentations.

As a finale, Prof Fuchs gave a further presentation on the Nutrition theme.

Prof MacDonald thanked all present for their active participation and noted the value of scientists being able to spread across the disciplines. He again wished Dr Sack well in his duties and thanked the Division Directors for their support of the Director's office.

Mr Jacques Martin brought the meeting to a close thanking all concerned for their hard work and continuing commitment to the work of the Centre. He also conveyed to the BOT members and Centre staff his sorrow at the passing of Maj Gen Choudhury and staff members who passed away over the previous six months.

RESOLUTIONS FROM THE PROGRAMME COMMITTEE

1/BT/Nov/99

The Board agreed that at future Board meetings, a time be scheduled for the Programme Committee to meet that is after and separate from the session scheduled for staff presentations.

2/BT/Nov/99

The Board agreed that it is highly desirable that one or more members of the Board participate in all Board-commissioned scientific reviews of the Centre's activities.

3/BT/Nov/99

The Board requested the Director to provide a draft schedule of future Board-commissioned scientific reviews at its next meeting.

4/BT/Nov/99

The Board agreed that Board members, Dr Ricardo Uauy Dagach and Mr Rolf Carriere, be approached to participate in the planned review of the Centre's nutrition activities.

5/BT/Nov/99

Subsequent to the review of the Health and Population Extension Division and the Centre's response to that review reported at the previous Board meeting, the Board requests the Director to give consideration to the name of that Division.

MEETING WITH THE STAFF WELFARE ASSOCIATION (SWA)

On Saturday 6 November 1998, at 12:30pm, BoT members met with the Executive Committee of the SWA. Dr G R Rabbani, President of SWA, addressed the meeting and outlined a number of issues which he requested that the Board give favourable consideration during its deliberations.

Dr Rabbani urged the Board and Centre management to consider a significant rise in salary to satisfy the long-felt needs of the Centre staff.

He further requested that:

The system of voluntary severance package be continued with added full benefits;

That salaries be fixed in US dollars;

That the retirement age for staff be raised to 62 years;

Dr Rabbani noted that the Centre had not yet finalised its administrative and financial structure for the next millenium. SWA anticipated that the results of the restructuring exercises and discussions which had taken place at various levels in the Centre would be useful to the Director to decide on a suitable structure that will create an optimum working environment for all staff. He stated that SWA will always be supportive of any action of the management to enhance growth and development of the Centre.

He pointed out that the staff are now better informed, more committed, uniform in thought and actively involved in major decision-making at the Centre, which was a very important aspect of staff development and should be utilised by the management to foster its anticipated objectives.

On the issue of the community health workers (CHWs), SWA requested that, because of the hardship of the field working conditions, management should consider a special allowance for the CHWs of the Matlab field station.

Other issues:

Dr Rabbani stated that lack of proper and regulatory policy with regard to ranking, recruitment and hiring, resulted in unfairness, bias and frustration among the staff. SWA suggested that immediate action be taken to prevent further deterioration of the situation. He pointed out that this should not be limited to Dhaka-based staff; Matlab and other out stations should also be taken into account.

SWA further requested that an established criteria for evaluation and promotion of non-scientific staff be implemented. He also pointed out that dual standards are followed for evaluation and promotion of international and national personnel.

Dr Rabbani completed the SWA presentation reiterating the Association's commitment to safeguarding the interests and privileges of the employees as well as to protecting the interests of the Centre. He stated SWA's belief that better co-operation, understanding

and sacrifice among the staff, management and the Board would lead to a bright and productive ICDDR,B in the next millenium.

Mr Jacques Martin, Chair of the Board, thanked Dr Rabbani and the Executive Committee of SWA for its presentation. He acknowledged the staff's commitment and support during the restructuring process and agreed that their demands deserved consideration which will be taken up in the relevant Committees.

The meeting ended at 1:30pm.

**REPORT OF THE FINANCE COMMITTEE MEETING
HELD ON 7 NOVEMBER 1999**

PRESENT:

Finance Committee members

Prof R R Colwell	-	Chair, Finance Committee
Mr Rolf Carriere		
Dr David Sack, Director		
Dr A K M Masihur Rahman		
Mr Jacques O Martin	-	Chair of the Board

Board members

Prof Marian Jacobs
Prof A K A Azad Khan
Dr Tawfik A M Khoja
Prof Peter J McDonald
Dr Tikki Pang
Prof Carol Vlassoff

Invited

Division Directors and staff members (CFO, CPO, ER&ID officers)

The Committee convened at 8:30am at the ICDDR,B Guest House.

On Sunday 7 November, 1999 at 8:30am, the Finance Committee of the Board of Trustees met to consider the finances of the Centre. This session was chaired by Prof Rita Colwell, Chair of the Finance Committee, and the finance report was presented by Mr John Winklemann, Chief Finance Officer (CFO).

Prof R Colwell welcomed the members, Division Directors and invited staff to the meeting. She then presented a brief overview of the agenda items to be discussed.

1. Approval of the Agenda

The agenda was approved with the addition of the following items for discussion:

Under Agenda Item 6 – Any Other Business

1. Report from the Child Health Foundation
2. Proposal for dealing with the Cumulative Deficit

1999 Forecast

Income

Donor Contributions for 1999 were budgeted at US\$13,335,000 and are expected to increase to US\$13,889,000. There would therefore be an increase of US\$554,000 (4.2%).

In restricted contributions, 2 new donors began supporting the Centre during 1999, the World Bank and John Snow Incorporated (JSI) (through funds from USAID).

The World Bank is supporting the development of the Nutrition Centre of Excellence and JSI is supporting selected activities of Dhaka Hospital.

Restricted Contributions from ongoing donors have been forecast in line with anticipated project activities.

Unrestricted Contributions are expected to increase. These increases were due to a one-time special contribution of US\$203,000 from the Government of the People's Republic of Bangladesh and the return of the Netherlands Government as donors to the Centre with unrestricted funds.

1999 Forecast

Expenditure

Operating Cash Expenditures (Tables 3 and 5) were budgeted at US\$14,365,00 and are forecast to decrease by US\$348,000 (2.4%) to US\$14,017,000.

Depreciation which was budgeted at US\$854,000 is expected to increase by \$31,000 (3.6%) to \$885,000.

Total Expenditures including depreciation was budgeted at \$15,219,000 and is anticipated to decrease by \$317,000 (2.1%) to \$14,902,000.

Balance

Net Operating Deficit excluding depreciation was budgeted at \$1,030,000. This is now anticipated to decrease by \$902,000 to a deficit of \$128,000.

Net Operating Deficit including depreciation was budgeted at \$1,884,000. This is now anticipated to decrease by \$871,000 to a deficit of \$1,013,000.

Restricted Expenditures for projects and programs are expected to decrease primarily due to a decrease in international salaries as a result of the departure of International Staff in late 1998 and 1999. Recruitment is currently underway to staff these vacant positions. Expenditures in all other categories are forecast in line with anticipated project activities.

Unrestricted Expenditures in programs are expected to decrease primarily due to salary savings as a result of the voluntary severance program and donor support with restricted funds for some essential programs supported with unrestricted funds.

Unrestricted Expenditures in management are expected to increase by \$70,000; however, this includes \$228,000, being 50% of the cost of the voluntary severance program. Management costs in other areas are expected to decrease primarily due to salary savings from the voluntary severance program and international salaries, as recruitment of one position was deferred.

Discussion:

Explaining further the information provided in the 1999 forecast, Prof Colwell said that what we have here is a "confidence budget". Confidence in the Director, the Centre and the future. She commended the work of the Centre with particular note to the work of the Interim Director and Executive Committee over the past 15 months, the Finance Officer and all Centre staff which she said has allowed for curtailment of expenses and the Centre is beginning to see the reward of right-sizing. Two new donors – John Snow International (JSI) (for the hospital) and the World Bank (Nutrition Centre of Excellence) have greatly improved the Centre's financial status and that the Centre is anticipating a deficit of just over \$100,000.

Prof Colwell also took this opportunity to acknowledge the one-time contribution of US\$203,000 by the Government of Bangladesh to the Centre and on behalf of the Committee, expressed gratitude to Mr MM Reza for enabling this contribution.

2000 Budget

Income

Donor Contributions are budgeted at \$16,367,000 as compared to \$13,889,000 forecast for 1999, **that is**, an increase of \$2,487,000 (17.8%).

Restricted Contributions will increase in line with expenditures and are commented on under expenditures.

The increase in contributions are mainly from the European Union -- \$614,000; USAID/Dhaka -- \$749,000; USAID/Washington -- \$812,000; SDC -- \$302,000; John Snow Inc -- \$89,000; Other -- \$208,000; the total of which is \$2,774,000.

Unrestricted contributions are anticipated to decrease by \$296,000. This decrease results primarily from a one-time special contribution received from the Government of Bangladesh in 1999 and not anticipated in 2000. Support from the Kingdom of Saudi Arabia ended in 1999. However, the much appreciated inquiry by Board Member Dr T A M Khoja is expected to lead to continued partnership with the Kingdom of Saudi Arabia and the AGFUND and future support from this much valued supporter. There has been a reduction of US\$36,000 as in the agreement with SDC.

2000 Budget

Expenditure

Operating Cash Expenditures are expected to be \$16,456,000 as compared to \$14,017,000 forecast for 1999, showing an increase of \$2,439,000 (17.4%).

Restricted Expenditures are expected to increase with the staffing of vacant international positions and increased project activity. The increased project activity is mainly in projects funded by the EU, SDC and USAID.

Unrestricted Expenditures are not expected to change significantly. The increase in management costs is primarily due to 2 new international positions. Management costs also include \$288,000 being the last 50% of the cost of the voluntary severance program.

Depreciation is expected to be \$908,000 as compared to \$885,000 forecast for 1999, an increase of \$23,000.

Total expenditures including depreciation is budgeted at \$17,364,000 as compared to \$14,902,000 forecast for 1999. This is an increase of \$2,462,000 (16.5%).

Balance

Net Operating Deficit excluding depreciation is expected to be \$89,000 compared to the forecast deficit of \$128,000 for 1999.

Commentary

The Centre has managed to reduce the annual deficit over the past two years to the point that breakeven is possible. Efforts will be continued to control and reduce costs as well as to obtain donor support with restricted funds for essential activities that are currently supported from unrestricted funds. These measures, along with continued donor support with unrestricted funds should enable the Centre to operate without an annual deficit.

The cumulative deficit of approximately \$4.0m remains a serious problem. The future viability of the Centre remains uncertain and cash flow continues to be a problem requiring a frequent overdraft.

Additional unrestricted funds are required to ensure the future stability of the Centre.

Discussion:

Prof Colwell stated that this is the largest budget the Centre has ever had and is clearly a confidence budget.

Dr Sack added that this budget reflects the efforts of the previous Interim Director, the Executive Committee and all Centre staff. He also noted that in several multiyear agreements, the rate of research work does determine the amount of funds the Centre receives which includes indirect cost recoveries. This budget reflects increased activities under these agreements.

It was also noted that unrestricted expenditures included the last half of the voluntary severance programme and two new international positions.

National Staff Salaries and Allowances

Centre staff receive salaries considerably less than employees at WHO at comparable grade/step levels. This applies to both GS and NO staff. To bring ICDDR,B staff salaries in line with WHO salaries would mean the increase in personnel costs by USD\$5,730,000. It was agreed that this was not possible in the near future, but that salaries to be increased to levels closer to the WHO scale.

International Staff Salaries and Allowances

International staff salaries are less than those at WHO for comparable grade/step level. Full implementation of WHO salaries would mean the increase in personnel costs of US\$356,700.

Discussions were held in a closed session.

Agenda 5:

a) ICDDR,B Hospital Endowment Fund

The balance of the Hospital Endowment Fund(HEF) was \$4,046,791 at 31 December 1998. Receipts from the first 9 months of 1999 were \$110,573. In addition, the Fund had net-unrealised gains of \$181,254 at 31 August 1999, giving a total market value of the fund of \$4,338,618 at 31 August 1999.

Discussion:

In discussions of the HEF, it was noted that the Centre had begun to divest itself of shares in companies in Bangladesh as the market was not likely to improve in the foreseeable future. Approximately \$10,000 has been realised to date. Hospital Endowment Funds held in Bangladesh are now being invested in Government securities providing a return of 15% per annum if retained for 5 years. The two securities are Bangladesh Savings Certificates and Defence Savings Certificates.

In response to the request for clarification regarding the investment of endowment funds in Defence Savings Certificates, Dr Masihur Rahman stated that the Defence Savings Certificate is one of the several instruments that the Government of Bangladesh uses for borrowing. The receipts from borrowing are credited to the public accounts of the Republic together with other monies or receipts that government borrows or holds in a fiduciary capacity. The resources raised through Defence Certificate/Bonds do not have any direct relationship with government expenditure related to defence. The resources raised through borrowing are applied to budgetary expenditure, particularly development outlay of the Government. The accounts are audited by the Comptroller and Auditor General of Bangladesh and these reports are laid before Parliament.

b) Centre's Endowment Fund

The balance of Centre Endowment Fund including USAID Endowment Fund was \$3,180,148 as at December 31, 1998. The unrealised income as at 31 August 1999 was \$625,044 for a total market value of the fund of \$3,805,192. This entire amount is invested with Morgan Stanley and is being monitored by the Centre Fund Management Committees. There have been no contributions to this Fund to date in 1999.

c) Reserve Fund

The balance of the Reserve Fund as at 31 December 1998 was \$2,259,834. Interest income on this Fund is approximately \$105,000 per year. The Reserve Fund is held as security by American Express Bank for our overdraft facility.

d) Fixed Assets Acquisition and Replacement Fund

The balance of this Fund as at 31 December 1998 was \$146,726. This is funding from the Government of Japan for the Matlab International Training Centre. With the completion of the Training Centre in early 1999, this Fund will be fully utilized by the end of this year.

Agenda 6:

a) Cheque signatories

As required by the Board resolution of 22 November 1994, the Board is advised that Dr David A Sack, M.D. and Prof Barkat-e-Khuda, HPED, have been appointed as cheque signatories.

This action was noted by the Committee.

b) Child Health Foundation

Prof Colwell presented a report on the activities of the Child Health Foundation (CHF) who have been assisting with the endowment funds invested with Morgan Stanley.

The report provided a history of the funds received in the USA and the investment portfolio managed by Morgan Stanley.

Mr J Martin noted that the report was incomplete as it did not include contributions to the HEF received in Dhaka. He requested that this be discussed with the CHF for a more comprehensive report on the endowment funds.

c) USA Global

A letter from USA Global Ltd dated 2 November 1999 was circulated to Committee members. Annex I.

Discussion ensued in which members expressed strong dissatisfaction with the performance of USA Global, and a decision was made to request the Board to terminate

the contract after obtaining legal advice, as provided for in the contract. Ms Brooks was requested to draft the relevant questions for review by the Centre's legal counsel, Venable, Baetjer & Howard PC of Baltimore, Maryland, USA, and to request legal counsel to draft the letter terminating the contract.

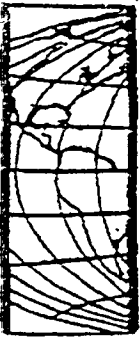
d) Cumulative Deficit

Discussion:

It was noted that the cumulative deficit of approximately \$4m remains a serious problem. The future viability of the Centre remains uncertain and cash flow continues to be a problem requiring a frequent overdraft. Dr Sack requested the Committee to consider the following steps to assist the Centre in reducing overdraft interest costs and over time, eliminating the cumulative deficit.

- Contributors to the HEF are interested in seeing the income from these funds used for the purpose for which they were intended.
- Income up to \$200,000 per annum from the HEF beginning in 1999, be used to partially cover costs of clinical care at the hospitals. These funds should be considered restricted funds and ongoing clinical care expenditures be charged to these funds.
- The Reserve Fund will have an approximate balance of \$2,350,000 at the end of 1999. This Fund is held as collateral for the Centre's overdraft facilities of \$2.0m with American Express Bank, in interest-bearing deposit certificates. A minimum balance of US\$2.0m is required. Dr Sack recommended that \$300,000 be transferred from the Reserve Fund to the Operating Funds in the year 2000. In future years, consideration should be given to transfer up to \$100,000 from the Reserve Fund to the Operating Fund to further reduce the cumulative deficit.

The Committee agreed with Dr Sack's suggestions and agreed to recommend to the Board approval of the recommendations.



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TO: Dr. David Sack

FAX: 208/955-4437

FROM: Ching for Jay Hoffman

DATE AND TIME: November 2, 1999 5:00 PM

PAGES: (INCLUDING COVER SHEET) 3.

1101

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In terms of a detailed report, I will forward that to you as soon as it is complete. I don't think it will be in time for the November 4-7 Board meeting as I am hopeful that it will be accompanied by a check from one of the donors I am working with.

As I have been traveling extensively over the past several months, e-mail is the best way to communicate with expediency.

As always, my very warmest regards,

Sincerely,

Jay S. Hoffman

JSH:cj

cc: Dr. William Greenough

Dictated, but not read in order to forward immediately.

USA GLOBAL LTD.

Jay S. Hoffman
President/CEO

October 29, 1999

Dr. David Sack, M.D.
Director - ICDDR,B
Dhaka, Bangladesh

Via Telefax (208) 955-4437

Dear David,

Thank you for your letter dated October 20, 1999.

I hope you have settled in to your new position as Director and I wish you every success in this endeavor. As I have said before, ICDDR,B will be wonderfully served by your leadership and dedication to good science.

With reference to the contents of your memo, I would like to clarify the fact that the current contract with USA Global runs until June, 2000 and not November, 1999 as you had thought.

The real issue, however, is the Endowment Fund donations that are expected.

Thank you for acknowledging my efforts so far, and thank you for your offer to assist in attending meetings, etc. to facilitate the donations.

I will definitely ask for your assistance in this area.

At present, I am engaged with Larry Greenfield and Dina Beaumont in an all out effort to secure sizeable contributions to the Endowment Fund prior to the end of calendar 1999.

I am confident of our success and am quite aware of the importance to ICDDR,B that this effort holds.



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RESOLUTIONS FROM THE FINANCE COMMITTEE

6/BT/Nov99

The Board agreed to approve the 2000 budget as presented, noting that over the past two years the Centre has been able to significantly reduce the annual operating deficit. The Management was encouraged to continue to take all measures possible to avoid the projected \$89,000 deficit in 2000.

7/BT/Nov99

In recognising the serious problems facing the Centre with the cumulative deficit and to reduce overdraft interest costs, the Board approved a \$300,000 transfer from the Reserve Fund to the operating Fund in the year 2000. Centre Management was requested to continue to take all steps necessary to ensure a balanced budget in future.

8/BT/Nov99

The Board recognised that contributors to the HEF anticipate that income from these funds will be used in supporting clinical care costs of the hospitals. In line with this, the Board approved the use of up to \$200,000 from the HEF in 1999 for this purpose. The funds are to be recorded as restricted income and identified ongoing clinical care costs to be charged to these funds.

9/BT/Nov99

The Board approved that in the year 2000, up to \$200,000 be used from the HEF to provide clinical care at the hospitals. These funds are to be recorded as restricted income and identified ongoing clinical care costs are to be charged to these funds.

10/BT/Nov99

The Board expressed its concerns on the progress of the fundraising undertaken by USA Global Development Company, LLC (USA/GDC), a consulting firm retained for fundraising services for a contract period from 26 November 1997 to 30 June 2000. To fulfill our fiduciary obligations and to exercise due diligence in governing the Centre's affairs, the Board recommended the following course of action.

The Board delegated the Executive Committee its decision-making authority pertaining to the Centre's contractual relationship with USA/GDC. Based on the advice of legal counsel, Venable, Baetjer & Howard PC, a law firm in Baltimore, Maryland, USA, the Executive Committee may take necessary action to protect the Centre's interests including the termination of the Centre's contract with USA/GDC in accordance with Article 3.1 of the Agreement.

The Board approved a salary increase of 6% for all NO and GS staff, and a 3% salary increase for all international staff, effective 1 January 2000.

The Board instructed Management to complete salary compensation analysis. A report on options for remuneration for all staff at the June 2000 Board Meeting was requested.

Finance Committee

COMMENDATION

The Finance Committee made a commendation to the Director, Dr David Sack, the Interim Director, Prof George Fuchs, the Executive Committee of ICDDR,B, Mr John Winkleman, Chief Finance Officer, and the staff of the Centre for their excellent performance during difficult times that makes the future prospects of the Centre highly favourable, notably in stabilising the financial outlook.

**PERSONNEL AND SELECTION COMMITTEE MEETING
(CLOSED SESSION)
SUNDAY 6 NOVEMBER 1999**

On Sunday 6 November 1999 at 2:30pm, the Personnel and Selection Committee held its first session. Mr Jacques Martin, Chair of the Board, proposed that Prof Marian Jacobs continue as Chair of the Committee. Prof Jacobs declared the meeting open. She welcomed everyone to the meeting and especially to Dr David Sack, the Director; Dr Kim Streatfield and Mrs Judith Bennett Henry who had all recently joined the Centre and pointed out that appointments taken up after September would be given mention in the Board's June meeting.

She stated that the Committee noted with sadness the deaths of Maj Gen Choudhury and Dr Shameem and asked that the Committee's condolences be extended through the Director and Prof Barkat. Chief Personnel Officer would make similar approaches to the families of staff members Mr Shafiqul Islam, Finance; Mr D K Barua, CSD; Mr A Karim, CSD; Mr Shah Alam, LSD; Mr Nurul Haque, PHSD.

Prof Jacobs then called the meeting to order.

The meeting was held in closed session. It also included members of the Centre's Executive Committee.

Personnel and Selection Committee members

Prof Marian Jacobs	-	Chair, P&S Committee
Dr David Sack	-	Director
Mr M M Reza		
Mr Jacques Martin	-	Chair, BoT

Invited Trustees

Present:

Mr Rolf Carriere
Prof Peter McDonald
Dr Tawfik A M Khoja
Dr Tikki Pang
Prof Carol K Vlassoff
Prof Rita Colwell
Prof A M Azad Khan
Dr A K Masihur Rahman

Absent:

Prof Q Zheng
Dr Y Takeda

Centre Staff:

Mr Wahabuzzaman Ahmed
Dr Barkat-e-Khuda
Dr V I Mathan
Dr Lars Ake Persson
Mr John Winkleman
Ms Vanessa Brooks
Dr Ishtiaque Zaman

Mrs Judith Bennett Henry (Minute Secretary)

1. Approval of the Agenda

The agenda was approved. It was agreed that a closed session be allowed for the more sensitive aspects for discussion.

Prof Jacobs advised the Committee that she is being called away on work-related duties and would be leaving Dhaka at noon on 7 November. She proposed that Mr Rolf Carriere carry on the responsibility of the Chair of the Committee on her departure. It was so agreed.

Prof Jacobs stated that the format of the minutes should include on the agenda item a note on action to be taken, the person responsible and the allotted timeframe for feedback to the Committee.

The main factors of the meeting's proceedings would be questions of clarification and additional questions.

Prof Jacobs stated further that there was no record of last year's minutes of the Committee due to the fact that it was held in closed session. She requested that minutes be taken of the "closed" as well as the "closed closed" session of the Committee and be reflected in the agenda for next BoT meeting.

2. Staffing

2.1 Overview of the staffing situation

The overview was presented by Mr W Ahmed, Chief Personnel Officer.

Centre staff stood at a total of 1601 as at 30 September 1999.

The Centre continued to enforce the ban on external recruitment of non-project (unrestricted) fixed-term staff during this operating period 1 April – 30 September 1999. The Centre's fixed-term staff stood, as at 30 Sept 99, at 910, of whom 11 were International Professionals; 167 National Officers; and 732 General Services Staff. Of the total 910 staff members, not including the international professionals, 435 were in the unrestricted funding areas and 464 in restricted funding.

There were 36 separations and 42 additions, mainly in the restricted areas.

It was noted that contractual service holders decreased by 3 during the period 31 Mar to 30 Sept 1999; and a decrease in daily wagers from 246 to 179 during the same period..

With regard to the staffing status by sex, it was reported that in the **international professionals** category, there were 11 males (85%) and 2 females (15%); **national officers** 128 males (77%) and 39 females (23%); **general services** 501 males (68%) and 231 females (32%).

In the category of **community health workers**, females were 142 (95%), males 7 (5%); **volunteers** were females 68 (99%), males 1 (1%). **Seconded staff** were males 2 (100%), females nil; **part-time international** 1 male (100%), females nil.

Trainees were 16 males (66%), females 10 (34%); and CSAs were 115 males (46%) and 135 females (54%).

Prof Jacobs thanked Mr Zaman for his presentation.

Discussion:

It was recommended that the CPO provide more relevant data to make the tables more meaningful as well as to insert a table for "Authorised Posts". The point was put forward that it was the Board's function to authorise posts and the Centre's management to recruit personnel to fill them. It was stressed however that where the Board had the authorisation to approve international posts, it did not have a say in the number of posts.

Discussion ensued on donors' involvement in the recruitment process for funded posts; whether the Centre is legally bound by donors for specific (named) personnel. It was explained that the Centre reviews its staff's capabilities to see whether he/she fills the requirements for the post. If this is not possible, external recruitment is the next step.

Some Board members requested an improvement in the HR data being presented to the Board. He suggested that members summarise the type of data being requested and forward to him (with attached dummy tables) and a rationale for the data.

It was discussed that a policy action on gender distribution be put in place. It was agreed that a Task Force comprising several members meet with staff to develop a Gender Equity Target. It was recommended that Board members who have had experience in that area forward relevant information to Dr Sack to facilitate the process. It was agreed that Prof Vlassoff will liaise with Dr Sack in this regard.

2.2 Recruitment of International Staff

a. Head, Reproductive Health Programme, P5

It was reported to the Committee that Dr Japhet Killewo, a Tanzanian national, was recruited to fill the post. He joined the Centre on 27 October 1999.

b. **Head, Health & Demographic Surveillance Programme, PHSD, P5**

It was reported that Dr Kim Streatfield, Australian national, was appointed to the abovementioned post and took up his duties at the Centre on 18 July 1999.

c. **Head, Human Resources, P5**

It was reported that Mr Fons Marcellis would be unable to take up this post as had been expected. It was agreed that this appointment be held in abeyance. Dr Sack would liaise with Mr Carriere on likely candidates. Board members were also asked to submit names and personal data of individuals who would fit the bill.

d. **Chief Scientist, P5**

No appointment has been made for this vacancy. It was agreed that a new job description was needed and this should be discussed at a later date.

e. **Health Economist, ORP/HPED, P4**

It was reported that a Health Economist would be coming as a consultant for 6 months. It was further stressed that the Division had an urgent need to fill this post. The candidate who had originally been chosen had still not resolved his US visa status and would therefore be unable to take up the post.

f. **Operations Research Scientist, ORP/HPED, P4**

Prof Ray Langsten had been invited to the Centre for an interview and a presentation of a seminar which took place on 27 and 28 October. A decision is still to be made on filling this post.

g. **Research Microbiologist, LSD, P4**

Dr G Balakrish Nair visited the Centre to attend for an interview and present a seminar as part of the selection process. This post was vacated by Dr John Albert who completed his contract with ICDDR,B on 31 October 1999. It was decided that Dr G B Nair would be offered the post and he would take up his duties at the beginning of April 2000.

h. **Head, Training & Education Department, Director's Division, P4**

It was reported that the post was being effectively filled at the present time by Dr Alam. It was requested that the post be elevated to P-5 level in the title of Head, Information Sciences, in order to expand the Centre's activities to electronic information sources, distance education, data archiving.

i. **Social Scientist, SBSP/PHSD, P4**

Dr Lauren Blum was selected for the post and would take up her duties in January 2000.

j. **Internal Auditor, Director's Division, P2**

k. **Bio-statistician, Director's Division, P2**

It was reported that no appointments have been made for these posts.

It was suggested that for the post of Internal Auditor, it was not necessary to have an in-house, but can contract on needed basis.

1. Executive Assistant to Director, Director's Division, P1

Mrs Judith Bennett Henry, a national of Trinidad and Tobago, was appointed to the post and took up her duties on 1 October 1999.

Discussion:

The Committee deliberated on the 6-yr rule; salaries; international and national staff; new posts; CHWs.

6 year rule: This subject was discussed at length by the Committee. Concern was voiced that the rule would in some cases cost the Centre excellent staff and may result in replacing high calibre staff with those less so. It was suggested that in the best interests of the Centre and to maintain continuity and commitment to the research efforts as well as attract new intellect, a certain flexibility should prevail and should allow the Director discretionary authority to implement policy as he sees best.

Salaries: The Committee noted the impassioned request by SWA for salary increase and for BOT's attention to other staff issues. It was discussed that the staff showed considerable fortitude during the period of right-sizing and belt-tightening and it was the right thing to reward them for their commitment.

International and national staff: It was discussed that the Board be consistent with guidelines for national as well as international staff. The Board should address and evaluate remuneration policies for national scientists in relation to those from other organisations.

It was further discussed that Dr Bilqis Amin Hoque had tendered her resignation. It was suggested that the post be established at a P-level. There is no job description at the present time. It was also reported that 2 posts under the cooperative agreement with USAID will be nationalised on completion of contract of the incumbent scientists.

CHWs: The Committee's discussions focussed on the request by the SWA to consider including community health workers (CHWs) as regular staff on the GS scale. This would raise their salary. As almost all CHWs are female, keeping them on lower salary levels may represent gender discrimination. Also the CHWs have more responsibilities than in the past and should be compensated. It was felt that the Board needed to move cautiously because of possible implications for government workers.

Mr Martin thanked the Executive Committee members for their straightforward and honest opinions. He felt it was a useful exercise in which the Board could better understand the issues facing the staff in general.

The meeting ended at 4:30pm.

RESOLUTIONS FROM THE PERSONNEL AND SELECTION COMMITTEE

12/BT/Nov 99

The Board requests the Director to further improve the quality of the presentation of Human Resources data to the Board in order to better inform its discussion and to facilitate decision-making.

13/BT/Nov 99

The Board requests the Director to collect and collate an information package on ICDDR,B's human resources policy as part of the induction of new Board members.

14/BT/Nov 99

The Board establishes a Gender Equality Task Force with the aim to develop clear gender equality policies and time-bound gender targets, and to oversee its implementation. The Director and Prof Carol Vlassoff will take the lead, and Board members agree to share with the Task Force in writing before end-December 1999 their institutions' policy documents and/or their own experience.

15/BT/Nov 99

The Board, in clarifying the "6-year limitation rule" for incumbents of international professional posts, confirms the following policy:

- That the first contract of 3 years is in principle "renewable" and may be followed by another 3 year contract, subject to (i) the post still being needed; (ii) the incumbent's excellent performance; and (iii) the post not having been re-defined.
- That in case the post is no longer needed and/or the incumbent's performance is less than expected, this information be communicated to the incumbent at the time of the second Annual Performance Evaluation discussion;
- That on completion of the second 3-year contract (and assuming there is a continued need for the post), the normal expectation would be for the vacancy to be filled with a new staff member;
- That under exceptional circumstances, when it is in the best interest of the ICDDR,B, another new contract not exceeding 18 months may be considered and granted to the current incumbent;
 - When a unique individual is making critical contribution; and/or
 - When the terms of tenure and the terms of contract requirements do not coincide;
- That even in either of these cases the vacancy be widely advertised, thus allowing open and fair competition on an equal footing by any and all interested international-level candidates. (The incumbent will still be eligible to compete for the post);
- That Board approval will continue to be needed for all appointments at level P-5 and above, and henceforth also for all International professional contracts

(including P-1 through P-4) that would result in any employment beyond 6 years in an IP post;

- That eligibility to reapply for an IPO vacancy would be restored after an interval of 3 years;
- That this policy applies to all international staff, regardless of the mechanism through which they are hired (directly or on secondment) and regardless of the number of different posts at different levels they may have occupied;
- That the Director retains the ability and responsibility to exercise discretionary judgement in appointing the best person for the post;
- That the above policy will be phased in over a period of the next 18 months during which period the Director is requested to bring to the Board's notice any need for further refinement of this policy;
- That this policy will immediately apply to the two cases of contract renewals beyond 6 years currently before the Board) namely for the posts of Senior Scientist, P-5, PHSD; Social Scientist and Project Director, P-4, ICDDR,B/SRC Project (Chakaria Community Health Project), PHSD;
- That the Board had given full authority to the Director to make these two personnel decisions, as needed.

16/BT/Nov99

The Board requests the Director to propose, at the June Board meeting, how ICDDR,B's annual performance evaluation system for staff in all three categories currently serves as a basis for reappointment and annual merit increase, and how it could serve as a basis for a performance-based financial reward system, in a transparent and fair manner.

17/BT/Nov99

The Board takes note of the status of recruitment and renewals of International Professional staff, and approves to create and initiate recruitment for the new post in Information Sciences at P-5 level (which is a conversion of an existing P-4 level post).

18/BT/Nov99

The Board supports, subject to availability of the necessary budget, the creation of new international posts in the areas of ER&ID, Institution Development, Internal Audit (perhaps with title change to better reflect the scope and responsibilities of this post), and requests the Director to circulate the draft job descriptions to all Trustees for comment, and also to submit them for classification by an external agency (WHO or UNICEF). Final decisions will be made in consultation with the Executive Committee.

19/BT/Nov99

The Board agrees to extend the search for new Trustees, bearing in mind the requirements of the Ordinance and the results from the Board Retreat about current strengths, weaknesses and needs in the Board's make-up, and requests the names of nominees (with their consent of nomination) be sent to the Director no later than end-December 1999, thus allowing decision-making to proceed via e-mail (and perhaps, should that be needed and feasible, via tele- or video-conferencing) well before the June Board meeting.

20/BT/Nov99

The Board requests the Director to complete, by the time of the next Board meeting, the development of options, proposals and recommendations with regard to the following HR areas:

- Market survey and new salary structure for GS, NO and IPO categories
- Job classification for all posts
- Promotion policies
- Travel policy
- Retirement age policy
- Remuneration of CHWs

The Board recognises that these policies may need to be developed with the help of external expertise.

21/BT/Nov99

The Board expresses its profound grief at the death of the following colleagues, and extends its condolences to the loved ones of:

- Maj Gen (ret'd) Prof M R Choudhury, Trustee of the Board
- Dr Shameem Ahmed, Health Scientist, Operations Research Project
- Mr Shafiqul Islam, Finance
- Mr D K Barua, CSD
- Mr A Karim, CSD
- Mr Shah Alam, LSD
- Mr Nurul Haque, PHSD

**FULL BOARD SESSION
MONDAY 8 NOVEMBER 1999**

Present:

Mr Rolf Carriere - Acting for Prof Jacobs as Chair of the Committee
Mr Jacques Martin - Chair of the Board
Dr David Sack - Director
Prof Tawfik Khoja
Prof Rita Colwell
Prof Azad Khan
Dr A K M Rahman
Prof Carol Vlassoff
Prof Peter MacDonald
Dr Tikki Pang

Mrs Judith Bennett Henry Minute Secretary

At 9:00 am, Mr Jacques Martin, Chair of the Board opened the Full Board Session. He thanked all present for their participation and especially the Bangladeshi representatives. He stated that despite the absence of 4 Board members, the meeting still had a quorum.

1. Approval of the Agenda

It was agreed that an additional agenda item be placed on the Programme Committee: Plans for Scientific Review. This will include the review of 2 scientific themes.

2. Approval of the draft minutes of the BOT meeting held in June 1999

The minutes were approved with the following amendment:

Agenda item 14.2 Appreciation – Prof Cesar G Victora.

“A letter was addressed to him” to replace “A letter was addressed to her”.

3. Retreat brief.

It was agreed that the Retreat had been a success; that with the help of facilitators Mary de Kuyper and John Brown, the Board was able to look more closely at its role in the Centre. The Board was looking forward to the follow-up report which will be compiled by Mary de Kuyper and submitted upon completion.

4. Fund raising strategies

It was agreed that the USA Global issue be resolved without delay.

The Board also agreed to consider the establishment of a new post for Head, Development which will reinforce the Centre's capability for procuring funds, especially in increasing the endowment. The Director also noted that this office played a vital role in the Centre's expanding activities and a change of strategy would further enhance its role. Following the approval of this post, the Centre would need the services of a consultant to write up a job description.

It was pointed out that at the June meetings, a resolution was drafted which called for the formation of an Executive Committee to work on overall strategy for fundraising. This has not been accomplished.

Trustees were asked to remain attentive to the findings at the Retreat which pointed to a need for Board members to play a more active role in the fundraising activities of the Centre.

5. Resolutions from the Personnel and Selection Committee

Mr Rolf Carriere, Acting Chair of the P&S Committee presented the draft resolutions. It was agreed that the resolutions be accepted and approved.

6. Resolutions from the Finance Committee

Prof Rita Colwell, Chair of the Finance Committee, presented the draft resolutions. They were accepted and approved.

7. Resolutions from the Programme Committee

Prof Peter McDonald presented the draft resolutions. They were accepted and approved.

8. Any Other Business:

It was noted that it was useful to have the Programme Committee at the beginning of the Board's proceedings. Prof McDonald suggested a review of themes and divisions; especially a review of the nutrition theme.

It was further suggested that a Board member sit on the review team.

Prof McDonald called attention to the last Board's meeting in which there was suggested the possible change of name of the HPED.

It was agreed that the participation of the EC at the Board retreat as well as in the P&S closed session was necessary and useful and afforded a healthy exchange between the BoT and the EC.

It was suggested that the implementation of ISO 9000 in the Centre should be reviewed and feedback given at the next Board meeting.

It was agreed that the SWA's presentation uncovered several issues which needed resolution, principal of which was the salary issue. The request for raising the

retirement age to 62 required further study. The CHWs' issue needed review and further discussion.

On the subject of the dates of the next Board in June, it was pointed out that there was the possibility of hartals. Prof Azad Khan advised that hartals should not be taken into account when making these decisions as they usually are impromptu and for which it is impossible to plan in advance.

It was agreed that the Report from the Retreat be included on the agenda for the next Board meeting.

It was also noted that considerable time was taken up with a social programme of receptions, lunches, dinners during the Board meetings. It was suggested that a welcome reception would be sufficient.

Prof Colwell suggested that Mary de Kuyper should be recalled at next Board meeting to follow-up on developments from the Retreat.

Chair of the Board, Mr Jacques Martin, closed the November 1999 Board of Trustees Meeting at 1:30pm.

DONORS SUPPORT GROUP
MONDAY 8 NOVEMBER 1999

During the afternoon, the Donors Support Group held its meeting with the participation of Board members, Centre management and other senior staff.

3/BT/JUNE 2000

POLICY ISSUES FROM THE DIRECTOR
EXTERNAL REVIEWS

4/BT/JUNE 2000

**RESOLUTIONS FROM PROGRAMME
COMMITTEE**

PROGRAMME COMMITTEE

Saturday 3 June 2000

Director's Report



**Centre for Health and Population
Research**

Director's Report To BOT Meeting 3-5 June 2000

Mission Statement

The fundamental mission of the Centre is to develop and disseminate solutions to major health and population problems facing the world, with emphasis on simple and cost-effective methods of prevention and management.

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1. Overview

1999 was a year of many accomplishments and some stabilization for the Centre. All the scientific division head positions were filled with permanent international staff, a new director joined in October, several new initiatives were started, and the Centre operated under a balanced budget for the first time in several years. These improvements resulted from increased confidence by donors in the Centre and from improved management systems within the Centre. Fortunately, the Centre did not have to deal with a major flood as had occurred in the previous year, and the patient numbers were more similar to the overall patterns.

Some changes in key scientific leadership positions took place in 1999. On 1 October, I assumed responsibility as Director of the Centre, at which point, Dr. George Fuchs, who had been the interim director for one and a half years, resumed his position as Head of the Clinical Sciences Division (CSD). Dr. Lars-Ake Persson became Head of the Public Health Sciences Division (PHSD) in March 1999 and Dr. Barkat-e-Khuda, who had been the acting Head of the Health and Population Extension Division (HPED) was formally appointed as Head. Dr. V.I. Mathan continued as Head of the Laboratory Sciences Division (LSD). Dr. M.A. Salam served as the acting Head of the CSD during Dr. Fuchs' tenure as Interim Director of the Centre and a rotation of senior scientists filled in as acting Head of the PHSD until the arrival of Dr. Persson.

Other scientists who joined the Centre included Dr. Peter Kim Streatfield to be in charge of the Health and Demographic Surveillance Programme, and Dr Japhet Killewo to be in charge of the Reproductive Health Programme. The Centre also bade farewell to several scientists who had worked for many years here. These included Dr. Andres de Francisco, Head of Reproductive Health Programme, who left the Centre to join the Global Forum for Health Research in Geneva in January, and Dr. John Albert, Senior Scientist and Microbiologist who left the Centre in October to join the University of Kuwait as Professor of Microbiology. Prof. Mahmud Khan, Head of the Health Economics Programme left in July, but continues as a consultant to the Programme.

During the previous year, the Centre made some significant and needed changes in its administrative mechanisms in response to major financial shortfalls during the previous few years. There was a need to improve the Centre's efficiency and productivity. Thus, a right-sizing of staff numbers occurred, primarily in 1998, with an overall reduction of about 200 positions. The benefits of the right-sizing began to be seen in 1999 with an improved financial situation at the Centre. Fortunately, most of the staff who left the Centre found excellent positions in other organizations. Much credit for the success of this major restructuring goes to Dr Fuchs, the interim director; Mr W Ahmed, the Chief Personnel Officer; Mr Winkelmann, the Chief Financial Officer; and the staff who cooperated with the programme.

The support of the donors was most gratifying. The trend for donors to support specific projects rather than providing unrestricted funding continued, with several negative impacts on the overall stability of the Centre. We were very encouraged however by the donation from the Netherlands who returned as a donor and specifically indicated that theirs was an unrestricted donation that could be used as needed by the Centre. An external evaluation team from the Government of Japan, upon completion of its visit to the Centre, recommended that Japan's contribution be significantly raised and the Kingdom of Saudi Arabia has pledged continued core support to the Centre for the next five years. The United States Agency for International Development (USAID) assisted with regard to clinical care by facilitating a productive collaboration with John Snow Inc. (JSI). In addition to the annual donations from specific donors, the Centre's programmes are benefiting from the

endowment that was created and enhanced during the last nine years. With the endowment, we are now able to start using a portion of the earnings to help support the costs for clinical care in the hospital. The contributors to the Hospital Endowment Fund (HEF) were promised that a donation would provide care for patients in the future, and this promise is now being kept. Still, the endowment will have to grow to much higher levels to support the overall costs of the clinical care that the Centre provides.

Because of the increased support from the donor community, the revenue from the endowment, the right-sizing and strict financial controls, the Centre's operating budget showed a small surplus for the year. Unfortunately, the Centre's accumulated deficit that developed over several years, remains a handicap. This deficit will take up to ten years to erase under the Centre's current financial plan.

The administrative and logistic infrastructure of the Centre will benefit from the development of a comprehensive Policies and Procedures Manual that was completed in 1999. This five-volume set includes working documents for all the administrative activities of the Centre and will be the basis for further improvements in the administration of the Centre. The need for improved administrative and financial information has led to the new financial reports that assist the staff in financial planning and management. Upgrades and standardization of the computer system allows scientists full email and Internet services. The Centre has now its own V-SAT satellite link for our computer network and this will allow more speedy Internet access.

The Centre has many resources that are administered through the scientific divisions and these are described below. It has also been discussing how best to address the scientific needs for defining the cross-cutting issues in which each of the scientific divisions can participate. Often through such interdepartmental synergy, major advances occur. Thus, the Centre is defining its cross-cutting themes which help communicate the goals and promises of the ICDDR,B. These themes, as currently being considered, include child health, nutrition, reproductive health, infectious diseases, vaccine sciences, health systems, and population sciences. Each of these themes uses the resources of the scientific divisions to formulate the priorities for their topical area and the discussions between the divisions stimulate innovative projects. These themes inevitably overlap since one cannot talk about child health without discussing infections and nutrition and reproductive health of the parents. Still there is value in recognizing the overlapping interests and attempting to deal with children's health as a discrete goal. In Bangladesh, 368,000 children die before they reach their fifth birthday, making this country the eighth highest country in the world for childhood deaths. Though this high number is discouraging, the number is decreasing and is actually decreasing-at rates-similar-to those of India, in spite of its fewer-resources. The ICDDR,B plays an important role in assisting with this mission of saving children's lives.

Among the important missions of the Centre is that of training and information sciences. Almost every week, the training department is conducting a national or international training course. This provides the trainees not only with improved knowledge, but also with a network of resources. Similarly, the Centre's library is a resource for scientists at the Centre as well as for the country.

The Clinical Research and Service Centre (The Dhaka hospital) continues to serve the large numbers of patients with diarrhoea and diarrhoea-related conditions. During 1999, the number of patient visits (117,365) was lower than in 1998, the year of unprecedented floods, but it was higher, by 2,378, than in 1997. This suggests that the trend of increasing numbers of patients continues. The 2% sample surveillance system (one out of every 50 patients) provides information regarding the patients

being treated and the etiology of their diarrhoeal diseases. Based on the surveillance system, the most common agents include rotavirus, *V. cholerae*, *Shigella spp.* and enterotoxigenic *E. coli*.

The Dhaka hospital is not simply a centre for conducting research; it is also an important part of the health care system of Dhaka. The Centre is working with partners, such as John Snow Inc's Urban Family Health Partnership (JSI/UFHP) to support child-survival activities for we realize that services that are currently provided by the ICDDR,B should be provided closer to home. Thus, the Centre is working with its partners, in an attempt to franchise the diarrhoea treatment services and to more fully integrate them into an overall primary care system.

There were several important findings from the nutrition research at the Centre. For example, in an important study published in the Lancet in June, a protocolized treatment of children with severe malnutrition was shown to significantly decrease case fatality rates (by 47%) compared to standard treatment. This observation was highlighted in a follow-up editorial in October in the same journal. Based on the findings of the protocolized management, a training module was developed and several training workshops both national and international were conducted at the Centre. Participants came from many countries including Bangladesh, Bhutan, and North Korea. The Centre is exploring the possibility of becoming the WHO regional training site for the management of severe malnutrition that would include follow-up effectiveness studies and operations research.

Several studies are evaluating the utility of zinc in the treatment and prevention of certain conditions. The goal of these studies is to understand the most appropriate role for zinc as a public health tool during healthy periods as well as during illness. The series of studies at ICDDR,B will help to clarify this role in the near future. It does seem that the studies on zinc demonstrate that zinc supplements need to be considered in combination with other micronutrients such as vitamin A to maximize benefits from each.

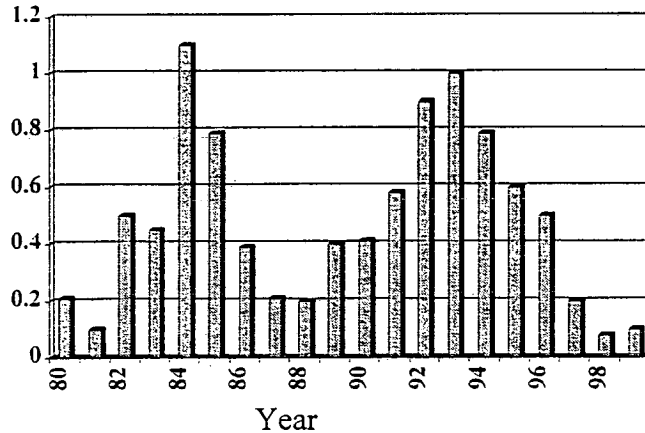
Studies on the clinical management of diarrhoea were also conducted at the Centre. One study examined the fluid composition in treatment of children with persistent diarrhoea. It was already known that these children benefit from oral rehydration solution (ORS) to compensate for their fluid losses, but the optimal formulation for the ORS needed further validation. Studies showed that children receiving a reduced osmolarity ORS (RORS) (either glucose or rice-based) had decreased stool output compared to the standard WHO-ORS.

Preliminary data from another study examining the pathophysiology of *Helicobacter pylori* showed that *Helicobacter pylori* infection decreases the amount of gastric acid produced by infected children. Since gastric acid is an important protective mechanism against other intestinal pathogens, the finding suggests that infection with *H. pylori* might make infected children more susceptible to other infections. A further study also further demonstrates a role for *H. pylori* infection as one part of the problem of iron deficiency that is so common in developing countries.

Several studies are examining the potential for changes for the certain pharmacological agents in the treatment of diarrhoeal diseases. In a rabbit model of shigellosis for example, the amino acid, histidine, was shown to markedly decrease the extent of inflammation thus setting up the rationale for a clinical trial in patients with shigellosis. Similarly other agents are also be tested for their efficacy in specific infections.

Figure 1

Ratio of *S. dysenteriae* to *S. flexneri* in Dhaka since 1980



Trends with regard to infectious diseases in Bangladesh show some remarkable features. For example, an analysis of the long-term data from shigellosis demonstrates a period epidemic from *S. dysenteriae* type 1 (Shiga bacillus). This is shown through monitoring rates of infection from surveillance areas and hospitals, but it is also dramatically seen when expressing the ratio of isolates of *S. dysenteriae* 1 to *S. flexneri* (Figure 1). The reason for this ten-year cycle is not known, but the cycle appears to be repeating itself for at least the last forty years. Although there is less data from Central and Southern Africa, similar cycles also appear to occur in there. If the cycle continues, we expect an upsurge in cases by the year 2003 and we should be able to detect this upsurge by monitoring the ratio. Unfortunately, a majority of the previous epidemics have occurred with strains that have developed new antibiotic resistance; thus, we might expect that the next epidemic will be one that is resistant to the fluoroquinolones. If this occurs, the case fatality rate may be very high unless appropriate interventions can be developed.

The surveillance system for cholera shows marked differences in the seasonality and incidence between different areas in Bangladesh. Factors that influence the seasonality are being studied. Importantly, the "genetic fingerprints" of the strain of cholera that appeared in Bangladesh in 1992, strain *V. cholerae* O139 are being monitored. These studies demonstrate that the new strain is undergoing rapid genetic changes. Furthermore, it is also more widely distributed throughout the country than in previous years. Taken together, it seems likely that strain O139 will continue to evolve, and to spread outside of South Asia at some point soon.

The Centre is undertaking some ambitious new projects in the area of emerging infectious diseases, including projects in tuberculosis and dengue fever. In studies already underway, the antibiotic resistance patterns of some of the most common bacterial causes of pneumonia are of concern. A large proportion of the *H. influenzae* type B strains isolated from children with invasive disease are resistant to the cotrimoxazole (the most commonly used antibiotic for this illness). Also alarming is the high proportion of *N. gonorrhoea* organisms resistant to ciprofloxacin, generally considered to be a first line antibiotic for this infection. In the past there was a

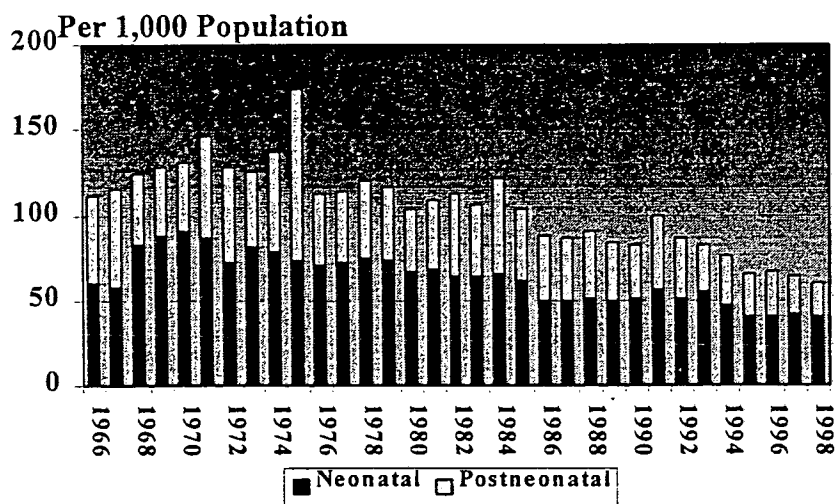
hypothesis that *in vitro* resistance did not necessarily correlate with clinical failure but studies at ICDDR,B show clearly that patients infected with these resistant organisms failed to respond to treatment with ciprofloxacin. Fortunately, the surveillance for HIV infection shows that the rate for this virus is still very low, even in high risk groups; however, the conditions for its rapid spread exist in Bangladesh. High risk groups do have high rates of infection with other sexually transmitted infections suggesting that HIV will certainly infect Bangladesh as it has so many other countries unless steps are taken now to limit its spread.

Studies on vaccines for rotavirus, shigella, pneumococcus and enterotoxigenic *E. coli* have been under study at the Centre. Zinc supplements were evaluated as a potential way to improve the serological response to rotavirus vaccine in Bangladeshi children, many of whom are zinc deficient. Children who were given the supplements did show some improvement in antibody titers following vaccine, but the overall results suggest that the rotavirus vaccine is highly immunogenic in these children even without zinc supplements. In another study, pneumococcal vaccine, when administered to pregnant mothers was shown earlier to stimulate antibodies that are passed on to their infants. Plans are under way to follow this study with additional studies testing this strategy as a way to prevent pneumococcal pneumonia of infants. Additional studies are being planned for several new vaccines to be tested in the future.

The area of reproductive health has been identified as one of the major priority areas for the Centre. The increased emphasis in this area is the result of a large body of evidence suggesting that maternal, especially obstetric health has been long neglected with a high cost in terms of high maternal mortality rates. This also contributes to the high neonatal mortality rates. Both the PHSD and HPED have major projects toward addressing the needs of obstetric care.

Figure 2

Neonatal & Postneonatal Mortality Rates, 1966-1998 Matlab, Bangladesh



The Demographic Surveillance System (DSS) in Matlab has now been converted into a Health and Demographic Surveillance System (HDSS) with the integration of the record-keeping system (RKS) with the DSS. This system continues to provide extremely high quality data on demographic trends and these trends illustrate some important features. For example, the rates of infant mortality and under-five mortality

have been steadily declining in Matlab, yet the rates of neonatal mortality have been relatively resistant to change. This is illustrated by Figure 2 showing neonatal (0 to 1 month) and post-neonatal (1 to 11 months) mortality over time. The contrast with lowered rates of childhood mortality is even more dramatic (Figure 3). (Of interest in Figure 3 are the peaks in childhood mortality related to war in 1971, the famine of 1974-75 and *Shigella* epidemic of 1984-85.)

Figure 3

Child Mortality, 1966-1998 Matlab, Bangladesh

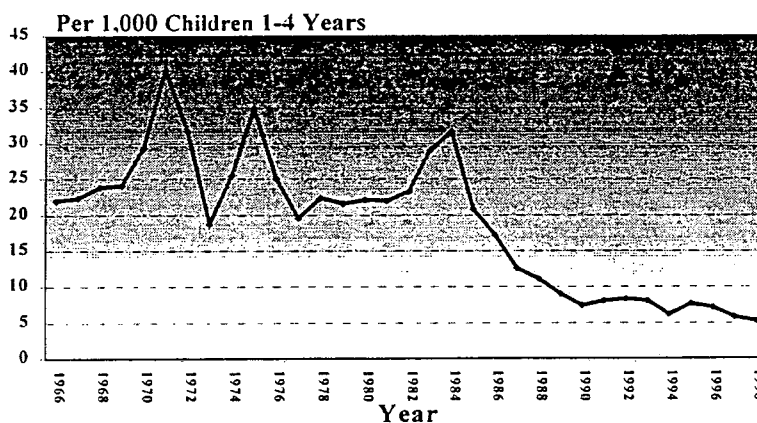
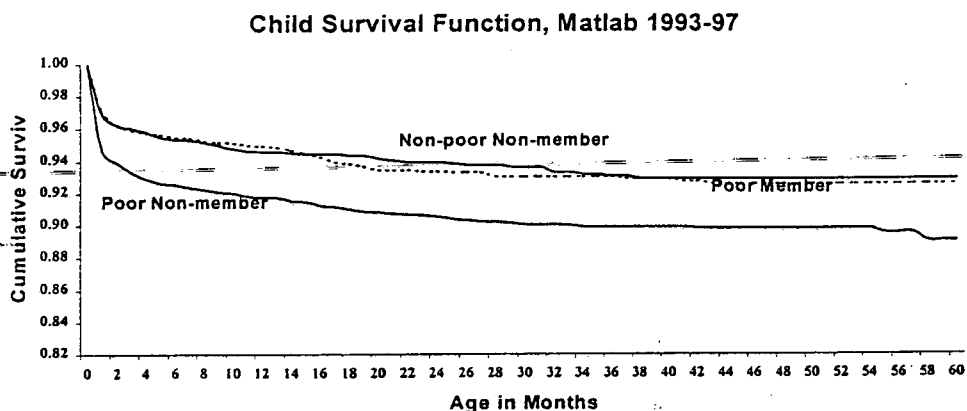


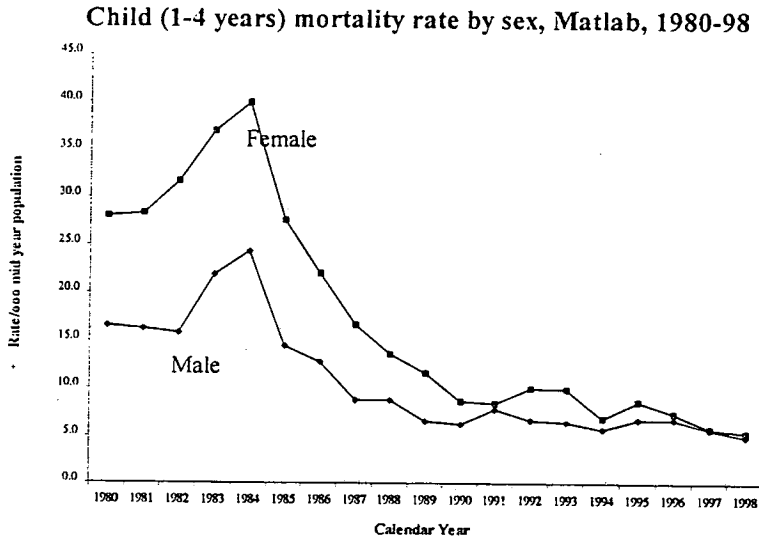
Figure 4



Issues of equity are also receiving increased attention at the Centre. For example, studies from Matlab in collaboration with BRAC show the combined effect of poverty alleviation programmes when co-ordinated with health programmes. As shown in Figure 4, there are marked differences in survival curves between a) poor households who did not participate in poverty alleviation programmes, b) poor households who

participated in the poverty alleviation programmes, c) economically better-off households who were not eligible to participate in the poverty alleviation programme. The effect of poverty alleviation programmes in reducing the gaps between rich and poor who participated in the programme was quite dramatic. Additional studies in equity show a diminution in the difference in gender-specific mortality in Matlab. (Figure 5). Clearly our Matlab primary health care programme is finding a way to provide health care in an equitable manner and the lessons from this programme need to be translated to other areas.

Figure 5



One innovative field project in Chakaria (in southern Bangladesh) is built around the concept of improving community health through promotion of preventive measures and other health initiatives by indigenous village-based self-help organisations. The major activities during the year included the development of a system of community financing for curative services. Currently, there are eight village health posts providing a platform for health activities. A landmark in this project this year was the completion of a project building, thus increasing the resources for new activities in the area.

The Centre sees itself as an important partner with the Ministry of Health and Family Welfare (MOHFW) of the Government of Bangladesh. The MOHFW is undergoing significant changes in the delivery of its services and the Centre is playing an active role in assisting with these changes and in evaluating their impact. Through the Operations Research Project (ORP), the Centre provided technical assistance with operationalizing the Community Clinics strategy within the MOHFW and in designing, pilot-testing, and nationwide implementation of a unified management information system (UMIS). The shift in service delivery to a clinic-based programme is a major change for the Ministry and the ORP is dedicated to making this shift a success in terms of improving the quality and cost-effectiveness without jeopardizing the successes of the previous programmes.

The Centre has undergone many changes in recent years as reflected in the expanded range of activities and the different scientific approaches being used. It has not however changed its mission "to develop and disseminate solutions to major health problems facing the world with emphasis on cost-effective methods of

prevention and management". We look forward to the coming years with a renewed sense of optimism. The successes of the past provide confidence that health problems of developing countries may be difficult, but changes and improvements can and do occur. While the successes found in an annual report tend to reflect short-term and specific achievements, more gratifying is the long-term progress in lowering infant and childhood mortality rates and in seeing oral rehydration solution save the lives of over one million children each year. It is the long-term impact of lowering fertility rates as well as assisting families in gaining control of the health of their households which gives the most satisfaction from working at the ICDDR,B Centre for Health and Population. I trust you will enjoy reading the Centre's Annual Report. We appreciate inquiries about our programme and we welcome your support as we attempt to fulfill our mission.

2. Division Reports

2.1 Clinical Sciences Division (CSD)

The CSD conducted its programme in research, service, and training activities with support from 184 fixed-term staff. A total of 63 health workers, 15 trainee physicians, and 143 personnel on contractual service agreements assisted in the activities of the CSD. Two senior paediatricians and a radiologist provided support for better training of staff as well as trainee physicians of the Division.

The number of patients (50,571) to visit the hospital during the 6-month reporting period was at a moderately high rate. This is nearly 30% fewer patients than for the same period last year. Of the total patient visits, 27,533 (mean, 4,589 per mo) or 54% of all patients required admission to one of the inpatient units (Short Stay, General Ward, ICU, Research Wards, NRU) of the hospital for more intensive treatment Table 1 and 2). The total number of patients treated at the CRSC for the year 1999 was amongst the highest in the Centre's history. The number of patient visits of 117,365 in 1999 was 40,076 (25.5%) lower than that of 1998 (Figure 6). However, this was 2,378 (2.1%) higher than 1997, consistent with an overall trend of slow but steady increases in patient numbers with each successive year.

Patients	October-March 1998-9	October-March 1999-2000
Total	65,949	50,571
Inpatient	42,470(64%)	27,533(54%)
Short Stay Ward	38,633	24,308
General Ward	2,597	2,145
ICU	939	755
Research Ward	301	325

Table 2. CLINICAL RESEARCH AND SERVICE CENTRE, ICDDR,B, DHAKA

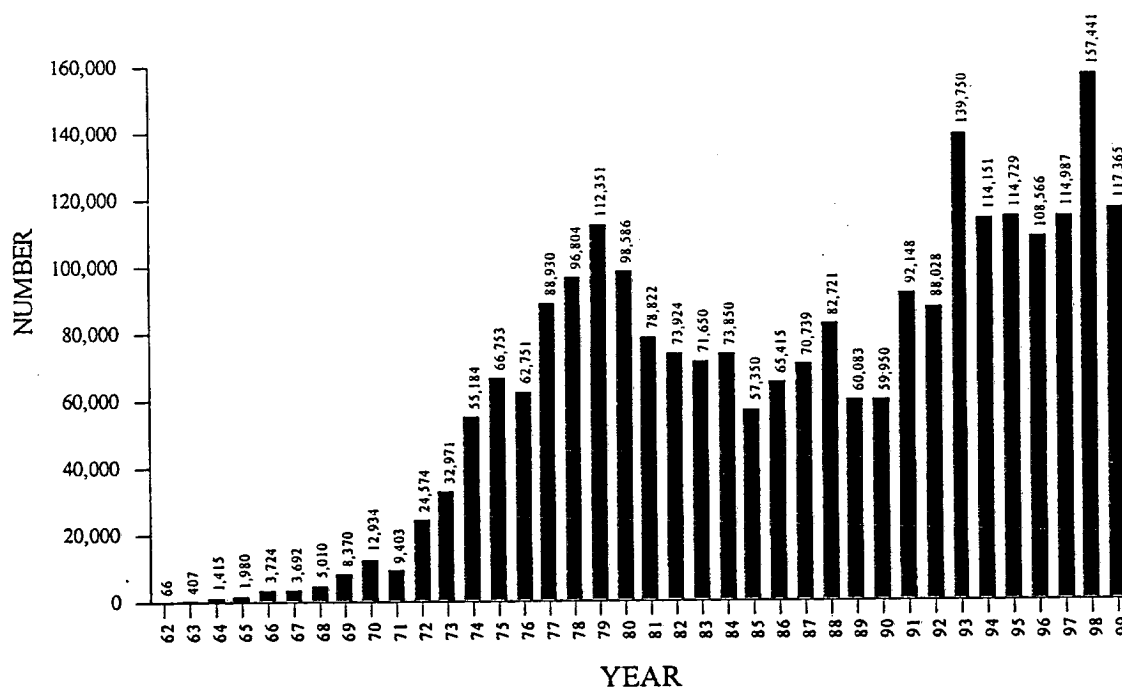
Patients records from October 1999 to March 2000.

Months	Total patients visits	Patient treated in ORT	PATIENT ADMITTED												Grand Total
			Short Stay Ward (SSW)				GW + RW + NRU				Special Care Unit (SCU) (direct admissions only)				
			< 12 hrs.	12-24 hrs.	> 24 hrs.	Total	< 1 day	1 - 7 days	> 7 days	Total	< 1 day	1 - 7 days	> 7 days	Total	
Oct-99	10,925	4,468	3,411	1,501	1,545	6,457	3	413	82	498	10	116	10	136	7,091
Nov-99	7,896	3,877	1,826	961	1,232	4,019	1	348	57	406	8	96	15	119	4,544
Dec-99	8,211	4,616	1,291	907	1,397	3,595	5	289	56	350	8	114	6	128	4,073
Jan-00	7,717	4,556	1,085	840	1,236	3,161	4	294	61	359	6	97	11	114	3,634
Feb-00	6,818	3,850	1,000	748	1,220	2,968	5	382	63	450	6	97	15	118	3,536
Mar-00	9,004	4,896	1,771	982	1,355	4,108	2	344	61	407	12	109	19	140	4,655
Total	50,571	26,263	10,384	5,939	7,985	24,308	20	2,070	380	2,470	50	629	76	755	27,533

ORT = Oral Rehydration Traige, GW = General Ward, RW = Research Ward, NRU = Nutrition Rehabilitation Unit.

Figure 6

Yearly Patients Visits 1962 - 1999
Clinical Research and Service Centre



2.2.1 Division Highlights (Notable results of selected research projects)

- * A modified ORS (less sodium, more potassium, added micronutrients) vs. standard WHO ORS was tested in 125 severely malnourished children with diarrhoea. Fewer modified than standard ORS children developed over-hydration (8 vs. 3, $p=NS$) although children in both groups were effectively rehydrated and there were no deaths in either group. Of importance, children receiving modified ORS developed significantly better potassium status as indicated by a greater mean serum potassium in the modified ORS compared to standard ORS at 24 and 48 hours (4.0 vs. 3.2 mmol/L and 4.0 vs. 3.4 mmol/L, respectively, $p=0.001$ for both comparisons).
- * Of 273 randomly selected children age 13-60 months from a poor, periurban community, 82% were asymptotically infected with *H. pylori* by UBT. Mean serum ferritin and hemoglobin were both lower ($p=0.006$) in infected than non-infected children, and more infected than non-infected children had iron depletion ($p=0.08$) and anaemia ($p=0.05$). Gastric acid is essential for adequate dietary iron absorption. In a subsample of ten infected children, total stimulated gastric acid output significantly increased ($p=0.02$) after anti-*H. pylori* treatment. Further investigations, including iron stable isotope absorption studies, are on-going in this project to define the role and mechanism of *H. pylori* infection in iron deficiency and iron deficiency anaemia.
- * L-Histidine, an amino acid with anti-inflammatory and antioxidative activities reduces intestinal inflammation and secretion induced by infectious agents in animals. The effects of L-Histidine are being explored in a rabbit model of acute colitis induced by intracolonic administration of *Shigella flexneri* 2a. L-Histidine significantly ($p<0.05$) reduced faecal blood and mucus and improved clinical symptoms including diarrhoea, fever, leukocytosis, and weight loss. Histologically, L-Histidine significantly ($p<0.05$) reduced colonic mucosal congestion, cellular infiltration, and necrotic changes. The initial results indicate that L-Histidine may improve clinical, pathological, and bacteriological features of experimental shigellosis.
- * A modified, semi-permeable, cellulose membrane sachet developed by UCB Osotics Ltd U.K. was tested in the ICDDR,B laboratory. Sachets for preparation of ORS, therapeutic milk, infant formula and potable water produced 100%, 93%, 96% and 100% uncontaminated solutions respectively from heavily contaminated water. The osmotic sachet has significant potential for preparing safe drinking water and feeds in heavily contaminated and/or crisis environments.
- * A trial was completed in which 800 children 12-35 mo. of age were randomized to zinc (x 14 d), vitamin A (once), Zinc plus VA, or placebo and followed for six months. Zinc and VA synergistically improved VA status (retinol and RBP) in VA-deficient children. Zinc alone, VA alone, and Zinc plus VA reduced incidence and prevalence of diarrhoeal disease, with the effect being greatest in the Zinc plus VA group. Zinc plus VA reduced rates of persistent diarrhoea and dysentery. Conversely, there was an increase in incidence and prevalence of ALRI in children who received Zinc alone. No differences in growth were observed among any of the groups.
- * Zinc supplementation of pregnant women had no effect on birth weight, but did reduce rates of acute diarrhea (RR: 0.84; 95%CI: 0.72,0.98), dysentery (RR: 0.36; 95%CI: 0.25,0.84) and impetigo (RR: 0.53; 95%CI: 0.34,0.82) in the first six

months of life. These reductions were observed in LBW infants whereas no significant differences were found in NBW infants, and no significant differences in infant growth were observed between treatment groups. These results also emphasize the importance of birth weight as an indicator rather than only an outcome in strategies to influence the consequences of low birth weight.

- * Another cohort of 301 infants was supplemented with 5 mg elemental zinc/day or placebo from 4-24 weeks of age. No significant differences were observed between the groups in growth or rates of acute diarrhoea and dysentery. Micronutrient interventions to improve early infant outcomes might need to be implemented prenatally.
- * In an evaluation to assess the impact of the HKI nationwide home gardening programme to improve VA status, no differences were observed in 600 mothers and 800 children in five randomly selected rural communities regarding VA status, iron deficiency or anemia, or general nutritional status of children and women of gardening (programme) vs. non-gardening (non-programme) households. However, compliance to the HKI guidelines to promote gardens was widely variable among NGOs who adopted the programme. Women, but not children, in households that were part of "compliant" NGOs had better VA status (blood retinol) than women in non-gardening or "non-compliant" NGO households. Data analysis is in progress to define factors influencing compliance. It is expected that the results from this evaluation will have major implications for gardening programmes in Bangladesh and elsewhere in the world aimed at improving VA status. This was conducted as a CSD-PHSD effort.

Operations Research Component of the Bangladesh Integrated Nutrition Project (BINP-ORP)

- A total of fourteen research projects have been carried out under the Bangladesh Integrated Nutrition Project-Operations Research Project (BINP-ORP) by scientists from 8 different national and international research organizations or NGOs and by ICDDR,B. By March 2000, all projects had completed data collection and the results of nine studies had been disseminated to the Research Advisory Committee of the BINP. The investigators of the remaining five research projects are currently finalizing their analyses with their final reports in various stages of completion.
- ICDDR,B is currently assisting the Research Advisory Committee (RAC) in disseminating the results of the studies and is in this capacity producing a series of dissemination reports. These reports compile the findings of several BINP Operations Research projects and present some overall conclusions and recommendations for the programme. The first two dissemination reports, compiling the findings of six studies, were distributed among the members of the RAC, BINP/NNP staff and members of ICDDR,B's Nutrition Working Group. These reports were discussed during dissemination workshops, held at ICDDR,B on 15 December 1999 and 23 February 2000 respectively. A third dissemination workshop is scheduled for 6 April 2000 to discuss the findings of another three BINP-ORP research projects.
- Meanwhile an additional three proposals have been developed by investigators from ICDDR,B to be accommodated with the remaining BINP-ORP funds. These proposals address some recent research questions as have been identified by BINP and its successor the National Nutrition Programme (NNP): reduction of Low Birth Weight, reduction of moderate malnutrition and implementation of CBNC in

the urban areas. The proposals on "the effect of energy, protein and micronutrient supplementation of rural Bangladeshi pregnant women on the birth weight of their newborns" (co-funded), "Feasible means to address moderately malnourished children with BINP communities" and "Community based management of severe malnutrition in the urban areas (co-funded)" are currently under going ICDDR,B's review and it is anticipated that field work of these projects will commence within the next few months.

- ICDDR,B has also been identified as the sole source for the Operations Research of the National Nutrition Programme (NNP) and is currently developing a proposal for this new activity. The total cost of the NNP-OR project would be approximately US\$ 1,500,000 for a period of four years.

Other developments in CSD

- A collaboration with John Snow Inc. and PSKP, an NGO, was implemented during the reported period on the ICDDR,B hospital "franchising" concept with a JSI-supported NGO. Expected outcomes of this initiative include reduced patient load and reduced financial pressure on the Centre's Dhaka hospital, improved health care delivery (decentralization, improved case management of diarrhoeal disease and malnutrition within a package of comprehensive health care services), and a new infrastructure for ICDDR,B for operations research, surveillance, among others.
- CSD established an acute lower respiratory tract infection (ALRI) Working Group to refine and promote the division's strategic and work plans for ALRI research, service, and training activities. In the past, to be eligible for treatment at the CRSC, all patients must have diarrhoea. The admissions policy was changed to allow admission of children with acute lower respiratory tract infection (ALRI) only and specifically for enrolment into ALRI research protocols.

2.1.2 Publications of CSD

A. Journals and Books Published

1. Haider R, Kabir I, Ashworth A. Are breastfeeding promotion messages influencing mothers in Bangladesh? Results from an urban survey in Dhaka, Bangladesh. *J Trop Pediatr* 1999 Oct;45(5):315-8.
2. Haider R, Kabir I, Fuchs GJ, Habte D. Neonatal diarrhoea in a diarrhoea treatment centre in Bangladesh: clinical presentation, breastfeeding management and outcome. *Indian Pediatr* 2000 Jan;37:37-43.
3. Haskell MJ, Mazumder RN, Peerson JM, Jones AD, Wahed MA, Mahalanabis D, Brown KH. Use of deuterated-retinol-dilution technique to assess total-body vitamin A stores of adult volunteers consuming different amounts of vitamin A. *Am J Clin Nutr* 1999 Nov;70(5):874-80.
4. Islam S, Kabir I, Wahed MA, Goran MI, Mahalanabis D, Fuchs GJ, Khaled MA. Multifrequency bioelectrical impedance analysis to assess human body composition. *Nutr Res* 1999 Aug;19(8):1179-88.

5. Lobitz B, Beck L, Huq A, Wood B, Fuchs G, Faruque ASG, Colwell R. Climate and infectious disease: use of remote sensing for detection of *Vibrio cholerae* by indirect measurement. *Proc Nat Acad Sci* 2000;97:1438-43.
6. Osendarp SJM, van Raaij JMA, Arifeen SE, Wahed MA, Baqui AH, Fuchs GJ. A randomized, placebo-controlled trial of the effect of zinc supplementation during pregnancy on pregnancy outcome in Bangladeshi urban poor. *Am J Clin Nutr* 2000;71:114-9.
7. Rahman MM, Mahalanabis D, Hosain S, Wahed MA, Alvarez JO, Siber GR, Thompson C, Santosham M, Fuchs GJ. Simultaneous vitamin A administration at routine immunization contact enhances antibody response to diphtheria vaccine in infants younger than six months. *J Nutr* 1999 Dec;12(129):2192-5.

Review Articles & Book Chapters

1. Rabbani GH. Cholera. In: *Conn's Current Therapy*. Philadelphia: W.B. Saunders, 2000:72-74

Letters & Editorials

1. Rabbani GH. The search for a better oral rehydration solution for cholera (editorial). *New Eng J Med* 2000 Feb;342(5):345-6.

B. Journal and Book In Press

1. Akramuzzaman SM, Cutts FT, Wheeler JG, Hossain MJ. Increased childhood morbidity after measles is short-term in urban Bangladesh. *Am J Epidemiol*
2. Alam DS, Marks GC, Baqui AH, Yunus M, Fuchs GJ. Association between clinical type of diarrhea and growth of children younger than five years of age in rural Bangladesh. *Int J Epidemiol*
3. Amed F, Khan MR, Islam M, Kabir I, Fuchs GJ. Anaemia and iron deficiency among adolescent schoolgirls in peri-urban Bangladesh. *Eur J Clin Nutr*
4. Ashraf H, Hildebrand P, Meier R, Beglinger C, Gyr K. Induction of artificial fat malabsorption by the ¹³C-hiolein breath test in healthy volunteers: a double blind controlled pilot study. *Digestion* 2000;
5. Fuchs GJ and Khan WA. Cholera. In: *Rakel RE, ed. Conn's Current Therapy*. Philadelphia, W.B. Saunders Co.
6. Hyder Z, Persson LA, Chowdhury AMR, Ekstrom E-C. Anaemia among non-pregnant rural women in Bangladesh. *Public Health Nutr*

2.1.3 Research Protocols of CSD

1. Diagnosis of pneumonia in children with dehydrating diarrhoea. PI: M.A. Salam. Donor: USAID. Amount: 41,499. Start date: 1.8.98, End date: 31.12.2000.
2. A prospective, controlled, randomized, double-blind, multicentre study comparing the efficacy and safety of ciprofloxacin suspension administered for 3-days (short course) versus ciprofloxacin suspension administered for 5-days (standard

- course) in children and juveniles for treatment of *Shigella dysenteriae* type 1 dysentery. PI: M.A. Salam. Donor: NEMC. Amount: 80,962. Start date: 1.7.98, End date: 22.6.00.
3. Randomized, double-blind, controlled clinical trial to compare the efficacy of a single-dose of azithromycin versus a 3-day, multiple dose of erythromycin in the treatment of childhood cholera due to *V. cholerae* O1 or O139. PI: W.A. Khan. Donor: NEMC. Amount: 128,475. Start date: 6.1.99, End date: 31.12.00.
 4. Zinc balance and bioavailability from two different dietary regimes for children with persistent diarrhoea syndrome in Bangladesh using zinc stable isotopes. PI: S.K. Roy. Donor: USAID. Amount: 168,870. Start date: 1.8.98, End date: 31.12.00.
 5. Evaluation of the potential use of an osmotically driven ultrafiltration device for the preparation of therapeutic feeds for the home management of malnutrition. PI: S.K. Roy. Donor: UCB Osmotics Ltd. (UK). Amount: 37,686. Start date: 1.4.98, End date: 30.09.00.
 6. Effect of zinc supplementation on the immune and inflammatory responses of children to *Shigella flexneri* infection and correlation with clinical severity of illness and growth following recovery. PI: S.K. Roy. Donor: USAID. Amount: 48,454. Start date: 1.6.99, End date: 30.6.2001.
 7. Is *Helicobacter pylori* (Hp) infection a cause or treatment failure of iron deficient anemia in children in Bangladesh? PI: S.A. Sarker. Donor: NIH, USA. Amount: 95,561. Start date: May '98, End date: 31.3.2001.
 8. Iron bioavailability from a traditional complimentary food: the effect of human milk. PI: S.A. Sarker. Donor: Nestec Research Foundation. Amount: 26,444. Start date: 1.3.00, End date: 28.02.01.
 9. Helicobacter pylori infection associated hypochlorhydria and iron deficiency anaemia in childbearing women in Bangladesh. PI: S.A. Sarker & G.J. Fuchs. Donor: SDC. Amount: 62,792. Start date: 1.12.99, End date: 31.12.00.
 10. Clinical efficacy of L-glutamine in persistent diarrhoea in children. PI: I. Kabir. Donor: USAID. Amount: 98,055. Start date: 1.7.97, End date: 30.6.00.
 11. Promotion and support of exclusive breastfeeding and lactational amenorrhoea method by peer counsellors in rural Bangladesh. PI: A.K.M. Iqbal Kabir. Donor: SDC & World Bank. Amount: 40,240 & 24,533. Start date: 1.10.99, End date: 31.3.2001.
 12. Surveillance of invasive *Haemophilus influenzae* (Hi) and *Streptococcus pneumoniae* (Spn) diseases in Bangladeshi children and the antimicrobial resistance and serotype patterns of Hi and Spn isolates in Bangladesh: PI: Shahadat Hossain (Hospital component). Donor: USAID. Amount: 172,925. Start date: 1.10.98, End date: 30.09.2001.
 13. The effect of psychosocial stimulation on the development of malnourished children in BINP Centres in Bangladesh. PI: J.D. Hamadani. Donor: World Bank. Amount: 70,000. Start date: 1.10.99, End date: 1.2.2002.
 14. Therapeutic evaluation of L-histidine in experimental shigellosis in rabbits. PI: G.H. Rabbani. Donor: Cytos Pharmaceuticals, USA. Amount: 35,000. Start date: 1.6.99, End date: 31.5.2000.

15. Clinical evaluation of L-Histidine as an antidiarrhoeal agent in adults with cholera
PI: G.H. Rabbani. Donor: Cytos Pharmaceuticals Ltd., USA. Amount: 78,900.
Start date: 1.8.99, End date: 30.9.2000.
16. Evaluation of the effect of a soluble fiber (Benefiber) supplemented comminuted chicken diet in the treatment of persistent diarrhoea in children. PI: N.H. Alam.
Donor: Novartis Nutrition, Switzerland. Amount: 89,554. Start date: 1.4.98, End date: 30.9.2000.
17. Evaluation of a dietary treatment algorithm as a home-based management of children with persistent diarrhoea: a community-based study. PI: N.H. Alam.
Donor: SDC. Amount: 48,825. Start date: 1.1.99, End date: 31.12.00.
18. Clinical trial to determine the efficacy and safety of hypotonic glucose based ORS with low sodium concentration in the treatment of neonates and young infants with acute dehydrating diarrhoea. PI: A.M. Khan. Donor: USAID. Amount: 50,653. Start date: 1.1.98, End date: 31.12.00.
19. Evaluation of efficacy of parenteral gentamycin in a single daily dose versus conventional three divided dose in malnourished children. PI: A.M. Khan. Donor: USAID. Amount: 73,380. Start date: 1.7.97, End date: 31.8.00.
20. Assessment of carotenoid bioavailability from plant source. PI: K.M.A. Jamil.
Donor: University of California, Davis, USA. Amount: 51,183. Start date: 15.9.98, End date: 14.9.00.
21. Release of toxins from *Shigella dysenteriae* type 1 in response to different antibiotics. PI: K.M.A. Jamil & G.J. Fuchs. Donor: USAID. Amount: 40,220. Start date: 1.1.00, End date: 31.12.00.
22. Efficacy of zinc supplementation in young infants with acute watery diarrhoea. PI: Abdullah Brooks. Donor: JSU. Amount: 19,725. Start date: 20.9.98, End date: 20.9.00.
23. Efficacy of zinc in the treatment of pneumonia in hospitalized infants less than 2 years of age. PI: Abdullah Brooks. Donor: JHU. Amount: 49,892. Start date: 1.6.99, End date: 31.5.00.
24. Controlled trial to prevent acute lower respiratory tract (LRI) infection and diarrhoea with zinc supplementation in below 2 years of age. PI: Dr. Abdullah Brooks. Donor: JHU, USAID, SDC. Amount: 92,082; 52,000; 49,010. Start date: 1.8.98, End date: 31.7.00.
25. Evaluation of the impact of home gardening programme in rural Bangladesh (HKI). PI: G.J. Fuchs. Donor: HKI. Amount: 320,000. Start date: 1.10.97, End date: 31.12.00.
26. Randomized placebo-controlled double blind trial to prevent shigellosis in family contacts with single dose vitamin A. PI: A.S.G. Faruque & G.J. Fuchs. Donor: SDC. Amount: 166,634. Start date: 1.1.00, End date: 31.12.00.
27. Community-based protocolized management of severe malnutrition (World Bank). PI: G.J. Fuchs. Donor: World Bank. Amount: 100,892. Start date: 1.12.99, End date: 30.9.2001.

28. Home-based nutritional rehabilitation of severely malnourished children recovering from diarrhoea. PI: Tahmeed Ahmed. Donor: SDC. Amount: 41,832. Start date: 1.12.99, End date: 31.12.00.
- 29. The efficacy of fish oil supplementation to pregnant mothers on birth weight of their babies. PI: I. Kabir. Donor: World Bank. Amount: 40,198. Start date: 1.3.00, End date: 28.02.2001.

2.2 Health and Population Extension Division (HPED)

2.2.1 Division Highlights

- * The HPED conducts rural and urban community-based operations research in collaboration with the Government of Bangladesh and NGOs in various aspects of health systems, viz. quality of care, management improvement, and programme and financial sustainability. The scientific work of the Division is aimed at improving efficiency, effectiveness, cost-effectiveness and sustainability of the national health and population programme through design, field-testing and replication of simple, appropriate and accessible strategies and technologies. A major focus of the Division's activities is on the application of research findings and advocacy for necessary programmatic and policy changes, as well as the provision of technical assistance in scaling-up results from successful interventions.
 - * The HPED is composed of Operations Research Project (ORP), Epidemic Control Preparedness Programme (ECPP), and Environmental Health Programme (EHP). However, as part of the overall reorganization currently underway within the HPED, the ECPP has been relocated to the Public Health Sciences Division (PHSD), effective January 2000.
 - * At the end of 1999, the Division had a staff of 268 personnel (5 international-level scientists, 49 national officers, and 214 general services and field-level staff). The Division's research and technical assistance activities are currently being conducted in 32 thanas (sub-districts) in 14 districts and two city corporations of the country as part of its support to service delivery agencies in the national health and population sector (MAP attached).
 - * HPED scientists play an important role in the various thematic working groups currently operating at the Centre. The Division works as the focal point for the working group on Health Systems Research.
-
- * An HPED senior scientist acted as the convenor of the ICDDR,B Ninth Annual Scientific Conference (ASCON) held in February, 2000. The theme of this year's ASCON was "Health Systems Research: Meeting the Needs of Population in Transition".
 - * The Division Director of HPED represented the Centre at the Global Forum for Health Research meeting of the "Initiative on Child Health and Nutrition Research" held in Geneva, Switzerland during February 9-11, 2000. Also, the Division Director attended the meeting on "Reproductive Health Capacity Building" organized by the Partners in Population and Development (PPD), in collaboration with Mahidol University and UNFPA Country Support Team, held at Bangkok, Thailand, March 6-8, 2000. In addition, he had meetings with concerned officials of UNFPA, ESCAP and Mahidol University during this meeting.

- * For objective reflection of the Division's ongoing activities on health systems research and its strategic positioning, a change in the name and structure of the Division is under consideration based on the recommendation made by the BOT review of the Division during November 3-6, 1998.

I. Operations Research Project (ORP)

The ORP which began in July 1997 as a follow-on project to the former MCH-FP Extension Project, represents the Centre's principal contribution to a broad partnership, involving the Ministry of Health and Family Welfare (MOHFW), Government of Bangladesh (GOB) and other service-delivery organizations under the USAID-funded National Integrated Population and Health Programme (NIPHP).

The focus of the ORP reflects the Centre's emphasis on finding solutions to problems in reproductive health and child survival and on promoting the wider availability and use of the services included in the national Essential Services Package (ESP). The key research agenda of ORP includes operations research studies conducted to support the service-delivery activities of the GoB and the NIPHP partners, and the application of research findings for the required programmatic and policy changes. Within these contexts, ORP designs and field-tests interventions jointly with the government agencies, NGOs and social marketing in the rural and urban areas.

The ORP has four "experimental sites" in rural (Abhoynagar sub-district in Jessore district, and Mirsarai and Patiya sub-districts in Chittagong district) and urban areas (Dhaka City). The Project maintains a surveillance system that covers a population of 126,747 persons and 23,624 households at these field sites. In addition, during 1999, the ORP conducted research and technical assistance activities in over 28 sub-districts in 13 districts and two city corporations of the country as part of its support to service delivery agencies in the health and population sector. Also, technical assistance was provided in the TOT courses conducted on the national health and population programme's unified MIS in another 18 districts.

The Project has been organized into three teams, covering the areas of Integrated Family Health Services; Sustainable Service Delivery Systems and Health Financing; and Management Support Systems and Innovative Programmes. There is a Field Support and Surveillance Team and an Administrative Unit to facilitate accomplishment of research activities of the above three teams. At the end of 1999, the ORP had 2 international-level staff members, 41 national officers, and 201 general services and field support staff.

In 1999, ORP continued the following operations research activities with GoB and NIPHP partners:

- Operationalization of a cost-effective tiered system for delivering the ESP in the public sector.
- Operationalization of a cost-effective tiered system for delivering the ESP in rural areas by the NIPHP NGOs.
- Strategies to improve prevention and management of reproductive tract infections and sexually transmitted diseases (jointly with the Centre's Laboratory Sciences Division).
- Modified strategies for ensuring referral and linkage for essential obstetric care.

- Strategies for improving quality and performance of clinical contraceptive services.
- Technical assistance to strengthen management support systems for effective delivery of the ESP.
- Cost-recovery of ESP delivery through systematic pricing and revenue management in the public sector and NIPHP NGO programmes.

Significant achievements

- Six scientific presentations were made on the ORP research findings at the Annual Meeting of the Population Association of America (PAA) held on 23-25 March 2000 in Los Angeles, California.
 - ORP researchers made 12 oral and 14 poster presentations on the results and lessons learned from its recent scientific work in the various areas of health system research at the Ninth Annual Scientific Conference of the Centre (ASCON) held during 11-13 February 2000.
 - ORP co-hosted the International Union for the Scientific Study of Population (IUSSP) global seminar on "Family Planning Programmes in the 21st Century" held during 17-20 January 2000. This was the first ever seminar of this prestigious scientific body organized in Bangladesh. Two scientific sessions of the seminar were dedicated to population issues relating to Bangladesh and lessons learned from the ORP of ICDDR,B respectively. Reputed population scientists from various countries, including Bangladesh, attended the seminar. A total of 12 papers were presented at the seminar by the ORP researchers.
 - ORP worked as the main coordinator and resource for the Centre's Training and Education Department (TED) - organized international workshop on "Improving Effectiveness, Quality of Services and Sustainability in Reproductive Health Programmes through Operations Research" held during 4-15 December 1999.
 - ORP acted as the major resource in the "Expert Group Meeting on Developing Resource Capacity" organized jointly by the Partners in Population and Development (a South-to-South global partnership to materialise the ICPD Programme of Action) and ICDDR,B during December 5-8, 1999. The Expert Group Meeting, participated by delegates from 14 countries, was aimed at identification of plans and strategies for South-South collaboration in reproductive health research and assisting Partner countries in the development of their own research capacity.
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- ORP representative attended the Fifth International Congress on AIDS in Asia and the Pacific held at Kuala Lumpur in Malaysia during 23-27 October 1999.
 - ORP publications during the reporting period included fifteen journal articles (6 published, 9 in press), eight working papers (4 published, 4 in press) and six special publications (list attached).
 - Apart from the above major achievements, key accomplishments of the Project's ongoing research protocols are listed below:
 - Both the government and the NGO programmes in Bangladesh have initiated new service delivery approaches in line with clinic-based delivery of essential services package (ESP) based on the concept of "one-stop shopping (service provision)". The ongoing operations research on delivery of ESP in rural sub-

district levels and below entail development/adaptation of manuals, tools and guidelines to facilitate implementation of the new strategies by evolving a feasible partnership between the service facilities/providers and the local community; design and implementation of a transition plan to ensure smooth switching from the conventional (home-based) approaches to the new systems; and suggest measures for further fine-tuning of the corresponding national policies, based on the findings from documentation, monitoring and evaluation of the new approaches. To this end, a series of participatory workshops were conducted with the policy makers, programme managers, service providers and community representatives. Several of these workshops was attended by the State Minister for Health and Family Welfare, Health Secretary, and other high-ranking government officials. Based on the findings of the ORP research, necessary modifications were made in the corresponding guidelines on establishment of Community Clinics for the delivery of ESP at the community level. Also, a Task Force, comprising national and sub-district government officials, was formed to expedite and monitor the ESP and Community Clinics implementation process. Study reports and manuals prepared in this regard by ORP, in collaboration with the related government agencies, were published as ICDDR,B special publications (Nos.103, 104, 105 and 106). In addition to developing the guidelines for the above facilitation work, ORP provided orientation to the Task Force members.

- To develop effective ways of involving the local community in the organisation and management of the Community Clinics, ten focus group discussions were conducted with the community representatives. ORP completed an operational manual to this end. The MOHFW has decided to incorporate this manual in the Comprehensive Operational Guidelines for ESP delivery. Also, ORP is providing technical assistance and inputs in the preparation of the latter document.
- ORP conducted a BCC (Behaviour Change Communication) needs assessment study for the new service delivery strategies in its research sites. A report on this study has been prepared (ICDDR,B Working Paper No. 129) and shared with the government and NGO policy makers and programme managers.
- As part of the operations research to develop appropriate mechanisms for an integrated delivery of family health services, i.e., the ESP from government primary clinics in the urban areas, ORP designed a reorganised service delivery mechanism and is currently field-testing an algorithm-based screening mechanism for tapping the "missed opportunities" at the Sher-e-Bangla Nagar Model ESP Clinic. Also, user-friendly job aids were developed/adopted for the providers to facilitate delivery of ESP by them, and providers and clinic managers were trained on appropriate use of the job aids. The urban clinic service provision has been further strengthened with introduction of syndromic management of RTI/STDs and antenatal screening for syphilis. A baseline survey on utilization of ESP services in the intervention area in Dhaka City has been completed, and is under publication as an ICDDR,B Working Paper.
- The operation research on strategies to improve prevention and management of RTI/STDs involves feasibility assessment of the syndromic management and the antenatal care (ANC) screening for syphilis as part of antenatal care services at the primary health care (PHC) level, and, also, strengthening of the capacity of pharmacies (drug sellers) to provide RTI/STDs prevention services. The first two components of the intervention are being tested in the

government and non-government clinics in urban and rural areas in collaboration with GoB, UFHP and Rural Service Delivery Partnership (RSDP) of NIPHP, and the Laboratory Sciences Division of the Centre. The findings of the survey on pharmacy-based RTI/STD services conducted in collaboration with Social Marketing Company (SMC) at Tongi municipality areas suggest that the drug sellers at the pharmacies provide services to RTI/STD clients, but that they lack the ability to provide adequate information and treatments. Findings of the report have been published as an ICDDR,B Working Paper No.137.

- The operations research on essential obstetric care (EOC) has begun testing strategies to increase the use of EOC facilities for the management of obstetric complications, increase the number of deliveries by trained personnel, and to increase awareness among women and in the community about complications of pregnancy and childbirth. Orientation of community leaders to facilitate increased community awareness by using pictorial cards and posters about complications of pregnancy and childbirth and timely care-seeking from appropriate sources, and strengthening of linkages between different types of service providers through involvement of village practitioners and traditional birth attendants (TBA) in the referral process have been introduced.
- As part of the EOC intervention, ORP scientists, along with the GoB and UNICEF colleagues, developed a communication and social mobilization plan to support the national programme for reducing maternal mortality. Service-delivery manuals and protocols for EOC were finalized, and handed over to the MOHFW for approval and replication.
- ORP is testing strategies to reduce barriers to clinical contraceptive methods, reduce discontinuation, and strengthen referral and linkages as part of the intervention to improve the quality and performance of clinical contraceptive services at selected GoB and NGO sites. Materials to provide accurate information on clinical contraceptives have been designed in collaboration with the Behaviour Change Communication Unit of the MoHFW, and are currently being field-tested. Refreshers' training for the community-level ESP providers and paramedics on compliance with the protocols for appropriate provision of clinical contraceptives has been conducted.
- As part of designing interventions to improve reproductive health services for adolescents, a needs assessment study, using both survey and qualitative data collection techniques, was completed in 1999. The results of the study indicated that lack of correct information on issues, such as fertility, family planning, RTI/STDs, and HIV/AIDS were major problems. Existing reproductive health services were reported to be inaccessible to them. In urban areas, a large proportion of adolescents living in slums had dropped out of schools, and joined the labour market. The findings were disseminated locally and in various international forums, including USAID/Washington.
- ORP provided technical inputs to RSDP (Pathfinder International) of the NIPHP to assess its current newlywed programme strategy and identify areas of programme improvement. It also provided technical inputs to BRAC to assess the Adolescent Family Life Education Programme Strategy and to consider possibilities for replicating and/or expanding the programme. In addition, ORP is collaborating with the UFHP (JSI) and Population Council in implementation of the Bangladesh component of a

Global Youth Study which seeks to test strategies to improve reproductive health services for adolescents to be provided at schools, clinics and community level. Other countries implementing the Global Study are Mexico, Kenya and Senegal.

- ORP is supporting the GoB with technical assistance and special studies in the development, pilot testing, and implementation of the new Unified Management Information System (UMIS) to support the delivery of ESP. The MOHFW had formally launched the new UMIS on October 31, 1999, and requested ORP to monitor the process of implementation in all sub-districts of Jessore and Chittagong districts over the next 12 months. In this context, ORP developed a training methodology (including manuals and training materials) for staff at thana (upazila) level and below involved in organizing the implementation of the system, designed a monitoring checklist to assist district managers in monitoring UMIS-related training activities in their respective areas, and provided technical assistance in training (TOT) programme managers as staff trainers in 18 districts.
- ORP conducted the final evaluation of the intervention on coordination among urban health providers and facilities in 1999, with the objectives to assess the effects of zonal and ward health and family planning coordination committees, and examine the perspectives of the members and non-members on the activities of the committees. The results of the evaluation indicated that the zonal committees worked as an effective forum for improving coordination among different ESP providers. Also, the results of the study indicated the need for reorganisation of service delivery points, resolving common health issues, and organising health promotion events and campaigns, e.g., observation of NID and measles and neonatal tetanus campaigns.
- ORP has contributed, as a Task Force member, in the national curriculum development on "ESP orientation for clinical service providers at sub-district (thana) level and below" as well as "ESP orientation for field and support service providers".
- ORP has been included in the Master Trainers list of ESP Orientation course. Also, ORP provided technical assistance to the Bangladesh Public Administration Training Center (BPATC) in planning, designing and facilitation of workshop on "Coordination and Integration for Reproductive Health IEC" for senior and mid-level officials of different ministries.
- To examine the critical policy issue regarding implementation of financial sustainability of health and family planning services by charging moderate user fees, within the operations research on cost recovery of ESP delivery through systematic pricing and revenue management, a study on willingness and ability to pay and healthcare demand on a sample of 2,408 rural households has been completed. A considerable number of households was found paying for health care (for example: in Mirsarai, 59% of ANC users paid a median amount of Tk.30.00; 38% of TT and 8% of child immunization Tk.10.00 for each shot; 93% of sick mother care and 95% of sick child care seekers Tk.80.00 and Tk.55.00, respectively). Seventy-six percent of the respondents were willing to pay for family planning methods and 83 percent for maternal and child health care. Majority of those who are willing and able to pay for the services opted to pay Tk.4.00-7.00 for the specified maternal and child health services (ANC, TT immunization, sick mother care, child immunization and sick-

child-care). A considerable proportion expressed their willingness to pay (83% of FP method users and 57% of MCH service seekers) at the government facilities as well. Interestingly, socioeconomic and demographic determinants had no statistically significant influence upon the payment decision-making process. Also, qualitative studies to understand the perceptions of the users and providers on charging user fees have been conducted. Draft reports on these studies have been completed, and are currently being finalized.

- ORP was a partner to a collaborative study of the Partnerships for Health Reform/Abt Associates, Inc., USA, BASICS Project and MOHFW/GoB on "Costs and Financing of Immunization Services in Bangladesh", completed in December 1999.
- ORP surveillance systems in the rural and urban field sites have been combined. A unified R-base data management system and data collection procedure are now being implemented. Data management section of the ORP surveillance system has been decentralized to the ORP field sites. Data entry started at the field sites, effective 1 October 1999. Now routine data are entered at Chittagong district office, Abhoynagar field office and Dhaka field office.
- ORP surveillance currently includes a population of 126,747 persons in 23,624 households from three rural and one urban field sites, including their respective comparison areas. Routine data collection at 90-day interval continued to record information on the status of ongoing interventions as well on immunisation, family planning, utilisation of static services facilities and demographic events during the reporting period.

New Initiatives

- Assessment of high-risk behaviour and knowledge on HIV/AIDS among priority groups and service providers.
- Study on perceptions and knowledge about usefulness of Vitamin A among providers and clients.
- Strategies to improve reproductive health services for adolescents.
- Pilot-testing of GoB-adopted IMCI strategies.
- Assessment of record keeping and reporting systems of NGOs.
- Study on met and unmet health and family planning needs in urban areas.
- Study on girl trafficking.
- Study to assess the effects of displaying user fees at the NGO clinics.
- Situation analysis on current practices of pharmacy-based healthcare provision.
- Study on the background and current practices of rural medical practitioners.
- Design and piloting of a quick and easy-to-implement customer satisfaction monitoring mechanism at the NGO clinics.

II. Environmental Health Programme (EHP)

- During the last quarter of 1999, the EHP provided technical assistance to government and non-government agencies and documented some of its rural and urban studies on water, sanitation, hygiene and solid waste-disposal. In collaboration with other agencies such as the Department of Public Health Engineering, WHO, UNICEF and a number of NGOs, the programme coordinated a series of consultations and focus group discussions with women, men, and opinion leaders in the community at national and local levels to outline a broad strategy for future water and sanitation activities in Bangladesh.
- EHP also conducted a situation analysis on hygiene promotion activities in the country that described examples of good practice while stressing that gaps in policy, intersectoral coordination and in the design of current interventions were undermining progress in this area.
- In December 1999, Dr B A Hoque resigned as head of the Environmental Health Programme (EHP).

2.2.2 Publications of HPED

A. Journals and Books Published

1. Routh S, Jahan SA. Shifting away from doorstep distribution of services in urban Bangladesh: consequences on dropout and new acceptance of family planning. *J Pop Soc Stud* 2000 Jan 8(2):17-33.

B. Journals and Books In Press

Journal articles:

1. Ahmed S, Islam A, Khanum PA, Barkat-e-Khuda. Maternal morbidity in rural Bangladesh: Where do women go for care? *Health Policy and Planning*.
2. Ahmed S, Sobhan F, Islam A, Barkat-e-Khuda. Neonatal morbidity and care-seeking behaviour in rural Bangladesh. *J Trop Paed*.
3. Azim SMT, Tunon C, Baqui AH, Mookherji S. Record keeping systems for quality improvement in urban primary health care clinics. *Health Pop of Dev Countries*.
4. Barkat-e-Khuda, Phillips JF, Kane TT, Rahman M. Assessing the policy impact of operations research on the Bangladesh health and family planning programme. IUSSP volume, *Oxford University Press*.
5. Barkat-e-Khuda, Caldwell JC, Caldwell BK, Pieries I, Caldwell P, Ahmed S. The global fertility transition: new light from the Bangladesh experience. IUSSP volume, *Oxford University Press*.
6. Caldwell B, Barkat-e-Khuda. The first generation to control family size: understanding Bangladesh's fertility decline from the perspective of the participants. *Stud Fam Plann*.
7. Haque I, Kane TT, Roy NC, Mozumder KA, Barkat-e-Khuda. Contraceptive switching patterns in rural Bangladesh. *Int Fam Plann Perspective*.
8. Mozumder ABMKA, Barkat-e-Khuda, Kane, TT, Levin A, Ahmed S. The effects of birth interval on malnutrition in infants and young children. *J Bio Sci*.

9. Routh S, Barkat-e-Khuda. An economic appraisal of alternative strategies for the delivery of MCH-FP services in urban Dhaka, Bangladesh. *Int J Health Plann Management*, April 2000.

Working Papers Published

1. Khanum PA, Quaiyum MA, Islam A, Ahmed S. Complications of pregnancy and child-birth: knowledge and practices of women in rural Bangladesh. Dhaka: Operations Research Project, International Centre for Diarrhoeal Disease Research, Bangladesh, 2000. (ICDDR,B working paper no. 131).
2. Roy NC, Kane TT, Barkat-e-Khuda, Haque I. Consequence of adult mortality in rural Bangladesh: socioeconomic and health implications for the family. Dhaka: Operations Research Project, International Centre for Diarrhoeal Disease Research, Bangladesh, 2000. (ICDDR,B working paper no. 132).
3. Alamgir SU, Routh S, Reza M. Operationalizing essential services package delivery in the public sector in Dhaka city: baseline finding from a cross-sectional study. Dhaka: Operations Research Project, International Centre for Diarrhoeal Disease Research, Bangladesh, 2000. (ICDDR,B working paper no. 133).
4. Khatun J, Tunon C, Uddin MA, Sirajuddin AKM, Islam M, Uddin MJ. Improving planning and coordination of services among providers of essential services package (ESP) in urban Dhaka, Bangladesh: findings from an operations research study. Dhaka: Operations Research Project, International Centre for Diarrhoeal Disease Research, Bangladesh, 2000. (ICDDR,B working paper no. 134).

2.2.3 Research Protocols in Progress (all protocols are funded by USAID/D)

1. Strategies for improving the quality and performance of clinical contraceptive services. PI: Dr. Farzana Sobhan. Start date: January 1999; End Date: December 2001.
2. Technical assistance to strengthen management support systems for the effective delivery of the essential services package. PI: Dr. Cris Tunon. Start date: January 1999; End date: December 2001
3. Cost recovery of the ESP delivery through systematic pricing and revenue management in the RSDP sites. PI: Dr. Zahidul Quayyum. Start date: October 1998; End date: February 2001.
4. Cost recovery of the ESP delivery through systematic pricing and revenue management in the public sector. PI: Dr. Mahub Alam Mazumder. Start date: October 1998; End date: February 2001.
5. Strategies to improve prevention and management of reproductive tract infections (RTIs) and sexually transmitted diseases (STDs). PI: Dr. Saifur Rahman. Start date: October 1998; End date September 2000.
6. Modified strategies for ensuring referral and linkage for essential obstetric care. PI: Dr. Md. Abdul Quaiyum. Start date: February 1999; End date: December 2000.
7. Operationalizing a cost-effective tiered system for delivering the essential services package in the public sector. PI: Dr. Subrata Routh. Start date: October 1998; End date: December 2000.
8. Operationalizing a cost-effective tiered system for delivering the essential services package by NIPHP NGOs. PI: Dr. Shamsuddin Alamgir. Start date: July 1998; End date: December 1999.

2.3 Laboratory Sciences Division (LSD)

The LSD enjoins us to apply the best of modern technology to solve the pressing health needs of the community. The Division is focussing on Diarrhoeal Diseases (DD), Acute Lower Respiratory Tract Infections (ALRI), Reproductive tract Infections (RTI/STD) including HIV Infection, and Tuberculosis (Tbc). The Divisional skills, in Microbiology, Virology, Parasitology, Environmental Microbiology, Biochemistry, Immunology and Molecular Biology, work towards solutions for the prevalent infectious diseases of public health importance. The effectiveness of the efforts of the Division scientists is maximised by the thematic partnerships with the other scientific divisions of the Centre and with a variety of national and international scientific partners.

2.3.1 Division Highlights

- * Specific lytic phages for *Vibrio cholerae* and *Shigella* species are found in environmental water sources throughout the year. This suggests the presence of bacterial pathogens that support the growth of the specific phages. Further surveillance is necessary to correlate the fluctuation in phage populations to outbreaks of clinical illness.
- * Rough strains of *V. cholerae* survive and multiply for up to 18 days in a laboratory microcosm in association with a cyanobacterium *Anabaena sp.* After 18 days they continue to be found in association with *Anabaena* upto 60 days but are non culturable and can be detected only by fluorescent antibody technique, dot blot hybridisation or PCR.
- * Apoptotic cell death in the duodenal mucosa is a feature of early and convalescent phase of cholera and is associated with the proliferation marker Ki-67 in the lamina propria.
- * Ultrastructural morphologic differences between the duodenal mucosa in ETEC and cholera patients suggests that factors other than the enterotoxin such as the ZOT toxin may be significant in the pathogenesis of cholera.
- * A field based, double blind, randomised placebo controlled study of the safety and immunogenicity of an enterotoxigenic *Escherichia coli* vaccine (Phase II) has started and about 10% of the study group has been enrolled.
- * Pulse field gel electrophoresis patterns suggest that a clone identical with the 1994 epidemic clone of *Shigella dysenteriae* serotype 1 has emerged in the last five months. The antibiotic resistance pattern and plasmid profile of these strains are being analysed.
- * Serotyping of 331 isolates of *S. flexneri* isolated between January 1999 and March 2000 showed that 22.5% of the strains were untypable and the predominant strain was type 2b (18.1%). Type 2a which accounted for 50% of the isolates in 1984 is now fifth in order and accounts for only 15.4% of isolates. The plasmid profile of the untypable strains was different.
- * Differences in the innate and acquired immunity and mucosal defences to oxygen free radicals are likely to explain the clinical differences between adults and children affected by shigellosis.

- * There is significant elevation of rotavirus specific plasma IgG1 and IgG3 in children with rotavirus diarrhoea compared to children with watery diarrhoea from other causes.
 - * Genetic diversity of *Entamoeba histolytica* is shown by analysis of "serine-rich *E. histolytica*" gene, by the variability of the internal tandem repeat sequences.
 - * The prevalence of ciprofloxacin resistant *N. gonorrhoea* has reached 55% in Dhaka while limited data from elsewhere in Bangladesh gives a lower prevalence.
 - * Primers for amplification of a 390 bp amplicon of the 4.2kb cryptic plasmid of *N. gonorrhoeae* and a 473 bp amplicon of the 7.4 kb common plasmid of *C. trachomatis* have been shown to be useful in a multiplex PCR for diagnosis directly from genital discharge. Optimisation of primers and condition to diagnose *T. vaginalis* infection also in a multiplex PCR for testing genital discharge is nearing completion.
 - * The second round of the Bangladesh National Sentinel Surveillance for HIV and Syphilis will be completed by April 2000. This work is done jointly with the Institute of Epidemiology and Diseases Control Research (IEDCR) of the Ministry of Health, Government of Bangladesh. Surveillance will be transferred to the IEDCR by 2002(4th round).
 - * *Streptococcus pneumoniae* were isolated from 60% of the nasopharyngeal aspirate of children with diarrhoea without respiratory tract infection. In contrast in children with pneumonia a variety of organisms were isolated (*Moraxella catarrhalis* in 60% of children from Dhaka Medical College) while the rate of isolation of *S. pneumoniae* was low and no *H. influenzae* were isolated.
 - * Blood cultures from 500 children with pneumonia isolated 11 *S. pneumoniae*, 5 *H. influenzae*, 16 *Acinetobacter* species and 5 *M. catarrhalis*. Nine *H. influenzae*, 5 *S. pneumoniae* and 2 *N. meningitidis* were isolated from 70 patients with meningitis. 50% of *H. influenzae* and 56% of *S. pneumoniae* isolates were resistant to cotrimoxazole.
 - * The infrastructure of the Nutritional Biochemistry Laboratory has been significantly upgraded.
 - * The Nepal laboratories cooperating in the Antimicrobial resistance surveillance have been visited twice and solutions provided for technical and operational problems.
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- * Technical assistance is being provided to the Tuberculosis Clinic at Shamoli, Dhaka, for establishing a culture and antimicrobial susceptibility testing facility.
 - * The Clinical Laboratory Services Programme continues to provide excellent services to patients, research protocols and to training. External quality assurance programmes evaluate these laboratories in the 95% confidence interval.
 - * The Tissue Culture Laboratory and the Animal Resources Branch provide excellent support to research and help other national organisations and institutes especially the Institute of Public Health.
 - * The high quality research and service output of the Division would not have been possible without the efficient work of the Biomedical Engineering Cell.

I. Enteric Infections: An Analytical Report of a Sub-theme: "Shigellosis"

The Context

"Taking Science where the disease is" was a major emphasis in the international health research effort in the 1970s. This has now changed to "the correction of the 10/90 imbalance" and "Essential National Health Research", piloted by the Global Forum for Health Research. Unfortunately the critical inputs from high quality laboratory sciences to these endeavours are often obscured. The Laboratory Sciences, especially where they involve high technology, tend to be given very low priority by policy makers and fund givers when institutions in the developing world are under consideration.

The following detailed analysis of the Centre's work on shigellosis over the last 30 years, with emphasis on the LSD's past and active current contributions and a strategy for future action is presented to highlight strengths, weaknesses, opportunities and challenges that face the Centre. At least five other sub-themes in "Infectious diseases and vaccines" or several from the other themes could have been chosen for such a presentation. However, shigellosis is a major looming threat as presented to the November 1999 Board of Trustees Meeting. As shown later, there is further molecular epidemiological evidence that suggests that the epidemic of shiga dysentery is more likely to occur earlier than later. The Centre is facing a window of opportunity that must be seized now, without losing the momentum on the many other valuable initiatives that are underway.

A. Epidemiology and Technology

- South Asia and Bangladesh has had at least 3 recorded pandemics of *Shiga dysentery* since 1970. Based on epidemiological and antimicrobial resistance pattern evidence, the next pandemic can be predicted to occur between 2002 and 2004.
- The ratio of *S. dysenteriae* 1 to *S. flexneri* in clinical isolates reached its lowest point post-1994 pandemic, in 1998 and increased slightly in 1999.
- Ciprofloxacin resistance in *S. dysenteriae* 1 has already been found in Calcutta (All three earlier pandemics first started in India).
- Most recent molecular epidemiological data from the LSD indicates that the 1994 epidemic clone of *S. dysenteriae* 1 has re-emerged in Dhaka, as identified by PFGE patterns.
- 10% of the patients attending the Teknaf Thana Health Complex are suffering from dysentery. [ICDDR, B had a field station in Teknaf, a highly dysentery endemic area, that was closed in 1990. The above data is from a recent LSD field visit].
- Molecular epidemiology and antimicrobial resistance screening of clinical samples will be essential to track the further evolution of the potential pandemic.

B. Environment and Technology

- The outbreaks during earlier pandemics occurred mainly through drinking water sources.
- Chlorination of common source water was an effective means of terminating epidemics of *S. dysenteriae* 1 during earlier pandemics.
- Specific lytic phages for *S. dysenteriae* 1 have been detected in water samples from around Dhaka.
- The shiga toxin gene (a specific virulence factors of *S. dysenteriae* 1) has been detected in environmental water samples.
- Molecular techniques already developed in the LSD can track the environmental biology of shigellae.
- Can household water chlorination (e.g. by water purification tablets) be an effective means to prevent or control the next pandemic? It is possible to field-test this hypothesis.
- Is it feasible to implement the strategy of hand washing?

C. Protective Immunity and Vaccines

- The antigens, which could elicit protective immunity against shigellosis are not yet identified.
- Based in part on a Centre report that around 50% of patients in Dhaka Hospital with *S. flexneri* were serotype 2a in 1984, a potential vaccine for 2a has been developed and is currently under going phase II field trials in Matlab.
- During 1998-99 *S. flexneri* serotype 2a accounts at best for 15.4% of cases in Dhaka and 22.5% of isolates are untypable. Cross serotype protection by the vaccine is not anticipated.
- Understanding host response to infection and exposure to infection, is the key to elucidating the nature of protective immunity.
- Analysis of tissue response, cytokines, reactive oxygen species, tissue protective factors and immunocytes_in_children_and_adult_patients_with_shigellosis_and_controls has identified differences in the host response in the two age groups. Extension of these studies is likely to help in identifying potential protective antigens.
- There are as yet no candidate live attenuated oral vaccines for *S. dysenteriae* serotype 1. However, the polysaccharide conjugate vaccine developed by Robbins is a potential vaccine, which must be evaluated if it is to be utilised in the forthcoming pandemic.

D. Host Response – the Clinical Advantage

- The identified differences in the response between adults and children to *Shigella* infection can be further analysed to improve the clinical care of children.
- Ongoing critical evaluation of children with the haemolytic ureaemic syndrome in collaboration with the Clinical Sciences Division will provide valuable strategies for the management of this potentially fatal complication of *S. dysenteriae* 1 infection at the time of the pandemic.
- Detailed analysis of host response, in a case control setting of index case – family contacts, can help identify protective antigens utilising changes in innate and secondary immunity. This can help develop candidate vaccines.

E. Proposed Plan of Action

The Centre should identify "Early prediction and preparation for the prevention of the next epidemic outbreak of dysentery caused by *Shigella dysenteriae* serotype 1" as a major priority for a trans-divisional research initiative.

Hypothesis

- The next epidemic outbreak of dysentery due to *Shigella dysenteriae* 1 is likely to occur between 2002-2004.
- The occurrence of the epidemic can be predicted by (a) determining the ratio of *S. dysenteriae* 1 to *S. flexneri* isolations from patients with dysentery, and (b) by identifying the emergence of new antibiotic resistant strains of *S. dysenteriae* 1.
- Molecular techniques can be used to track *Shigellae* in environmental water samples.
- Adequate chlorination of water for household use or an appropriate vaccine can prevent or abort an epidemic.

Background to the hypothesis and strategies

A review of available information on outbreaks of *S. dysenteriae* 1 infections in South Asia leads to the following conclusions:

- Monitoring the *S. dysenteriae* 1 vs *S. flexneri* ratio in clinical isolates is likely to help forecast an outbreak of *S. dysenteriae* 1 infection, as the ratio approaches 1.
- The emergence of a new plasmid mediated antimicrobial resistance can be another predictor of an epidemic outbreak.
- Potential environmental reservoirs of *S. dysenteriae* 1 are likely to be identified if appropriate molecular techniques are used.
- Molecular epidemiological analysis will help to better understand and predict the build up to a potential epidemic.
- Immunological characterisation of patients can help in identifying *Shigella* antigens that have vaccine potential.

- Since experience with earlier pandemics suggested that chlorination of water and washing of hands could avert or abort the epidemic it would be worthwhile to do a pilot experiment, if we can identify an area with sufficient patients with dysentery.
- There are no vaccines currently available for *S. dysenteriae* 1. However, the polysaccharide conjugate vaccine developed by Robbins has potential to be tested. If a suitable area can be identified an appropriate field trial can be carried out.

Strategies

- Sentinel site monitoring, case detection and isolation and AMR characterisation of *Shigella dysenteriae* 1 and other *Shigellae*.
- Environmental molecular biology of *Shigellae*.
- Clinical case management and immunological analysis.
- Non-vaccine intervention to alter the course of epidemics due to *S. dysenteriae* 1
- Phase II and Phase III trials of polysaccharide conjugate vaccines.
- Anticipated budget: US\$1 m per year for 6 years.

F. Inter-Divisional Collaborations

Monitoring	: LSD and PHSD
Environment	: LSD
Case Management	: CSD and LSD
Nonvaccine Intervention	: PHSD and LSD
Vaccine evaluation	: LSD and PHSD
Operationalisation and Dissemination:	LSD, HPED, PHSD, CSD

Team

Faruque SM, Hossain MA, Iqbal Kabir AKM, Mathan VI, Nair GB, Raqib R, Talukder KA, Wagatsuma Y.

G. Conclusion

The prediction of a pandemic due to *S. dysenteriae* 1 between 2002 and 2004 places a unique opportunity to be proactive in devising strategies to abort or control it. The leadership, scientific human resources, infrastructure and access to field areas available in the Centre are sufficient to meet this challenge. The successful resolution of the many questions posed by the plan of action could produce exciting results which could be comparable to the Centre's contributions to elucidating the *Vibrio cholerae* 0139 puzzle or the development of ORS. If the Centre accepts this challenge and decides to commit a team to this endeavour, the only constraint would be the necessary financial resources. The approval and endorsement of this plan of action by the Board of Trustees will enable the Centre to actively seek the necessary financial support and start this exciting venture.

2.3.2 Publications of LSD

A. Journals and Books Published

1. Albert MJ, Faruque ASG, Faruque SM, Sack RB, Mahalanabis D. Case-control study of enteropathogens associated with childhood diarrhoea in Dhaka, Bangladesh. *J Clin Microbiol.* 1999;37:3458-3464.
2. Ansaruzzaman M, Albert MJ, Nahar S, Byun R, Katouli M, Kuhn I and Mollby R. Clonal groups of enteropathogenic *Escherichia coli*, isolated in case control studies of diarrhoea in Bangladesh. *J Med Microbiol.* 49:177-185;2000.
3. Azim T, Islam MN, Bogaerts J, Mian MAH, Sarker MS, Fattah KR, Simmonds P, Jenkins C, Choudhury MR and Mathan VI. Prevalence of HIV and syphilis among high risk groups in Bangladesh. *AIDS* 2000; 14: 210-211.
4. Faruque SM, Rahman, MM, Asadulghani, Islam KMN, and Mekalanos JJ. Lysogenic conversion of environmental *V. mimicus* strains by CTX Φ . *Infect Immun.* 1999;67:5723-5729.
5. Faruque SM, Saha MN, Asadulghani, Bag PK, Bhattacharya SK, Sack Rampura Bridge, Takeda Y, Nair GB. Genomic diversity among *Vibrio cholerae* 0139 strains isolated in Bangladesh and India between 1992 and 1998. *FEMS Microbiol Lett.* 2000;184:279-284.
6. Qadri F, Ahmed F, Karim M, Wenneras C, Begum YA, Salam MA, Albert MJ, McGhee JR. Lipopolysaccharide and cholera toxin specific subclass response of B cell response in cholera. *Clin Diag Lab Imm.* 1999;6:812-818.
7. Qadri F, Swadesh Kumar Das, ASG Faruque, George J. Fuchs, M. John Albert, R Bradley Sack and Ann-Mari Svennerholm. Prevalence of toxin types and colonization factors in enterotoxigenic *Escherichia coli* isolated during a two year period from diarrheal patients in Bangladesh. *J Clin Micr.* 38, 2000,27-31.
8. Rahman M, Alam A, Nessa K, Hossain A, Nahar S, Datta D, Khan SA, Mian RA and Albert MJ. 2000. Etiology of sexually transmitted infections among floating female sex workers in Dhaka, Bangladesh. *J Clin Microbiol.* 38(3):1244-1246.
9. Wahed MA, Mitra AK, Azad AK, Jahan F, Fuchs GJ. Retinol concentration in liver and serum among children who died in a diarrhoeal hospital. *Nutr Res* 1999;19:1719-1729.
10. Wenneras C, Qadri F, Bardhan PK, Sack RB, Sevennerholm A-M. B cell responses to enterotoxigenic *Escherichia coli* (ETEC) in vaccinees and patients after oral immunization and infection. 1999. *Infection and Immunity*, 67, 6234-6241.

B. Journals and Books In Press

1. Albert MJ, Grant T, Robins-Browne R. Bacterial adherence to tissue culture cells. In: Ann YH, Friedman RJ, editors. *Handbook of Bacterial Adhesion; Principles, methods, and Applications.* Totowa, NJ: Humana Press 1999.

2. Albert MJ, Morris JG Jr. Cholera and other vibrioses. In: Strickland GT, editor. Hunter's Tropical Medicine, 8th edition. Philadelphia: W.B. Saunders Company 1999.
3. Mathan M. Intestinal mucosal biopsy in "Small Intestinal Diseases. Ed Ratnaike R.
4. Rahman M, Levy J, Butzler JP. Quinolone resistance in *Shigella dysenteriae* type 1: role of resistance plasmid and *gyrA* gene. *J Antimicrobial Chemother* 1999.
5. Haque R, Molla NU, Ali IKM, Alam K, Eubank A, Lyerly D and Petri WA Jr. Diagnosis of amebic liver abscess and intestinal infection with TechLab *Entamoeba histolytica* II antigen detection and antibody tests. *J Clin Microb.*
6. Shamsuzzaman SM, Haque R, Ruhul Hasin SK, Hasshigucchi Y. Evaluation of indirect fluorescent antibody test and enzyme-linked immunosorbent assay for diagnosis of hepatic amebiasis in Bangladesh. *J Parasitol.*
7. Raqib R, Shah MD, Shahjahan M, Qadri F, Tanfis I. Innate immune responses in children and adults with shigellosis. *Infect Immun.*
8. Islam MS, Begum A, Khan SI, Sadique MA, Khan MNH, Albert MJ, Yunus M, Huq A, Colwell RR. Microbiology of pond ecosystems in rural Bangladesh: its public health implications. *The Intl J Env studies.*

2.3.3 Research Protocols of LSD

1. Study of specific and innate mechanisms of the immune response in acute watery diarrhoea due to *Vibrio cholerae* and enterotoxigenic *Escherichia coli*. Studies in patients and vaccinees. PI: Dr. F. Qadri. Donor: SIDA: SAREC. Amount: \$313,942. Starting date: January 1999; Ending date: December 2001.
2. Epidemiology and ecology of *Vibrio cholerae* infection in Bangladesh. PI: F. Qadri. Donor: NIH. Amount: Part of \$2,517,683. Starting date: July 1996; Ending date: 2001.
3. Intraspecies variation in *E. histolytica*. PI: Dr: Rashidul Haque. Donor: USAID/ Washington and University of Virginia. Amount: \$13,900. Starting date: January 1997; Ending date: December 2000.
4. Field studies of human immunity to amebiasis in Bangladesh. PI: Dr. Rashidul Haque. Donor: University of Virginia/NIH. Amount: \$355,442. Starting date: September 1998; Ending date: September 2002.
5. Epidemiology and ecology of *Vibrio cholerae* in Bangladesh. PI: Dr. SM Faruque. Donor: NIH. Amount: Part of \$2,517,683. Starting date: July 1996; Ending date: 2001.
6. Development and application of multiplex PCR assays as an aid to clinical and environmental studies. PI: Dr. SM Faruque. Donor: USAID/Washington. Amount: Starting date: 1997; Ending date: July 2000.
7. Surveillance of invasive *Streptococcus pneumoniae* (Spn) and *Haemophilus influenzae* (Hi) diseases in Bangladeshi children and the antimicrobial resistance and serotype patterns of Hi and Spn isolates in Bangladesh. PI: Dr. Mahburur

- Rahman. Donor: USAID/Washington. Amount: \$120,000. Starting date: October 1998; Ending date September 2001.
8. Immune responses in children with both acute lower respiratory tract infection (ALRI) and diarrhoea, PI: Dr. Dilara Islam. Donor: USAID/Washington. Amount: \$269,557. Starting date: January 1998; Ending date: October 2001.
 9. The influence of innate immune mechanisms on T cells stimulation in shigellosis, PI: Dr. Dilara Islam. Donor: SAREC/SIDA. Amount: \$185,947. Starting date: January 1999; Ending date: December 2001.
 10. Further studies of immunoprotective and immunopathogenic mechanisms in shigellosis. PI: Dr. Rubhana Raquib. Donor: SIDA/SAREC. Amount: \$196,194. Starting date: January 1999; Ending date: December 2001.
 11. Detailed study of the humoral and cellular immune responses in children with primary infection due to *Shigella* species. PI: Dr. Rubhana Raquib. Donor: WHO. Amount: \$55,000. Starting date: January 1998; Ending date: June 2000.
 12. Effect of zinc supplementation on the immune and inflammatory responses of children to *Shigella flexneri* infection, and correlation with clinical severity of illness and growth following recovery. PI: Dr. Rubhana Raquib. Donor: USAID/W. Amount: \$90,743. Starting date: March 1999; Ending date: March 2000.
 13. Risk factors for the development of *S. dysenteriae* type 1 associated HUS. PI: Dr Tasnim Azim. Donor: USAID/W and Govt. of Japan. \$362,616. Starting date: July 1998; Ending date June 2001.
 14. National sentinel surveillance for HIV and syphilis in Bangladesh. PI: Dr. Tasnim Azim. Donor: DFID. Amount: \$363,477. Starting date: July 1999; Ending date: June 2001.
 15. Cellular and humoral immune responses to rotavirus infection in Bangladeshi infants and relevance to rotavirus vaccine studies. PI: Dr. Tasnim Azim. Donor: USAID/Washington. Amount: \$170,201. Starting date: October 1998; Ending date September 2001.
 16. Investigation of the importance of Norwalk-like viruses in childhood diarrhoea in Bangladesh. PI: Tasnim Azim. Donor: USAID/Washington. Amount: \$44,448. Starting date: October 1998; Ending date: September 2000.
 17. Epidemiology and Ecology of *V. cholerae* in Bangladesh. PI: Dr. MS. Islam. Donor: National Institute of Health (NIH), USA. Amount: Part of \$2,517,683. Starting date: July 1996; Ending date: June 2001.
 18. A simple water filtration for cholera intervention. PI: Dr. MS. Islam. Donor: University of Maryland Biotechnology Institute (UMBI), USA. Amount: \$794,940. Starting date: September 1998; Ending date: August 2001.
 19. Are waste stabilization ponds (WSP) barriers to, or reservoirs of, cholera ? How much *V. cholerae* is there in wastewater ? PI: Dr. MS Islam. Donor: University of Newcastle upon Tyne, UK. Amount: \$166,512. Starting date: August 1998; Ending date: July 2001.
 20. Molecular characterization of *Helicobacter pylori* strains isolated from patients with duodenal ulcer and gastric cancer, and from asymptomatic carriers. PI: Dr.

Motiur Rahman. Donor: SIDA/SAREC. Amount: \$30,500. Starting date: September 1998; Ending date: August 31, 2001.

21. Prevalence of treatment failure due to ciprofloxacin and ceftriaxone in gonorrhoea among Bangladeshi female sex workers. PI: Dr. Motiur Rahman. Donor: SDC. Amount: \$55,550. Starting date: July 1999; Ending date: December 2000.
22. Field evaluation of multiplex PCR based diagnosis for control and prevention of sexually transmitted infection/reproductive tract infection among female sex workers. PI: Dr. Motiur Rahman. Donor: Govt. of Bangladesh. Amount: \$11,200. Starting date: July 1999; Ending date: June 2001.
23. The prevalence and aetiology of reproductive tract infections among women attending the BWHC clinic in Mirpur, Dhaka, Bangladesh. PI: Dr. J. Bogaerts. Donor: BADC. Amount: \$59,890. Starting date: June 1997; Ending date: December 1999.
24. Studies on virulence of *V. cholerae* O139 Bengal. PI: Dr. M.J. Albert. Donor: SIDA/SAREC. Amount: \$226,862. Starting date: January 1999; Ending date: December 2001.
25. Serological and molecular epidemiology of *Shigella flexneri* isolated in Bangladesh. PI: K.A. Talukdar. Donor: ICDDR,B. Amount: Not yet funded. Starting date: January 1999; Ending date December 2000.
26. Molecular epidemiology of *Shigella dysenteriae* type 1 strains associated with haemolytic-uraemic syndrome and other complications. PI: K.A. Talukdar. Donor: USAID/Washington. Amount: \$45,676. Starting date: December 1999; Ending date: December 2000.
27. Studies in preparation for the introduction of rotavirus vaccines for routine childhood immunization in Bangladesh. PI: Dr. Tasnim Azim. Donor: USAID/Washington. Amount: \$113,588. Starting date: October 1998; Ending date: September 2001.
28. Aetiology of male genital ulceration. PI: Dr. J. Bogaerts. Donor: BADC. Amount: \$452,711. Starting date: January 2000; Ending date: December 2001.
29. Nepal antimicrobial resistance surveillance: A technical cooperation project. PI: Dr. V.I. Mathan/Dr. Anowar Hossain. Donor: USAID. Start date: January 1999; End date: June 2000.

2.4 Public Health Sciences Division (PHSD)

2.4.1 Division Highlights

- * *Scientific staff.* Dr Lauren Blum, a medical anthropologist; Dr Yukiko Wagatsuma, an infectious disease epidemiologist; and Dr. Carel van Mels, a demographer joined the scientific team. Mr. Kapil Ahmed, a senior staff member of the Health and Demographic Surveillance Programme, received his PhD degree from the Indian Institute of Population Studies in Mumbai.
- * *The New Matlab Health and Demographic Surveillance System (HDSS).* A series of changes have taken place; the data collected is now uniform over the entire area (selected health information is also collected where government is the

service-provider). Data entry, data storing, quality control systems, documentation etc. have been extensively reformed.

- * *The Epidemic Control Preparedness Programme (ECP)* has joined the Division, already resulting in interactions with epidemiologists and other infectious disease researchers within and outside the division and developments of new research plans.
- * *Matlab*. Progress was made in implementing the Safe Motherhood project, which includes improved obstetric services also at government facilities (including caesarean section at thana health complex). Male clinics were established as part of the project "male involvement in reproductive health". Provision of family planning services was partly shifted to fixed sites (from doorstep delivery) and is being evaluated. A large trial of IMCI (Integrated Management of Childhood Illnesses) was initiated.
- * *Chakaria*. The office building – which also includes space for meetings, guestrooms, a small laboratory – is ready and plans are underway for implementation of a series of initiatives and studies in Chakaria.
- * *Training*. The division took the initiative together with TED for a more field-based version of the traditional international "Research Methodology" workshop. First week was given at the training centre in Matlab, the second in Dhaka. Epidemiology and biostatistics were more integrated, the participants worked on Matlab data and the course offered a lot of "hands-on" experiences.

I. Child Health Programme (CHP)

Accomplishments

- With funding from the World Health Organization (WHO), a five-year study was started to evaluate the health impact and cost-effectiveness of the Integrated Management of Childhood Illnesses (IMCI) strategy, using a randomised experimental design. This is part of a WHO multi-country study.
- A study is being started to evaluate the effectiveness of Hib conjugate, adsorbed diphtheria, tetanus and pertussis combined vaccine (TetraHiB) given at 6, 10, and 14 weeks of age on a) Hib pneumonia, b) radiologically defined pneumonia, and c) Hib meningitis. This study is performed in Dhaka and funded by Asian Development Bank supported Urban PHC Project of the GOB and Aventis Pasteur International.
- Fieldwork of an efficacy trial of iron and/or zinc or a micronutrient-mix supplementation was started with financial contribution from USAID/Washington and Nutricia Research Foundation.
- USAID/W has agreed to fund a three-year project "Surveillance of multi-drug resistance tuberculosis and development of cost effective tuberculosis control strategies in Bangladesh".
- Three projects are in the pipe-line. These are a) *Shigella* vaccine young children trial in collaboration with Walter Reed Army Institute for Research, b) One dose Hib vaccine trial (submitted for funding to CVT-PATH), and c) Neonatal sepsis project in collaboration with Johns Hopkins University, Oxford University and Shishu Hospital (submitted for funding to Wellcome Foundation).

II. Epidemic Control Preparedness Programme (ECP)

Activities

- From January to March 2000, a total of 7,506 cases of acute watery diarrhoea and 16 deaths were reported in the country by the GoB epidemic surveillance. This was significantly lower as compared to 1999. However, 85% of the cases reported during this year occurred in the southern and coastal districts.
- ECP conducted 75 days of cholera surveillance at five sentinel sites during the same period. A total of 199 acute diarrhoea patients was seen. *Vibrio cholera* 01 was isolated from 4 out of 155 specimen cultured. Our results confirm that the incidence of epidemic diarrhoea is significantly lower as compared to last year. However, the incidence of cholera is usually low during this time of the year.

New initiatives

- The proposal on "Surveillance of Dengue viral Disease in Bangladesh" was developed in collaboration with the Laboratory Sciences Division. The proposal has been submitted to a potential donor for funding.
- A proposal on "Randomised trial on community-based malaria case management using dipstick diagnosis in malaria endemic areas in Bangladesh" is being developed.

III. Health and Demographic Surveillance Programme (HDSP)

Achievements

- From February 2000, reproductive and child health data (formerly RKS) are also being collected in the area, where the government is the services provider. This means that, for the first time, an identical set of health and demographic variables are registered in the entire 221,000 population of ICDDR,B Matlab surveillance area. An independent quality control team is being established, and improvements have also being made in the computerization of data (new data entry software). Similarly, software for the integration of the health information with the demographic information is soon ready.
- The Record Keeping System data are being prepared for transfer to our main SUN server in the near future. Incompatibilities in coding of demographic data over the years are being corrected. Documentation of all changes and the entire modernization of the HDSS will be completed by mid year 2000. As a reflection of this modernization and integration, the 1998 annual report (published spring 2000) from the HDSS combines both demographic and health information for the first time.
- In the Contraceptive Use Dynamics Project, family planning services delivery has been moved from door-step deliver to fixed sites in two of the service blocks in Matlab. In the remaining two blocks, the door-step delivery continues. Qualitative and quantitative studies have been performed on the changes delivery system. The project Abortion Dynamics in rural Bangladesh is completed, and preliminary reports have been presented. The study addresses the complex interactions between declining fertility, declining desired number of children, increasing use of family planning, and increasing resort to abortion to control fertility.

IV. Health Economics Programme (HEP)

- The Department for International Development (DFID) of the United Kingdom has confirmed funding for the programme for the next three years. This provides a financial stability for the activities, and enables recruitment of a few more scientists.
- The project "Health care seeking behaviour, willingness and ability to pay for health services delivered through NGO-run facilities of UFHP" has been finalized and reported to the donor.
- A new project has been funded (World Bank grant to the Centre) "Cost effectiveness of nutritional intervention activities in rural Bangladesh".

V. Matlab Health Research Programme (MHRP)

Achievements

- The preliminary analysis of the "Safety and immunogenicity of tetravalent rhesus rotavirus vaccine – RRV-TV" study has been completed. The RRV-TV was safe, and no significant differences in side-effects between the vaccine and placebo groups were found in the study. The vaccine was also found to be immunogenic. Vaccine recipients were significantly more likely to have a four-fold or greater rise in anti-RRV antibodies than placebo recipients. Overall, 87% of the vaccines demonstrated evidence of sero-conversion based on either anti-RRV IgA by an ELISA test or by neutralising antibody titers against RRV.
- Delivery facilities were established in the third sub-centre clinic with support from BADC and the Matlab community.

VI. Services Provided

- Seventy percent of eligible women were using contraceptives in the area where ICDDR,B provides services, 98% of women in reproductive age were covered with two doses of tetanus toxoid, and 96% of eligible infants were immunised.
- During the period, about 8,000 women and 7,500 children were provided treatment for various illnesses. Two hundred ninety deliveries were conducted at the ICDDR,B facilities. There were 1,734 antenatal and 565 postnatal controls performed in the four sub-centres. A total of 3,473 diarrhoea patients were treated at Matlab clinical research unit.

VII. Reproductive Health Programme (RHP)

Achievements

- In the project "Safe Motherhood: Essential Obstetric Care", progress was made in completing necessary permissions by the government in establishing an advisory committee, and preparing for constructions and renovations of maternity facilities.
- The programme is testing the hypothesis that male involvement in reproductive health and family planning is dependent upon active programme targeting the

adult male population in another study. A survey is starting and four male clinics are now operational.

- In an ongoing study, the programme is assessing the prevalence and risk factors for STDs among residents at a truck stand in Dhaka. The study also determines the health care seeking behaviour and the anti-microbial susceptibility of the bacterial pathogens.
- In another study at Matlab area, the programme is testing the hypothesis that provision of high-quality Menstrual Regulation services would decrease the rate of abortions and abortion-related complications in the community. Improvements are made in the MR services at two Union Health and Family Welfare Centres.

VIII. Social and Behavioural Sciences Programme (SBSP)

- The impact survey of the BRAC-ICDDR,B joint project in Matlab on study of poverty alleviation programme on health and human well-being has been completed.
- The construction of the office building in Chakaria has been completed.
- Four new studies have received funding and been initiated.

2.4.2 Publications of PHSD

A. Journals and Books Published

1. Ahmed MK. Dynamics of induced abortion in rural Bangladesh. *PhD thesis*. Mumbai, International Institute of Population Sciences 2000.
2. Alam N. Teenage motherhood and infant mortality in Bangladesh: maternal age-dependent effect of parity one. *J Biosoc Sci* 2000;32:1-8.
3. Bairagi R, Islam MM, Barua MK. Contraceptive Failure: Levels, Trends and Determinants in Matlab, Bangladesh. *J Biosoc Sci* 2000 Jan;32(1):107-23
4. Hawkes S, Azim T. Health care systems in transition III. Bangladesh, Part II. Bangladesh's response to HIV/AIDS. *J Pub Health Med* 2000;22:10-13.
5. Pena R, Wall S, Persson LA. The Effect of Poverty, Social Inequity, and Maternal Education on Infant Mortality in Nicaragua, 1988-1993. *Am J Public Health* 2000 Jan;90(1):64-69
6. Rahman MO, Liu Ji-hong. Gender Differences in Functioning for Older Adults in Rural Bangladesh. The Impact of Differential Reporting. *J Gerontology: Med Sc* 2000;55A(1):M28-M33.
7. Vanneste AM, Ronsmans C, Chakraborty J, de Francisco A. Prenatal screening in rural Bangladesh: from prediction to care. *Health Policy Plann* 2000 Mar;15(1):1-10.

B. Journals and Books In Press

1. Alam N. Utilisation of health services for children's acute illness in rural Bangladesh: patterns and correlates. *PhD Thesis*. London School of Hygiene and Tropical Medicine.

2. Alam D. Association between clinical type of diarrhoea and growth of children younger than 5 year old in rural Bangladesh. *Int'l Epidemiol.*
3. Ali M. Defining high-risk areas of endemic cholera with environmental risk factors: implications of GIS. *PhD thesis.* Belgium. University of Liege.
4. Akram K, Zaman K. Perception and practice of rest during pregnancy among mothers and the family decision-makers. *J Trop Paed.*
5. Arifeen SE. Infant growth patterns in the slums of Dhaka in relation to birth weight, intrauterine growth retardation and pre-maturity. *Am J Clin Nutr.*

2.4.3 Research Protocols of PHSD

1. Improvement of health through community development oriented programme in rural Bangladesh. PI: Dr Abbas Bhuiya. Donor: Consortium of Swiss, German and Dutch Red Cross. Amount US\$ 2,000,000. Start date:01.01.94, End date: 31.12.2000.
2. The impact of social and economic development programmes on health and well-being: a BRAC ICDDR,B collaborative project in Matlab. PI: Dr Abbas Bhuiya Donor: Ford Foundation. Amount: US\$503,786. Start date: 01.01.93, End date: 30.06.2000.
3. Study of the immunogenicity of conjugate pneumococcal vaccine in infants of mothers who have and who have not been immunized with polysaccharide vaccine. PI: Dr Nigar Shahid. Donor: USAID, Thrasher Research Foundation. Start date: 01.05.98, End date: 31.01.1999.

Addendum: Safety and immunogenicity trial of a dose of the polysaccharide pneumococcal vaccine at 9 months of age in vaccine in infants of mothers who have and who have not been immunized with polysaccharide pneumococcal vaccines. PI: Dr Nigar Shahid. Donor: USAID, Thrasher Research Foundation. Amount: US\$244,458. Start date: 08.06.98, End date: 31.12.2001.

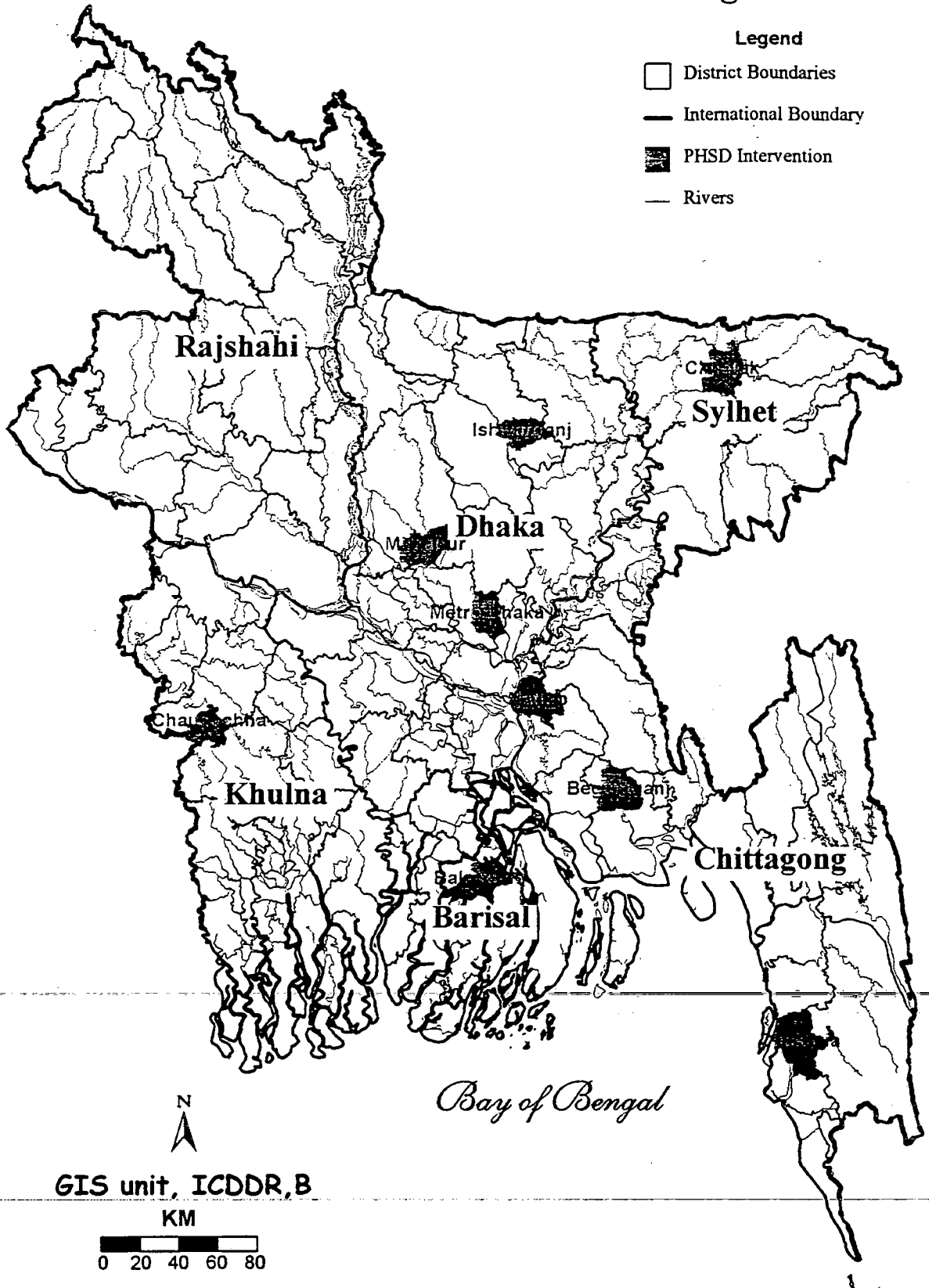
4. Does disease due to *V. cholerae* O1 confer protection against subsequent diarrhoea due to *V. cholera* O139? PI: Dr Md Yunus. Donor: NIH, USA. Amount: US\$10,000. Start date: 01.11.96. End date: Analysis ongoing.
5. Epidemiology and ecology of *V. cholerae* in Bangladesh. PI: Dr AKM Siddique. Donor: NIH. Amount: US\$2,517,683. Start date: 1.1.97, End date: 31.12.2001.
6. Abortion dynamics in rural Bangladesh: Does an MCH-FP programme bring about any change? PI: Dr R. Bairagi. Donor: WHO. Amount: US\$118,666. Start date: 15.1.98, End date: 30.04.2000.
7. Contraceptive use dynamics in Bangladesh. PI: Dr R. Bairagi. Donor: EU Amount: US\$514,000. Start date: 29.5.98, End date: 12.6.2004.
8. Tetravalent Rhesus Rotavirus Vaccine: a randomised, placebo controlled trial to evaluate immunogenicity, reactogenicity and acceptability in infants in Matlab, Bangladesh. PI: Dr Md Yunus. Donor: WHO. Amount: US\$15,000. Start date: 31.12.97, End date:30.06.2000.

9. Safety and immunogenicity of 4x10⁵ pfu treatment research rotavirus vaccine with or without zinc supplementation in Matlab, Bangladesh. PI: Dr SE Arifeen. Donor: WHO and USAID. Amount: US\$58,185. Start date: 30.09.98, End date: 30.06.2000.
10. An out-patient study of safety, dose and immunogenicity of an oral live *S. flexneri* 21 vaccine candidate (Sc602) in a rural community setting in Bangladesh. PI: Dr AH Baqui. Donor: USAID/NVPO & USAID/WRAIR. Amount: US\$130,000. Start date: 01.12.98, End date: 31.05.2000.
11. A community based, randomised controlled trial to assess the effect of zinc supplementation in <5 years old Bangladeshi children during diarrhoea on clinical course of diarrhoeal, subsequent diarrhoea and ARI morbidity and growth. PI: Dr AH Baqui. Donor: JHU & USAID/T. Amount: US\$193,489. Start date: 01.08.99, End date: 30.4.2001.
12. A community-based randomised, controlled trial to assess the efficacy of iron and/or a micronutrient mix supplementation to reduce anemia and morbidity and to improve growth and development in Bangladesh infants. PI: Dr AH Baqui. Donor: USAID/NRF. Amount: US\$250,745. Start date: 15.8.99, End date: 31.7.2001.
13. Surveillance of invasive *Haemophilus influenzae* (HI) and *Streptococcus Pneumoniae* (Spn) diseases in Bangladeshi children and the antimicrobial resistance and serotype patterns of HI and Spn in Bangladesh (Population-based component). PI: Dr AH Baqui. Donor: USAID/TRF. Amount: US\$284,260. Start date: 1.10.98, End date: 30.9.2001.
14. Essential Obstetric Care. PI: Professor Japhet Killewo. Donor: EU. Amount: 1,423,623. Start date: 1.10.99, End date: Sept.2004.
15. Male involvement in reproductive health programmes. PI: Professor Japhet Killewo. Donor: EU. Amount: US\$963,756. Start date: 21.11.99, End date: 20.11.2002.
16. A study on the effect of Menstrual Regulation Service provision on induced abortion morbidity in Matlab. PI: Dr Rubina Shaheen. Donor: SDC. Amount: US\$49,900. Start date: 1.2.99, End date: Dec. 2000.
17. An evaluation of the health impact of integrated management of childhood illness (IMCI), Matlab, Bangladesh, a randomized experimental study. PI: Dr Shams El Arifeen. Donor: WHO. Amount: US\$2,016,018. Start date: 01.07.99, End date: 30.06.2004.
18. Evaluation of sustainability of education aimed at increased consumption of green leafy vegetables by young children and others in selected poor village communities at Matlab in Bangladesh. PI: Dr Md Yunus. Donor: SDC. Amount: US\$20,000. Start date: 01.03.99, End date: 28.02.2000.
19. Healthcare seeking behaviour, willingness and ability to pay for health services and costing of the ESP Components delivered through NGO-run facilities of RSDP. PI: Dr Shakil Ahmed. Donor: USAID/W. Amount: US\$129,396. Start date: Nov 1999. End date: July 2000.

20. Health Care Seeking Behaviour, willingness and ability to pay for health services delivered through NGO-run facilities of UFHP. PI: Dr Shakil Ahmed. Donor: USAID. Amount: US\$63,910. Start date: June 1999. End date: Feb 2000.
21. Cost effectiveness of nutritional intervention activities in rural Bangladesh. PI: Dr Shakil Ahmed. Donor: World Bank. Amount: US\$49,975. Start date: Jan 2000, End date: Dec 2000.
22. Disease burden due to ALRI in Matlab: Secondary analysis of Matlab RKS data. PI: Dr Nigar S Shahid. Amount: US\$10,000. Start date: Not yet started.
23. Women's health and domestic violence (under: Violence Against Women). PI: Dr Ruchira Tabassum Naved. Donor: ADB. Amount: US\$329,624. Start date: 1.3.2000, End date: Feb 27, 2002.
24. An effectiveness study of *Haemophilus Influenzae* Type b Vaccine. PI: Dr AH Baqui Donor: ADB&PMC. Amount: US\$625,502. Start date: April 1, 2000, End date: March 31, 2003.
25. Safety, dose, immunogenicity, and community transmission risk of a candidate *Shigella flexneri* 2a vaccine (SC602) among young children in rural Bangladesh. PI: Dr AH Baqui. Donor: WRAIR&NVP, USA. Amount: US\$123,651. Not yet started.
26. An action research into positive and negative deviance in child nutrition in rural Bangladesh. PI: Dr Ruchira Tabassum Naved. Donor: World Bank. Amount: US\$57,514.83. Start date: 1.10.99, End date: 31.12.2001.
27. Efficacy of short course of oral co-trimoxazole in treatment of non-severe pneumonia and its relationship with antimicrobial resistance: a clinical trial in the Matlab community. PI: Dr Shams El Arifeen. Donor: WHO). Amount: US\$99,989. Start date: Nov 99, End date: June 2001.
28. The use of direct recording scale to involve mothers in monitoring the growth of children in rural Bangladesh. PI: Dr Abbas Bhuiya. Donor: World Bank. Amount: US\$21,225. Start date: 1.10.99, End date: 31.9.2000.
29. Sexuality, Risk and HIV/AIDS: Adolescents of Bangladesh. PI: Ms Lazeena Muna. Donor: SDC. Amount: US\$31,236. Start date: Nov 1, 99, End date: 31 Oct. 2000.
30. Situation assessment of male to male sex business in Chittagong for STD/HIV intervention. PI: Dr Sharful Islam Khan. Donor: SDC. Amount US\$50,414. Start date: 1.12.99, End date: 31 Oct. 2000.
31. Prevalence and risk factors for STDs among residents at Tejgaon truck stand. PI: Mr Nazmul Alam. Donor: SDC. Amount US\$63,000. Start date: 15 Sept.99, End date: 14.9.2001.
32. The effect of childbearing patterns on all-cause mortality in Bangladesh. PI: Ms Lisa Sioned Davies. Amount US\$6,625. Start date: Oct. 98, End date: Oct. 2001.
33. Hormonal contraception: the user's perspective. PI: Ms Juliet McEachran. Donor: Simons Population Trust (UK). Amount: £2,458. Start date: 1.3.200, End date: 31.5.2000.

Figure 7.

PHSD Intervention Areas in Bangladesh



2.5 Director's Division

2.5.1 Personnel Office

The Centre's fixed-term staff as at 31 March 2000 stood at 925, out of whom 12 were international professionals, 166 national officers and 747 belonged to the general services category. Out of this 925, apart from the international professionals, 434 were in the unrestricted funding areas and 479 were in restricted funding.

Besides the international professionals, the distribution of the total fixed-term staff were 564 for research (scientific, support and field), 221 for research administration, 81 for administration, 10 for Personnel, and 37 for Finance.

The Centre also had in the "other" category, 6 international seconded staff, 30 short-term (international, NO and GS) staff, 131 community health workers and 63 auxiliary health workers.

Changes in staff strength during the period 1 October 1999 to 31 March 2000

Additions in NO and GS Category			Separations in NO and GS Category		
a)	Conversion from Contractual Service Agreements	15	a)	Retirement/Abolition of post/Release/Death	11
b)	New appointments	22	b)	Resignation	12
	Total additions in NO and GS	37		Total separations in NO and GS	23
Additions in International Professional			Separations in International Professionals		
a)	New appointments	3	a)	Resignation/Release	2
	Total additions	40		Total separations	25
Net additions: 40-25 = 15					

Staff Clinic

The staff clinic continued to provide health care services to NO and GS staff and their dependants. During the reporting period, a total of 9,278 patients attended the staff clinic, of whom 9,013 patients were treated in the staff clinic and 265 required referral to outside Clinics/Hospitals/Consultants for specialized medical services. The Staff Clinic arranged hospitalization for 98 patients, vaccination for 240 children and attended 49 emergency cases. Family-planning services were provided to 179 couples. 142 minor surgeries were done in the staff clinic. ECG was done for 115 patients. Pre-employment medical examinations were done for 35 prospective employees. Periodical medical examinations were performed for 293 existing staff members. On an average, the health status of the staff and their dependants remained good.

2.5.2 Administrative Services

Various entities described below provided administrative services to the Centre:

Support Services Department

The Support Services Department was engaged to provide administrative, engineering and logistical support to the Centre and its staff. The Department provided security, cleaning, transport, and logistics support services. It executed civil construction, installation and maintenance of electrical and mechanical equipment, maintenance of buildings, roads and all physical facilities of the Centre. The Department arranged procurement of local and foreign equipment for the Centre, and also provided support to the expatriates with regard to their travel, immigration, customs and various other facilities.

Civil Engineering Branch

The Branch ensured proper maintenance of utility services of the Centre, and also completed construction/renovation works for the Centre as were required.

Electrical Engineering Branch

This Branch routinely performed installation and maintenance of the Centre's electrical appliances and devices, including maintenance of 800 KVA standby generator and electrical substation. It also maintained the 255 line PABX exchange and 105 T&T direct telephone lines.

Transport Management Branch

This Branch provided regular transport services for pickup and drop off to 284 staff members of the Centre. It also provided transport services to and from Matlab Station, and also maintained the wireless communication between Dhaka and Matlab.

Vehicle Maintenance Branch

This Branch supported the Centre's movement facilities by providing routine servicing, preventive maintenance, and repairing of Centre's cars, jeeps, microbuses, buses and motorcycles. During the reporting period, the Branch repaired 350 vehicles and kept them roadworthy by using Centre's staff and contractual resources.

General Services Branch

This Branch continued to provide services for the safety and security of the Centre's properties, cleaning, mail, and conference management by using Centre and contractual resources/ staff.

Travel and Estate Office

The Travel and Estate Office managed the Travel Services Office, Estate Office and the Guest House of the Centre. This Office continued to provide all travel-related supports to the Centre's staff, members of the Board of Trustees, visitors and trainees. It also arranged accommodation for visitors and trainees. This Office also maintained liaison with concerned government authorities for issuance of visas, landing permits and customs passbooks, clearance of personal and household effects shipment (incoming and outgoing) for the Centre staff.

2.5.3 Procurement Office

During the reporting period, this Office procured goods and equipment worth US\$1.33 million both from local and overseas markets. Procurement of IV fluid materials/equipment worth approximately US\$0.30 million was made for use by the Institute of Public Health, Government of Bangladesh. The Office cleared 264 shipments during the period, including 89 perishable consignments.

2.5.4 Computer Information Services (CIS)

Installed a V-SAT for the Centre which has connected the Centre's information backbone on Internet and Data Communication to the outside world with its own communication systems connecting to ST-1 Satellite as the Gateway. The newly equipped system has made the Centre an independent Internet Service Provider which can benefit the Centre's goal to disseminate and share its information to the rest of the world by developing Internet Web enabled applications with option for multi-cast streaming applications. The Centre now maintains its own name servers and gateway for connecting to the outside Internet world. The system is also designed to meet fax communication needs of the centre.

The Centre's Campus Network has been designed with Access Servers for neighboring outside Centre sites to the Centre Systems, using PSTN circuits. Router and switching technology is being supplied and extended for enhancement of the present LANs and WANs. CIS is also developing an IT Architecture for the Centre through an IT Advisory Committee appointed by the Director. The Architecture will define the client environment for Network users at the Centre as well as the Networking computing platform and protocols along with LAN sharing guidelines for sharing data, systems and application among various groups using common Network resources.

The Centre WEB page (www.icddrb.org) is going to be further modified for more interactive participation of site visitors.

The CIS Manager also participated in the National IT Project as member of the National Technical Standing Committee to help Government implement a large IT project which will create Campus Networking for Ministries, Planning Commission, Prime Minister's Office and others using ATM technology and creation of a National Data Bank.

2.5.5 Finance Department

- * Price Waterhouse completed their assignment of developing a comprehensive Administrative and Personnel Policy Manual in December 1999.
- * The 1999 annual audit carried out by our joint auditors, was completed and signed on March 15, 2000.
- * The Centre did not experience any problems with respect to the Y2K issue at the start of the new millennium.

2.5.6 Dissemination and Information Services Centre (DISC)

DISC currently comprises (1) Information Services Branch, (2) Publications Services Branch, and (3) Audiovisual Unit. It carries out various programmes and functions with the mission to diffuse results of global health, population, and nutrition research for solving the common health, population, and nutrition problems, especially in the context of the developing world. The department collects, processes, stores, and disseminates information resources on health, population, nutrition, and environment research and related programmes from various sources for use and benefit of the Centre's researchers and research-support personnel and outside readers. The research findings of the Centre are disseminated through both printed and electronic formats.

The Branch initiated an orientation/training programme on Web-based and Medline and Popline CD-ROM databases in three phases for the Centre's research and research-support staff. Forty participants attended the first session. Services of two external experts have been used for the purpose. Mr. Md. Nazimuddin, Librarian, attended a one-day orientation programme on POPLINE, organized by the Bangladesh Center for Communication Programmes. He also attended a one-day Workshop on Assessing Needs on Documentation and Resource Center held in Dhaka.

The Journal of Diarrhoeal Diseases Research (JDDR) was re-launched as the Journal of Health, Population and Nutrition (JHPN). Prof. David A. Sack assumed the responsibilities of editor-in-chief of the Journal. The editorial boards of the JDDR were reorganized to be more effective to suit the re-launched Journal. The Journal will be available through the Internet. A web site was created to disseminate details of the journal. The Branch produced one issue of the Glimpse, two issues of the Shasthya Sanglap, and one issue of the JDDR. In addition to that, 8 working papers and 10 special publications were produced under the supervision of DISC during the reporting time.

The Audiovisual Unit continued to provide audiovisual support to the Centre. This included support through desktop publishing, layouts and illustrations for the Annual Report, Glimpse and other Centre publications. In addition, various types of badges, coupons, folders, posters, invitation cards, albums, etc., were designed by AVU. Projection and photographic support were also provided to various events of the Centre.

2.5.7 Training and Education Department (TED)

Table 3: Training activities during the period 1 October 1999 to 31 March 2000

Particulars of activities/courses/programmes	Number of courses	Number of Participants
1. Health Research Training Programme: 1.1 International Workshop on Research Methodology 1.2 Post-Graduate students (M.Sc. and M.Phil.) from Bangladesh	2 Individual	28 10
2. Clinical Fellowship Programme: 2.1 SAARC Fellows 9 2.2 BADC Fellows 5 2.3 Clinical Fellows 13 2.4 Nursing Fellows 11 2.5 International Fellows 13	Individual	51
3. Short International Training Courses/Workshops: 3.1 Workshop on Emerging and Re-emerging Pathogens 3.2 Workshop on Reproductive Health Programmes Through Operations Research	1 1	10 12
4. National Training Courses/Workshops: 4.1 Clinical Management of Diarrhoeal Diseases 4.2 Course on Management of Severely Malnourished Children 4.3 Training programme on Use, Maintenance and Trouble-shooting of Atomic Absorption Spectrophotometers	2 4 1	29 47 10
5. Other Trainees: 5.1 At Clinical Laboratory 5.2 Orientation	Individual	3 419
Total number of participants		619
6. Seminars: 6.1 Weekly Seminars 6.2 Inter-Divisional Scientific Meeting	12 11	Centre staff
Home countries of the course participants (13 countries)		
a) Asia: Afganistan, Bangladesh, Bhutan, Cambodia, India, Japan, Malaysia, Maldives, Pakistan, Sri Lanka, and Vietnam		
b) Africa: Ghana, Kenya, Tanzania, Zambia, and Zimbabwe		
c) Europe: The Netherlands and Sweden		
d) North America: United States of America and Mexico		

Table 4: Staff Development activities report during 1 October 1999 to 31 March 2000

Sl. #	Staff training	Ph.D.	Masters	Short training	Confere-nces/ Workshops	Total
1	Staff returned during the period after completing training and degree* (see Appendix I)	1	2	8		11
2	Staff who left for training (see Appendix II for details)	5*	3	4		12
3	Staff abroad on training as at 30 September 1999	10	6	2		18
4	Staff attended conferences/ workshops				35**	35

* Two out of five staff will return after completion of their partial requirements for Ph.D. degrees to conduct research at the Centre for their dissertations.

** Total number of conferences and or workshops was 30 where 35 staff attended.

Table 5: Distribution by discipline and outcome of training of staff abroad as at 31 March 2000

Field of training	Ph.D. (n=17)	Masters (n=5)	Focused training (n=1)	Total (n=23)
Anthropology		1		1
Cartography and Satellite Imagery	1			1
Child Health	1			1
Demography/Sociology/Population Dynamics	4	1		5
Gastroenterology	4			4
Health Economics			1	1
Immunology/Microbiology	1			1
Nutrition	1			1
Public Health/Community Health	2	2		4
Reproductive Health/ Gender Studies		2		2
Total	14	6	1	21

2.5.8 External Relations & Institutional Development Office (ER&ID)

The ER&ID Office continued to implement the planned activities during the reporting period as follows:

Preparation of Project Proposals

- The ER&ID Office initiated the preparation and the submission of project proposals for institutional support to AusAID (2000) and UNICEF (2000-2002). It also coordinated the preparation and submission of the modification to the ongoing Cooperative Agreement with USAID/Washington for three more years (2001-2004).
- The ER&ID Office prepared technical revisions to a UNDP-approved grant proposal requesting Women in Development funds and facilitated its submission to the Japanese Government.
- ER&ID Office prepared the first year Grant Progress Report for the World Bank DGF grant for the Nutrition Centre of Excellence. Additionally, this Office prepared and submitted to the World Bank the DGF Application for the third and final year of funding of the Nutrition Centre.

Grants Administration

- The ER&ID Office continued to keep close contacts with several donors that led to the annual contributions being received by the Centre during the reporting timeline. The Centre received core contributions from Sri Lanka (1999), project contribution of 1 million kronor from Norway, and Hospital Endowment Fund contribution from Scobie & Mackinnon Trust from Australia. The Centre also received funds from the Government of Japan for the construction of a clinic that will be run by a local NGO to provide patient care under a network of NGO clinics operation of JSI/UFHP.
- The Kingdom of Saudi Arabia (KSA) pledged to continue with its annual core contribution of the Centre for the next five years. Also, the External Evaluation Team from the Ministry of Foreign Affairs of the Government of Japan, upon completion of its visit and an extensive review of the Centre, recommended that the Japanese annual contribution to the Centre be significantly increased for 2000.
- In addition, the ER&ID Office continued to coordinate the allocation process of funds for the USAID's targeted research funds, SDC's research funds, and research funds from other donors. These donor funds were allocated to the Centre's scientists through a Centrewide competitive grant allocation process.
- The ER&ID Office administered funding for the World Bank Nutrition Centre of Excellence by monitoring the disbursement of funds from the first year funding and assisted in developing the budget for Year 2 funding under the grant. The ER&ID Office presented an overview of Nutrition funding over the past five years as part of the Centre's theme review on the Nutrition.
- The ER&ID Office drafted and assisted in implementation of the terms of a Memorandum of Understanding (MOU) between the Centre and JSI/UFHP that allowed for the opening of an on-site primary health care clinic at the Centre's premises. The clinic manages outpatient cases for control of diarrhoeal diseases

and provides other primary health care and family planning services approved under the National Institute of Primary Health Care Project. Patients are referred to community-based facilities for follow-up and future treatment.

- The Office continued to produce the Grants Administration database every month. The monthly report from this database showed the report due dates to donors. Based on this, the ER&ID Office assisted the scientists for production of the technical reports and closely liaised with the Centre's Finance Department to produce financial reports for onward submission to the respective donors. The timely submission of donor reports led to the subsequent release of funds from these donors.
- The Office also produced and sent out the bimonthly Grants News - the Centre's funding newsletter - to Trustees, donors, and friends of the Centre.

Preparation of Contracts

- The ER&ID Office reviewed all contracts and agreements entered into by the Centre with donors, pharmaceutical companies, NGOs and international organizations requiring the Director's signature. Such agreements included research contracts, service contracts, programme support agreements, contracts for clinical trials, amendments to existing agreements and Memoranda of Understanding. Where such agreements required revisions, the ER&ID Office worked with the other party to the agreement, the Centre's Office of Finance and Centre scientists to assure that the final agreement would meet the Centre's requirements and reflected terms with which the Centre could comply.

Special Events

Visitors to the Centre

- The ER&ID Office coordinated the visit to the Centre of Mrs Trix Heberlein, the President of the Swiss Parliament. She was given an overview of the Centre and a tour of the Centre's facilities.
- It arranged the visits to the Centre's Dhaka facility of Dr. David Carter, the new British High Commissioner; Mr Kazuyoshi Urabe, new Japanese Ambassador; Ms Nancy Ann Budden, the representative of the international energy company Unocal; the doctors and administrators from the Noble Prize winning NGO Medicins Sans Frontieres (MSF); Mr Eduardo Doryan, the Vice President for Human Development Network of the World Bank/Washington; and a high level team on Common Agenda initiative comprising officials from USAID and Japan.
- It also organized the visits to the Centre's Dhaka and Matlab facilities for HE Mr John C Holzman, the US Ambassador and Mr Matt Daley, Senior Adviser, South Asia Bureau, US State Department, as part of an advance team visit to Bangladesh by Clinton Administration officials. The ER&ID Office arranged similar visits for HE Mr Robert Flynn, the new Australian High Commissioner; HE Mr David Preston, the new Canadian High Commissioner; Mr Bill Gates Sr of the Bill and Melinda Gates Foundation; and Mr Neal Brandes of the Health and Nutrition Unit of USAID/W.

International Conferences

- An ER&ID Office representative prepared and presented an overview of the Nutrition Agenda as part of a team presentation on the nutrition work of the

Centre at the World Bank's Human Development Week in Washington, D.C. Following the conference the ER&ID Office drafted with Centre scientists participating in the HD Week a summary of the session and submitted it to the Bank for the HD Official Week Summary, to be published by the World Bank.

- The ER&ID Office organized a press conference on the Annual Scientific Conference (ASCON) for the local and international media. This ASCON, the ninth edition, was held on 11-13 February 2000 at ICDDR,B. The theme of this year's ASCON was Health Systems Research. The ER&ID Office also arranged funding of this conference from CIDA and facilitated the receipt of funding from Plan International.

Media and Public Relations Events

- The ER&ID Office arranged a press briefing in October 1999 to introduce the Centre's new Director Dr. David Sack and to inform the media about the new research initiatives that are currently being undertaken at ICDDR,B.
- In March 2000, the ER&ID Office organized a visit to Matlab for the journalists of the country so that they could see first hand this unique field research infrastructure. Twelve leading journalists from Bangladesh Television, Radio, and the national dailies went to Matlab on this orientation tour.
- The ER&ID Office assisted in the coordinating interviews with the Centre's Director and Centre scientists for a TV documentary on Vaccine Preventable Disease and Immunization Programmes in Bangladesh. The documentary was subsequently broadcasted worldwide by CNN.

Communication

- The ER&ID Office produced an edited version of the existing Centre video. The edited copy includes footage on the Centre's new Director Dr. David Sack as well as updated information. The tape time of the new video is 15 minutes, and is distributed to Europe and North America. However, work on the production of a new video for promotion of the Centre and its many activities will begin after the next Board of Trustees meeting.
- The Office produced a new brochure on the Centre's new theme-based research initiatives that was presented to donors and visitors. This new brochure highlights seven themes as guidelines for thematic presentation of the Centre's research agenda in future.
- ER&ID provided articles on the Board of Trustees, Centre management, special visit of Director General of WHO, information on special visitors to the Centre and overall editing and comments to the Centre's publication *Glimpse*.

Donor Support Group

- The ER&ID Office continued to work as the Secretariat for the Centre's Donor Support Group (DSG). It organized holding of the DSG meetings involving several donors that include sending notices and taking minutes, among other activities. The Office successfully organized two DSG meetings - in November 1999 and in March 2000.

Institutional Development

- As part of developing institutional linkages and addressing questions of institutional development, an ER&ID office representative arranged to meet with various individuals in the United States and discussed fund raising by Child Health Foundation; the availability of UNFIP [Turner Fund] funding for Centre research, the improvement of contracts management (JHSPH Office of Sponsored Research); finalization of pending grant proposals with UNDP and World Bank; and, possible intellectual property protection for Centre's logo and name (Astrachan, Gunst, a Baltimore firm specializing in intellectual property).

Hospital Endowment Fund Raising Event

- The ER&ID Office coordinated the preparations for the annual Hospital Endowment Fundraising Ball on 12 February 2000 assisted by a team comprising of 12 members including wives of the Centre's senior managers, the senior Secretary of the Clinical Sciences Division and the Head of the Audio Visual Department. With significant support from the Finance Office and the ER&ID Office, the Centre succeeded in attracting a sponsor for the event, resulting in total contributions exceeding \$45,000 and net earnings nearly US\$37,000 from the event which is about a 10% increase over the previous year.

Board of Trustees

- The ER&ID Office assisted the Director as well as the Finance Office during the preparation of the Board papers for the November Board of Trustees meetings. It provided an update on the substantive donor relations that took place between the Centre and its various donors during this time.
- The ER&ID Office also organized a two-day retreat for the Board of Trustees in November 1999. The meeting intended to provide Trustees with terms of reference and discussed the role of the Board and highlighted the expectations sought for a successful Boardship.

Presentation

- The Office made a multimedia presentation at the annual meet of the World Bank, Washington. The presentation highlighted the Centre's work as well as its work on Nutrition.

2.5.9 Committee Coordination Office

The following are the activities of the Centre's mandatory committees:

Research Review Committee (RRC):

- During the reporting period, RRC met 6 times and reviewed 24 research proposals, addendum to and requests for time extension of the previously approved protocols. All protocols and requests were approved.

Ethical Review Committee (ERC)

- ERC met 7 times during the reporting period and approved all 24 protocols and addendum to the previously approved protocols.

Animal Ethics Experimentation Committee (AEEC)

- AEEC met once during the reporting period and approved one protocol.

3. Research and Related Activities

3.1 Research Output

Table 6 shows the number of publications and ongoing research protocols for this reporting period.

Table 6: Research output during the period 1 October 1999 to 31 March 2000

Papers/Protocols	PHSD	CSD	LSD	HPED	Total
Papers/Books Published:					
1 Oct. 1996 – 30 Sept. 1997	20	20	32	3	75
1 Oct. 1997 – 31 March 1998	15	8	12	3	38
1 April – 30 Sept. 1998	12	11	9	4	36
1 Oct. 1998 – 31 March 1999	10	17	7	4	38
1 April – 30 Sept. 1999	4	8	13	8	33
1 Oct. 1999 – 31 March 2000	7	7	10	1	25
Papers/Books in Press:					
1 Oct. 1996 – 30 Sept. 1997	8	12	5	3	28
1 Oct. 1997 – 31 March 1998	19	12	10	8	49
1 April – 30 Sept. 1998	13	12	8	13	46
1 Oct. 1998 – 31 Mar 1999	5	8	8	15	36
1 April – 30 Sept. 1999	11	10	13	11	45
1 Oct. 1999 – 31 March 2000	5	6	8	9	28
Total Papers Published and in Press:					
1 Oct. 1996 – 30 Sept 1997	28	32	37	6	103
1 Oct. 1997 – 31 Mar 1998	34	20	22	11	87
1 April – 30 Sept. 1998	25	23	17	17	82
1 Oct. 1998 – 31 March 1999	15	25	15	19	85
1 April – 30 Sept. 1999	15	18	26	19	78
1 Oct. 1999 – 31 March 2000	12	13	18	10	53
Research Protocols/Programmes in Progress:					
1 Oct. 1996 – 30 Sept. 1997	49	28	19	19	115
1 Oct. 1997 – 31 March 1998	72	25	14	6	117
1 April – 30 Sept. 1998	49	36	24	13	122
1 Oct. 1998 – 31 March 1999	21	32	28	8	89
1 April – 30 Sept. 1999	42	23	26	13	104
1 Oct. 1999 – 31 March 2000	33	29	29	8	99

PROGRAMME COMMITTEE

Saturday 3 June 2000

Report from Staff Welfare Association (SWA)

**Representation of the ICDDR,B Staff Welfare Association (SWA) to the
Chairman of the Board of Trustees of ICDDR,B
Dhaka, Bangladesh
3-5 June, 2000**

Dear Sir:

It is my privilege, on behalf of the general members and the Executive Committee of the ICDDR,B Staff Welfare Association, to welcome the distinguished Chairman and the members of the ICDDR,B Board of Trustees, both from home and abroad to its first meeting of the new millennium, 2000.

I am also pleased to thank Prof. David Sack, who has taken the position of our Director since the last Board meeting in November, 1999 for his fair, sympathetic, and progressive attitudes towards the growth and development of the Centre in the true sense of its term and in his dealings with the staff in general. During the last six months we have found Dr. Sack very friendly, cooperative, enthusiastic, and responsive to the issues and needs that we have brought to his kind notice many times.

As most you know that SWA is an elected body of staff representatives organized for the purpose of improving staff relationship with the management and to help maintain an administrative, scientific, and cultural environment that are optimum for accomplishing the goals of the Centre.

In this regard I would like to draw the kind attention of the honourable Chairman and the Members of the Board to the following points for their favourable considerations:

1. Staff Salary:

First of all I must appreciate and thank the Board and the Director of the Centre for approving a six-percent salary increase in its last November, 1999 meeting which has been implemented from January, 2000. This has significantly contributed towards maintaining staff confidence on Centre's management, which is more than the real value of the money itself. I expect this trend will continue in the future to reduce the salary gap between the ICDDR,B and the UN pay scale as early as possible.

We also understand that salary issues are usually not considered in June meeting of the Board, but this is nothing but a reminder. We would look forward to a significant salary rise in its November meeting this year.

2. Administrative issues:

We are pleased to see that the Centre has now appointed a Human Resource personnel to look into the Centre's administrative and management systems. We hope that careful attention be given to bring fairness, justice, and rule of law by specifically looking into policies of recruitment, ranking, promotion, hiring consultants, salary issues, duty hours, overtime allowance, medical benefits, national and international positions, retirement age, tenure of employment, special issues related to field stations at Matlab CHWs, and other places, and other issues that we have brought into the notice of the Director from time to time.

We understand that this is no doubt, a formidable task, but we also hope that with mutual cooperation and understanding between the staff and the management, significant improvement can be accomplished. In this regard, the SWA is committed to extend all out

efforts and cooperation to help management in deciding and implementing appropriate policies and actions that are beneficial for the staff and the Centre as well.

In view of this, I am pleased to learn that some recent administrative reforms with regard to medical benefit and merit increase are already in progress.

3. Restructuring of the Centre:

The Centre is still in transition about selecting a best possible organizational structure that will enhance efficient programme management and optimum growth of the institute. The sooner it is decided whether a thematic approach or a divisional structure would optimize its operation and accomplishment is better for us. We hope the Board will definitely look into this matter.

4. Broadening the scope of the Centre:

Although the Centre maintains its focus on diarrhoeal diseases, it has now widened its scope of activities to all areas of health research including population under the new name of Centre for Health and Population Research. This would definitely call for better organizational skills, manpower, and of course qualified scientists with leadership. We expect that the Board will come forward to help the Centre meeting the challenge of the twenty-first century.

- 5. In conclusion,** I would like to bring to your kind attention, the important role that the SWA has been playing in accomplishing the overall goals of the Centre. Through its medical assistance fund, the SWA provides monetary benefit to employees, provides educational funds to staff dependents, organizes cultural activities including picnic, annual dinner, farewell to outgoing staff, condolences of deceased staff, construction of mosque in Matlab, and home gardening and fish production in Matlab. Through the Cooperative Society, the SWA has been significantly contributing to staff welfare by its credit programme.

By interacting with management, the SWA also contributes significantly in improving staff relationship with the management with regard to the administrative, financial, and regulatory activities.

We believe that the confidence and trust between the SWA and the management are very important for the development of the Centre and we must ensure that our mutual cooperation definitely leads to a productive conclusion in the future.

Thank you.

G H RABBANI, MD, PhD, FACC
President, Staff Welfare Association

PROGRAMME COMMITTEE

Saturday 3 June 2000

Review of External Review of Nutrition Centre

Review of Nutrition Research Activities of ICCORB January 2000

I. Background

The Board of Trustees and the World Bank requested a review of the nutrition research activities performed at the ICDDR,B. We received presentations of the research, had discussions with the respective investigators, visited the laboratories and had personal interviews with key people outside ICDDR,B who are associated with incorporating the research findings into the development of policy and programmes. The quality of the preparation of documents and the programme, the presentations and meetings was high and we faced challenges in absorbing all the information so we may have made some errors in our assumptions. For this we apologise in advance.

Our report is presented in relation to:

- Research Strategy,
- Basic science,
- Intervention studies,
- Operational research,
- Dissemination of Findings.

2. Research Strategy

2.1 We noted that the Nutrition Working Group (NWG) had a Consultation on Research Strategy in September 1999. This had resulted in the Production of a Work Plan for 2000- 2001. We also noted that a Research Strategy is in preparation for the next 5 years.

The Work Plan included key areas: -

- Prevention and management of severe and moderate child malnutrition
- Improvement of the nutritional status of women during adolescence and pregnancy and develop interventions aimed at reducing the prevalence of low birth weight
- Further definition of the relationship between infectious disease and nutrition - Study the interrelation between nutrition and child growth and development - Improve infant and child feeding practices

2.2 We noted that the research plans, as they were laid out in the document, appeared without reference to other recent national strategies and we suggest that they are related to broader frameworks of Nutrition such as outlined in "Bangladesh: Breaking the Malnutrition Barrier - key to Development" (December 1999, from the Health Nutrition and population Unit, South Asia Region, The World Bank). Particular emphasis should be given to evaluation of the preventive types of programmes. We recognise the need to focus on a few specific areas and not to become overstretched, however we see the advantage of establishing projects which evaluate how "new knowledge" is incorporated within the less highly supervised environments of service type programmes. Dialogue with a Nutrition Research Network of Donors in Bangladesh will be

especially helpful in this regard - not only for defining research objectives but for better access to research funds.

2.3 We recognise that the inclusion of more operational research will create some conflict for the career advancement of nutrition scientists, many of whom will be under pressure to publish in scientific journals. We suggest that care is given to create an environment where critical evaluation of nutrition related service programmes is rigorously performed. Such data is sadly lacking in most service programmes and in our view is appropriate for high quality research in ICDDR,B. We recognise that this is not a problem which is confined to ICDDR,B. Many other organisations are "scored" on their scientific citation impact factors rather than whether they have had an influence on policy or service programmes.

2.4 Overall we agree that the present nutrition research priorities are appropriate for immediate implementation but suspect that further research planning will open up new areas, especially operational research which will aid the implementation of programmes aiming to improve Nutrition of the population. We also suggest that research will soon be necessary on Nutrition/HIV, Toxicity (especially where malnutrition might increase susceptibility to harm). We also suggest that Food fortification/dietary promotion of particularly micronutrient rich diets may also be suitable for inclusion in intervention assessments.

2.5 We discussed potential areas for nutrition research, which were not in the priority list. These included: -

- Toxicity (arsenic, lead)
- Fetal programming
- Obesity
- Adult diet related disease
- Nutrition in Societies in Transition
- In-House Stable Isotope facility
- Human genome related work
- Gene nutrient gene interactions
- Energy and protein metabolism
- HIV/nutrition relationships
- Food fortification as a means to improve micronutrient status
- Genetically modified foods
- Operational research into programmes

We suggest that these are included in future research strategy deliberations.

3. Basic science

The projects presented were an example of a portfolio of projects underway. The three consisted of: -

- Assessment of Carotenoid Bioavailability using new stable isotope methodologies

- The potential role of helicobacter in the development of gastritis/decreased gastric acid secretion and impaired iron absorption
- Psychomotor development including new measures of mental development, behaviour temperament, cognition and scholastic achievement
- Nutritional Biochemistry laboratory

3.1 Strengths - these are well-designed studies and a particular strength is the development and use of novel technologies which will advance understanding of bioavailability, nutrient/brain/development interactions and the physiology of iron absorption. These methodologies will be useful for development of novel research on a range of studies on bioavailability of micronutrients. Several new analytical instruments have been procured (new HPLC, graphite AASP, auto analysers, haematological analysers). Well-trained staff are a particular asset with high levels of quality control on international standards. Perhaps the greatest strength of the basic science research is the ability to link with "cutting edge" research groups internationally who are attracted to work with ICDDR,B because of many aspects of the local research environment. These include the ability to perform carefully controlled metabolic studies (in this regards the clinical facilities are invaluable), community cooperation, experience in running field trials, laboratory resources, communications, fast set up time, critical mass of nutritional scientists, trained and highly motivated staff, data analysis and IT facilities, physical security and safety. There are many other logistic benefits of working at ICDDR,B.

3.2 Weaknesses - difficult to be sure where some new basic science information will lead in terms of further studies or implementation. We suggest that all proposals ask "how will the results of this study influence policies or programmes?" "who will use this information?" The Laboratory is not dust free, benching is old and difficult to keep clean; there is need for improved AIC and careful dust controlling ventilation. There is little space for visiting scientists such as researchers from nutrition departments in Bangladesh and neighbouring countries. Equipment is just sufficient for present work but would be useful to have gas Chromatograph and additional HPLC for increase in future studies.

4. Intervention Studies

These included: -

- Exclusive breast feeding
- Positive and negative deviance studies
- Micronutrient supplementation of mothers and birth weight and morbidity of their children
- Micronutrient supplementation of children with diarrhoea
- Multiple micronutrient supplementation and birth weight
- Evaluation of the WHO method for the management of severe PEM
- Psycho motor stimulation in the management of malnourished children
- Community based management of malnutrition in urban areas

4.1 Strengths - well reviewed, good epidemiological study designs, indicators well defined and objectives well set. As most are randomised controlled trials (PCT) they will be able to overcome

some of the difficulties with differences in baseline population or individual micronutrient status. Nearly all the projects addressed extremely important issues related to child survival and development.

4.2 Weaknesses - Health and Nutrition Economic Analysis is somewhat weak and in many cases absent. More cost-effective analyses are needed for each intervention study to enable 'information based decisions' by policy planners who need to decide on whether to implement supplementation regimes. There are no studies on dietary diversification interventions and their impact on nutritional status. ICDDR,B is now in a position to evaluate such interventions (small fish/fruits/carotene rich foods) and assess their impact on nutritional status. As dietary inadequacies and malnutrition is so widespread in Bangladesh it seems advisable to investigate these as well as micronutrient mixes. If the research findings are encouraging (i.e. appropriately correct the nutrient deficiency and found to be cost effective), this will add a new dimension towards addressing the problem of hunger and malnutrition of the country.

In some of the research projects (e.g. positive/negative deviance) it was difficult to assess what the resulting intervention should be. Some are extremely complex (e.g. community based approach for nutrition rehabilitation, which rely on the provision of increased number of clinical services including Paediatric beds).

5. BINP supported Operation Research

There are 14 BINP supported projects at the different stages of implementation. Three projects were presented as an example: -

- the cost effectiveness of nutritional interventions
- effective means to address moderate malnutrition
- effectiveness of management of severe PEM

5.1 Strengths

Considerable amount of information will come from the research, strong commitment to shoring the knowledge, well designed studies

5.3 Weaknesses

In the absence of information on different aspects of the cost of the three projects presented it is difficult to know how replicable these projects will be. We suggest that all operational projects are subjected to Nutrition/Health Economic Analysis. As BINP is aimed to elicit behavioural change it is important to assess any change carefully both in the short and long term using carefully performed Behavioural Science techniques. We suggest that more attention be given to studies of the growth patterns in relation to the development of malnutrition and how such patterns can lead to earlier recognition and improved management. As it is often claimed, on virtually no evidence, that food supplementation projects lead to a decrease in self-sufficiency and social development activities it is important to measure the "social toxicity" of food intervention programmes. This could be done in association with key groups who are experienced in running Social Development Programmes (e.g. BRAC).

6. Support and Management of the Nutrition Research Programme and the NWG

We noted a number of obstacles faced by scientists wishing to prepare and submit research proposals. These included: -

- a) Short Notice of deadlines
- b) Need for external scientific review and ethical review
- c) Difficulty in obtaining costings
- d) Divisional Director has to support
- e) No obvious list of deadlines for applications to be submitted
- f) Risk of overlap between applications being prepared at the same time

6.1 We noted that there was no central Management Information System (MIS) capable of monitoring and informing on the number of grants that were currently in progress. We suggest that an MIS database is established which would provide costings, and timetable of deadlines together with information on referees comments on recent applications. This could be established on a website or intranet.

7. Staff Development

7.1 It was reported that it was difficult to identify sufficient high-flying candidates for doctoral training. We suggest that efforts to identify younger scientists for doctoral training be established. We suggest an increased role for the development of nutrition training for young researchers from elsewhere in the Region. We suggest the establishment of a cadre of nutrition research training post for non-Bangladeshi nationals (e.g. Nepal, Bhutan, and India). This could be set up collaboratively with local Bangladeshi universities with skills and expertise in nutrition. We also suggest that, once a Research Strategy is agreed, a training programme should be established identifying the numbers of staff that will require training in different skills (e.g. specialist MSc. courses, PhDs, post doctoral training).

7.2 The problem of keeping existing high quality staff was noted. We have no easy answers here but suggest that efforts are made to ensure that staff return after doctoral training and provide necessary incentives to those who perform well. The possibility of financial bonding could be explored but more detailed appraisal of the problem is recommended. We noted the high quality of academic leadership shown by senior staff, especially the Leader of the Nutrition Research Theme. More detailed consideration of the management of the theme is considered elsewhere but we suggest that there is a need for a Secretariat to coordinate the work of the Group, especially from the perspective of coordinating preparation and submission of applications, academic meetings and seminars, communication and dissemination of results.

8. DISSEMINATION and USE of RESEARCH KNOWLEDGE

8.1 While the publication of peer reviewed journals (both international and local journals) is a good means of disseminating research findings there is a need for others to know of what projects

are underway and if there are any preliminary findings. We suggest the use of a website for the display of summaries of protocols and results so that a wide range of stakeholders can access these on the internet. We recognise that "Ownership" of data, confidentiality and competition are all issues with public dissemination of data and recommend that these issues are discussed and agreed on before research starts. We also suggest that dissemination of research results through PowerPoint presentations, CD Roms and other electronic means could be useful.

8.2 There is a need to express the results in terms which are understandable by policy makers in national government and international agencies. "Social marketing of nutrition results including the benefits in terms of health and development gains per money invested will be important.

8.3 There is a need to inform/inspire donors of the good value for money that nutrition interventions achieve. We suggest that a "Nutrition Donors Group" should be established locally for ICDDPB to encourage joint funding for Nutrition Research/Evaluation projects. We also suggest that ICDDPB remains in contact with government/agencies as they implement a programme/intervention which has resulted from research at ICDDR,B. This would be best as a contractual arrangement in which ICDDR,B researchers would guide and monitor the programme. We suggest that the role of ICDDR,B staff as "mentors" would be useful. Evaluation of this activity would itself be a useful piece of research.

8.4 There are many opportunities for increasing communication and research linkage with national universities with expertise in nutrition (especially in supporting Msc/PhD student research). We suggest that collaboration be increased.

8.5 While the general level of dissemination of knowledge is high and could become even higher if some of the above suggestions are implemented, we suggest that more objective indicators of how research knowledge has influenced policy and practice of national governments and international agencies are prepared. We suggest the formal development of a "Tracing research into Policy and Practice" be developed. This could be set up for a number of interventions such as zinc supplements in the management of malnourished children with diarrhoea. Such examples are likely to increase the reputation of the value of ICDDR,B nutrition research among the donor community. We suggest there is a particular need to make results available in "userfriendly" forms for policy makers and programme managers. This may require a more "fiscal" approach towards presentation in which "value for money" is emphasised.

9. In conclusion, we find the Nutrition Research Programme at ICDDR,B to be of a very high standard, competitive with nutrition centres of excellence elsewhere internationally. There are a few individual areas where research is less than excellent and suggestions are given for change. The academic strengths far outweigh the weaknesses and we suggest that the Board develops clear statements of its support of Nutrition Research as key within the overall mandate of research within ICDDR,B. We found the level of cooperation and provision of information to be very high during the visit and there was an extremely high level of awareness of the scope and potential for future Nutrition Research at ICDDR,B.

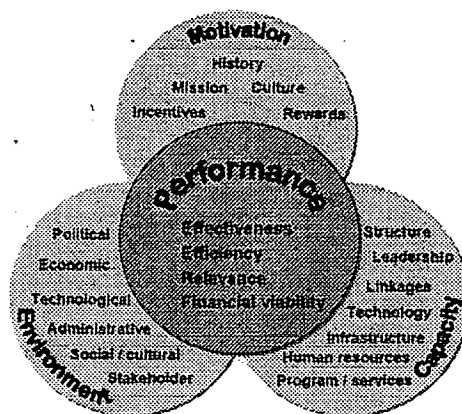
Organisation Review of the Nutrition Centre at ICDDR,B

ICDDR,B was established in Bangladesh in 1978. It was the successor to the Cholera Research Laboratory created in 1960 to study the epidemiology, treatment and prevention of cholera. The ICDDR,B is an independent, international, non-profit Organisation for research, education, training, clinical services and information dissemination.

Since its inception ICDDR,B has been engaged in various aspects of nutrition research¹. In the mid 90's, as a result of various discussions and reports, it decided to create a Nutrition Working Group whose purpose it was to bring together the various expertise of ICDDR,B in order to create synergies and new and better approaches to the work being done. Of importance, is that over the last few years nutrition research has re-emerged in ICDDR,B as an important area for scientific inquiry. The results of research conducted in nutrition provide; high quality research for the scientific community, protocols for health professionals, guidelines for agencies and policy makers, quality control information to task managers and a training site. In 1998, The World Bank provided a 3-year grant to support the development of a multidisciplinary centre of excellence within ICDDR,B. At that time the initiative was called the "Nutritional Centre of Excellence" (NC). The grant formalised this trend in the ICDDR,B and has heightened the status of nutrition research in ICDDR,B.

This is the middle of year 2 of the WB grant and the ICDDR,B has evolved its ideas about the Nutrition Centre (NC). As a result of the evolution of nutrition work, the Board of Trustees has asked for an independent assessment of the strengths and weaknesses of both the scientific as well as the organisational aspects of this work. In short the evolution of the nutrition work starts with individual researchers who did primarily discipline based nutrition research. It moves to a multidisciplinary Nutrition Working Group (NWG). The NWG becomes supported by the WB grant entitled Nutrition Centre of Excellence. Now, several years later the Nutrition Centre of Excellence has evolved into the Nutrition Centre (NC), housed within the CSD. This report focuses on the institutional and organisational aspects of the nutrition work at ICDDR,B. Using the framework below (Lusthaus et. Al. 1999), this report overviews the strengths and weaknesses of the Nutrition Centre's (NC) performance, and the major factors that are affecting performance namely, the context in which it is performing, the capacity of the NC to perform and the motivation of its staff. Also the report includes a short section on the sustainability of the NC. This report should be read alongside the scientific report that assesses the Nutrition Research Activities.

¹ At one time we were told there was a Division of Nutrition



This review took place in January 2000. The principal sources of data for the review were documents from ICDDR,B, interviews conducted with staff in Dhaka and site visits. Also, several key project stakeholders were interviewed in person during the mission to Bangladesh that took place January 25-28, 2000.

Performance

An Organisation or in this case an organisational unit's (NC) performance is made visible through the totality (quantity and quality) of the work generated in pursuit of its mission and goals. The outputs and their effects are the most discernible aspects of organisational performance. However, merely moving towards chosen targets is not adequate for an Organisation or one of its sub groups. In order for an Organisation to be considered "doing well", it must be able to balance its specific goal oriented achievements with 3 other performance variables. First it must achieve its result in an efficient way--the ability to indicate that it used its resources cost-effectively. Secondly, NC must do its work in a way that is perceived as relevant to key stakeholders. Finally, it must be able to sustain itself financially (financial viability).

For this review an expert panel assessed the scientific work of the Centre and looked at the work in relation to its use and affect on policy. The Scientific Review captures the team's assessment of the effectiveness of the NC in the area of science research. Less attention was put in the areas of training and service; the other aspects of the mission of the ICDDR,B.

With respect to other aspects of performance the following observations of the strengths and weaknesses are observed.

General observation about performance

The NC is a new organisational sub unit, which is emerging within ICDDR,B. As such it is at an early stage of its organisational evolution. In this context, the review team has judged its performance to be very good. Its strengths are its emphasis on quality research and its emerging research program. Clients indicated that the nutrition research work done is of high quality and with many potential applications. Clients of the work of the NC indicate that they would continue working with the unit. Furthermore the NC is being sought to do further work for these clients. While there is some data on research and publications

relatively little data exists on other areas of its mission-namely-research use, policy influence, training effects. Specific comments from the review team follow:

1. No systematic data exist within the NC, on its efficiency. Interviews with Centre indicate that perceive that they work hard and carry out their functions in a cost-effective way. Some stakeholders indicate that NC is more costly than National Institutions but provides a higher quality of service-thus find it difficult to make the judgement of efficiency. They perceive it as expensive. However, ICDDR,B is an upper end international Organisation. It is costly to run. What needs to be clear to those using and paying for ICDDR,B services is that their scientific thoroughness is one of their comparative advantages. This is an institutional trade-off.
2. ICDDR,B's new emphasis on nutrition research is timely and more relevant than ever, in light of the GOB's determination to address malnutrition in a massive way. Likewise, the World Bank and donors interviewed said the same thing.
3. While interview data indicates good relations with clients. the Centre performs no internal or external survey to assess its relevance to its stakeholders. Interview data with a limited number of internal and external stakeholders reveal that the Centre is perceived as a high quality scientific institution. However, external stakeholders interviewed indicate that they have several reservations about slow delivery of products, a concern for the use NC's scientific work, its impact beyond Bangladesh in Asia and so forth.
4. Finally with respect to financial viability, financial data reviewed with the Financial Officer indicates that the ICDDR,B has been able to stop its deficit and begin to improve its overall financial picture due to restructuring and downsizing. This should be of help to the evolution and ultimate sustainability of NC. Interviews with ERID indicate that there is a wide assortment of funders supporting the Nutrition theme and that there is on growing interest from donors in this area. This is evidenced by the evolution of funding. In 1995 seven donors contributed less than \$300,000 to nutrition. In 2000 it is projected that there will be almost 2 million expended. Interviewees indicated that the WB grant has been instrumental in leveraging the work of the NC. However, while some projections have been made about future project revenue streams, a careful analysis of the direct and indirect costs and cash flow p 'ection has not been done. This would provide a better picture of the financial viability prove

Recommendations

- That NC in conjunction with the overall ICDDR,B develop a set of performance measures linked to its objectives and strategy
- That NC on a yearly basis review its progress on these indicators
- That NC develops a basis for making judgements on its work either through benchmarking, year to year comparisons or criteria referenced analysis.

The Context within which the Centre is operating

An analysis of the context (external environment) is used to help understand the forces outside NC's boundaries that shape its work and performance. The external environment can provide both facilitating and inhibiting influences on its performance. For example, the agreement of the GOB with the World Bank on a sector wide approach to nutrition, opens up many opportunities for ICDDR,B generally and NC specifically. Multiple influences in the immediate or proximal environment form the boundaries within which NC operates. Specifically, it is ICDDR,B itself that is a major driving force in the work of NC.

However, the context includes other important considerations that influences and shape the way NC defines itself and how it articulates what is good and appropriate to achieve. Other external environmental forces include the professional scientific knowledge and community, the health and population situation in Bangladesh and globe (social, political, cultural, linguistic technological contexts), the stakeholder context, the competitor environment and so forth. It is important to note that NC both shapes and is shaped by the environment within which it operates (organisational-sub unit power).

The following observations of the strengths and weaknesses are observed.

General observations

NC has both shaped and been influenced by ICDDR,B. It has been influential in the re-organisation of ICDDR,B into themes and has begun to influence nutrition programming and policy in Bangladesh. At the same time these same forces are shaping the NC. For example the Board did not endorse the idea of a centre of excellence, proposed as part of the WB grant. Nor has ICDDR,B clarified the roles and authority of groups like NC (now known as themes).

While time did not allow for a full review the following observations are made.

5. The planned changes in ICDDR,B which have led to the creation of NC remain in flux and present a number of difficulties for the evolution of NC. These include:
 - Clarifying the functions and organisational status of themes within the centre
 - Dialoguing with the new Centre Director on possible future changes in the NC and other themes as articulated in the matrix structure proposed by the Mummert report.
6. ICDDR,B needs to decide whether it wants to play a leadership role in operations research to support the new nutrition initiatives of the Government in a similar way as it did for the family planning program in the 1970 and 1980s and in a similar way it did for health in the 1990s. While the NC has brought together the existing staff to offer services within its capacity, the present operational research capacity is fully booked. Thus a strategic decision is needed by ICDDR,B on the magnitude of the role it wants to play in the emerging Nutrition work in Bangladesh.
7. As indicated in its own documents, the context of Bangladesh and its own history of developing health and population data, makes Bangladesh a national and international

laboratory for those wishing to better understand Nutrition issues, practices and policies. This contextual benefit with out its costs.

8. Of interest to the reviewers was the difficulty NC staff and we have had in identifying appropriate national or international organisations with whom to compare the NC (competitor and industry analysis). In general, however. the NC competes against local University groups and NGOs for its contract research work. This competition supported by the donor community, has both positive and negative affects on NC.
9. An important contextual variable in looking at an Organisation is the characteristics of the labour market from which it is drawing staff. Internationally, it has a rich assortment of people and institutions from which to draw. It also provides a relatively competitive salary structure for senior international scientists. For local staff the pool from which to draw is much smaller as are the salaries². Thus recent turnover in NC while relatively small has proved difficult for them because in essence they are an important training ground for top-flight scientists. Our companion study makes some suggestions about increasing the pool of potential scientists from simply local contenders to regional. We endorse this.
10. Typically, in carrying out a strategic plan, organisations do a review of their internal and external environment. While the strategy developed by NC provides insight into the present internal situation of NC. it does not provide a situational analysis of the burden of malnutrition as they relate to issues that affect NC (e.g. labour market for scientists, market analysis, competitor analysis, sector context etc.). Such an analysis helps identify the comparative advantage and provides a rationale for the objectives set within the strategy.
11. Finally, it is interesting to note that many agencies have integrated Health, Nutrition and Population as central human development themes. The reviewers wanted to point out that ICDDR,B's logo omits reference to nutrition. This is a symbolic issue with respect to the importance of Nutrition in ICDDR,B.

Recommendations

- NC needs to include as part of strategic planning work an external situational analysis
- ICDDR,B should use its unique comparative strength in operations research, resources and lessons learned to support more fully, the new GOB initiative in nutrition. Because of the size of the need, this could include significantly increasing its operations research capacity among other skill areas.
- ICDDR,B should include within its own strategy clear direction about the role and function of the Nutrition Centre. Preliminary ideas are in the appendix.

NC's capacity and its affect on performance

Our approach to assessing organisational capacity entails reviewing eight interrelated areas. They are: strategic leadership, structure (operational and governance), management of human, financial and infrastructure resources, program/project management, process

² ICDDR,B is an important training ground for building local scientific capacity.

management, and inter-institutional linkages. This section reviews some of the strengths and weaknesses of some of the key capacity issues that are facing NC and the ICDDR,B. Again it should be understood, that Organisation and sub groups evolve through stages. The NC is at an early stage of its evolution and our remarks are made in this context.

General Comments

During the last 2 years, there has been significant progress-at an institutional level- in developing the NC out of the Nutrition Working Group. We have observed, within the NC, a group of highly dedicated individuals working together to create an increasingly important organisational unit. Dedicated leadership by many people has pushed the research, organisational and administrative aspects of this work. Through the World Bank Grant and support of the Centre, important capacities have been built and lessons learned. The strategy and work plan are important steps to the future. The workshop held to support this work created important synergies. Team meetings and substantive multidisciplinary scientific discussions have all been important to the evolution of this unit. While research in Nutrition has been going on since the inception of ICDDR,B and will go on in the future, it should be noted that even with the World Bank Grant the organisational aspects of this group is fragile and time taken to develop the NC competes with a heavy scientific agenda. Balancing the scientific research agenda with the need for Organisation and management of an emerging theme has been a "tightrope"-- difficult to walk.

Our specific observations are:

12. NC members have spent significant time and effort engaging in organising themselves and developing a strategic plan (to be completed) and work plan. Through its strategic planning process, the members of the NC have demonstrated commitment and dedication to creating a solid Nutrition theme within ICDDR,B. The process used and documents developed are a positive platform upon which key strategic issues for NC can and should be addressed. For example, what are the objectives of the NC? How should it be organised to meet its objectives? What are the strategies NC should use to meet its objectives? What are the human resource and financial strategies that support the theme? Do key internal and external stakeholders agree with the objectives, performance targets and strategies identified? However, as stated in the section on context, this work is fragile and is dependent on direction from the leadership in ICDDR,B.
13. The global nutrition research agenda, can now, in this globalised world be implemented anywhere. It is increasingly imperative for ICDDR,B to articulate its own special niche, through the NC. This needs to come about through a more focused agenda created by clarifying the ICDDR,B comparative advantage and clearer explanations of what is in and what ought not to be included in the work of ICDDR,B generally and the NC more specifically.
14. The NC began operating on the assumption that the Mummert report on the reorganisation of the ICDDR,B would be implemented within a relatively short period. They pushed ahead on both strategic and structural considerations. However, the structural changes envisioned in the report have not and probably will not occur. The

consultants do not see this as a problem rather, what is a concern is, the perception on the part of NC that they are not operating within a formal mandate or set of TORs from the Centre. They indicate the need for a more formal articulation-or at least the in place a process that can more formally articulate the role and function of themes putting generally, and NC more specifically. What is the purpose of a theme within ICDDR,B. What function is it supposed to serve? What authority is delegated to themes and theme leaders? While organising into formal work themes such as NCOA is not a major departure from past working groups, the expectations created by the Mummert report are high. As such it is important to clarify these points and send a clear signal to the NC that they will have a clear role and function within the Centre.

15. The workflow of an Organisation is an important determinant of its efficiency. We asked both inside and outside informants about the efficiency of workflow. In general, we found a process' that is typical in academic communities. For example, we were told that there were over 70 research proposals waiting for funders. This is both commendable and costly. As the NC becomes more market driven the efficiency of the workflow process needs to be examined and if required and appropriate modified to meet market demands for speed and efficiency.
16. The management of the programmatic theme along with the needed human and financial resources presents significant challenges to NC. As stated earlier, structurally, the role of the themes need more definition. Once this is done, NC will need to assess the level and skill profile of resources it will need to manage the theme's programme and the human and financial resources associated with the program. This will be true for the science side as well³. Interview data suggests⁴ that the themes (NC) are to be more market driven, more problems focused, more innovative and so forth. If this is the context, new management systems must be put in place to facilitate these desires. For example, interviewees argue that to be successful theme a more modern MIS, better financial tools and templates, and more skills in human resource management, an aligned incentive system and performance appraisal system and so forth. These ideas were supported by the Mummert report.
17. Part of the discussion we had with respect to contract research dealt with the costing of proposals. We were told that some donors do not accept an overhead charge, while other donors do not provide enough overheads to cover ICDDR,B costs. Our experience is that different donors have different rules and that personnel costing must match donor rules. This means that there might be different charge out rates for different donors in order that the ICDDR,B can recover all costs.
18. A feature of the theme approach, as represented by NC, is the ability of the theme to raise funds. This implies the possibility of engaging in more contract research and evaluation. This presents some dilemmas for the Centre, which needs to be clarified. In our interviews with clients and stakeholders some of the following issues emerged? Who owns the data of contract research? Who has the authority to supervise the

³ In our companion review, it suggests that more health and nutrition economists are needed. We concur and would add operational research as well. What this implies however, is a more careful human resource analysis of the scientific needs of NC.

⁴ The discussion we had about themes has led us to suggest the functions of themes, which underlie this section.

contractual obligations NC undertakes in contractual research e.g. getting products on time to clients. What happens when ICDDR,B researchers report on data before it is agreed to be the clients? Being more market driven will require research management.

19. An important organisational issue that most modern organisations need to address relates to issues of equity. ICDDR,B needs to insure some level of equity between local and international staff as well as between men and women. Several staff discussed these issues with us and indicated that the ICDDR,B generally and the NC specifically need to be proactive in their bridging the gender gap along with the gap between international and national staff. We were pleased to find out that the Board is already looking into these issues and will soon suggest an overall approach.
20. The management process skills (strategy development, planning, negotiating, project management, communicating etc.) required for the NC is considerably different than those required running a divisional structure as exists today. As discussed with the Director of ICDDR,B, it was clear that though some of the issues identified in the Mummert report and the suggested solutions resonated with the director, the more drastic overhaul of the ICDDR,B was not envisioned. While changes will be made, the reviewers got the impression that they would be more modest in scope. Nevertheless, the Director is solidly behind the development of themes generally and a nutrition theme more specifically. Discussion with him and others indicate a need for a more facilitative approach to managing themes. One in which scientists come together to discuss and create new ideas and possibilities. While not wanting to reorganise ICDDR,B the Director does want to stimulate scientific inquiry and the use of scientific finding in policy and practice. In our experience, to do this requires the development of institutional structures and processes that facilitate this conception. New ways of planning and monitoring. Leadership skills which focus on brainstorming, participation and synergy rather than isolation and authority. In this emerging world of NC, project, process and change management skills are more important than ever. These are not the core competencies of those hired as scientists in the Centre and often need to be developed on the job.
21. Finally, modern organisations or units such as NC require linkages and partnerships both within and outside the Organisation. NC has a wide assortment of these ventures, both in and out. In our interviews we were impressed with the many possibilities that are open to NC for joint work. For example, internally NC can work with the ERID to develop better contract management tools for PIs who are being asked to do more complicated contract research programs. Externally, they need to be able to select linkages that are more strategic. It is clear to the review team that the NC needs to create good relations with internal groups in order to access the resources they need from the divisions. This they have been doing. Similarly they have developed good linkages to support their academic work. However, it needs to develop more thoughtful ways to take their research to scale and into policy. Joint ventures (JCI, BRAC) have the potential to improve the NC program and policy impact in Bangladesh. As NC becomes clearer on its focus it will need to better assess and access linkages that bring the work of NC to use.

Recommendations

In this section, there are wide ranges of capacities that need to be developed as the NC matures. We were pleased to see the progress made over the last few years as a result of the WB grant. Because there is so much to do at the early stages of the evolution of an organisational group, the following are our priorities. Thus we recommend that

- NC is assigned core administrative resource to develop a more permanent secretariat (a structure) whose purpose it would be to support the evolution of the role and function of the NC within the secretariat. The review team thought that at this time the secretariat would consist of three persons (a program manager, and administrator and a secretary) however, a more careful analysis of needs should be done in light of the recently released WB sector study and other environmental forces in Bangladesh which is driving the nutrition agenda.
- NC as a matter of priority improves its ability to generate the managerial data needed to run a modern NC. Doing a full analysis of needs and reviewing the various options that could meet the needs should do this. We are very mindful of the complexity of developing a fully integrated and modern MIS and suggest care if moving in this direction.
- NC and ISDDR,B build its ability to manage large scale programmatic and contract research work. Imbedded in this recommendation is the need for the NC to develop an integrated "program" of research within a declared niche.
- NC develop clear objectives and practices when creating linkages and joint ventures which would be aligned with its need to get better results from the linkages in research, programming to scale, training and its policy agenda's.

Organisational motivation of NC and performance

All organisations and their sub units have particular personalities that either support or detract from its performance. The variables that are associated with the motivation of NC include the professional norms and values it embraces, history, its mission, vision and values, its internal norms and culture and the physical and psychic incentives it provides for the work of its staff.

General comments

As stated earlier, the review team was impressed with the dedication and hard work that has been put into the NC. We are aware that NC scientists and others, have given up precious personal time to help develop the managerial and administrative framework for the NC. This was despite the fact that they would obtain few institutional or career rewards. Our perspective is that the NC is at a crossroads with regards to staff. Senior ICDDR,B leadership need to provide the signs with respect to whether the work done to date is valued by the ICDDR,B and will lead to the type of NC envisaged by those working for it over the last few years. This is an issue of managing the expectations of a change process and needs to be carefully thought through.

Our specific observations are:

- At an institutional level we observed the pride of those working within the ICDDR,B generally and the NC particularly, which has emerged from a proud history of accomplishments and service. Organisational symbols reinforce this pride. This is another reason to consider including Nutrition along with the terms Population and Health in the logo. It is also the reason we think it is important for the Board to formally acknowledge the Nutrition Centre.
- As the ICDDR,B asks its scientists to be more involved in key nutritional issues in Bangladesh, its reward structure-both formal and informal, will need to shift to be congruent with what ICDDR,B wants from its staff.
- Interviewees indicated that the institutional bias toward rewarding refereed publications need to be balanced by the NC desire to for research use and policy influence. This potential shift in the norms and values of NC has significant implications for managing the human resources of the NC.
- The Mummert work has raised expectations of important changes to take place in the ICDDR,B generally and the NC more specifically. Managing and channelling the energy that emerged from this work will be a significant challenge for the ICDDR,B and NC leadership. The cost of not meeting these types of expectations are often staff departures.
- The uses of participatory processes for change have heightened the awareness of NC researchers on the importance of participatory processes in creating a culture of productive work. Participatory processes also take time. These processes at all levels of the Organisation have added to the positive ambience of the ICDDR,B generally and the NC more specifically. Such processes take skills so that the process does not overtake the content of the work. Discussion with the leadership of NC indicate that the ICDDR, B generally, but the NC more specifically need to develop the managerial skills associated with the management of change.

Sustainability of the work under Nutrition Centre of Excellence grant

Finally, as part of this review we were asked to make a judgement on the sustainability of the work undertaken under the World bank grant for building a Nutrition Centre of Excellence within ICDDR,B. For us sustainability of the work undertaken for the grant has two components. First, will the research undertaken have a sustaining impact? Second, will the organisational structure, processes and learning find its way into the on going work of ICDDR,B. In the first instance, the research carried out under the grant we feel that it is too early and not ready for such an assessment. Therefore, the following observations emerge from our understanding of the sustainability to the structure, processes and learning.

General comments

Over the past several years there has been an evolution in the focus ICDDR,B has placed on nutrition research. First the working group successfully brought together the various scientists and interested parties working on nutrition issues. Second the World Bank Grant came along and added synergy to the process. The Mummert report further pushed the nutrition group ahead in its thinking and organisational understanding. The NC is now at a crossroads. In the next few months it will see to what extent ICDDR,B Board and leadership will continue the institutional efforts started several years ago by the NWG and reinforced by the Bank's grant. To say the least, the institutionalisation of the Nutrition Centre is fragile at this point. As stated earlier, it needs to be given a clear institutional mandate and function. It needs to obtain administrative and staffing support to build for the future. It needs to continue to engage with the researchers in a participatory fashion and create processes for managing the work of the NC that resonate with the discipline based nature of ICDDR,B. While the institutional evolution still needs to be determined, our data suggests that nutrition research within the ICDDR,B will continue.

In this context we make the following observations:

- Interviews with ICDDR,B leadership indicates that they are ready to make a more formal statement with regards to the future structure of the NC and other themes identified. The question is to what extent will the ICDDR,B leadership provide a framework which gives enough resources, authority and incentives to sustain the interest of those who have taken leadership responsibilities for the NC.
- Interviews with the World Bank, donors and partners indicate their need and desire to support and work with ICDDR,B generally and the NC more specifically. All recognised the importance of bringing together the multidisciplinary talents of ICDDR,B and focusing these talents on key operational and policy research issues. From our interviews it appears that the demand for a more permanent NC exists as well as the potential for resources.
- Interviews with internal staff indicate that they need to see signs from ICDDR,B with regard to the direction ICDDR,B wants to go. In other words, is the development of the NC a serious organisational priority. If so there exists a cadre of staff willing to engage in sustaining the NC. Our sense is that we are at a Junction where decisions need to be made.
- Our discussions with staff about the processes used to create the momentum of the NC indicate, that there is a need to develop systems and skills to support the scientists in engaging in managerial responsibilities. As recommended earlier in this report this includes training, systems development and the provision of management and administrative support.

Concluding comments

We have spent about 31/2 days reviewing the institutional and organisational aspects of the Nutrition Centre. In general, our findings indicate that ICDDR,B has an opportunity to be significantly involved in malnutrition reduction in Bangladesh. Also we conclude, if ICDDR,B decides to do so-by putting both fiscal and psychic resources into the NC, ICDDR,B can make a significant contribution to both science and development. However, such a move has its risks. In our opinion, if ICDDR,B goes in this direction, it would be doing so by increasing its contract research. Managing contract research in a development context is difficult. Donors do not understand the research process and researchers have difficulty dealing with international Donors. Furthermore, donors and other funders have not fully understood the cost of good operational research. As such they often undervalue and cost quality work. We think it is important for ICDDR,B and the NC to remind people not only the cost of good work-but also the human and economic cost of doing the wrong development intervention. Finally, as NC ventures away from academic work into the world of practice, there are many organisational and administrative changes that need to be made to align the ICDDR,B structure and reward systems with this type of work. The decision is a very important one and we wish ICDDR,B and the NC good luck in making it.

To conclude we want to thank George Fuchs and his Nutrition Centre members and staff for their tremendous support during our visit. We hope that this report will contribute to their deliberations.

Appendix I: Performance indicators

- Results of -
- Scholarship-scholarly journals and reports
- Use
- Policy change and enforcement
- Program implementation and target group impact
- Client and stakeholder survey's compared over time
- Total NC project value-changes over time-targets over time
- Research \$ by researcher
- Research proposals pending at funders
- % of outputs provided on time
- % contribution to overall Centre OH
- Capital utilisation and contribution rates
- Number of new funders-funding mix balanced and dynamic
- Appropriate contribution to OH
- Revenue and cost comparisons over 1.00
- Stakeholders satisfaction reviews
- Employee surveys

Appendix II: Functions of the NC

- Developing a strategy and program
- Stimulate new creativity for solving key nutrition problems through multidisciplinary teams
- Create a safe place to discuss innovative ideas
- Share state of the art info
- Create conditions that support the marketing the work of the Nutrition Scientist
- Manage institutional data -output requirements-contract management, financial oversight- proposals out and success rates etc
- Create ways to leveraging funds
- Support fund raising aimed at the development of state of the art Capital development and equipment for scientists
- Create a learning opportunities that will improve both the scientific and management skills
- Integrate and co-ordinate nutrition work to improve the Centre as a whole
- Create new linkages and alliances that improve the performance of the NC

PROGRAMME COMMITTEE

Saturday 3 June 2000

Response from Centre

PROGRAMME COMMITTEE

Saturday 3 June 2000

Response from Centre

NWG documents to the Board of Trustees (June 2000)

1. Response of the Centre to the Reviewers' Report (I & II)
2. Report on Strategic Planning Retreat 2000-2004
3. NWG Strategic Plan 2000-2004
4. NWG Work Plan 200-2001
5. NWG Annual Report

PROGRAMME

JANUARY 20

EXTERNAL REVIEW – NUTRITION WORKING GROUP JANUARY 24-27, 2000

External Reviewers:

Prof. Andrew Tomkins, Institute of Child Health, London

Mr. Rolf Carriere, BOT Member

Prof. Nazmul Hassan, INFS

Mr. Charles Lusthaus, UNIVERSALIA, CANADA

January 24, 2000

- 8.15 a.m.** Pick up from Guest House
- 8.30 a.m.** Meeting with Dr. David Sack
Director, ICDDR,B (Director's Office)
- 9.00 a.m.-11.00 a.m.** Briefing by Prof. G. Fuchs (CSD Conf. Room)
Head, Nutrition Working Group
& Finalize Agenda
(Reviewers, NWG Core members)
- 11.00 a.m.** TEA
- 11.00 a.m – 12 noon** Meeting with individuals (to be determined)
- 12.00 noon.** LUNCH
CSD Conference Room
- 1.00 p.m.** Tour of Facilities
- | | | |
|---|------------|----------------|
| - | CRSC | Dr. G Fuchs |
| - | Library | Mr. SI Khan |
| - | CIS | Mr. Abu Sufian |
| - | Laboratory | Mr. M.A. Wahed |
- 3.00 p.m. – 3.30p.m.** Meeting with Dr. V.I. Mathan
Division Director, Laboratory Sciences Division
- 4.00 p.m.** TEA
- 4.15 p.m.** Leave for JSI for meeting with Mr. Peter Connell
- 4.30 p.m.** Meeting with Mr. Peter Connell
Level 2, Progress Towers
Road 23, Gulshan I
- Social:**
- 6.30 p.m.- 8.00 p.m.** Reception (ICDDR,B Guest House – No. SW(B),12,
Road 12, Gulshan I)
(Reviewers, NWG members, Director, Division Directors)

JANUARY 25

January 25, 2000

- 8.15 a.m. Pick up at Guest House
- 9.00 a.m. Presentation: **OPEN –NWG members** (CSD Conference Room)
NCOE Main Grant - Ms. Vanessa Brooks & Dr. Fuchs
(all reviewers)
- 10.00 a.m. – 11.a.m. Dr. D. Sack, Director, ICDDR,B
(Director's Conference Room)
(**Mr. Rolf Carriere & Dr. Charles Lusthaus**)
- 11.00 a.m. – 11.40 a.m. Meeting with Dr. G. Fuchs
(**Mr. Rolf Carriere & Dr. Charles Lusthaus**)
- 10.00 a.m.- 11.40 a.m. Scientific Presentations – **OPEN NWG members** (CSD Conference Room)(**Dr. Andrew Tomkins & Prof. N. Hassan**)
- NCOE Research Protocols:
- 10.00 a.m. – 10.20 a.m. 1. Cost effectiveness of nutritional intervention activities in rural Bangladesh - Mr. Shakil Ahmed
- 10.20 a.m. – 10.40 a.m. TEA BREAK
- 10.40 a.m. – 11.00 a.m. 2. Promotion and support of exclusive breastfeeding and lactational amenorrhoea method by peer counsellors in rural Bangladesh - Dr. Iqbal Kabir
- 11.00 a.m. – 11.20 a.m. 3. An action research into positive and negative deviance in child nutrition in rural Bangladesh - Dr. Ruchira **Tabassum**
- 11.20 a.m. – 11.40 a.m. 4. Effect of psychosocial stimulation on mental development of malnourished children in Community Nutrition Centres of BINP - Dr. Huda
- 11.40 a.m. – 12.30 p.m. BINP Presentation: Dr. S. K. Roy, Ms. Saskia Osendarp & Dr. Fuchs (**All Reviewers**)
- 12.30 p.m. – 3.00 p.m. Lunch (packed)
Nandipara Site visit (Dr. S. Sarker, Reviewers & Dr. Fuchs)
(**Dr. A. Tomkins, Mr. R. Carriere, Prof. N. Hassan**)

- 12.30 p.m. – 1.00 p.m. Lunch with Dr. Petra (**Mr. Lusthaus**)
- 1.00 p.m. – 1.30 p.m. Mr. Zaman, Chief Personnel Officer (**Mr. Lusthaus**)
(Mr. Zaman's Office)
- 1.30 p.m. – 2.00 p.m. Mr. J. Winkelmann & Mrs. S. Moin (**Mr. Lusthaus**)
(CFO's Office)
- 2.00 p.m. - 3.00 p.m. Ms. Vanessa Brooks (**Mr. Lusthaus**)
(ERID Office)
- 3.00 p.m. – 3.20 p.m. Mr. Abu Sufian – Computer Branch (**Mr. Lusthaus**)
(CIS Office)
- 3.20 p.m. – 3.45 p.m. Ms. Saskia Osendarp (**Mr. Lusthaus**)
(Saskia's Office)
- 3.45 p.m. - 4.00 p.m. TEA BREAK
- 3.00 p.m. - 3.45 p.m. Scientific Presentations: **OPEN NWG members** (CSD
Conference Room)
Management of Severely Malnourished Children
NRU Site Visit (ICDDR,B)
Shishu Hospital Trainees (Training Branch)
Dr. Tahmeed Ahmed
(**Dr. Tomkins, Mr. Carriere, Prof. Hassan**)
- 3.45 p.m. – 4.00 p.m. TEA BREAK
- 4.00 p.m. - 4.20 p.m. (**ALL REVIEWERS**)
Assessment of carotenoid bioavailability from plant sources -
Dr. K.M. Jamil (at study site)
- 4.20 p.m. - 4.40 p.m. Micronutrient Studies in Matlab (ongoing) - Dr. A-H Baqui
- 4.40 p.m. – 5.00 p.m. Zinc supplementation during pregnancy in Bangladeshi urban
poor and effect on infant growth and morbidity during the first
six months of life - Ms. Saskia Osendarp
- 5.00 p.m. - 5.20 p.m. HKI Home Gardening Programme Evaluation: Dr. G. Fuchs

Social

- 7.00 p.m. Dinner for Reviewers hosted by Dr. Fuchs (Residence)

RESCHEDULED MEETINGS

January 26, 2000

- 8.15 a.m. Pick up from Guest House
- 8.30 a.m. Scientific Presentations: **OPEN** (CSD Conf. Room)
- 8.30 a.m. – 9.00 a.m. Low Birth Weight (Dr. Lars Ake Persson & Dr. G. Fuchs)
- 9.00 a.m. – 9.20 a.m. Moderate Malnutrition – Dr. S.K. Roy
- 9.20 a.m. – 10.00 a.m. Community Based Management of Malnutrition –
Dr. Petra Osinski
- 10.15 a.m. TEA BREAK
- 10.30 a.m. Dr. George Fuchs
- 11.00 a.m. Dr. V.I. Mathan, Division Director, LSD
(in Dr. Mathan's Office)
- 12.15 Lunch and meeting with Dr. Barkat-e-Khuda
Division Director, HPED (in Conf. Room)
- 1.00 p.m. – 3.30 p.m. Mr. Brad Herbert, World Bank
Dr. Iqbal Kabir, World Bank
Dr. Yuki Shiroishi, UNICEF
Dr. Manzurul Karim, UNICEF
Mr. A.T.K.M. Ismail, Acting Project Dir., BINP
(Venue: The World Bank Office)
- 4.00 p.m. Meeting with Dr. Mushtaq Choudhury
BRAC

January 27, 1999

- 8.15 a.m. Pick up from Guest House
- 8.30 a.m. – 9.00 a.m. Mr. J. Winkelmann, Chief Finance Officer
Mrs. S. Moin
(Venue: CFO's Office)
- 9.15 a.m. – 10.00 a.m. Ms. Molly Mort, USAID
(at ICDDR,B)
- 11.00 a.m. Health Secretary
- 10.30 a.m. – 11.00 a.m. Mr. Wahabuzzaman, Chief Personnel Officer
(Venue: Mr. Zaman's Office)
- 11.15 a.m – 11.30 a.m. TEA BREAK
- 11.30 a.m. Meeting with Dr. George Fuchs (CSD Conf. Room)
- 12.30 p.m. Lunch and Wrap up meeting with Dr. David Sack and Dr.
George Fuchs (Director's Office)
- Afternoon: Free for report writing

NOTE:

Individual meetings with: Dr. Petra Osinski, Saskia Osendarp, Dr. S.K. Roy will be arranged when convenient for Dr. Lusthaus.

RESPONSE TO RECOMMENDATIONS BY THE EXTERNAL REVIEW OF THE ICDDR,B NUTRITION PROGRAMME

The following is a response to the observations and recommendations by the external review with reference to the report sections as presented by the reviewers.

1. Background

The Board of Trustees and the World Bank requested a review of the nutrition research activities performed at the ICDDR,B. We received presentations of the research, had discussions with the respective investigators, visited the laboratories and had personal interviews with key people outside ICDDR,B who are associated with incorporating the research findings into the development of policy and programmes. The quality of the preparation of documents and the programme, the presentations and meetings was high and we faced challenges in absorbing all the information so we may have made some errors in our assumptions. For this we apologise in advance.

Our report is presented in relation to:

- Research Strategy,
- Basic science,
- Intervention studies,
- Operational research;
- Dissemination of Findings.

Response: It is important to mention that only selected research studies were presented to the Review Team because time constraints did not allow for all Centre nutrition studies to be presented. An attempt was made to present to the Review Team studies as examples of the type of nutrition research being undertaken at the Centre. All World Bank NCOE grant-supported projects were in addition presented because the review served two purposes, 1) external review of ICDDR,B's nutrition research programme and 2) mid-term review specifically of the World Bank NCOE grant.

2. Research Strategy

2.1 We noted that the Nutrition Working Group (NWG) had a Consultation on Research Strategy in September 1999. This had resulted in the Production of a Work Plan for 2000-2001. We also noted that a Research Strategy is in preparation for the next 5 years.

The Work Plan included key areas: -

- Prevention and management of severe and moderate child malnutrition

- *Improvement of the nutritional status of women during adolescence and pregnancy and develop interventions aimed at reducing the prevalence of low birth weight*
- *Further definition of the relationship between infectious disease and nutrition - Study the interrelation between nutrition and child growth and development - Improve infant and child feeding practices.*

2.2 *We noted that the research plans, as they were laid out in the document, appeared without reference to other recent national strategies and we suggest that they are related to broader frameworks of Nutrition such as outlined in "Bangladesh: Breaking the Malnutrition Barrier - key to Development" (December 1999, from the Health Nutrition and population Unit, South Asia Region, The World Bank). Particular emphasis should be given to evaluation of the preventive types of programmes. We recognise the need to focus on a few specific areas and not to become overstretched, however we see the advantage of establishing projects which evaluate how "new knowledge" is incorporated within the less highly supervised environments of service type programmes. Dialogue with a Nutrition Research Network of Donors in Bangladesh will be especially helpful in this regard - not only for defining research objectives but for better access to research funds.*

Response: With ICDDR,B being an international research institution based in Bangladesh, research plans and priorities were and are developed in the context of national and as well as global priorities including those of UNICEF, WHO, and the WB. An attempt is also made to include what are perceived to be "cutting-edge" scientific issues in addition to programmatic issues as factors in defining the Centre's priorities, specifically to develop and test potential new strategies. Certain Centre staff participating in the Centre's Nutrition Strategic and Work plans have also participated in nutrition research priority-setting workshops/meetings for the GoB and several UN Agencies (country and global offices), international donors, Global Forum for Health Research, etc. Direct reference to these strengthens the Centre's own plans and we will explore how to incorporate these more systematically.

We appreciate that research relating to prevention should be emphasised in the Centre's programme. We believe, however, that case management and therapeutic strategy research are complementary and ultimately we aim for the appropriate mix. The Centre's research strategy and work plan already includes a major commitment to research on the prevention of low birth weight, including evaluation of the proposed comprehensive programmes. Equally significant commitments to research on the prevention of malnutrition were presented under the heading "To improve infant and child feeding practises", including e.g., research on complementary feeding. But perhaps the heading used did not make this sufficiently clear.

Major components of the Centre's nutrition research activities are performed within the context of service programmes and the results therefore are directly linked to programmes. While we have adopted the "Lifecycle" approach as our research conceptual framework (Annex 1), our operational framework relates significantly to deliberate strategic linkages including with the GoB and NGO (specifically UFHP) health systems (Annex 2). Some of the reasons for this are to facilitate incorporation of "new knowledge" into service programmes and to translate our research into policy at the national level. Examples include the Nutrition Working Group's planned

study on combined interventions to reduce low birth weight, which is evaluating both efficacy and effectiveness of combined interventions. While the main outcome measure is birth weight, maternal nutrition issues and infant outcome in the first 18 months will also be evaluated. The project will be implemented within a BINP¹ programme area and utilises the BINP programme activities (food supplementation). The project is therefore closely linked to the major national effort to reduce low birth weight and maternal and infant malnutrition. Similarly, "The "health systems approach to severe malnutrition" project will be performed within an NGO health care system operating in the Dhaka slums and integrated with existing referral networks of Dhaka Shishu hospital and other NGOs (e.g., Radda Barnen clinic). This project is co-funded by the World Bank and the BINP with expectations that results will be applicable to the BINP/NNP² in addition to gaining new knowledge that has international relevance.

Dialogue with donor organisations for nutrition research in Bangladesh is currently only indirectly supported through the NWG's Nutrition Seminar series, but could usefully be intensified and focussed towards the objectives recommended by the reviewers, especially with donors such as the World Bank and USAID that are directly supporting ICDDR,B nutrition research.

2.3 We recognise that the inclusion of more operational research will create some conflict for the career advancement of nutrition scientists, many of whom will be under pressure to publish in scientific journals. We suggest that care is given to create an environment where critical evaluation of nutrition related service programmes is rigorously performed. Such data is sadly lacking in most service programmes and in our view is appropriate for high quality research in ICDDR,B. We recognise that this is not a problem that is confined to ICDDR,B. Many other organisations are "scored" on their scientific citation impact factors rather than whether they have had an influence on policy or service programmes.

Response: The Centre is moving increasingly into nutrition operations research and programme evaluation. We agree that, while not necessarily easily done, the Centre should have mechanisms to ensure high quality and also should strive for appropriate rewards to scientists for research that leads to influence on policy or service programmes as compared to publication in scientific journals. The Centre's scientific ranking criteria are currently under review. Meanwhile, the Centre has given increased importance to operations research in recent years as evident from its partial cost support of BINP operations research and the high profile of HPED within ICDDR,B.

2.4 Overall we agree that the present nutrition research priorities are appropriate for immediate implementation but suspect that further research planning will open up new areas, especially operational research which will aid the implementation of programmes aiming to improve Nutrition of the population. We also suggest that research will soon be necessary on Nutrition/HIV, Toxicity (especially where malnutrition might increase susceptibility to harm). We also suggest that Food

¹ Bangladesh Integrated Nutrition Programme

² National Nutrition Programme

fortification/dietary promotion of particularly micronutrient rich diets may also be suitable for inclusion in intervention assessments.

Response: Some of the suggested new research areas are already under discussions within the Centre. We are interested and prepared to develop the Nutrition/HIV area, particularly since it would relate well to certain of the Centre's traditional areas (e.g., diarrhoeal disease, malnutrition), however rates of HIV in Bangladesh are too low at present for such a programme. Promotion of micronutrient-rich diets and dietary diversification is currently undertaken on a limited scale. Expansion could be considered subject to donor interest and availability of resources. Regardless, we feel it is important to identify our research topics according to criteria such as applied to development of our recent Nutrition Strategic Plan, i.e. relationship to ICDDR,B's mission, comparative advantage, relationship to core competencies and relevance to key target groups for ICDDR,B research.

2.5 We discussed potential areas for nutrition research, which were not in the priority list. These included:

- *Toxicity (arsenic, lead)*
- *Foetal programming*
- *Obesity*
- *Adult diet related disease*
- *Nutrition in Societies in Transition*
- *in-house Stable Isotope facility*
- *Human genome related work*
- *Gene nutrient gene interactions*
- *Energy and protein metabolism*
- *HIV/nutrition relationships*
- *Food fortification as a means to improve micronutrient status*
- *Genetically modified foods*
- *Operational research into programmes*

We suggest that these are included in future research strategy deliberations.

Response: Some of the suggested nutrition research priorities are already planned. Work related to foetal programming is on the agenda for the LBW programme through the Lifecycle approach. Exploratory work on malnutrition/arsenic is also on the agenda. Other suggested projects such as the human genome-related work and gene nutrient gene interaction, while important, may be less urgent in our context and require such substantial additional capacities that it is felt to be lower on the priority list. We also feel an acute need for the Centre's nutrition programme to be focused in order to be productive. As described in the response to section 2.4 above, we try to use specified criteria to identify the research areas. However, we take from the Reviewer Team's recommendation that, although the Nutrition

Research Strategic Plan covers a five year period, we must ensure a mechanism that allows for some review and modification in the interval between Plans.

3. Basic science

The projects presented were an example of a portfolio of projects underway. The three consisted of: -

- Assessment of Carotenoid Bioavailability using new stable isotope methodologies
- The potential role of helicobacter in the development of gastritis/decreased gastric acid secretion and impaired iron absorption
- Psychomotor development including new measures of mental development, behaviour temperament, cognition and scholastic achievement
- Nutritional Biochemistry laboratory

3.1 Strengths - these are well-designed studies and a particular strength is the development and use of novel technologies which will advance understanding of bioavailability, nutrient/brain/development interactions and the physiology of iron absorption. These methodologies will be useful for development of novel research on a range of studies on bioavailability of micronutrients. Several new analytical instruments have been procured (new HPLC, graphite AASP, auto analysers, haematological analysers). Well-trained staff are a particular asset with high levels of quality control on international standards. Perhaps the greatest strength of the basic science research is the ability to link with "cutting edge" research groups internationally who are attracted to work with ICDDR,B because of many aspects of the local research environment. These include the ability to perform carefully controlled metabolic studies (in this regards the clinical facilities are invaluable), community cooperation, experience in running field trials, laboratory resources, communications, fast set up time, critical mass of nutritional scientists, trained and highly motivated staff, data analysis and IT facilities, physical security and safety. There are many other logistic benefits of working at ICDDR,B.

3.2 Weaknesses - difficult to be sure where some new basic science information will lead in terms of further studies or implementation. We suggest that all proposals ask "how will the results of this study influence policies or programmes?" "who will use this information?" The Laboratory is not dust free, benching is old and difficult to keep clean; there is need for improved A/C and careful dust controlling ventilation. There is little space for visiting scientists such as researchers from nutrition departments in Bangladesh and neighbouring countries. Equipment is just sufficient for present work but would be useful to have gas Chromatograph and additional HPLC for increase in future studies.

Response: We appreciate and will implement the suggestion that all proposals should reflect on potential relevance to policy or programmes and end-users of the results so as to facilitate translation of the Centre's work into policy and programmes. The Centre values its responsibility to provide services to policy makers and programmers and recognises that programmatic relevance should be a primary criterion in prioritising the Centre's nutrition research. However, we also recognise

that not all studies will or should have direct policy or programme implications, particularly those types of studies that are "basic". A focus entirely on direct policy- or programme-relevance could come at the expense of the development of new understanding of mechanisms and of innovative nutrition strategies. The nutritional biochemical laboratory has submitted a request to the Centre for funds to address the issues relating to ventilation. An additional HPLC was purchased with NCOE funds in the fall of last year and the laboratory estimates that its current needs are met.

4. Intervention Studies

These included: -

- *Exclusive breast feeding*
- *Positive and negative deviance studies*
- *Micronutrient supplementation of mothers and birth weight and morbidity of their children*
- *Micronutrient supplementation of children with diarrhoea*
- *Multiple micronutrient supplementation and birth weight*
- *Evaluation of the WHO method for the management of severe PEM*
- *Psycho-motor stimulation in the management of malnourished children*
- *Community based management of malnutrition in urban areas.*

4.1 Strengths - *well reviewed, good epidemiological study designs, indicators well defined and objectives well set. As most are randomised controlled trials (RCT) they will be able to overcome some of the difficulties with differences in baseline population or individual micronutrient status. Nearly all the projects addressed extremely important issues related to child survival and development.*

4.2 Weaknesses - *Health and Nutrition Economic Analysis is somewhat weak and in many cases absent. More cost-effective analyses are needed for each intervention study to enable "information based decisions" by policy planners who need to decide on whether to implement supplementation regimes. There are no studies on dietary diversification interventions and their impact on nutritional status. ICDDR,B is now in a position to evaluate such interventions (small fish/fruits/ carotene rich foods) and assess their impact on nutritional status. As dietary inadequacies and malnutrition is so widespread in Bangladesh it seems advisable to investigate these as well as micronutrient mixes. If the research findings are encouraging (i.e. appropriately correct the nutrient deficiency and found to be cost effective), this will add a new dimension towards addressing the problem of hunger and malnutrition of the country.*

In some of the research projects (e.g. positive/negative deviance) it was difficult to assess what the resulting intervention should be. Some are extremely complex (e.g. community based approach for nutrition rehabilitation, which rely on the provision of increased number of clinical services including Paediatric beds).

Response: While health economics analysis is currently applied to several of our projects, we agree with the Review Team that there is a need and scope to apply this to more of our projects. The existing demand for health economics input seems to exceed current capacity within the Centre, and to follow-through with this recommendation may require increasing capacity. The Centre has been recruiting to fill an additional health economics post in HPED, however a suitable candidate has not yet been identified. Health economics capacity in the Centre will be reviewed to determine whether or not it is adequate to meet the increasing needs. Related research linkages are also being explored with the International Food Policy Research Institute (IFPRI).

The Centre is engaged in some dietary diversification research (e.g., impact evaluation of a national home gardening programme to improve vitamin A status) and there is scope to increase this further. The Centre has nevertheless currently only a finite research capacity and feels a need to maintain a focus to our research agenda. This capacity gap and research topic need was also identified during the Centre's most recent Nutrition Strategic Planning Retreat. We are aiming to increase capacity in this area, especially in behaviour-change interventions. An internationally reputed medical anthropologist has joined us recently as a staff member and has become active in nutrition research. Another mechanism to increase behaviour-change research capacity is through collaboration and, in this regard, the Centre has recently established linkages to such programmes at Cornell University and University of California at Davis as well as the London School of Hygiene and the Institute of Child Health, London.

Micronutrient research, including on micronutrient mixes, is a prominent component of the current Centre's work plan. The project to which the reviewers refer, community-based management of severe malnutrition, does not rely on the provision of increased numbers of paediatric beds, nor on increased numbers and staffing of clinics. Rather, it is aimed to, among several objectives, improve management by using existing resources in a health systems approach.

5. BINP supported Operation Research

There are 14 BINP supported projects at the different stages of implementation. Three projects were presented as an example: -

- *the cost effectiveness of nutritional interventions*
- *effective means to address moderate malnutrition*
- *effectiveness of management of severe PEM [sic].*

5.1 Strengths

Considerable amount of information will come from the research, strong commitment to sharing the knowledge, well-designed studies

5.3 Weaknesses

In the absence of information on different aspects of the cost of the three projects presented it is difficult to know how replicable these projects will be. We suggest

that all operational projects be subjected to Nutrition/Health Economic Analysis. As BINP is aimed to elicit behavioural change it is important to assess any change carefully both in the short and long term using carefully performed Behavioural Science techniques. We suggest that more attention be given to studies of the growth patterns in relation to the development of malnutrition and how such patterns can lead to earlier recognition and improved management. As it is often claimed, on virtually no evidence, that food supplementation projects lead to a decrease in self-sufficiency and social development activities it is important to measure the "social toxicity" of food intervention programmes. This could be done in association with key groups who are experienced in running Social Development Programmes (e.g. BRAC).

Response: We are not sure health economics analysis are warranted in "all" operations research studies but fully agree with the spirit of the recommendation. We will therefore explore the possibility to amend the Centre's Research Review Committee (RRC) protocol format for intervention studies in order to show whether and how issues of cost analysis, sustainability and/or cost effectiveness have been considered or whether these are proposed to be done later.

We appreciate that more research studies of growth patterns would enhance our understanding of the development of malnutrition and present means to intervene before children reach a severe state. Information is being collected about when the onset of malnutrition generally occurs, what signs and symptoms of malnutrition parents recognise and what are some of the health seeking behaviours related to malnutrition in the urban slums as part of the "community-based management of severe malnutrition" project. The possibility of including early recognition and management of growth faltering a priority in the upcoming National Nutrition Programme (NNP) Operations Research activity will also be explored. The caution regarding potential adverse effects of food supplementation is appreciated. A first line of investigation would address whether or not planned supplements are true supplements or a replacement for household foods. This was the focus of one of the initial BINP OR studies where no strong evidence of a "substitution" effect emerged. A recently completed ICDDR,B study under BINP OR shows that family resources could be successfully used by rural mothers to significantly improve the nutrition status of the moderately malnourished children with the help of specific education on diet, feeding and other caring practices.

Further definition with appropriate partners of the benefits and negatives of food supplementation will be important.

6. Support and Management of the Nutrition Research Programme and the NWG

We noted a number of obstacles faced by scientists wishing to prepare and submit research proposals. These included: -

- a) Short Notice of deadlines*
- b) Need for external scientific review and ethical review*
- c) Difficulty in obtaining costings*
- d) Divisional Director has to support*

- e) *No obvious list of deadlines for applications to be submitted*
- f) *Risk of overlap between applications being prepared at the same time*

6.1 *We noted that there was no central Management Information System (MIS) capable of monitoring and informing on the number of grants that were currently in progress. We suggest that an MIS database is established which would provide costings, and timetable of deadlines together with information on referees comments on recent applications. This could be established on a website or intranet.*

Response: The obstacles listed above imply some generalisations that we find a bit unclear. However, each has been reviewed with the aim of identifying mechanisms to address or improve. Increased communication between the Nutrition Working Group and ERID to better define roles regarding dissemination of deadlines will be pursued. Short deadlines are occasionally required within the constraints as determined by donors and/or the availability of funds. While the need for Scientific/ethical review is evident, the time for proposals to go through the RRC/ERC process was reviewed a few years ago and was found to be similar that of US-based institutions and of shorter duration than commonly perceived by many scientists within the Centre. The Nutrition Working Group with the help of external consultants is currently developing a nutrition database which will make it possible to track related information and identify specific "bottle-necks" on an ongoing basis. One of the roles of the Division Directors is to ensure quality of proposals and in certain cases may result in lack of support for specific proposals. This issue also relates directly to the discussion of the "matrix" organisation as described in the "Organisation Review". With regards to research funds under the NCOE grant, these were allocated after scientific review and scoring according to criteria by a committee of senior scientists. We believe the risk of overlap of similar applications would largely be addressed with a cross-division Nutrition group as initially envisioned in the Centre's reorganisation plan, however roles and responsibilities of themes and relative roles and responsibilities of themes vs. divisions remain to be fully defined (see "Organisation Review").

We strongly agree that a central or integrated MIS is critical for increased efficiency of planning of activities and utilisation of human and financial resources. This has been discussed within the Centre for some time. While this has not yet been realised, the Nutrition group has proceeded with the development of a database on nutrition projects and related HR capacities which we anticipate will be of great help, but no substitute for an integrated MIS.

7. Staff Development

7.1 *It was reported that it was difficult to identify sufficient high-flying candidates for doctoral training. We suggest that efforts to identify younger scientists for doctoral training be established. We suggest an increased role for the development of nutrition training for young researchers from elsewhere in the Region. We suggest the establishment of a cadre of nutrition research training post for non-Bangladeshi nationals (e.g. Nepal, Bhutan, and India). This could be set up collaboratively with local Bangladeshi universities with skills and expertise in nutrition. We also suggest that, once a Research Strategy is agreed, a training programme should be*

established identifying the numbers of staff that will require training in different skills (e.g. specialist MSc. courses, PhDs, post doctoral training).

Response: In response to training opportunities under the Fogarty Nutrition Training Grant, it was difficult to identify young investigators in large numbers. For this reason, certain of the usual selection criteria were relaxed to increase the pool of candidates, but perhaps also increase the risk of trainees not returning to the Centre upon completion. The establishment of such a training scheme as recommended would be highly appropriate but might be difficult since staff development is compartmentalised as a divisional responsibility. Means to finance this approach will also need to be identified. We agree fully that a nutrition training strategy is needed and this will be undertaken.

7.2 The problem of keeping existing high quality staff was noted. We have no easy answers here but suggest that efforts be made to ensure that staff return after doctoral training and provide necessary incentives to those who perform well. The possibility of financial bonding could be explored but more detailed appraisal of the problem is recommended. We noted the high quality of academic leadership shown by senior staff, especially the Leader of the Nutrition Research Theme. More detailed consideration of the management of the theme is considered elsewhere but we suggest that there is a need for a Secretariat to co-ordinate the work of the Group, especially from the perspective of co-ordinating preparation and submission of applications, academic meetings and seminars, communication and dissemination of results.

Response: Efforts will be ongoing to increase the chances of retaining Centre after doctoral training. The Centre currently has a financial bond system for this purpose, but this needs further review in a training strategy plan to explore means to optimise this approach based on a careful examination of underlying causes. Scope for increased recognition and use of new knowledge will likewise be explored, as will incentives for exceptional performance. The recommendation for a Secretariat for the reasons described by the Review Team is very welcomed and this will also be pursued.

8. DISSEMINATION and USE of RESEARCH KNOWLEDGE

8.1 While the publication of peer reviewed journals (both international and local journals) is a good means of disseminating research findings there is a need for others to know of what projects are underway and if there are any preliminary findings. We suggest the use of a website for the display of summaries of protocols and results so that a wide range of stakeholders can access these on the Internet. We recognise that "Ownership" of data, confidentiality and competition are all issues with public dissemination of data and recommend that these issues are discussed and agreed on before research starts. We also suggest that dissemination of research results through PowerPoint presentations, CD ROMs and other electronic means could be useful.

8.2 There is a need to express the results in terms that are understandable by policy makers in national government and international agencies. "Social marketing of nutrition results including the benefits in terms of health and development gains per money invested will be important.

8.3 *There is a need to inform/inspire donors of the good value for money that nutrition interventions achieve. We suggest that a "Nutrition Donors Group" should be established locally for ICDDR,B to encourage joint funding for Nutrition Research/Evaluation projects. We also suggest that ICDDR,B remains in contact with government/agencies as they implement a programme/intervention which has resulted from research at ICDDR,B. This would be best as a contractual arrangement in which ICDDR,B researchers would guide and monitor the programme. We suggest that the role of ICDDR,B staff as "mentors" would be useful. Evaluation of this activity would itself be a useful piece of research.*

8.4 *There are many opportunities for increasing communication and research linkage with national universities with expertise in nutrition (especially in supporting MSc/PhD student research). We suggest that collaboration be increased.*

8.5 *While the general level of dissemination of knowledge is high and could become even higher if some of the above suggestions are implemented, we suggest that more objective indicators of how research knowledge has influenced policy and practice of national governments and international agencies are prepared. We suggest the formal development of a "Tracing research into Policy and Practice" be developed. This could be set up for a number of interventions such as zinc supplements in the management of malnourished children with diarrhoea. Such examples are likely to increase the reputation of the value of ICDDR,B nutrition research among the donor community. We suggest there is a particular need to make results available in "user-friendly" forms for policy makers and programme managers. This may require a more "fiscal" approach towards presentation in which "value for money" is emphasised.*

Response: We find these recommendations very interesting, constructive, and timely and fully appreciate their rationale. The recommendations of the Review Team highlight what we believe to be the need for the Centre's Nutrition group to further strengthen its strategic plan for dissemination and monitoring of utilisation of research activities including Tracing research (Translating Research Into Policy and Practice, a.k.a. TRIP analysis). We agree fully with the recommendation to maximise the Internet to disseminate such information and steps have already been taken. The dissemination through PowerPoint presentations, CD ROMs, etc. will need further review to define the audience, value, and selection of materials for dissemination.

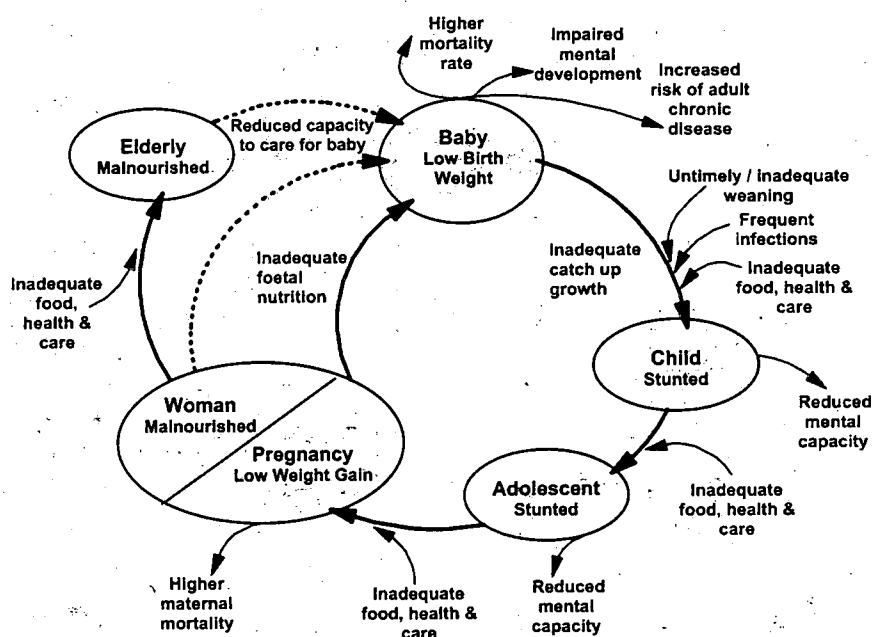
The means to best disseminate or "market" our research results will be explored. Since the time of the External Nutrition Review, one individual was identified to assist in developing such materials, including a 1999 "annual report" for this purpose.

The recommendation to increase linkages with national universities is consistent with our recent activities which, due to time constraints, may not have been fully described to the Review Team. There are many such examples of these linkages including PhD training linkage between the University of Dhaka and ICDDR,B, research linkages with INFS, BRAC among others. We always welcome and will continue to look for additional opportunities for this. The concept of a Nutrition Donors Support Group is creative and will be explored further to define members and TOR of such a group. Composition might include (i) all current bilateral donors to NWG projects, (ii) World Bank and UNICEF, WHO (Geneva/SEARO), (iii) potential bilateral donors, and (iv) GoB.

9. *In conclusion, we find the Nutrition Research Programme at ICDDR,B to be of a very high standard, competitive with nutrition centres of excellence elsewhere internationally. There are a few individual areas where research is less than excellent and suggestions are given for change. The academic strengths far outweigh the weaknesses and we suggest that the Board develops clear statements of its support of Nutrition Research as key within the overall mandate of research within ICDDR,B. We found the level of co-operation and provision of information to be very high during the visit and there was an extremely high level of awareness of the scope and potential for future Nutrition Research at ICDDR,B.*

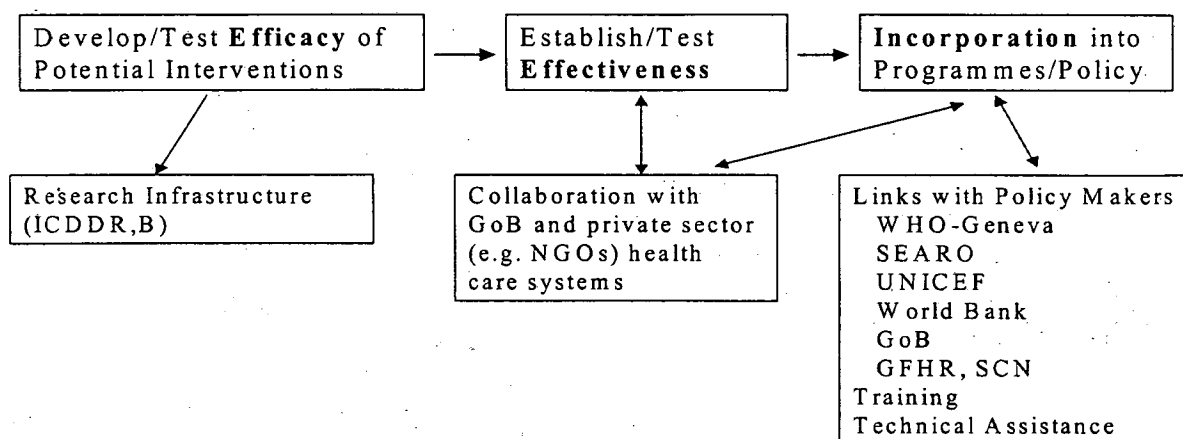
Annex 1

Lifecycle: the causal links



Poor nutrition starts *in utero* and extends, particularly in girls and women, throughout the lifecycle. This amplifies the risks to the individual's health but also increases the likelihood of damage to future generations through further foetal malnutrition and the limited ability to cope with stresses within the family and in the provision of childcare.

Annex 2

KEY CONCEPTUAL PRINCIPLES

ICDDR,B RESPONSE TO RECOMMENDATIONS OF THE EXTERNAL ORGANISATION REVIEW OF THE NUTRITION CENTRE AT ICDDR,B

ICDDR,B was established in Bangladesh in 1978. It was the successor to the Cholera Research Laboratory created in 1960 to study the epidemiology, treatment and prevention of cholera. The ICDDR,B is an independent, international, non-profit Organisation for research, education, training, clinical services and information dissemination.

Since its inception ICDDR,B has been engaged in various aspects of nutrition research¹. In the mid 90's, as a result of various discussions and reports, it decided to create a Nutrition Working Group whose purpose it was to bring together the various expertise of ICDDR,B in order to create synergies and new and better approaches to the work being done. Of importance, is that over the last few years nutrition research has re-emerged in ICDDR,B as an important area for scientific inquiry. The results of research conducted in nutrition provide; high quality research for the scientific community, protocols for health professionals, guidelines for agencies and policy makers, quality control information to task managers and a training site. In 1998, The World Bank provided a 3-year grant to support the development of a multidisciplinary centre of excellence within ICDDR,B. At that time the initiative was called the "Nutritional Centre of Excellence" (NC). The grant formalised this trend in the ICDDR,B and has heightened the status of nutrition research in ICDDR,B.

This is the middle of year 2 of the WB grant and the ICDDR,B has evolved its ideas about the Nutrition Centre (NC). As a result of the evolution of nutrition work, the Board of Trustees has asked for an independent assessment of the strengths and weaknesses of both the scientific as well as the organisational aspects of this work. In short the evolution of the nutrition work starts with individual researchers who did primarily discipline based nutrition research. It moves to a multidisciplinary Nutrition Working Group (NWG). The NWG becomes supported by the WB grant entitled Nutrition Centre of Excellence. Now, several years later the Nutrition Centre of Excellence has evolved into the Nutrition Centre (NC), housed within the CSD. This report focuses on the institutional and organisational aspects of the nutrition work at ICDDR,B. Using the framework below (Lusthaus et. Al. 1999), this report overviews the strengths and weaknesses of the Nutrition Centre's (NC) performance, and the major factors that are affecting performance namely, the context in which it is performing, the capacity of the NC to perform and the motivation of its staff. Also the report includes a short section on the sustainability of the NC. This report should be read alongside the scientific report that assesses the Nutrition Research Activities.

This review took place in January 2000. The principal sources of data for the review were documents from ICDDR,B, interviews conducted with staff in Dhaka and site visits. Also,

¹ At one time we were told there was a Division of Nutrition

several key project stakeholders were interviewed in person during the mission to Bangladesh that took place January 25-28, 2000.

Performance

An Organisation or in this case an organisational unit's (NC) performance is made visible through the totality (quantity and quality) of the work generated in pursuit of its mission and goals. The outputs and their effects are the most discernible aspects of organisational performance. However, merely moving towards chosen targets is not adequate for an Organisation or one of its sub groups. In order for an Organisation to be considered "doing well", it must be able to balance its specific goal oriented achievements with 3 other performance variables. First it must achieve its result in an efficient way--the ability to indicate that it used its resources cost-effectively. Secondly, NC must do its work in a way that is perceived as relevant to key stakeholders. Finally, it must be able to sustain itself financially (financial viability).

For this review an expert panel assessed the scientific work of the Centre and looked at the work in relation to its use and affect on policy. The Scientific Review captures the team's assessment of the effectiveness of the NC in the area of science research. Less attention was put in the areas of training and service; the other aspects of the mission of the ICDDR,B.

With respect to other aspects of performance the following observations of the strengths and weaknesses are observed.

General observation about performance

The NC is a new organisational sub unit, which is emerging within ICDDR,B. As such it is at an early stage of its organisational evolution. In this context, the review team has judged its performance to be very good. Its strengths are its emphasis on quality research and its emerging research program. Clients indicated that the nutrition research work done is of high quality and with many potential applications. Clients of the work of the NC indicate that they would continue working with the unit. Furthermore the NC is being sought to do further work for these clients. While there is some data on research and publications relatively little data exists on other areas of its mission-namely-research use, policy influence, training effects. Specific comments from the review team follow:

1. No systematic data exist within the NC, on its efficiency. Interviews with Centre indicate that perceive that they work hard and carry out their functions in a cost-effective way. Some stakeholders indicate that NC is more costly than National Institutions but provides a higher quality of service-thus find it difficult to make the judgment of efficiency. They perceive it as expensive. However, ICDDR,B is an upper end international Organisation. It is costly to run. What needs to be clear to those using and paying for ICDDR,B services is that their scientific thoroughness is one of their comparative advantages. This is an institutional trade-off.

2. *ICDDR,B's new emphasis on nutrition research is timely and more relevant than ever, in light of the GOB's determination to address malnutrition in a massive way. Likewise, the World Bank and donors interviewed said the same thing.*
3. *While interview data indicates good relations with clients, the Centre performs no internal or external survey to assess its relevance to its stakeholders. Interview data with a limited number of internal and external stakeholders reveal that the Centre is perceived as a high quality scientific institution. However, external stakeholders interviewed indicate that they have several reservations about slow delivery of products, a concern for the use NC's scientific work, its impact beyond Bangladesh in Asia and so forth.*
4. *Finally with respect to financial viability, financial data reviewed with the Financial Officer indicates that the ICDDR,B has been able to stop its deficit and begin to improve its overall financial picture due to restructuring and downsizing. This should be of help to the evolution and ultimate sustainability of NC. Interviews with ERID indicate that there is a wide assortment of funders supporting the Nutrition theme and that there is on growing interest from donors in this area. This is evidenced by the evolution of funding. In 1995 seven donors contributed less than \$300,000 to nutrition. In 2000 it is projected that there will be almost 2 million expended. Interviewees indicated that the WB grant has been instrumental in leveraging the work of the NC. However, while some projections have been made about future project revenue streams, a careful analysis of the direct and indirect costs and cash flow projection has not been done. This would provide a better picture of the financial viability prove*

Recommendations

- *That NC in conjunction with the overall ICDDR,B develop a set of performance measures linked to its objectives and strategy*
- *That NC on a yearly basis review its progress on these indicators*
- *That NC develops a basis for making judgments on its work either through-benchmarking, year to year comparisons or criteria referenced analysis.*

Response: The development of performance measures corresponds to one of the "next steps" remaining after the NWG Strategic Planning Retreat and needs to be done. We similarly recognize the importance of assessment based on benchmarks, year to year comparison, or criteria referenced analysis. We feel the NWG and the Centre as a whole will require methodological advice and consultant input to achieve this. Toward this end, plan to approach a donor for additional support for this activity.

The Context within which the Centre is operating

An analysis of the context (external environment) is used to help understand the forces outside NC's boundaries that shape its work and performance. The external environment can provide both facilitating and inhibiting influences on its performance. For example, the agreement of the GOB with the World Bank on a sector wide approach to nutrition, opens up many opportunities for ICDDR,B generally and NC specifically. Multiple influences in the immediate

or proximal environment form the boundaries within which NC operates. Specifically, it is ICDDR,B itself that is a major driving force in the work of NC. However, the context includes other important considerations that influence and shape the way NC defines itself and how it articulates what is good and appropriate to achieve. Other external environmental forces include the professional scientific knowledge and community, the health and population situation in Bangladesh and globe (social, political, cultural, linguistic technological contexts), the stakeholder context, the competitor environment and so forth. It is important to note that NC both shapes and is shaped by the environment within which it operates (organisational-sub unit power).

The following observations of the strengths and weaknesses are observed.

General observations

NC has both shaped and been influenced by ICDDR,B. It has been influential in the re-organisation of ICDDR,B into themes and has begun to influence nutrition programming and policy in Bangladesh. At the same time these same forces are shaping the NC. For example the Board did not endorse the idea of a centre of excellence, proposed as part of the WB grant. Nor has ICDDR,B clarified the roles and authority of groups like NC (now known as themes).

While time did not allow for a full review the following observations are made.

5. The planned changes in ICDDR,B which have led to the creation of NC remain in flux and present a number of difficulties for the evolution of NC. These include:
 - Clarifying the functions and organisational status of themes within the centre
 - Dialoguing with the new Centre Director on possible future changes in the NC and other themes as articulated in the matrix structure proposed by the Mummert report.
6. ICDDR,B needs to decide whether it wants to play a leadership role in operations research to support the new nutrition initiatives of the Government in a similar way as it did for the family planning program in the 1970 and 1980s and in a similar way it did for health in the 1990s. While the NC has brought together the existing staff to offer services within its capacity, the present operational research capacity is fully booked. Thus a strategic decision is needed by ICDDR,B on the magnitude of the role it wants to play in the emerging Nutrition work in Bangladesh.
7. As indicated in its own documents, the context of Bangladesh and its own history of developing health and population data, makes Bangladesh a national and international laboratory for those wishing to better understand Nutrition issues, practices and policies. This contextual benefit without its costs.
8. Of interest to the reviewers was the difficulty NC staff and we have had in identifying appropriate national or international organisations with whom to compare the NC (competitor and industry analysis). In general, however, the NC competes against local University groups and NGOs for its contract research work. This competition supported by the donor community, has both positive and negative effects on NC.

9. *An important contextual variable in looking at an Organisation is the characteristics of the labour market from which it is drawing staff. Internationally, it has a rich assortment of people and institutions from which to draw. It also provides a relatively competitive salary structure for senior international scientists. For local staff the pool from which to draw is much smaller as are the salaries². Thus recent turnover in NC while relatively small has proved difficult for them because in essence they are an important training ground for top-flight scientists. Our companion study makes some suggestions about increasing the pool of potential scientists from simply local contenders to regional. We endorse this.*
10. *Typically, in carrying out a strategic plan, organisations do a review of their internal and external environment. While the strategy developed by NC provides insight into the present internal situation of NC, it does not provide a situational analysis of the burden of malnutrition as they relate to issues that affect NC (e.g. labour market for scientists, market analysis, competitor analysis, sector context etc.). Such an analysis helps identify the comparative advantage and provides a rationale for the objectives set within the strategy.*
10. *Finally, it is interesting to note that many agencies have integrated Health, Nutrition and Population as central human development themes. The reviewers wanted to point out that ICDDR,B's logo omits reference to nutrition. This is a symbolic issue with respect to the importance of Nutrition in ICDDR,B.*

Recommendations

- NC needs to include as part of strategic planning work an external situational analysis
- ICDDR,B should use its unique comparative strength in operations research, resources and lessons learned to support more fully, the new GOB initiative in nutrition. Because of the size of the need, this could include significantly increasing its operations research capacity among other skill areas.
- ICDDR,B should include within its own strategy clear direction about the role and function of the Nutrition Centre. Preliminary ideas are in the appendix.

Response: The Nutrition Strategic Plan took the sector context of the NWG's work into account to an appreciable extent. We used a combination of formal and informal processes of situational analysis to define goals and feasibility of the strategic plan and have included factors such as an assessment of our capacity in the particular topic area, donor demand for research, service, and/or training for the topic, etc. "Labor market and competitor analysis" would have been difficult due to lack of information. We appreciate, however, that more reflection is in order on the "market" for the NWG's products and that the NWG needs to factor into its planning more explicitly the expressed interest of the Centre's current and potential donors and other stakeholders.

The Centre has been identified as the sole source for Operations Research of the upcoming National Nutrition Programme (NNP) to begin in July of 2000. While this was

² ICDDR,B is an important training ground for building local scientific capacity.

taken up in part during the Strategic and Work Plan retreat, the NWG proposes an immediate review of the Centre's capacity and human resources needs to implement this and other potential related future projects. In doing so, the NWG would, however, need to be functionally supported by yet-to-be-developed modalities of joint human resource planning, development, and personnel administration, which would replace the current exclusive authority of Centre divisions in human resource utilization.

Recommendations regarding the role and function of ICDDR,B's "Nutrition Centre" relate to the Centre-wide policy issues and cannot therefore be addressed by the NWG alone. Based on the experience and issues encountered by the NWG to date as the "prototype" theme identified by the Board of Trustees in the Centre's reorganization, the NWG feels a sense of urgency at this point in time that the strategy for its (and that of other themes) role and function be defined. Some preliminary discussion has taken place over the past several months within the Centre, but related functional as well as structural implications remained to be resolved and related policies proposed. Ideally, the BOT and Centre Director will address these issues soon.

NC's capacity and its affect on performance

Our approach to assessing organisational capacity entails reviewing eight interrelated areas. They are: strategic leadership, structure (operational and governance), management of human, financial and infrastructure resources, program/project management, process management, and inter-institutional linkages. This section reviews some of the strengths and weaknesses of some of the key capacity issues that are facing NC and the ICDDR,B. Again it should be understood, that Organisation and sub groups evolve through stages. The NC is at an early stage of its evolution and our remarks are made in this context.

General Comments

During the last 2 years, there has been significant progress-at an institutional level- in developing the NC out of the Nutrition Working Group. We have observed, within the NC, a group of highly dedicated individuals working together to create an increasingly important organisational unit. Dedicated leadership by many people has pushed the research, organisational and administrative aspects of this work. Through the World Bank Grant and support of the Centre, important capacities have been built and lessons learned. The strategy and work plan are important steps to the future. The workshop held to support this work created important synergies. Team meetings and substantive multidisciplinary scientific discussions have all been important to the evolution of this unit. While research in Nutrition has been going on since the inception of ICDDR,B and will go on in the future, it should be noted that even with the World Bank Grant the organisational-aspects of this group is fragile and time taken to develop the NC competes with a heavy scientific agenda. Balancing the scientific research agenda with the need for Organisation and management of an emerging theme has been a "tightrope"-- difficult to walk.

Our specific observations are:

12. *NC members have spent significant time and effort engaging in organising themselves and developing a strategic plan (to be completed) and work plan. Through its strategic planning process, the members of the NC have demonstrated commitment and dedication to creating a solid Nutrition theme within ICDDR,B. The process used and documents developed are a positive platform upon which key strategic issues for NC can and should be addressed. For example, what are the objectives of the NC? How should it be organised to meet its objectives? What are the strategies NC should use to meet its objectives? What are the human resource and financial strategies that support the theme? Do key internal and external stakeholders agree with the objectives, performance targets and strategies identified? However, as stated in the section on context, this work is fragile and is dependent on direction from the leadership in ICDDR,B.*
13. *The global nutrition research agenda, can now, in this globalised world be implemented anywhere. It is increasingly imperative for ICDDR,B to articulate its own special niche, through the NC. This needs to come about through a more focused agenda created by clarifying the ICDDR,B comparative advantage and clearer explanations of what is in and what ought not to be included in the work of ICDDR,B generally and the NC more specifically.*
14. *The NC began operating on the assumption that the Mummert report on the reorganisation of the ICDDR,B would be implemented within a relatively short period. They pushed ahead on both strategic and structural considerations. However, the structural changes envisioned in the report have not and probably will not occur. The consultants do not see this as a problem rather, what is a concern is, the perception on the part of NC that they are not operating within a formal mandate or set of TORs from the Centre. They indicate the need for a more formal articulation-or at least the in place a process that can more formally articulate the role and function of themes putting generally, and NC more specifically. What is the purpose of a theme within ICDDR,B. What function is it supposed to serve? What authority is delegated to themes and theme leaders? While organising into formal work themes such as NCOA is not a major departure from past working groups, the expectations created by the Mummert report are high. As such it is important to clarify these points and send a clear signal to the NC that they will have a clear role and function within the Centre.*
15. *The workflow of an Organisation is an important determinant of its efficiency. We asked both inside and outside informants about the efficiency of workflow. In general, we found a process' that is typical in academic communities. For example, we were told that there were over 70 research proposals waiting for funders. This is both commendable and costly. As the NC becomes more market driven the efficiency of the workflow process needs to be examined and if required and appropriate modified to meet market demands for speed and efficiency.*
16. *The management of the programmatic theme along with the needed human and financial resources presents significant challenges to NC. As stated earlier, structurally, the role of the themes need more definition. Once this is done, NC will need to assess the level and skill profile of resources it will need to manage the theme's programme and the human*

and financial resources associated with the program. This will be true for the science side as well³. Interview data suggests⁴ that the themes (NC) are to be more market driven, more problems focused, more innovative and so forth. If this is the context, new management systems must be put in place to facilitate these desires. For example, interviewees argue that to be successful theme a more modern MIS, better financial tools and templates, and more skills in human resource management, an aligned incentive system and performance appraisal system and so forth. These ideas were supported by the Mummert report.

17. Part of the discussion we had with respect to contract research dealt with the costing of proposals. We were told that some donors do not accept an overhead charge, while other donors do not provide enough overheads to cover ICDDR,B costs. Our experience is that different donors have different rules and that personnel costing must match donor rules. This means that there might be different charge out rates for different donors in order that the ICDDR,B can recover all costs.
18. A feature of the theme approach, as represented by NC, is the ability of the theme to raise funds. This implies the possibility of engaging in more contract research and evaluation. This presents some dilemmas for the Centre, which needs to be clarified. In our interviews with clients and stakeholders some of the following issues emerged? Who owns the data of contract research? Who has the authority to supervise the contractual obligations NC undertakes in contractual research e.g. getting products on time to clients. What happens when ICDDR,B researchers report on data before it is agreed to be the clients? Being more market driven will require research management.
19. An important organisational issue that most modern organisations need to address relates to issues of equity. ICDDR,B needs to insure some level of equity between local and international staff as well as between men and women. Several staff discussed these issues with us and indicated that the ICDDR,B generally and the NC specifically need to be proactive in their bridging the gender gap along with the gap between international and national staff. We were pleased to find out that the Board is already looking into these issues and will soon suggest an overall approach.
20. The management process skills (strategy development, planning, negotiating, project management, communicating etc.) required for the NC is considerably different than those required running a divisional structure as exists today. As discussed with the Director of ICDDR,B, it was clear that though some of the issues identified in the Mummert report and the suggested solutions resonated with the director, the more drastic overhaul of the ICDDR,B was not envisioned. While changes will be made, the reviewers got the impression that they would be more modest in scope. Nevertheless, the Director is solidly behind the development of themes generally and a nutrition theme more specifically. Discussion with him and others indicate a need for a more facilitative approach to

³ In our companion review, it suggests that more health and nutrition economists are needed. We concur and would add operational research as well. What this implies however, is a more careful human resource analysis of the scientific needs of NC.

⁴ The discussion we had about themes has led us to suggest the functions of themes, which underlie this section.

managing themes. One in which scientists come together to discuss and create new ideas and possibilities. While not wanting to reorganise ICDDR,B the Director does want to stimulate scientific inquiry and the use of scientific findings in policy and practice. In our experience, to do this requires the development of institutional structures and processes that facilitate this conception. New ways of planning and monitoring. Leadership skills which focus on brainstorming, participation and synergy rather than isolation and authority. In this emerging world of NC, project, process and change management skills are more important than ever. These are not the core competencies of those hired as scientists in the Centre and often need to be developed on the job.

21. Finally, modern organisations or units such as NC require linkages and partnerships both within and outside the Organisation. NC has a wide assortment of these ventures, both in and out. In our interviews we were impressed with the many possibilities that are open to NC for joint work. For example, internally NC can work with the ERID to develop better contract management tools for PIs who are being asked to do more complicated contract research programs. Externally, they need to be able to select linkages that are more strategic. It is clear to the review team that the NC needs to create good relations with internal groups in order to access the resources they need from the divisions. This they have been doing. Similarly they have developed good linkages to support their academic work. However, it needs to develop more thoughtful ways to take their research to scale and into policy. Joint ventures (JCI, BRAC) have the potential to improve the NC program and policy impact in Bangladesh. As NC becomes clearer on its focus it will need to better assess and access linkages that bring the work of NC to use.

Recommendations

In this section, there are wide ranges of capacities that need to be developed as the NC matures. We were pleased to see the progress made over the last few years as a result of the WB grant. Because there is so much to do at the early stages of the evolution of an organisational group, the following are our priorities. Thus we recommend that

- NC is assigned core administrative resource to develop a more permanent secretariat (a structure) whose purpose it would be to support the evolution of the role and function of the NC within the secretariat. The review team thought that at this time the secretariat would consist of three persons (a program manager, and administrator and a secretary) however, a more careful analysis of needs should be done in light of the recently released WB sector study and other environmental forces in Bangladesh which is driving the nutrition agenda.
- NC as a matter of priority improves its ability to generate the managerial data needed to run a modern NC. Doing a full analysis of needs and reviewing the various options that could meet the needs should do this. We are very mindful of the complexity of developing a fully integrated and modern MIS and suggest care if moving in this direction.
- NC and ISDDR,B build its ability to manage large scale programmatic and contract research work. Imbedded in this recommendation is the need for the NC to develop an integrated "program" of research within a declared niche.

- *NC develop clear objectives and practices when creating linkages and joint ventures which would be aligned with its need to get better results from the linkages in research, programming to scale, training and its policy agenda's.*

Response: Many fundamental issues relating to the function and structure of the nutrition theme as the prototype for the Centre's thematic approach and within the context of existing division structure are underscored by the Reviewers. We agree that the Nutrition Centre is "fragile" until the nature of the restructuring is fully defined. In this regard, it is the feeling of the Nutrition Working Group that there has already been a natural return back to individual divisions from Centre-wide theme in decision-making of research planning, priorities, and agenda because the division structure is the "default" structure in the absence of a defined and endorsed alternative.

In particular, we consider the recommendation for a more permanent secretariat for the NWG as appropriate although it would also be important to beforehand delineate intended functions, responsibilities, and authority of the Theme groups vis-à-vis Divisions. Core terms of references of a Programme Manager (internationally or nationally recruited) and one nationally recruited Administrator/Budget Analyst have been developed.

In addition, the Nutrition Centre has since defined the format for a nutrition research database to assist in management of its activities and with the intent that the database model so developed can potentially be adopted by other themes and ultimately integrated into the also contemplated Centre-wide integrated MIS.

We agree that a plan should be developed for incorporating additional management skills (human resources, contract and project management, etc.) through specific training or acquired through hiring for Nutrition and other themes.

The reviewers have also made observations and suggestions pertaining to the gender gap and gap between international and national staff. While these are issues to be addressed at the Centre rather than Nutrition theme level, it seems clear that the gap between international and national staff is too large and that these differences will become increasingly apparent as Bangladeshi staff are given the opportunity to work elsewhere. Concern that the Centre's salaries and opportunities for promotion for national staff are not sufficiently competitive has been discussed within the Centre for the past several months. This along with the related need to review procedures for staff appraisal, merit pay increases, etc. were in large part the basis for the Human Resources Agenda and work plan described and endorsed by the BOT in its most recent meetings. At the last BOT meeting a subcommittee was established to review means to measure and achieve gender equity in the Centre.

Fundamental objectives and practices for linkages and joint ventures have been developed and are described in the "Key Conceptual Principles" figure of Annex 1. Tracking the Centre's work with a view towards more systematic translation of its research into programmes has been included among the TOR for the proposed NWG Programme Manager post.

Organisational motivation of NC and performance

All organisations and their sub units have particular personalities that either support or detract from its performance. The variables that are associated with the motivation of NC include the professional norms and values it embraces, history, its mission, vision and values, its internal norms and culture and the physical and psychic incentives it provides for the work of its staff.

General comments

As stated earlier, the review team was impressed with the dedication and hard work that has been put into the NC. We are aware that NC scientists and others have given up precious personal time to help develop the managerial and administrative framework for the NC. This was despite the fact that they would obtain few institutional or career rewards. Our perspective is that the NC is at a crossroads with regards to staff. Senior ICDDR,B leadership need to provide the signs with respect to whether the work done to date is valued by the ICDDR,B and will lead to the type of NC envisaged by those working for it over the last few years. This is an issue of managing the expectations of a change process and needs to be carefully thought through.

Our specific observations are:

- *At an institutional level we observed the pride of those working within the ICDDR,B generally and the NC particularly, which has emerged from a proud history of accomplishments and service. Organisational symbols reinforce this pride. This is another reason to consider including Nutrition along with the terms Population and Health in the logo. It is also the reason we think it is important for the Board to formally acknowledge the Nutrition Centre.*
- *As the ICDDR,B asks its scientists to be more involved in key nutritional issues in Bangladesh, its reward structure-both formal and informal, will need to shift to be congruent with what ICDDR,B wants from its staff.*
- *Interviewees indicated that the institutional bias toward rewarding refereed publications need to be balanced by the NC desire to for research use and policy influence. This potential shift in the norms and values of NC has significant implications for managing the human resources of the NC.*
- *The Mummert work has raised expectations of important changes to take place in the ICDDR,B generally and the NC more specifically. Managing and channeling the energy that emerged from this work will be a significant challenge for the ICDDR,B and NC leadership. The cost of not meeting these types of expectations are often staff departures.*
- *The uses of participatory processes for change have heightened the awareness of NC researchers on the importance of participatory processes in creating a culture of productive work. Participatory processes also take time. These processes at all levels of the Organisation have added to the positive ambience of the ICDDR,B generally and the NC more specifically. Such processes take skills so that the process does not overtake the content of the work. Discussion with the leadership of NC indicate that the ICDDR, B*

generally. but the NC more specifically need to develop the managerial skills associated with the management of change.

Sustainability of the work under Nutrition Centre of Excellence grant

Finally, as part of this review we were asked to make a judgment on the sustainability of the work undertaken under the World bank grant for building a Nutrition Centre of Excellence within ICDDR,B. For us sustainability of the work undertaken for the grant has two components. First, will the research undertaken have a sustaining impact? Second, will the organisational structure, processes and learning find its way into the on going work of ICDDR,B. In the first instance, the research carried out under the grant we feel that it is too early and not ready for such an assessment. Therefore, the following observations emerge from our understanding of the sustainability to the structure, processes and learning.

General comments

Over the past several years there has been an evolution in the focus ICDDR,B has placed on nutrition research. First the working group successfully brought together the various scientists and interested parties working on nutrition issues. Second the World Bank Grant came along and added synergy to the process. The Mummert report further pushed the nutrition group ahead in its thinking and organisational understanding. The NC is now at a crossroads. In the next few months it will see to what extent ICDDR,B Board and leadership will continue the institutional efforts started several years ago by the NWG and reinforced by the Bank's grant. To say the least, the institutionalisation of the Nutrition Centre is fragile at this point. As stated earlier, it needs to be given a clear institutional mandate and function. It needs to obtain administrative and staffing support to build for the future. It needs to continue to engage with the researchers in a participatory fashion and create processes for managing the work of the NC that resonate with the discipline based nature of ICDDR,B. While the institutional evolution still needs to be determined, our data suggests that nutrition research within the ICDDR,B will continue.

In this context we make the following observations:

- *Interviews with ICDDR,B leadership indicates that they are ready to make a more formal statement with regards to the future structure of the NC and other themes identified. The question is to what extent will the ICDDR,B leadership provide a framework which gives enough resources, authority and incentives to sustain the interest of those who have taken leadership responsibilities for the NC.*
- *Interviews with the World Bank, donors and partners indicate their need and desire to support and work with ICDDR,B generally and the NC more specifically. All recognised the importance of bringing together the multidisciplinary talents of ICDDR,B and focusing these talents on key operational and policy research issues. From our interviews it appears that the demand for a more permanent NC exists as well as the potential for resources.*
- *Interviews with internal staff indicate that they need to see signs from ICDDR,B with regard to the direction ICDDR,B wants to go. In other words, is the development of the*

NC a serious organisational priority. If so there exists a cadre of staff willing to engage in sustaining the NC. Our sense is that we are at a Junction where decisions need to be made.

- Our discussions with staff about the processes used to create the momentum of the NC indicate, that there is a need to develop systems and skills to support the scientists in engaging in managerial responsibilities. As recommended earlier in this report this includes training, systems development and the provision of management and administrative support.

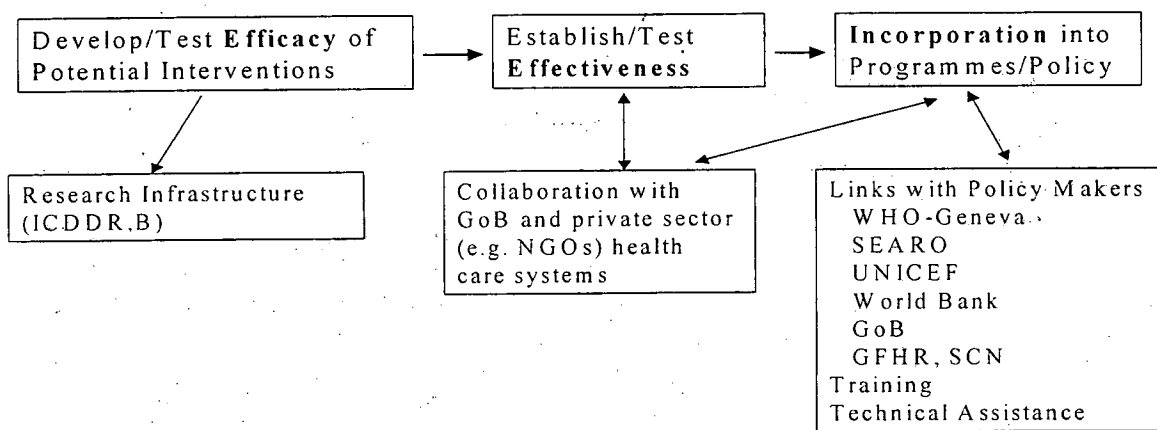
Concluding comments

We have spent about 31/2 days reviewing the institutional and organisational aspects of the Nutrition Centre. In general, our findings indicate that ICDDR,B has an opportunity to be significantly involved in malnutrition reduction in Bangladesh. Also we conclude, if ICDDR,B decides to do so-by putting both fiscal and psychic resources into the NC, ICDDR,B can make a significant contribution to both science and development. However, such a move has its risks. In our opinion, if ICDDR, B goes in this direction, it would be doing so by increasing its contract research. Managing contract research in a development context is difficult. Donors do not understand the research process and researchers have difficulty dealing with international Donors. Furthermore, donors and other funders have not fully understood the cost of good operational research. As such they often undervalue and cost quality work. We think it is important for ICDDR,B and the NC to remind people not only the cost of good work-but also the human and economic cost of doing the wrong development intervention. Finally, as NC ventures away from academic work into the world of practice, there are many organisational and administrative changes that need to be made to align the ICDDR,B structure and reward systems with this type of work. The decision is a very important one and we wish ICDDR,B and the NC good luck in making it.

To conclude we want to thank George Fuchs and his Nutrition Centre members and staff for their tremendous support during our visit. We hope that this report will contribute to their deliberations.

Annex 2

KEY CONCEPTUAL PRINCIPLES



**Report on a Strategic Planning Retreat on ICDDR,B's
Nutrition Activities, 2000 to 2004**

BRAC (Mohakhali) Conference Centre, 27-28 September 1999

Facilitator: Mr. Peter J. Connell, Chief-of-Party, UFHP
Rapporteur: Dr. Petra Osinski, Project Management Consultant, ICDDR,B

**International Centre for Diarrhoeal Disease Research, Bangladesh
Nutrition Working Group/Nutrition Centre of Excellence**

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Report on a Strategic Planning Retreat Nutrition Working Group/Nutrition Centre of Excellence, ICDDR, B

27 to 28 September 1999
BRAC (Mohakhali) Conference Centre

Introduction: Objectives and Structure of the Retreat

1. Objectives

The Retreat started with a presentation by the Retreat Facilitator, Mr. Peter J. Connell, giving an overview about the objectives, agenda and broad schedules for the two-day Retreat. In line with common practice for strategic planning, the objective of the Retreat was to develop the longer-term "big picture" for ICDDR,B's nutrition activities. This would necessarily imply a longer-term time frame than the two-year Work Plan that would be outlined on Day 2 of the Retreat. After considerable thought, a five-year time frame had been decided upon before the Retreat. The Retreat participants would, therefore, consider where ICDDR,B's Nutrition Working Group wanted to be by the end of the year 2004 and how to get there.

2. Structure of the Retreat

The Retreat would follow a commonly used conceptual structure for strategic planning exercises, starting with a *situation analysis*, and proceeding from there to the *development of a vision, development of strategies and action plans*, and consideration of *monitoring and evaluation* issues (Annexure 1). Development of action plans would include the development of an outline Work Plan of ICDDR,B Nutrition Activities, 2000-2001, which would take into account existing commitments, but would seek to mesh existing commitments with strategies and thrusts agreed upon during the Retreat. Day 1 of the Retreat would therefore be devoted to the situation analysis, development of a vision and related "thrusts", and elaboration of related strategies and action plans. Day 2 would start with a review of existing commitments, and proceed from there to a reconciliation of existing commitments with strategies, more detailed work planning and—time permitting—consideration of monitoring and evaluation issues (Annexure 2).

In the context of the present Retreat, the *situation analysis* was intended to establish a consensus about the facts of current nutrition activities at ICDDR,B. The *vision* would outline what the Nutrition Working Group wants to achieve and wants to look like by the year 2004. The *strategies and action plans* would add more specificity on how to

achieve the vision, while keeping the broader picture and longer-term timeframe in mind. Under *monitoring and evaluation*, Retreat participants would then consider how to monitor progress in achieving the aims of the vision.

The Introductory Session concluded with an introduction of the Retreat participants (Annexure 3)

A. Analysing the Current Situation

1. Achievements To-date: Historical Overview

The *situation analysis* of ICDDR,B's nutrition activities consisted of overview presentations of achievements to-date by Prof. George Fuchs, Head of ICDDR,B's Nutrition Working Group and by Dr. S. K. Roy, followed by a plenary discussion of the "segmentation" of ICDDR,B's nutrition activities, and an analysis of strengths and weaknesses. It was explained that "segmentation" means the partitioning of the Centre's overall nutrition activities into clusters that prove useful for planning purposes.

Having been introduced by Prof. George Fuchs, *Dr. S. K. Roy* then gave a *historical overview* of the Centre's achievements in nutrition to-date. Dr. Roy referred to the impressive list of nutrition research protocols in progress that was included in one of the background documents for the Retreat (Nutrition Research at ICDDR,B, 1999 -2000) and to the Centre's current strategic position within the region, among international organisations, and within the research community, as evident from the numerous collaborating institutions listed and from ICDDR,B's impressive assembly of nutrition researchers with their extensive research interests.

This continued the proud tradition of ICDDR,B's former Nutrition Division that had existed until 1985, with pioneering work done by Dr. Lincoln Chen. The discontinuation of this division had resulted in some loss of focus, reduced fund allocations and less leadership. Good work had nevertheless continued, especially in the Centre's Clinical Sciences and Public Health Sciences Divisions. This work had been focused on micronutrients, child nutrition and the interrelationship of nutrition and infections, but had to some extent been driven by individual interests and the agenda of international organisations.

In 1995, the Board of Trustees had, in view of the universally recognised importance of nutrition, re-emphasised ICDDR,B's role in nutrition research and this had, with Dr. Demissie Habte's support, led to the institution of ICDDR,B's Nutrition Working Group (NWG). Prof. Fuchs, Director of ICDDR,B's Clinical Sciences Division, provided

leadership to the NWG and promoted its interdisciplinary character. Related achievements were documented in the Bibliography of Nutrition Research at ICDDR,B up to 1996, published in 1997. The strength of the NWG and its interdisciplinary approach were clearly demonstrated from publications related to metabolic studies, women's nutrition, child nutrition, micronutrients, low birth weight, breastfeeding and complementary feeding, and community-level studies.

Regular meetings of the Nutrition Working Group were held as were NWG Seminars, which were an opportunity for professional exchanges within the nutrition community at large and with local representatives of the Government of Bangladesh, international and donor organisations. The Centre's professional strength in nutrition was likewise evident from the roster of ICDDR,B's nutrition scientists with their research interests.

The Government of Bangladesh had recognised the strength of ICDDR,B's NWG by concluding with ICDDR,B a US\$ 1 million-contract for operations research on the community-based component of the Bangladesh Integrated Nutrition Project (BINP), which was the largest nutrition services project in the world. Guided by various committees, the NWG had discharged this challenging task successfully. While results remained to be disseminated, preliminary findings were already reflected in the design of the forthcoming (Bangladesh) National Nutrition Program and had also met with considerable attention on part of the World Bank.

Subsequently, Dr. Robert Suskind, envisaged to strengthen ICDDR,B's involvement in nutrition through the establishment of a Nutrition Centre of Excellence (NCoE) within ICDDR,B. In September 1998, the NCoE was institutionalised by a three-year grant under the World Bank's Development Grant Facility (DGF). NCoE operational activities included those related to the clinical management of severely malnourished children. Based on published results of an efficacy trial at ICDDR,B, standardised protocolised management of severely malnourished children was now being widely disseminated through a series of training workshops organised by ICDDR,B.

In addition, scientists from ICDDR,B's NWG had established collaboration with WHO for field-testing the nutritional management aspects of WHO's protocol for the Integrated Management of Childhood Illness (IMCI). ICDDR,B also collaborated with WHO on nutrition initiatives throughout the SEARO region and was, moreover, well represented in other international fora on nutrition.

Within ICDDR,B's NWG and especially for the management of activities under the World Bank grant to the NCoE, nutrition scientists had organised themselves into five "sub-

themes". These were: Severe Malnutrition, Malnutrition/Infectious Disease Interrelationships, Child Growth and Development, Low Birth Weight, and Infant and Complementary Feeding. In addition, there was operations research under BINP as a crosscutting sub-theme and research on the immunological and metabolic aspects of nutrition. Professional interactions within the sub-theme groups extended, however, also to other aspects of nutrition. For the continuation of its work, the NWG envisaged to broaden collaboration so as to be even better positioned for addressing existing and emerging nutrition problems and to focus research on preventative approaches.

2. Achievements To-date: Current Situation

Prof. George Fuchs continued with an *assessment of the current situation*. Nutrition activities of ICDDR, B had seen a recent rapid expansion. This presented individual researchers with increased opportunities. It also meant that management issues to be addressed for NWG related to capacity expansion, rather than to resource constraints. Different from other Theme Groups within ICDDR,B, the NWG had, moreover, been placed in a position of managing funds dedicated for nutrition activities. This made it timely to assess where the Centre's nutrition research had been and where it was going. The proper context for such an assessment was the Centre's mission statement with its emphasis on simple and cost-effective solutions to major health and population problems facing developing countries (Annexure 4).

An exceptional strength of ICDDR,B's nutrition activities lay in ICDDR,B's multidisciplinary resources, i.e., scientists with a diverse range of nutrition research skills, its superb laboratory facilities, unique opportunities for clinical research both in Dhaka and in Matlab, and unparalleled opportunities for community-level and operations research, e. g., in Matlab, at other ICDDR,B field sites, and in BINP thanas. This was complemented by outstanding capacities and opportunities for the application and incorporation of research results into programs, e. g., through the Health and Population Extension Division's well-established relationship with the Government of Bangladesh's Ministry of Health and Family Welfare (MOHFW) and with NGOs and through ICDDR,B's unique co-operation with the operations research component of the Bangladesh Integrated Nutrition Project.

Development of simple and cost-effective solutions to nutrition problems, as per the Centre's mandate, requires an involvement in a "chain", leading from problem identification to efficacy and then effectiveness evaluations of interventions. Nutrition scientists at ICDDR,B had demonstrated capacities for effective contributions to each

aspect of this "chain". The present challenge was therefore to develop an overall plan and a vision.

Prof. Fuchs then presented an overview of the Centre's Nutrition Research Agenda, 1999-2000

- Nutrition of Adolescents and Pregnant Women; Low Birthweight
- Micronutrients and Child Health
- Recovery from Malnutrition
 - ✓ Protocolised Management
 - ✓ Community-based Management
- Breastfeeding and Complementary Feeding
- Operations Research on Nutrition
 - ✓ BINP and, potentially, NNP Operations Research
 - ✓ Impact Evaluation of HKI Homegardening
 - ✓ Zinc-related studies.

The importance of nutrition research within ICDDR,B's research activities was shown by the circumstance that of 82 research activities that were ongoing at ICDDR,B in 1999, 29 percent related to nutrition; similarly, 22 percent of peer-reviewed ICDDR,B publications in 1998 had related to nutrition.

Prof. Fuchs then highlighted the NWG's role in administering nutrition funds in parallel to ICDDR,B's divisional structure, even though the implementation responsibilities generally remained with the Divisions. A prime example was the sizeable World Bank grant to ICDDR,B's NCoE. This should, however, be seen as a World Bank grant to ICDDR,B's nutrition program and not as *the* nutrition program of ICDDR,B. Research and other outputs defined for administration of the NCoE grant were not all-encompassing of ICDDR,B's nutrition activities as a whole.

In addition to research, ICDDR,B's nutrition activities also included a very substantial *training* component, which had nevertheless scope for being expanded.

Important *training modules* related to case management protocols for which efficacy evaluations had been conducted in the ICDDR,B hospital were the protocols for the

management of severe child malnutrition and for nutritional management of persistent diarrhoea:

Staff development related to ICDDR,B's nutrition activities included participation in doctoral as well as masters degree programmes by ICDDR,B nutrition researchers. Several of these had distinguished themselves as finalists or had received rewards in international highly competitive young investigators programmes.

The Centre as a whole had, more recently, been given a mandate for a South-South role, which also extends to nutrition. NWG commitment to this was evident, e.g., from its collaboration with the SEARO network on nutrition.

As evident from the above, nutrition activities at ICDDR,B are cross-divisional in character, corresponding to the "matrix"-type of organisation recommended by ICDDR,B's Board of Trustees in June 1998, with nutrition as the prototype. Yet it remains to be worked out how the "themes" adopted by ICDDR,B will relate in operational terms to ICDDR,B's existing divisional structure, which is likely to remain in place. Seeking to come to terms with this, ICDDR,B's Board of Trustees had, in June of 1999, directed the Centre to further elaborate the themes for ICDDR,B's work and to further define the relationship between ICDDR,B's Divisions and Theme Groups on administrative matters and with regard to the utilisation of the Centre's human and financial resources. The Board of Trustees had, furthermore, directed the Nutrition Theme Group to proceed with its nutrition activities as a prototype for theme development, and this had been accepted as a difficult but manageable challenge.

The key issue in meeting this challenge lay in the management of competing demands, given the circumstance that all nutrition professionals had other commitments, generally defined in terms of their divisional affiliation. Competing demands also arise from individuals' involvement in other Theme Groups. However, interdivisional and interdisciplinary collaboration was necessary, owing to the fact that "nutrition" does not happen in a vacuum, but needs to related to a broader conceptual framework that factors in health and socio-economic conditions (Annexure 5).

On conclusion of their presentations, the Facilitator thanked the two presenters for their excellent overviews and inquired whether there were any *requests for clarification or disagreements*.—In response to a query, Prof. Fuchs re-emphasised that ICDDR,B's Nutrition Working Group (NWG) was "broader" than the Nutrition Centre of Excellence—a term which was perhaps not sufficiently modest, but which had been adopted as such to capture the objectives of the World Bank DGF grant.

3. Segmentation of the Centre's Nutrition Activities

To conclude the Situation Analysis, the Facilitator then led into a plenary discussion of the “three ‘Ss’”—*Segmentation, Strengths and Shortcomings*.

Based on earlier-used sub-themes for ICDDR,B's nutrition activities, two such possible segmentations were displayed:

Possible Segmentation

- | | |
|-----------------------------------|--|
| A. Adolescents/Pregnant Women/LBW | D. Breast-feeding, Complementary Feeding |
| B. Micro-nutrient/Child Health | E. Operations Research |
| C. Recovery from Malnutrition | |

Alternative Possible Segmentation

- | | |
|---|-------------------------------|
| 1. Severe Malnutrition | 5. LBW |
| 2. Malnutrition/Infectious Disease Interrelations | 6. Education/Behaviour Change |
| 3. Growth and Development | 7. Women's Nutrition |
| 4. Infant/Complementary Feeding | 8. Micronutrient Research |

From the plenary discussion, it was apparent that there were multiple, albeit different rationales for “segmenting” ICDDR,B's nutrition activities, and that the challenge was to select those that are most useful for planning purposes. Possible “bases” for the segmentation include:

- Importance and persistence of nutrition problems, as reflected in the current scientific discussion; related key outcomes
- Causes, aetiologies of and risk factors for nutrition problems so as to effectively focus interventions;
- Interventions/strategies for addressing nutrition problems;
- Disciplinary/“skill-based” segmentation;

- Interrelations with stakeholders: donors, e.g., as per stated grant purposes, as well as other organisations in the Centre's environment: GOB, developing country interests, international fora, NGOs;
- “The way we have been working”, i.e., currently well-represented professional and personal interests (which implies a risk of missing other important areas) and
- “customers”, i.e., beneficiaries of nutrition interventions, e.g., children under two, adolescents (age 10 to 19), pregnant women, and moderately and/or severely malnourished children.

With respect to “beneficiaries”, Prof. Fuchs commented that the World Bank NCoE grant had a focus on malnutrition problems in children under two and on low birthweight, but that ICDDR,B's nutrition activities as a whole were not restricted to this focus. Dr. S. K. Roy felt that nutrition problems were most appropriately approached as “issues”, i.e., driven from the problem side and reminded in that connection of the “assessment—analysis—action” framework promoted by UNICEF. In summing up, the Facilitator observed that it needed to be recognised that there were many “bases” for segmentation and that nutrition activities were, by their very nature, multi-dimensional. However, there had nevertheless been a common theme in discussing the segmentation of ICDDR,B's nutrition activities, i.e., acceptance of a *problem-solving approach*.

4. Strengths

Based on the morning's presentations and as an introduction to further review in plenary, Mr. Peter Connell then summarised with the participants apparent *strengths* of ICDDR,B's nutrition activities. These included:

- a range of multi-disciplinary skills, giving ICDDR,B the ability to approach nutrition problems from many different perspectives
- easy access to populations for clinical and community-based research
- an excellent research environment, offering a unique infrastructure
- the connection of research with service, grounded in strong motivation and “clear intention to serve”
- a strong image, based on ICDDR,B's pioneering role and good reputation.
- demonstrated skills in applying and incorporating research results into programs.

However, the Facilitator invited the participants to nevertheless ask themselves "are we average, rather than excellent?"

In recapitulating, on Day 2, the apparent strengths of ICDDR,B's nutrition activities, three more observations were offered by the Facilitator:

- Nutrition activities within ICDDR,B are probably of broader scope and larger in volume than commonly perceived.
- ICDDR,B as a whole is "edging" towards a matrix organisation-like structure, and the Nutrition Working Group and its NCoE are well ahead of the curve in recognising the implications and putting principles into practice.
- ICDDR,B and its Nutrition Working Group have a recognised role in interregional and regional collaboration, especially with regard to South-South co-operation.

5. Shortcomings

The introductory plenary discussion of shortcomings identified several constraints that participants perceived as keeping them from working as effectively as they would like. These were:

- funding constraints
- capacity constraints, leading to overcommitment of existing staff
- professional competition
- relatively slow decision-making
- lack of an integrated management information system
- gaps in key skills (e.g., advanced biostatistics, behaviour-change communications) and absence of some state-of-the-art equipment (e.g., for mass spectrometry).

Further thought on these was invited by the Facilitator, e.g., to consider possible *reasons* for the funding constraints. Concerning capacity constraints it would be worthwhile to review whether *capacities* were *short* relative to commitments incurred under funding accepted by the Centre or whether there was a *structural mismatch* between funding and capacity. If the second, the underlying reason was that ICDDR,B, viewed as a system, was not good at identifying and "signalling" the mismatch and/or not flexible enough to

respond to available information. Prof. Fuchs responded that under the Centre's present organisational structure, some mismatches arose because ICDDR,B's Divisions, rather than Themes (e.g., Nutrition) control the allocation of the Centre's human resources.

B. Developing a Vision Statement

1. Overview on Methodology

While the Situation Analysis done during the Retreat answered the question "Where are we?", the development of a Vision Statement would answer the question "Where do we want to be?". The usual components of a Vision Statement are:

- a timeframe (agreed to be the five-year period 2000 to 2004)
- a portfolio of activities (potentially formulated in many different ways)
- performance targets (such as size of staff and/or budgets, numbers of publications, extent of "contributions")
- overall positioning (related to the Nutrition Working Group's external image, e.g., in terms of expertise)
- core competencies ("what we really know how to do").

A Vision Statement can be derived through brainstorming, using a variety of inputs (Annexure 6).

2. Breakout Group Discussions/Presentations and Subsequent Plenary

Following a short overview presentation of the methodology by the Facilitator, the participants then divided into three breakout groups¹ to discuss their vision for ICDDR,B's nutrition activities. Breakout groups were requested to tackle *three main questions*:

- Are you happy with the current split of the Centre's nutrition activities into sub-themes?
 - ✓ should we aim to develop more sub-themes in future? If so, which ones?
 - ✓ should we drop some of the existing ones? If so, which ones?
 - ✓ should we combine some of the existing ones? If so, which ones?

¹ "Break-out group" is the technical term for the small-groups that were configured and re-configured in the course of the Retreat, with their compositions varying according to the topics under discussion.

- ✓ how many do we really want to pursue 2000-2004? number?
- Take the final list agreed upon and rank the sub-themes
 - ✓ how much time/effort/budget does each justify? percentage?
 - ✓ think about the Centre's *real* strengths and desired positioning; likely external demand/interest; etc ... not just your personal interests
- What corporate weaknesses might constrain our achieving this vision?- Let's list them so we can deal with them.

Outputs requested from each breakout group were:

- a proposed list of sub-themes for the years 2000 to 2004, with their proposed "weights" as proportions of total funding; and
- identification of corporate constraints that need to be addressed.

Proposed Sub-themes with Their Weights

Group 1		Group 2		Group 3	
Severe malnutrition	18%	Management of childhood malnutrition (LBW; severe and moderate child malnutrition)	22%	<ul style="list-style-type: none"> • Nutrition of the lifecycle • Adolescent nutrition • Women's nutrition • Birth weight 	50%
Nutrition and infection	18%	Prevention of malnutrition (LBW prevention; breastfeeding and complementary feeding; other)	23%	<ul style="list-style-type: none"> • Child nutrition • Severe child malnutrition • Moderate child malnutrition • Feeding practices 	30%
Child growth and development	18%	Adolescent and maternal nutrition	17%	<ul style="list-style-type: none"> • Micronutrients • Childhood nutrition & growth • Maternal nutrition • Infectious diseases and immunity 	20%
LBW and maternal nutrition	28%	Growth and development	11%		
Infant feeding	18%	Communication and behaviour change	15%		
		Infectious diseases and nutrition	12%		

(Each of these to include OR)

Perceived Institutional Constraints		
Group 1	Group 2	Group 3
Centre's structure (matrix management; divisions vs. themes)	Lack of staff with specific skills (OR; biostatistics; behaviour change communications)	Skills in biostatistics, health economics, social/behavioural sciences
Project management (MIS; inadequate co-ordination; sub-optimal distribution of resources; not all investigators skilled in management/administration)	Management: "delays at several levels" Lengthy funding process Capacity constraints both with respect to equipment and human resources (skill development; loss of skilled staff)	Centre's structure (matrix management; divisions vs. themes) Absence of an integrated MIS
Lack of staff with specific skills (biostatistics)		

The breakout group presentations and subsequent plenary discussion indicated that the Retreat participants were broadly satisfied with the NWG's existing split of activities by "sub-themes." However, the discussion revealed that participants also felt that strategies and corresponding resource allocations should be based on the *lifecycle approach* (and focussed on longer-term outcomes than the management of "acute" child malnutrition). While found appealing, it was felt that the lifecycle approach, including the exploration of longer-term and inter-generational effects, should not be regarded as a "sub-theme" by itself, but rather as a conceptual framework (see Annexure 7). It was therefore agreed that strengthening of ICDDR,B's nutrition activities relative to the lifecycle approach would be one of the broad "thrusts" within the strategic plan for ICDDR,B's nutrition activities, meaning all sub-themes would be able to contribute to it.

In response to the breakout group presentations, it was also agreed that *behaviour change communications* and *operations research* were crosscutting across sub-themes, rather than sub-themes by themselves. After considerable debate, the weight of the argument leaned towards also considering *micronutrients* as crosscutting, such that research on micronutrients would be integrated with respective outcomes and/or interrelations of interest.

Prof. Fuchs reminded that the discussion on segmentation should not confine itself to sub-themes as such. Specifically, it might include ICDDR,B's commitment to outcomes to be achieved within a five-year timeframe, e.g., reductions in malnutrition in children under two or under five and/or reductions in low birthweights. ICDDR,B's nutrition activities should therefore be framed and prioritised with such outcomes in mind. Prof.

Fuchs also advised that "packaging" of ICDDR,B's nutrition activities should not be based on a textbook approach, but should rather be focused on marketable Centre strengths that facilitate communications with ICDDR,B's donor community.

Taking into account breakout group presentations and subsequent plenary discussions, the Day-1 review of the segmentation of ICDDR, B's future nutrition activities resulted in the identification of *five focal areas or sub-themes*. Their proposed weights, based on a tallying of "votes" from the three Day-1 Breakout groups, were as follows:

Focal Areas/Sub-themes	Breakout Group Votes	Summary Weights/Proportions
Preventing/managing severe and moderate child malnutrition	75	35
Improving adolescent and other maternal nutrition and low birth weight	100	35
Strengthening child growth and development	35	10
Understanding the relationship between infectious diseases and nutrition	35	10
Improving infant and child feeding practices	30	10

Micronutrients and behaviour change communications will cut across all five focal areas; different types of research, including operations research will be pursued in each.

Constraints arose mainly in two areas:

- *Management systems*
 - ✓ lack of an integrated MIS
 - ✓ slow decision-making
 - ✓ limited skills in and attention to project management
 - ✓ need to anticipate/identify/eliminate capacity constraints
- *Developing and maintaining skills/counteracting the "brain drain" in the areas of*
 - ✓ operations research
 - ✓ biostatistics
 - ✓ health economics
 - ✓ behaviour change communications.

3. Agreed Elements of the Vision Statement

As summed up by the Facilitator, Retreat participant had reached agreement on many, though not all, of the customary components of a vision statement:

- A *planning timeframe* of five years (2000-2004).
- By 2004, the range of nutrition activities at the Centre would be not much expanded. Agreed *focal areas* which—together with micronutrients—also correspond to the Centre's existing core competencies in nutrition were:
 - ✓ severe and moderate child malnutrition
 - ✓ maternal nutrition and low birth weight
 - ✓ child growth and development
 - ✓ infectious diseases and nutrition
 - ✓ infant and child feeding practices.
- The expected *size/growth* of ICDDR,B's nutrition activities, their appropriate *share within ICDDR,B's overall programme*, and related *performance targets* remain to be articulated.
- Possible *thrusts* to be pursued are:
 - ✓ developing a lifecycle approach to nutrition;
 - ✓ improving management systems;
 - ✓ building and retaining skills.

A first draft of the Vision statement for ICDDR,B's nutrition activities, as developed during the Retreat, is given as Annexure 8.

While sub-themes were agreed upon as mentioned, several retreat participants emphasised that it was important to retain, within a five-year strategic plan, some flexibility for innovative research and/or research on emerging priorities that would not necessarily fall within the now agreed sub-themes. Possible "safety valves" for providing this kind of flexibility would be to keep available some five to ten percent of resources for innovative research and/or to fund such research under income generated through targeted research.

C. Developing Strategies and Action Plans

1. Development of Strategies and Action Plans for Sub-themes

Based on broadly-based agreement on the vision statement ("Where do we want to be?"), the next agenda item for Day 1 was to develop strategies and action plans for the five sub-themes identified in the Vision Statement (see Annexure 9). Breakout groups were then formed for each. Their task was to identify strategies—maximally three to four—to pursue over the next five years. As emphasised by the Facilitator, strategies needed to be consistent with the vision and thrusts already identified; they obviously needed to be practical/achievable, not wish lists. Each strategy would need a number of action plans² to support implementation. Such plans should specify:

- tasks
- completion deadlines
- responsibilities, and
- (if possible) ballpark costs or resource requirements.

In addition, sub-theme groups were asked to aggregate, within each group, resource requirements across action plans and projected capacity utilisation for individual researchers. Results of the Breakout group discussions were presented the morning of Day 2.

Proposed strategies for meeting the five sub-theme objectives in the agreed vision statement are at Annexure 10. Against the five sub-themes with their 22 strategies, the breakout groups showed about 70 individual action plans, most of them research protocols, but also including several training programmes. In view of the value of the detailed information generated during the Retreat, but also taking into account the need for further review, prioritisation and continuous updates, it is intended to incorporate the project-specific information from the Retreat into a data base for ICDDR,B nutrition projects. Availability of this database will facilitate further consistency reviews and/or updates of the Work Plan. Pending such reviews and updates, inputs generated during the Retreat would be assembled in a Draft NWG Work Plan 2000-2001.³

2. Identification of Proposed Action Plans for Management System Improvements with Their Resource Requirements

² In most instances, action plans are research protocols.

³ This has been finalised and distributed as a separate NWG document after providing the opportunity for further review and comments by NWG members.

In addition to the five sub-theme-specific breakout groups, a breakout group on management systems had been formed to identify possible actions for strengthening of management systems and skill development as related to the requirements of ICDDR,B's Nutrition Working Group. Proposed actions included:

- the establishment of a policy and criteria to better define the operational relationships between ICDDR,B's divisions and "themes";
- the development of a centre-wide integrated management information system (MIS) which would integrate project and grant information on research protocols and other projects with financial and human resource allocation data;
- the intensification of fundraising and resource mobilisation for nutrition, including
 - ✓ active identification of new funding sources and related networking
 - ✓ charging for services provided to stakeholders, e.g., for laboratory services
 - ✓ having a ready "pipeline" of RRC and ERC-approved protocols;
- to improve project management skills within ICDDR,B's ERID office, Divisions and Theme Groups so as to achieve a better match between projected performance and actual delivery;
- to engage Grant Writing Teams or otherwise strengthen the capacity of the ERID office and/or Theme Groups for assisting individual Principal Investigators with grant applications, while freeing Division Directors and others of editing and re-writings tasks; and
- to strengthen ICDDR,B's ability for recruiting and retaining staff with technical expertise required by NCoE through professional development of junior investigators, including mentoring, and by instituting incentives and creating rewards for exceptional performance.

D. Preparation of a Draft NWG Work Plan 2000-2001

1. Steps in the Planning Process

Preparation of the Draft NWG Work Plan 2000-2001 involved three distinct steps:

- Review of already existing commitments for 2001-2001 in the light of sub-themes with their strategies and action plans, as identified during the Retreat;
- "Mapping" the agreed five-year strategy onto existing commitments for 2000-2001; and
- Work planning.

Consistency reviews were requested both from the perspective of individual personnel and as a group planning exercise for sub-theme groups. Specifically, individual participants were asked to review interim results of the Retreat against their existing commitments for 2000-2001 and to examine goodness of fit, to then work in groups with others who have similar research interest to prepare the sub-theme work plans for 2000-2001. Thereafter, sub-theme groups were asked to report back to the plenary group on their conclusions, for discussion and consistency review.

Planning for individual personnel was proposed to be conducted in terms of "full-time staff equivalents" (FTSEs); other planning was done by comparing (projected) budgets needed to (projected) budgets available. Inputs for Work Plan preparation were:

- sub-theme specific statements of strategies and actions plans that had been prepared on Day 1 in the Breakout groups
- plenary comments offered on Day 2
- known existing funding commitments and personal commitments, e.g., based on the lists of ongoing and proposed protocols that had been prepared before the Retreat by Nutrition Sub-theme Group Co-ordinators, and
- a re-arranged listing of such protocols by the revised sub-themes as agreed upon on Day 1.

The Facilitator proposed the following questions as guidance for *personal work planning*:

- Do my existing commitments for 2000/2001 fit comfortably with the sense of priorities established on Day 1 of the Retreat? Do I want to drop anything?
- How much of my time is already committed under existing contracts? How much time can I offer for new projects over the next two years?
- Do I have funding for all of that time commitment? If not, what is the shortfall? Where might I seek funding?

- What personal priorities for new areas of research do I have for the next two years? Are they consistent with the Vision for Nutrition? Who will be the “customer” for each?
- What constraints might prevent me from implementing my existing commitments?

A similar range of tasks and discussions was suggested for the *sub-theme groups*:

- First, pool all the conclusions from the personal work planning
 - ✓ list of individuals active in the sub-theme
 - ✓ commitments by topic
 - ✓ available capacity
 - ✓ budget adequacy
 - ✓ priorities for new research and probable “customers”.
- Second, compare the summarised picture for consistency with the overall strategies/action plans of Day 1.
- Third, debate how to eliminate overlaps/duplications and fill priority gaps.
- Fourth, prepare an overall plan for the sub-theme 2000/2001—what, who, when, how much.

Guidance provided by the Facilitator sparked considerable debate on how to best accommodate (and reflect in the Work Plans) the inherent uncertainty resulting from protocol-specific funding from a multiplicity of donors. The consensus was that the NWG Work Plan would reflect this uncertainty by including “a reasonable proportion” of unfunded activities. This implied, at the aggregate level, that only “a reasonable proportion” of the Work Plan could be expected to be completed. At the personal level, the implication was that individual researchers would continue to “overbook” themselves as a safeguard against funding shortfalls for some of their anticipated commitments.

2. Unfinished Agendas: Personal Work Planning and Strengthening of Management/ Skill Development

Given the wealth of information generated, it was only possible to summarise and analyse in the course of the workshop budgetary information, while analysis of commitments of individual staff remained to be addressed after the Retreat. Review of

the detailed protocol-specific Work Plans for 2000-2001 as presented by sub-theme-specific breakout groups indicated, however, that there were numerous instances in which investigators were included for only five or ten percent of effort. The Facilitator observed that this level of commitment would appear to be only sufficient for reviewers, but probably not for implementation responsibilities. It should therefore be examined whether investigators were spreading themselves too thin. It could also be considered to adopt a "ten percent" rule as the lower limit for investigator involvement in protocols.

For the detailed work planning by sub-themes 2000-2001, members of the earlier breakout group on Strengthening of Management/Skill Development had been dispersed among the sub-theme breakout groups. A detailed work plan for 2000-2001 corresponding to the strategies and tasks proposed for management strengthening and skill development would therefore still need to be prepared after the Retreat.

3. Results of Risk Assessment and Consistency Checks for Sub-theme Draft Work Plans, 2000-2001

Comparisons of available funding with required funding; as reported by the sub-theme breakout groups, indicated that some of the areas in the Draft NWG Work Plan were more risky than others in terms of uncertainty of funding. In particular, there appeared to be a "disconnect" between required and available funding for research on the nutrition/infectious disease interrelationships:

Sub-Theme	Budget Needed (\$)	Budget Currently Available (\$)	Pct. Funded
Maternal nutrition/LBW	305,000	145,000	48
Severe/moderate child malnutrition	1,400,000	1,020,000	73
Infectious diseases	1,595,000	545,000	35
Feeding practices	611,000	226,000	37
Child growth/development	590,000	410,000	69
Total	4,501,000	2,346,000	52

Review of these results further raised the question whether an overall funding level of 52 percent at three months before the start of the Work Plan period could be considered as safe or not. Prof. Fuchs mentioned in response that the Retreat was the first occasion where the implications of funding for ICDDR,B's nutrition programme had been analysed in this manner and that he felt ICDDR,B would "do well" if as much as 25 percent of the funding gap of more than one million USDollars per year could be raised. On the other

hand, Ms. Brooks made a case for ambitious fundraising by “stretching ICDDR,B’s tentacles”.

Comparison of the Draft Work Plan data with the target proportions for sub-themes as per the Vision statement brought out that budget proportions of sub-themes in the Draft Work Plan were not well aligned with the Vision:

Sub-theme	Budget Needed	Budget Currently Available	Vision Target
	%	%	%
Maternal nutrition/LBW	7	6	35
Severe/moderate child malnutrition	31	43	35
Infectious diseases	35	23	10
Feeding practices	14	10	10
Child growth/development	13	17	10
Total	100	100	100

Differences were largest for the maternal nutrition/LBW sub-theme. There, the question arose whether this sub-theme could be built up fast enough to achieve a 35 percent weighting by the year 2004 or whether—alternatively—the Vision should be amended. The consensus view was that an initial low-cost phase of conceptualisation and protocol preparation would then be followed by a rapid transition to protocol implementation at a very significant level of funding.

E. Issues Remaining to Be Addressed and Next Steps

1. Finalising the NWG Work Plan, 2000-2001

Based on the Draft Work Plan 2000-2001 generated during the Retreat and other inputs, a finalised version of the NWG Work Plan remained to be prepared. Time commitments of investigators were to be budgeted and aligned with time available as part of the same exercise. It was observed that finalisation would require two or three rounds of reviews and revisions.

2. Including Performance Targets in the Vision Statement

Normally, Vision statements feature desired growth targets as part of their performance targets, but this did not emerge from the Vision discussion during the Retreat. (Apparently, because participants were unsure of the existing size of nutrition activities.)

This left as a small management task to pin down the size of nutrition activities and to then establish a consensus on desired growth.

The Vision statement could also be amended by building into it desired outcomes as performance targets, either with reference to Bangladesh or for international application.

3 Addressing Management Issues

A two-year work plan for management strengthening remains to be worked out as mentioned.

Personnel capacity and "HRD" issues featured prominently among management issues remaining to be addressed. Particularly, it remained to be examined whether investigators are spread too thinly over proposed protocols. As observed during the workshop, PIs are typically budgeting only five or ten percent of their time on individual projects/protocols. This raised the question whether this was enough to ensure quality and/or just about right to provide opportunities for professional development of more junior staff.

There remained also a recognised need for a better understanding and better management of staff capacity utilisation. One first step will be to prepare, for each NWG research protocol and each other action plan in nutrition (i.e., service and training), a complete staff list with budgeted percentages of effort, then to aggregate results by named individuals and to reconcile results with staff time available for nutrition activities. This would then also result in a better reflection of service delivery and training in the NWG Work Plan. However, while the just completed strategic planning exercise was almost entirely focused on research, it should also be considered how these other "business types" should be reflected in the NWG Vision statement and related strategies.

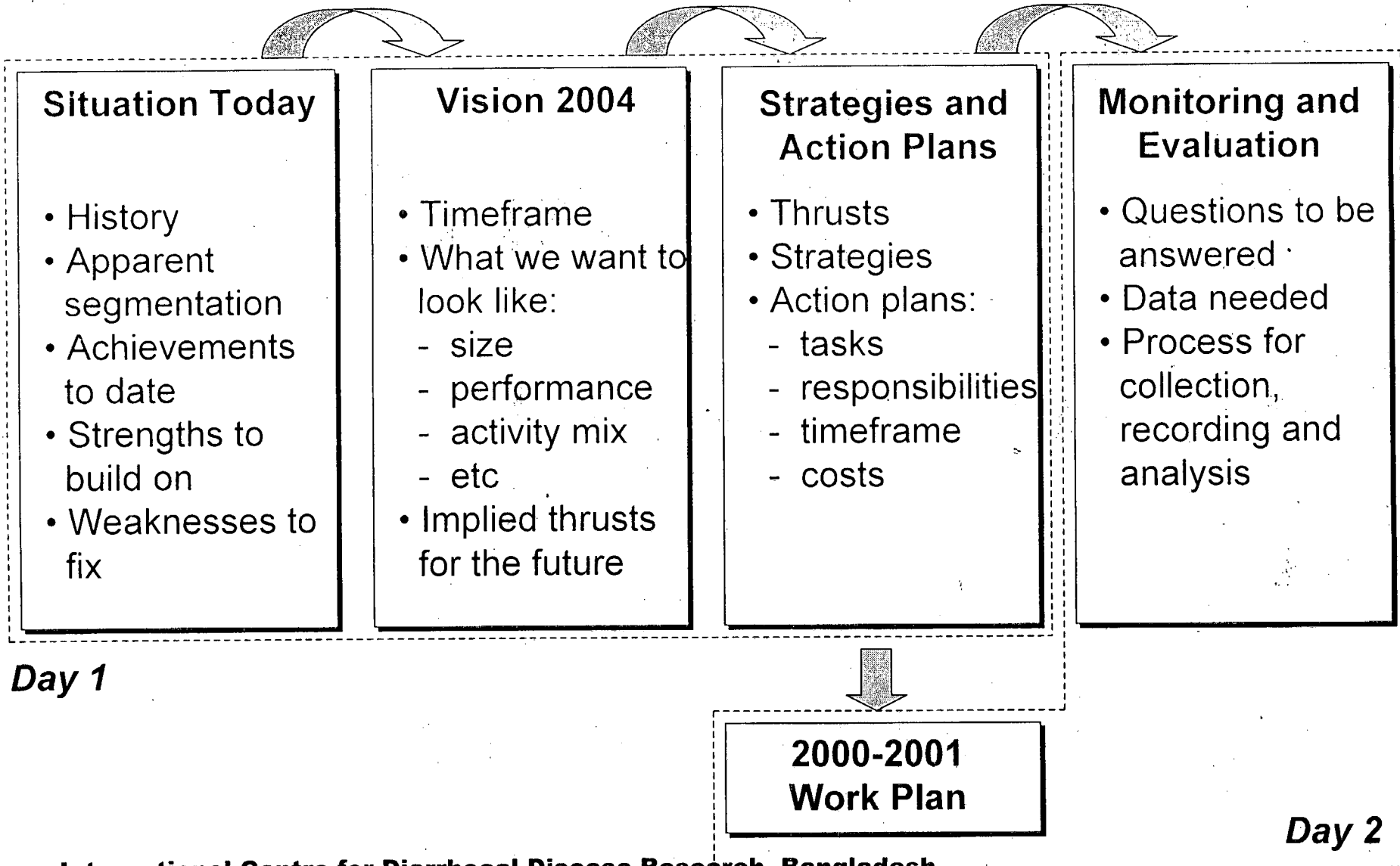
A final management issue remaining to be addressed was how to ensure adequate flexibility for the conduct of innovative research and ability to respond to emerging issues.

F. Closing Statement and Thanks

In his closing statement, Prof. Fuchs appreciated that the Retreat had been valuable and that much had been achieved, even though much still needed to be done. As pioneers in putting into practice the "matrix-organisation" principles proposed for ICDDR,B, the Nutrition Working Group could expect to hit some bumps along the way, but he nevertheless felt that the Retreat had been a milestone in the recent history of the Centre.

Prof. Fuchs expressed special thanks to Mr. Mahbul Hoque, the NWG Secretary, for his outstanding support to the Retreat and to Ms. Saskia Osendarp, Ms. Vanessa Brooks and Dr. Petra Osinski for their assistance in planning the Retreat. Prof. Fuchs then expressed his particular gratitude to Mr. Peter Connell for his effective and gracious performance as Facilitator for the Retreat and his kind offer for making available two days of his valuable time at no charge to ICDDR, B.

Planning ICDDR,B's Activities in Nutrition - Conceptual Structure



Agenda. Planning ICDDR,B Activities in Nutrition - Retreat of Nutrition Centre of Excellence

<i>Time</i>	<i>Topic</i>	<i>Method</i>	<i>Lead</i>
Day 1 – Strategy through 2004 (Monday, 27 September 1999)			
08:30 – 08:45	Introduction and objectives	Presentation	Facilitator
08:45 – 09:30	<i>Our achievements in Nutrition to date</i> (Roy)	Historical overview presentation	George Fuchs
09:30 – 10:15	Segmentation, Strengths and Shortcomings	Plenary discussion	Facilitator
10:15 – 10:30	Break		
10:30 – 10:45	Vision: what, why and how	Methodology presentation	Facilitator
10:45 – 11:45	<i>Where Do We Want to Be?</i>	Breakout group discussion	Topic-specific groups
11:45 – 12:45	<i>Our Vision for Nutrition</i>	Breakout group presentation/discussion	Topic-specific groups
12:45 – 13:30	Lunch		
13:30 – 14:15	<i>Thrusts for the Future</i>	Plenary discussion	Facilitator
14:15 – 14:30	Thrusts, Strategies and Action	Methodology presentation	Facilitator
14:30 – 15:30	<i>How Are We Going to Get There?</i> (part 1)	Breakout group discussion	Segment-specific groups
15:30 – 15:45	Break		
15:45 – 16:30	<i>How Are We Going to Get There?</i> (part 2)	Breakout group discussion	Segment-specific groups
16:30 – 17:45	<i>Our Strategies for Nutrition</i>	Breakout group presentation/discussion	Segment-specific groups
17:45 – 18:00	Wrap-up	Presentation	Facilitator
Day 2 - Work Plan for 2000 through 2001 (Tuesday, 28 September 1999)			
08:30 – 09:00	<i>Our Draft Strategic Plan for Nutrition</i>	Summary presentation from Day 1	Facilitator
09:00 – 09:45	<i>Our Existing Commitments in 1999/2001</i>	Presentation of inputs from attendees	Petra Osinski
09:45 – 10:30	<i>Mapping Commitments onto Strategy</i> (part 1)	Plenary discussion	Facilitator
10:30 – 10:45	Break		
10:45 – 11:30	<i>Mapping Commitments onto Strategy</i> (part 2)	Plenary discussion	Facilitator
11:30 – 11:45	Personal and Group Work planning	Methodology presentation	Facilitator
11:45 – 12:45	<i>Personal Work Planning</i>	Individual thinking/planning	Individual participation
12:45 – 13:30	Lunch		
13:30 – 14:45	Group Work Planning	Breakout Group Discussion	Segment-specific groups
14:45 – 15:30	<i>The 1999/2001 Work Plan</i> (part 1)	Breakout Group Presentation/Discussion	Segment-specific groups
15:30 – 15:45	Break		
15:45 – 17:00	<i>The 1999/2001 Work Plan</i> (part 2)	Breakout Group Presentation/Discussion	Segment-specific groups
17:00 – 17:45	<i>M&E: Questions to be Answered</i>	Plenary discussion	Facilitator

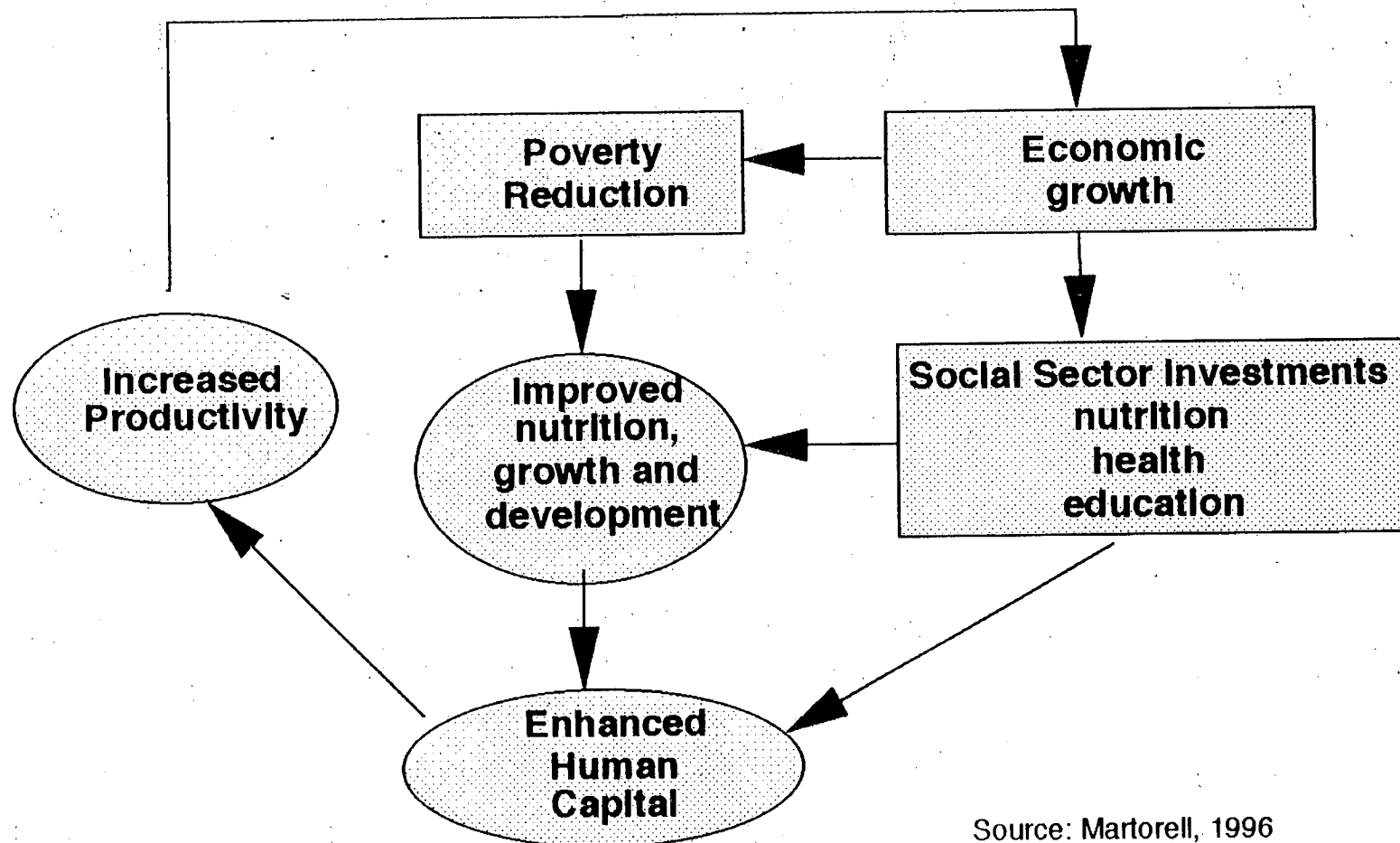
NCOE RETREAT PARTICIPANTS
27 & 28 September, 1999

1. Dr. Tahmeed Ahmed	CSD
2. Dr. Shakil Ahmed	PHSD
3. Dr. Dewan S. Alam	PHSD
4. Dr. Shams E Arifeen	PHSD
5. Dr. Radheshyam Bairagi	PHSD
6. Dr. Abdullah H Baqui	PHSD
7. Ms. Vanessa Brooks	ERID/NCOE
8. Mr. J. Chakraborty	PHSD
9. Dr. Lotta Ekström	NCOE
10. Prof. George Fuchs	CSD
11. Dr. Rukhsana Haider	CSD
12. Dr. Rashidul Haque	LSD
13. Dr. Kazi Jamil	CSD
14. Dr. Iqbal Kabir	CSD
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23. Dr. M. Yunus	PHSD
24. Dr. K. Zaman	HPED
25. Mr. Peter Connell	Facilitator
26. Dr. Mizan Siddiqui	UFHP

ICDDR,B: Centre for Health and Population Research

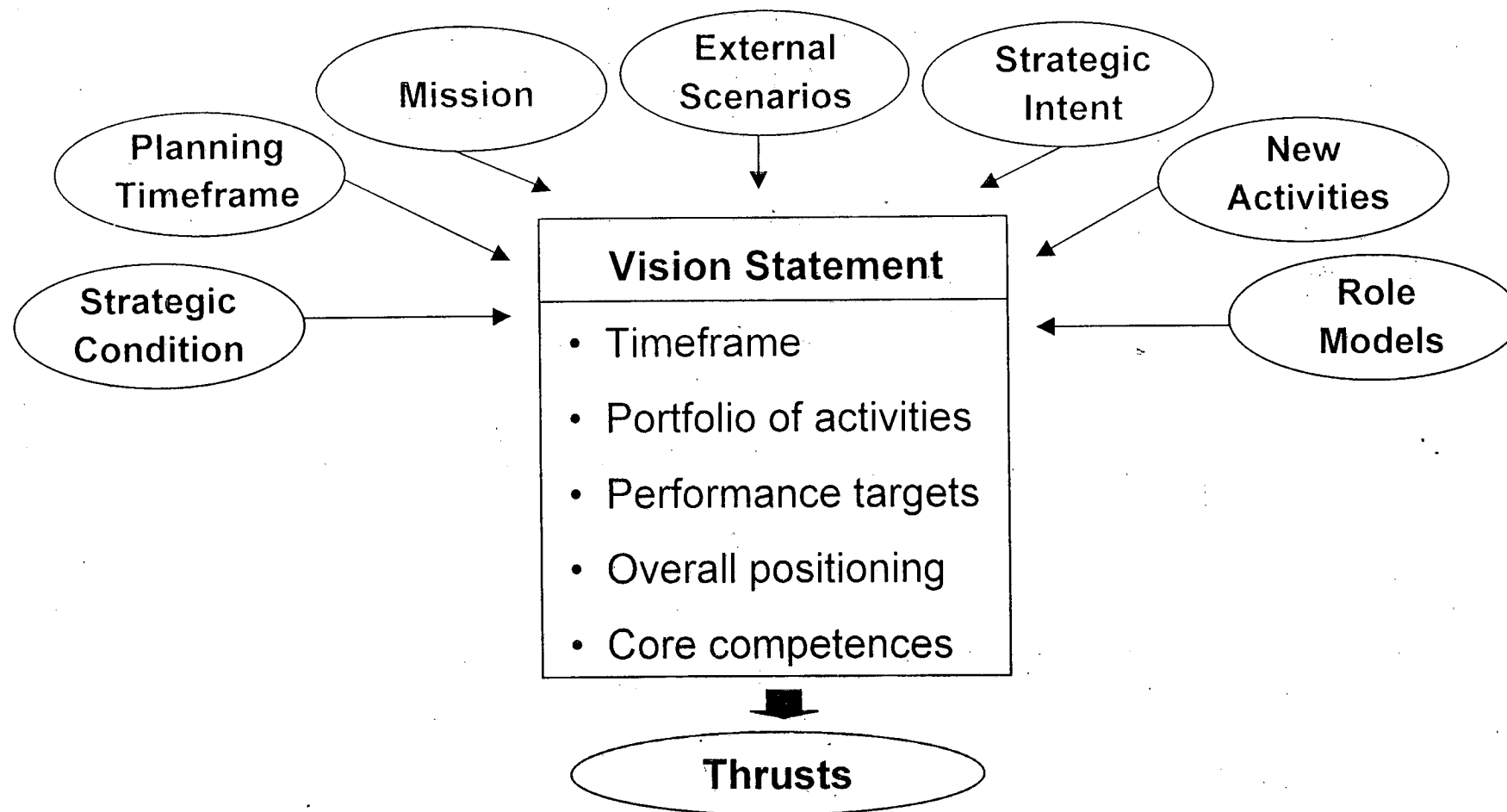
*Develop and disseminate
solutions to major health and
population problems with an
emphasis on simple and cost-
effective methods of prevention
and management*

Nutrition, health and economic growth



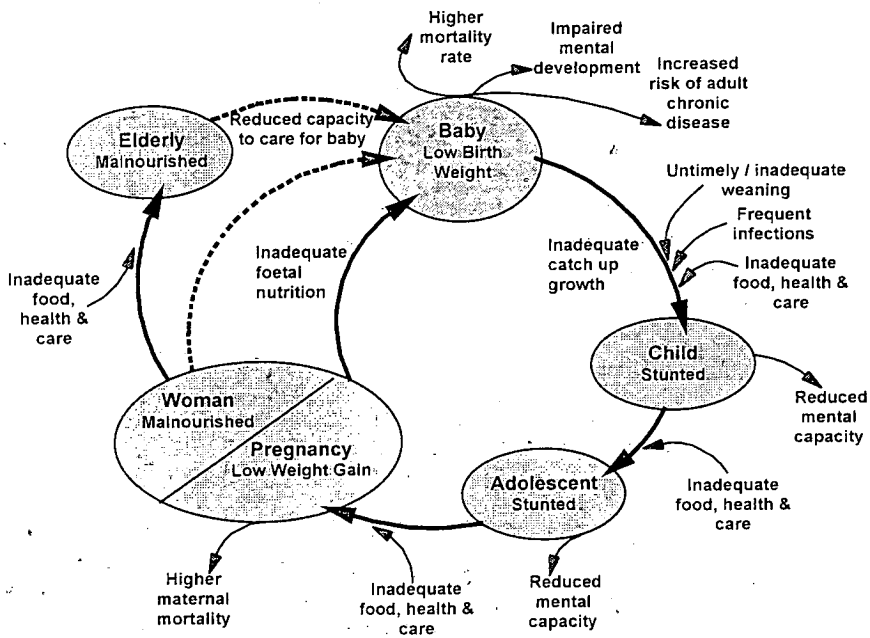
Source: Martorell, 1996

The Vision statement can be derived through brainstorming, using a variety of inputs.



Annex 2

Lifecycle: the causal links



Poor nutrition starts in utero and extends, particularly in girls and women, throughout the lifecycle. This amplifies the risks to the individual's health but also increases the likelihood of damage to future generations through further foetal malnutrition and the limited ability to cope with stresses within the family and in the provision of childcare.

Vision Statement for Nutrition

First Draft

Our planning timeframe is five years. By the end of 2004, we expect to have been focussing on a range of research topics about as wide as it is today. Specifically, we will pursue six core research competencies:

- Severe/moderate child malnutrition;
- Maternal nutrition and low birth weight;
- Infectious diseases and nutrition;
- Infant/child feeding practices;
- Child growth and development;
- Micronutrients.

Of these, the first two will have accounted for around 35 percent each of our total activity over the five years; the next three about 10% each; and micronutrients will have been represented across all of the other five. This focus will allow us to have contributed significantly to reducing child and maternal mortality in Bangladesh.

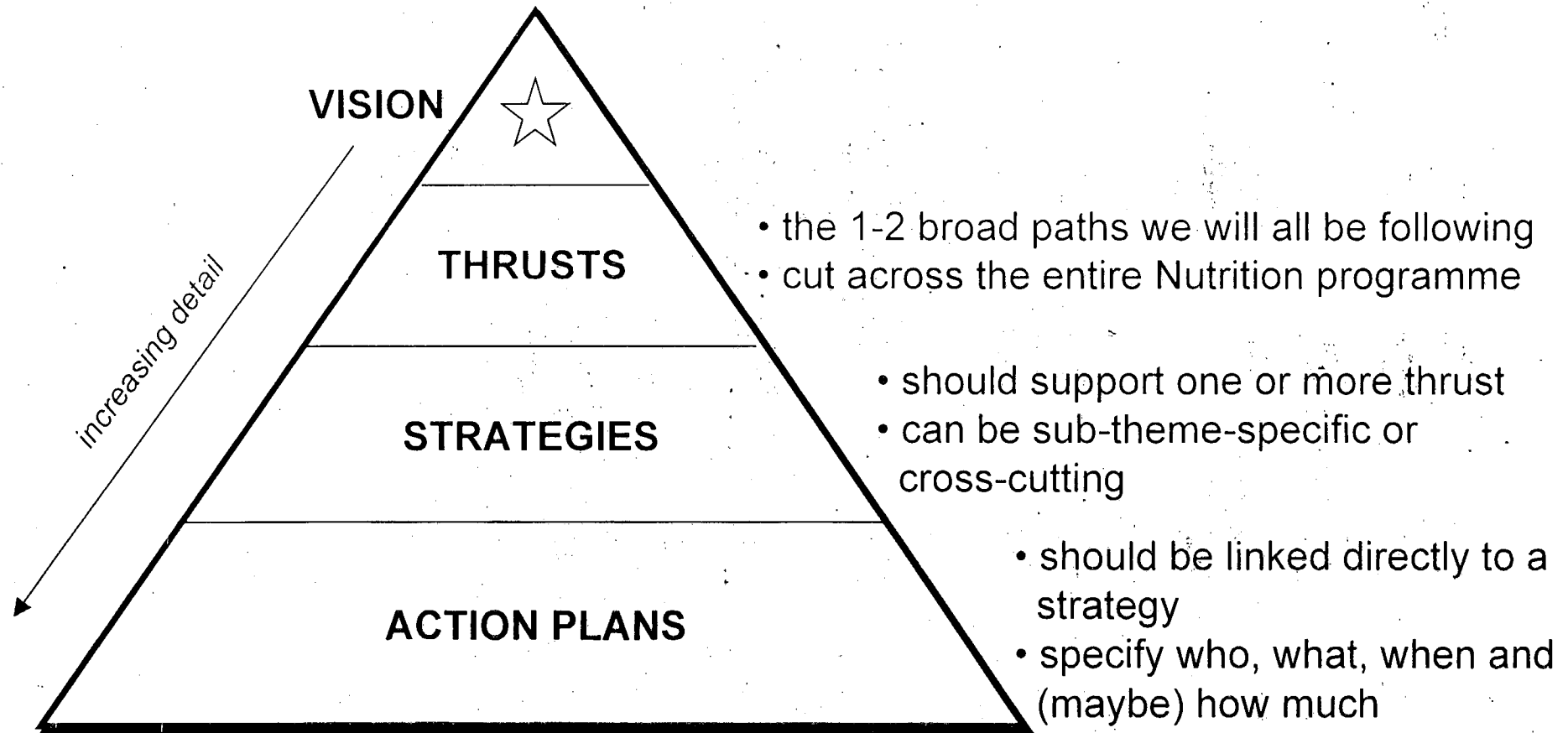
We expect that the international market for nutrition research will grow at around five?? percent per annum over our planning timeframe and that average project sizes will grow in line with the market. This implies that our full-time equivalent staff working on nutrition will have increased at a somewhat-lower rate, to allow for rising productivity. Nutrition will probably represent around 30 percent of the Centre's total research effort by that time, slightly higher than today.

To achieve this vision, we shall have pursued three strategic thrusts over the five years:

- To build a life-cycle approach to nutrition into all that we do;
- To strengthen the management systems which support nutrition;
- To find ways of recruiting, motivating and retaining appropriate nutrition skills.

Together, we anticipate that these three thrusts will help us to integrate better our multi-dimensional nutrition activities and build the right support structure to help us achieve the vision.

They are also logically inter-linked, with each level supporting the level above.



Strategies for Nutrition Sub-themes Adopted by Breakout Groups

Sub-theme 1: Preventing/managing severe and moderate child malnutrition

- Strategy 1: Further improvement of protocolised management of severe malnutrition
- Strategy 2: To develop effective community based management strategy for severely malnourished children
- Strategy 3: To develop optimum methods for the management of moderate malnutrition in children
- Strategy 4: To organize and conduct training courses on the management of severe malnutrition
- Strategy 5: To investigate the role of micronutrients on growth, morbidity and mortality of malnourished children
- Strategy 6: To investigate the risk factors for severe malnutrition (biological/environmental/socio-economic)
- Strategy 7: To identify culturally acceptable and feasible infant feeding practices and explore related breast feeding counseling approaches to prevent childhood malnutrition
- Strategy 8: To investigate the consequences of early (under two) malnutrition on growth and development at school entry

Sub-theme 2: Improving adolescent and maternal nutrition and low birth weight (LBW)

- Strategy 1: To identify prevalence of and risk factors for LBW
- Strategy 2: To identify comprehensive (nutrition) interventions to improve maternal nutrition and reduce LBW
- Strategy 3: To address the nutritional status of adolescents
- Strategy 4: To address issues related to maternal nutritional status

Sub-theme 3: Understanding the relation between infectious diseases and nutrition

- Strategy 1: To study the effect of infections on nutrient homeostasis and host defense leading to malnutrition
- Strategy 2: To study the impact of micronutrient supplementation on growth and morbidity

Strategy 3: Control of infections to improve nutritional status

Sub-theme 4: Strengthening child growth and development

Strategy 1: To develop standard methods for growth and cognitive functions

Strategy 2: To identify risk factors for poor child development and test interventions

Strategy 3: To improve knowledge and skills on child development of paramedics and nutrition workers

Sub-theme 5: Improving infant and child feeding practices

Strategy 1: Assessment of child/infant feeding practices

Strategy 2: Identifying culturally acceptable and feasible improved infant feeding practices

Strategy 3: Develop a tool to perform dietary intake studies

ICDDR,B Nutrition Working Group Strategic Plan, 2000-2004

Strategic Planning for ICDDR,B Nutrition Activities, 2000-2004—The Process

September 27-28, 1999 ICDDR,B's Nutrition Working Group met for a facilitated Strategic Planning Retreat to which all professional staff currently involved in nutrition services, research and training were invited.

The retreat had 24 participants from all ICDDR,B Divisions—Clinical Sciences, Public Health Sciences, Laboratory Sciences, Health and Population Extension and External Relations & Institutional Development (Director's Division) and one participant from the Urban Family Health Partnership, a collaborating partner for ICDDR,B's urban-based intervention for community-based management of severe malnutrition.

The *Objectives* of the retreat were:

- to develop the longer-term "big picture" for ICDDR,B's Nutrition Activities, with a five-year timeframe, 2000-2004; and
- to initiate preparation of a more detailed Work Plan for implementation, 2000-2001.

The retreat followed a commonly used conceptual structure for strategic planning exercises: starting with a *situation analysis*, proceeding to development of a *vision*, development of *strategies and action plans*, and consideration of *monitoring and evaluation* issues.

The *Outcomes* of the retreat were:

- a draft vision statement—subject to further refinement and endorsement within the Centre.
- agreement, as part of the vision statement, on focus areas for ICDDR,B nutrition research and on related strategic emphases; and
- inputs to a two-year Work Plan for Nutrition Research, 2000-2001.—These were subsequently consolidated and are available as a separate document.

Strategic Planning for ICDDR,B Nutrition Activities, 2000-2004—Results

Situation Analysis: Identified Strengths

- a range of multi-disciplinary skills
- excellent research environment offering a unique infrastructure
- easy access to populations for clinical and community-based research
- connection of research with service and "clear intention to serve"
- strong image, based on ICDDR,B's pioneering role and good reputation
- demonstrated skills in applying and incorporating research results into programs

Situation Analysis: Shortcomings

- funding constraints
- capacity constraints
- lack of an integrated management information system
- gaps in key skills (biochemist, social behavioural scientists, epidemiologists with backgrounds in nutrition and a biostatistician)

Agreed Segmentation of ICDDR,B's Nutrition Research

Retreat participants were broadly satisfied with the existing clustering of nutrition research into sub-themes, reflected in the current structure of "sub-theme" working groups within ICDDR,B's Nutrition Working Group. Sub-themes (elsewhere referred to as "objectives") for ICDDR,B nutrition research, 2000-2004 will correspond to six core research competencies.

Elements of the *Vision* for the Centre's Nutrition Activities

- a five-year timeframe, 2000-2004, including a more detailed Work Plan for 2000-2001
- overall positioning based on identified strengths
- portfolio of activities grouped by agreed focus areas, corresponding to core competencies
- a target for overall growth of ICDDR,B's nutrition research; research on maternal nutrition and low birthweight growing at an accelerated rate
- pursuit of "strategic emphases" to address identified shortcomings and overarching themes
- research efforts motivated and measured by their potential for reducing maternal and child mortality.

Agreed *Focus Areas* for ICDDR,B Nutrition Research, 2000-2004, corresponding to Core Competencies

- severe/moderate child malnutrition
- maternal nutrition and low birth weight
- infectious disease/nutrition interrelationships
- infant and child feeding practices
- child growth and development
- micronutrients research and interventions.

Crosscutting Issues

Certain issue areas and aspects of research were deemed to crosscut the six identified areas of focus. These included behavioural change communication, operations research and micronutrient research and interventions. Similarly, a "life-cycle" conceptual framework to the Centre's nutrition research and interventions surfaced as a cross-cutting issue, where an intervention at one stage of the life cycle (e.g., adolescent nutrition) may influence outcomes and interventions at other stages in the life cycle (e.g. new-born of an adolescent mother). The life-cycle approach to nutrition also recognises the possibility of inter-generational implications.

Achieving the *Vision*—Moving from Current Commitments to *Strategic Plan Targets*

By 2004, "weighting" of focus areas would change so that severe/moderate child malnutrition and maternal nutrition and low birth weight will each account for about 35 percent of ICDDR,B's nutrition research, the next three for 10 percent each, with micronutrients represented across the other five focus areas.

Moving from Current Commitments under Funded Research to Vision Targets for the Year 2004

Focus Area	Percent of Current Budgets	Percent of Vision Target
Maternal nutrition/LBW	6	35
Severe and moderate child malnutrition	43	35
Infectious disease/nutrition interrelations	23	10
Infant and child feeding practices	10	10
Child growth and development	17	10
Total	100	100

Achieving the Vision—Anticipated Future Growth

Reflecting increased international attention to nutrition problems and programs, nutrition research at ICDDR,B is expected to grow at five to ten percent a year or more. "Full-time staff equivalents" working on nutrition will also have to grow. Nutrition research would thus represent an increased proportion—30 percent or more?—of ICDDR,B's total research effort.

Achieving the Vision—Strategic Emphases

To achieve the vision, the Nutrition Working Group will pursue three strategic emphases:

- utilise the lifecycle conceptual framework as the context for its nutrition research programme;
- strengthen the management systems that support nutrition research, services and training at ICDDR,B; and
- find ways of recruiting, motivating and retaining staff with appropriate skills.

Strategic Planning for ICDDR,B Nutrition Activities, 2000-2004—Next Steps

The Strategic Plan, including its vision statement, will be submitted for Centre endorsement

The Two-year Work Plan for Nutrition Research, 2000-2001 will be consolidated in a data base which will facilitate planning and management of human resources for nutrition under ICDDR,B's current "matrix" organisation, also taking into account staff commitments to service and training.

ICDDR,B: Centre for Health and Population Research

NUTRITION WORKING GROUP

Work Plan 2000-2001

I. INTRODUCTION

An array of nutritional deficiencies are widely prevalent in Bangladesh and in other developing countries. Deficiencies of macronutrients (protein-energy malnutrition) as well as micronutrients (vitamin A, zinc, iodine, iron, etc.) have enormous impact on health and productivity due to primary effects as well as their effects as co-factors in a variety of conditions including among others gastrointestinal and other infections, low birthweight, psychomotor and cognitive development.

Nutrition research is therefore one of the priorities of ICDDR,B.

To effectively implement ICDDR,B's nutrition research and service agenda a Nutrition Working Group (NWG) with the following terms of reference has been established:

1. Facilitate interdivisional collaborative nutrition research.
2. Assist in capacity building in the field of nutrition.
3. Identify priority areas for future work.

The identification of priority areas was addressed in a Strategic Planning Retreat held 27-28 September 1999. There, it was agreed that future nutrition research at ICDDR,B will develop within the following five areas of investigation (objectives): preventing/managing severe and moderate child malnutrition, adolescent and maternal nutrition and low birth weight, the interrelations between infectious diseases and nutrition, effects of nutrition on child growth and development, and improving infant and child feeding practices. To further guide future activities and research, several strategies were proposed within each of these objectives.

A detailed list of proposed research for 2000-2001 grouped by objective and strategy is described in Annexure 1.

In addition to the research activities, the nutrition programme of ICDDR,B also includes management and training activities as well as delivery of clinical services.

- Members of the NWG are managing and will continue to manage activities under the Nutrition Centre of Excellence, including research proposals funded through this special grant.

- The Operations Research component of the Bangladesh Integrated Nutrition Project (BINP) is co-ordinated through ICDDR,B and in that capacity members of the NWG were involved in reviewing and selecting nutrition research protocols submitted for funding by investigators from national institutions, NGOs and from ICDDR,B. Subsequently, the NWG will provide technical assistance to the BINP-ORP investigators during reporting and dissemination of the study findings and will assist the BINP program in translating research findings into recommendations for BINP and the subsequent National Nutrition Programme.
- With regard to training, NWG members are involved in the design and serve as faculty for training courses offered at ICDDR,B on case management protocols for which efficacy trials have been conducted at the ICDDR,B hospital. Future such training planned for 2000-2001 is also described in Annexure 1.
- In addition, eight international Nutrition Working Group Seminars were held at ICDDR,B in 1998-1999 and future such seminars are anticipated.
- Clinical nutrition services are provided at the Nutrition Rehabilitation Units at the Centre's Clinical Services and Research Centres in Dhaka and Matlab.

II. RESEARCH OBJECTIVES

1. *To prevent and manage severe and moderate child malnutrition*

The high mortality among hospitalised severely malnourished children has remained almost unchanged over the past five decades and is believed to be due to faulty case-management. Development and use of a standardised management protocol at ICDDR,B has almost halved the death rate among severely malnourished children acutely ill with diarrhoea, pneumonia, or septicaemia. Studies are to be undertaken to evaluate modifications in the management protocol to further reduce mortality. Strategies include the use of metronidazole against small-bowel bacterial overgrowth, and use of reduced-sodium ORS. Several training courses will be organised to disseminate and utilise experience with the protocolised management. ICDDR,B will also soon become WHO/SEARO training site for both the protocolised management and IMCI.

After the acute illness has been managed, children with severe malnutrition are conventionally provided nutritional therapy in a hospital-based nutritional rehabilitation unit. As hospital-based treatment is expensive, the effectiveness of community-based nutritional rehabilitation will be studied. These studies will attempt to find an inexpensive and sustainable alternative to costly hospital-based nutritional rehabilitation. A second community-based study will examine whether hospital-based nutritional rehabilitation can be replaced by home feeding of an indigenous, low-cost, nutritious diet prepared by mothers. Such diets developed at ICDDR,B have already been found to be effective in improving the weight gain of severely malnourished children.

In Bangladesh an estimated 44% of all children are moderately malnourished according to the Gomez classification and the success of programs to manage and prevent severe malnutrition is likely to further increase this figure. Research will be undertaken to develop optimum feasible and effective methods to manage moderate malnutrition in children within the Bangladesh Integrated Nutrition Program (BINP) and in Matlab.

Research will be undertaken in Matlab to investigate the role of micronutrient supplementation during pregnancy on growth, morbidity and mortality during the first year of life.

Studies have also been proposed to investigate the risk factors for severe malnutrition, to identify culturally acceptable and feasible infant feeding practices (including breastfeeding counselling) to prevent childhood malnutrition and to investigate the consequences of early childhood malnutrition.

2. *To improve the nutritional status of women during adolescence and pregnancy and develop interventions aimed at reducing low birth-weight.*

The critical role of nutritional adequacy including micronutrient sufficiency of young women, especially during pregnancy, on the nutritional and health status of their infants and children is now recognised. The incidence of low birthweight in Bangladesh is estimated to be between 35 to 50%, among the highest in the world. Low birthweight is an important predictor of subsequent childhood malnutrition, increased risk of infection, and poor cognition in infancy and throughout childhood. And although there is a national policy to supplement pregnant women with iron, the programme effectively reaches less than 20% of the targeted population. Multiple micronutrient deficiencies are very common in Bangladeshi women. There is a need for well-designed RCTs that will examine the role of selected nutrient interactions and multivitamin-mineral supplementation in improving pregnancy outcomes.

Activities at ICDDR,B in this area will have two principal components: i) the characterisation of nutritional (general and micronutrient) status as well as the development of practical field tests and improved laboratory methodologies to assess nutritional deficits in these populations, and ii) the testing of nutritional intervention strategies.

The inter-relationships between maternal nutritional status and gestational age, birth weight, perinatal/infant mortality, and infant cognitive and motor development are to be investigated in a proposed study in Matlab to assess the effect of protein/energy supplementation along with micronutrients on pregnancy outcomes.

The great majority of LBW is believed to be directly due to abnormalities that extend throughout the lifecycle, indicating an intergenerational problem. LBW infants grow up to be undernourished and stunted children and adolescents and, ultimately, undernourished women of childbearing age and undernourished pregnant women. Research is therefore required to address the issue of undernutrition in all stages of the life cycle. Studies will be

undertaken to determine the prevalence and the principal aetiologies of anaemia in rural and urban women, and to address the nutritional status of adolescents in Matlab.

3. *To further define the relation between infectious diseases and nutrition*

Substantial work has been done in the area of dietary management of acute and persistent diarrhoea. Efficacy of a high-protein diet to improve catch-up growth in malnourished children during recovery from shigellosis, improvement of clinical outcome with a rice-based diet in persistent diarrhoea, effect of zinc supplementation in acute and persistent diarrhoea is well established. A standardised treatment protocol has been shown to reduce death in severely malnourished children with diarrhoea by half.

However, case fatality due to acute and persistent diarrhoea remains high, and a better understanding of nutritional interventions is needed to reduce the morbidity, mortality and growth failure that occur as a consequence of diarrhoea and malnutrition. ICDDR,B will undertake further research to study the effect of infections on nutrient homeostasis and host defence leading to malnutrition that will ultimately have program and policy implications and will lead to better child survival.

Evidence continues to accumulate to demonstrate unique roles for micronutrients like vitamin A and zinc in the treatment and prevention of diarrhoeal disease and other infectious causes of excessive childhood morbidity and mortality. A hospital to community study in Matlab is underway to determine the effect on growth and cell-mediated immunity of a micronutrient mix (zinc, iron, and folate) given to children with severe malnutrition. A community-based study will be conducted to assess the effect of combined iron & zinc supplementation on growth, anaemia, morbidity and mental development of children. Studies will also be done on potential therapeutic roles of zinc, vitamin A, and selected antioxidants (B-carotene, tocopherol, selenium and vitamin C) in invasive diarrhoea. A community-based study is underway in urban Dhaka to assess the effect of zinc supplementation on acute lower respiratory infections in children.

The optimal dose of zinc supplementation for efficacy in children with diarrhoeal disease and in children recovering from severe malnutrition while avoiding toxicity in young infants is not known. Studies will be conducted using different doses of zinc and assessment of clinical outcomes, immunity, and copper status. The zinc metabolic consequences of diarrhoeal disease in malnourished children will be determined in a separate study.

For poorly understood reasons, a significant number of children fail to improve their vitamin A status after supplementation with a megadose of vitamin A. It has been speculated that causal mechanisms involve intestinal parasitosis or zinc deficiency. A study is planned to determine the importance of and need for simultaneous zinc with vitamin A supplementation of children who fail to respond to a single large dose of vitamin A. A separate study will examine the impact of intestinal parasitosis on the efficacy of β -carotene to improve vitamin A status.

4. To study the interrelations between nutrition and child growth and development

Deficiencies of (micro)nutrients are known to not only affect child growth but also have an impact on future cognitive and motor development. ICDDR,B is seeking to expand its research efforts in this important emerging area of research.

A standard, validated tool to measure child development in the Bangladesh setting has not yet been developed. Research is proposed to study the use of a direct recording scale, involving mothers, to monitor growth and development of children in rural Bangladesh.

To identify risk factors for poor child development a research is underway in rural Bangladesh to explore the underlying caring practices that contribute to child's nutritional status. Two intervention studies are underway to assess the effect of micronutrient supplementation (zinc, and/or iron and/or multimix micronutrients) on children's growth and development in rural and urban Bangladesh. A research has been initiated to assess the effect of psychosocial stimulation on the development of malnourished children within an existing national nutrition program. Another study is proposed to assess the impact of violence addressed to mothers on children's development.

5. To improve infant and child feeding practices

A period of 4-6 months of exclusive breast feeding followed by timely introduction of high-quality complementary foods has been recommended by WHO to ensure adequate infant growth during the first year of life and beyond. Several studies in Bangladesh have indicated that exclusive breastfeeding is not commonly practised and there have been substantial efforts to promote the use of exclusive breast-feeding through peer counselling.

However, very little is known about actual infant feeding practices including complementary feeding. Research is proposed to assess the breast-milk intake by children age 0-18 months in rural Bangladesh and to assess the iron bioavailability from traditional complementary foods using stable-isotope techniques.

ICDDR,B is seeking to expand research in this important area and new proposals will be developed to further define infant/child dietary practices and test/identify culturally acceptable and feasible improved infant/child feeding practices with a particular emphasis on complementary foods.

To effectively study the dietary intake, information on the composition of foods is essential. Unfortunately, up to this moment a national food composition database in Bangladesh is virtually non-existing. ICDDR,B, in collaboration with national and international partners, has developed a proposal to develop a computerised, national food composition database. Once funding will have been assured, it is aimed to start this activity within the next two years.

ANNEXURE TO NWG WORKPLAN

OBJECTIVE 1: Prevention/management of severe and moderate malnutrition in children

Strategy 1: *To further improve the protocolized management of severe malnutrition*

Task	Date ¹	Investigators
1.1.1 Use of metronidazole in improving nutritional rehabilitation of severely malnourished children recovering from diarrhoea	Dec 2001	Drs. Tahmeed Ahmed / Iqbal Hossain / G Fuchs
1.1.2 Role of free radicals in the pathogenesis of edematous malnutrition	Dec 2001	Dr. Jamil
1.1.3 Hypophosphatemia in severely malnourished children: prevalence, pathophysiology, and management	Jul 2003	Drs. Tahmeed Ahmed / Jamil / Iqbal Hossain / G Fuchs
1.1.4 Parenteral magnesium in the management of abdominal distention in severely malnourished children	August 2000	Drs. Tahmeed Ahmed / G Fuchs

¹ date= proposed completion date

Strategy 2: To develop effective community based management strategies for severely malnourished children

Task	Date	Investigators
1.2.1 Community-based protocolized management of severe malnutrition.	September 2001	Dr.s Fuchs/Osinski/S. K. Roy/Tahmeed Ahmed/Abbas Bhuiya/Lauren Blum, Persson et al.
1.2.2 Acute phase treatment of severely malnourished children in day care clinics	July 2001	Drs. Iqbal Hossain / Tahmeed Ahmed / G Fuchs
1.2.3 Home-based management of severely malnourished children recovering from diarrhoea	December 2001	Drs. Tahmeed Ahmed / Munirul Islam / MA Salam / Ann Ashworth / G Fuchs
1.2.4 Evaluation of the nutrition module of IMCI	2001	Dr. Fuchs/Shams El Arifeen
1.2.5 Cost-effectiveness of nutrition interventions in rural Bangladesh	2001	Dr. Shakil Ahmed

Strategy 3: To develop effective methods for the management of moderate malnutrition in children

Task	Date	Investigators
1.3.1 Effective means to reduce moderate malnutrition within the BINP areas	June 2001	Dr. SK Roy
1.3.2 Impact of energy supplementation on moderately malnourished children under 5 years of age: a community-based intervention study in Matlab	2001	Dr. Anisur Rahman

Strategy 4: To organize and conduct training courses on the management of severe malnutrition

	Task	Date	Investigators
1.4.1	Training of trainers in medical colleges, Dhaka Shishu Hospital	2004	Drs. AN Alam, Tahmeed, Anjuman Ara, Jamil, Iqbal Hossain, Hasan Ashraf
1.4.2	Courses for local participants	On-going	Same (see above)
1.4.3	Courses for overseas participants	2001	Same (see above)
1.4.4	Impact evaluation of training courses for Bhutan and Kurigram	2001	Drs. Tahmeed Ahmed, G Fuchs
1.4.5	WHO/SEARO training site for protocolized management of severe malnutrition and IMCI	2000-on-going	Drs. Fuchs/Tahmeed Ahmed

Strategy 5: To investigate the role of micronutrients on growth, morbidity and mortality of severely malnourished children

	Task	Date	Investigators
1.5.1 see: 2.2.1	The Matlab Birth Weight study: effect of maternal energy/protein and/or micronutrient supplementation on growth, morbidity and mortality of infants.	2004	Dr. Fuchs/Persson

Strategy 6: To investigate the risk factors for severe malnutrition (biological/environmental/socio-economic)

	Task	Date	Investigators
1.6.1	Observational study to assess risk factors for severe malnutrition	Dec 2000	Dr. Bairagi

Strategy 7: *To identify culturally acceptable and feasible infant feeding practices and explore related breast feeding counseling approaches to prevent childhood malnutrition*

Task	Date	Investigators
1.7.1 Promotion of exclusive breastfeeding (EBF) and lactational amenorrhoea methods (LAM) by peer counseling in rural Bangladesh	Dec 2000	Dr. Iqbal Kabir

Strategy 8: *To investigate the consequences of early (under two) malnutrition on growth and development at school entry*

Task	Date	Investigators
1.8.1 Analysis of existing data on consequences of early childhood malnutrition	Dec 2001	Dr. Bairagi

OBJECTIVE 2: Adolescent and maternal nutrition and Low Birth Weight (LBW)

Strategy 1: To identify prevalence of and risk factors for LBW

	Task	Date	Investigators
2.1.1	Add birthweights to the Matlab DSS longitudinal data collection	2000	Dr. Shams El Arifeen
2.1.2	Pooled analysis on prevalence of and risk factors for LBW in rural and urban Bangladesh	2000	Dr. Shams El Arifeen/George Fuchs/DS Alam/Saskia Osendarp/Zahid Hasan
2.1.3	Estimating Disability Adjusted Life Years (DALY)s for LBW	2001	Dr. Shams El Arifeen/Rubina Shaheen/M. Khan

Strategy 2: To identify comprehensive (nutrition) interventions to improve maternal nutrition and reduce LBW

	Task	Date	Investigators
2.2.1 see: 1.5.1	The Matlab Birth Weight Study: Combined interventions against LBW in Bangladesh	2003	Dr. Fuchs/Persson (Dr. Shams El Arifeen/Lotta Ekstrom/DS Alam/ Rubina Shaheen/ Saskia Osendarp/ Nigar Shaheed)
2.2.2	Effect of fish oil supplementation to pregnant mothers on LBW	2003	Dr. Iqbal Kabir

Strategy 3: To address the nutritional status of adolescents

	Task	Date	Investigators
2.3.1	The Matlab Adolescent Health and Nutrition Project	2003	Drs. Rubina Shaheen/Japhet Killewo/Md. Yunus/ Chakraborty/LA Persson

Strategy 4: To address issues related to maternal nutritional status

	Task	Date	Investigators
2.4.1	The etiology of anaemia in women	2002	Dr. Lotta Ekstrom

OBJECTIVE 3: The relation between infectious diseases and nutrition

Strategy 1: *To study the effect of infections on nutrient homeostasis and host defense leading to malnutrition*

	Task	Date	Investigators
3.1.1	An epidemiological study of shigellosis in severely malnourished children	2001	Dr. Jamil

Strategy 2: *To study the impact of micronutrient supplementation on growth and morbidity*

	Task	Date	Investigators
3.2.1	Effectiveness study of zinc supplementation during diarrhea	2000	Dr. AH Baqui/ Zaman/Shams El Arifeen
3.2.2	Efficacy of iron and/or zinc or micronutrient supplementation on diarrhoea morbidity and growth	2001	Dr. AH Baqui/ Zaman/Shams El Arifeen/ K Zaman
3.2.3	Effect of zinc supplementation on immunity, inflammation and growth	2001	Dr. Rubhana Raquib/ SK Roy/Alam/Kabir
3.2.4	Controlled trial on zinc supplementation and ALRI/diarrhoea	2000	Dr. A. Brooks
3.2.5	Efficacy of zinc supplementation in young infants with acute watery diarrhoea	2000	Dr. A. Brooks
3.2.6	Clinical efficacy of L-glutamine in persistent diarrhea	2001	Dr. I. Kabir/Fuchs
3.2.7	Cellular and humoral immune response to rotavirus infection in Bangladeshi infants and relevance to rotavirus vaccine studies	2000	Dr. Tasneem Azim

Strategy 3: *Control of infections to improve nutritional status*

OBJECTIVE 4: Child growth and development

Strategy 1: To develop standard methods for growth and cognitive functions

	Task	Date	Investigators
4.1.1	The use of direct recording scale to involve mothers in monitoring the growth of children in rural Bangladesh	2000	Dr. Abbas Bhuiya

Strategy 2: To identify risk factors for poor child development and test interventions

	Task	Date	Investigators
4.2.1	Action research into positive and negative deviance in child nutrition	2000	Dr. Naved T Ruchira
4.4.2 see: 3.2.2	A community based RCT; efficacy of iron and/or zinc or multimix supplementation on growth and development	2000	Dr. Baqui/George Fuchs/ K. Zaman
4.2.3	The effect of zinc supplementation on infant growth and development	2000	Dr. Jena Hamadani/George Fuchs/Saskia Osendarp
4.2.4	The effect of psycho-social stimulation on development of malnourished children within the BINP	2000	Dr. Jena Hamadani/Nazmul Huda
4.2.5	Mother's ways of understanding physical and developmental growth	2001	Dr. Abbas Bhuiya/Iqbal Kabir
4.2.6	Women's violence and its impact on child development	2000	Dr. A Bhuiya/Dr. Rabeya Khatun/Persson

Strategy 3: To improve knowledge and skills on child development of paramedics and nutrition workers

OBJECTIVE 5: Improving infant and child feeding practices

Strategy 1: *Assessment of child/infant feeding practices*

	Task	Date	Investigators
5.1.1	Feasible means to address moderate malnourished children	2001	Dr. SK Roy
5.1.2	Breast milk intake by 0-18 months olds	2001	Dr. Iqbal Kabir
5.1.3 see: 1.7.1	Positive and negative deviance in child nutrition	2000	Dr. Navid Ruchira
5.1.4	Iron bioavailability from traditional complementary foods	2001	Dr. Shafique Sarker

Strategy 2: *Identifying culturally acceptable and feasible improved infant feeding practices*

	Task	Date	Investigators
5.2.1	The promotion and support of EBF and LAM	2000	Dr. Haider/Iqbal Kabir

Strategy 3: *Develop a tool to perform dietary intake studies*

NUTRITION WORKING GROUP

ANNUAL REPORT

1999



May 2000

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1. Introduction

The International Centre for Diarrhoeal Disease Research, Bangladesh (ICDDR,B; the Centre) was established in 1978 with the signing of a Government of Bangladesh ordinance. It was the successor to the Cholera Research Laboratory of the 1960s, widely recognised as the successful developer of oral rehydration solution. An institute of international renown, ICDDR,B is now recognised as a leading organisation in the field of health, population and nutrition research in the developing world. In addition, its experience in the field of research and treatment of cholera has enabled the Centre to respond effectively to outbreaks of cholera and other disasters not only in Bangladesh but also in South America and Rwanda.

Bangladesh is a developing country and is classified by the United Nations Human Development Index as ranking 143rd (in 1996) in the world. The 1999 Report on Human Development in South Asia lists the population of Bangladesh at 128 million (1998), making it one of the most populous in the world. It is estimated that 55% of all Bangladeshi children under five years have moderate or severe stunting while 56% are underweight and 21% severely underweight (UNICEF State of the World's Children 2000). Prevalence of low birth weight (<2500g) is estimated at 40 to 50% of all live births, the highest in the world. Dire poverty combined with lack of access for the vast majority of the population to clean drinking water, sanitary living conditions, adequate health services and education compounds the problems of infection, disease and malnutrition particularly in vulnerable groups such as infants, children and pregnant and lactating women. Problems thus abound. The high prevalence of broad spectrum of nutrition problems and their close linkages with infection and disease thus provide multiple challenges and opportunities for the continuing conduct of nutrition research at the Centre by a large number of ICDDR,B's scientists.

2. The Nutrition Working Group

The Centre's Nutrition Working Group (NWG) was established as a cross-divisional body in 1995 on the directive of ICDDR,B's Director to give an identity and momentum to nutrition research at the Centre and to act as a focal point for nutrition research activities. It began as one of five working groups focussed on a single theme or subject within ICDDR,B's areas of scientific expertise. Nutrition is now foremost among the interdisciplinary and interdivisional research themes developed at ICDDR,B, bringing together scientists with the various skills to address research issues through the Nutrition Working Group.

Keeping in mind the interdisciplinary nature of nutrition research, the Nutrition Working Group was established with the objectives of a) facilitating ICDDR,B's interdivisional collaborative nutrition research; b) assisting in capacity building in the field of nutrition and c) helping to identify priority areas for future work. Headed by Prof. George Fuchs, the NWG is an interdisciplinary group with members from ICDDR,B's four scientific divisions — Clinical Sciences, Laboratory Sciences, Health and Population Extension and Public Health Sciences Division.

The NWG fulfils its mission of facilitating interactions, developing capacities, and supporting inter-divisional collaboration of nutrition researchers, so as to enable ICDDR,B to respond more effectively to the nutrition problems of developing countries. It also provides a forum for the interaction between scientists, governmental, non-governmental and donor agencies and the conduct of scientific research in the field of nutrition.

In his capacity as head of NWG, Prof. George Fuchs provides technical updates to the members, calls meetings of NWG, has dialogues with donors, represents the Centre at conferences and international for a, approves fund allocations from NCoE grant and guides and supervises the administrative office of NWG. Drs Lars Åke Persson and SK Roy

desputise as NWG head in the absence of Prof. Fuchs. Co-ordinators were identified to be responsible for the development of research and/or intervention programmes in one or more of the following sub themes – (i) LBW and maternal nutrition, (ii) Feeding practices and complementary feeding, (iii) Treatment and management of severely malnourished children, (iv) Growth and development, (v) Malnutrition and infectious diseases, (vi) Operations Research, including BINP/NNP and (vii) Training. The Co-ordinators have been instrumental in providing updates on activities within the sub-themes. The LBW Symposium and Workshop on Nutrition and Child Development were organised by two of the co-ordinators.

At the professional level, NWG is informally managed by Vanessa Brooks (Grants Administrator), Saskia Osendarp (Co-ordinator BINP-ORP), and Petra Osinski (Consulting Scientist) working at the centre with TORs related to NWG/NCoE. An Office Manager provides administrative support with extensive support from the secretary to the Programme Head. The NWG administration as a whole compiled much of the information for the Internal Review of the NWG held in January 2000 and prepared for - and organised - the NWG Strategic Planning Retreat held in September 1999.

Meetings of NWG are held monthly and serve to update NWG members on recent developments, co-ordinations and consultations. The priorities of the Work Plan 2000-2001 and the five-year Strategic Plan were decided upon by the Nutrition Working Group as a whole.

3. Highlights of 1999

Compared to 1998, a dramatic increase of 136% in *funding* received for nutrition activities by ICDDR,B was seen in 1999. The allocation of funds under the *World Bank Development Grant Facility* enabled the institutionalisation of a Nutrition Centre of Excellence (NCoE) at ICDDR,B in 1998. The grant which is channelled through the NCoE to fund various research and administrative support to the NWG was renewed in 1999 and was a major source of funding for research and other nutrition activities.

Eleven nutrition research protocols were completed in 1999 while *28 nutrition research protocols* were ongoing. Organisation of nutrition *seminars* was continued in 1999 and papers continued to be well received. Ten research papers on nutrition were presented in 1999 by researchers from ICDDR,B as well as affiliating institutes and agencies in Bangladesh and abroad. The list of nutrition research papers presented in 1999 at ICDDR,B is at Annex 1.

Peer-reviewed articles on nutrition by scientists of the Centre were published in premier international scientific journals, a list of which is attached at Annex 2. Papers on nutrition research were presented by several scientists at meetings, workshops and seminars in country and abroad. A list of meetings attended and papers presented are attached at Annex 3. *Dr. Tahmeed Ahmed* was awarded the *International Health Research Award, 1999* from the Ambulatory Paediatric Association of the USA for his research on protocolised management of severe malnutrition.

A mini workshop on child development was held on May 24, 1999 at ICDDR,B's Sasakawa Training Centre. Organised by the Growth and Development sub-committee of the Nutrition Centre of Excellence and chaired by Prof. George Fuchs, the workshop was attended by participants from INFS, Dhaka Shishu Hospital, Sir Salimullah Medical College and Hospital, Institute of Child Health (UK) and ICDDR,B. The objective of the workshop was to identify research priorities and future strategies in the area of child development. A

presentation was made by Dr Sally Grantham-McGregor of the Institute of Child Health (UK) on the magnitude of the problems of child development and data from various research conducted in other countries. The workshop resulted in a set of recommendations identifying priority areas for intervention trials.

In June 1999 ICDDR,B organised and hosted a four-day *symposium and workshop on Low Birth Weight*. Co-sponsors were UNICEF, the Bangladesh Integrated Nutrition Project (BINP), and the collaborating members of USAID's Child Health Research Project (ICDDR,B: Centre for Health and Population Research, the Harvard Applied Research on Child Health Project, the World Health Organisation Department of Child and Adolescent Health, the International Clinical Epidemiology Network, and Johns Hopkins University Family Health and Child Survival). During the meeting, the epidemiology and causes of low birth weight (LBW) were discussed, and many interventions to reduce its incidence examined. The primary outcome of the symposium was to develop strategies to prevent and treat LBW and to consider how these interventions will be integrated into programmes. The two-day (June 14-15) symposium was held at the ICDDR,B campus in Dhaka to review current scientific knowledge on the issues of LBW, including interventions to reduce LBW and LBW activities in Bangladesh. The symposium was structured around presentations by experts who reviewed the state of the art scientific evidence on defined aspects of the multifaceted problem that is LBW.

The two-day (June 16-17) workshop that followed was held at ICDDR,B's Matlab training centre in which participants developed priority research and programme options with the benefit of the review and discussion of the previous two-day symposium. An important consideration for the workshop were the direct implications of recommendations as options for the Bangladesh Integrated Nutrition Programme (BINP) and its follow up the National Nutrition Programme (NNP), the multi-year national programmes of the Government of Bangladesh financed through the World Bank.

Recognition of the role of the "life-cycle" conceptual framework to address LBW was an important conclusion from the Symposium and was reflected in the structure of the Workshop, specifically the definition of the groups. Proceedings of the Symposium and Workshop, including the specific research and programme priorities from the Workshop were published as an ACC/SCN-ICDDR,B monograph scheduled for release in February 2000.

A Strategic Planning Retreat for the Nutrition Working Group was held from September 27 to 28 1999. The retreat, the first ever in the history of nutrition activities at ICDDR,B, was seen as an important tool in streamlining nutrition activities and research under a strategised approach. See below in Section 8 for details.

A *Fogarty grant* was awarded to ICDDR,B with training at University California Davis, USA. The Fogarty International Center of the US National Institutes of Health (International Maternal and Child Health Training Grants) supports pre- and post-doctoral training in areas relevant to reproductive health (as it relates to birth outcomes) and children's health and development in low-income countries. The Grant's focus is on maternal and child health and nutrition, and is implemented in collaboration with five international research centers, including ICDDR,B.

Visitors to the Centre in 1999 specifically for nutrition related activities included Monuara Begum of BINP, Dhaka, Dr Maureen Black of the University of Maryland, USA, Prof Robert E. Black and Mathuram Santosham of Johns Hopkins University, Dr Howard Bouis of IFPRI, Washington, USA; Prof Kenneth Brown of the University of California, Davis, USA; Dr

Andrew Dannenberg of CDC Atlanta, USA, Dr Andres de Francisco from WHO Geneva, Dr Mark Fletcher of MD Pasteur Merieux Connaught, France, Dr Rae Galloway, Milla McLachlan, Richard Skolnik and Rashmi Sharma of the World Bank, USA, Dr Ellen Girerd-Barday, UNICEF Regional Advisor for Nutrition and Health, UNICEF ROSA in Nepal, Sally Grantham-McGregor of the Institute of Child Health, London; Dr Gretel Pelto and Prof Jean Pierre Habicht of Cornell University, USA, Usha Ramakrishnan of Emory University, USA, Prof Robert Suskind of LSUMC, UK, Joop van Raaij and Prof Frans Kok of Wageningen Agricultural University, The Netherlands; and Dr Daniel Walker and Dr Lynn Walker of CSIRO Tropical Agriculture, Australia.

4. Nutrition Research

The following priority areas were identified by NWG in the Strategic Planning retreat held in September 1999: preventing/managing severe and moderate child malnutrition, adolescent and maternal nutrition and low birth weight, the interrelations between infectious diseases and nutrition, effects of nutrition on child growth and development, and improving infant and child feeding practices. Criteria applied in their identification included relationship to ICDDR,B's mission, comparative advantage, relationship to core competencies and relevance to key target groups for ICDDR,B research. While these priority areas were primarily identified for the NWG Work Plan 2000-2001, they are here used as a framework for presenting earlier studies as well. Abstracts of protocols completed as well as those ongoing or initiated in 1999 are attached at Annex 4.

To prevent and manage severe and moderate child malnutrition

Malnutrition continues to be highly prevalent among children in Bangladesh. While interventions to address severe and moderate malnutrition are in place through projects such as the National Nutrition Project (NNP) and the Bangladesh Integrated Nutrition Project (BINP), the long-term sustainability of these projects is of concern. Costing studies of NNP and BINP activities and the potential for mobilisation of local resources through user charges were therefore conducted in 1999. Another costing study is still ongoing to examine the cost effectiveness of nutrition intervention (BINP) activities from the perspective of the project in order to determine the impact of such activities with respect to the resources used.

BINP supplementary feeding provided to malnourished children consists of a mixture of a locally prepared roasted rice-*dal* powder with a small amount of molasses and soybean oil. While extremely nutritious, the feeding supplement has a very high density resulting in lesser quantities of supplement being consumed than desired. A study was conducted to test whether the addition of amylase rich flour (ARF) from germinated wheat to this mixture, resulting in a reduction in viscosity, would make the supplement more palatable and hence increase intake.

Oral Rehydration Solutions are used to manage acute diarrhoea, including in severely malnourished children. Trials are currently ongoing to determine whether hypotonic ORS is helpful in reducing stool volume as well as duration of diarrhoea. Case management will be made simpler and easier for those very young infants if the risk of development of hypernatraemia is also minimised. Another study to compare the development of over-hydration and potassium status during treatment of severely malnourished children suffering from diarrhoea with either modified ORS ReSoMaL compared to standard WHO-ORS is also ongoing.

To improve the nutritional status of women during adolescence and pregnancy and develop interventions aimed at reducing low birth weight

Adolescence is a time of transition and a period of accelerated growth due to hormonal changes. Birth weight of new-borns is dependent on the mother's nutritional status in pregnancy particularly in respect to micronutrients. A study was completed in 1999 that studied the effect of zinc supplementation during pregnancy and infancy on the birth weight, growth, morbidity and immune response to vaccines in Bangladeshi children.

Another study is ongoing that will study the efficacy of fish-oil supplementation to pregnant mothers on birth weight of their babies.

To further define the relation between infectious diseases and nutrition

While the interrelation between infectious diseases and nutrition is well documented, the effect of various micronutrients on the duration, severity and treatment of various infectious diseases is not yet understood. Several zinc supplementation studies are currently ongoing that study its efficacy on immune response, duration, morbidity and growth with respect to severe diarrhoea, cholera vaccine, severe pneumonia and ARI. Another study examining the efficacy of L-Histidine, an amino acid with anti-inflammatory and antioxidative activities, in reducing intestinal inflammation and secretion induced by infectious agents in animals was completed in 1999. The effects of L-Histidine in a rabbit model of acute colitis induced by intracolonic administration of *Shigella flexneri* 2a were thus examined.

In Bangladesh case fatality due to acute and persistent diarrhoea remains high. Group A rotavirus (RV) accounted for 35% of all diarrhoeal cases in children below 2 years attending the Clinical Research and Service Centre (CRSC) of ICDDR,B in 1996. Control of RV infection will, therefore, have an enormous impact in morbidity and mortality associated with diarrhoeal diseases in Bangladesh. Vaccination is now considered the best method for control. A study is underway to study cellular and humoral response to rotavirus infection in Bangladeshi infants and relevance to rotavirus vaccine studies. Another related study is the study on safety and immunogenicity of 4×10^5 pfu Tetraivalent Rhesus Rotavirus Vaccine, with or without Zinc Supplementation in Matlab, Bangladesh. This study aims to evaluate the safety and IgA serological response of 3 doses of oral tetraivalent rhesus rotavirus vaccine in Bangladeshi infants, when it is given with or without zinc supplementation.

A study evaluating clinical efficiency of L-glutamine, an amino acid that acts as a nutrient for enterocytes, in children with persistent diarrhoea on clinical outcome is also currently ongoing. The results of this study will be beneficial if glutamine supplementation shows a better clinical recovery from persistent diarrhoea.

Iron deficiency and anaemia is said to affect more than 3.5 billion people in the developing world. *Helicobacter pylori* (Hp) is a major gastrointestinal pathogen that causes gastritis and low gastric acid production. Gastric acid is one of the most important luminal factors necessary for optimal non-haeme iron (Fe) absorption. Two studies on the association between helicobacter pylori and iron deficiency anaemia in children and women of childbearing age in Bangladesh are ongoing in 1999.

To study the interrelations between nutrition and child growth and development

Micronutrient deficiencies affect growth as well as the cognitive and motor development of children. Studies on the effect of zinc supplementation on growth and intestinal availability of iron-replete and iron-deplete children and the effect of zinc and vitamin A supplements on the bioavailability of vitamin A in children were completed in 1999.

Growth monitoring is an important tool that enables faltering children to receive adequate attention and the necessary care in time to prevent severe malnutrition. However, growth monitoring requires frequent visits of caretakers to health centres with their children and accuracy of growth monitoring equipment. A direct recording scale (DRS) developed by Teaching Aid at Low Cost (TALC) has been specially designed so that mothers can weigh their children by themselves even without the benefits of literacy and without having to plot the chart. The direct involvement of mothers in monitoring their children's growth is expected to increase the use of growth monitoring as a tool. A study is currently ongoing with the objective of developing a strategy that makes growth monitoring (GM) a part of family activities.

There has been increasing concern among international agencies and national governments over the loss of human potential in children growing up with poverty and malnutrition. Malnourished children tend to be listless which reduces interaction between them and their caregivers. In a proposal initiated in 1999, a low cost, feasible, and culturally appropriate programme of child development activities will be incorporated in Bangladesh Integrated Nutrition Programme (BINP) feeding centres with the aim of improving the social and cognitive development of malnourished children and the child rearing skills of their mothers.

To improve infant and child feeding practices

The availability of clean drinking water is an essential aspect of health. In many developing countries, as in Bangladesh, the unavailability of clean drinking water may be compounded by the lack of necessary resources such as fuel and time to boil water to make it suitable for drinking. UCB Osmotics limited UK has developed 4 types of osmotic sachets made of semi-permeable food grade cellulose membrane with pore size diameter 2.4 nm to prepare microbiologically safe ORS, therapeutic milk, infant formulae and potable water. Scientists at ICDDR,B have in 1999 completed a trial to evaluate the osmotic sachets. Another study is currently ongoing to evaluate the potential use of an osmotically driven device for the preparation of therapeutic feeds for home management of malnourished children.

Breastfeeding provides a complete source of nutrition in the first six months of life; it confers immunity against specific diseases and can be sustained during times of illness even as complementary food intake decreases, thus providing vital nutrients to the child. Breastfeeding lengthens the period of postpartum amenorrhoea thus lengthening birth interval, which is also closely related to infant and child survival. While breastfeeding rates are very high in developing countries (exceeding 95% in some countries according to ACC/SCN's 4th Report on the World Nutrition Situation, 2000), only 51% of children (0-3 months) in Bangladesh are exclusively breastfed (UNICEF State of the World's Children 1999). A study is currently ongoing to study the impact of peer counsellors (PC) on breastfeeding and contraceptive practices in rural Bangladesh. Local women have been trained as peer counsellors to provide counselling on breastfeeding and lactational amenorrhoea method (LAM) to pregnant women during their third trimester. Another study has been initiated in 1999 to study the breast milk intake of 0-18 month old Bangladeshi children in accordance with WHO/UNICEF feeding recommendations:

Iron (Fe) deficiency anaemia is a major nutritional problem in vulnerable population groups such as infants, children and women of childbearing age. Iron deficiency anaemia during infancy is of particular importance since it can adversely affect psychomotor and mental development, some of which are irreversible. Bioavailability of iron from most traditional weaning foods is low because of the presence of phytic acid in the cereals and legumes that make up the weaning diet. While ascorbic acid is a potent enhancer of iron absorption and inhibitor of the action of phytic acid, it is only available if fruits and vegetables are added to

the weaning food. A study is ongoing to evaluate the possibility of improving iron bioavailability from a traditional cereal/legume based complementary food by ingestion of human milk immediately after feeding the complementary food.

Kitchen gardens are a good source of micronutrients such as vitamin A. Home gardening can also likely increase the supply of food within the household, increase income, and increase the quality of food consumed. A study is ongoing to evaluate the Helen Keller International's (HKI) ongoing USAID-supported home gardening programme to promote the production and consumption of vegetables in rural Bangladesh. The parameters under study are: (a) vitamin A status of household members; (b) consumption of vegetables within the household, especially by young children, and their mothers; (c) income of the household; (d) effects on social structure and gender relations; (e) sustainability of HKI-introduced home gardening; and (f) nutritional status of children and their mothers.

Others

Nutrition is an interdisciplinary subject and other research conducted at ICDDR,B often has implications for nutrition research. Such studies ongoing in 1999 include the evaluation of the effect of a soluble fibre supplemented comminuted chicken diet in the treatment of persistent diarrhoea in children, a community based evaluation of a dietary treatment algorithm as a home based management of children with persistent diarrhoea and the carotenoid bioavailability from plant sources.

5. Operations Research Management and Capacity Development under BINP

The Bangladesh Integrated Nutrition Project (BINP) aims to reduce malnutrition among Bangladeshi women and children through community-based nutrition interventions, and comprehensive national and intersectoral initiatives for micronutrient supplementation, breastfeeding promotion and household food security. The community-based nutrition component focuses on growth monitoring and promotion, supplementary feeding, IEC and mobilisation of the community.

During 1999 a total of fourteen research projects (annex 5) have been carried out under the BINP-Operations Research Project (BINP-ORP) by scientists from eight different national and international research organisations or NGO's and by ICDDR,B. By the end of the year, fieldwork of three projects was still ongoing while 11 projects had completed data collection with their final reports in various stages of completion. The BINP-ORP secretariat reported regularly on the progress of the studies through monthly progress reports and during meetings with the World Bank's Mid Term Review Mission of BINP and the NNP Appraisal Mission in March and November 1999. During the course of the BINP-ORP, research capacity building and quality assurance have become major activities for ICDDR,B. The review procedure of the research proposals and several meetings with investigators and members of ICDDR,B's Final Award Committee ensured the quality of the research proposals. During implementation of the study projects, each project was assigned an ICDDR,B monitor who provided technical assistance to the investigators. Technical assistance was again provided during the dissemination phase with an extensive review procedure of the draft reports and separate meetings and discussions with ICDDR,B monitor/co-ordinator and investigators if required to ensure quality of the reports. ICDDR,B is assisting the Research Advisory Committee (RAC) in disseminating the results of the studies and is in this capacity producing a series of dissemination reports. These reports compile the findings of several BINP Operations Research studies and present some overall conclusions and recommendations for the program. A first dissemination report, compiling the findings of the first three studies, was presented during a dissemination seminar, held at ICDDR,B on 15th December 1999.

6. NWG Services and Training

6.1 Nutrition Rehabilitation Unit

Over two-thirds of all children attending ICDDR,B's Clinical Research and Service Center (CRSC) are malnourished. Many of them do not have the opportunity of being immunised against the common vaccine-preventable diseases. The mothers often do not have the knowledge about preparation of nutritious food for their children using inexpensive, locally available ingredients. In this background, the Child Health Programme (CHP) of ICDDR,B's Clinical Sciences Division has been providing preventive as well as curative health care to children and their mothers attending the CRSC since 1988. The services include nutritional rehabilitation of severely malnourished children, health education, immunisation, growth monitoring, and family planning services. Health personnel are trained and operations research conducted in these areas.

During 1999, 26,431 health education sessions were conducted with mothers and female attendants of patients on home management and prevention of diarrhoea, nutrition, and importance of immunisation, covering an estimated 158,586 persons. Sessions are interactive, include video shows, and are conducted in both in- and outpatient facilities of the CRSC. Immunisation against 6 vaccine-preventable diseases were provided to 6,222 children aged less than 2 years (98% of the eligible children), making CRSC the largest immunisation site in the country. Tetanus toxoid was administered to 4,970 women of childbearing age. Vitamin A capsules were given to all children who did not receive the vitamin in the last six months.

Among the most severely malnourished children, 262 children were treated in the in-patient nutritional rehabilitation unit (NRU) where a standardised feeding protocol is used with inexpensive, locally available diets. In total, 1669 severely malnourished children were treated in the outpatient nutrition follow-up unit of the programme. Fifty-three children were diagnosed to have tuberculosis and received anti-TB treatment. Since birth spacing increases the ability of the mother to take care of her child, the programme provided family planning services to 423 parents of children attending the hospital. Orientation on activities of the programme and its importance as a model for primary health care is a part of Centre's scheduled training courses for national and international participants including doctors, nurses, and medical students.

6.2 Training programmes

Twelve paramedics nominated by the Urban Family Health Partnership from different NGOs were trained in a 10-day course on child survival interventions. The sessions were conducted from 7-18 February 1999 at the newly constructed training centre at Matlab. The training course was supported by USAID as part of the National Integrated Population and Health Programme (NIPHP). The course was designed to enable participants to provide immunisation services at the field level, to handle appropriate case management of children with diarrhoea and acute respiratory infections, to administer vitamin A capsules appropriately to children, and to provide appropriate counselling on vitamin A and breast-feeding.

The Centre offered a 6-week training for fellows from member countries of the South Asian Association for Regional Cooperation (SAARC) beginning 14 March 1999. The aim of this programme was to provide hands-on training to physicians and health professionals on different aspects of diarrhoeal diseases, laboratory diagnosis of common diarrhoeal disease agents, and community health to help strengthen the diarrhoeal disease control programmes in their countries. Ten fellows--two each from Bangladesh, Bhutan, The Maldives, Nepal, and Sri Lanka--have attended the programme.

The CHP organised the first training course on the management of severely malnourished children in collaboration with the Training and Education department in May, 1999. The course was participated by doctors, nurses, and health workers from within the country and Bhutan. The training course was based on the effective treatment protocols developed and implemented by CHP of the Clinical Sciences Division. Three similar ten-day courses were also conducted in 1999 for the doctors and nurses of Dhaka Shishu Hospital, Radda MCH-FP Centre and the NGO Food for the Hungry. These three courses were jointly organised by CHP, the Training and Education Department of the Centre and Dhaka Shishu Hospital. These courses were specifically organised to strengthen the nutrition unit of Dhaka Shishu Hospital, which will eventually serve as the referral centre for the project on community-based management of severe malnutrition.

Two national training courses on clinical management of diarrhoeal diseases were organised. Ten DCH students from Bangladesh Institute of Child Health and 17 physicians from the College of General Practitioners of Bangladesh attended these courses.

The Centre runs several training courses on a routine basis throughout the year. These courses have a day of lecture and practical training on assessment of severe malnutrition and its management. The staff of the CHP are assigned to conduct the lectures and practical training.

7. LBW Symposium

Every year, approximately 20.5 million infants from developing countries are born with low birth weight (LBW), a condition that predisposes them to extremely high rates of morbidity and mortality from infectious disease, malnutrition and growth failure, and accounts for an estimated one-third of all deaths during the first year of life. The potential benefits of preventing LBW in terms of health and national productivity are enormous.

The primary objective was to review current scientific knowledge and effective interventions on LBW issues and generate recommendations for future research and programme priorities.

The two-day (June 14-15) symposium was held at the ICDDR,B campus in Dhaka to review current scientific knowledge on the issues of LBW, including interventions to reduce LBW. The 2-day workshop in Matlab that followed the symposium (June 16 & 17) reviewed LBW-related activities in Bangladesh and developed recommendations for programmatic strategies and operations research for improving birth weight that can be adopted by future nutrition programmes in the country.

8. Strategic Planning Retreat and Draft NWG Strategic Plan

The objectives of the retreat were: a) to develop the longer term "big picture" for ICDDR,B's Nutrition activities, with a five year time frame, 2000-2004; and b) to initiate preparation of a more detailed Work Plan for implementation, 2000-2001.

The retreat's 24 participants were from the ICDDR,B's five Divisions — Clinical Sciences, Public Health Sciences, Laboratory Sciences, Health and Population Extension and External Relations and Institutional Development (Director's Division), and one participant from the Urban Family Health Partnership, a collaborating partner for a proposed urban-based nutrition programme.

The retreat resulted in a draft vision statement that awaits further refinement and endorsement within the Centre. In addition, agreement was reached on focus areas for nutrition research

and on related strategic thrusts, and inputs were also made to a two-year Work Plan for Nutrition Research (2000-2001), that was finalised in early 2000.

9. Staff: Changes and Development

There were three new additions to the NWG/NCoE Secretariat - **Dr Petra Osinski, and Dr E-C Ekström** joined as Consultant Scientists while **Mr Mahbulul Hoque** was appointed Office Manager.

NWG members Dr Rukhsana Haider (Clinical Sciences Division) and Dr Mahmud Khan (Public Health Sciences Division) left the Centre in 1999 to join other institutions while Dr Lars Åke Persson, joined NWG as a core member and Dr David Sack and Dr Kim Streatfield as general members. On a more tragic note, Dr Shameen Ahmed (Health and Population Extension Division), an active member of NWG, died in a plane crash on her way back from a meeting in Nepal.

Staff of the Centre continued to receive advanced specialised nutrition training. In 1999, two nutrition researchers began degree programmes at the University of Dhaka with academic components to be undertaken in the United Kingdom and France, Dr Jena Hamadani at the institute of Child Health, London while Ms Sufia Islam at the Conservatoire Nationale des Arts et Metiers de Paris, France. Dr Hamadani's field work in Bangladesh is being funded by NCoE and partly by the British Council while the academic studies component in London will be fully supported by the British Council while Ms Islam's academic training in France is being partially supported by the Government of France with the rest of her funding being provided by ICDDR,B. Dr M Aminul Islam continued with his work on his Ph.D. in Clinical Nutrition at UAB, USA, Dr Dewan S Alam with his work on his Ph.D. in Nutrition from Wageningen Agricultural University in the Netherlands, and Dr Rukhsana Haider on her Ph.D. in Nutrition from LSHTM, UK. The Centre continued to receive funding for staff development activities from various donors to support Centre staff studying overseas. This includes support for personnel pursuing degree programmes and attendance at scientific conferences outside Bangladesh.

Annex 6 lists NWG Researchers with their qualifications, experience and areas of interest

10. Partnerships

Collaborations and partnerships undertaken by the NWG have included both national and international institutions and organisations.

National

Bangladesh National Nutrition Council
Bangladesh Integrated Nutrition Project
Bangladesh Rural Advancement Committee (BRAC)
College of Home Economics, Dhaka
Dhaka Shishu Hospital
Government of Bangladesh
Helen Keller International

Institute of Child and Mother Health
Institute of Public Health and Nutrition
Institute of Nutrition and Food Science, Dhaka University
Institute of Post-graduate Medicine and Research
Kumudini Hospital, Mirzapur
Ministry of Health & Family Welfare
UNICEF, Bangladesh
University of Dhaka

International

All India Institute of Medical Sciences (AIIMS), India
APFAN
ASEAN Foods
Institute of Child Health, London (UK)
International Atomic Energy Agency (IAEA)
Johns Hopkins University (USA)
Karolinska University (Sweden)
Louisiana State University (LSU)
London School of Hygiene and Tropical Medicine (UK)
National Institute of Standards and Technology (USA)
National Institute of Cholera and Enteric Diseases, Calcutta (India)
Swiss Federal Institute of Technology, Zurich (ETH), Switzerland
University of Edinburgh, Department of Child Life and Health, Edinburgh (UK)
University of California, Davis (USA)
University of North Carolina at Chapel Hill (USA)
University of Alabama at Birmingham (USA)
Wageningen University (The Netherlands)

11. Donor support to NWG, including funding of 1999 NWG expenditures**Donors**

Helen Keller International
Japan
National Institute of Health
The Netherlands Government
OMNI (Opportunities for Micronutrient Intervention)
Thrasher Foundation
UNICEF
USAID
World Bank
World Health Organisation

12. Outlook**Linkages**

Collaboration with individuals and institutes from developed countries will continue and be actively pursued. These collaborations through exchange of research/institutions and their students will increase NWG's capacity to conduct research as well as present new training and funding opportunities.

Initiatives (WHO Collaborative Centre, SEARO, AKU etc.) taken over the last several months to develop regional linkages will also continue with increased attention. Regional linkages provide new research opportunities, and enable sharing of experiences, both successful and unsuccessful, and the development of collaborations with special relevance to less developed country populations. Continued attention will also be given to strengthening linkages within Bangladesh with the GoB (e.g. BINP, NNP) and national institutes.

Nutrition Research Database

Pending the development of a Centre-wide integrated MIS, a database of nutrition projects and other activities will be developed and that will assist in management and reporting related to these activities.

Research Capacity

The NWG has identified a prioritised need for additional skills to enhance its research programme (nutrition communications specialists, nutrition anthropology, nutrition biochemistry, complementary feeding, and child development). Efforts will be made to obtain these skills through a combination of staff development, new recruitment, consultancy and collaboration.

Advisory Board

The possibility and potential benefit will be explored of the formation of an advisory board comprising of external scientific, policy, management and programme expertise to assist the Centre's programme in nutrition.

Annex 1: Nutrition research papers presented in 1999 at ICDDR,B

Speaker	Title	Date
Dr. Howard Bouis Int. Food Policy and Res. Instt. (IFPRI) and Dr. Ruchira Naved (SBS, ICDDR,B)	Impact of vegetable and fish production on general and micronutrient nutritional status	18 February 1999
Prof. Robert Suskind (LSUMC)	Management of severe malnutrition	13 April 1999
National Nutrition Seminar 26 April 1999		
Dr. SK Roy (ICDDR,B)	Nutrition activity in ICDDR,B and national collaboration	26 April 1999
Dr. Shams El Arifeen (ICDDR,B)	Low birthweight and risk of neonatal morbidity and mortality	26 April 1999
Dr. Anwar Iqbal, Director Nutrition, BARC	Research Priorities in Nutrition	26 April 1999
Dr. Shameem Ahmed (ICDDR,B)	Infant feeding practices in rural Bangladesh: policy implications	26 April 1999
Mr. MA Mannan Secretary, BNNC and President, NSB	Food and Nutrition policy of Bangladesh	26 April 1999
Mr. D.K. Nath Director General, Family Planning Gov. of Bangladesh	Maternal Nutrition Programme in HPSB	26 April 1999
Dr. Naila Zaman Khan (Dhaka Shishu Hospital)	Prenatal and postnatal risk factors for childhood cognitive disabilities in Bangladesh	10 August 1999
Dr. Khurshid Talukder (ICMH)	Adolescent anthropometry	12 October 1999

Annex 2: Peer reviewed journal articles published in scientific journals**A. Original Scientific Papers (including short reports)**

1. Ahmed S, Parveen SD, Islam A. Infant feeding practices in rural Bangladesh: policy implications. *J Trop Pediatr* 1999 Feb;45(1):37-41
2. Ahmed T, Ali M, Ullah MM, Choudhury IA, Haque ME, Salam MA, Rabbani GH, Suskind RM, Fuchs GJ. Mortality in severely malnourished children with diarrhoea and use of a standardised management protocol. *Lancet* 1999 Jun 5;353(9168):1919-22
3. Bhutta ZA, Black RE, Brown KH, Gardner JM, Gore S, Hidayat A, Khatun F, Martorell R, Ninh NX, Penny ME, Rosado JL, Roy SK, Ruel M, Sazawal S, Shankar A. Prevention of diarrhoea and pneumonia by zinc supplementation in children in developing countries: pooled analysis of randomised controlled trials. *J Pediatr* 1999 Dec;135(6):689-97
4. Casswall TH, Nilsson H-O, Bergström M, Aleljung P, Wadström T, Dahlström AK, Albert MJ, Sarker SA. Evaluation of serology, ¹³C-urea breath test, and polymerase chain reaction of stool samples to detect *Helicobacter pylori* in Bangladeshi children. *J Pediatr Gastroenterol Nutr* 1999 Jan;28(1):31-6
5. Faruque ASG, Mahalanabis D, Haque SS, Fuchs GJ, Habte D. Double-blind, randomised, controlled trial of zinc or vitamin A supplementation in young children with acute diarrhoea. *Acta Paediatr* 1999 Feb;88(2):154-60
6. Filteau SM, Rice AL, Ball JJ, Chakraborty J, Stoltzfus R, de Francisco A, Willumsen JF. Breast milk immune factors in Bangladeshi women supplemented postpartum with retinol or β -carotene. *Am J Clin Nutr* 1999 May;69(5):953-8
7. Haider R, Kabir I, Hill AA, Fuchs GJ. Are breastfeeding messages influencing mothers in Bangladesh? *Trop Pediatr* 1999 Oct;45(5):315-8.
8. Haider R, Kabir I, Hill AA, Fuchs GJ. Are breastfeeding messages influencing mothers in Bangladesh? *Trop Pediatr* 1999 Oct;45(5):315-8.
9. Hossain MI, Yasmin R, Kabir I. Nutritional and immunisation status, weaning practices and socioeconomic conditions of under five children in three villages of Bangladesh. *Indian J Public Health* 1999 Jan-Mar;43(1):37-41
10. Islam S, Kabir I, Wahed MA, Goran MI, Mahalanabis D, Fuchs GJ, Khaled MA. Multifrequency bioelectrical impedance analysis to assess human body composition. *Nutr Res* 1999 Aug;19(8):1179-88
11. Rahman MM, Akramuzzaman SM, Mitra AK, Fuchs GJ, Mahalanabis D. Long-term supplementation with iron does not enhance growth in malnourished Bangladeshi children. *J Nutr* 1999 Jul;129(7):1319-22
12. Rahman MM, Mahalanabis D, Hossain S, Wahed MA, Alvarez JO, Siber GR, Thompson C, Santosham M, Fuchs GJ. Simultaneous vitamin A administration at routine immunisation contact enhances antibody response to diphtheria vaccine in infants younger than six months. *J Nutr* 1999 Dec;129(12):2192-5
13. Rice AL, Stoltzfus RJ, de Francisco A, Chakraborty J, Kjolhede CL, Wahed MA. Maternal vitamin A or β -carotene supplementation in lactating Bangladeshi women benefits mothers and infants but does not prevent subclinical deficiency. *J Nutr* 1999 Feb;129(2):356-65
14. Roy SK, Tomkins AM, Haider R, Behren RH, Akramuzzaman SM, Mahalanabis D, Fuchs GJ. Impact of zinc supplementation on subsequent growth and morbidity in Bangladeshi children with acute diarrhoea. *Eur J Clin Nutr* 1999 July;53(7):529-34

15. Wahed MA, Mitra AK, Azad AK, Jahan F. Retinol concentrations in liver and serum among children who died in a diarrhoeal hospital in Bangladesh. *Nutr Res* 1999 Dec;19(12):1719-29
- B. Review Articles, Book Chapters, Papers in Conference Proceedings, and Monographs**
1. Ahmed S. Breastfeeding revisited. *In: Recent advances in paediatrics. V. 3. Tropical paediatrics.* New Delhi: Jaypee Brothers Medical Publishers, 1999:1-23
- C. Letters and Abstracts in Journals**
1. Hossain S, Biswas R, Kabir I, Sarker S; Fuchs G, Mahalanabis D, Dibley M. Vitamin A for treating shigellosis [reply]. *Br Med J* 1999 Apr 3;318(7188):940
 2. Osendarp SJM, van Raaij JMA, Baqui AH, Fuchs GJ. Zinc supplementation during pregnancy in Bangladeshi urban poor and infant growth and morbidity during first 6 months of life [abstract]. *FASEB J* 1999 Mar 12;13(4):A207
 3. Salam MA, Khan WA, Dhar U, Ronan A, Rollins NC, Bennis ML. Vitamin A for treating shigellosis [letter]. *Br Med J* 1999 Apr 3;318(7188):939-40

Annex 3: Nutrition papers presented at seminars, workshops and meetings in 1999

February 1999	8 th Annual Scientific Conference (ASCON), ICDDR,B "Zinc supplementation during pregnancy in Bangladeshi urban poor: effect on infant growth and morbidity during the first six months of life" and "Response to tuberculin skin testing at six months of age and relation with birth characteristics in infants of Dhaka city slums". Presenter: Saskia Osendarp
February 1999	5 th International Congress of Tropical Paediatrics, Jaipur, India. "Zinc in health and nutrition". Presenter: Dr SK Roy
March 1999	XIX IVACG meeting, Durban, South Africa. "A study on immunological effect of vitamin A and zinc in a placebo controlled 4 cell trial". Presenter: Dr SK Roy
April 1999	University of Texas School of Medicine, Houston, Texas. "Intrauterine growth retardation: a developing world perspective." Presenter: Prof. George Fuchs
April 1999	University of Texas School of Public Health, Houston, Texas. "Low birth weight and impact of zinc supplementation during pregnancy". Presenter: Prof. George Fuchs
April 1999	FASEB Meeting 1999, Washington DC. "Zinc supplementation during pregnancy in Bangladeshi urban poor and infant growth and morbidity during the first six months of life". Presenter: Prof. George Fuchs
April 1999	FASEB Meeting 1999, Washington DC. "Efficacy and effectiveness of weekly iron supplementation during pregnancy in rural Bangladesh". Presenter: Dr E-C Ekström
May 1999	Annual Conference of Paediatric Societies of America (USA & Canada), San Francisco, California. "Protocolised Management of severe malnutrition". Presenter: Dr Tahmeed Ahmed
May 1999	WHO SEARO Nutrition Meeting, Bangkok. "Thematic Approach to Nutrition Research at ICDDR,B". Presenter: Prof. George Fuchs
June 1999	International Low Birth Weight Symposium and Workshop, ICDDR,B: Centre for Health and Population Research, Bangladesh, "The Bangladesh experience - epidemiology and consequences". Presenter: Dr. Shams El Arifeen.
June 1999	International Low Birth Weight Symposium and Workshop, ICDDR,B: Centre for Health and Population Research, Bangladesh. Opening Address; and "Improving outcome of LBW Infants - interventions". Presenter: Prof. George Fuchs
June 1999	Global Forum for Health Research, Geneva. "Low Birth Weight". Presenter: Prof. George Fuchs
August 1999	8 th Asian Congress of Nutrition, Seoul, South Korea. "Vitamin A and Intestinal Permeability in Children with Acute Diarrhoea". Presenter: Dr SK Roy

- October 1999 9th International Conference of the International Society for Research in Human Milk and Lactation, Munich, Germany. "Community-based peer counsellors increase exclusive breastfeeding practices in Dhaka". Presenter: Dr Rukhsana Haider
- October 1999 International workshop and seminar on "Maternal and foetal malnutrition and human development in South Asia", Aga Khan University, Karachi, Pakistan. "BINP operations research and lessons learned". Presenter: Prof. GJ Fuchs
- October 1999 International workshop and seminar on "Maternal and foetal malnutrition and human development in South Asia", Aga Khan University, Karachi, Pakistan. "The relationship of zinc nutrition in pregnancy and pregnancy outcome". Presenter: Saskia Osendarp
- November 1999 WHO/UNICEF/INACG/MI Technical consultation on intermittent iron supplementation in the control of iron deficiency anaemia, PAHO, Washington DC. "Efficacy and effectiveness of iron supplementation during pregnancy: Experiences from the Bangladesh study". Presenter: Dr E-C Ekström

Annex 4: Abstracts of NWG research*Research Completed in 1999***Prevention/management of severe and moderate malnutrition in children****Effective means to address moderately malnourished children within Bangladesh Integrated Nutrition Project (BINP) communities**

Investigators: SK Roy, George Fuchs, Tamanna Sharmeen, Jeba Mahmood

Funded by: BINP

The objective of the study was to find an effective means to address moderately malnourished children. A total of 282 moderately malnourished children of rural Bangladesh aged 6-24 months were studied. Children were assigned to three groups to receive either nutrition education (Group 1), supplementary feeding plus nutrition education (Group 2), or to serve as a control (Group 3). Group 1 received intensive nutrition education (INE) on food security, disease control and caring practices and Group 2 received INE plus BINP supplements of 300 kcal daily for 6 days a week for a period of 3 months. The control group received only standard BINP advice on nutrition and health education. The children were observed for a further 3 months after intervention.

The study showed that intensive nutrition education significantly improved mothers' behaviour related to child feeding and caring practices for moderately malnourished children. The change in behaviour led to a significant improvement in nutritional status of the children within 3 months of intervention and showed further improvement during a subsequent 3 months of observation.

Cost estimates for the National Nutrition Program (NNP) and potentials for local resource mobilisation through user charges

Investigators: M Mahmud Khan, Shakil Ahmed

Funded by: World Bank

The purpose of this research was to estimate the total cost of providing nutrition services from community-level nutrition centres of rural Bangladesh. Under the National Nutrition Programme (NNP), all rural thanas of Bangladesh are to establish one community nutrition centre for every 1,250 individuals. The phasing of the project in various thanas of the country over the next 10 years has been defined by the World Bank technical mission, which was used as the basic underlying assumption for the cost projection. Nutrition intervention activities considered for this costing were: food supplementation for malnourished children, pregnant women and lactating mothers, nutrition education, provision of vitamin A and iron, and growth monitoring of children. Using experiences of the Bangladesh Integrated Nutrition Project (BINP), the cost-coefficients as well as the participation rates of target population in the programme were estimated for defining parameters of the national-level cost projections. An important part of the exercise was to estimate the number of potential beneficiaries per rural thana over the next 10 years. The Bangladesh Bureau of Statistics (BBS) data from the sample vital registration and child nutrition status surveys was used to estimate the temporal trend of the number of potential beneficiaries.

The total cost of NNP for the community based nutrition component totalled USD 632 million without overhead. Since \$70 million is provided by the communities, about \$562 million would be required through the NNP. Adding 15% overhead costs on the project expenses, the total cost of the project was estimated to be about USD 650 million.

Costing of Bangladesh Integrated Nutrition Project activities at the community level: An analysis based on Community Nutrition Centres in Five Thanas of Bangladesh

Investigators: M. Mahmud Khan, Shakil Ahmed

Funded by: BINP ORP

The objective of the study was to estimate the cost of Bangladesh Integrated Nutrition Project's (BINP) activities at the community level in order to correctly define the resource requirements of nutrition intervention. Seven Community Nutrition Centres (CNCs) were randomly selected and a modified production-function analysis used for purposes of costing. The production-function analysis in costing observed outputs being produced and then tried to identify inputs needed to produce specific outputs. The results of the study showed that the average cost of running community-based nutrition activities, including food supplementation, was approximately Tk. 71,865 per centre per year. Food cost was the important component, explaining 77% of total cost. Community-donated resources and time were also important. The communities contributed approximately 9% of the total project cost. The actual participation rate of the eligible and enrolled individuals in the food supplementation project ranged from 60% to 78%. The results of the interviews of the beneficiaries showed that, although the households were satisfied with the quality of nutrition services, they were unwilling to pay any user charges for the intervention. Food costs have, therefore, to be controlled in order to enable the programme to expand at the national level. The means to reduce food costs and improve compliance to the supplementation programme, and the reasons for the low willingness to pay for services are areas that should be explored by the BINP.

Effect of addition of amylase-rich flour (ARF) to the BINP supplement on the supplementary food intake of malnourished children

Investigators: M Iqbal Hossain, Shaheen Ahmed and MA Wahed

Funded by: BINP

The Bangladesh Integrated Nutrition Project (BINP) provides supplementary food (SF) to severely malnourished and growth faltered children (aged 6-24 months). This consists of a locally prepared roasted rice-*dal* powder with a small amount of molasses and soybean oil. It is expected that addition of amylase-rich flour (ARF) from germinated wheat to the supplementary food, which reduces the viscosity, would make the supplement more palatable and hence increase intake.

The objectives of this study were to improve the existing supplementary feed used for children with respect to: a) reduced viscosity, b) increased palatability and c) increased energy intake.

A research project was carried out at Sadar thana of Narshingdi district in Bangladesh from December 1998 to April 1999 to add ARF to the existing SF of BINP in nine-community nutrition centres (CNCs). A total of 166 young severely malnourished and/or growth-faltered children in nine CNCs were randomly allocated to receive one of the three types of diets:

1. Study diet: ARF added to the normal BINP supplement (n= 65),
2. Control diet-I: the usual BINP SF (n=35),
3. Control diet-II: the usual BINP SF with additional water to make it of the same viscosity as the study diet (n=65).

The results of the study showed that the baseline characteristics were comparable on enrolment. Mean food intake as well as calorie intake (kcal) per day was higher in the study diet group compared to control I and II diet groups. Incidence of vomiting was significantly higher in the control diet II group compared to the other two diets. Most of the attending mothers/caretakers (95-97%) had a positive impression of the acceptability of the study diet. Initially the production

of ARF was carried out at the Nutrition Biochemistry Lab of ICDDR,B and subsequently a small production unit was set up at the field office. The additional cost of adding 2 g ARF was ~ Taka 0.25 (1US \$ = Taka 48). In conclusion, the addition of ARF to existing supplementary food is a simple and effective means to make the supplement's consistency more suitable. While this resulted in an increased intake of the supplement and increased energy intake, no measurable improvements in weight gain were seen.

Adolescent and maternal nutrition and Low Birth Weight (LBW)

Effect of zinc supplementation during pregnancy and infancy on the birth weight, growth, morbidity and immune response to vaccines in Bangladeshi children

Investigators: Saskia Osendarp, George Fuchs, Abdullah H Baqui, Shams El Arifeen, MA Wahed, Mathuram Santosham, Robert E Black, Joop van Raaij

Funded by: The Royal Netherlands Government and Johns Hopkins Family Health and Child Survival Co-operative Agreement with USAID

Although observational studies suggest a positive association between zinc status during pregnancy and pregnancy outcome, so far, no controlled supplementation trials have been published in developing countries, where zinc intakes are habitually very low and where zinc deficiency is likely to be a problem. This study examined the effects of zinc supplementation during pregnancy and infancy on pregnancy outcome, postnatal growth, morbidity and immune response to infant vaccines in two cohorts in Dhaka city slums; a very poor community where LBW is highly prevalent.

The study included 559 women, enrolled between 12-16 weeks gestation. The women were prospectively followed from 4 months gestation until birth and their new-borns from birth until 6 months postpartum. The result of this study suggests that supplementation with a single micronutrient during pregnancy in a population with multiple nutrient deficiencies is unlikely to improve infant growth either in-utero or post-natally. Maternal zinc supplementation, however, may be responsible for a reduced morbidity post-natally, probably more pronounced in LBW infants. These findings, once confirmed in other studies could have important implications for child health and survival programs in developing countries with high incidences of LBW.

A cohort study to estimate the optimal duration of nutritional supplementation for malnourished pregnant women and its impact on birth weight of new-borns

Investigators: Rubina Shaheen, Andres de Francisco

Funded by: BINP

Low birth weight (LBW) with its known short and long-term implications on infant and adult life outcomes is a major public health problem in Bangladesh with prevalence ranging from 40 to 50 per cent. This operations research project attempted to explore the optimal duration of nutritional supplementation for malnourished pregnant women. The women were visited at home by trained interviewers who measured the women's body weight, height and collected socio-demographic information and information on socio-economic conditions, antenatal care, morbidity, and dietary practice. A sub-sample of women was visited for a second time and a second anthropometric measurement done and the information on morbidity and dietary practice again collected. A third visit was paid on another sub-sample of women. Except for a few women (10.0%) all were visited within 72 hours of childbirth and birth weight and chest circumference of the infant was measured. Postpartum maternal weight was also measured and data on delivery practice, duration of labour and complications related to childbirth were collected.

Results indicated that the mean birth weight improved with longer duration of supplementation, and there seemed to be a threshold of duration of supplementation for benefiting the foetus somewhere around 120 days after which there were positive impacts on weight at birth. The results also indicated that early entry into the supplementation programme was beneficial for improving birth weight and maternal gain in terms of change in Body Mass Index (BMI).

It may be concluded that food supplementation in this project has measurable beneficial impact on birth weight if continued for a longer duration more than 150 days. Supplementation was also found to benefit pregnant women by improving BMI, especially the women who entered with lower BMI.

The relation between infectious diseases and nutrition

L-histidine improves colitis in experimental shigellosis in rabbit

Investigators: GH Rabbani, David A Sack, JW Peterson.

Funded by: Cytos Pharmaceuticals, USA

L-Histidine, an amino acid with anti-inflammatory and antioxidative activities reduces intestinal inflammation and secretion induced by infectious agents in animals. The effects of L-Histidine in a rabbit model of acute colitis induced by intracolonic administration of *Shigella flexneri* 2a were examined. After 24 h, rabbits were given 2-h intraperitoneal injection of L-Histidine (10 mL of 3.8% solution) or an L-Histidine-free solution (control); rabbits were killed at 24 h and 48 h after treatment for histologic and bacteriologic assessment.

After administration, peak L-Histidine concentrations in serum occurred after 15 minutes (809 ± 510 , nM/mL) which declined over 120 minutes. L-Histidine significantly ($p < 0.05$) reduced faecal blood and mucus and improved clinical symptoms including diarrhoea, fever, leucocytosis, and weight loss. Histologically, L-Histidine significantly ($p < 0.05$) reduced colonic mucosal congestion, cellular infiltration, and necrotic changes. The values of colitis index based on a standardised scores of histologic assessment ranging from 1 (mild) to 3 (severe) were significantly different between treatment and control groups at 24 h and 48 h respectively (1.81 ± 0.36 vs 2.64 ± 0.31 ; 1.41 ± 0.21 vs 2.36 ± 0.28 ; $p < 0.05$). The macroscopic scores ranging from 1 (mild) to 10 (severe) were significantly lower in the L-Histidine group compared to controls at 24 h and 48 h respectively (4.7 ± 1.1 vs 8.7 ± 2.1 ; 3.0 ± 1.3 vs 8.1 ± 2.3 , $p < 0.01$). Counts of *S. flexneri* 2a (cfu/mL) in colon were lower in the L-Histidine group, but the difference was not statistically significant. We conclude that L-Histidine improves the clinicopathological features of rabbit shigellosis and can be evaluated in shigellosis in humans.

Child Growth and Development

Effect of Iron Supplementation on Growth and Intestinal Permeability of Iron-replete and Iron-deplete Children

Investigators: George Fuchs, Tahmeed Ahmed, Munirul A Islam, MA Wahed, Chris Kelnar

Funded by: USAID/T

Children with iron deficiency anaemia have impaired growth that can be corrected by supplementation with iron. However, recently it has been shown that iron supplementation in iron-replete children also has an adverse effect on growth. If confirmed, this has major implications for iron fortification/supplementation programs. Iron is also important for maintaining normal intestinal mucosal function. This study proposed to determine the effect of oral iron on growth and intestinal permeability in both iron-replete and iron-deplete children. Endocrine and bone metabolism markers of growth, and intestinal permeability were determined

in thirty iron deficient and thirty iron-replete children aged one to five years before and one month after the start of iron supplementation. Anthropometry was done monthly for four months. The study objectives were to: 1. determine intestinal integrity in children with iron deficiency anaemia (IDA) and iron-replete children before and after iron supplementation; 2. determine the function of growth hormone-IGF1 axis in children with IDA and iron-replete children before and after iron supplementation; 3. assess indicators of bone synthesis in children with IDA and iron-replete children before and after iron supplementation.

The results of the study are expected to have meaningful implications for iron supplementation programmes for children.

Effect of simultaneous zinc and vitamin A supplements on the bioavailability of vitamin A in children

Investigators: M Mujibur Rahman, MA Wahed, Abdullah H Baqui, George Fuchs, JO Alvarez

Funded by: UAB, USA

To examine whether combined zinc and vitamin A supplementation leads to better health and vitamin A nutrition status as compared with vitamin A supplementation, 460 children aged 1 to 3 years were studied in a randomised double-blind controlled trial. Children were randomly assigned to receive either (i) vitamin A (200,000 IU, single dose on day 14), or (ii) zinc acetate (20 mg, daily for 14 days), or (iii) vitamin A (200,000 IU, single dose on day 14) plus zinc acetate (20 mg, daily for 14 days), or (iv) placebo. Venous blood was drawn on admission, day 21, and 3 months after supplementation for MRDR test, serum retinol, retinol binding protein (RBP), and zinc assay. A urine sample was collected from a subset of children for 3 days after vitamin A supplementation to measure the urinary loss of retinol, if any. Cell mediated immunity (CMI) was measured on enrolment and on day 21 using multi-test CMI skin test. Weight and height measurements were taken on admission, 1 month and 3 month. The children were followed up at home weekly for diarrhoea and respiratory tract infection morbidity (RTI) for a period of 3 months. The major outcome variables were pre- and post-supplementation liver vitamin A stores, serum retinol and RBP, plasma zinc levels, cell mediated immunity (CMI), morbidity (diarrhoea and RTI), and growth (weight and height gain). This was a community study carried out in Bangladesh over a period of 2 years.

The effect of zinc supplementation on infant growth and development

Investigators: Jena Derakhshani Hamadani, George Fuchs, Syed Nazmul Huda, Saskia Osendarp, Sally Grantham-McGregor

Funded by: UNICEF

Zinc deficiency is common in many developing countries. Considerable evidence exists that zinc supplementation benefits the course of diarrhoea in undernourished children and, in some instances, growth. Children's development and behaviour may also be affected by zinc supplementation and some studies have found improvements in behaviour or motor development in young children and cognition in school-aged children although the findings are inconsistent. Two double blind randomised controlled trials of zinc supplementation were conducted in Bangladesh.

In one study, 301 four-week-old infants were randomly assigned to supplementation with 5-mg zinc or placebo daily for 5 months. At 7 and 13 months of age (+/-2 weeks), 213 of the children who remained in the study and could be located in time had their development assessed on the Bayley Scales of Mental Development which has two subscales; the mental development index (MDI) and the psychomotor development index (PDI). There was no effect of treatment at 7

months but at 13 months of age the zinc treated group had slightly but significantly lower scores on the MDI (Table).

In the other study, 559 pregnant women were assigned to 30-mg zinc or placebo daily from 12-16 weeks of gestation until delivery. A sub-sample of 240 offspring were randomly selected from the surviving sample to have their development and behaviour assessed at 13 months (+/-2 weeks) of age. One hundred and sixty eight children were tested at the correct time and the group treated with zinc had significantly lower scores on both the MDI and PDI. They also were rated on the behaviour scales as being significantly less happy and co-operative during the test session.

Results in both the present studies showed that supplementation was harmful to these children's development. The absorption of zinc is linked to copper and iron, it is therefore possible; that zinc supplementation caused a micronutrient imbalance. Supplementation with zinc alone might be detrimental in certain groups of children and should be re-evaluated. Many of the children in this study were moderately undernourished and may have been particularly vulnerable. Consistent findings from different studies will be necessary to establish the effect and role of zinc supplementation in child development.

Improving infant and child feeding practices

Laboratory evaluation of osmotic sachets designed for preparation of ORS, Therapeutic Milk, Infant Formulae and Potable Water

Investigators: SK Roy, MS Islam, Andrew M Tomkins

Funded by: UCB Osmotics (UK)

Scarcity of safe water for preparing microbiologically safe feeds for malnourished children remains a challenge in developing countries. UCB Osmotics limited UK developed four types of osmotic sachets made of semi-permeable food grade cellulose membrane with pore size diameter 2.4 nm to prepare microbiologically safe ORS, therapeutic milk, infant formulae and potable water. An evaluation was conducted to test whether these sachets could prepare microbiologically safe solutions with acceptable biochemical composition from contaminated water.

During laboratory evaluation, 55% ORS, 48% infant formula, 72% therapeutic milk and 20% potable water producing sachets were found in visibly good condition. Of those seen to be in visibly good condition, all ORS, 96% infant formula, 93% therapeutic milk and all potable water sachets produced microbiologically safe solution. Biochemical analysis of reconstituted ORS produced by 95% osmotic sachets showed acceptable ionic composition and osmolality. Therapeutic milk and infant formula sachets needed 3 to 5 hours to hydrate and ORS and potable water sachets needed 6 to 7 hours to hydrate up to the "ready-to-use" mark.

The study showed that osmotic sachets are potentially capable of generating microbiologically safe feeds when clean water is unavailable.

Research Ongoing in 1999**Prevention/management of severe and moderate malnutrition in children****Parenteral magnesium in the management of abdominal distention in severely malnourished children**

Investigators: Tahmeed Ahmed, George Fuchs

Funded by: USAID, Govt of Japan and ICDDR,B

Abdominal distension in severely malnourished children with diarrhoea interferes with feeding, and is most commonly associated with depletion of body magnesium and potassium. Magnesium therapy along with potassium supplementation resolves abdominal distension due to depletion of the two cations. The study aims to determine if a single intramuscular injection of magnesium sulphate, in addition to supplemental potassium, could resolve abdominal distension in severely malnourished children with diarrhoea and ileus.

In this prospective, randomised, double blind, placebo-controlled trial, the study subjects are 60 severely malnourished children with diarrhoea aged 0-5 years. Malnutrition and diarrhoea is being treated according to standard norms as practised in the Clinical Research and Service Centre (CRSC). As of December 1999, 33 children had been enrolled. Outcome measures are bowel sounds, abdominal girth, consistency of abdomen, and residual food in the stomach determined at 3 hourly intervals, and treatment failure in the magnesium and placebo groups.

If magnesium therapy is effective in resolving ileus in severely malnourished children with diarrhoea, feeding can be continued from the beginning without further compromising nutritional status. This will also prevent unnecessary and costly intravenous infusions that can be a cause of harmful fluid and salt overload for these malnourished children.

Efficacy of a modified oral rehydration solution in the treatment of severely malnourished children with watery diarrhoea

Investigators: Nur Haque Alam, Jena D Hamadani, N Dewan, George Fuchs

Funded by: WHO

The aim of the study is to compare the development of over-hydration and potassium status during treatment of severely malnourished children suffering from diarrhoea with modified ORS ReSoMaL compared to standard WHO-ORS. A double blind, randomised, controlled clinical trial in severely malnourished children aged 6 to 36 months with a history of acute watery diarrhoea was conducted. Children were randomised to ReSoMaL or WHO-ORS until cessation of diarrhoea. Treatment was otherwise identical.

Of the 130 patients included in the trial, 65 received ReSoMaL and 65 WHO-ORS. A higher proportion of patients developed over hydration in the WHO-ORS group. ReSoMaL therapy corrected basal hypokalaemia in a greater number of patients than WHO-ORS. Means of serum potassium levels at 24 h and 48 h were also significantly higher in ReSoMaL group. More patients remained hyponatraemic in the ReSoMaL treated group than with WHO-ORS. One child suffering from cholera developed hyponatraemic (serum sodium 108 mmol/L) convulsion within 24 hours of therapy. Intake of ORS, water, calorie and output of stool, urine was similar in the two groups during the study period. Results of the study demonstrated similar efficacy of the two ORSs in the treatment of dehydration of severely malnourished children. However, compared to standard ORS, children receiving ReSoMaL had less over-hydration as well as significantly better

potassium status. In children with cholera, the risk of development of symptomatic hyponatraemia might not be greater during treatment with ReSoMaL.

Clinical trial to determine the efficacy and safety of hypotonic glucose based ORS with low sodium concentration in the treatment of neonates and young infants with acute dehydrating diarrhoea

Investigators: Ali Miraj Khan, George Fuchs

Funded by: USAID/W

This study has been designed to compare the efficacy and safety of WHO-ORS and glucose based hypotonic oral rehydration solution with low sodium content in the treatment of neonates and young infants aged up to two months with acute dehydrating diarrhoea. The osmolality of the proposed hypotonic solution is 245 mOsmol/L where sodium as well as glucose concentration are 75 mmol/L. A total of 96 neonates and infants aged upto two months with acute diarrhoea and some dehydration will be studied. They are randomly assigned to two equal groups. Stool output, intake of ORS, unscheduled I.V. fluid, duration of diarrhoea and incidence of hypernatraemia will be compared. If the study proves that hypotonic ORS is helpful in reduction of stool volume as well as duration of diarrhoea and if it also minimises the risk of development of hypernatraemia, then case management will be simple and easier for those very young infants.

Enrolment of patients for the study was completed in December 1999 and preparations have been undertaken for data analysis.

Evaluation of efficacy of parenteral gentamicin in a single dose versus conventional three divided doses in malnourished children with infection where gentamicin is indicated

Investigators: Ali Miraj Khan, George Fuchs

Funded by: USAID/W

A prospective, open and randomised clinical study was initiated to evaluate and compare the efficacy of once daily administration of parenteral gentamicin with the same amount of drug administered conventionally in three divided doses in malnourished children. This study also aims to determine the effects of malnutrition on the pharmacokinetics of once-daily dosing of gentamicin. The study protocol aims to enrol 156 malnourished and 20 healthy children aged 1 to 5 years of either sex with infection where gentamicin will be indicated. The patients are randomly assigned into one of the two treatment schedules. Efficacy of gentamicin assessed by clinical and laboratory parameters will be compared. Gentamicin related toxicity evaluated by renal, auditory and vestibular function test would also be compared. If a single dose regimen of gentamicin proves to be equally or more efficacious and to have reduced toxicity compared to multiple doses, then timing, logistic and financial benefit will be of immense help for patient care.

The study is in progress. So far 148 of the required 176 subjects have been studied. The study has been extended and will continue till 31st August 2000.

WHO/SEARO training for protocolised management of severe malnutrition and Integrated Management of Childhood Illness (IMCI)

Investigators: George Fuchs, Tahmeed Ahmed

Funded by: WHO

Discussions have been held with WHO/SEARO and WHO Geneva regarding ICDDR,B as a WHO/SEARO training site for protocolised management of severe malnutrition and IMCI and it has been agreed in principle that ICDDR,B can be a good site for regional training activities. The first field testing of the WHO protocol for severe childhood malnutrition will take place around

November 2000 at the Kanti Hospital, Kathmandu that will involve health professionals from the region and at which ICDDR,B has been asked to take part as facilitators.

Studies on intestinal ion transport with high potassium and low sodium containing electrolyte solution in malnourished rabbits during diarrhoea induced by *Escherichia coli*.

Investigators: Sufia Islam

Funded by: Staff Development Fund and CNAM Paris

It has been recognised that there is a close relationship between infection and malnutrition. Controversy exists regarding the optimal electrolyte composition of oral rehydration solution (ORS) especially for use in-patients with severe malnutrition. It has been demonstrated that in severe protein energy malnutrition (PEM) total body sodium is increased while total potassium is depleted. It has also been shown that hypokalemia with diarrhoea is not satisfactorily corrected by the standard WHO-ORS containing 20 mM/L of potassium. Several indicators including pH or osmolality of urine and blood, concentration of glucose, urea and protein, haematocrit and serum electrolytes are also very important for the accurate assessment of dehydration and rehydration in diarrhoeal disease associated with PEM.

In this study we plan to compare the WHO-ORS with ReSoMal, a high potassium and low sodium containing ORS, in an experimental animal model of protein energy malnutrition with infection caused by rabbit diarrhoeagenic *Escherichia coli* (RDEC-1). This study will also compare the changes in total body water distribution, ion transport mechanism, intestinal morphology and functions in the same animal model with that of control.

Malnutrition will be developed in one group of animal. After development of diarrhoea with RDEC-1 the indicators of dehydration will be assessed and compared with the control. Total body water, extra and intracellular fluid changes will also be compared. The changes in the net intestinal ion transport will be measured with ReSoMal during infection and by small intestinal perfusion technique. By utilising the Ussing Chamber, the unidirectional ion transport will also be determined and compared with the control rabbits. The effects of malnutrition on mucosal damage will be determined by mucosal morphology, brush border enzyme activities and dual sugar permeability tests. All these parameters will be compared with the control. This study is expected to provide important data for the better understanding of pathophysiologic mechanisms of infection and malnutrition. This study will also be very helpful in evaluating the severity of diarrhoea in a malnourished animal model. It will provide the guidelines for development of better ORS for the management of diarrhoea with malnutrition.

Cost effectiveness of nutritional intervention activities in rural Bangladesh

Investigators: Shakil Ahmed, M Mahmud Khan, SK Roy

Funded by: World Bank (NCoE)

The purpose of this study is to examine the cost effectiveness of nutrition intervention (BINP) activities from the perspective of the project in order to determine the impact of such activities with respect to the resources used. The study will calculate cost-effectiveness ratios of various nutrition intervention activities, examine the characteristics of the individuals participating in the nutrition intervention program and to see whether the target groups are correctly identified, identify and measure the effects or positive intermediate outcomes of health-nutrition education, try to understand the knowledge of the population about the nutritional status of mothers and children, and formulate recommendations for policy makers on resource allocation and strengthening of nutrition intervention programme.

The study will help to evaluate the impact of community based nutrition component (CBNC) activities with respect to the resources used and will also examine the efficiency of resource allocation in CBNC activities, the sustainability of nutritional activities in the long run, nutritional planning, the possibility of BINP expansion in new areas and NNP implementation.

Adolescent and maternal nutrition and Low Birth Weight (LBW)

Efficacy of Fish-oil supplementation to pregnant mothers on birth weight of their babies

Investigators: Iqbal Kabir, Rukhsana Haider, Sayed Akramuzzaman, George Fuchs

Funded by: World Bank

The prevalence of low birth weight (LBW) is very high in South Asia, and highest in Bangladesh at 40-50%. LBW increases the risk of morbidity, mortality, diminished cognitive function, and increased chronic diseases in adulthood. Therefore, prevention of LBW has been identified as a high priority in South Asia. Several studies have shown beneficial effects of dietary intervention with macro and micronutrients to improve birth weights.

Previous studies conducted in Denmark have shown that supplementing fish oil containing n-3 fatty acids (docosahexaenoic and eicosapentaenoic acids) to pregnant women with significantly increased the birth weight of their new-borns. A possible mechanism could be that these fatty acids improve transplacental blood and nutrient supply and reduce intra uterine growth retardation.

A double blind randomised trial with supplementation of 4g fish oil (intervention) or 4g olive oil (control) daily during the third trimester of pregnancy is being carried out in Dhaka city with 400 pregnant women identified in the 25th week of gestation by community workers. These community workers visit the pregnant women at home every day to ensure compliance by direct supervision. Compliance is checked by one of the investigators in 10% of cases by a random visit.

Baseline data include socio-economic, anthropometric and food intake data (24 hour recall and food frequency). Each mother/infant pair will be visited within 24 hours of delivery. The outcome variables are birth weight, length, head and chest circumferences of the new-borns. The proportion of LBW will be calculated and compared between the groups.

Results of this study will be useful for planning and implementing health intervention programmes aimed at reducing the rate of LBW and improving child survival.

The relation between infectious diseases and nutrition

Zinc balance and bioavailability from two different dietary regimes for children with persistent diarrhoea syndrome in Bangladesh using stable isotope

Investigators: SK Roy, Susan Fairweather-Tait, Andrew M Tomkins

Funded by: USAID

Zinc loss in persistent diarrhoea has been documented to be high in some studies of persistent diarrhoea. Yet there is no precise information on loss of zinc and other essential micronutrients such as iron, copper and magnesium during diarrhoea. Amount of zinc absorption from dietary zinc as well as supplemental zinc in children with persistent diarrhoea has also not yet been studied.

This study aims to measure the efficiency of zinc absorption from a chicken diet, a rice based diet, and from supplemental zinc.

A total of 45 children aged between 6 months to 24 months presenting with persistent diarrhoea are being studied. These children, divided into three groups of fifteen patients each, are being studied for metabolic balance using zinc stable isotope in a 7-day balance period. Each group receives a rice or chicken based diet supplemented with zinc or a rice based diet without zinc supplementation. Total amount of 7 days stool and urine will be collected for isotope analysis at acute phase and at recovery phase. Anthropometric measurement will be done on admission and at weekly intervals for 15 days, then will be repeated at the end of the study.

Patient enrolment has been completed. Of 45 patients, 44 have completed the total study period i.e. 2nd balance after one month of clinical recovery. Biochemistry tests of almost all blood samples have been done. No stool samples have yet been assayed. Stool and urine samples for isotope analysis have been sent to the Institute of Food Research, Norwich, UK.

The overall benefit of the study will be to ascertain the appropriate supplemental dose of zinc, iron or magnesium in malnourished children during and after diarrhoea. The results of this study will help to develop a definite strategy on dietary and micronutrient management of a high-risk group of children.

Effect of zinc supplementation on the immune and inflammatory responses of children with *shigella flexneri* infection and correlation with clinical severity of illness and growth following recovery

Investigators: SK Roy, Rubhana Raqib

Funded by: USAID

Shigellosis is a major cause of morbidity and mortality in young children in Bangladesh and other developing countries. It has been found in a recent study that the immune response in *S. flexneri* infection was lower in children who were severely malnourished when compared to children with weight-for-age from > 65-75%. As zinc has profound effects on immunity as well as clinical outcome in diarrhoeal diseases, it is possible that zinc deficiency may be a factor in reducing immunity and increasing severity of acute illness in malnourished children with shigellosis.

This study aims to determine whether zinc supplementation improves the inflammatory and immunological responses in malnourished children with *S. flexneri* infection; whether it reduces the severity of acute illness; and improves growth following recovery in malnourished children with *S. flexneri* infection; and to correlate the changes in immunity, if any, with the severity of acute illness and growth following recovery from the acute illness.

A double randomised clinical trial is being conducted among children with *Shigella Flexneri* aged between 12 - 60 months of both sexes. Children will be followed up monthly for 6 months (at weekly intervals) after the onset of diarrhoea to assess morbidity and growth.

A total of 12 patients have been enrolled in to the study, of which 3 patients have completed their total study period i.e. 6 months follow up. All samples have been sent to respective lab for analysis.

Cellular and humoral immune response to rotavirus infection in Bangladeshi infants and relevance to rotavirus vaccine studies

Investigators: Tasnim Azim

Funded by: USAID

Group A rotavirus (RV) accounted for 35% of all diarrhoeal cases in children below 2 years attending the Clinical Research and Service Centre (CRSC) of ICDDR,B in 1996. Control of RV infection will, therefore, have an enormous impact in morbidity and mortality associated with diarrhoeal diseases in Bangladesh and vaccination is now considered the best method for control. The vaccine candidates tested so far have been based on studies of antibody responses but correlation between humoral responses and protection has not always been observed. The question of the best correlates of infection and protection, therefore, remains unanswered. A small study in humans' show that the proliferative responses parallel IgA responses and the two together may be a better marker of immunity to rotavirus infection.

In this study we aim to study the humoral and cellular immune responses in children with RV infection and to correlate these responses with illness from RV infection. Also, reports from vaccine trials show reduced vaccination efficacy in children from developing countries compared with those from developed countries. The cause(s) (e.g. reduced vaccine take and/or reduced immunity) have not been investigated. As protein energy malnutrition and micronutrient deficiency are major problems in children from developing countries, it may be that nutritional status is a determining factor in reduced vaccine efficacy observed in children from developing countries. This study, therefore, aims to also determine whether malnutrition is associated with prolonged RV excretion and lower RV-specific immune responses in RV infected children. For this purpose, the study groups will include children, 7-24 months of age, admitted to the CRSC of ICDDR,B with RV infection only in the extreme categories of nutritional.

Thus, the study will provide baseline information regarding the nature and kinetics of RV-specific immune responses and determine the best immune correlate of RV infection as well as the association of nutrition in viral clearance and RV-specific immune responses. Such information is pertinent for future vaccine studies.

Effect of vitamin A and Zinc supplementation on immune response to oral cholera vaccine in Bangladeshi children

Investigators: Firdausi Qadri

Funded by: Thrasher Research Fund

Cholera is major public health problem in all developing countries and may be controlled by vaccination. In the 1985 field trial of a killed oral vaccine in Bangladesh, even though the efficacy of the vaccine was in general satisfactory, it was poor in children 2-5 years old, the most susceptible age group for cholera. Micronutrients such as vitamin A and zinc, are essential for immune response to infection and vaccination. It was postulated that the poor efficacy of the cholera vaccine is due to subclinical micronutrient deficiency, which is common in Bangladeshi children. Further, immune response to the vaccine can be enhanced by administration of vitamin A and zinc at the time of vaccination.

A four-cell-trial is being conducted in which one group of children will be given a large single dose of vitamin A; second group, zinc every day for six weeks; third group, vitamin A and zinc; and the fourth group, a placebo. Two doses of the licensed, killed oral cholera vaccine will be administered with a two-week interval between the doses after the micronutrient supplementation has started. Pre- and post-vaccination blood samples will be collected and assayed for immune response to the vaccine. The frequency and magnitude of the immune response will be compared

among the four groups of children to assess whether the micronutrients given individually or in combination have enhanced the immune response to the vaccine.

If the micronutrient supplementation has a positive effect on the immune response, it may be adopted as a public health measure to enhance the efficacy of the cholera vaccine and possibly also other vaccines.

Safety and Immunogenicity of 4×10^5 pfu Tetravalent Rhesus Rotavirus Vaccine, with or without Zinc Supplementation in Matlab, Bangladesh

Investigators: Shams El Arifeen, Mohammad Yunus, Joseph Bresee, Abdullah Hel Baqui, MA Wahed, Tasnim Azim, J Patrick Vaughan, Robert E Black, Roger Glass

Funded by: WHO, USAID

The study aims to evaluate the safety and IgA serological response of 3 doses of oral tetravalent rhesus rotavirus vaccine in Bangladeshi infants, when it is given with or without zinc supplementation.

A randomised, double blind placebo-controlled design was adopted. Infants were randomised to one of the following three groups: (i) RRV-TV and zinc supplement, (ii) RRV-TV and placebo for zinc, and (iii) placebos for vaccine and zinc. Three doses of vaccine or placebo were given at 6-8, 10-12 and 14-16 weeks of age along with the routine immunisations. Zinc supplements or placebos were given daily (5 mg/day) starting 2 weeks before the first dose until 4 weeks after the third dose when the last blood sample was obtained. Immune responses are to be compared between the three groups to assess the effect of the vaccine and supplement. All fieldwork has been completed and follow-up completed for 163 infants.

Preliminary analyses show no significant side effects of the vaccine or of the daily zinc supplement. The IgA (ELISA) seroconversion (4 fold or more increase in titre) rate was 31.5% in the group receiving both placebos, 74.5% in the group receiving RRV-TV and placebo for zinc, and 81.5% in the group receiving the RRV-TV vaccine and daily zinc supplement.

The vaccine and supplement were well tolerated. The vaccine produced significantly higher rates of seroconversion and the zinc supplement did not seem to provide an additional benefit in this regard. Definitive conclusions can only be drawn after completing the remaining laboratory tests, including serum neutralisation antibody and zinc assays, and a complete analysis of the data.

All fieldwork has been completed and follow-up has been completed for 163 infants. Preliminary analyses show that the vaccine and supplement were well tolerated. The vaccine was immunogenic but the zinc supplementation did not seem to influence immune response. Further data analysis is in progress.

Is *Helicobacter pylori* infection, a cause of treatment failure of iron deficiency anaemia in children in Bangladesh?

Investigators: SA Sarker, George Fuchs, Nur Haque-Alam, PK Bardhan, Tahmeed Ahmed, K Gyr, C Beglinger

Funded by: NIH

Helicobacter pylori (Hp) is recognised as a major gastrointestinal pathogen in developing countries with up to 60% of children less than five years infected with the microorganism. The organism is strongly associated with chronic gastritis and peptic ulcer disease in children and adults. The progression of gastritis into atrophy often leads to decreased gastric acid output, which is a well-known risk factor for anaemia. Gastric acid is essential to increase the

bioavailability and absorption of non-haeme dietary iron, the most important source of iron in developing countries. Numerous reports exist to suggest iron malabsorption secondary to low gastric acid output is a problem in developing countries. We now hypothesise that the poor bioavailability of iron in those countries might be related to *H. pylori*-induced low gastric acid output. It has been further observed that some cases with iron deficiency anaemia (IDA) are resistant to iron therapy particularly in developing countries. We propose to investigate the role of *H. pylori* infection as a cause of anaemia and treatment failure of iron supplementation in Bangladesh. A prospective, randomised, double blind, placebo-controlled field trial is proposed among five groups (65 each) of IDA children 2-5 years of age with *H. pylori* infection (4 groups) and without (one group). *H. pylori* infected children with IDA will be assigned to one of the four therapies: antibiotics (for *H. pylori* eradication) plus iron therapy, iron therapy alone, antibiotic therapy alone or placebo. Children with IDA but without *H. pylori* infection will be treated with iron therapy. Combination of three markers (haemoglobin, Hb; serum ferritin, SF; serum transferrin receptors, STfR) and urea breath test (UBT) will be used for detection of IDA and *H. pylori* infection respectively and will be performed before and at 1 and 3 months after the therapy. We furthermore propose a complementary study in an additional group of 20 children with *H. pylori* infection with IDA to assess iron absorption with a simple oral iron absorption test using 1 mg/kg elemental iron before and after therapy. The incidence of *H. pylori* infection and IDA and values for iron stature and absorption will be compared before and after therapy. The results of the study are expected to have implications for the treatment of iron deficiency anaemia in developing countries.

***Helicobacter pylori* infection-associated hypochlorhydria and iron deficiency anaemia in Bangladeshi women in childbearing age**

Investigators: SA Sarker, George Fuchs

Funded by: SDC

Helicobacter pylori (Hp) is a major gastrointestinal pathogen that causes gastritis and low gastric acid production. Gastric acid is one of the most important luminal factors necessary for optimal non-haeme iron (Fe) absorption. Thus, low gastric acid is a risk factor for iron deficiency anaemia (IDA), which affects millions of people, primarily infants and women in the reproductive age. We hypothesise that poor bioavailability of iron in these countries might be related to low gastric acid output resulting from Hp infection. The frequency of low gastric acid secretor and IDA in such populations is not known. We, therefore, propose to investigate the frequency of *H. pylori*-associated low gastric acid secretor (hypochlorhydria) and to evaluate its role in causing IDA in women. One hundred sixty women in the reproductive age, living in Nandipara, a peri-urban community of Dhaka city, will be studied to ascertain the frequency of *H. pylori*-associated low acid output and IDA. To investigate the role of Hp in causing hypochlorhydria and IDA an intervention study is also planned. Four groups (25 in each group) of Hp-infected women with IDA and hypochlorhydria, and another group (fifth group) of 25 women with normochlorhydria will be studied. Hp infected women with IDA and hypochlorhydria will be assigned to be one of the four interventions: (i) anti-Hp therapy (triple-therapy with clarithromycin, amoxicillin and omeprazole), (ii) anti-Hp triple therapy plus iron (ferrous fumarate), (iii) iron therapy alone, or (iv) placebo. The fifth group of women with Hp infection and IDA but without hypochlorhydria will be treated with anti-Hp therapy.

Urea breath test will be used for identification of *H. pylori* infection. Iron status will be determined by analysing haemoglobin, serum ferritin, and circulating transferrin receptor. Electrical Impedance Tomography (EIT) will be used to assess basal and pentagastrin-stimulated gastric acid outputs. Urea breath test, iron status, and EIT will be repeated at the end of intervention, and at 3 and 6 months from the time of initiation of intervention therapy.

This study is expected to provide useful, new information on the role of *H. pylori* infection and hypochlorhydria in the aetiology of IDA. The findings of this study, therefore, are likely to influence the design of iron fortification strategies/programmes for reducing the burden and consequences of IDA in the developing countries.

Clinical Efficacy of L-Glutamine in Persistent Diarrhoea in Children

Investigators: I Kabir, George Fuchs

Funded by: USAID

Persistent diarrhoea is a major cause of childhood mortality accounting for 15-50% of all diarrhoeal deaths. The aetiology and pathogenesis of persistent diarrhoea is complex and multifactorial. Avoidance of cow's milk and lactose has been found to be beneficial. Recent studies indicate that gut-specific nutrients may play an important role in the maintenance of intestinal structure, metabolism and function.

The objective of the study is to evaluate clinical efficiency of L-glutamine, an amino acid that acts as a nutrient for enterocytes, in children with persistent diarrhoea on clinical outcome.

Ninety children with persistent diarrhoea will be randomly assigned to either a rice-based diet containing L-glutamine or a rice-based diet without glutamine for seven days. Absorption of carbohydrate, fat and protein will be determined by metabolic balance study. Gut permeability will be estimated by lactulose and mannitol ratio. The duration of diarrhoea, absorption of foods (carbohydrate, fat and protein) and permeability will be compared between two groups. The result of this study will be beneficial if glutamine supplementation shows a better clinical recovery from persistent diarrhoea.

Randomised placebo-controlled double blind trial to prevent shigellosis in family contacts with single dose vitamin A

Investigators: ASG Faruque, George Fuchs

Funded by: SDC

Shigellosis is an important cause of childhood illness and deaths, and is associated with childhood malnutrition in many developing countries including Bangladesh. Early diagnosis and treatment with an effective antibiotic drug along with continued feeding are important in its management. However, some children die from this disease despite such interventions. Because of a very small infective dose, the infection can easily transmit from one family member to another. Unlike many other infectious diseases, an effective vaccine for the prevention of shigellosis is not yet available. Infection may be prevented through improved hygienic practices; however, this is difficult to achieve in Bangladesh, particularly in children. It is, therefore, necessary to look for other effective interventions that are easier to implement. In this study, we would examine the potential beneficial effect of a single large dose of vitamin A in reducing secondary case rate of shigellosis among family members (children, 73-120 months old) with exposure to documented cases of shigellosis.

In a previous study we conducted, VA was shown to improve clinical outcome of children with acute shigellosis. This randomised, placebo-controlled, double blind intervention trial aims to determine if a single large dose of vitamin A can reduce secondary case rates of shigellosis among family members who have exposure to documented cases of shigellosis. About 900 children will be enrolled into the study. Study children (family contacts of index cases seen at the Dhaka Hospital of ICDDR,B) will receive a single oral dose of either 200,000 IU of vitamin A or a placebo at the household on the first day of their enrolment. They are followed for 10

consecutive days to observe the occurrence of diarrhoea due to microbiologically confirmed shigellosis where the isolate is genetically indistinguishable.

A community-based, randomised, controlled trial to assess the effect of zinc supplementation in <5 year old Bangladeshi children during diarrhoea on the clinical course of diarrhoea, subsequent diarrhoea and ARI morbidity, and growth

Investigators: Abdullah H Baqui, Robert E Black, Patrick Vaughan, Md. Yunus, Shams El-Arifeen, J Chakraborty, Jeroen van Ginneken, George Fuchs
Funded by: USAID/T and JHU

Recent controlled trials have shown that zinc supplementation during diarrhoea reduces the duration and severity of acute and persistent diarrhoeal episodes. Controlled trials have also shown that zinc supplementation reduces subsequent risk of acute and persistent diarrhoea, dysentery, ARI, and improves growth. However, the total available body store of zinc is small and maintenance of a zinc-sufficient status requires regular intake, which is difficult to achieve in a program situation. The proposed study is to test a delivery strategy of zinc which is based on the premise that the zinc status of most Bangladeshi children are either low or marginal and many of them become deficient during a diarrhoeal episode. Thus, if all episodes of diarrhoea are treated with zinc, a positive zinc balance will be maintained in most children.

Based on this premise, it was hypothesised that in a population where zinc deficiency is common; zinc supplementation given as a therapy for two weeks in 3-59 months old children in addition to oral rehydration therapy (ORT) for all episodes of diarrhoea will: (i) reduce the duration and severity of the treated diarrhoeal episode; (ii) reduce subsequent diarrhoeal illness; (iii) reduce diarrhoea episodes related hospitalisation; (iv) reduce subsequent acute lower respiratory infections (ALRIs); and (v) improve growth of supplemented children.

To test these hypotheses, a community-based, prospective, randomised trial has been proposed. The outcome variables are duration and severity of treated diarrhoeal episodes, prevalence of diarrhoea and ARI, diarrhoea and ARI related hospitalisation and weight gain and linear growth during a period of one-year follow-up. The sample size requirement has been estimated at 4,316 child years of observation. About 40 DSS villages around Matlab will be selected for the study to ensure adequate sample size. To minimise baseline differences in diarrhoea incidence and diarrhoea related hospitalisation rates, the villages will be ranked using hospital visit incidence rates and one village from each pair of villages will be randomly assigned to treatment (zinc plus ORT) and the other in the comparison group (ORT).

To ensure data quality, study supervisors and investigators will make spot checks. In addition, a 5% sample of study children will be re-interviewed and re-measured within two days of the original interview/measurement.

The effect on diarrhoea and ARI morbidity in the one-year follow-up period will be evaluated by comparing prevalence rates of diarrhoea and ARI in the treatment and comparison groups. Appropriate statistical methods will be used to account for within-child correlations. As some children will have more episodes of diarrhoea than others (some may not have any episode and consequently may not receive any supplementation), stratified and sub-group analysis may be required. The bi-monthly weight and length measurements will be used to calculate growth velocities and change in z score weight-for-height, weight-for-age, and height-for-age. Differences in the mean growth velocities and z-scores between the intervention and comparison groups will be compared using appropriate statistical tests. If the proposed intervention is proved to be successful, it can be easily incorporated with the existing diarrhoeal disease control program, which should significantly improve child health and survival.

A community-based, randomised, controlled trial to assess the efficacy of iron and/or zinc or a micronutrient mix supplementation to reduce anaemia and morbidity and to improve growth and development in Bangladeshi Infants

Investigators : Abdullah H Baqui, George Fuchs, K Zaman, Lars Åke Persson, Shams El Arifeen, Jena Hamadani, MA Wahed, Md. Yunus, Nigar Shahid, J Chakraborty, Robert E Black, Maureen Black

Funded by: USAID/T, Nutritia Research Foundation (Netherlands)

Diets given to infants in most developing countries are often deficient in multiple micronutrients including iron and zinc. Consequently, many of these infants develop multiple micronutrient deficiencies, particularly iron and zinc deficiency by six months of age. Iron deficiency during early childhood can cause anaemia and impairs the child's physical and mental development. Recent controlled trials have shown a therapeutic effect of zinc on diarrhoeal episodes, preventive effects on diarrhoea and ALRI morbidities, positive effects on growth, immune function, and child development. Thus, in countries where there is no immediate solution to correct micronutrient deficiencies through dietary approaches, it is important to define the need and feasibility of micronutrient supplementation of infants 6 months onwards to prevent anaemia, reduce morbidity, and to improve growth, mental, psychomotor and behavioural development.

The proposed study is a community-based, prospective, double-blind, randomised, controlled trial to evaluate the efficacy of weekly supplementation of iron and/or zinc or a micronutrient mix for six months in infants beginning 6 months of age. Five groups: i) 20 mg iron with 1 mg riboflavin, ii) 20 mg zinc with 1 mg riboflavin, iii) both iron and zinc with riboflavin, iv) a micronutrient mix, and v) riboflavin only (placebo) will be studied.

The following outcome variables will be measured: a) Iron status, b) Zinc status, c) Copper status, d) diarrhoeal morbidity, e) Growth, and f) Cognitive, psychomotor, and behavioural development. Eight hundred infants from selected Matlab villages meeting the eligibility criteria will be enrolled in the study over a six-month period. Trained community health workers (CHWs) will visit the infants every week to collect morbidity data and to feed the infants the assigned supplement during the weekly home visits. To assess growth, weight, length, and MUAC of study children will be measured at enrolment and thereafter every month. Finger prick blood samples will be collected from each study infant at the start and end of the follow-up and will be tested for haemoglobin. About 3 ml venous blood samples will be collected by a trained nurse from 50% of the study infants at the start and end of the follow-up and will be tested for serum transferrin receptor (sTfR), ferritin, zinc, and copper. An assessment of mental, psychomotor, and behavioural developments will be carried out in a 50% sample of study infants at the start and end of the trial (6 months and 12 months) by a trained psychologist using Bailey's Scale of Infant Development, version 2. Dietary data will be collected from a 10% sample of children to assess the dietary intake of zinc, iron and other micronutrients, which would help identify any differences in zinc/iron intake in the different treatment groups.

Data will be analysed to assess the efficacy of various-types of supplementation on the outcomes of interest. To examine the potential additive and multiplicative effects of providing zinc, iron, and other micronutrients, multiple regression analysis will be done with dummy variables representing supplementation groups (e.g., zinc versus no zinc, iron versus no iron). To examine additive effects of zinc and iron, the dummy variables will serve as independent variables. To determine possible multiplicative effects, the interaction of dummy coded variables will be examined.

Efficacy of zinc supplementation in young infants with acute watery diarrhoea

Investigators: W Abdullah Brooks, SK Roy, George Fuchs, Mathuram Santosham, Robert E Black, M Hashem, MA Wahed

Funded by: USAID, JHU

Previous studies have demonstrated efficacy of zinc supplementation in older infants and children with acute watery diarrhoea, while the efficacy in younger infants was uncertain. The aim of this study is to compare efficacy of 5 vs. 20-mg zinc in reducing duration and severity of acute watery diarrhoea (AWD) in infants less than six months of age in a double blind randomised placebo controlled clinical trial.

The primary outcome measures of the study are duration of illness, total stool volume and frequency and incidence of intra-episode dehydration.

The study was in its 68th week on 31 December 1999, enrolling 160 of 292 infants (54.8%).

This intervention may decrease the duration, severity of acute watery diarrhoea and incidence of dehydration in 1-6 month age group with a safe, inexpensive adjuvant, and thereby lower the childhood burden of disease attributable to diarrhoea.

Efficacy of zinc in the treatment of severe pneumonia in hospitalised children less than 2 years of age

Investigators: W Abdullah Brooks, Md. Yunus, ASG Faruque, Mathuram Santosham, Robert E Black, MA Wahed, George Fuchs

Funded by: JHU (USAID)

The aim of this double blind placebo controlled trial is to determine the efficacy of 20-mg zinc to reduce duration, severity of pneumonia in hospitalised children less than two years old.

In its 19th week on 31 December 1999, 76 of 270 children (36.8%) have been recruited.

This may improve the management of severe pneumonia in this population, irrespective of disease aetiology and antimicrobial sensitivity.

Controlled trial to prevent acute lower respiratory tract infection and diarrhoea with zinc supplementation in children less than 2 years of age

Investigators: W Abdullah Brooks

Funded by: SDC, CHR (USAID), JHU (USAID)

This community-based double-blind placebo controlled trial employing weekly home surveillance study aims to determine the efficacy of 70 mg/week of zinc vs. placebo to reduce pneumonia incidence in 1,614 children less than two years old supplemented for one year

The study is in its 37th week on 31 December 1999. By the end of June 2000, we will have completed 80% of the surveillance activity, and the remainder will finish by the end of August.

This may reduce the total morbidity and mortality attributable to pneumonia, irrespective of aetiology, in the most vulnerable age group.

Child Growth and Development

Use of direct recording scale to involve mothers in monitoring the growth of their children

Investigators: Abbas Bhuiya, Sabrina Rasheed

Funded by: World Bank (NCoE)

Growth monitoring (GM) is one of the key technologies towards the eradication of childhood malnutrition. It has been used in many large development programmes as an operational strategy to enable mothers to visualise growth, and to receive specific, relevant and practical guidance in ways in which she, her family and her community could participate in monitoring the growth of her child. The complexity of plotting a line graph by largely uneducated mothers and community members has resulted in the failure of GM in most development programmes. Teaching Aid at Low Cost (TALC) has developed a direct recording scale (DRS) that aims to redress some of these deficiencies. These scales are specially designed so that mothers can weigh their children by themselves even without the benefits of literacy and without having to plot the chart.

The objective of this study is to develop a strategy that makes growth monitoring (GM) a part of family activities. The study will include children aged <2 years and mothers who agree to participate in the study. Both qualitative and quantitative data will be collected. Baseline information will be collected for each group of mothers by trained interviewers. There will be five periodic quantitative surveys the result of which will be compared with the baseline findings to assess the changes. Participatory methods will be used in implementation of the project and training of mothers/caregivers. The project inputs will include supply of one DRS to a group of 10-15 mothers living in a close neighbourhood. The study will involve weighing of children by mothers/caregivers at the household level. Mothers and caregivers are expected to provide information on health and feeding practices related to the study results. The objective of the study, the time involvement of the mother/caregiver and the voluntary nature of participation will be made clear to the participating mothers at the beginning of the activities. Using the verbal consent form, only those who are willing to participate will be included in the study. Health workers will be extensively trained to provide advice and support and to refer severe cases of malnutrition to the village health posts.

Improving infant and child feeding practices

Promotion and support of exclusive breastfeeding and lactational amenorrhoea methods by peer counsellors in rural Bangladesh

Investigators: Iqbal Kabir, Rukhsana Haider, Tanzila Faruque, Shahara Banu

Funded by: World Bank (NCoE) and SDC

The impact of peer counsellors (PC) on breastfeeding and contraceptive practices will be evaluated in rural Bangladesh. Three unions (lowest administrative unit) have been selected and randomised. Mothers of one union will receive individual counselling, one union will receive mostly group counselling but individual counselling for 45 days after childbirth, and one union will not be given any counselling and will serve as control. Local women have been trained as peer counsellors who will provide counselling on breastfeeding and lactational amenorrhoea method (LAM) to pregnant women during their third trimester. The PCs will visit the mothers within 48 hours of delivery, and then monthly for the first five months of the babies. The individually counselled group will continue monthly home visits, and those group counselled will resume the monthly group counselling sessions. Both the intervention and control group mothers will be visited by midwives and family welfare assistants as per the regular governmental programme.

The study was started in October 1999 and 300 pregnant women have been enrolled and counselling commenced till date.

Evaluation of sustainability of education aimed at increased consumption of green leafy vegetables by young children and others in selected poor village communities at Matlab in Bangladesh

Investigators: Md. Yunus, Dewan S Alam, JP Vaughan, Abdullah H Baqui

Funded by: SDC

Nutritional blindness due to vitamin A deficiency has been recognised for many years as a major public health problem in Bangladesh and other developing countries. Despite the programme of biannual distribution of high dose vitamin A capsule to young children, vitamin A malnutrition continues to be a serious public health problem in Bangladesh. Other intervention such as nutrition education to promote increased consumption of β -carotene rich foods especially green leafy vegetables and yellow fruits is of paramount importance. An educational intervention project with repeated nutrition education for improving cooking procedures and increasing consumption of β -carotene rich vegetables and fruits by young children and mothers was conducted in Matlab for one year from May 1994 to April 1995. Evaluation after one year showed significant improvements in cooking procedures, and increase in consumption of vegetables rich in β -carotene by both children and mothers. The effectiveness of health education intervention, especially its sustainable impact, has been debated but follow-up studies to assess long-term impacts following discontinuation of interventions are sparse. Therefore, a follow-up study was conducted to investigate the issue of sustainability of positive impact four years after the termination of the one-year intervention project.

The objective of the study was to evaluate the sustainability of nutrition education strategy aimed at improved preparation, and increased consumption of β -carotene rich vegetables and fruits by young children and mothers as a source of vitamin A in poor communities in rural Bangladesh.

The study was carried out in the Matlab field research area of ICDDR,B. 120 households with very low socio-economic condition having one child aged 6-59 months that were previously given intensive nutrition education intervention, and 120 households with similar criteria but without intervention that served as controls, were included. A Knowledge Attitude and Practice (KAP) survey, 2 rounds of dietary recall surveys, 1 round of in-depth interviews, and 1 round of 8-hour participant observation were conducted on all households. Ethnographic interviews on food behaviour were also conducted in a sample of 20 households to understand the reason regarding difference in sustainability. The field data collection has been completed by December 1999. Coding and data entry are in progress.

The study is expected to provide new information concerning sustainability of impacts of nutrition education programme in combating vitamin A deficiency.

Iron bioavailability from a traditional complementary food: the effect of human milk

Investigators: SA Sarker, Lena Davidson

Funded by: Nestle Research

Iron (Fe) deficiency anaemia is a major nutritional problem in vulnerable population groups such as infants, children and women of childbearing age. Fe deficiency anaemia during infancy is of particular importance since it can adversely affect psychomotor and mental development, some of which are irreversible. After exhausting the placentally transferred Fe, infants depend on dietary Fe for their rapidly expanding blood volume and replacement of Fe losses. Thus it is very

important to ensure adequate bioavailability of Fe in complementary foods during this period in order to prevent Fe deficiency.

Traditionally, cereals are often one of the first semi-solid foods to be presented to the infant. The nutritional composition and the bioavailability of nutrients in this type of food are therefore of great importance. Fe bioavailability from cereal products is usually low due to the presence of phytic acid, the major phosphorus storage compound in the grain. Ascorbic acid is a potent enhancer of Fe absorption that can overcome the inhibiting effect of phytic acid when present in high enough quantities. However, home prepared complementary foods based on cereals and legumes contain relatively high levels of phytic acid and virtually no ascorbic acid unless vitamin C rich foods such as fruits and vegetables are mixed with the cereal or consumed at the same time. Another potential source of ascorbic acid in the weanling's diet is human milk.

The aim of this study is to evaluate the possibility to improve Fe bioavailability from a traditional cereal/legume based complementary food (sweet *khichuri*) by ingestion of human milk immediately after consumption of *khichuri*. Fe bioavailability will be measured by a stable isotope technique based on the incorporation of stable Fe isotopes into erythrocytes 14 days after administration of labelled test meals.

Evaluation of the impact of a home gardening programme in rural Bangladesh

Investigators: George Fuchs, ASG Faruque

Funded by: HKI

Vitamin A (VA) deficiency is a serious public health concern with long-term health and social consequences. Helen Keller International (HKI) has an ongoing USAID-supported home gardening programme to promote the production and consumption of vegetables in rural Bangladesh. Home gardening should increase the supply of food within the household, increase income, and increase the quality of food consumed. This formed the premise that the home gardening programme would increase vegetable production in the home plot and reduce vitamin A deficiency in household members. However, recent studies have suggested poorer than-predicted efficacy of increased intake of dark green leafy vegetables (DGLV) to improve VA status, perhaps due to poorer than predicted bioavailability of preformed VA in the DGLV. It is, therefore, critical that the impact of the HKI Home Gardening Project be quantified. In this project, both quantitative and qualitative research methods are used for assessing the overall impact of the programme on: (a) vitamin A status of household members; (b) consumption of vegetables within the household, especially by young children, and their mothers; (c) income of household; (d) effects on social structure and gender relations; (e) sustainability of HKI-introduced home gardening; and (f) nutritional status of children and their mothers. About 1200 mothers and their 1400 children 2-6 years old from the intervention and non-intervention areas and from 8 randomly selected HKI programme areas throughout Bangladesh have been enrolled. The final analysis of data is presently underway and a report is expected to be made available soon.

Evaluation of the potential use of an osmotically driven Ultrafiltration device for preparation of therapeutic feeds for home management of malnourished children

Investigators: SK Roy, Andrew M Tomkins, AJ Seal

Funded by: UCB Osmotics (UK)

The aim of the study was to determine the ability of mothers to prepare microbiologically safe therapeutic milk for malnourished children by using osmotic sachets. An osmotically driven ultrafiltration sachet has been developed by UCB Osmotics Limited (UK) and tested by mothers of low socio-economic status of a Dhaka slum to prepare microbiologically safe therapeutic milk for malnourished children in household conditions. The sachet consists of two compartments: (a)

waterproof upper compartment containing dry therapeutic milk powder and (b) semi-permeable lower compartment containing sucrose, which acts as an osmotic driver to exclude pathogens during hydration process. A total of 35 mothers were trained to prepare therapeutic milk at household level using these sachets.

Household water used for submerging the sachet for milk preparation had contamination levels of total coliform and total heterotrophic bacteria up to 10^6 CFU/100ml and 10^6 CFU/ml respectively. None of the prepared milk samples had any detectable coliforms and only 2 (6%) had total heterotrophic bacteria with a contamination level of 10^1 CFU/ml, which is within the limit recommended by WHO. All (100%) study subjects showed an interest in using the osmotic sachet in preparing therapeutic milk for their children.

Preliminary study results indicate that safe therapeutic milk can be produced from unsafe domestic water using osmotic sachets.

Others

Evaluation of the effect of a soluble fibre (Sun Fibre) supplemented comminuted chicken diet in the treatment of persistent diarrhoea in children

Investigators: Nur Haque Alam, R Meier, George Fuchs, SA Sarker, PK Bardhan, N Dewan, H Schneider, K Gyr

Funded by: Novartis Nutrition (Switzerland)

Dietary fibre is generally considered a major regulator of bowel function. In recent years, considerable interest has been generated in soluble dietary fibres as a subject of research and its therapeutic application. Partially hydrolysed guar gum (Sun Fibre), an easily fermentable and soluble fibre, if added to food, will undergo fermentation liberating short chain fatty acids (SCFAs) which cause improvement of small intestinal and colonic function including intestinal absorption of nutrients and colonic absorption of salt and water, and thus reduce the course of diarrhoeal illness. In a double-blind controlled clinical trial this protocol proposes to study the effects of a soluble fibre (Sun Fibre) supplemented comminuted chicken diet (minced chicken meat, glucose and oil mixture) in the treatment of persistent diarrhoea in children. 90 male patients aged 5-18 months will be randomised to receive either comminuted chicken based diet or comminuted chicken based diet supplemented with Sun Fibre. Other supportive therapy such as rehydration therapy and vitamin and mineral will be given to both the groups. A standard hospital management will be provided. After completion of the study the clinical responses such as stool output, duration of diarrhoea, success of therapy and weight change will be compared between the two groups. If this agent is found to be effective, then it might be recommended to use this agent in the dietary therapy of persistent diarrhoea.

Evaluation of a dietary treatment algorithm as a home based management of children with persistent diarrhoea: a community based study

Investigators: Nur Haque Alam, George Fuchs, Jena D Hamadani, ASG Faruque

Funded by: SDC

Persistent diarrhoea continues to be an important cause of childhood morbidity and mortality in developing countries. Improved case management might prevent mortality and morbidity due to this childhood illness. This study proposes to evaluate the feasibility and efficacy of a dietary treatment protocol (shown efficacious in the hospital setting) as a home based management of children with non-severe persistent diarrhoea. This is a randomised, controlled, home-based intervention study. After examining the eligibility criteria the patients will be randomised to either intervention group (dietary treatment algorithm) or control (standard management). Patients

in the intervention group, in addition to dietary manipulation, will receive oral rehydration therapy and vitamin-mineral supplementation. Patients in the control group will receive standard management, which include oral rehydration therapy, and his/her usual diet or as advised by a hospital physician. 320 children aged 5 months to 36 months will be included in the study. After completion of the study the success rate with diet A, diet B and overall will be calculated and will be compared with that of the control group. The factors related to treatment failure will also be analysed. This treatment algorithm might help to establish a rationale and effective treatment of persistent diarrhoea at home.

Assessment of carotenoid bioavailability from plant sources

Investigators: Ken H Brown, KMA Jamil, George Fuchs

Funded by: USDA, MI (Canada)

Recent studies cast doubt on the factors used to convert dietary provitamin A to equivalent amounts of retinol. This human volunteer study is therefore designed to assess vitamin A bioavailability from different types of dietary sources using the novel deuterated-retinol dilution technique. Vitamin A reserve is assessed before and after a 60-day period of daily supplementation with a presumably equivalent amount of one of the following four forms of vitamin A: *pui shak* (a green leafy vegetable), sweet potato, retinol, and β -carotene. A control group is also included which is not supplemented with any form of vitamin A. The study will also assess vitamin A reserve in these subjects by another abbreviated method using octa-deuterated retinyl acetate (d-8R). A total of 38 subjects have completed the study and another 32 are expected to be enrolled soon. Data will be analysed after the final round of the study is over.

Research Initiated in 1999

Prevention/management of severe and moderate malnutrition in children

Community-based Protocolised Management of Severe Malnutrition

Investigators: George Fuchs, Tahmeed Ahmed, SK Roy, P Osinski, F Anjuman Ara, A Bhuiya, Lauren Blum, W Abdullah Brooks, I Hossain, K Mozumder, Lars -ke Persson, M Hossain, S Shakur, R Haider, J Hyderi, B Amena

Funded by: BINP/NCoE

The proposed protocol will strengthen capacities for the identification and management of severe child malnutrition among urban slum and low-income population at multiple levels. The Nutrition Unit of Dhaka Shishu Hospital will introduce protocolised management of severely malnourished children requiring hospitalisation. Staff of three urban primary health care clinics of an urban NGO (PSKP) will be trained to conduct nutritional assessments, refer severely malnourished children as needed or counsel caretakers on monitored home-based protocolised management, conduct growth monitoring and promotion in conjunction with weekly Satellite Clinics, and conduct quarterly outreach visits. Referral and discharge criteria and procedures to and from Dhaka Shishu Hospital, the three intervention PSKP clinics and homes will be well coordinated. Progress of children once identified as severely malnourished will be monitored until six months after improvement from severe to moderate malnutrition in terms of weight-by-age.

The proposed protocol will build on ICDDR,B's experience with protocolised management of severe malnutrition among severely malnourished children hospitalised for diarrhoea and other associated acute illnesses at the Clinical Research and Services Centre of ICDDR,B (Ahmed et al. 1999) and on Ashworth and Khanum's experience with home-based management of severe child malnutrition (Ashworth and Khanum 1997). Dietary advice and other messages for home-based protocolised management of severely malnourished children will also be guided by recent

experience among moderately malnourished children in communities served by the Bangladesh Integrated Nutrition Project, BINP (Roy et al. unpublished).¹ Different from previous research, home-based protocolised management under the protocol will be supported and monitored by personnel of existing urban primary health care clinics. Clinic staff will, moreover, actively identify severely malnourished children through growth monitoring and promotion in conjunction with community-level weekly Satellite Clinics and through quarterly outreach visits to households in the intervention area for the protocol.

Child Growth and Development

The effect of psychosocial stimulation on the development of malnourished children in BINP Centres in Bangladesh

Investigators: Jena Hamadani

Funded by: World Bank (NCoE)

There has been increasing concern among international agencies and national governments over the loss of human potential in children growing up with poverty and malnutrition and possible ways of improving the situation are being explored. The Bangladesh Integrated Nutrition Project (BINP) is a major governmental effort to improve malnourished children's nutritional status. This project should reduce mortality and morbidity in children but it is unlikely to also improve their general cognitive, social and emotional development. This proposal concerns incorporating low-cost, feasible, and culturally appropriate programme of child development activities into BINP feeding centres with the aim of improving the social and cognitive development of malnourished children and the child rearing skills of their mothers. It is a randomised controlled trial involving the BINP feeding centres, where a group of malnourished children and their mothers will participate in an intervention on child development activities and will be compared with a control group of severely malnourished children attending other feeding centres. Intervention will include teaching mothers how to play with their children in a way to promote good development, and how to make toys from waste materials. Attention will also be paid to improving maternal-child verbal interaction and to improving mothers' self esteem. The intervention programme will last for one year. Stimulation at home and the socio-economic status of the family will be measured during a home visit. Children's developmental levels, behaviour, temperament and anthropometry and the mothers' knowledge of child development and child rearing practices will be assessed before and after the study.

Improving infant and child feeding practices

Breast milk intake of Bangladeshi children from 0-18 months in accordance with WHO/UNICEF feeding recommendations for WHO multi-centre growth reference study

Investigators: I Kabir, R Haider, Shams El Arifeen, SM Akramuzzaman

Funded by: partly funded by International Atomic Energy Agency

Several concerns have recently been raised regarding adequacy of the National Centre for Health Statistics (NCHS) growth reference. The data for the first two years of life originated from a single ethnically homogenous community where most babies were formula fed, while recent research shows that babies following current recommendations (i.e. exclusive breastfeeding for 4-6 months) show different growth patterns. Therefore, WHO's Expert Committee has recommended that a new international growth reference be developed. Several studies have suggested that the mean breastmilk output at three months post-partum are very similar in women from both developed and developing countries. We, therefore, plan to conduct a study to estimate the breastmilk intake of Bangladeshi children 0-18 months who are not growth constrained (i.e. from higher socio-economic status) and who will follow the WHO/UNICEF feeding recommendations. The mothers will be

recruited from different clinics in Dhaka city during their antenatal check up. They will be informed of the study purpose and counselled to follow the feeding recommendations. Breastmilk intake will be determined by stable isotope (deuterium oxide dilution) technique following standard procedure. This will be part of the WHO multicentre Growth Reference Study involving several developed and developing countries.

Annex 5: List of research projects carried out under the BINP-Operations Research Project in 1999

1. Costing of the BINP activities at the community level. Dr. Mahmud Khan (ICDDR,B)
2. Is the supplement a substitute or true supplementation to the usual diet? Dr. Mohammed Abdullah (INFS)
3. A cohort study to estimate the optimal duration of nutritional supplementation for malnourished pregnant women and its impact on birth weights of newborns. Dr. Rubina Shaheen (ICDDR,B)
4. What should be the optimum duration of supplementation for infants? Dr. Saria Tasnim (ICMH)
5. Evaluation and indicators for monitoring of the project activities under the community based nutrition component (CBNC) of BINP. Dr. AMR Chowdhury (BRAC)
6. Effective means to address moderately malnourished children. Dr. SK Roy (ICDDR,B)
7. Development of nutrient dense supplementary foods for malnourished children. Ms. Shaheen Ahmed (CHE) and MA Wahed (ICDDR,B)
8. Socio-demographic and health characteristics of Bangladeshi malnourished children requiring food supplementation and risk factors for relapse back to severe malnutrition among under two years Bangladeshi children. Dr. AKM Fazlur Rahman and Dr. Ferdousi Islam (ICMH)
9. Assessment of alternative strategies to increase the micronutrient content of Bangladesh Integrated Nutrition Project. Dr. Rezaul Karim & Dr. James Levinson (INFS/Tufts University)
10. Effectiveness of the breastfeeding activities in the Bangladesh Integrated Nutrition Project (BINP). Dr. M Quamrul Hassan (ICMH)
11. Exploring the potential to sustain nutrition promotion activities in the community. Mr. Mohidul Hoque Khan and Dr. Harun Yusuf (AFHR/Dhaka University)
12. Assessment of childcare and feeding practices for development and improvement of IEC strategies as implemented by Bangladesh Integrated Nutrition Project (BINP). Mr. Gazi Nazrul Islam Faisal (BROTEE)
13. Development of improved complementary foods and feeding practices in rural Bangladesh. Mr. Joel Kimmons and Dr. Ken Brown (UCD/ICDDR,B)
14. Studies on the mother's understanding about the GMP cards being used in BINP. Mr. MA Mannan (BNNC)

Annex 6: NWG members with their qualifications, experience and areas of interest

Director's Division

Personnel

Ahmed Nurul Alam,
MBBS, MRCP, Ph.D.

Research Interests

Enteric Protein Loss, Micronutrient
supplementation, Anaemia, Serum ferritin & cholera

David A Sack, MD

Vaccine development and interaction of nutrition and vaccine
fluid and electrolyte management and ORS in malnourished
micronutrients

Clinical Sciences Division

Personnel

Tahmeed Ahmed, MBBS, Ph.D.

Nutritional rehabilitation of malnourished children, iron
deficiency and growth

Eva-Charlotte Ekström, Ph.D.

Bridging gap between efficacy and effectiveness in public health
nutrition

ASG Faruque, MBBS, MPH

Vitamins and micronutrients, impact on growth, morbidity and
mortality.

George Fuchs*, MD

Micronutrients, nutrition and immunity, short-chain fatty acids
and diarrhoeal disease, PEM, nutrition rehabilitation, maternal
nutrition, infant nutrition, LBW.

Jena D. Hamadani, MBBS, DCH
(Ph.D. student)

Mental development and behaviour of children, its relation
to malnutrition and nutritional deficiencies

Shahadat Hossain, MBBS

Micronutrients, intervention in infection, complementary
feeding, nutrition rehabilitation in the community

Aminul Islam, MBBS, MSc

Maternal and Child Health Nutrition; Epidemiology and
Research Methods; International Health; Epidemiology of
Infectious Diseases particularly diarrhea, respiratory infections
and tuberculosis.

K.M.A. Jamil, MBBS

Bioavailability of vitamin A from different dietary sources; Role
of antioxidants in the management of severely malnourished
children

A.K.M. Iqbal Kabir, MBBS, Ph.D.

Dietary management of diarrhoea, infant feeding, vitamin A,
antioxidants, stable isotopes, growth, body composition, energy
expenditure.

Saskia Osendarp, Sc.D.

Maternal nutrition; zinc; LBW; nutrition and immunity.

Petra Osinski, Ph.D.

Organisation and management of community-based health and
nutrition services

G.H. Rabbani, MBBS, FACC

Short chain fatty acids and diarrhoeal disease.

*Head, Nutrition Working Group (NWG)
NWG Division Co-ordinator

SK Roy*, MBBS, MSc, Ph.D.

Micronutrient absorption and balance, zinc, vitamin A, persistent diarrhoea; maternal nutrition, low birth weight, nutritional rehabilitation.

MA Salam, MBBS

Shigellosis (Clinical aspects, and pathophysiology); Pharmacological Interventions in Shigellosis and Cholera; Body Composition; and Energy Expenditure

Laboratory Sciences Division**Personnel****Research Interests**

Tasnim Azim, MBBS, Ph.D.

Immunity, Enteric viruses, HIV/STD, Nutrition

Rashidul Haque, MBBS, Ph.D.

Parasitic disease, malnutrition, vitamin A.

Rubhana Raqib, Ph.D.

Micronutrients and immunity, nutrition & immunity, relationship between malnutrition, infection and immunity

MA Wahed, B.Sc.

Micronutrient analysis, weaning food, trace element, Food Composition Database.

Public Health Sciences Division**Personnel****Research Interests**

Shakil Ahmed, MBBS, MPH

Health Economics Research on Nutrition and Child Health

Dewan Shamsul Alam, MBBS, MmedSc

Nutritional epidemiology, vitamin A and bioavailability, LBW, maternal and child nutrition issues

Shams El Arifeen, MBBS, MPH, DrPH

Birth weight and maternal nutrition, and micronutrients.

Radheshyam Bairagi, D.Sc

Methodology of international and local standards for anthropometric indices of nutritional status.

Abdullah H Baqui, MBBS, MPH, DrPH

Children and maternal nutrition, micronutrients, interrelationship between malnutrition and infections, micronutrients and vaccine response.

Abbas Bhuiya, Ph.D.

Poverty Alleviation Programme and health community participation in PHC, Health Equity

J Chakraborty, Dip. in Nutrition

Nutrition interventions.

Khalequzaman, MBBS, MPH

Nutritional status, cell-mediated immune status, ARI.

Ruchira Tabassum Naved, Ph.D.

Child nutrition; Gender and reproductive health

Lars Åke Persson, MD, Ph.D.

Nutrition epidemiology

Zahidul Quayyum, MA, MSc

Economic evaluation of nutrition-related programmes

Abdur Razzaque, Ph.D.

Effects of family size on childhood nutritional status

* Division Co-ordinator

Rubina Shaheen, MBBS, Mmed Sc

Maternal Nutrition

Nigar S. Shahid, MBBS, MSc

Nutritional epidemiology, nutrition and immunity.

Peter Kim Streatfield, Ph.D.

Reproductive health and demographic surveillance systems;
Child and maternal health.

Md. Yunus, MBBS, MSc Public Health Nutrition

Health & Population Extension Division

Personnel

Research Interests

Rabeya Khatun, M.D., Ph.D.

Maternal and Child Nutrition

Cristobál Tuñón, Ph.D.

Health Systems Research, Health Sector Reform, Adolescents,
MIS, Local level planning

5/BT/JUNE 2000

**RESOLUTIONS FROM
FINANCE COMMITTEE**

WELCOME TO FINANCE COMMITTEE

**ICDDR,B CENTRE FOR
HEALTH & POPULATION RESEARCH**



**BOARD OF TRUSTEES MEETING
FINANCE COMMITTEE**

JUNE 04, 2000

PROGRAMME

BOARD OF TRUSTEES MEETINGS

3-5 June 2000

Venue: Meetings in Dhaka will be held in the Sasakawa International Training Centre on the first floor of the hospital building.

**Programme Committee Meeting
3 June 2000**

Distribution of Minutes and opportunity for correction
(BOT members to submit corrected version to Judith before the
end of the day)

- | | |
|------------------|--|
| 08:15 – 08:30 am | Opening remarks by Chairperson (BOT)
Opening remarks by Chairperson (Programme Committee) |
| 08:30 - 09:30 am | Director's Report |
| 09:30 - 09:45 am | Discussion |
| 09:45 – 10:00 am | Tea/Coffee |
| 10:00 – 12:00 pm | Division updates |
| 12:00 – 12:30 pm | Trustees to meet with SWA representatives |
| 12:30 – 02:00 pm | Lunch in respective Conference Rooms including Trustees, donors
and chosen staff members |
| 02:00 – 03:00 pm | Review of External Review of Nutrition Centre – Dr Andrew
Tomkins |
| 03:00 – 03:30 pm | Response from Centre |
| 03:30 – 03:45 pm | Response from Director |
| 03:45 – 04:00 pm | Tea/Coffee |
| 04:00 – 5:00 pm | Discussion - - closed session (Training Room I) |
| 07:30 pm | Reception at Guest House including AC members, Trustees,
donors and invited staff |

Sunday 4 June **EXECUTIVE SESSION OF THE FULL BOARD (includes AC)**

08:30 – 09:45 am Review of November 1999 BOT retreat

09:45 – 10:00 am Tea/Coffee

FINANCE COMMITTEE

10:00 – 11:00 am Finance Committee Meeting (open) (Seminar Room 1)

11:00 – 12:00 pm Finance Committee Meeting (closed) (with Division Directors)

12:00 – 01:45 pm Lunch (Board members only at Guest House)

PERSONNEL & SELECTION COMMITTEE MEETING

02:15 – 03:45 pm Personnel & Selection Committee Meeting (closed – for Trustees and Division Heads)

03:45 – 04:00 pm Tea/Coffee

04:00 – 5:00 pm Personnel & Selection Committee meeting (closed closed) (Trustees only)
Selection of new Trustees and appointment to Committees

05:00 – 06:00 pm Completion of resolutions

06:00 pm – **Free evening**

Monday 5 June EXECUTIVE SESSION OF FULL BOARD (includes AC)

- 08:00 – 08:15 am Approval of the Agenda
- 08:15 – 08:30 am Approval of the Draft Minutes of November 1999 meeting
- 08:30 – 10:00 am Policy issues from the Director
External Reviews
- 10:00 – 10:30 pm Tea/Coffee
- 10:30 – 11:30 pm Resolutions from the Committees
- 11:30 – 01:00 pm Resolutions from the Committees (closed)
- 01:00 – 02:00 pm Dates of next meeting
Other resolutions
Any Other Business
Closure of Meeting
- 02:00 – 03:00 pm Lunch

03:00 – 05:00 pm **DONORS' SUPPORT GROUP MEETING**

Programme to be determined

ICDDR,B BOARD OF TRUSTEES MEETING

FINANCE COMMITTEE - JUNE 4, 2000 MEETING

AGENDA

1. Approval of Agenda.
2. 1999 Audited Financial Statements and Auditors' Reports.
 - a) ICDDR,B
 - b) ICDDR,B Hospital Endowment Fund
3. 2000 Forecast.
4. Appointment of Auditors for 2000.
5. Report on:
 - a) Centre's Endowment Fund
 - b) Reserve Fund
 - c) Fixed Assets Acquisition and Replacement Fund
6. Miscellaneous.
 - a) Bank Overdraft

Attachments:

- Table 1/1A. Contributions from Donors 1998 to 2000
- Table 2. Income by Sources and Expenditure by Categories 1998 to 2000
- Table 3. Unrestricted and Restricted Income and Expenditure 1998 to 2000
- Table 4/4A . Donor Contributions by Unrestricted and Restricted Funds 1998 to 2000
- Table 5. Unrestricted Programme and Management Expenditure 1998 to 2000

Annexures:

- "A" - Report of the Finance Committee of November 7, 1999
- "B" - 1999 Auditors' Report and Audited Financial Statements
- "C" - 1999 ICDDR,B Hospital Endowment Fund Auditor's Report and Audited Financial Statements

1999 ICDDR,B AUDITED FINANCIAL STATEMENTS AND AUDITORS' REPORTS

The audited Financial Statements are attached as annexure "B". The audit was completed and the Financial Statements were signed on March 15, 2000. Abridged audited Financial Statements are included in the Centre's Annual Report.

The Auditors' Report includes three qualifications. Management does not agree with the qualification for not including the assets and liabilities of "ICDDR,B Employees Separation Payment Fund" as the Centre has no effective control over these Funds and the inclusion of such funds would materially distort the true financial position of the Centre.

The second qualification relates to the recoverability of the \$200,000 outstanding for 1995 and 1996 from the Arab Gulf Fund/UNDP. Management continues to followup on this issue and feels that this amount will be received by the Centre.

The third issue noted is the treatment of the voluntary severance payment to employees as a deferred revenue expenditure. Management deferred this expenditure to be charged to the operating fund equally over two years, 1999 and 2000, to relate to the salary savings from this program over the two years. The balance of the deferred revenue expenditure will be charged in the year 2000, and the audit qualification will no longer appear.

The joint auditors considered that there are no matters of significance which needed to be reported to the Board, but they have submitted a letter to management covering minor matters. This is available, should any committee member wish to review it.

The audited financial statements do not contain the detailed information which we present to the Finance Committee. Accordingly, Finance Department has prepared detailed tables from the audited accounts.

INCOME

Donor and Hospital Endowment Fund Contributions (Table 3 for summary and Table 4 for individual donor amounts) increased by \$2,076,000 (18.2%) from \$11,389,000 to \$13,465,000. This increase comprised:

	1999 <u>ACTUAL</u>	1998 <u>ACTUAL</u>	DIFF. <u>(DECREASE)</u>
Restricted			
Projects/Programs	8,505,000	7,839,000	666,000
Fixed Assets	1,210,000	496,000	714,000
Hospital Endowment Fund	200,000	-	200,000
	<u>9,915,000</u>	<u>8,335,000</u>	<u>1,580,000</u>
Project Overhead	<u>1,441,000</u>	<u>1,255,000</u>	<u>186,000</u>
Total Restricted	<u>11,356,000</u>	<u>9,590,000</u>	<u>1,766,000</u>
Unrestricted			
General	<u>2,109,000</u>	<u>1,799,000</u>	<u>310,000</u>
Total Income	<u>13,465,000</u>	<u>11,389,000</u>	<u>2,076,000</u>

Restricted Income increased primarily due to full year funding for projects and programs started in 1998. This includes funds from European Union, DfID and the World Bank. Ongoing activities funded by the Swiss Red Cross and USAID/W as well as new projects supported by USAID/W increased. \$200,000 was transferred to restricted income from the Hospital Endowment Fund.

Unrestricted Income increased primarily due to a one time contribution from the Government of Bangladesh and renewed unrestricted funding from the Netherlands.

EXPENDITURE

Operating Expenditures (Tables 3 to 5) increased by \$995,000 (8.2%) from \$12,207,000 to \$13,202,000. This increase comprised:

	1999 <u>ACTUAL</u>	1998 <u>ACTUAL</u>	DIFF. <u>(DECREASE)</u>
Restricted			
Projects/Programs	8,705,000	7,839,000	866,000
Fixed Assets	<u>1,210,000</u>	<u>496,000</u>	<u>714,000</u>
Total Restricted	<u>9,915,000</u>	<u>8,335,000</u>	<u>1,580,000</u>
Unrestricted			
Program	1,792,000	2,757,000	(965,000)
Management	<u>1,495,000</u>	<u>1,115,000</u>	<u>380,000</u>
Total Unrestricted	<u>3,287,000</u>	<u>3,872,000</u>	<u>(585,000)</u>
Total Operating Cash Cost	<u>13,202,000</u>	<u>12,207,000</u>	<u>995,000</u>

Depreciation increased by \$4,000 (0.4%) from \$895,000 to \$899,000.

Total Expenditures including capital expenditure and depreciation increased by \$999,000 (7.6%) from \$13,102,000 to \$14,101,000.

BALANCE

Operating Surplus, excluding depreciation changed by \$1,081,000 from a deficit of \$818,000 in 1998 to a surplus of \$263,000 in 1999.

Cumulative Operating Deficit, excluding depreciation decreased by \$197,000 from \$3,921,000 to \$3,724,000. This decrease is comprised of the operating surplus of \$263,000 less a transfer of \$65,254 to the Fixed Assets Acquisition and Replacement Fund for unfunded assets purchased for activities supported by unrestricted funds.

Restricted Expenditures increased in line with increased revenues as noted under revenue.

Unrestricted Expenditures In Programs decreased primarily due to the ability of the Centre to attract Donor support as project funds for some essential programs previously supported from unrestricted funds and from salary savings as a result of the Voluntary Severance Program initiated in late 1998.

Unrestricted Expenditure In Management increased due to the charge of 50% (\$288,000) of the Voluntary Severance Program.

Cumulative Unfunded Depreciation, increased by \$855,000 from \$9,408,000 to \$10,263,000.

**1999 ICDDR,B HOSPITAL ENDOWMENT FUND
AUDITED FINANCIAL STATEMENTS AND AUDITORS'
REPORTS**

The audited Financial Statements are attached as annexure "C". The audit was completed and the Financial Statements were signed on March 15, 2000.

	1999 <u>ACTUAL</u>	1998 <u>ACTUAL</u>	DIFF. <u>(DECREASE)</u>
Income:			
Investment Income.	112,245	88,628	23,617
Donations	64,843	26,968	37,875
Net Fund Raising Activities	9,649	3,611	6,038
Exchange loss	(23,785)	(28,969)	5,184
Profit on Sale of Investments	<u>261,104</u>	<u>-</u>	<u>261,104</u>
Net Income	<u>424,056</u>	<u>90,238</u>	<u>333,818</u>
Distribution/Appropriation of Net Income:			
Transfer to:			
Inflation Reserve	118,382	69,708	48,674
Other Investment Capital Account	74,492	30,579	43,913
Investment Income Account	31,182	(10,049)	41,231
ICDDR,B Hospital	<u>200,000</u>	<u>-</u>	<u>200,000</u>
	<u>424,056</u>	<u>90,238</u>	<u>333,818</u>
Investments at Cost:			
Morgan Stanley Co. USA	2,398,791	2,000,000	398,791
Cash or equivalents - Dhaka	1,431,968	1,658,419	(226,451)
Shares, Debentures and Govt. Securities - Dhaka	<u>447,730</u>	<u>388,372</u>	<u>59,358</u>
Total Invested Funds	<u>4,278,489</u>	<u>4,046,791</u>	<u>231,698</u>

In 1999 \$200,000 was withdrawn from the endowment for operating expenses of the Dhaka hospital.

The shares of common stock investments had a market value of \$154,416 as at December 31, 1999 (1998 \$256,840).

As at December 31, 1999, the market value of the investment portfolio with Morgan Stanley & Co in the USA was \$2,830,731 (1998 \$2,256,279).

The total market value of the fund at December 31, 1999 was \$4,417,115.

2000 FORECAST

INCOME

Donor and Hospital Endowment Fund Contributions (Table 3 for summary and Table 4 for individual donor amounts) which were budgeted at \$16,367,000 are expected to decrease to \$15,356,000. This decrease of \$1,011,000 (6.2%) comprises:

	2000 <u>BUDGET</u>	2000 <u>FORECAST</u>	DIFF. <u>INC/(DEC)</u>
Restricted			
Projects/Programs	11,351,000	11,093,000	(258,000)
Fixed Assets	<u>1,340,000</u>	<u>817,000</u>	<u>(523,000)</u>
	12,691,000	11,910,000	(781,000)
Project Overhead	<u>1,791,000</u>	<u>1,627,000</u>	<u>(164,000)</u>
Total Restricted	14,482,000	13,537,000	(945,000)
Unrestricted	<u>1,885,000</u>	<u>1,819,000</u>	<u>(66,000)</u>
Total Contributions	<u>16,367,000</u>	<u>15,356,000</u>	<u>(1,011,000)</u>

Restricted Income will decrease in line with expenditures and are commented on under expenditures. Forecast includes \$200,000 from the Hospital Endowment Fund.

Unrestricted Income is expected to decrease due to exchange rate fluctuations for contributions paid in currencies other than US dollars and a decrease in the contribution from the SDC.

EXPENDITURE

Operating Cash Cost (Tables 3 to 5) which was budgeted at \$16,456,000 is forecast to decrease by \$888,000 (5.4%) to \$15,568,000. This decrease comprises:

	2000 <u>BUDGET</u>	2000 <u>FORECAST</u>	DIFF. <u>INC/(DEC)</u>
Restricted			
Projects/Programs	11,351,000	11,093,000	(258,000)
Fixed Assets	<u>1,340,000</u>	<u>817,000</u>	<u>(523,000)</u>
	12,691,000	11,910,000	(781,000)
Unrestricted			
Programs	2,029,000	1,832,000	(197,000)
Management	<u>1,736,000</u>	<u>1,826,000</u>	<u>90,000</u>
Total Unrestricted	3,765,000	3,658,000	(107,000)
Total Operating Cash Cost	<u>16,456,000</u>	<u>15,568,000</u>	<u>(888,000)</u>

Depreciation which was budgeted at \$908,000 is expected to decrease by \$22,000 (2.4%) to \$877,000.

Total Expenditures including Depreciation was budgeted at \$17,364,000 and is expected to decrease by \$919,000 (5.3%) to \$16,445,000.

The Net Operating Deficit excluding depreciation was budgeted at \$89,000. This is expected to increase by \$123,000 (138.2%) to a deficit of \$212,000.

Net Operating Deficit including depreciation was budgeted at \$997,000. This is anticipated to increase by \$92,000 (9.2%) to \$1,089,000.

Restricted Expenditures are expected to decrease due to delayed implementation of some activities in projects and a delay in approval of some projects. A capital project funded by the Swiss Red Cross was completed in 1999, a portion of this expenditure was included in the 2000 Budget.

Unrestricted Expenditures are not expected to change significantly.

APPOINTMENT OF AUDITORS FOR 2000

Price Waterhouse, Calcutta and Hoda Vasi Chowdhury & Co, Dhaka were the auditors for 1999.

Price Waterhouse, Calcutta have been the Centre's auditors for the last four years and Hoda Vasi Chowdhury & Co, Dhaka for one year.

The Centre's practice is to normally retain auditors for three to five years to provide continuity in the audits and minimize audit costs.

In line with this Management is recommending the reappointment of Price Waterhouse, Calcutta and Hoda Vasi Chowdhury & Co, Dhaka as joint auditors for the year 2000.

Management is recommending that the audit fee not exceed \$15,000, the same as in 1999.

a) **Centre's Endowment Fund**

The balance of Centre Endowment Fund including USAID Endowment Fund was \$3,841,691 as at December 31, 1999. This entire amount is invested in Morgan Stanley's Total Fund Management Portfolio and is being monitored by the Centre Fund Finance Committee. The unrealized income as at December 31, 1999 was \$502,325 for a total market value of the fund of \$4,344,016. There were no contributions or withdrawals from this fund during 1999.

b) **Reserve Fund**

The balance of the Reserve Fund as at December 31, 1999 was \$2,364,851. Interest income of the fund during 1999 was \$105,017. The Reserve Fund is held as security by American Express Bank for our overdraft facility. As approved by Board Resolution on November 07, 1999, \$300,000 has been transferred from the Reserve Fund to Operating Fund in January 2000.

c) **Fixed Assets charged to Fixed Asset Acquisition and Replacement Fund**

Capital expenditures charged to the fund in 1999 totaled \$133,873 comprising:

Matlab International Training Centre	68,619
Equipment – Centrally Funded	<u>65,254</u>
Total	<u>\$ 133,873</u>

During the year a transfer of \$65,254 was made from the Operating Fund to provide for unfunded assets purchased from this fund.

The fund balance as at December 31, 1999 of \$78,107 is funding from Government of Japan committed for the completion of the Matlab International Training Centre.

MISCELLANEOUS

a) Bank Overdraft

The Centre's current \$2 million overdraft facility with American Express Bank, which carries no undrawn commitment fees, will expire on July 13, 2000. The facility is used for the balance of margins on letters of credit and any overdraft. As a result of the large cumulative deficit of the Centre, there will be a ongoing overdraft requirement to cover operating costs. In view of this, management request Board approval to renew the overdraft agreement of \$2 million for the year to July 13, 2001. This overdraft facility is secured by term deposits of the Reserve Fund.

By way of Board resolution in June 1995, management may also borrow from the Hospital Endowment Fund up to a maximum of \$750,000 to cover operating cash requirements. No funds were borrowed during 1999.

TABLE - 1 A
ICDDR,B: - CENTRE FOR HEALTH AND POPULATION RESEARCH
CONTRIBUTIONS FROM DONORS 1998 - 2000

(IN US\$'000)

	1998 ACTUAL		1999 ACTUAL		2000 BUDGET		2000 FORECAST		2000--STATUS FIRM ESTI.	
OTHERS :										
SAUDI ARABIA	50	3.3%	9	0.6%			50	3.0%	50	
SRI LANKA	8	0.5%	4	0.3%						
AGA KHAN FOUNDATION	(1)	-0.1%								
ABT Associates	27	1.8%	2	0.1%						
AIBS\ Dr.Patricia	10	0.7%								
BGS ARGOSS	8	0.5%	6	0.4%	9	0.6%	9	0.5%	9	
BDG/DGHS/ARI	4	0.3%								
BDG/WB/MINISTRY OF SCIENCE					175	10.8%				
CANADA/CHC-ASCON VI/IX	2	0.1%					15	0.9%	15	
CYTOS PHARMACEUTICAL	4	0.3%	33	2.2%	20	1.2%	36	2.2%	36	
FAMILY HEALTH INTERNATIONAL	42	2.8%								
FUTURE GROUP			42	2.8%	30	1.9%	55	3.3%	55	
G. MASON FOUNDATION	1	0.1%	8	0.5%	1	0.1%				
HELLEN KELLER INTERNATIONAL	1	0.1%								
HKI-ASCONVII	6	0.4%								
ICRW/USA: BRAC-ICDDR,B	22	1.4%	47	3.2%						
IDRC	11	0.7%	4	0.3%						
INT'L. ATOMIC ENERGY	6	0.4%	3	0.2%						
JAPAN - JICWS	19	1.2%	4	0.3%	46	2.8%	46	2.8%	46	
JOHN SNOW INC. (JSI)			159	10.8%	256	15.8%	313	18.8%	313	
MACRO INTERNATIOAL INC.	54	3.5%								
MEDICAL RESEARCH COUNCIL			2	0.1%						
NEW ENGLAND MEDI. CENTRE (NEMC)	35	2.3%	117	7.9%	101	6.3%	75	4.5%	75	
NESTLE RESEARCH FOUNDATION							12	0.7%	12	
NORTHFIELD LABORATORIES	83	5.4%	3	0.2%			18	1.1%	18	
NIH/RAND CORPORATION	(10)	-0.7%	165	11.2%			188	11.3%	188	
NOVARTIS	22	1.4%	24	1.6%	50	3.1%	39	2.3%	39	
NEWCASTLE UNIVERSITY	15	1.0%	75	5.1%	85	5.3%	90	5.4%	90	
NUTRICIA RESEARCH FOUNDATION					41	2.5%				
POPULATION COUNCIL	17	1.1%								
PRAXIS					46	2.8%				
SAVE THE CHILDREN	9	0.6%								

TABLE - 1 A
ICDDR,B: - CENTRE FOR HEALTH AND POPULATION RESEARCH
CONTRIBUTIONS FROM DONORS 1998 - 2000

(IN US\$'000)

	1998		1999		2000		2000		2000-STATUS	
	ACTUAL		ACTUAL		BUDGET		FORECAST		FIRM	ESTI.
OTHERS :										
PLAN INTERNATIONAL							13	0.8%	13	
PROCTOR & GAMBLE	10	0.7%	1	0.1%	2	0.1%	2	0.1%	2	
ROCKEFELLER FOUNDATION	62	4.1%								
SAIDNET			5	0.3%						
THRASHER	58	3.8%	20	1.4%	90	5.6%	1	0.1%	1	
THRASHER (ALBERT)			63	4.3%						
UCB-OSMOTIC/SIDAC	43	2.8%	48	3.2%	20	1.2%	37	2.2%	37	
USAID / OFDA	72	4.7%	33	2.2%	47	2.9%	65	3.9%	65	
UC - Davis			65	4.4%	60	3.7%				
UNICEF	18	1.2%	36	2.4%			11	0.7%	11	
UNIVERSITY OF ALABAMA	53	3.5%	7	0.5%			4	0.2%	4	
UNIVERSITY OF LOUGHBOROUGH	1	0.1%								
UNIVERSITY OF PENNSYLVANIA	27	1.8%	10	0.7%			1	0.1%	1	
UNIVERSITY OF VIRGINIA	14	0.9%	62	4.2%	71	4.4%	70	4.2%	70	
UFHP-633841	5	0.3%	(8)	-0.5%						
WANDER-AG	5	0.3%								
WHO	187	12.3%	128	8.7%	285	17.6%	195	11.7%	195	
DISASTER / EPIDEMIC :										
USAID/CARE	265	17.4%	15	1.0%						
CIDA	65	4.3%								
DfID-DHAKA	22	1.4%	45	3.0%						
AusAID	3	0.2%					13	0.8%	13	
UNOCAL, Cairn, Shell & OXY	88	5.8%	169	11.4%	136	8.4%	199	12.0%	199	
SDC	81	5.3%	29	2.0%						
AMEX BANK	7	0.5%								
ALICO	6	0.4%								
ANZ BANK	4	0.3%								
OTHERS (SS)	(16)	-1.0%	44	3.0%	45	2.8%	105	6.3%	105	
TOTAL OTHERS	1,525	100.0%	1,479	100.0%	1,616	100.0%	1,662	100.0%	1,662	

TABLE - 2
ICDDR,B : CENTRE FOR HEALTH AND POPULATION RESEARCH
INCOME BY SOURCES AND EXPENDITURE BY CATEGORIES - 1998 TO 2000

(IN US\$'000)

	ACTUAL 1998		ACTUAL 1999		BUDGET 2000		FORECAST 2000		INC/(DEC) FORECAST 2000 ACTUAL 1999	
INCOME:										
CONTRIBUTIONS BY DONORS:										
UNRESTRICTED FUNDS	1,799	16%	2,109	16%	1,885	11%	1,819	12%	(290)	-14%
RESTRICTED - OVERHEADS	1,255	11%	1,441	11%	1,791	11%	1,627	11%	186	13%
RESTRICTED - PROJECTS / PROGRAMS	8,335	73%	9,915	73%	12,691	78%	11,910	77%	1,995	20%
TOTAL DONOR INCOME	11,389	100%	13,465	100%	16,367	100%	15,356	100%	1,891	14%
EXPENDITURE:										
LOCAL SALARIES \ WAGES	6,106	50%	5,971	45%	6,978	41%	6,783	43%	812	14%
INTERNATIONAL SALARIES	2,615	21%	1,953	15%	2,859	17%	2,717	17%	764	39%
CONSULTANTS	114	1%	162	1%	264	2%	349	2%	187	115%
MANDATORY COMMITTEES	100	1%	95	1%	121	1%	121	1%	26	27%
TRAVEL	324	3%	489	4%	656	4%	679	4%	190	39%
SUPPLIES AND MATERIALS	1,611	13%	1,503	11%	2,122	13%	1,730	11%	227	15%
REPAIR AND MAINTENANCE	83	1%	122	1%	121	1%	179	1%	57	47%
RENT, COMMUN. AND UTILITIES	480	4%	460	3%	504	3%	515	3%	55	12%
PRINTING AND PUBLICATION	239	2%	421	3%	356	2%	341	2%	(80)	-19%
TRAINING AND FELLOWSHIP	157	1%	268	2%	270	2%	347	2%	79	29%
STAFF DEVELOPMENT	155	1%	135	1%	174	1%	219	1%	84	62%
VOLUNTARY SEVERANCE PROGRAM			288	2%	288	2%	288	2%		
OTHER EXPENSES	812	7%	903	7%	1,128	7%	1,162	7%	259	29%
OTHER RECEIPTS	(1,085)	-9%	(778)	-6%	(800)	-5%	(754)	-5%	24	-3%
TOTAL INTERNAL CASH EXPENDITURE	11,711	96%	11,992	91%	15,041	91%	14,676	94%	2,684	22%
DONOR CAPITAL EXPENDITURE	496	4%	1,210	9%	1,415	9%	892	6%	(318)	-26%
TOTAL OPERATING CASH EXPENDITURE	12,207	100%	13,202	100%	16,456	100%	15,568	100%	2,366	18%
NET CASH SURPLUS/(DEFICIT)	(818)		263		(89)		(212)		(475)	-181%
DEPRECIATION	895		899		908		877		(22)	-2%
NET OPERATING SURPLUS/(DEFICIT)	(1,713)		(636)		(997)		(1,089)		(453)	71%
CAPITAL EXPENDITURE:										
BANGLADESH	232									

Note: Where necessary 1998 to 1999 figures have been regrouped to conform with 2000 budget & forecast preparation.

TABLE - 3

**ICDDR,B : CENTRE FOR HEALTH AND POPULATION RESEARCH
UNRESTRICTED AND RESTRICTED INCOME AND EXPENDITURE 1998 TO 2000**

(IN US\$'000)

	ACTUAL 1998			ACTUAL 1999			BUDGET 2000			FORECAST 2000		
	UNRESTR.	RESTR.	TOTAL	UNRESTR.	RESTR.	TOTAL	UNRESTR.	RESTR.	TOTAL	UNRESTR.	RESTR.	TOTAL
INCOME:												
CONTRIBUTIONS BY DONORS:												
UNRESTRICTED FUNDS	1,799		1,799	2,109		2,109	1,885		1,885	1,819		1,819
RESTRICTED - OVERHEADS	1,255		1,255	1,441		1,441	1,791		1,791	1,627		1,627
RESTRICTED - PROJECTS / PROGRAMS		8,335	8,335		9,915	9,915		12,691	12,691		11,910	11,910
TOTAL INCOME	3,054	8,335	11,389	3,550	9,915	13,465	3,676	12,691	16,367	3,446	11,910	15,356
EXPENDITURE:												
LOCAL SALARIES \ WAGES	2,925	3,181	6,106	2,145	3,826	5,971	2,364	4,614	6,978	2,228	4,555	6,783
INTERNATIONAL SALARIES	894	1,721	2,615	772	1,181	1,953	1,059	1,800	2,859	987	1,730	2,717
CONSULTANTS	44	70	114	2	160	162	14	250	264	14	335	349
MANDATORY COMMITTEES	95	5	100	92	3	95	121		121	121		121
TRAVEL	25	299	324	58	431	489	25	631	656	25	654	679
SUPPLIES AND MATERIALS	734	877	1,611	621	882	1,503	783	1,339	2,122	670	1,060	1,730
REPAIR AND MAINTENANCE	50	33	83	56	66	122	62	59	121	40	139	179
RENT, COMMUNL AND UTILITIES	257	223	480	217	243	460	221	283	504	210	305	515
PRINTING AND PUBLICATION	148	91	239	138	283	421	170	186	356	155	186	341
TRAINING AND FELLOWSHIP	25	132	157	18	250	268	31	239	270	20	327	347
STAFF DEVELOPMENT		155	155		135	135		174	174		219	219
VOLUNTARY SEVERANCE PROGRAM				288		288	288		288	288		288
OTHER EXPENSES	405	407	812	315	588	903	392	736	1,128	381	781	1,162
INTERDEPARTMENTAL SERVICES	(682)	682		(679)	679		(1,048)	1,048		(802)	802	
OTHER RECEIPTS	(1,048)	(37)	(1,085)	(756)	(22)	(778)	(792)	(8)	(800)	(754)		(754)
TOTAL INTERNAL CASH EXPENDITURE	3,872	7,839	11,711	3,287	8,705	11,992	3,690	11,351	15,041	3,583	11,093	14,676
DONOR CAPITAL EXPENDITURE		496	496		1,210	1,210		75	1,415		817	892
TOTAL OPERATING CASH EXPENDITURE	3,872	8,335	12,207	3,287	9,915	13,202	3,765	12,691	16,456	3,658	11,910	15,568
NET CASH SURPLUS/(DEFICIT)	(818)		(818)	263		263	(89)		(89)	(212)		(212)
DEPRECIATION	895		895	899	0	899	908		908	877		877
NET OPERATING SURPLUS/(DEFICIT)	(1,713)		(1,713)	(636)	(0)	(636)	(997)		(997)	(1,089)		(1,089)
CAPITAL EXPENDITURE:												
BANGLADESH	232		232									

Note: Where necessary 1998 to 1999 figures have been regrouped to conform with 2000 budget & forecast preparation.

TABLE - 4
 ICDDR,B - CENTRE FOR HEALTH AND POPULATION RESEARCH
 MAJOR DONOR CONTRIBUTIONS BY UNRESTRICTED AND RESTRICTED FUNDS 1998 - 2000

(IN US\$'000)

	1998 - ACTUAL			1999 - ACTUAL			2000 - BUDGET			2000 - FORECAST			2000 - STATUS			
	UNRESTR	RESTR	TOTAL	%	UNRESTR	RESTR	TOTAL	%	UNRESTR	RESTR	TOTAL	%	FIRM	ESTIM.		
UNRESTRICTED FUNDS:																
AUSTRALIA - AusAID	207	207	207	1.8%	209	209	209	1.6%	208	208	208	1.3%	188	188	188	1.2%
BANGLADESH	211	211	211	1.9%	384	384	384	2.9%	204	204	204	1.2%	197	197	197	1.3%
BELGIUM - BADC	89	89	89	0.8%	66	66	66	0.5%	76	76	76	0.5%	67	67	67	0.4%
CANADA - CIDA	143	143	143	1.3%	205	205	205	1.5%	201	201	201	1.2%	203	203	203	1.3%
NETHERLANDS					232	232	232	1.7%	232	232	232	1.4%	206	206	206	1.3%
SWEDEN - SIDA	321	321	321	2.8%	301	301	301	2.2%	301	301	301	1.8%	281	281	281	1.8%
SWITZERLAND - SDC	312	312	312	2.7%	324	324	324	2.4%	288	288	288	1.8%	252	252	252	1.6%
UNITED KINGDOM - DfID	83	83	83	0.7%												
UNITED STATES - USAID	275	275	275	2.4%	275	275	275	2.0%	275	275	275	1.7%	275	275	275	1.8%
UNICEF	100	100	100	0.9%	100	100	100	0.7%	100	100	100	0.6%	100	100	100	0.7%
OTHERS	58	58	58	0.5%	12	13	13	0.1%					50	50	50	0.3%
TOTAL UNRESTRICTED	1,799	1,799	1,799	15.8%	2,109	2,109	2,109	15.7%	1,885	1,885	1,885	11.5%	1,819	1,819	1,819	11.8%
RESTRICTED PROJECTS/PROGRAM FUNDS:																
BANGLADESH - WB & BINP	8	217	225	2.0%	25	268	293	2.2%	282	282	282	1.7%	51	544	595	3.9%
BELGIUM - BADC		148	148	1.3%		144	144	1.1%	164	164	164	1.0%		174	174	1.1%
EUROPEAN UNION - BHARP		123	123	1.1%		573	573	4.3%	1,272	1,272	1,272	7.8%		1,090	1,090	7.1%
FORD FOUNDATION	27	306	333	2.9%	31	225	256	1.9%	47	322	369	2.3%	42	308	350	2.3%
JAPAN	47	533	580	5.1%	47	533	580	4.3%	47	533	580	3.5%	47	533	580	3.8%
NETHERLANDS	9	31	40	0.4%	1	4	5	0.0%					4	18	22	0.1%
NORWAY - NORAD	13	112	125	1.1%	23	90	113	0.8%	6	53	59	0.4%				
SWEDEN - SIDA/SAREC	2	159	161	1.4%	10	114	124	0.9%	15	157	172	1.1%	14	146	160	1.0%
SWITZERLAND - SDC	8	116	124	1.1%	15	174	189	1.4%	65	520	585	3.6%	59	525	584	3.8%
SWISS RED CROSS	38	254	292	2.6%	62	415	477	3.5%	78	523	601	3.7%	38	253	291	1.9%
UNITED KINGDOM - DfID:																
- DfID / RTI / T.Well / HIV	6	51	57	0.5%	12	40	52	0.4%	34	111	145	0.9%	29	94	123	0.8%
- DfID / HE	23	160	183	1.6%	23	165	188	1.4%	12	84	96	0.6%	8	57	65	0.4%
- DfID / Interim fund for HDSP/DSS		63	63	0.6%		38	38	0.3%								
- DfID / Modernization of Matlab DSS	7	67	74	0.6%	29	289	318	2.4%	39	388	427	2.6%	39	390	429	2.8%
UNAIDS		95	95	0.8%		59	59	0.4%								
UNDP - Japan	5	54	59	0.5%		78	78	0.6%		53	53	0.3%		44	44	0.3%
UNITED STATES - USAID:																
USAID/Dhaka	698	2,794	3,492	30.7%	644	2,584	3,228	24.0%	770	3,245	4,015	24.5%	707	2,992	3,699	24.1%
USAID/Washington																
- USAID/Washington	226	972	1,198	10.5%	240	1,017	1,257	9.3%	399	1,774	2,173	13.3%	338	1,488	1,826	11.9%
- USAID/Nepal					30	120	150	1.1%	40	162	202	1.2%	31	123	154	1.0%
- USAID/HKI					24	97	121	0.9%								
- NIH - JHU/UMBI		471	471	4.1%		436	436	3.2%		764	764	4.7%		533	533	3.5%
- OMNI - HNI	1	14	15	0.1%												
- JHU	9	71	80	0.7%	15	111	126	0.9%	26	115	141	0.9%	31	127	158	1.0%
WORLD BANK - NCOE	24	161	185	1.6%	115	770	885	6.6%	100	666	766	4.7%	111	737	848	5.5%
HOSPITAL ENDOWMENT FUND						200	200	1.5%						200	200	1.3%
OTHERS	104	1,363	1,467	12.9%	95	1,371	1,466	10.9%	113	1,503	1,616	9.9%	78	1,534	1,612	10.5%
TOTAL RESTRICTED	1,255	8,335	9,590	84.2%	1,441	9,915	11,356	84.3%	1,791	12,691	14,482	88.5%	1,627	11,910	13,537	88.2%
GRAND TOTAL	3,054	8,335	11,389	100.0%	3,550	9,915	13,465	100.0%	3,676	12,691	16,367	100.0%	3,446	11,910	15,356	100.0%
CAPITAL EXPENDITURE:																
BANGLADESH	232															

Note: Where necessary 1998 to 1999 figures have been regrouped to conform with 2000 budget & forecast preparation.

TABLE - 4 A
 ICDDR,B - CENTRE FOR HEALTH AND POPULATION RESEARCH
 MAJOR DONOR CONTRIBUTIONS BY UNRESTRICTED AND RESTRICTED FUNDS 1998 - 2000

(IN US\$'000)

	1998 - ACTUAL				1999 - ACTUAL				2000 - BUDGET				2000 - FORECAST				2000 - STATUS		
	UNRESTR.	RESTR.	TOTAL	%	UNRESTR.	RESTR.	TOTAL	%	UNRESTR.	RESTR.	TOTAL	%	UNRESTR.	RESTR.	TOTAL	%	FIRM	ESTIM.	
UNRESTRICTED FUNDS: - OTHERS																			
SAUDI ARABIA	50		50	0.4%	9		9	0.1%					50		50	0.3%			50
SRI LANKA	8		8	0.1%	4		4	0.0%											50
TOTAL UNRESTRICTED - OTHERS	58		58	0.5%	13		13	0.1%					50		50	0.3%			
RESTRICTED FUNDS: - OTHERS																			
AGA KHAN FOUNDATION		(1)	(1)	-0.0%															
ABT Associates	1	26	27	0.2%	2	2	0.0%												
AIBS\ Dr.Patricia	1	9	10	0.1%															9
BGS ARGOSS	2	6	8	0.1%	1	5	6	0.0%	2	7	9	0.1%	2	7	9	0.1%			
BDG/DGHS/ARI		4	4	0.0%															
BDG/WB/MINISTRY OF SCIENCE									16	159	175	1.1%	3	12	15	0.1%			15
CANADA/CHC-ASCON VI/IX		2	2	0.0%															36
CYTOS PHARMACEUTICAL		4	4	0.0%		33	33	0.2%		20	20	0.1%		36	36	0.2%			
FAMILY HEALTH INTERNATIONAL	8	34	42	0.4%					5	25	30	0.2%	6	49	55	0.4%			55
FUTURE GROUP					4	38	42	0.3%											
G. MASON FOUNDATION		1	1	0.0%		8	8	0.1%		1	1	0.0%							
HELLEN KELLER INTERNATIONAL		1	1	0.0%															
HKI - ASCONVII	1	5	6	0.1%															
ICRW/USA: BRAC-ICDDR,B	5	17	22	0.2%	11	36	47	0.3%											
IDRC	1	10	11	0.1%		4	4	0.0%											
INT'L. ATOMIC ENERGY		6	6	0.1%		3	3	0.0%											
JAPAN - JICWS		19	19	0.2%		4	4	0.0%		46	46	0.3%		46	46	0.3%			46
JOHN SNOW INC. (JSI)						159	159	1.2%		256	256	1.6%	7	306	313	2.0%			313
MACRO INTERNATIONAL INC.	10	44	54	0.5%															
MEDICAL RESEARCH COUNCIL						2	2	0.0%											
NEW ENGLAND MEDI. CENTRE (NEMC)	8	27	35	0.3%	28	89	117	0.9%	24	77	101	0.6%	18	57	75	0.5%			75
NESTLE RESEARCH FOUNDATION													1	11	12	0.1%			12
NORTHFIELD LABORATORIES	17	66	83	0.7%	1	2	3	0.0%					4	14	18	0.1%			18
NIH/RAND CORPORATION		(10)	(10)	-0.1%		165	165	1.2%						188	188	1.2%			188
NOVARTIS	5	17	22	0.2%	6	18	24	0.2%	12	38	50	0.3%	9	30	39	0.3%			39
NEWCASTLE UNIVERSITY	3	12	15	0.1%	18	57	75	0.6%	20	65	85	0.5%	21	69	90	0.6%			90
NUTRICIA RESEARCH FOUNDATION									8	33	41	0.3%							
POPULATION COUNCIL	4	13	17	0.1%					9	37	46	0.3%							
PRAXIS																			
SAVE THE CHILDREN		9	9	0.1%										13	13	0.1%			13
PLAN INTERNATIONAL														2	2	0.0%			2
PROCTOR & GAMBLE	1	9	10	0.1%		1	1	0.0%		2	2	0.0%							
ROCKEFELLER FOUNDATION		62	62	0.5%															
SAIDNET					1	4	5	0.0%											

TABLE - 4 A
 ICDDR,B - CENTRE FOR HEALTH AND POPULATION RESEARCH
 MAJOR DONOR CONTRIBUTIONS BY UNRESTRICTED AND RESTRICTED FUNDS 1998 - 2000

(IN US\$'000)

	1998 - ACTUAL				1999 - ACTUAL				2000 - BUDGET				2000 - FORECAST			2000 - STATUS			
	UNRESTR.	RESTR.	TOTAL	%	UNRESTR.	RESTR.	TOTAL	%	UNRESTR.	RESTR.	TOTAL	%	UNRESTR.	RESTR.	TOTAL	%	FIRM	ESTIM.	
RESTRICTED FUNDS: - OTHERS																			
THRASHER	4	54	58	0.5%	1	19	20	0.1%	6	84	90	0.5%		1	1	0.0%		1	
THRASHER (ALBERT)					4	59	63	0.5%											
UCB-OSMOTIC/SIDAC	10	33	43	0.4%	10	38	48	0.4%	4	16	20	0.1%	7	30	37	0.2%		37	
USAID / OFDA		72	72	0.6%		33	33	0.2%		47	47	0.3%		65	65	0.4%		65	
UC - Davis					8	57	65	0.5%	7	53	60	0.4%							
UNICEF	3	15	18	0.2%		36	36	0.3%						11	11	0.1%		11	
UNIVERSITY OF ALABAMA	3	50	53	0.5%		7	7	0.1%						4	4	0.0%		4	
UNIVERSITY OF LOUGHBOROUGH		1	1	0.0%															
UNIVERSITY OF PENNSYLVANIA		27	27	0.2%		10	10	0.1%						1	1	0.0%		1	
UNIVERSITY OF VIRGINIA	1	13	14	0.1%	2	60	62	0.5%		71	71	0.4%		70	70	0.5%		70	
UFHP-633841		5	5	0.0%		(8)	(8)	-0.1%											
WANDER-AG	1	4	5	0.0%															
WHO	1	186	187	1.6%	128	128	128	1.0%		285	285	1.7%		195	195	1.3%		195	
DISASTER / EPIDEMIC:																			
USAID/CARE		265	265	2.3%		15	15	0.1%											
CIDA		65	65	0.6%															
DDID-DHAKA		22	22	0.2%		45	45	0.3%											
AnsAID		3	3	0.0%										13	13	0.1%		13	
UNOCAL, Cairn, Shell & OXY		88	88	0.8%		169	169	1.3%		136	136	0.8%		199	199	1.3%		199	
SDC	11	70	81	0.7%		29	29	0.2%											
AMEX BANK		7	7	0.1%															
ALICO		6	6	0.1%															
ANZ BANK		4	4	0.0%															
OTHERS (SS)	3	(19)	(16)	-0.1%		44	44	0.3%		45	45	0.3%		105	105	0.7%		105	
TOTAL RESTRICTED	104	1,363	1,467	12.9%	95	1,371	1,466	10.9%	113	1,503	1,616	9.9%	78	1,534	1,612	10.5%		1,612	

Table 5

TABLE - 5
ICDDR,B : CENTRE FOR HEALTH AND POPULATION RESEARCH
UNRESTRICTED PROGRAM AND MANAGEMENT EXPENDITURE 1998 TO 2000

(IN US\$ '000)

	ACTUAL 1998				ACTUAL 1999				BUDGET 2000				FORECAST 2000			
	GROSS COSTS	RECOVER COSTS	NET COSTS	% AGE	GROSS COSTS	RECOVER COSTS	NET COSTS	% AGE	GROSS COSTS	RECOVER COSTS	NET COSTS	% AGE	GROSS COSTS	RECOVER COSTS	NET COSTS	% AGE
PROGRAMS																
CLINICAL SCIENCES:																
DHAKA HOSPITAL	1,178	(135)	1,043	8.5%	801	(145)	656	5.0%	1,150	(142)	1,008	6.1%	869	(64)	805	5.2%
HOSPITAL SURVEILLANCE DIVISIONAL	260	(123)	137	1.1%	226	(140)	86	0.7%	269	(140)	129	0.8%	245	(140)	105	0.7%
PUBLIC HEALTH SCIENCES:																
MATLAB CLINICAL RESEARCH	266	(1)	265	2.2%	272		272	2.1%	241		241	1.5%	226		226	1.5%
MATLAB ADMINISTRATION	296	(103)	193	1.6%	297	(113)	184	1.4%	307	(145)	162	1.0%	290	(109)	181	1.2%
MATLAB FAMILY PLANNING	142	(142)			131	(131)			133	(133)			133	(133)		
MATLAB COMMUNITY RESEARCH DIVISIONAL	290		290	2.4%	130		130	1.0%	123		123	0.7%	107		107	0.7%
HEALTH & DEMOGRAPHIC SURVEILL	208	(5)	203	1.7%	145		145	1.1%	239		239	1.5%	186		186	1.2%
	297		297	2.4%	118		118	0.9%	147		147	0.9%	136		136	0.9%
LABORATORY SCIENCES:																
LABORATORY SERVICES DIVISIONAL	1,119	(1,149)	(30)	-0.2%	955	(1,140)	(185)	-1.4%	1,072	(1,277)	(205)	-1.2%	1,046	(1,174)	(128)	-0.8%
	246	(120)	126	1.0%	206	(120)	86	0.7%	120	(120)			120	(120)		
HEALTH & POPULATION EXTENSION:																
DIVISIONAL	70	(91)	(21)	-0.2%	110	(12)	98	0.7%		(11)	(11)	-0.1%	1		1	0.0%
TECHNICAL SUPPORT:																
DISC	185	(13)	172	1.4%	166	(13)	153	1.2%	221	(19)	202	1.2%	191	(15)	176	1.1%
TRAINING & DISSEMINATION	126	(113)	13	0.1%	140	(134)	6	0.0%	149	(129)	20	0.1%	196	(153)	43	0.3%
COMPUTER SERVICES	104	(35)	69	0.6%	83	(40)	43	0.3%	46	(72)	(26)	-0.2%	48	(54)	(6)	-0.0%
TOTAL PROGRAMS	4,787	(2,030)	2,757	22.6%	3,780	(1,988)	1,792	13.6%	4,217	(2,188)	2,029	12.3%	3,794	(1,962)	1,832	11.8%
MANAGEMENT																
DIRECTOR'S BUREAU	302		302	2.5%	176		176	1.3%	296		296	1.8%	311		311	2.0%
EXTERNAL RELATIONS & INSTITU. DEV.	133		133	1.1%	68	(1)	67	0.5%	236		236	1.4%	202		202	1.3%
BOT & COMMITTEES	110		110	0.9%	110		110	0.8%	151		151	0.9%	151		151	1.0%
ADMINISTRATION & PERSONNEL	1,064	(368)	696	5.7%	778	(292)	486	3.7%	793	(387)	406	2.5%	796	(277)	519	3.3%
FINANCE	312	(13)	299	2.4%	360	(58)	302	2.3%	301		301	1.8%	363	(1)	362	2.3%
VOLUNTARY SEVERANCE PACKAGE					288		288	2.2%	288		288	1.8%	288		288	1.8%
OTHER	94	(519)	(425)	-3.5%	266	(200)	66	0.5%	455	(397)	58	0.4%	330	(337)	(7)	-0.0%
TOTAL MANAGEMENT	2,015	(900)	1,115	9.1%	2,046	(551)	1,495	11.3%	2,520	(784)	1,736	10.5%	2,441	(615)	1,826	11.7%
TOTAL PROGRAMS AND MANAGEMENT	6,802	(2,930)	3,872	31.7%	5,826	(2,539)	3,287	24.9%	6,737	(2,972)	3,765	22.9%	6,235	(2,577)	3,658	23.5%
UNRESTRICTED FUNDS			3,872	31.7%			3,287	24.9%			3,765	22.9%			3,658	23.5%
RESTRICTED FUNDS			8,335	68.3%			9,915	75.1%			12,691	77.1%			11,910	76.5%
TOTAL			12,207	100.0%			13,202	100.0%			16,456	100.0%			15,568	100.0%

ICDDR,B BOARD OF TRUSTEES MEETING

REPORT OF THE FINANCE COMMITTEE MEETING HELD ON NOVEMBER 07, 1999

PRESENT:

Finance Committee Members

Mr. J.O. Martin – Chairperson of the Board
Prof. R.R. Colwell – Chairperson, Finance Committee
Mr. R. Carriere
Dr. David Sack – Director
Dr. A.K.M. Masihur Rahman

Board Members

Prof. M. Jacobs
Prof. A.K.A. Azad Khan
Dr. T.A.M. Khoja
Prof. P.F. McDonald
Prof. Tikki Pang
Prof. Carol Vlassoff

Invited

Division Directors and staff members

The Committee convened at 8.30 p.m. at the ICDDR,B Guest House.

On Sunday, November 7, 1999 at 8.30 a.m. the Finance Committee of the Board of Trustees met to consider the finances of the Centre. This session was chaired by Prof. R.R. Colwell, Chairperson of the Finance Committee, and the finance report was presented by Mr. John Winkelmann, Chief Finance Officer.

Mr. J.O. Martin, Chairperson of the Board welcomed the members, Division Directors and invited staff to the meeting.

Prof. Rita Colwell presented a brief overview of the agenda items to be discussed.

1. Approval of Agenda

The Agenda was approved with the addition of the following items for discussion:

Under Agenda Item 6 - Any Other Business

1. Report from the Child Health Foundation
2. Proposal for dealing with the Cumulative Deficit

1999 FORECAST

INCOME

Total Contributions by individual donors are summarized for years 1997 to 2000 in Table 1 & 1A and a more detailed breakdown into restricted and unrestricted funds is presented in Tables 4 & 4A. Total income by source for unrestricted and restricted funds and the subsequent expenditure by categories for years 1997 to 2000 are shown in Tables 2 & 3.

Donor Contributions for 1999 were budgeted at \$13,335,000 and are expected to increase to \$13,889,000. This increase of \$554,000 (4.2%) is explained by the following summary table.

	1999 <u>BUDGET</u>	1999 <u>FORECAST</u>	DIFF. <u>INC./DEC.</u>
Restricted			
Projects/Programs	9,022,000	8,840,000	(182,000)
Fixed Assets	<u>1,039,000</u>	<u>1,406,000</u>	<u>367,000</u>
	10,061,000	10,246,000	185,000
Project Overhead	<u>1,502,000</u>	<u>1,462,000</u>	<u>(40,000)</u>
Total Restricted	11,563,000	11,708,000	145,000
Unrestricted	<u>1,772,000</u>	<u>2,181,000</u>	<u>409,000</u>
Total Contributions	<u>\$ 13,335,000</u>	<u>\$ 13,889,000</u>	<u>\$ 554,000</u>

In restricted contributions 2 new donors began supporting the Centre during 1999, The World Bank and John Snow Incorporated (JSI).

The World Bank is supporting the development of the Nutrition Centre of Excellence and JSI is supporting selected activities of Dhaka Hospital.

Restricted Contributions from ongoing donors have been forecast in line with anticipated project activities .

Unrestricted Contributions are expected to increase primarily due to an additional one time special contribution of \$203,000 from the Government of the People's Republic of Bangladesh and the Netherlands Government again supporting the Centre with unrestricted funds.

1999 FORECAST

EXPENDITURE

Operating Cash Expenditures (Tables 3 and 5) were budgeted at \$14,365,000 and are forecast to decrease by \$348,000 (2.4%) to \$14,017,000. This decrease is explained by the following table.

	1999 <u>BUDGET</u>	1999 <u>FORECAST</u>	DIFF. <u>INC./DEC.</u>
Restricted			
Projects/Programs	9,022,000	8,840,000	(182,000)
Fixed Assets	<u>1,039,000</u>	<u>1,406,000</u>	<u>367,000</u>
Total Restricted	10,061,000	10,246,000	185,000
Unrestricted			
Programs	2,761,000	2,158,000	(603,000)
Management	<u>1,543,000</u>	<u>1,613,000</u>	<u>70,000</u>
Total Unrestricted	4,304,000	3,771,000	(533,000)
Total Operating			
Cash Expenditures	<u>\$ 14,365,000</u>	<u>\$ 14,017,000</u>	<u>\$ (348,000)</u>

Depreciation which was budgeted at \$854,000 is expected to increase by \$31,000 (3.6%) to \$885,000.

Total Expenditures including depreciation was budgeted at \$15,219,000 and is anticipated to decrease by \$317,000 (2.1%) to \$14,902,000.

BALANCE

Net Operating Deficit excluding depreciation was budgeted at \$1,030,000. This is now anticipated to decrease by \$902,000 to a deficit of \$128,000.

Net Operating Deficit including depreciation was budgeted at \$1,884,000. This is now anticipated to decrease by \$871,000 to a deficit of \$1,013,000.

Restricted Expenditures for projects and programs are expected to decrease primarily due to a decrease in international salaries as a result of the departure of International Staff in late 1998 and 1999. Recruitment is currently underway to staff these vacant positions. Expenditures in all other categories are forecast in line with anticipated project activities.

Unrestricted Expenditures in programs are expected to decrease primarily due to salary savings as a result of the voluntary severance program and donor support with restricted funds for some essential programs supported with unrestricted funds.

Unrestricted Expenditures in management are expected to increase by \$70,000, however this includes \$288,000 being 50% of the cost of the voluntary severance program. Management costs in other areas are expected to decrease primarily due to salary savings from the voluntary severance program and international salaries, as recruitment of one position was deferred.

Discussions:

Explaining further the information provided in the 1999 forecast, Prof. Rita Colwell said that what we have here is a "confidence budget". Confidence in the Director, the Centre and the future. She commended the work of the Centre with particular note to the work of the Interim Director and Executive Committee over the past 15 months, the Finance Officer and all Centre staff which she said has allowed for curtailment of expenses and the Centre is beginning to see the reward of the right-sizing. Two new donors – John Snow International (for the hospital) and the World Bank (Nutrition Centre of Excellence) have greatly improved the Centre's financial status and that the Centre is anticipating a deficit of just over \$100,000.

Prof. Colwell also took this opportunity to acknowledge the one time contribution of US\$ 203,000 by the Government of Bangladesh to the Centre and on behalf of the Committee expressed gratitude to Mr. Reza for enabling this contribution.

2000 BUDGET

INCOME

Donor Contributions (Table 1 for summary and Tables 4 & 4A for individual donor amounts) are budgeted at \$16,367,000 as compared to \$13,889,000 forecast for 1999. This increase of \$2,478,000 (17.8%) is explained by the following table.

	2000 <u>BUDGET</u>	1999 <u>FORECAST</u>	DIFF. <u>INC./DEC.</u>
Restricted			
Projects/Programs	11,351,000	8,840,000	2,511,000
Fixed Assets	<u>1,340,000</u>	<u>1,406,000</u>	<u>(66,000)</u>
	12,691,000	10,246,000	2,445,000
Project Overhead	<u>1,791,000</u>	<u>1,462,000</u>	<u>329,000</u>
Total Restricted	14,482,000	11,708,000	2,774,000
Unrestricted	<u>1,885,000</u>	<u>2,181,000</u>	<u>(296,000)</u>
Total Contributions	<u>\$ 16,367,000</u>	<u>\$ 13,889,000</u>	<u>\$2,478,000</u>

Restricted contributions will increase in line with expenditures and are commented on under expenditures.

The increase in contributions are mainly from the following:

European Union	614,000
USAID/Dhaka	749,000
USAID/ Washington	812,000
SDC	302,000
John Snow Inc.	89,000
Other	208,000

	<u>\$ 2,774,000</u>

Unrestricted contributions are anticipated to decrease by \$296,000. This decrease results primarily from a one time special contribution received from the Government of Bangladesh in 1999 and not anticipated in 2000. Support from the Kingdom of Saudi Arabia ended in 1999 and a reduction of \$36,000 as in the agreement with SDC. However, the much appreciated inquiry by Board Member Dr. T.A.M. Khoja is expected to lead to continued partnership with the Kingdom of Saudi Arabia and the AGFUND and future support from this much valued supporter.

2000 BUDGET

EXPENDITURE

Operating Cash Expenditures (Tables 3 & 5) is expected to be \$16,456,000 as compared to \$14,017,000 forecast for 1999. This increase of \$2,439,000 (17.4%) comprises:

	2000 <u>BUDGET</u>	1999 <u>FORECAST</u>	DIFF. <u>INC./DEC.</u>
Restricted			
Projects/Programs	11,351,000	8,840,000	2,511,000
Fixed Assets	<u>1,340,000</u>	<u>1,406,000</u>	<u>(66,000)</u>
Total Restricted	12,691,000	10,246,000	2,445,000
Unrestricted			
Programs	2,029,000	2,158,000	(129,000)
Management	<u>1,736,000</u>	<u>1,613,000</u>	<u>123,000</u>
Total Unrestricted	3,765,000	3,771,000	(6,000)
Total Operating Cash Expenditures	\$ 16,456,000	\$ 14,017,000	\$ 2,439,000

Restricted Expenditures are expected to increase with the staffing of vacant international positions and increased project activity. The increased project activity is mainly in projects funded by the European Union, SDC and USAID.

Unrestricted Expenditures are not expected to change significantly. The increase in management costs is primarily due to 2 new international positions. Management costs also includes \$288,000 being the last 50% of the cost of the voluntary severance program.

Depreciation is expected to be \$908,000 as compared to \$885,000 forecast for 1999, an increase of \$23,000.

Total Expenditures including depreciation is budgeted at \$17,364,000 as compared to \$14,902,000 forecast for 1999. This is an increase of \$2,462,000 (16.5%).

BALANCE

Net Operating Deficit excluding depreciation is expected to be \$89,000 compared to the forecast deficit of \$128,000 for 1999, which is a decrease of \$39,000 (30.5%).

Net Operating Deficit including depreciation is expected to be \$997,000 as compared to \$1,013,000 forecast for 1999, a decrease of \$16,000 (1.6%).

COMMENTARY

The Centre has managed to reduce the annual deficit over the past two years to the point that breakeven is possible. Efforts continue to control and reduce costs. Efforts to obtain Donor support with restricted funds for essential activities that are currently supported from unrestricted funds will continue. These measures, along with continued Donor support with unrestricted funds should enable the Centre to operate without an annual deficit.

The cumulative deficit of approximately \$4.0 million remains a serious problem. The future viability of the Centre remains uncertain and cash flow continues to be a problem requiring a frequent overdraft.

Additional unrestricted funds are required to ensure the future stability of the Centre.

Discussions:

Prof. Colwell stated that this is the largest budget the Centre has ever had and is clearly a confidence budget.

Dr. Sack added that this budget reflects the efforts of the previous Interim Director, the Executive Committee, and all Centre staff. He also noted that in several multiyear agreements the rate of research work does determine the amount of funds the Centre receives which includes indirect cost recoveries. This budget reflects increased activities under these agreements.

It was also noted that unrestricted expenditures included the last half of the voluntary severance programme and two new international positions.

RESOLUTION 1

The Committee resolved to present the following draft resolution to the Board for its approval:

The Board agrees to approve the 2000 budget as presented noting that over the past two years the Centre has been able to significantly reduce the annual operating deficit. The Management is encouraged to continue to take all measures possible to avoid the projected \$89,000 deficit in 2000.

NATIONAL STAFF SALARIES AND ALLOWANCES

The Salaries and allowances scales were changed by 3% on January 1, 1999 and the Centre is now paying middle of each grade salaries at the following percentages against UN rates:

National Officers	43.5%
General Service Staff - 5/6	49.5%
General Service Staff - 1/4	46.7%

To raise salaries to full UN rates would necessitate the following percentage increases:

National Officers	134.7%
General Service Staff - 5/6	102.0%
General Service Staff - 1/4	114.5%

and would cost the Centre \$5,730,000

National Officers	2,650,000
General Service Staff - 5/6	1,145,000
General Service Staff - 1/4	<u>1,935,000</u>
Total	<u>\$ 5,730,000</u>

Implementation of each 1% increment would cost \$47,800, of which 41% (\$19,500) would be from unrestricted funds and 59% (\$28,300) from restricted funds.

National Officers	19,700
General Service Staff - 5/6	11,200
General Service Staff - 1/4	<u>16,900</u>
Total	<u>\$ 47,800</u>

The previously accepted target was for National Officers and General Service 5/6 to be at 85% of local UN rates and General Service 1/4 to be at 75%. To implement this would necessitate the following percentage increases:

National Officers	99.5%
General Service - 5/6	72.0%
General Service - 1/4	61.0%

and would cost \$3,795,000

National Officers	1,957,000
General Service Staff - 5/6	808,000
General Service Staff - 1/4	<u>1,030,000</u>
Total	<u>\$3,795,000</u>

Over the last four years salaries for all National Officers and General Service Staff have been adjusted upwards on January 1, 1996 by 2%, January 1, 1998 by 4% and January 1, 1999 by 3%.

Fixed term employees total 901 staff and about three quarters receive an annual within grade increase which averages 3.3% of base salary.

INTERNATIONAL STAFF SALARIES AND ALLOWANCES

International staff salaries and allowances were adjusted to 95% of UN levels effective January 1, 1995. Upward adjustments to UN scales since that date has resulted in ICDDR,B scales being:

Salaries	82.3% of UN
Allowances	100.5% of UN

In allowances the Centre is paying 18% as post adjustment, against 12.7% current UN rate for Bangladesh.

Full implementation of UN scales for salary and allowances for all international staff would cost:

Salaries	320,000
Allowances	<u>36,700</u>
Total	\$ <u>356,700</u>

Implementation to 95% of UN salaries and 100% of allowances would cost:

Salaries	238,800
Allowances	<u>36,700</u>
Total	\$ <u>275,500</u>

Implementation of 1% increment based on current salaries and allowances paid by the Centre would cost \$17,800 of which 36% (\$6,400) would be from unrestricted funds and 64% (\$11,400) from restricted funds.

Salaries	14,900
Allowances	<u>2,900</u>
Total	\$ <u>17,800</u>

Fixed term international employees totaling 14 staff may receive an annual within grade increase which approximates 2.5% of total annual income.

Discussions were held in a closed session.

Agenda 5:

a). ICDDR,B HOSPITAL ENDOWMENT FUND

The balance of the Hospital Endowment Fund was \$4,046,791 at December 31, 1998. Receipts from the first nine months of 1999 were \$110,573. In addition the fund had net unrealized gains of \$181,254 at August 31, 1999 giving a total market value of the fund of \$4,338,618 at August 31, 1999.

Discussion

In discussions on the Hospital Endowment Fund it was noted that the Centre had begun to divest itself of shares in companies in Bangladesh as the market was not likely to improve in the foreseeable future. Approximately \$ 10,000 has been realized to date. Hospital Endowment funds held in Bangladesh are now being invested in Government securities providing a return of 15% per annum if retained for 5 years. The two securities are Bangladesh Savings Certificates and Defence Savings Certificates.

In response to the request for clarification regarding the investment of endowment funds in Defence Savings Certificates, Dr. Rahman stated that the Defence Savings Certificate is one of the several instruments that the Government of Bangladesh uses for borrowing. The receipts from borrowing are credited to the public accounts of the Republic together with other monies or receipts that Government borrows or holds in a fiduciary capacity. The resources raised through Defence Certificate/Bonds do not have any direct relationship with government expenditure related to defence. The resources raised through borrowing are applied to budgetary expenditure, particularly development outlay of the Government. The accounts are audited by the Comptroller and Auditor General of Bangladesh and these reports are laid before the Parliament.

b). CENTRE'S ENDOWMENT FUND

The balance of Centre Endowment Fund including USAID Endowment Fund was \$3,180,148 as at December 31, 1998. The unrealized income as at August 31, 1999 was \$625,044 for a total market value of the fund of \$3,805,192. This entire amount is invested with Morgan Stanley and is being monitored by the Centre Fund Management Committee. There have been no contributions to this fund to date in 1999.

c). RESERVE FUND

The Balance of the Reserve Fund as at December 31, 1998 was \$2,259,834. Interest income on this fund is approximately \$105,000 per year. The Reserve Fund is held as security by American Express Bank for our overdraft facility.

d). FIXED ASSETS ACQUISITION AND REPLACEMENT FUND

The balance of the Fixed Assets Acquisition and Replacement Fund as at December 31, 1998 was \$146,726. This is funding from the Government of Japan for the Matlab International Training Centre. With the completion of the Training Centre in early 1999 this fund will be fully utilized by the end of this year.

AGENDA 6:

a). CHEQUE SIGNATORIES

As required by the Board resolution of November 22, 1994, the Board is advised that David A. Sack M.D., Director and Prof. Barkat-E-Khuda, Director, HPED, have been appointed as cheque signatories.

This action was noted by the Committee

b) Child Health Foundation

Prof. R. Colwell presented a report on the activities of the Child Health Foundation who have been overseeing the endowment funds invested with Morgan Stanley.

The report provided a history of the funds received in the USA and the investment portfolio managed by Morgan Stanley.

Mr. J. Martin noted that the report was incomplete as it did not include contributions to the Hospital Endowment Fund received in Dhaka. He requested that this be discussed with the Child Health Foundation for a more comprehensive report on the endowment funds.

A letter from USA Global Ltd., dated November 2, 1999 was circulated to Committee members.

Discussions ensued in which members expressed strong dissatisfaction with the performance of USA Global Ltd., and a decision was made to request the Board to terminate the contract after obtaining legal advice, as provided for in the contract. Ms. Brooks was requested to draft the necessary letter and have this reviewed by our legal counsel in the USA, Venable, Baetjer & Howard P.C. in Baltimore, Maryland.

c) Cumulative Deficit

Discussion

It was noted that the cumulative deficit of approximately \$ 4.0 million remains a serious problem. The future viability of the Centre remains uncertain and cash flow continues to be a problem requiring a frequent overdraft. Dr. Sack requested the Committee to consider the following steps to assist the Centre in reducing overdraft interest costs and over time, eliminating the cumulative deficit.

- Contributors to the Hospital Endowment Fund are interested in seeing the income from these funds used for the purpose they were contributed.
- Income up to \$ 200,000 per annum from the Hospital Endowment Fund, beginning in 1999, be used to cover costs of clinical care at the hospitals. These funds should be considered restricted funds and ongoing clinical care expenditures be charged to these funds.
- The Reserve Fund will have an approximate balance of \$ 2,350,000 at the end of 1999. This fund is held as collateral for the Centre's overdraft facilities of \$ 2.0 million with American Express Bank, in interest bearing deposit certificates. A minimum balance of US\$ 2.0 million is required. Dr. Sack recommended that \$300,000 be transferred from the Reserve Fund to the Operating Funds in the year 2000. In future years, consideration should be given to transfer up to \$ 100,000 from the Reserve Fund to the Operating Fund to further reduce the cumulative deficit.

The Committee agreed with Dr. Sack's suggestions and agreed to recommend to the Board approval of the recommendations.

AUDITORS' REPORT

TO THE BOARD OF TRUSTEES OF INTERNATIONAL CENTRE FOR DIARRHOEAL DISEASE RESEARCH, BANGLADESH

We have audited the accompanying Statement of Financial Position of INTERNATIONAL CENTRE FOR DIARRHOEAL DISEASE RESEARCH, BANGLADESH (ICDDR,B) as of December 31, 1999 and the related Statements of Activity (Operating Fund) and Cash Flows for the year then ended. These financial statements are the responsibility of ICDDR,B's management. Our responsibility is to express an opinion on these financial statements based on our audit.

We conducted our audit in accordance with generally accepted auditing standards. Those standards require that we plan and perform the audit to obtain reasonable assurance as to whether the financial statements are free of material misstatement. An audit includes examining, on a test basis, evidence supporting the amounts and disclosures in the financial statements. An audit also includes assessing the accounting principles used and significant estimates made by management, as well as evaluating the overall financial presentation. We believe that our audit provides a reasonable basis for our opinion.

As explained in Note 17, \$8,365,718 being the accumulated balance of the "ICDDR,B Employees Separation Payment Fund" at December 31, 1999 and invested with Generali Worldwide Insurance Company Limited of Guernsey, Channel Islands has not been recognised in these accounts.

Except for the matter referred to in the immediately preceding paragraph and also for recoverability of funded support of \$200,000 from Arab Gulf Fund and treatment of voluntary severance pay of \$288,019 as Deferred Revenue Expenditure as explained in Notes 20 and 21 respectively, in our opinion, the financial statements referred to above, together with the notes thereon, present fairly, in all material respects, the financial position of ICDDR,B as of December 31, 1999 and the results of its activities and its cash flows for the year then ended, in conformity with the accounting policies disclosed in Note 2.

Hoda Vasi Chowdhury & Co.
Hoda Vasi Chowdhury & Co
Chartered Accountants

Jonie Waterhouse
Price Waterhouse
Chartered Accountants

Dhaka, March 15, 2000

INTERNATIONAL CENTRE FOR DIARRHOEAL DISEASE RESEARCH, BANGLADESH

STATEMENT OF FINANCIAL POSITION
AS OF DECEMBER 31, 1999

	Note	<u>1999</u>	<u>1998</u>
FIXED ASSETS:			
Cost	3	16,314,074	14,970,567
Less: Accumulated depreciation	3	<u>11,161,339</u>	<u>10,262,656</u>
		5,152,735	4,707,911
		-----	-----
CURRENT ASSETS:			
Inventories	4	413,911	623,693
Accounts receivable			
Donors	5	1,146,468	1,118,917
Others	6	574,038	615,879
Centre Endowment Fund investments			
At cost	16	3,841,691	3,180,148
Cash and bank balances	7	1,216,942	606,571
Deposits with banks against Reserve Fund	8	<u>2,364,851</u>	<u>2,259,834</u>
		9,557,901	8,405,042
		-----	-----
LESS: CURRENT LIABILITIES:			
Bank overdraft	9	-	576,882
Contributions received in advance	5	5,104,246	3,537,959
Accounts payable	10	<u>2,180,553</u>	<u>3,200,936</u>
		7,284,799	7,315,777
		-----	-----
NET CURRENT ASSETS		2,273,102	1,089,265
DEFERRED REVENUE EXPENDITURE	21	288,019	576,037
		-----	-----
TOTAL NET ASSETS		US\$ <u>7,713,856</u>	<u>6,373,213</u>
		=====	=====

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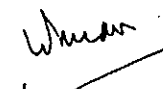
INTERNATIONAL CENTRE FOR DIARRHOEAL DISEASE RESEARCH, BANGLADESH

STATEMENT OF FINANCIAL POSITION
AS OF DECEMBER 31, 1999 (Cont.)

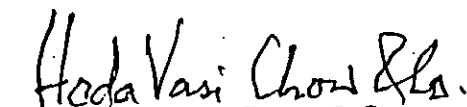
	Note	<u>1999</u>	<u>1998</u>
REPRESENTED BY:			
Fixed Asset Fund	11	5,152,735	4,707,911
Fixed Asset Acquisition and Replacement Fund	12	78,107	146,726
Centre Endowment Fund	16	3,841,691	3,180,148
Reserve Fund	13	2,364,851	2,259,834
Operating Fund	14	(3,723,528)	(3,921,406)
TOTAL FUNDS		US\$ 7,713,856	6,373,213
		=====	=====


The accompanying notes 1 to 17 and 20 to 22 are an integral part of this Statement


Director
ICDDR, B


Member
Board of Trustees

This is the Statement of Financial Position referred to in our report of same date.


Hoda Vasi Chowdhury & Co
Chartered Accountants


Price Waterhouse
Chartered Accountants

Dhaka, March 15, 2000

INTERNATIONAL CENTRE FOR DIARRHOEAL DISEASE RESEARCH, BANGLADESH

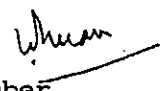
STATEMENT OF ACTIVITY (OPERATING FUND)

FOR THE YEAR ENDED DECEMBER 31, 1999


	Note	1999	1998
REVENUE			
Contributions	5	13,265,039	11,389,461
Less: Transferred to Fixed Asset Fund to the extent of capital expenditure funded by Donors	11	<u>1,209,634</u>	<u>495,737</u>
		12,055,405	10,893,724
Contribution from ICDDR,B Hospital Endowment Fund		200,000	-
Exchange gains (net)		51,092	240,454
Other receipts (net of expenditure \$135,741; 1998:\$142,735)		726,560	844,527
		-----	-----
		13,033,057	11,978,705
		=====	=====
EXPENDITURE			
Salaries and benefits - local		5,970,088	6,105,682
Salaries and benefits - international		1,952,618	2,614,888
Voluntary Severance Package	21	288,018	-
Consultancy		162,274	114,073
Mandatory committees	18	95,745	100,344
Travel		489,011	324,491
Supplies and materials		1,503,090	1,611,788
Repairs and maintenance		121,138	82,426
Rent, communication and utilities		459,992	479,956
Printing and publications		420,932	239,105
Other expenditure	19	1,307,019	1,123,584
		-----	-----
		12,769,925	12,796,337
		-----	-----
Surplus/(Deficit) before depreciation		263,132	(817,632)
ADD: Depreciation for the year	3	(898,683)	(894,651)
		-----	-----
DEFICIT FOR THE YEAR	US\$	<u>(635,551)</u>	<u>(1,712,283)</u>
		=====	=====


The accompanying notes 1, 2, 5, 11, 18, 19, 21 and 22 are an integral part of this Statement


 Director
 ICDDR,B


 Member
 Board of Trustees

This is the Statement of Activity (Operating Fund) referred to in our report of same date.


 Hoda Vasi Chowdhury & Co
 Chartered Accountants


 Price Waterhouse
 Chartered Accountants

Dhaka, March 15, 2000

INTERNATIONAL CENTRE FOR DIARRHOEAL DISEASE RESEARCH, BANGLADESH

STATEMENT OF CASH FLOWS
FOR THE YEAR ENDED DECEMBER 31, 1999

	<u>1999</u>	<u>1998</u>
CASH FLOWS FROM OPERATING ACTIVITIES		
Deficit of revenues over expenses	(635,551)	(1,712,283)
Adjustments to reconcile net cash from operating activities		
Depreciation	898,683	894,651
Loss/(Profit) on disposal of fixed assets	-	40
Decrease/(Increase) in assets		
Accounts receivable	(27,551)	367,440
Donors	41,841	192,364
Others	209,782	(56,150)
Inventories		
Increase/(Decrease) in liabilities		
Donors' Contribution received in advance	1,566,287	322,496
Accounts payable	(1,020,383)	(390,754)
	-----	-----
	1,033,108	(382,196)
Decrease/(Increase) in Deferred Revenue Expenditure	288,018	(576,037)
	-----	-----
Cash Surplus/(Deficit) from operating activities	1,321,126	(958,233)
	-----	-----
CASH FLOWS FROM INVESTMENT ACTIVITIES		
Acquisition of fixed assets	(1,343,507)	(1,095,272)
Interest on Reserve Fund deposits	105,017	104,736
	-----	-----
Net cash from investment activities	(1,238,490)	(990,536)
	-----	-----
CASH FLOWS FROM FINANCING ACTIVITIES		
Increase/(Decrease) in Bank Overdraft	(576,882)	576,882
Donor capital fund contributions	1,209,634	612,711
	-----	-----
Net cash from financing activities	632,752	1,189,593
	-----	-----
Net Increase/(Decrease) in cash and equivalents	US\$ 715,388	(759,176)
	-----	-----
Cash and equivalents beginning of year	US\$ 2,866,405	3,625,581
Cash and equivalents end of year	US\$ 3,581,793	2,866,405

David A. Sack
Director
ICDDR, B

Whuman
Member
Board of Trustees

This is the Statement of Cash Flows referred to in our report of same date.

Hoda Vasi Chowdhury & Co.
Hoda Vasi Chowdhury & Co
Chartered Accountants

Price Waterhouse
Price Waterhouse
Chartered Accountants

Dhaka, March 15, 2000

INTERNATIONAL CENTRE FOR DIARRHOEAL DISEASE RESEARCH, BANGLADESH

NOTES TO THE FINANCIAL STATEMENTS

AS ON DECEMBER 31, 1999

1. NATURE OF ACTIVITIES

The International Centre for Diarrhoeal Disease Research, Bangladesh ("Centre") was established in 1978 by an Ordinance of the Government of The People's Republic of Bangladesh to provide for the establishment of an international centre in Bangladesh with multinational scientific collaboration and financial contributions to conduct research in diarrhoeal diseases and the directly related subjects of nutrition and fertility with special relevance to developing countries and for matters ancillary thereto. The activities of the Centre are mainly funded by various Governments and international organisations.

2. SIGNIFICANT ACCOUNTING POLICIES

- a) These financial statements have been prepared on a going concern basis, in accordance with generally accepted accounting principles on the historical cost convention and in the manner as prescribed and approved by the Board of Trustees.
- b) "Revenue" and "Expenditure" of the Centre for the year have been accounted for on an accrual basis.
- c) Other receipts mainly include fees, charges for services provided to staff and third parties and interest.
- d) Contributions have been considered as revenue on the following bases:
Central Funds have been accounted for to the extent they relate to the current period and those pertaining to future periods have been carried forward.
Project Funds received during the year but not expended have been carried forward as contributions received in advance. Correspondingly, amounts equal to the expenses incurred but not yet reimbursed by donors have been treated as contributions receivable. Project funds include overhead recoveries at the rate provided for in the various Donor agreements.
- e) Grants in kind by way of various services rendered by different Donors and those directly paid by Donor(s) to other organisation(s) and institution(s) for project/service work carried out by them on behalf of the Centre have not been considered in these accounts.
- f) Fixed assets acquired up to August 1981 have been brought to account at material cost only. Subsequent thereto incidental expenses such as labour, freight, insurance, etc. have also been taken into consideration in arriving at the cost of fixed assets. Fixed assets other than gifted motor vehicles, costing less than \$200 are expensed on acquisition. Depreciation on fixed assets has been charged on the "Straight Line" method based on the estimated useful life of such assets.

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2. SIGNIFICANT ACCOUNTING POLICIES (Cont.)

g) Inventories are valued at invoice price plus incidental expenses such as labour, freight, insurance, etc. Inventories issued at weighted average cost to Service Centres are expensed when issued and the stock of such items remaining unconsumed at the year end not considered material are not included in the closing stock. However, closing inventories at Matlab Health Complex are accounted for.

h) Currency conversion of non-US currencies to US Dollars:

Advances, liabilities and cash and bank balances are translated into US Dollars at the prevailing year end exchange rates.

All items other than those stated above are translated into US Dollars at the rates of exchange prevailing at the beginning of that month.

The exchange rates used for the currency conversion are calculated on the prevailing average of the buying rates of Telegraphic Transfer Clean and On Demand Transfer as published by Centre's Bank and are as follows:

Currency	Average monthly	Year end exchange rate	
	exchange rate	1999	1998
-----	-----	-----	-----
	1999	1999	1998
	Taka	Taka	Taka
US \$ 1.00	48.8917	50.6975	48.3092
UK £ 1.00	78.7637	81.8004	80.9807
EURO 1.00	51.4333	50.2514	50.9806

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3. FIXED ASSETS

PARTICULARS	C O S T			D E P R E C I A T I O N			N E T
	At January 1 1999	Additions/ (Disposals) in 1999	At December 31 1999	At January 1 1999	Additions/ (Disposals) in 1999	At December 31 1999	At December 31 1999
Freehold Land	85,508	-	85,508	-	-	-	85,508
Buildings	4,572,376	564,880	5,137,256	1,999,710	236,962	2,236,672	2,900,584
Equipment	8,526,064	828,009	9,354,073	7,242,054	570,410	7,812,464	1,541,609
Furniture	150,626	1,443	152,069	145,075	2,601	147,676	4,393
Vehicles	<u>1,057,661</u>	<u>104,983</u>	<u>1,162,644</u>	<u>875,617</u>	<u>88,710</u>	<u>964,327</u>	<u>198,117</u>
Capital Work in progress	<u>14,392,235</u>	<u>1,499,315</u>	<u>15,891,550</u>	<u>10,262,656</u>	<u>898,683</u>	<u>11,161,339</u>	<u>4,730,211</u>
1999	US\$ 14,970,567	1,343,507	16,314,074	10,262,656	898,683	11,161,339	5,152,735
	=====	=====	=====	=====	=====	=====	=====
1998	US\$ 13,915,737	1,054,830	14,970,567	9,408,407	854,249	10,262,656	4,707,911
	=====	=====	=====	=====	=====	=====	=====

(a)

(b)

(a) External additions and disposals/write offs of fixed assets in the year comprised \$1,343,507 (1998: \$1,095,272) and Nil (1998: \$40,442) respectively.

(b) External additions and disposals/write offs for depreciation in the year comprised \$898,683 (1998: \$894,651) and Nil (1998: \$40,402) respectively.

Two plots of land measuring 4.10 and 0.51 acres situated at Mohakhali (Dhaka) and at Matlab (Chandpur), received as donations from the Government of the People's Republic of Bangladesh and a private individual respectively, have not been valued and therefore not incorporated in these accounts.

Cost of buildings includes an amount of \$103,488 spent by the Centre on the extension of the Institute of Public Health building, owned by the Government of the People's Republic of Bangladesh and which is at present partly accommodating the Centre.

4. INVENTORIES

	1999	1998
Supply stores	313,084	375,575
Maintenance stores	<u>98,507</u>	<u>97,875</u>
	411,591	473,450
Stores in transit	<u>18,843</u>	<u>166,766</u>
	430,434	640,216
Less: Provision for obsolete and slow moving stock	16,523	16,523
	-----	-----
	US\$ 413,911	623,693
	=====	=====

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5. CONTRIBUTIONS

1999

DONOR	(Due)/ Advanced at 1.1.99	Received during the Year	(Due)/ Advanced 31.12.99	Income for the Year	1998 Income
Central Funds: (Unrestricted)					
Arab Gulf Fund	(200,000)	-	(200,000)	-	-
Australia- AusAID	-	208,923	-	208,923	208,830
Bangladesh	(103,500)	389,300	(98,500)	384,300	211,000
Belgium - BADC	(88,800)	80,919	(73,711)	65,830	88,800
Canada - CIDA	(143,057)	331,207	(17,025)	205,175	143,057
Netherlands	-	231,573	-	231,573	-
Saudi Arabia	(108,000)	116,945	-	8,945	50,000
Sweden - SIDA	-	300,832	-	300,832	320,850
Switzerland -SDC	324,330	252,206	252,206	324,330	311,819
Sri Lanka	-	4,000	-	4,000	8,000
United Kingdom - DFID	-	-	-	-	83,050
United States - AID	-	275,000	-	275,000	275,000
UNICEF	-	100,000	-	100,000	100,000
Total Central Funds (A) US\$	(319,027)	2,290,905	(137,030)	2,108,908	1,798,406
Project Funds (Restricted)					
Bangladesh - WB & BINP	(45,668)	257,890	(80,916)	293,138	224,466
Belgium - BADC	112,411	242,757	211,120	144,048	147,638
European Union	(80,213)	987,658	334,084	573,361	122,947
Ford Foundation	1,092,624	-	836,428	256,196	332,986
Japan	-	580,000	-	580,000	580,000
Johns Hopkins University	24,263	137,233	36,004	125,492	79,703
Netherlands	-	-	(4,879)	4,879	40,160
Norway - NORAD	7,495	109,128	3,731	112,892	125,273
Sweden - SIDA/SAREC	10,204	153,278	39,298	124,184	181,050
Switzerland - SDC	640,056	252,206	703,262	189,000	123,662
Swiss Red Cross	303,120	100	(174,087)	477,307	291,767
Thrasher Research Fund	(28,163)	40,469	(71,446)	83,752	58,374
United Kingdom - DFID	379,517	744,351	529,384	594,484	377,286
United States - AID etc.	(132,098)	6,861,394	1,058,020	5,671,276	5,360,307
United Nations - UNAIDS	32,798	36,922	11,100	58,620	94,852
UNDP / JAPAN	27,834	-	(50,562)	78,396	59,166
UNICEF	(4,578)	51,438	11,266	35,594	12,907
WHO	92,743	272,911	238,080	127,574	187,042
World Bank	(184,835)	1,000,000	(69,906)	885,071	184,835
Disaster / Epidemic (c)	337,025	199,808	279,383	257,450	541,922
Others (b)	153,534	585,327	255,444	483,417	484,714
Total Project Funds (B) US\$	2,738,069	12,512,870	4,094,808	11,156,131	9,591,055
Total Contributions (A + B) US\$	2,419,042	14,803,775	3,957,778	13,265,039	11,389,461
=====					
(a)					
Fixed Assets Fund (Note-12)					
United Kingdom - DFID	-	-	-	-	(114,576)
Government of Bangladesh	-	-	-	-	231,550
Total Fixed Assets Fund US\$	-	-	-	-	116,974
=====					

- a) (Due)/advanced contributions comprise net of due \$1,146,488 (1998: \$1,118,917) and advanced \$5,104,246 (1998: \$3,537,959).
- b) Contributions in 1999 from Others for project funds were received from Canada - IDRC, George Mason Foundation, Future Group Intl, Inc., International Atomic Energy Centre, Medical Research Council, North Field Laboratories, Proctor & Gamble, New England Medical Centre, SAIDNET, Japan/JICWS, Institutional Development for Self Sustaining Area, Cytos Pharmaceuticals Inc., Novartis, British Geological Survey, UCB/Sidac, UFHP, Universities of Alabama, Pennsylvania, New Castle, Loughbourg and Virginia.
- c) Contributions in 1999 for Disaster/Epidemic funds were received from USAID/CARE, DFID/Dhaka, AusAID, Cairn Energy PLC., UNOCAL Bangladesh Ltd., Shell Bangladesh Explorations Dev. B.V., Occidental of Bangladesh Ltd.

6. ACCOUNTS RECEIVABLE - OTHERS	<u>1999</u>	<u>1998</u>
Advances to employees:		
Official	93,523	86,482
Investment loans	136,527	139,252
Rent and utilities	32,830	-
Others	<u>140,983</u>	<u>16,278</u>
	403,863	242,012
Operating advances to projects	24,550	29,570
Advances to suppliers and others	139,936	87,236
Deposits and other receivables	5,689	257,061
	-----	-----
	US\$ 574,038	615,879
	=====	=====
 7. CASH AND BANK BALANCES		
Cash in hand	4,700	3,586
	-----	-----
Cash at banks:		
Taka Accounts		
American Express Bank Ltd., Dhaka		
Current account (convertible)	18,423	39,022
Current account	1,174	13,129
Agrani Bank, Dhaka		
Current account	15,595	20,827
Time deposit	690	724
Project bank accounts	<u>7,589</u>	<u>5,554</u>
	43,471	79,256
	-----	-----
US\$ Accounts		
American Express Bank Ltd., New York		
Current account	244,982	-
American Express Bank Ltd., Dhaka		
Current account (NORAD)	8,936	19,048
Current account	86,372	79,140
Current account (USAID-ORP)	<u>338,503</u>	<u>324,280</u>
	678,793	422,468
	-----	-----
EURO Account		
American Express Bank Ltd., Dhaka		
Current account (European Union)	481,748	57,940
UKE Account		
American Express Bank Ltd., London		
Current account	8,230	43,321
	-----	-----
	US\$ 1,216,942	606,571
	=====	=====
 8. DEPOSITS WITH BANK AGAINST RESERVE FUND		
American Express Bank Ltd., Dhaka		
Time deposit	2,304,000	2,254,000
Current account	60,851	5,834
	-----	-----
	US\$ 2,364,851	2,259,834
	=====	=====

9. BANK OVERDRAFT

1999

1998

US\$ Account		
American Express Bank Ltd., New York	-	576,882
	=====	=====

Cash Credit from the Bank secured by a lien on time deposits held with them on Reserve Fund Account.

10. ACCOUNTS PAYABLE

Supplies and materials	177,934	193,385
Expenses and other	1,931,313	2,940,809
Security and other deposits	62,307	61,902
Current account with ICDDR, B		
Hospital Endowment Fund	8,999	4,840
	-----	-----
US\$	2,180,553	3,200,936
	=====	=====

11. FIXED ASSET FUND

Balance as at January 1	4,707,911	4,507,330
Add: Capital expenditure funded by Donors	1,209,634	495,737
Fixed Asset Acquisition and Replacement Fund (Note 12)	133,873	599,535
	6,051,418	5,602,602
	-----	-----
Less: Transferred to Operating Fund (Note 14)		
Written down value of fixed assets sold/written off	-	40
Depreciation for the year	898,683	894,651
	-----	-----
US\$	5,152,735	4,707,911
	=====	=====

The fixed asset fund reflects contributions from Donors and Centre's expenditure for fixed assets and is equal to the net book value of fixed assets.

12. FIXED ASSET ACQUISITION AND REPLACEMENT FUND

Balance as at January 1	146,726	279,287
Add: Donor contribution (Note 5)	-	231,550
Transfer from Operating Fund (Note 14)	65,254	350,000
	211,980	860,837
	-----	-----
Less: Funds utilized for replacement of fixed assets (Note 11)	133,873	599,535
Fixed Asset Fund Receivable written off (Note 5)	-	114,576
	-----	-----
US\$	78,107	146,726
	=====	=====

The fund was created to provide for the acquisition or replacement of fixed assets. It is the intention to build the fund up to an amount equal to the provision for depreciation by Donor contributions, by annual transfers from the Operating Fund and by income earned on investment of the fund.

	<u>1999</u>	<u>1998</u>
13. RESERVE FUND		
Balance as at January 1	2,259,834	2,155,098
Add: Net interest earned on deposits	<u>105,017</u>	<u>104,736</u>
	US\$ 2,364,851	2,259,834
	=====	=====

The fund was created to enable the Centre to attain better financial stability and to enable it to retain a satisfactory level of work in case of uneven flow of resources beyond its control. The fund comprises donations, transfers from operating account and income earned on investment of the fund.

14. OPERATING FUND

Balance as at January 1	(3,921,406)	(2,753,814)
Add: Deficit for the year	(635,551)	(1,712,283)
Transfer from Fixed Asset Fund (Note 11)		
Written down value of fixed assets sold/written off	-	40
Depreciation for the year	898,683	894,651
	-----	-----
	(3,658,274)	(3,571,406)
Less: Transferred to Fixed Asset Acquisition and Replacement Fund (Note 12)	<u>(65,254)</u>	<u>(350,000)</u>
	US\$ (3,723,528)	(3,921,406)
	=====	=====

15. ICDDR,B HOSPITAL ENDOWMENT FUND	US\$ 4,278,489	4,046,791
	=====	=====

The ICDDR,B Hospital Endowment Fund was created to raise money through donations and other fund raising activities and to use the income earned on the investment of those funds for patient care in the Centre's hospitals. The Governors of the Fund with the approval of Board of Trustees of ICDDR,B, are empowered to invest all such moneys and all investment income not immediately required for patient care in bank deposits, listed securities inside or outside Bangladesh and as subscriptions to limited companies which are about to be listed. Account of this accumulated fund have been prepared and presented separately.

16. CENTRE ENDOWMENT FUND	US\$ 3,841,691	3,180,148
	=====	=====

The Fund was created to raise donations from Governments or their Agencies, Foundations, Corporations and Individuals. The income earned from the investment of those funds will be used in supporting new research initiatives and provide a stable financial base for the Centre's ongoing activities. The investment of funds is monitored by the Centre Fund Finance Committee in USA. Included in these funds are a USAID contribution of \$1,000,000 (market value as at December 31, 1999 \$1,487,779; 1998: \$1,237,962). The total market value of the Funds as at December 31, 1999 was \$4,344,016 (1998: \$3,613,303).

17. EMPLOYEES RETIREMENT FUND

The Centre operates a retirement fund called "ICDDR,B Employees Separation Payment Fund" for all National employees under an agreement with the Generali Group of UK. During the year the Centre and staff members contributed 14.8% and 7.4% of the base pay respectively to the fund. The amounts so accumulated were remitted, net of employee settlements, to Generali Group on a quarterly basis by the Centre. The Generali Group is empowered to invest the fund available with them as considered profitable by them and at the end of each calendar year the profits earned from these investments are distributed among the staff members' accounts.

This accumulated fund which at December 31, 1999 was estimated at \$8,365,718 (1998: \$8,402,021) is not reflected in the books of account as it is not directly related to the Centre's activities.

18. MANDATORY COMMITTEES

The expenses include an amount of \$17,845 (1998:\$12,431) paid as honorarium to the members of the Board of Trustees.

19. OTHER EXPENDITURE	<u>1999</u>	<u>1998</u>
Training and dissemination	268,000	157,203
Staff development and training	135,201	154,872
Contractual services	383,420	227,381
Other services	256,991	374,926
Hospital patient food	109,109	114,747
Other items	154,298	94,455
	-----	-----
	US\$ 1,307,019	1,123,584
	=====	=====

20. ACCOUNTS RECEIVABLE - DONORS

The Arab Gulf Fund provides support to ICDDR,B through United Nations Development Programme (UNDP) under agreements signed by Arab Gulf Fund and UNDP. Funding support of \$200,000 (\$100,000 for 1995 and \$100,000 for 1996) was approved by Arab Gulf Fund in 1997. These funds have not been received; however, through correspondence and follow-up, the management are aware that \$80,000 has been released by the Arab Gulf Fund to UNDP. Management feels that these funds will be received in due course.

21. DEFERRED REVENUE EXPENDITURE

In June 1998 the Board of Trustees approved a Voluntary Severance Package for the Centre Staff. During 1998, \$576,037 was paid to 90 staff members who opted for this program. Out of \$576,037, \$288,018 has been charged to operations in 1999. Balance of \$288,019 will be charged to operations in 2000.

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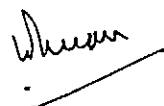
22. GENERAL

The previous year's figures have been rearranged and regrouped, wherever considered necessary, to conform to the current year's presentation.

Figures appearing in these Financial Statements have been rounded off to the nearest US dollar.



Director
ICDDR,B



Member
Board of Trustees



1980



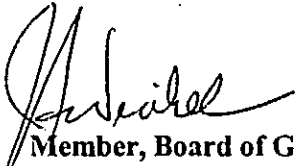
PRICE WAREHOUSE

ICDDR,B HOSPITAL ENDOWMENT FUND
STATEMENT OF FINANCIAL POSITION AS OF DECEMBER 31, 1999

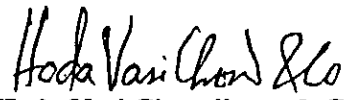
	Note	<u>1999</u>	<u>1998</u>
INVESTMENTS:			
Shares, Debentures and Government Securities	3	447,730	388,372
Overseas Investment with Morgan Stanley & Co. Incorporated, USA	4	2,398,791	2,000,000
CURRENT ASSETS:			
Cash on Time Deposit and at Bank	5	1,422,969	1,653,579
Current account with ICDDR,B		<u>8,999</u>	<u>4,840</u>
	US\$	<u>4,278,489</u>	<u>4,046,791</u>
REPRESENTED BY:			
Investment Capital Account	6	4,234,677	4,034,161
Investment Income Account	7	<u>43,812</u>	<u>12,630</u>
	US\$	<u>4,278,489</u>	<u>4,046,791</u>

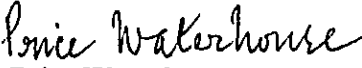
The attached notes 1 to 8 constitute an integral part of this Statement of Financial Position.


Member, Board of Governors


Member, Board of Governors

This is the Statement of Financial Position referred to in our report of same date.


Hoda Vasi Chowdhury & Co
Chartered Accountants


Price Waterhouse
Chartered Accountants

Dhaka, March 15, 2000


AUDITORS' REPORT

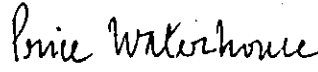
TO THE BOARD OF GOVERNORS OF ICDDR,B HOSPITAL ENDOWMENT FUND

We have audited the accompanying Statement of Financial Position of ICDDR,B HOSPITAL ENDOWMENT FUND as of December 31, 1999. The preparation of this Statement of Financial Position is the responsibility of the ICDDR,B Management. Our responsibility is to express an opinion on this Statement of Financial Position based on our audit.

We conducted our audit in accordance with generally accepted auditing standards. Those standards require that we plan and perform the audit to obtain reasonable assurance as to whether the Statement of Financial Position is free of material misstatement. An audit includes examining, on a test basis, evidence supporting the amounts and disclosures in the Statement of Financial Position. An audit also includes assessing the accounting principles used and significant estimates made by the management, as well as evaluating the overall financial presentation. We believe that our audit provides a reasonable basis for our opinion.

In our opinion, and to the best of our information and according to the explanations given to us, the Statement of Financial Position referred to above, together with the notes thereon and subject to indication regarding decline in the value of Investments on Note 3, presents fairly, in all material respects, the financial position of ICDDR,B Hospital Endowment Fund as of December 31, 1999 in conformity with the accounting policies disclosed in Note 2.


Hoda Vasi Chowdhury & Co
Chartered Accountants


Price Waterhouse
Chartered Accountants


Dhaka, March 15, 2000

ICDDR,B HOSPITAL ENDOWMENT FUND
STATEMENT OF FINANCIAL POSITION AS OF DECEMBER 31, 1999


	Note	<u>1999</u>	<u>1998</u>
INVESTMENTS:			
Shares, Debentures and Government Securities	3	447,730	388,372
Overseas Investment with Morgan Stanley & Co. Incorporated, USA	4	2,398,791	2,000,000
CURRENT ASSETS:			
Cash on Time Deposit and at Bank	5	1,422,969	1,653,579
Current account with ICDDR,B		<u>8,999</u>	<u>4,840</u>
	US\$	<u>4,278,489</u>	<u>4,046,791</u>
REPRESENTED BY:			
Investment Capital Account	6	4,234,677	4,034,161
Investment Income Account	7	<u>43,812</u>	<u>12,630</u>
	US\$	<u>4,278,489</u>	<u>4,046,791</u>


The attached notes 1 to 8 constitute an integral part of this Statement of Financial Position.


Member, Board of Governors


Member, Board of Governors

This is the Statement of Financial Position referred to in our report of same date.


Hoda Vasi Chowdhury & Co
Chartered Accountants


Price Waterhouse
Chartered Accountants

Dhaka, March 15, 2000

AUDITORS' REPORT

TO THE BOARD OF GOVERNORS OF ICDDR,B HOSPITAL ENDOWMENT FUND

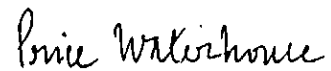
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Hoda Vasi Chowdhury & Co
Chartered Accountants



Price Waterhouse
Chartered Accountants

Dhaka, March 15, 2000

ICDDR,B HOSPITAL ENDOWMENT FUND

NOTES TO THE STATEMENT OF FINANCIAL POSITION AS OF DECEMBER 31, 1999

1. NATURE OF ACTIVITIES

The ICDDR,B Hospital Endowment Fund (here-in-after referred to as the "Fund") was established on June 6, 1991 by a resolution of the Board of Trustees of the International Centre for Diarrhoeal Disease Research, Bangladesh (ICDDR,B) to be a permanent resource which will generate a stream of income from the invested capital of the Fund to complement other sources of income for running the operations of ICDDR,B's hospitals at Dhaka and Matlab.

2. SIGNIFICANT ACCOUNTING POLICIES

- a) This Statement of Financial Position has been prepared on a going concern basis and in accordance with generally accepted accounting principles on the historical cost convention.
- b) The Statement of Financial Position of the Fund has been prepared in the manner as prescribed and approved by the Board of Governors.
- c) The Governors of the Fund are empowered to invest all capital and all investment income not immediately required for running the operations of ICDDR,B hospitals in bank deposits, publicly listed securities inside and outside Bangladesh and subscriptions to limited companies which are about to be listed.
- d) Income of the Fund for the year has been accounted for on the cash receipt basis.
- e) Investments are carried at cost.
- f) Currency conversion of non-US currencies to US dollars:

All advances, liabilities, investments and bank balances are translated into US dollars at the prevailing year end exchange rate.

All items other than those stated above are translated into US dollars at the rate of exchange prevailing at the beginning of that month.

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2. SIGNIFICANT ACCOUNTING POLICIES (continued)

The exchange rates used for the currency conversion, are calculated on the prevailing average of the buying rates of Telegraphic Transfer Clean and On Demand Transfer as published by the Centre's Bank and are as follows:

Currency	Average monthly exchange rates	Year end exchange rates	
	----- 1999 (Taka)	1999 (Taka)	1998 (Taka)
US\$ 1.00	48.8917	50.6975	48.3092

- g) To protect the capital of the Fund an amount equal to the approximate rate of inflation is transferred annually from the Investment Income Account to the Inflation Reserve on December 31 and is based on the investment and cash asset currency mix on January 1 of the same year. The inflation for 1999 was estimated at 2.6% for US dollar assets and 5.5% for Bangladesh Taka assets.
- h) In any one year 50% of the net realized Capital Profits, after retaining the balance of Investment Capital Account at the beginning of the year, may be transferred to Investment Income Account. However, the amount of transfer shall not exceed seven and one half percent of the value of the of Investment Capital Account at the beginning of the year. The balance of the net realized Capital Profits will accrue to the Investment Capital Account under Profit on Sale of Investments.

Balance of Investment Income Account can be utilized for distribution to ICDDR,B Hospital Budget with the approval of the Board of Trustees of ICDDR,B.

3. SHARES, DEBENTURES AND GOVERNMENT SECURITIES:	1999	1998
Quoted on the Dhaka Stock Exchange		
Shares	323,114	357,835
Debentures	<u>26,116</u>	<u>30,537</u>
Government Securities (Unquoted)	349,230	388,372
Bangladesh Sanchaypatra and Protirakha	98,500	-
Sanchaypatra	-----	-----
	US\$ <u>447,730</u>	<u>388,372</u>

(Market Value of Quoted Investments on Dhaka Stock Exchange as of December 31, 1999 \$154,416; 1998 \$256,840)

Note: Decline in the value of Investments of \$194,814 (1998 \$131,532) has not been accounted for as, according to Management, this is not considered to be a permanent short fall.

4. OVERSEAS INVESTMENT

With Morgan Stanley & Co. Incorporated, USA	US\$ <u>2,398,791</u>	<u>2,000,000</u>
(Market Value of investment portfolio as at December 31, 1999 \$2,830,731; 1998 \$2,256,279)		

5. CASH ON TIME DEPOSIT AND AT BANK

	<u>1999</u>	<u>1998</u>
Cash on time deposit		
Taka Account		
Agrani Bank, Dhaka	-	67,275
US\$ Accounts		
American Express Bank Ltd., Singapore	1,419,292	1,521,958
American Express Bank Ltd., Dhaka	-	50,000
Cash at Banks:		
Taka Accounts		
Agrani Bank, Dhaka - Savings Account	530	1,856
American Express Bank Ltd., Dhaka/ -Current Account (Convertible)	-	813
US\$ Account		
American Express Bank Ltd., Dhaka -Current Account	3,147	11,677
	<u>US\$ 1,422,969</u>	<u>1,653,579</u>

6. INVESTMENT CAPITAL ACCOUNT

DONATIONS

Balance as at January 1	3,350,741	3,323,773
Donations received	<u>64,843</u>	<u>26,968</u>
Balance as at December 31	<u>3,415,584</u>	<u>3,350,741</u>

FUND RAISING ACTIVITIES

Balance as at January 1	42,701	39,090
Net Funds raised	<u>9,649</u>	<u>3,611</u>
Balance as at December 31	<u>52,350</u>	<u>42,701</u>

INFLATION RESERVE - DOLLAR

Balance as at January 1	287,084	234,588
Transfer from Investment Income Account	<u>93,175</u>	<u>52,496</u>
Balance as at December 31	<u>380,259</u>	<u>287,084</u>

INFLATION RESERVE - TAKA

Balance as at January 1	100,173	82,961
Transfer from Investment Income Account	<u>25,207</u>	<u>17,212</u>
Balance as at December 31	<u>125,380</u>	<u>100,173</u>

PROFIT ON SALE OF INVESTMENTS

Balance as at January 1	253,462	253,462
Realised Capital Profit (net of loss of \$8,864)	<u>268,746</u>	-
Balance before transfer	522,208	253,462
Transfer to Investment Income Account	<u>(261,104)</u>	-
Balance as at December 31	<u>261,104</u>	<u>253,462</u>

US\$ 4,234,677	<u><u>4,034,161</u></u>
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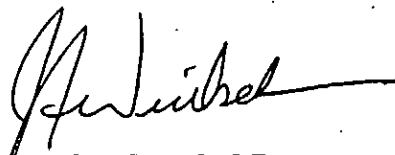
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7. INVESTMENT INCOME ACCOUNT	<u>1999</u>	<u>1998</u>
INCOME		
Balance as at January 1	338,837	348,886
Add: Investment Income		
Bank Interest	81,755	80,938
Debenture Interest	2,124	4,437
Dividend	7,185	3,253
Income from Overseas Investments	<u>21,181</u>	<u>-</u>
	451,082	437,514
Add: Transfer from Profit on Sale of Investments	<u>261,104</u>	<u>-</u>
	<u>712,186</u>	<u>437,514</u>
Less: Exchange Loss	23,785	28,969
Transfer to Inflation Reserve		
- Dollar	93,175	52,496
- Taka	<u>25,207</u>	<u>17,212</u>
	<u>142,167</u>	<u>98,677</u>
Balance prior to Distribution	<u>570,019</u>	<u>338,837</u>
 DISTRIBUTION TO ICDDR,B HOSPITAL		
Balance as on January 1	326,207	326,207
During the year	<u>200,000</u>	<u>-</u>
Balance as on December 31	<u>526,207</u>	<u>326,207</u>
Balance after Distribution	US\$ <u>43,812</u>	<u>12,630</u>

8. OTHERS

- i) The Statement of Financial Position has been prepared using figures extracted from ICDDR,B books of account in which the transactions of the Fund are incorporated.
- ii) Figures appearing in the Statement of Financial Position have been rounded off to the nearest US dollar.
- iii) The previous year's figures have been rearranged and regrouped, wherever considered necessary, to conform to the current year's presentation.


Member, Board of Governors


Member, Board of Governors

6/BT/JUNE 2000

**RESOLUTIONS FROM
PERSONNEL AND SELECTION
COMMITTEE**

**BOARD OF TRUSTEES MEETING
JUNE 2000**



CENTRE
FOR HEALTH AND
POPULATION RESEARCH

**PERSONNEL AND SELECTION
COMMITTEE MEETING**

PERSONNEL AND SELECTION COMMITTEE MEETING

Sunday, 4 June 2000

Agenda

1. Approval of the minutes of November 1999 meeting
2. Approval of agenda
3. Staffing:
 - 3.1 Overview of the staffing status and total numbers by categories
 - 3.2 Status of recruitment of international professional staff:
 - a. Head, Human Resources, P5, Director's Division
 - b. Head, Information Sciences, P5, Director's Division
 - c. Chief Scientist, P5, ORP, HPED
 - d. Health Economist, P4, ORP, HPED
 - e. Operations Research Scientist, P4, ORP, HPED
 - 3.3 Renewal of contracts
 - a. Division Director, D1, LSD
 - b. Chief Finance Officer, P5, Director's Division
 - 3.4 Information on new international professional staff
 - a. Head, Reproductive Health Programme, P5, PHSD
 - b. Social Scientist/Anthropologist, SBSP, P4, PHSD
 - c. Executive Assistant to Director, P1, Director's Division
 - 3.5 Information on new seconded staff
 - a. Director
 - b. Demographic Researcher, HDSS, PHSD
 - c. Scientist, ECPP, PHSD
 - d. Visiting Scientist, PHSD
 - 3.6 Completion of tenure at international professional post
 - a. Senior Epidemiologist, P5, PHSD
 - 3.7 Establishment of a new international professional post
 - a. Head, Administration & ER&ID, P5, Director's Division
 - 3.8 Information on international professional staff separation
 - a. Dr. M. John Albert, Research Microbiologist, P4, LSD
 - b. Dr. Bilqis Amin Hoque, Environmental Specialist, P4, HPED
4. Selection of members of the Board of Trustees
5. Any other business

**PERSONNEL AND SELECTION COMMITTEE MEETING
(CLOSED SESSION)
SUNDAY 6 NOVEMBER 1999**

On Sunday 6 November 1999 at 2:30pm, the Personnel and Selection Committee held its first session. Mr Jacques Martin, Chair of the Board, proposed that Prof Marian Jacobs continue as Chair of the Committee. Prof Jacobs declared the meeting open. She welcomed everyone to the meeting and especially to Dr David Sack, the Director; Dr Kim Streatfield and Mrs Judith Bennett Henry who had all recently joined the Centre and pointed out that appointments taken up after September would be given mention in the Board's June meeting.

She stated that the Committee noted with sadness the deaths of Maj Gen Choudhury and Dr Shameem and asked that the Committee's condolences be extended through the Director and Prof Barkat. Chief Personnel Officer would make similar approaches to the families of staff members Mr Shafiqul Islam, Finance; Mr D K Barua, CSD; Mr A Karim, CSD; Mr Shah Alam, LSD; Mr Nurul Haque, PHSD.

Prof Jacobs then called the meeting to order.

The meeting was held in closed session. It also included members of the Centre's Executive Committee.

Personnel and Selection Committee members

Prof Marian Jacobs	-	Chair, P&S Committee
Dr David Sack	-	Director
Mr M M Reza		
Mr Jacques Martin	-	Chair, BoT

Invited Trustees

Present:

Mr Rolf Carriere
Prof Peter McDonald
Dr Tawfik A M Khoja
Dr Tikki Pang
Prof Carol K Vlassoff
Prof Rita Colwell
Prof A M Azad Khan
Dr A K Masihur Rahman

Absent:

Prof Q Zheng
Dr Y Takeda

Centre Staff:

Mr Wahabuzzaman Ahmed
Dr Barkat-e-Khuda
Dr V I Mathan
Dr Lars Ake Persson
Mr John Winkleman
Ms Vanessa Brooks
Dr Ishtiaque Zaman

Mrs Judith Bennett Henry (Minute Secretary)

1. Approval of the Agenda

The agenda was approved. It was agreed that a closed closed session be allowed for the more sensitive aspects for discussion.

Prof Jacobs advised the Committee that she is being called away on work-related duties and would be leaving Dhaka at noon on 7 November. She proposed that Mr Rolf Carriere carry on the responsibility of the Chair of the Committee on her departure. It was so agreed.

Prof Jacobs stated that the format of the minutes should include on the agenda item a note on action to be taken, the person responsible and the allotted timeframe for feedback to the Committee.

The main factors of the meeting's proceedings would be questions of clarification and additional questions.

Prof Jacobs stated further that there was no record of last year's minutes of the Committee due to the fact that it was held in closed session. She requested that minutes be taken of the "closed" as well as the "closed closed" session of the Committee and be reflected in the agenda for next BoT meeting.

2. Staffing

2.1 Overview of the staffing situation

The overview was presented by Mr W Ahmed, Chief Personnel Officer.

Centre staff stood at a total of 1601 as at 30 September 1999.

The Centre continued to enforce the ban on external recruitment of non-project (unrestricted) fixed-term staff during this operating period 1 April – 30 September 1999. The Centre's fixed-term staff stood, as at 30 Sept 99, at 910, of whom 11 were International Professionals; 167 National Officers; and 732 General Services Staff. Of the total 910 staff members, not including the international professionals, 435 were in the unrestricted funding areas and 464 in restricted funding.

There were 36 separations and 42 additions, mainly in the restricted areas.

It was noted that contractual service holders decreased by 3 during the period 31 Mar to 30 Sept 1999; and a decrease in daily wagers from 246 to 179 during the same period..

With regard to the staffing status by sex, it was reported that in the **international professionals** category, there were 11 males (85%) and 2 females (15%); **national officers** 128 males (77%) and 39 females (23%); **general services** 501 males (68%) and 231 females (32%).

In the category of **community health workers**, females were 142 (95%), males 7 (5%); **volunteers** were females 68 (99%), males 1 (1%). **Seconded staff** were males 2 (100%), females nil; **part-time international** 1 male (100%), females nil.

Trainees were 16 males (66%), females 10 (34%); and CSAs were 115 males (46%) and 135 females (54%).

Prof Jacobs thanked Mr Zaman for his presentation.

Discussion:

It was recommended that the CPO provide more relevant data to make the tables more meaningful as well as to insert a table for "Authorised Posts". The point was put forward that it was the Board's function to authorise posts and the Centre's management to recruit personnel to fill them. It was stressed however that where the Board had the authorisation to approve international posts, it did not have a say in the number of posts.

Discussion ensued on donors' involvement in the recruitment process for funded posts; whether the Centre is legally bound by donors for specific (named) personnel. It was explained that the Centre reviews its staff's capabilities to see whether he/she fills the requirements for the post. If this is not possible, external recruitment is the next step.

Some Board members requested an improvement in the HR data being presented to the Board. He suggested that members summarise the type of data being requested and forward to him (with attached dummy tables) and a rationale for the data.

It was discussed that a policy action on gender distribution be put in place. It was agreed that a Task Force comprising several members meet with staff to develop a Gender Equity Target. It was recommended that Board members who have had experience in that area forward relevant information to Dr Sack to facilitate the process. It was agreed that Prof Vlassoff will liaise with Dr Sack in this regard.

2.2 Recruitment of International Staff

a. Head, Reproductive Health Programme, P5

It was reported to the Committee that Dr Japhet Killewo, a Tanzanian national, was recruited to fill the post. He joined the Centre on 27 October 1999.

b. **Head, Health & Demographic Surveillance Programme, PHSD, P5**

It was reported that Dr Kim Streatfield, Australian national, was appointed to the abovementioned post and took up his duties at the Centre on 18 July 1999.

c. **Head, Human Resources, P5**

It was reported that Mr Fons Marcellis would be unable to take up this post as had been expected. It was agreed that this appointment be held in abeyance. Dr Sack would liaise with Mr Carriere on likely candidates. Board members were also asked to submit names and personal data of individuals who would fit the bill.

d. **Chief Scientist, P5**

No appointment has been made for this vacancy. It was agreed that a new job description was needed and this should be discussed at a later date.

e. **Health Economist, ORP/HPED, P4**

It was reported that a Health Economist would be coming as a consultant for 6 months. It was further stressed that the Division had an urgent need to fill this post. The candidate who had originally been chosen had still not resolved his US visa status and would therefore be unable to take up the post.

f. **Operations Research Scientist, ORP/HPED, P4**

Prof Ray Langsten had been invited to the Centre for an interview and a presentation of a seminar which took place on 27 and 28 October. A decision is still to be made on filling this post.

g. **Research Microbiologist, LSD, P4**

Dr G Balakrish Nair visited the Centre to attend for an interview and present a seminar as part of the selection process. This post was vacated by Dr John Albert who completed his contract with ICDDR,B on 31 October 1999. It was decided that Dr G B Nair would be offered the post and he would take up his duties at the beginning of April 2000.

h. **Head, Training & Education Department, Director's Division, P4**

It was reported that the post was being effectively filled at the present time by Dr Alam. It was requested that the post be elevated to P-5 level in the title of Head, Information Sciences, in order to expand the Centre's activities to electronic information sources, distance education, data archiving.

i. **Social Scientist, SBSP/PHSD, P4**

Dr Lauren Blum was selected for the post and would take up her duties in January 2000.

j. **Internal Auditor, Director's Division, P2**

k. **Bio-statistician, Director's Division, P2**

It was reported that no appointments have been made for these posts.

It was suggested that for the post of Internal Auditor, it was not necessary to have an in-house, but can contract on needed basis.

1. **Executive Assistant to Director, Director's Division, P1**

Mrs Judith Bennett Henry, a national of Trinidad and Tobago, was appointed to the post and took up her duties on 1 October 1999.

Discussion:

The Committee deliberated on the 6-yr rule; salaries; international and national staff; new posts; CHWs.

6 year rule: This subject was discussed at length by the Committee. Concern was voiced that the rule would in some cases cost the Centre excellent staff and may result in replacing high calibre staff with those less so. It was suggested that in the best interests of the Centre and to maintain continuity and commitment to the research efforts as well as attract new intellect, a certain flexibility should prevail and should allow the Director discretionary authority to implement policy as he sees best.

Salaries: The Committee noted the impassioned request by SWA for salary increase and for BOT's attention to other staff issues. It was discussed that the staff showed considerable fortitude during the period of right-sizing and belt-tightening and it was the right thing to reward them for their commitment.

International and national staff: It was discussed that the Board be consistent with guidelines for national as well as international staff. The Board should address and evaluate remuneration policies for national scientists in relation to those from other organisations.

It was further discussed that Dr Bilqis Amin Hoque had tendered her resignation. It was suggested that the post be established at a P-level. There is no job description at the present time. It was also reported that 2 posts under the cooperative agreement with USAID will be nationalised on completion of contract of the incumbent scientists.

CHWs: The Committee's discussions focussed on the request by the SWA to consider including community health workers (CHWs) as regular staff on the GS scale. This would raise their salary. As almost all CHWs are female, keeping them on lower salary levels may represent gender discrimination. Also the CHWs have more responsibilities than in the past and should be compensated. It was felt that the Board needed to move cautiously because of possible implications for government workers.

Mr Martin thanked the Executive Committee members for their straightforward and honest opinions. He felt it was a useful exercise in which the Board could better understand the issues facing the staff in general.

The meeting ended at 4:30pm.

RESOLUTIONS FROM THE PERSONNEL AND SELECTION COMMITTEE

12/BT/Nov 99

The Board requests the Director to further improve the quality of the presentation of Human Resources data to the Board in order to better inform its discussion and to facilitate decision-making.

13/BT/Nov 99

The Board requests the Director to collect and collate an information package on ICDDR,B's human resources policy as part of the induction of new Board members.

14/BT/Nov 99

The Board establishes a Gender Equality Task Force with the aim to develop clear gender equality policies and time-bound gender targets, and to oversee its implementation. The Director and Prof Carol Vlassoff will take the lead, and Board members agree to share with the Task Force in writing before end-December 1999 their institutions' policy documents and/or their own experience.

15/BT/Nov 99

The Board, in clarifying the "6-year limitation rule" for incumbents of international professional posts, confirms the following policy:

- That the first contract of 3 years is in principle "renewable" and may be followed by another 3 year contract, subject to (i) the post still being needed; (ii) the incumbent's excellent performance; and (iii) the post not having been re-defined.
- That in case the post is no longer needed and/or the incumbent's performance is less than expected, this information be communicated to the incumbent at the time of the second Annual Performance Evaluation discussion;
- That on completion of the second 3-year contract (and assuming there is a continued need for the post), the normal expectation would be for the vacancy to be filled with a new staff member;
- That under exceptional circumstances, when it is in the best interest of the ICDDR,B, another new contract not exceeding 18 months may be considered and granted to the current incumbent;
 - When a unique individual is making critical contribution; and/or
 - When the terms of tenure and the terms of contract requirements do not coincide;
- That even in either of these cases the vacancy be widely advertised, thus allowing open and fair competition on an equal footing by any and all interested international-level candidates. (The incumbent will still be eligible to compete for the post);
- That Board approval will continue to be needed for all appointments at level P-5 and above, and henceforth also for all International professional contracts

(including P-1 through P-4) that would result in any employment beyond 6 years in an IP post;

- That eligibility to reapply for an IPO vacancy would be restored after an interval of 3 years;
- That this policy applies to all international staff, regardless of the mechanism through which they are hired (directly or on secondment) and regardless of the number of different posts at different levels they may have occupied;
- That the Director retains the ability and responsibility to exercise discretionary judgement in appointing the best person for the post;
- That the above policy will be phased in over a period of the next 18 months during which period the Director is requested to bring to the Board's notice any need for further refinement of this policy;
- That this policy will immediately apply to the two cases of contract renewals beyond 6 years currently before the Board) namely for the posts of Senior Scientist, P-5, PHSD; Social Scientist and Project Director, P-4, ICDDR/B/SRC Project (Chakaria Community Health Project), PHSD;
- That the Board had given full authority to the Director to make these two personnel decisions, as needed.

16/BT/Nov99

The Board requests the Director to propose, at the June Board meeting, how ICDDR.B's annual performance evaluation system for staff in all three categories currently serves as a basis for reappointment and annual merit increase, and how it could serve as a basis for a performance-based financial reward system, in a transparent and fair manner.

17/BT/Nov99

The Board takes note of the status of recruitment and renewals of International Professional staff, and approves to create and initiate recruitment for the new post in Information Sciences at P-5 level (which is a conversion of an existing P-4 level post).

18/BT/Nov99

The Board supports, subject to availability of the necessary budget, the creation of new international posts in the areas of ER&ID, Institution Development, Internal Audit (perhaps with title change to better reflect the scope and responsibilities of this post), and requests the Director to circulate the draft job descriptions to all Trustees for comment, and also to submit them for classification by an external agency (WHO or UNICEF). Final decisions will be made in consultation with the Executive Committee.

19/BT/Nov99

The Board agrees to extend the search for new Trustees, bearing in mind the requirements of the Ordinance and the results from the Board Retreat about current strengths, weaknesses and needs in the Board's make-up, and requests the names of nominees (with their consent of nomination) be sent to the Director no later than end-December 1999, thus allowing decision-making to proceed via e-mail (and perhaps, should that be needed and feasible, via tele- or video-conferencing) well before the June Board meeting.

20/BT/Nov99

The Board requests the Director to complete, by the time of the next Board meeting, the development of options, proposals and recommendations with regard to the following HR areas:

- Market survey and new salary structure for GS, NO and IPO categories
- Job classification for all posts
- Promotion policies
- Travel policy
- Retirement age policy
- Remuneration of CHWs

The Board recognises that these policies may need to be developed with the help of external expertise.

21/BT/Nov99

The Board expresses its profound grief at the death of the following colleagues, and extends its condolences to the loved ones of:

- Maj Gen (ret'd) Prof M R Choudhury, Trustee of the Board
- Dr Shameem Ahmed, Health Scientist, Operations Research Project
- Mr Shafiqul Islam, Finance
- Mr D K Barua, CSD
- Mr A Karim, CSD
- Mr Shah Alam, LSD
- Mr Nurul Haque, PHSD

Staffing

3.1 Overview of the staffing situation

The Centre continued to restrict external recruitment of non-project (unrestricted) fixed-term staff during this reporting period (October 01, 1999 to March 31, 2000). There were 28 separations and 43 additions, mostly in the restricted areas. The total number of Centre fixed-term staff belonging to all categories thus increased by 15 as shown in Table 1 below:

Table 1Separations/Additions of Staff

	<u>Restricted</u>		<u>Unrestricted</u>		<u>Total</u>	
	<u>Sep</u>	<u>Add</u>	<u>Sep</u>	<u>Add</u>	<u>Sep</u>	<u>Add</u>
International	(-1)	+2	(-1)	+1	:-	(-2) +3
Research (Scientific Support & Field)	(-11)	+24	(-5)	+4	:-	(-16) +28
Research (Administration)	(-5)	+7	(-1)	+1	:-	(-6) +8
Administration & Personnel	-	-	(-3)	+4	:-	(-3) +4
Finance	-	-	(-1)	-	:-	(-1) -
	(-17)	+33	(-11)	+10	=	(-28) +43

Net addition : 15

STAFFING STATUS

U – Unrestricted (Core funded)
R – Restricted (Project funded)

Functional Area	1999 (March 31)	1999 (Sept 30)	2000 (March 31)
-International Professional staff	11	11	12
-Research (Scientific, Support & Field)	545	552	564
	U 195 R 350	U 187 R 365	U 186 R 378
-Research (Administration)	221	219	221
	U 123 R 98	U 120 R 99	U 120 R 101
-Support Services & Personnel	93	90	91
	U 93 R 0	U 90 R 0	U 91 R 0
-Finance	34	38	37
	U 34 R 0	U 38 R 0	U 37 R 0
Sub Total	904	910	925
-International Seconded Staff	3	2	6
-Short term staff (Int'l, NO & GS)	11	10	30
-Community Health Worker	143	152	131
Sub Total	167	164	167
Health Worker	65	69	63
GRAND TOTAL	1136	1143	1155

FELLOWS, CONTRACTUAL SERVICE HOLDERS AND DAILY WAGERS

	1999 (March 31)	1999 (Sept 30)	2000 (March 31)
Fellows	29	29	33
Contractual Service Holders	253	250	411
Daily Wagers	246	179	111
Total	528	458	555

**NUMBER OF FIXED-TERM UNRESTRICTED,
RESTRICTED & INTERNATIONAL PROFESSIONAL STAFF**

Functional Area	1999 (March 31)	1999 (Sept 30)	2000 (March 31)
Unrestricted	445	435	434
Restricted	448	464	479
International Professional	11	11	12
Total	904	910	925

STAFFING STATUS
FIXED-TERMAs of March 31, 2000

Sl. No.	Location	International Professional					NO	GS	Total
		Fixed Term	Short Term	Seconded	Fellow	Part Time			
1.	Director's Division	2	2	1	-	-	23	123	151
	-Director's Office	1	-	1	-	-	-	1	3
	-SWA	-	-	-	-	-	-	1	1
	-ER&ID	-	1	-	-	-	2	-	3
	-Audio Visual	-	-	-	-	-	1	1	2
	-Training	-	1	-	-	-	3	2	6
	-DISC	-	-	-	-	-	1	7	8
	-Support Services	-	-	-	-	-	4	77	81
	-Finance	1	-	-	-	-	9	27	37
	-Personnel	-	-	-	-	-	3	7	10
2.	Public Health Sciences Division	6	-	3	-	1	43	188	241
3.	Clinical Sciences Division	-	-	1	2	-	32	152	187
4.	Laboratory Sciences Division	1	-	1	-	-	25	111	138
5.	Health & Population Extension Division	3	-	-	-	-	43	173	219
	Total	12	2	6	2	1	166	747	936

**STAFFING STATUS
(SECONDED, SHORT-TERM, CHWs & HEALTH WORKERS)**

As of March 31, 2000

Sl. No.	Location	Seconded Staff (Int'l)	Short-term			CHWs	Total	HW
			Int'l	NO	GS			
1.	Director's Division	1	2	-	-	-	3	-
2.	Public Health Sciences Division	3	-	-	28	131	162	-
3.	Clinical Sciences Division	1	-	-	-	-	1	63
4.	Laboratory Sciences Division	1	-	-	-	-	1	-
5.	Health & Population Extension Division	-	-	-	-	-	-	-
Total		6	2	-	28	131	167	63

NO : National Officer
 GS : General Services
 CHW : Community Health Worker
 HW : Health Worker

LIST OF INTERNATIONAL PROFESSIONAL STAFF
As of March 31, 2000

FIXED-TERM

Sl. No.	Name	Country	Job Title	Pay Level	Contract Start Date	Contract End Date
1.	BAQUI, Dr. Abdullah H.	Bangladesh	Senior Epidemiologist, PHSD	P5	01.08.97	31.12.2000
2.	BENNETT HENRY, Ms Judith Gala	Trinidad & Tobago	Executive Assistant to Director	P1	01.10.99	30.09.2002
3.	BHUIYA, Dr. Abbas Uddin	Bangladesh	Social Scientist & Project Director ICDDR,B-SRC Project, PHSD	P4	01.07.94	30.06.2000
4.	BLUM, Dr. Lauren S.	USA	Anthropologist, SBSP, PHSD	P4	23.01.2000	22.01.2003
5.	KHUDA, Dr. Barkat-e-	Bangladesh	Division Director, HPED	D1	01.08.97	19.06.2002
6.	KILLEWO, Prof. Japhet Z. J.	Tanzania	Head, Reproductive Health Programme, PHSD	P5	27.10.99	26.10.2002
7.	MATHAN, Prof. V. I.	India	Division Director, LSD	D1	01.01.98	31.12.2000
8.	PERSSON, Prof. Lars Åke	Sweden	Division Director, PHSD	D1	01.03.99	28.02.2002
9.	SIDDIQUE, Dr. A. K. M	Bangladesh	Epidemiologist, ECPP, PHSD	P4	01.07.96	30.06.2002
10.	STREATFIELD, Dr. Peter K.	Australian	Head, Health & Demographic Surveillance Programme, PHSD	P5	18.07.99	17.07.2002
11.	TUNON, Dr. Cristobal	Panama	Management Scientist, ORP, HPED	P4	01.12.94	30.11.2000
12.	WINKELMANN, Mr. John F.	Canada	Chief Finance Officer, Director's Division	P5	01.12.97	30.11.2000

SHORT-TERM

Sl. No.	Name	Country	Job Title	Pay Level	Contract Start Date	Contract End Date
1.	ALAM, Dr. A. N.	Bangladesh	Head, Training & Education Dept., Director's Division	P4	01.05.96	31.07.2000
2.	BROOKS, Ms. Vanessa J.	U.S.A.	Grants Administrator, ER&ID, Director's Division	P4	01.10.97	30.11.2000

Agenda 3.1

Table-7
BOT/P&S/Jun 2000**LIST OF SECONDED STAFF**As of March 31, 2000

Sl. No.	Name	Country	Job Title	Pay Level	Contract Start Date	Contract End Date	Seconding Institution
1.	BOGAERTS, Dr. Jozef	Belgium	Senior Scientist, LSD	P5	01.01.96	21.12.2001	BADC
2.	FUCHS, Dr. George J.	U.S.A.	Division Director, CSD	D1	01.11.94	30.06.2001	LSU
3.	MELS, Mr. Carel T. van	Netherlands	Demographic Researcher	NOB	29.12.99	28.12.2001	NFA
4.	RAHMAN, Dr. Mahfuzar	Bangladesh	Visiting Scientist		26.01.2000		Linkoping University, Sweden
5.	SACK, Dr. David Allen	USA	Director, ICDDR,B	ADG	01.10.99	30.09.2002	JHU
6.	WAGATSUMA, Dr. Yukiko	Japan	Scientist	P4	17.01.2000	16.01.2002	JHU

BADC : Belgian Administration for Development Cooperation
 LSU : Louisiana State University
 NFA : The Netherlands Ministry of Foreign Affairs
 JHU : The Johns Hopkins University

LIST OF INTERNATIONAL FELLOWS
As of March 31, 2000

Sl. No.	Name	Country	Job Title	Start Date	End Date	Funding Status
1.	OSENDARP, Ms. Saskia	Netherlands	Int'l Health Research Fellow	20.11.95	14.08.2000	ICDDR,B
2.	BROOKS, Dr. W. Abdullah	USA	Int'l Health & Child Survival Fellow	01.07.1997	30.06.2001	JHU

INTERNATIONAL PROFESSIONAL STAFF ON
PART-TIME APPOINTMENT

1.	BAIRAGI, Dr. Radheshyam	Bangladesh	Senior Scientist	P5	15.01.98	14.06.2001	EU & WHO
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JHU : The Johns Hopkins University
EU&WHO : European Union and World Health Organization

ICDDR,B

Number of Authorized Posts
March 2000International Professional Category

	CF	PF	Seconded	Total
ADG	-	-	1	1
D1	2	1	1	4
P5	3	4	1	8
P4	2	7	1	10
P3	-	-	-	-
P2	3	-	-	3
P1	1	-	-	1
				27

National Officer (NO) Category

NOE	3	2	-	5
NOD	10	2	-	12
NOC	22	11	-	33
NOB	30	34	-	64
NOA	18	55	-	73
				187

General Services (GS) Category

GS6	34	35	-	69
GS5	76	91	-	167
GS4	64	100	-	164
GS3	81	121	-	202
GS2	45	30	-	75
GS1	105	35	-	140
				817

Community Health Workers : 150

Health Workers : 69

Grand Total : 1250

3.2 Status of Recruitment of International Professional Staff

Agenda 3.2a Head, Human Resources, P5, Director's Division

As discussed and agreed during the November 1999 meeting of the P&S Committee, due to the inability of Mr. Fons Marcelis to join the search for a suitable person to fill this post continued. Through this search process, the Centre has been able to identify Ms. Diann M. Hill, an American national to be suitable for the post. Ms. Diann M. Hill has accordingly been offered the position. She has accepted the offer and is due to join the Centre at the end of April 2000.

Agenda 3.2b Head, Information Sciences, P5, Director's Division

As per resolution (17/BT/Nov 99) of the Board of Trustees meeting, the above post of the Head, Information Sciences was announced in accordance with the Centre's current international professional post vacancy announcement procedures. By the last date for response (15 April 2000), a total of 37 applications have been received. These are being scrutinized for short-listing by a committee.

At the time of the meeting, the short-list will be presented to the P&S Committee for approval and decision.

Agenda 3.2c Chief Scientist, P5, ORP, HPED

As per discussions at the November 1999, P&S Committee Meeting, a new post/job description for the post of the Chief Scientist has been developed to be presented during its June meeting, for review and decision.

Agenda 3.2d Health Economist, P4, ORP, HPED

As reported at the November 1999, P&S Committee Meeting, upon refusal by Dr. Mukesh Chawla to take up the post, a six months consultant contract was offered to Mr. Andrew V. O. Nyamete who had shown a keen interest and accepted to work at the Centre. But later on he delayed his arrival due to some prior commitments. He has not contacted the Centre since. The search for a suitable person to fill this post continues.

3.2 Status of Recruitment of International Professional Staff

Agenda 3.2e Operations Research Scientist, P4, ORP, HPED

Prof. Ray Langsten who had visited the Centre and presented seminars in late October 1999 was not found to be matching the requirements of the advertised post. In the meantime, the Director and other senior management staff interviewed another candidate recently. He was not found suitable for the position. A consultant (Dr. Thomas T. Kane) is currently filling in for the post while the search continues.

3.3 Renewal of Contracts

Agenda 3.3a Division Director, D1, LSD

Prof. V. I. Mathan, Division Director, Laboratory Sciences Division will complete his first three years contract with the Centre on 31 December 2000. The P&S Committee is requested to put up recommendations, as appropriate, to the Board for consideration of renewal of the contract of Prof. Mathan.

Agenda 3.3b Chief Finance Officer, P5, Director's Division

Mr. John F. Winkelmann, Chief Finance Officer will end his first three years contract on 30 November 2000. The P&S Committee is requested to put up recommendations, as appropriate, to the Board for consideration of renewal of the contract of Mr. Winkelmann.

3.4 Information on new International Professional Staff

Agenda 3.4a Head, Reproductive Health Programme, P5, PHSD

Dr. Japhet Z. J. Killewo, a Tanzanian national joined the Centre as the Head of the Reproductive Health Programme on 27 October 1999.

Agenda 3.4b Social Scientist/Anthropologist, P4, SBSP, PHSD

Dr. Lauren S. Blum, an American national joined the Centre as Anthropologist under the Social and Behavioural Sciences Programme on 23 January 2000.

Agenda 3.4c Executive Assistant to Director, P1, Director's Division

Mrs. Judith G. Bennett Henry, a Trinidadian national joined the Centre as the Executive Assistant to Director on 01 October 1999.

3.5 Information on new seconded staff

Agenda 3.5a Director

On secondment from the School of Hygiene and Public Health, Department of International Health, Division of Disease Control, the Johns Hopkins University, Maryland, USA; Dr. David Allen Sack assumed the office of the Director of the Centre on 01 October 1999.

Agenda 3.5b Demographic Researcher, HDSP, PHSD

The Ministry of Foreign Affairs of the Government of the Netherlands was pleased to second the services of Mr. Carel T. van Mels, a Demographic Researcher to the Centre. Mr. van Mels joined the Public Health Sciences Division of the Centre on 29 December 1999.

Agenda 3.5c Scientist, ECPP, PHSD

The Johns Hopkins University, Maryland, USA seconded the services of Dr. Yukiko Wagatsuma, an Assistant Scientist at the School of Hygiene and Public Health, Department of International Health, to the Centre. Dr. Wagatsuma joined the Centre on 17 January 2000.

Agenda 3.5d Visiting Scientist, PHSD

The Linkoping University of Sweden seconded the services of Dr. Mahfuzar Rahman, an Epidemiologist, to the Centre and accordingly Dr. Rahman has joined the Public Health Sciences Division on 26 January 2000 to work on arsenic and related subjects, initially for a period of six months.

3.6 Completion of Tenure at International Professional Post

Agenda 3.6a Senior Epidemiologist, P5, PHSD

Dr. Abdullah H Baqui, Senior Epidemiologist of Public Health Sciences Division at pay level P5, will be completing 6 years of his tenure at the international professional position on 31 December 2000.

This position is essential for the Centre and is adequately funded. Hence it needs be announced immediately.

3.7 Establishment of a New International Professional Post

Agenda 3.7a Head, Administration & ER&ID, P5, Director's Division

This is now being increasingly felt that for maintaining efficient and cost effective administrative services as well as for supervising the External Relations & Institutional Development office and other facilitation units at the Centre, an international professional staff at no less than a P5 level is required who will effectively manage the entire administrative services, ER&ID and other facilitation units which are currently reporting directly to the Director.

Previously, for supervising the activities of the administration alone there was an authorized post of a Division Director at pay level D1 and for the ER&ID office a fixed-term P4 staff.

Thus it is requested that considering all the above mentioned activities of the Centre, a position of Head, Administration & ER&ID at pay level P5 be approved which will considerably lessen the enormous administrative load of the Centre Director and result in a smooth functioning of the Centre's administrative services and the ER&ID office.

A job description for the post is attached for review and approval at the P&S Committee.

ICDDR,B

JOB DESCRIPTION

Position : Head, Administration, External Relations & Institutional Development

Pay level : P5

1. SUMMARY OF THE POSITION

Under the direct control of the Director or his delegated authority, the incumbent performs the assigned duties. Plans, directs, co-ordinates and controls the overall administrative and External Relations & Institutional Development of ICDDR,B. Formulates policies and procedures related to the administrative areas of the Centre and submits them for approval. Ensures that the utilization of physical and administrative resources meet the research, training and service objectives of the Centre and the External Relations and Institutional Development activities of the Centre are carried out in a planned and well co-ordinate manner.

2. DESCRIPTION OF FUNCTIONS

a. Administration

- i. Plans, organizes, implements, coordinates and controls all activities in the areas of Administrative services, External Relations and Institutional Development.
- ii. Establishes an adequate database for management and information analysis to assess and improve the services to Divisions, Programmes, Branches and Offices within ICDDR,B. Such analysis will take into account the general long-term as well as short-term objectives of ICDDR,B as well as specific objectives derived from the general objectives of each scientific division.
- iii. From such study, periodically formulates procedures by which the objectives of each area under her/his supervision can be better accomplished and implements these through the concerned supervisor(s).
- iv. Delegates responsibilities to supervisors in their respective areas to enable them to discharge their assigned functions smoothly and efficiently.
- v. Ensures coordination of staff efforts in her/his areas of responsibility. Relates with other divisions, branches or offices to verify if the latter are satisfied with the work performance of administrative personnel in these areas; discusses common problems and reaches acceptable solutions, taking into account the general objectives of the Centre and the established priorities among those objectives.

- vi. In relation to the pre-determined objectives and their order of priority, forecasts the financial needs in collaboration with their supervisors. Takes corrective action in case of over-expenditure according to indications from the finance office/cost reports.
- vii. Formulates the budget for the Administrative Service areas, External Relations & Institutional Development.
- viii. Reviews project agreements, legal documents and contracts.
- ix. Coordinates all administrative and logistic services providing adequate registry, filing and communication services. Supervises, External Relations & Institutional Development office, Maintenance, Procurement, Travel, Estate and Transport.
- x. Organizes the physical facilities and support according to the needs of the Centre.
- xi. Performs any other duties as assigned by the Director.

b. External Relations and Institutional Development

- i. Plans, conducts and supervises, the activities and staff of the Centre's External Relations and Institutional Development (ER&ID) office.
- ii. Signs, on behalf of the Director, project and grant proposals, cooperative agreements with donors, letters and other communications related to funding of the Centre and its research activities.
- iii. Coordinates fund raising initiatives including the Centre's Endowment Fund.

C. REQUIREMENTS FOR POSITION

Masters degree preferably in Business Administration with 10 years experience in a Senior Management position in the relevant fields of Administration, External Relations & Institutional Development in national or multinational organizations. Must be capable of supervising administrative systems and services; organizing sustained fund raising and interacting with Donors. Experience in developed and developing countries desirable as is familiarity with non-profit organizations. Fluency in English is a must. Knowledge of Bangla or any other UN language will be an added advantage.

3.8 Information on International Professional Staff Separation

Agenda 3.8a **Dr. M John Albert**
Research Microbiologist, P4, LSD

At the completion of 10 years 5 months of continuous service at the international level position, Dr. M John Albert left the Centre on 2 November 1999.

Agenda 3.8b **Dr. Bilqis Amin Hoque**
Environmental Specialist, P4, HPED

After having served the Centre for 2 years and 7 months at the international level, Dr. Bilqis Hoque resigned and left the Centre on 31 December 1999. Prior to her becoming an international professional staff, Dr. Bilqis Hoque also served as a National Officer for 10 years and 8 months.

Selection of members of the Board of Trustees

- A. At its November 1999 meeting, the Board of Trustees:
- Agreed to review existing nominations and solicit additional nominations for final selection at June 2000 BOT meeting.
 - Agreed to forward the CVs of new nominees for review by all Board members.
- B. According to Ordinance Section 8(3) at any given time, the Board shall be so composed that, not counting the members nominated by the World Health Organization and a member to be nominated by a United Nations Agency....., more than 50% must come from the developing countries, including the members nominated by Bangladesh, and not less than one-third from developed countries. The Director shall be counted as coming from a developed or developing country depending upon nationality”.

Attached is the list of Board members with nationality, discipline, joining and ending dates (as at June 2000).

Selection of members of the Board of Trustees

Action Required

1. To select a member to replace Dr Helena Makela whose term ended on 1 July 1999.
2. To select a member to replace Prof Fehmida Jalil whose term ended on 1 July 1999.
3. To select a member to replace Mr Jacques Martin whose term ends on 1 July 2000.
4. To select a member to replace Dr Y Takeda whose term ends on 1 July 2000.
5. To select Chairperson of the BOT.

**LIST OF BOARD MEMBERS
WITH NATIONALITY, DISCIPLINE, JOINING AND ENDING DATES
(As at June 2000)**

Name	Country	Discipline	Joining/Ending date
Mr Rolf Carriere	UNICEF	Management/ Int'l Health	1997/2000
Prof Rita R Colwell	USA	Microbiology	1995/2001*
Dr Ricardo Uauy Dagach	Chile	Nutritionist	1999/2001
Prof Marian E Jacobs	South Africa	Child Health	1996/2002*
Dr Tawfik AM Khoja	Saudi Arabia	Public Health	1995/2001*
Prof AK Azad Khan	Bangladesh	Gastroenterologist	1999/2002
Prof Peter F McDonald	Australia	Demography	1995/2001*
Mr Jacques O Martin	Switzerland	Finance/Mgmt	1994/2000*
Dr AKM Masihur Rahman	Bangladesh (GoB)	Civil Servant	1996/
Prof Tikki Pang	WHO	Infectious Disease, Research & Policy	1999/2002
Mr Sayed Alamgir Farrouk Chowdhury	Bangladesh (GoB)	Civil Servant	2000/ **
Dr Yoshifumi Takeda	Japan	Microbiology	1994/2000*
Prof Carol Vlassoff	Canada	Public Health Trop. Diseases	1998/2001
Prof Zheng Qing-si	PR China	Social Medicine	1999/2002

**Unable to serve another term without a break*

*** To be confirmed by Government of Bangladesh*

Agenda 4

BOT/P&S/Jun 2000

As at June 2000

Must be - 11 members at large
3 GoB
1 UN
1 WHO
1 Director, ICDDR,B

Total: 17 members

<u>Developed Country</u>	<u>Region</u>	<u>Developing Country</u>	<u>Region</u>
David Sack (USA) Director	Nth America	Zheng Qing-si (China)	Asia
Rita Colwell (USA)	Nth America	Vacant	Asia
Peter McDonald (Aus)	Pacific	Tawfik Khoja (S/Arabia)	M/East/Arab
Vacant	Europe	Marian Jacobs (RSA)	Africa
Jacques Martini (Switz)	Europe	Ricardo U Dagach (Chile)	S.Am/Carib
Yoshifumi Takeda (Japan)	Asia	Bangladesh (3 GoB)	Asia
Carol Vlassoff (Canada)	Nth America		

Total: 6

Total: 7

Plus WHO: Prof Tikki Pang
UNICEF: Rolf Carriere

Total: 15

Of 15 (including WHO and UNICEF) more than 50% must be from developing countries (including Bangladesh). Not less than 1/3 from developed countries.

As per above table:

7/13 (54%) are from developing countries (50%=7½)

6/13 (46%) are from developed countries (1/3=5)

Gender: M=9

F=4

NOMINATIONS FOR TRUSTEES – JUNE 2000

Developed Country:

1. Prof J G Cleland (UK)
2. Prof Dr Klaus Gyr (Switzerland)
3. Prof Joseph Hautvast (Netherlands)
4. Dr Nobukatsu Ishikawa (Japan)
5. Prof Jane Anita Kusin (Netherlands)
6. Dr Carla Pruzzo (Italy)
7. Dr Gert Riethmüller (Germany)
8. Prof Dr Marcel Tanner (Switzerland)

Developing Country:

9. Dr Hāida Akhtar (Bangladesh)
10. Dr Uche Amazigo (?)
11. Dr Ahmed A Azad (Bangladesh & Australia)
12. Dr Laila Bisharat (Jordan & US)
13. Dr Jongsik Chum (Korea)
14. Prof N K Ganguly (India)
15. Prof Samia Ahmed Gumaa (Sudan)
16. Ms Manisha Gupte (India)
17. Dr Maimunah Bte Abdul Hamid (Malaysia)
18. Dr LeeNah Hsu (Taiwan & Canada)
19. Dr Pilar Ramos-Jiminez (Philippines)
20. Prof Nahid Kamel (Egypt)
21. Dr Zein El Abdeen Abdul Rahim Karrar (Sudan)
22. Dr Claudio Franco Lanata (Peru)
23. Dr Roberto Briceno-Leon (Venezuela)
24. Dr Halima Mwenesi (Kenya)
25. Prof Victoriano Campos Pardo (Chile)
26. Dr Gita Sen (India)

Agenda 5

BOT/P&S/Jun 2000

Any other business

7/BT/JUNE 2000

DATES OF NEXT MEETING

EXECUTIVE SESSION

Monday 5 June 2000

Dates of next meeting

BOARD OF TRUSTEES MEETING – NOVEMBER 2000

Friday 3 Nov	Trustees arrive
Saturday 4 Nov	Programme Committee
Sunday 5 Nov	Finance Committee Personnel & Selection Committee
Monday 6 Nov	Executive Session of the Full Board Donors Support Group Meeting

8/BT/JUNE 2000

OTHER RESOLUTIONS

9/BT/JUNE 2000

ANY OTHER BUSINESS