

AGENDA
FOR THE FOURTH MEETING OF THE DIRECTING COUNCIL

January 18-19, 1965

1. Adoption of the Proposed Agenda.
2. Confirmation of the minutes of the Third meeting of the Directing Council held on November 18-19, 1963.
3. Director's Scientific Report DC 4/1
4. Report of the Technical Committee DC 4/2
5. Director's Administrative Report DC 4/3
6. Director's Financial Report DC 4/4
7. Review of the Auditor's Report and the Director's Comments DC 4/5
8. Presentation of Appendices to Financial Regulations DC 4/6
9. Review of CRL Budget Plan for 1965/66 and Determination of the level of the General Operating Fund Contribution DC 4/7
10. Election of Chairman & Vice Chairman for the ensuing year.
11. Selection of dates for the 5th meeting of the Directing Council.
12. Other items of Business.

PAKISTAN-SEATO CHOLERA RESEARCH LABORATORY

Third Meeting of the

DIRECTING COUNCIL

Dacca, East Pakistan - November 18-19, 1963

Minutes and Supporting Documents of the
Third Meeting of the Directing Council held
at the Cholera Research Laboratory in Dacca,
East Pakistan on 18 - 19 November, 1963.

A handwritten signature in dark ink, appearing to read 'Abram S. Benenson', with a long, sweeping horizontal stroke extending to the right.

Abram S. Benenson, M.D.
Secretary to the
Directing Council

PAKISTAN-SEATO CHOLERA RESEARCH LABORATORY

Dacca, East Pakistan

MINUTES

The Third Meeting of the Directing Council of the Pakistan-SEATO Cholera Research Laboratory was held on the 18-19 November, 1963

The designated members of the Council were:-

Dr. D.J.M. MacKenzie
c/o R.I.H. Campion
P.O. Box 158
Welkam Q.F.S.
South Africa

Permanent Representative
of the Government of the
United Kingdom

CHAIRMAN

Dr. Ralph E. Knutti
Director
National Heart Institute
Bethesda, Maryland

Representing the Director
of the National Institutes
of Health

Mr. William Worth
Deputy Secretary-General
South East Asia Treaty Organization
Bangkok, Thailand

Representing the Secretary
General of SEATO

Dr. Z.A. Choudhuri
Director of Health Services
Government of East Pakistan
Eden Buildings
Dacca

Representative of the
Government of Pakistan

VICE-CHAIRMAN

Dr. Willard Boynton
Senior Public Health Officer
US/AID Pakistan
Karachi

Representative of the
Government of the United
States of America

Dr. Abram S. Benenson
Director
Pakistan SEATO Cholera Research
Laboratory
Dacca 5

Director of the Pakistan-
SEATO Cholera Research
Laboratory

SECRETARY

During Dr. Z.A. Choudhuri's absence Dr. K.A. Monsur
acted as his replacement

OTHERS ATTENDING THE MEETING:

Dr. K.A. Monsur

Director
Institute of Public Health &
Consultant to the Cholera Re-
search Laboratory

Dr. Robert S. Gordon

Scientific Director
Pakistan-SEATO Cholera Research
Laboratory

Dr. A.K.M. Abdul Wahed

Pakistani Member of Technical
Committee Meeting & Ex-Director
of Health Services

Mr. M.R. Bashir

Administrative Officer
Pakistan SEATO Cholera Research
Laboratory

OTHERS ATTENDING PART OF THE MEETING:

Dr. Md. Fahimuddin

Consultant to the Cholera
Research Laboratory

Dr. Saiyid Rizvi

Chief, Bacteriology Section
Pakistan-SEATO Cholera Research
Laboratory

Mr. Syed Zafar Ahmed

Chief, Water Studies Section
Pakistan-SEATO Cholera Research
Laboratory

Dr. William B. Greenough

Assistant Chief, Clinical Research
Pakistan-SEATO Cholera Research
Laboratory

Dr. John Lindenbaum

Research Physician, Clinical Re-
search, Pakistan-SEATO Cholera Re-
search Laboratory

Miss Dorothy G. Torrance

Hospital Supervisor - CRL Ward
Pakistan-SEATO Cholera Research
Laboratory

Dr. & Mrs. R. Glasse

Anthropologists
Pakistan-SEATO Cholera Research
Laboratory

AGENDA
FOR THE THIRD MEETING OF THE
DIRECTING COUNCIL
November 18-19, 1963

Election of Chairman and Vice Chairman	
Report of Technical Committee	DC3/1
Director's Scientific Report	DC3/2
Director's Administrative Report	DC3/3
Director's Financial Report	DC3/4
Review of Auditor's Report and Director's Comments	DC3/5
Presentation of Amendments of Financial and Personnel Regulations	DC3/6 DC3/7
Review of CRL Budget for 1964-65	DC3/8
Determination of Level of Operating Fund Contributions	
Selection of Date for Next Meeting	
Other Items of Business	

The meeting was called to order by the Chairman, Dr. MacKenzie, at 1100. All members were present, but because of an emergency, Dr. Choudhuri asked that he might absent himself from part of the meeting and be represented by Dr. K.A. Monsur. This was agreed.

The proposed agenda was presented. It was suggested and accepted that the Chairman elected the previous year preside through the subsequent annual meeting and that election of the Chairman and Vice Chairman for the ensuing year be deferred until the end of that meeting. The following agenda was adopted:-

AGENDA

1. Adoption of the draft agenda
2. Confirmation of the minutes of the Second Meeting of the Directing Council held on November 15-16, 1962
3. Report of the Technical Committee DC3/1
4. Director's Scientific Report DC3/2
5. Director's Administrative Report DC3/3
6. Director's Financial Report DC3/4
7. Review of the Auditor's Report and the Director's Comments DC3/5
8. Presentation of Amended Financial Regulations and Personnel Regulations DC3/6
DC3/7
9. Review of CRL Budget Plan for 1964/65 and Determination of the Level of the General Operating Fund Contributions DC3/8
10. Election of Chairman and Vice Chairman for the ensuing year
11. Selection of dates for the 4th meeting of the Directing Council
12. Other Items of business

Agenda Item #2

The minutes of the second Directing Council Meeting, 15-16 November, 1962 were approved as presented.

Agenda Item #3

The Report of the Technical Committee (Document DC3/1) was presented.

Concerning the suggestion in paragraph 2 that provision be made for the support and guidance in their subsequent careers of the cadre of local physicians assigned to the CRL, Dr. Choudhuri expressed his concern for the future of these doctors since at the present time, the Government has not made any plans for their career development after they complete their service at the CRL. The Directing Council considered that the future placement and utilization of these physicians was a proper subject for action by the Coordinating Committee of the CRL. The Directing Council accordingly referred this subject to this Committee and wishes to be kept informed of the results of the deliberations.

Dr. Boynton raised the question of setting up studies to measure the effect of the proposed Dacca water supply on the incidence of cholera in the population served. This water installation is expected to be completed in 6 years, allowing opportunity now for adequate base line observations to establish the effect, if any, of this sanitary engineering improvement on controlling cholera. This was considered as proper matter for discussion at the next meeting of the Technical Committee and was accordingly referred for its advice.

The Report of the Technical Committee was then accepted and, after an inspection of the Laboratory activities, the general program was approved. The Directing Council expressed appreciation to the Technical Committee and the Panel of Advisors for the work they have done.

Agenda Item #4

The Director's Scientific Report (DC3/2) was considered. The studies on the tetracycline therapy of cholera were discussed, as were the studies of the treatment of cholera by bacteriophage. Mr. Worth pointed out that the type of studies that are being conducted by the CRL had tremendous publicity value and offered the assistance of the SEATO Publicity Staff for this purpose. The Directing Council concurred with Mr. Worth and expressed the sentiment that the scientific findings of the laboratory should be presented first through the scientific press, and that thereafter general publicity would serve a useful purpose, particularly in helping to recruit qualified investigators and in making widely known the quality and extent of the scientific work which is being performed.

The Director's Scientific Report was then adopted with an expression of warm appreciation to the Director and his staff for the progress made in the last year.

Agenda Item #5

The Director's Administrative Report (DC3/3) was considered. The extension of the agreement between AID and GOP to June 30, 1967, was noted and welcomed. Mr. Worth commented on the satisfactory balance of administrative and technical personnel as demonstrated in the present establishment. Regarding the recruitment of a Water Biologist, he suggested that he determine through the French participants in SEATO whether or not qualified personnel might be found in French scientific circles.

The Directing Council expressed concern regarding the insurance of continuity and noted the lack of planned personnel replacements. It recommended that the phasing of replacements be given urgent consideration by the authorities concerned so that the loss of multiple key personnel at the one time should be avoided.

The Directing Council also notes with concern the fact that the planned development of the program of the CRL is likely to be hampered by the lack of physical space in the Laboratory buildings. It notes with pleasure the last paragraph in the Director's Administrative Report on physical facilities which suggests the integration of the CRL program with the proposed development of medical, clinical, and teaching facilities in East Pakistan. It was hoped that the GOEP would be able to give consideration now to making additional physical space available to the CRL project until such time as the planned new facilities become available.

Discussing the problem of transportation, Mr. Worth requested a list of CRL vehicles detailing their present mileage, model and year of purchase so that a program for vehicle replacement could be developed.

The Directing Council notes the urgency of providing a system of radio communication to support the important field studies now underway, and gratefully accepted the offer of Mr. Worth to look into the possibility of the SEATO Trade Training Centers perhaps developing the necessary equipment. It was hoped by the Directing Council that the GOP would be able to grant immediately a licence for any wireless system as soon as it becomes available.

The Directing Council notes with regret the problem posed by the present wording of the agreement concerning customs duties and sales taxes and fully supports any action that the CRL can take toward obtaining exemption certificates.

The Directing Council unanimously approved the recommendation to purchase Dr. Gordon's vehicle for the laboratory.

Mr. Worth, in noting the Director's comments on water transport, made reference to the jet boat developments in New Zealand and would seek further information on this subject.

The Directing Council then accepted and approved the Director's Administrative Report.

Agenda Item #6

The Director's Financial Report (DC3/4) and the revised plan for 1963/64 budget were presented and discussed. The Council noted that considerable variation had been necessary in the original allocation to some subheads of the budget for the CRL Operating Fund. The main increase was in Personal Services originally budgeted at Rs120,000 and now estimated to require Rs300,432. The reasons for the increase are:-

- (1) The engagement of additional personnel to staff, the clinical research ward,

- (2) a general increase in salaries of 10% to offset cost of living rises and to keep in line with an equivalent general increase in East Pakistan,
- (3) an increase of 25% in the salaries of professional and executive staff to compensate for abolition of overtime payments to existing staff and to attract suitably qualified persons to these posts.

Other increases have been found necessary in the allocation for Contractual Services and Supplies and Materials.

Since experience has shown it has been possible to reduce the allocation for Travel and Transportation, Rent and Communications, Printing and Equipment, the above increase can be met by transfers of allocations within the overall ceiling of the budget, i.e. Rs420,000 in contributed funds and Rs35,432 in savings carried forward according to Section D, paragraph 1.e. of the Revised Agreement. The Council accordingly approved the revised allocations set out in Appendix VII to DC3/4.

The Director's Financial Report was then approved.

Agenda Item #7

The Audit Report and the Director's Comments were accepted and approved.

Agenda Item #8

The Personnel Regulations were presented at the second Council Meeting and as later amended were accepted and approved by the Directing Council.

At this point, Dr. Boynton drew attention to the payment of allowances by AID to US personnel. He raised the question of the impact on the staff morale of the restrictive interpretation of the agreement between AID and the GOP whereby the support of US personnel was considered not to include allowances. He pointed out that it was necessary for the auditors to have a clear understanding whether or not it is the intention of the Directing Council that allowances be included in the concept of "support". The Directing Council confirms that its intention and policy is that the basic emoluments, allowances and support of personnel recruited outside Pakistan will be strictly in accordance with the policies of the respective governments for their nationals.

British and Australian personnel are receiving emoluments accordingly and for US personnel the basic emoluments, allowances and support of persons employed by the CRL should be equivalent to those applying to regular AID employees as stated in Section D paragraph 3 of the Agreement. In the case of the substantive Director, for example, the NIH has confirmed that the intention of the original and existing contract was that an educational allowance should be paid to the Director. The Directing Council accordingly brings this omission to the notice of AID.

The Directing Council is also of the opinion that the present arrangements for the conclusion of the Director's contract with the CRL are undesirable in principle and

administratively unsound. Accordingly, the Directing Council resolves that the Chairman, on behalf of the Directing Council will sign any future contracts or amendments of existing contracts with the Director. This will mean that the future contracts between the CRL and its Director will be with the Directing Council and will in no way invalidate the Revised Agreement, Section C 1 and 2, whereby the Director is selected and assigned by the NIH and has power to appoint and remove personnel and to execute contracts with persons employed by the CRL.

The amended Financial Regulations were then reviewed and were approved as presented. The Directing Council requests however that an outline description of all accounts to be kept in accordance with the provisions of paragraph 4.1, including records of stores, will be prepared by the Director as soon as possible and annexed to these regulations.

Agenda Item #9

The Directing Council gave detailed consideration to the budget proposals and noted that the expenditure from the General Operating Fund in 1963/64 are likely to use up all available funds, namely Rs455, 432. Considering the fact that the Clinical Research Section wards are now in full operation, that field operations have started on November 1, and that there has been an increase in the NIH research funds which would call for a compensating increase in supporting costs, the Council feels that an increase of 10% in general operating funds available for the next fiscal year is justified and therefore recommends that the Operating Fund should be at the level of Rs500,000. In the absence of authority for the representatives of the two participating nations to approve this level of the General Operating Fund at this meeting, the Directing Council could not approve this figure at the meeting.

The Directing Council accordingly strongly recommends, for consideration by the two contributing Governments, the provision of Rs500,000 for the General Operating Fund for the fiscal year 1965. When the Director has received the decision of the contributing nations on this recommendation he will circulate a revised budget for approval by the Council members, out of session.

Agenda Item #10

The election of the Chairman and Vice Chairman for the ensuing year was considered. It was proposed by the Chairman and seconded by Mr. Worth that Dr. Ralph E. Knutti be elected Chairman for the ensuing year. This was unanimously agreed. Dr. Z.A. Choudhuri, proposed by the Chairman and seconded by Dr. Knutti, was unanimously elected Vice Chairman.

Agenda Item #11

It was agreed that the date for the next meeting would be decided by the Chairman and the Director in consultation with the members of the Council seeking for an acceptable date during the last half of November or early December.

Agenda Item #12

The Chairman proposed and the members of the Directing Council concurred that appropriate tribute should be recorded in the minutes to express the profound admiration of the Directing Council of the part played by the late Dr. Joseph E. Smadel

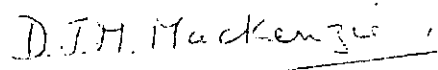
in establishing and developing the Cholera Research Laboratory. The Chairman of the meeting was requested by the Directing Council to express these sentiments by letter to Mrs. Smadel.

The Directing Council observes with high favor the remarkable progress that has been made in the last two years in the development of the Laboratory, and it wishes to commend warmly the Director and the Staff on the attainment of the goals to date. Further, the Directing Council, strongly hopes that it may be possible for the Director to continue in this position beyond the expiration date of his present contract.

The meeting adjourned at 1715, November 19, 1963.



Dr. Abram S. Benenson
Secretary



Dr. D.J.M. MacKenzie
Chairman

PAKISTAN-SEATO CHOLERA RESEARCH LABORATORY

Fourth Meeting of the

DIRECTING COUNCIL

Dacca, East Pakistan - January 18-19, 1965

DIRECTOR'S SCIENTIFIC REPORT

DIRECTOR'S REPORT

The past year has witnessed the maturation of the CRL into a functioning research laboratory; our level of effort is now limited by our financing and our physical facilities.

Research studies during the past year are best divided into five general functional areas, each of which involves the collaboration and participation of two or more working sections: (1) studies on the patient and the disease; (2) the pathogenesis of cholera; (3) studies of the vibrio; (4) community studies; and (5) last, but far from least, the vaccine study.

(1) The cholera patient and the disease:

The CRL ward facility has provided the opportunity to evaluate therapeutic regimens adapted to the epidemic situation. These procedures are intended for application in endemic areas where qualified physicians and equipped laboratories are few and far between. Our methods received a critical test during communal disturbances in January 1964, when cholera appeared in epidemic fashion among restricted population groups. The ability of our staff to successfully handle a large number of patients encouraged us to approach the Director of Health Services of the Government of East Pakistan with the suggestion that the CRL be designated as the official cholera treatment center for the Dacca area. This was desirable because of the paucity of cholera patients for study between outbreaks of disease. Our proposal was accepted and is the present practice. To move cholera suspect patients to our facility, the CRL maintains an ambulance at the Sir Salimullah Medical College Hospital (formerly called Mitford Hospital), where persons are accustomed to seek treatment. The efficacy of simplified therapeutic regimens is under continual test in the small field hospital in the Matlab vaccine trial area where a Pakistani physician/nurse team operate independently with no laboratory equipment.

The opportunity to observe all suspect cholera patients on admission has emphasized the importance of a group of cases, called for want of a better name, "non-vibrio cholera"; no vibrios are isolated from these cases or no evidence of vibrio infection can be detected, yet the clinical findings on admission are indistinguishable from those seen in the patients with typical cholera infection. It is possible that this dehydrating syndrome, if untreated, can have as high a mortality rate as typical cholera; the syndrome and its etiology require better definition.

Electrocardiographic and circulatory studies suggest interesting possibilities in the pulmonary area for further exploration. With our present therapeutic regimen, we no longer see the pulmonary edema traditionally associated with cholera; extension of studies in this area is projected for early 1965 when a team from the Columbia University College of Physicians and Surgeons will undertake studies on the pulmonary circulation of the cholera patient.

In diagnosis of V. cholerae infection, the use of the darkfield technique has proven a means of almost instantaneous, specific diagnosis on the majority of cholera patients.

Studies of intestinal absorption function in diarrheal states have shown that infection with V. cholerae and with other organisms results in transient, marked

interference with absorption of xylose, vitamin B12, and folic acid. This finding, which suggests that the absorption defect in cholera is much broader than that for sodium, opens new lines for investigation.

(2) The Pathogenesis of Cholera

Studies of possible predisposing factors (potassium depletion, folic acid and B12 deficiency, etc.) yielded negative results.

Studies of the host-parasite relationship, designed to elucidate how the cholera vibrio exerts its adverse effect on man, are presented under the pathogenesis of cholera. On a working trip here from the National Institutes of Health, Dr. Leonard showed that cholera stool filtrates may contain a heat-stable factor which has the same effect on the frog heart as digitalis compounds, a phenomenon which is associated with cell wall permeability. Studies carried out by Dr. Craig, who is here on a special NIH Fellowship, have demonstrated the presence of a heat-labile factor in cholera stools which produces capillary permeability and induration twenty-four hours after injection into the skin of a guinea pig or rabbit. This factor can be produced in vitro under properly defined conditions. Of great importance is the observation that this toxic effect can be obliterated by the serum of convalescent cholera patients, but not by the serum of rabbits injected with live cholera vibrios or of humans inoculated with commercial vaccine, despite the presence in these sera of high agglutinating antibodies derived from these procedures.

The relation of agglutinating antibodies to the protection of man or animals is still unclear. A micro technique has been developed which gives agglutinating antibody levels indistinguishable from those with standard techniques. This new technique will be of great value in community studies.

Observations on monkeys continue to provide clues for the study of cholera in human beings. Of great importance are two new findings: one, that infection with V. cholerae may persist within the upper gut despite consistently negative rectal swabs; and the other, that infection of liver and bile occurs after simple oral challenge. This does not appear to be a consequence of retrograde infection, but probably depends on portal vein bacteremia since infection occurs even after the bile duct has been ligated. No techniques have yet been developed for producing predictable disease in the monkey.

Physiological studies of the upper intestinal tract in human infection with V. cholerae have begun. Early findings suggest increased secretory activity of the duodenum, upper jejunum and/or pancreas. The persistent duodenal infection has been confirmed in one human case.

(3) Vibrio Studies

The emphasis in the Bacteriology Laboratories has been primarily directed toward the support of field and clinical studies diagnostically. Towards this end it has been important to critically review the ability of our techniques to detect the presence of vibrios, particularly in the carrier, and to determine any deleterious effect of delay in transit. This has resulted in the isolation of non motile vibrios; a stable non motile variant would provide a valuable tool for serological studies. Considerable emphasis has been placed on methods of recognizing the El Tor type of vibrio since this has been isolated in the periphery of our working area but not within it. Typical El Tor strains have been isolated in the Chittagong district in 1963; in September 1964, classical El Tor vibrios were received from the

Rangpur area in the north west corner of the province. Using chicken cell hemagglutinations for detection has brought to light the presence of cholera vibrios which hemagglutinate chicken cells but behave as classical organisms in all other respects.

Bacteriophage Studies have been conducted largely from the point of view of their value in providing markers for epidemiological purposes. These studies have disclosed that Group IV insusceptibility, the most generally accepted criterion of the "El Tor Vibrio", is a matter of quantitation. Studies have been carried out bearing on the possibility that a prophage may be the diarrhea provoking factor; no promising leads have emerged.

Anti-biograms of locally isolated organisms have been performed to provide guidance to the clinicians in selecting therapeutic agents. They confirm the choice of the tetracyclines for the therapy of the cholera, and suggest that chloromycetin may also prove to be of value.

(4) Community Studies

The aim of community studies is to describe the setting in which cholera occurs. For the past year, Dr. and Mrs. Glasse have studied a rural population providing information on cultural organization and attitudes of people towards disease. Their first hand observations of village life are expected to give insight into the facts involved in the fecal-oral transmission of disease.

To study population and environmental factors involved in the spread of cholera, and to estimate disability associated with infection in a defined population group, families of hospitalized cholera patients have been observed.

A community which had a sharp outbreak of cholera in January, 1964, was selected for a longterm study of cholera edemicity. This provides an opportunity to observe the dynamics of other infections, as well as to search for carriers or other location of cholera vibrios in the interepidemic period.

Studies of ruminants as possible reservoirs of cholera vibrios have been completed with the finding that many ruminants have agglutinins against cholera vibrios but these can be completely absorbed by noncholera vibrios. The rumen frequently contains noncholera vibrios.

Attempts to correlate water with infection in this endemic setting continue to give essentially negative results. Interest continues in the possible role of food, particularly methods of rice cooking which may allow water containing V. cholerae to achieve an infective dose.

(5) Vaccine Study

The vaccine study being carried out in a group of 23 villages in Matlab has involved all sections of the laboratory. Significant protection has been demonstrated during the first 6 months following injection of a commercial vaccine of high potency. The vaccine study is currently being extended in 35 additional villages using three preparations: the same cholera vaccine as was used last year, a purified Ogawa preparation, and an alum-precipitated tetanus toxoid as control. The availability of purified vaccine is an excellent example of international

cooperation. The original material, called a practical antigen, was prepared by Dr. Y. Watanabe at the Kitasato Institute, Tokyo. At our request, this material was flown to Galveston, Texas where Dr. W. F. Verwey extracted a purified fraction which produces a single line on agar diffusion, but retains very high mouse protective potency and relatively low reactivity. It was then taken to West Point, Pennsylvania, where it was lyophilized by Merke, Sharp and Dome. The vaccine was put into the field, using the same general methods as last year, after preliminary testing on laboratory personnel among whom no significant systemic reactions occurred. The same protocol used in the previous trial is being extended. Last year the acceptance rate was 51.7%. However, the response to the present campaign has exceeded 80%, an interesting change in attitude of the population towards our study group.

* * *

The program of work is the reflection of the personnel available to the laboratory. In the past year there have been many changes in staff. In the Clinical Research Section, Dr. Robert S. Gordon, who had been here since October, 1961, functioned as Scientific Director and, for a while, as Acting Director, departed 10 April 1964. This section also lost the services of Dr. Jalaluddin Ahmed on 25 July, 1964. Dr. Shamsuz Zoha, who was one of the first Pakistani physicians deputed by the Government, returned to Government Service in August, 1964, but has been replaced by Dr. Md. Shamsul Islam. The section has also gained the services of Dr. Ally Begum and Dr. Zabedul Huque.

In the Epidemiology Section, Dr. Robert Oseasohn has taken over from Dr. Joe L. Stockard, who departed 24 October, 1963. Dr. A. Q. Khan, who had been with us since August, 1962, left on 24 July, 1964 to become the Director of the Central Malarial Institute. Dr. Md. Fahimuddin, former Director of Public Health, East Pakistan, continues to serve as consultant and active participant in epidemiology projects; data processing has been efficiently performed by Mrs. Johanghir and Messrs. Chowdhury and Hussain.

In the Bacteriology Section, Mr. J. Brennan left on 2 March, 1964 to return to the University of Edinburgh. Dr. R. Akbar, who had previously been in the Clinical Research Section, has been spending the bulk of her time in bacteriology. Dr. John P. Craig, Assistant Professor of Microbiology, Downstate Medical Center, State University of New York, Brooklyn, New York, joined on 9 January, 1964 as a Special Fellow (NIH) and has been working in both the epidemiological and microbiological aspects of cholera.

Mr. Robert Freise joined as Executive Officer on 29 January, 1964.

A notable advance during the year has been the despatch of the first CRL personnel for foreign training. Mr. Imdadul Huq, Assistant Bacteriologist, is currently studying for a Diploma in Bacteriology at the London School of Tropical Medicine and Hygiene; Mr. Sayed Ahmed Khan is a graduate student in Sociology at Western Reserve University. Mr. Syed Iqbalul Hasan is working towards a graduate degree at Jefferson Medical College, Philadelphia. Since August, Mr. M. R. Bashir has been at NIH for on-the-job training, furthering his capabilities in research administration.

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FOR DETAILED TECHNICAL REPORT, SEE CRL ANNUAL PROGRESS REPORT, 1964.

PAKISTAN-SEATO CHOLERA RESEARCH LABORATORY

Fourth Meeting of the

DIRECTING COUNCIL

Dacca, East Pakistan - January 18-19, 1965

REPORT OF THE TECHNICAL COMMITTEE

Pakistan-SEATO Cholera Research Laboratory

Fourth Meeting of the

Directing Council

Dacca, East Pakistan

January 18-19, 1965

Final Report of Technical Committee

Final Report of Technical Committee
Pakistan-SEATO Cholera Research Laboratory

November 23-25, 1964

Introduction

The members of the Technical Committee met at CRL in Dacca on November 23, 24, and 25 to review the past year's work and plans for the future. In addition to the Committee members (Drs. Robert Cruickshank, A.K.M. Abdul Wahed and Colin MacLeod), Drs. Theodore Woodward and Robert Phillips were present as advisors. Dr. Clifford Pease, Chairman of the NIH Cholera Advisory Committee, Dr. James Goddard, Director of the Communicable Disease Center (CDC), and Dr. Alexander Langmuir, Chief of the Epidemiology Section of CDC were also present throughout the meetings as observers. Dr. MacLeod was chairman.

On November 24 at Matlab Bazar, one of the medical launches loaned to the CRL by the Government of Pakistan was christened the JOSEPH E. SMADEL, in a simple ceremony attended by the Committee, its advisors, staff of CRL, and local dignitaries.

I. - General Comments

The following subjects were reviewed both from written reports and oral presentation by staff members:

A. The Cholera Patient and the Disease

- (1) Summary of Ward Activities
- (2) Treatment of Epidemic Cholera at CRL, January 1964
- (3) Treatment of Cholera
- (4) Nonvibrio Cholera
- (5) Laboratory Diagnosis of Cholera
- (6) Pulmonary Hypertension
- (7) Malabsorption During and After Recovery from Acute Intestinal Infection

B. Pathogenesis of Cholera

- (1) Twenty-four Hour Exchangeable Potassium Content of Cholera Patients
- (2) Further Data on Urinary Electrolyte Excretion in East Pakistan
- (3) Serum Vitamin B₁₂ and Folic Levels in Patients with Cholera
- (4) Digitalis-like Activity in the Stool of Patients and Experimental Animals Infected with Vibrio cholerae
- (5) Effect of Cholera Stool and Culture Filtrates on the Skin of Guinea Pigs and Rabbits

- (6) Immunity in Cholera Patients
- (7) Development of a Microserological Method for Vibrio Agglutinins
- (8) The Rhesus Monkey as an Experimental Cholera Model

C. Vibrio Studies

- (1) Diagnostic Bacteriology
- (2) Bacteriophage Studies
- (3) Antibiotic Sensitivities

D. Community Studies

- (1) Social Groupings in Rural East Pakistan
- (2) Attitudes to Health and Disease in Rural East Pakistan
- (3) Water Study
- (4) Family Studies
- (5) Rayar Bazar Diarrhea Morbidity Study
- (6) Vibrio Infections of Ruminants

E. Cholera Vaccine Study

- (1) Cholera Vaccine Field Trial in Rural East Pakistan
First Six Months of Observation

The Director's report states that during the past year CRL has matured "into a functional research laboratory." The Director's report goes on to describe the areas in which scientific maturation has occurred.

Following a review of the current and projected CRL activities we have come to the conclusion that CRL has indeed matured scientifically. Full credit should be given to the Director and his staff. SEATO, the Government of Pakistan, and NIH can be proud of CRL.

It is of interest to note that during the past ten years, mainly through the efforts of NAMRU-2 and CRL, more has been learned about cholera than during the preceding 50 years. The indications are that we are well on the way to its control. Joe Smadel's vision is coming to fruition.

The following report makes no attempt to be comprehensive about the activities of CRL, but does attempt to select areas of its activities which either are of current importance or should be given more attention.

Our concerns are not different than those that have always plagued scientists confronted with large areas of ignorance: "In the face of what we don't know, what should we do first?"

First priority at CRL has been given to evaluation of a cholera vaccine, prepared by a commercial firm in the U. S. and assayed for mouse protective potency by Margaret Pittman and her staff at DBS, NIH. Preliminary evidence collected during the past year indicates that the cholera vaccine shows a protective ratio of about 5:1 (i.e. cases in the control group: cases in the vaccinated). The number of cases is still small and therefore the observations need to be continued for a longer period - perhaps 3 to 4 years - to determine the duration of immunity and the rate of its fall-off.

During the present year a test has been begun of the purified Watanabe-Verwey antigen prepared from an Ogawa strain. This has required a large extension of the vaccine study in the Matlab area, since observations are being continued on the population immunized last year with whole bacterial cholera vaccine and the TAB control vaccine. The new extension includes not only the purified Watanabe-Verwey antigen but also the cholera vaccine used in the first year's study and the tetanus ~~vaccine~~ ^{serum}, given to new population groups. This means not only a test of the purified material but also an extension of the present year's vaccine trial to new groups.

This extension of the vaccine trial is bound to stretch the resources of CRL and additional epidemiological help will be needed to ensure careful case finding and the collection of other data during the follow-up period.

The Technical Committee views with great interest and pleasure the participation of the Communicable Disease Center (CDC) of the U.S. Public Health Service in the work of CRL, because this is an excellent opportunity for epidemiological training in a place where cholera has high endemicity, where infection with the El Tor varriant has already occurred, and where excellent basic scientific resources are available. The interest of CDC should contribute greatly to the work of the laboratory and the control of cholera.

In the present state of its work, it may be premature to suggest studies for the future. However, the following general areas of interest would seem appropriate.

We are only at the beginning of an understanding of the pathogenesis of cholera and it is of the greatest importance to work it out, not only with the prevention and treatment of the disease in mind but also as a stimulus and object for studies on gastrointestinal physiology. It is well to emphasize that the cause of diarrhea is not known - whether it be due to derangement of diffusion, of secretion or of absorption, or a combination of these. This important question is unlikely to be answered except by studies in man. A finding during the past year that may have significance for understanding pathogenesis is the toxin and method of testing discovered by Dr. John Craig at CRL.

Great strides have been made in treatment of cholera by replacement of fluid and electrolytes and the use of antibiotics through the work of several laboratories. The case mortality in the best hands is very small and even under relatively primitive conditions was as low as about 3.5% as in the treatment of 117 cases in the Shaitnal area. It remains to develop the information, however, which will permit modern cholera therapy to be carried into the villages and rural areas of East Pakistan and other similar areas of South East Asia.

The studies in the Matlab area on cholera vaccination are most promising and the next three or four years should bring the basic information on effectiveness and also on duration of immunity. Immunity may last longer than commonly believed as evidenced by the firm information that in this endemic area the disease is found predominantly in children.

It has been suggested that CRL undertake a test of the effectiveness of locally produced cholera vaccines. We believe this not to be, at the present time, a proper activity for CRL, and would greatly prefer to see it concentrate its activities on vaccine improvement through isolation and testing of the protective antigenic components of the vibrio, or improved whole bacterial vaccines and dosage schedules. It is also essential that CRL should concentrate attention on the relationship of animal protection tests to the effectiveness of vaccines in controlled trials in man.

An additional area of study in which CRL has made excellent progress is the epidemiology and definition of non-choleraic diarrheal disease. The fine studies of the laboratory have already shown that a disease of unknown etiology having many of the characteristics of cholera is endemic in the area. Intensive studies of the etiology and epidemiology of this non-choleraic disease are of great significance in their own right as well as for definition of the protective effect of cholera vaccines. The considerable incidence of this disease and its mimicry of cholera emphasize the necessity of the most careful etiological studies of all cases of diarrheal disease in the vaccine trial studies.

One of the deficiencies of CRL is that a senior microbiologist, experienced generally in diagnostic work, in the biology of the vibrios and in immunology, has not been available during the past year. It is hoped that such a person can be recruited in the near future. Dr. Cruickshank will attempt to recruit a microbiologist from the United Kingdom and will report shortly on his efforts. Despite the lack of an experienced microbiologist to spend full time in supervising the diagnostic laboratory, highly creditable work has nonetheless been carried out especially in early and improved methods of diagnosis by Dr. Benenson, using dark field microscopy and microserological methods.

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In the following pages there are reviewed some of the more significant studies carried on at CRL during the past year. Recommendations follow each section.

II - Pathogenesis of Cholera

A. Effect of cholera stool and culture filtrates on the skin of rabbits and guinea pigs

Dr. Craig has made some highly interesting observations on a "toxin" present in cholera stools but not in the stools of diarrheal cases of non-cholera etiology. He has also demonstrated that the toxin is present in cultures grown in shallow layers of broth containing 5 per cent peptone. The toxic action is shown by reactions to intradermal injections in rabbits or guinea pigs 24 to 48 hours after injection. The lesions can be made more easily visible by intravenous injection of Pontamine Sky Blue, which concentrates in the indurated inflamed lesions.

Convalescent serum, but not acute phase serum, from proved cholera cases neutralizes the toxin. Serum from other diarrheal patients does not neutralize it, nor does the serum of animals or man who have been immunized with cholera vaccines.

The toxin may be related to the "endotoxin" studied by De.

Dr. Craig leaves Dacca in a few days and expects to continue his studies at Downstate Medical School in Brooklyn employing culture filtrates and materials sent to him from CRL. It is planned also to continue certain aspects at CRL.

Since Dr. Craig's discovery may well represent a breakthrough in elucidation of the pathogenesis of cholera it is desirable that they be furthered as rapidly as possible. Specifically the toxin should be prepared in large batches and purified. The following critical studies can then be carried out: behavior to toxoiding; antigenicity in animals and in man; protective effect against V. cholerae infections in the mouse, the rabbit laboratory models and the rhesus monkey. Ultimately it may be desirable to immunize man to test for protective effect against the natural disease.

It is recommended that appropriate steps be taken to exploit as rapidly as possible the studies with the Craig toxin suggested above.

B. Cholera infections of the rhesus monkey

Two new findings appear to be of considerable importance. The first of these is that infection with V. cholerae may persist in the upper small bowel even though rectal swabs are consistently negative for the vibrio. In addition, the vibrio can be recovered from the bile tracts and from the liver

after oral challenge. Infection does not seem to be retrograde because it occurs after ligation of the bile duct. This finding suggests that the organisms reach the liver and bile tracts either through the portal circulation or via lymphatics.

That these findings may be related to the human disease is indicated by the findings in one human case that persistent duodenal infection may occur. These studies are being expanded. They are considered important because of the recognition of the upper small bowel as an important site of infection, and also because of the recognition of infection outside the bowel itself.

It is recommended that these studies on pathogenesis be continued in both monkey and man.

III - Protective Effect of Cholera Vaccines

The field trial of cholera vaccine in the Matlab Thana area has been in operation for almost one year. Approximately 50 per cent of the population in 23 villages is participating in this carefully controlled study. A highly mouse-potent U.S. commercial vaccine is being compared with a placebo consisting of typhoid-paratyphoid vaccine. A close surveillance of the 14,000 persons in the study is being maintained by regular visits at least weekly and often more frequently from trained health workers of the field team. Close supervision of the field workers is provided by Dr. Robert O. Oseasohn.

During the first six months of the study a moderate incidence of cholera occurred in the study area. The attack rate for diarrheal disease bacteriologically confirmed as due to V. cholerae in the vaccinated group was 1.0 per 1000 persons, whereas the rate in the control group was 4.8. While the total numbers of cases involved, 7 versus 34, is still too small for final conclusions the results are encouraging.

Beginning in the fall of 1964, the cholera vaccine field trial was extended to 33 additional villages in the same general area. The response has been excellent with 80 per cent of the population participating. The purified Watanabe-Verwey Ogawa antigen is being compared with the currently used U.S. cholera vaccine and with tetanus ~~vaccine~~ ⁶²³⁸¹⁹ in a study conducted in a manner otherwise identical to the first trial. It is expected that 20,000 or more persons will participate.

It is recommended that these two trials be continued for an extended period to be determined primarily by the results as they unfold. It is of primary importance to determine whether or not a well-defined parenteral vaccine will confer protection against diarrhea caused by V. cholerae and to measure the duration of such protective effect. Therefore, the study might well be continued for several years if the presently observed beneficial effect persists.

IV - Treatment of Cholera

A. Water and electrolyte loss and replacement

Ideal therapy of cholera includes replacement of water and electrolyte losses in the dejecta. Studies at the CRL laboratory confirm that intravenous replacement of Na^+ , K^+ , Cl^- and HCO_3^- ions is apparently sufficient in the vast majority of instances; Ca^{++} , Mg^{++} , PO_4^{--} , SO_4^{--} , etc., losses do not appear to be significant in the uncomplicated case. CRL studies have shown that the cholera patient tolerates moderate over-and under-hydration as well as mild acidosis.

It is recommended that the current method of rehydration be objectively quantitated by plasma gravity, central venous pressure, plasma CO_2 etc., techniques.

Oral replacement of electrolytes and water could be studied very well in the CRL wards and useful regimens tested in the field.

It is suggested that rapid NaHCO_3 vs Na Lactate therapy of acidosis be studied.

Studies now underway on fluid replacement via other parenteral routes than the intravenous (peritoneal, marrow, etc.) should be completed.

B. Gastro-Intestinal absorption

The excellent studies of absorption should be continued. Wherever possible T_m (transport maximum) values should be obtained in the early, late and convalescent phases of the vibrio and non-vibrio cholera.

At some future time a cholera patient may require abdominal surgery. Full plans should be made in writing for the studies that might then be undertaken.

It is noted with approval that comparison of electrolyte losses in vibrio and non-vibrio cholera is about to be published.

C. Antimicrobial therapy

The 1960 Conference proposed that antibiotics be appraised in cholera patients under properly controlled conditions. Data prior to this time, although suggestive of therapeutic benefit, were conflicting. The investigators of the Cholera Research Laboratory addressed themselves to this

important problem and have demonstrated clearly that the broadly acting antibiotic, tetracycline, is beneficial in two important ways. It lessens the volume of purging approximately one-half, thereby reducing proportionately the requirement for fluid replacement. Secondly, the time of fecal shedding of the vibrio is shortened fifty per cent when compared with control subjects. Thus, tetracycline simplifies treatment significantly and its antibacterial action has important epidemiologic implications.

The initial findings showed that tetracycline was effective when given intravenously. Equally beneficial effects followed its oral use. Preliminary studies indicated that the non-absorbable antibiotic, Humatin, has similar therapeutic value, but more recently its effect appears less predictable. In a few cases chloramphenicol palmitate has not shown efficacy by the two parameters under appraisal.

In view of the confidence which adequate fluid replacement provides in the management regimen of cholera patients it is suggested that the following be evaluated under controlled conditions:

1. A single large oral dose of tetracycline.
2. A single daily dose of tetracycline.
3. Continuation of the Humatin study.
4. Appraisal of non-absorbably sulfonamides given on a continuous daily divided dose basis and on a daily one-dose regimen. An obvious limitation, however, to the use of sulfonamides is the high level of sulfonamide-resistance of classical cholera vibrios in East Pakistan. A combination of sulfa-drug and streptomycin might also be tried.
5. A single large oral dose of chloramphenicol based on 50 to 75 mg. per kilo body weight for adults.
6. A dosage regimen in children of chloramphenicol providing an initial dose of 125 mg. per kilo and a daily dose of this magnitude. It must be remembered that chloramphenicol palmitate preparation has certain limitations. Blood levels of chloramphenicol should be performed. This antibiotic would appear to have little therapeutic future in cholera.
7. Determination of blood levels be made for "non-absorbable" drugs used in therapy. It should be noted that whether a drug is "absorbable" has been determined in normal people and that the gut in cholera may behave differently. Even though during disease the vibrio appears to be confined to the gut lumen, tissue levels of antibiotic may be required for optimum effect. This point of view is emphasized by the findings in experimentally infected monkeys that the vibrio can be recovered from the biliary tract and from liver parenchyma.

V. - Bacteriology and Immunology

A brief review of some of the highlights in the bacteriological and immunological researches is grouped under the following headings and is followed by specific recommendations.

A. Laboratory diagnosis of cholera

A rapid method for the laboratory diagnosis of cholera by dark-ground examination of stools or young bile-peptone cultures for actively motile vibrios and their immobilization by specific antiserum has given positive results in some 80% of stool specimens and in over 90% of 3-4 hour enrichment cultures. This method can be applied in the ward side-room and give a very early presumptive diagnosis.

Immunological studies have shown that specific agglutinins appear after 3-4 days illness, reach a maximum titer in 10-15 days and decrease fairly quickly in convalescence. Pre-infection agglutinins, on the other hand, persist for a much longer period. A micro-method for estimating agglutinin titers requiring only small amounts of blood obtainable by finger-prick, has given results that correlate well with the tube method. This new method should be particularly useful in young children and at field stations.

In view of the recent introduction of El Tor vibrio infections into East Pakistan a battery of laboratory tests is needed to differentiate between classical V. cholerae and the El Tor variant. Studies have shown that tests like the chicken haemagglutinin reaction and the resistance of El Tor vibrios to Mukerjee Group IV phage are not per se entirely dependable and must be assessed in association with other tests.

B. Sources and vehicles for the cholera vibrios

In a continuing search for extra-human sources and vehicles for the cholera vibrio, a large bacteriological and serological survey of domestic animals (cow, goat, buffalo and sheep) has failed to demonstrate carriers of V. cholerae but non-cholera vibrios (NCV), mostly belonging to Heiberg Group I and II have been found in the rumen, particularly of cows. Similar types predominate in water supplies.

The examination of cooked rice as a possible vehicle has elicited the interesting finding that the cholera vibrio can multiply in certain rices where salt (0.1-0.5%) has been added; it may be that left-over cooked rice, grown in areas of high salinity as in East Pakistan, could serve as a vehicle for the intra-family spread of diarrhea.

C. Non-Vibrio diarrhea

Cases of choleraic diarrhea failing to yield V. cholerae have been frequently described in the literature. A cholera-like syndrome with a fairly high incidence has been observed in the Dacca and Matlab communities in the past year. The points which in the mass, distinguish this syndrome from cholera are its seasonal incidence in Feb-May, its relative rarity in the young children and its shorter duration. Bacteriological and serological examinations have so far failed to discover a causal agent.

In the long-term community study of diarrheal diseases in a village community (part Hindu and part Muslim) in Dacca it is hoped to find some clues to the problems inherent in the epidemiology of cholera. This longitudinal study which has been operating only since February 1964 and includes a "diarrhea clinic" in the community has already produced interesting data about the diarrheal diseases, e.g. the frequency of Shigella infection. It is most desirable that the intensive effort being put into this study should be continued under epidemiological surveillance for a minimum period of 3 years.

D. Routine diagnosis

The load on the diagnostic laboratory continues to increase and over 50,000 specimens per annum are now being processed in a variety of selective media. The brunt of this work falls on 3 technicians who have to work without the supervision of an experienced bacteriologist. With the increasing complexity of the bacteriological studies already in hand or envisaged, it seems absolutely essential to have a fairly senior, medically qualified bacteriologist in charge of the section. This will not only ensure a better service, but will help the morale of the technical staff and make worthwhile contributions to the research studies.

E. Recommendations

1. The progress in the development of new methods for the laboratory diagnosis of cholera is most commendable and will doubtless be continued. The extension of immunological procedures for vibriocidal antibody and for the in vitro demonstration of the cholera skin reactive "toxin" should be encouraged.

If El Tor infection becomes more prevalent, additional markers for differentiation of this variant from V. cholerae and for epidemiological use would be helpful.

2. The occurrence of non-vibrio cholera and the inauguration of a community study in diarrheal diseases stresses the need for extension of the bacteriological and serological tests for enteropathogenic bacteria and viruses.

3. The extension of these activities makes it essential to have an experienced microbiologist to take charge of the diagnostic services and to be actively engaged in the research program.

VI. - Anthropological Studies

A. Social Groupings in Rural East Pakistan

B. Attitudes to health and disease in Rural East Pakistan

These studies in progress at the riverine community of Shaitnal during the past year have developed interesting information previously unavailable for this region. Though preliminary, they point to the possibility

that further analysis may yield information bearing on the epidemiology of cholera and other enteric and non-enteric infections, and on the most effective means of applying health measures to these populations.

Dr. Robert Glasse will leave the laboratory shortly. Mrs. Glasse will continue her studies on attitudes to health during the next year.

The following recommendations are made

1. That Dr. Glasse be urged to complete the description of the work already accomplished and that CRL provide salary for him through February 1965 to enable him to complete his writing.
2. That Mrs. Glasse's work be continued during the coming year.
3. That no further anthropological studies be undertaken pending completion of those underway and their analysis.

VII. - Research on Methods for Extension of Treatment
to the Population of East Pakistan

The CRL studies have clearly demonstrated that simple techniques for control of fluid therapy can dramatically alter the fatality rate of serious diarrheal diseases. If these techniques were adopted on a widespread basis many thousands of lives would be saved in East Pakistan each year.

In order that such benefits can be made more generally available, studies of training methods, problems of production, distribution and stockpiling of fluids for replacement therapy, and the acceptability of village treatment centers versus home care programs should be carried out to determine feasibility in various settings and the associated costs. With such data, health authorities of East Pakistan can realistically carry out the necessary planning and budgeting for a province-wide program.

It is recommended that the CRL initiate in collaboration with East Pakistan health authorities:

1. Training activities which will be directed at medical school professors, medical students, government medical officers, medical officers of rural health centers, private medical practitioners, and such other personnel as are needed during periods of epidemics and that such training activities make use of available facilities, such as the Communicable Disease Center, for the production of necessary training aids including a film or series of films.

2. Field tests on a limited basis (after appropriate training of personnel). The field trial should study the acceptability of village treatment center versus home therapy program; the value of oral replacement therapy of cholera and cholera-like illnesses.

3. Administration studies aimed at determining the costs involved in every phase of a simplified program.

VIII. - Staffing

1. Administration

It is hoped that on the return of Mr. Bashir it may not be necessary to have a U. S. administrative officer in addition to Mr. Bashir. If this proves true, the billet will be available to the scientific operations of CRL.

2. Maintenance

There is an urgent requirement to acquire or train two individuals in mechanical, electrical, and electronic and optical repair for servicing CRL equipment.

3. Vaccine evaluation studies

It was the consensus that these studies will continue for another 3-5 years in the Matlab area. One epidemiologist should be able to direct this project although it was pointed out that tripling the size of the project next year may require another epidemiologist

It was agreed that Matlab Thana offers an unusual opportunity for one or two epidemiologists in residence throughout the year. Further, it was believed that this team could profitably be supplemented for 4-12 week periods with additional epidemiologists or epidemiologists in training, such as EIS trainees.

4. Other epidemiological studies

a. Water sampling. Upon the return of Mr. Huq, Mr. Zafar should be sent to UK for 2-4 months of practical training following which he should spend 4-8 weeks visiting water laboratories in the UK and USA.

b. Rayar Bazar. This study area has been most productive under Dr. Craig's direction. Dr. Benenson plans to supervise this study for a period of time after Dr. Craig departs in December 1964. There was some difference of opinion about the value of this study if a full-time epidemiologist were not available to explore leads which the surveillance team uncovers. It was generally agreed however that an urban area, such as Rayar Bazar, should be intensively studied for 3-5 years provided adequate supervision can be provided.

c. Environmental hygiene. Dr. Michael Flynn of Australia has expressed an interest in coming to CRL for a year or two on a sabbatical to conduct a pilot study to evaluate the effect of providing modern sewage disposal and ample potable water to a whole village on the incidence of diarrheal disease rates. It was believed that such a program would be too expensive to undertake at this time. It was also agreed that, should a feasibility study be undertaken and should Dr. Flynn join the CRL staff, he should not occupy one of the NIH billets because they are in such short

supply. There should be personal discussions with Dr. Flynn about the program for environmental sanitation that he proposes.

5. Bacteriology

There is an urgent need for a supervisory microbiologist who will provide all the research projects with reliable laboratory support, particularly in diagnostic bacteriology. There is also opportunity, as well as requirement, at CRL for one or more research microbiologists. The UK representative, Dr. Cruickshank, offered to attempt recruitment of a senior microbiologist.

6. Clinical investigation

a. U.S. It was generally agreed that the present staff, and that planned for the next year, is at the minimal level in view of the very heavy clinical load and the responsibilities for conducting research. There is ample clinical material available to support further medical staff although this will probably require additional laboratory and office space.

b. Pakistani. While the staff to this date have been found generally reliable and have gained competence in patient care, only one has been found who has shown a flair for clinical investigation.

There was discussion as to the advisability, at this time, of trying to obtain a more senior Pakistani of demonstrated ability in the field of clinical investigation. It was not clear that the candidates suggested possess the required qualifications. Search for qualified candidates will continue.

c. Other. Investigators from other SEATO nations will be welcome and facilities will be provided for their support.

TECHNICAL COMMITTEE:

Dr. Robert Cruickshank

Dr. A.K.M. Abdul Wahed

Dr. Colin M. MacLeod
(Chairman)

CRL Publications

1. Greenough, W.B., III, Gordon, R.S., Jr., Rosenberg, I.S., Davies, B.E., & Benenson, A.S. Tetracycline in the Treatment of Cholera (1964) Lancet 1, 355.
2. Gordon, R.S., Jr., Ahmed, J., Akbar, R., Jamiul Alam, A.K.M., Ali, M.M., Barui, R.K., Greenough, W.B., III, Islam, M.R., Islam, M.A., Khan, A.Q., Lindenbaum, J., Rahman, A.S.M.M., Zoha, M.S. Treatment of Cholera in 1964 (1964) East Pakistan Medical Journal 8, 10.
3. Greenough, W.B., III, Cholera: Method of Pakistan-SEATO Cholera Research Laboratory. Current Therapy. (in press).
4. Benenson, A.A., Islam, M.R., Greenough, W.B., III. Rapid Identification of Vibrio Cholera by Darkfield Microscopy. Bulletin of the World Health Organization. (in press).
5. Monsur, K.A., Rizvi, S., Huq, M.I. and Benenson, A.S. Effect of Mukerjee's Group IV Phage on El Tor Vibrios. Bulletin of the World Health Organization. (in press).
6. Pakistan-SEATO Cholera Research Laboratory. Cholera in East Pakistan Families, 1962-63. Bulletin of the World Health Organization. (in press).
7. McIntyre, R., Feeley, J.C., Greenough, W.B., III, Benenson, A.S., Hasan, S.I., Saad, A. Diarrhea Caused by Non-cholera Vibrios. Am. J. Trop. Med. & Hyg. (in press).
8. Rizvi, S., Huq, M.I., Benenson, A.S. Isolation of Hemagglutinating Non El Tor Vibrios. Journal of Bacteriology (submitted for publication).

PAKISTAN-SEATO CHOLERA RESEARCH LABORATORY

Fourth Meeting of the

DIRECTING COUNCIL

Dacca, East Pakistan - January 18-19, 1965

DIRECTOR'S ADMINISTRATIVE REPORT

DIRECTOR'S ADMINISTRATIVE REPORT.

During fiscal year 1963-64, the CRL Laboratory has functioned as a well established productive research laboratory. Indeed, the level of operation is now restricted because of limitations of physical facilities and finances.

Because support provided by AID had been capricious, a letter was exchanged between US/AID, Dacca and CRL clarifying para D/3 of Agreement dated December 30, 1961 between the GOP and US/AID. The letter, dated 20 July, 1964, specifies the support to be furnished by US/AID to the CRL Operation (appendix I). This has been of great value in clearly delineating the support which can be expected. However, the laboratory cannot be certain of the support which requires approval or authorization by the USAID/P Director. No guide lines have been furnished the laboratory, but some international travel considered necessary for CRL operation has been supported while some has not; personnel allowances which had been previously provided have been discontinued based on AID interpretation of paragraph d of cited letter. This agreement can provide important administrative and financial support, but it is evident that the laboratory must retain the resources to act when AID support is not given.

PERSONNEL:

There has been a marked increase in personnel strength during the past year. (Table I). The bulk of this increase was required for the support of the vaccine trials in Matlab. During the first year of operation, 65 personnel were required; with the expansion in program which took place in September, 1964, an additional 87 personnel have been added.

TABLE 1

	Direc- tor's Office	Clini- cal Res- earch Section	Epide- miology Section	Bact- erio- logy Sec.	Water Analy- sis Sec.	CRL Ward	Admin- istra- tive Sec.	Gener- al Ser- vices Sec.	Matlab Vaccine Trial	Foreign Train- ing.	TOTAL
28 Feb. 1962	3	2	7	5	6	-	4	13	-	-	40
16 Nov. 1962	4	14	18	10	7	-	4	13	-	-	80
18 Nov. 1963	4	22	27	20	11	40	7	37	-	-	168
15 Jan. 1965	4	26	23	27	11	45	8	48	152	3	347

(more)

In addition, the CRL has been become, at our request, the cholera treatment center for the Dacca area. Since October the cholera wards at the Sir Salimullah (Mitford) Hospital have been closed, and a CRL ambulance has been stationed at the hospital to move cholera suspect patients. This has resulted in a marked increase in patient load so that despite our official rated capacity of 20 patients, there has been a daily average census of 21.1 patients in October, 34.4 in November, and 44.6 patients in December. While this has greatly increased research opportunities, it has also necessitated an increase in staff, not only on the ward, but in the General Services and in the Clinical Research Sections.

Efforts to establish the means of developing the more capable and more deserving of our employees by higher training were realized. Two men were sent to United States universities for degree work; Mr. Syed Ahmed Khan of the Epidemiology Section is at Western Reserve University, Cleveland, Ohio and Mr. Syed Iqbalul Hasan of the Clinical Research Section is at Jefferson Medical College, Philadelphia, Pennsylvania. Also, Mr. Imdadul Huq of the Bacteriology Section, is at the London School of Hygiene and Tropical Medicine, for the Diploma of Bacteriology Course, and Mr. M. R. Bashir has completed the Management Intern Training Course at the National Institutes of Health, Bethesda, Maryland, U.S.A.

Changes in key personnel during the year were :

January to Dec. 1964.	Dr. John P. Craig, Assistant Professor of Microbiology & Immunology, State University of N.Y. on N.I.H. Special Fellowship.
29 January	Mr. Robert E. Freise, joined as Executive Officer from NIH.
2 March	Mr. John J. Brennen, departed to return to University of Edinburgh.
3 April	Dr. Moslem Uddin Khan, joined the Epidemiology Section, local hire.
4 April	Dr. (Mrs.) K.M. Ally, joined the Clinical Research Section, local hire.
1 May.	Dr. (Mrs.) Shamsa Ahmed, joined Epidemiology Section, local hire.
6 June.	Dr. Zahedul Huq, joined the Clinical Research Section with post at Matlab, local hire.
24 July.	Dr. A.Q. Khan, departed to assume post as Director, Malaria Institute of Pakistan.
25 July.	Dr. Jalaluddin Ahmed, departed for foreign assignment.
25 August.	Mr. K.M. Ashraful Aziz, appointed as Field Supervisor in Matlab Vaccine Trial.
27 August.	Dr. Md. Shamsuzzoha, returned to Government Service.
4 September.	Dr. Md. Shamsul Islam, joined in the Clinical Research Section, deputed by GOEP.
13 November.	Dr. Mojibur Rahman, joined in the Clinical Research Section, local hire.
3 December.	Dr. Norbert Hirschhorn, joined the CRL as Associate in the International Research Career Development Program of NIH, assigned to the Clinical Research Section.

PHYSICAL FACILITIES:

Because of the crowding and lack of maintenance facilities, an annex to the Laboratory was erected as a semipermanent structure to house maintenance facilities and the motor pool. It was so designed that, in case of cholera epidemics and an excess number of patients, about half of the building can be converted into temporary ward facilities. The building was completed on September 10, 1964 and since October 26, 1964, it has been in continuous use as a convalescent ward.

A building was constructed in Shaitnal, Matlab Thana, to serve as the base for Dr. and Mrs. R.M. Glasse in their anthropology studies. The building was designed by the University of Engineering and Technology, Dacca, to provide a headquarters and living quarters for the Glasses during the study, which can be converted into a medical dispensary or other public service structure when the project is completed. The land for its construction was deeded to the Government of East Pakistan, and construction completed on April 30, 1964.

As reported last year the voltage regulator broke down on September 28, 1963 after having been in service only five months. Extensive communication with the manufacturers led to no resolution of the problem other than that of procuring a second voltage stabilizer to be shipped out and installed. On September 3, 1964, Mr. Everett Adamson of Black & Veitch Company volunteered his personal services to attempt correction of the problem. When the unit was disassembled, it was found that during installation in the laboratory a hacksaw blade had broken and fallen into the heart of the machine with interruption of the circuit of two coils and a short circuit of one to the core. Mr. Adamson was able to effect repairs and on October 2, 1964, the apparatus was reenergized and has worked well since. However, the extra year with unstable current has levied its toll on air conditioners so that more than half of the laboratories were at ambient humidity and temperature during the last monsoon season. A new supply of air conditioners of common manufacture with necessary spare components, has recently arrived so that it is hoped that, now that the voltage regulator is in operation, this problem will have been resolved.

All available space assigned to the laboratory is now in use. Additional space is needed for expansion of laboratory work, for storage and office personnel. Action has not been taken on combining the CRL library with that of the Institute of Public Health, pending the outcome of discussions on how that space would be utilized.

The Matlab project is headquartered in a barge, loaned to the laboratory by the Police Directorate, GOEP. Intended as a floating police station, this has been converted to provide a ward, nurses station and small specimen collecting area on the first level, and an office area, supply storage, and quarters for doctor and ward master on the upper deck. Despite extensive efforts, we have failed to have a piece of land made available to us for construction of a fixed headquarters, but the Headmaster of the Matlabganj College has permitted us to use part of his area. A hospital ward tent, lent to us by the GOEP, has been erected to serve as for patient care in case of an epidemic exceeding the capacity of the barge. This reserve was fully committed during the first week of January, 1965.

(more)

TRANSPORATION:

1. The auto fleet assigned to the CRL is now capable of supporting the laboratory effort. We have acquired, during the last year, 5 Austins, using U.K. funds. One Plymouth station wagon has been provided by the NIH as a replacement for the Chevrolet station wagon which was honorably retired for old age. A jeep station wagon, to replace one which is inoperative, also provided by the NIH, has been involved in a ship fire in transit to Dacca. A Chevrolet carryall, as approved by the Directing Council, was purchased from Dr. Robert S. Gordon at the time of his departure. Our present motor vehicle complement is as follows:

Vehicle	Model	Licence No.	Mileage 1 Jan. '65.
1. Jeep, Station Wagon.	1960	EBD-6650	63,256
2. Jeep, Utility.	1960	EBD-6651	127,301
3. Jeep, Australian Station Wagon.	1962	EBA-1585	59,399
4. Jeep, " " "	1962	EBA-1586	59,261
5. Land Rover, " "	1962	EBD-2899	36,583
6. Land Rover, " "	1962	EBD-2781	34,129
7. Carryall, Dodge.	1962	EBA-2003	27,586
8. Carryall, Chevrolet.	1961	EBA-8978	34,727
9. Austin 1100	1964	EBA-6032	10,845
10. Austin A7 countryman.	1964	EBA-6033	12,914
11. " " "	1964	EBA-6034	13,137
12. " " "	1964	EBA-7026	7,256
13. " " "	1964	EBA-7027	6,689
14. Plymouth Station Wagon.	1964	EBA-7156	3,537

EBD-7074 (Chevrolet Station Wagon and EBD-5752 (Jeep Station Wagon) have been taken out of service and disposal authorization has been received.

2 Communication by water with the Matlab Project has been made reliable, although sometimes somewhat slow, by the kind action of the Government of East Pakistan in making available to the laboratory for its use, two dispensary launches; the 'Joseph E. Smadel' and the 'Abu Baker'. These are 42 foot launches with twin diesel motors with a speed of 10 knots per hour. There is a crew of 5 on the 'Smadel' which makes regularly scheduled trips between Matlab and Narayanganj, and 5 on the 'Abu Baker' which is in

(more)

reserve and provides local transport in the area; the personnel on these boats are members of the CRL staff. We now own, by local purchase 3 14 foot fibre-glass boats with 18, 20 and 28 H.P. motors respectively. The Dowty Turbocraft water jet boat has been completely overhauled during the year and new equipment valued at £ 65, including a canopy and built-in buoyancy, has been installed, making this a more all-weather boat. A 14 ft. aluminium boat, with 28 H.P. motor, and our old small aluminium boat with 7½ H.P. motor complete our fleet.

COMMUNICATION:

A PABX 5-25 line switchboard has been installed, providing a great improvement in external communication and automatic internal dialing to 25 outlets.

The Australian Government advised us in December 1964, that they would provide a radio communication system with which we will be able to maintain contact with field stations; this will be most welcome.

ACCOUNTING:

Accounting and financial operations have functioned this year with smoothness and despatch, thanks to the conscientiousness and efficiency of our personnel, using the systems recommended in the previous year by Mr. Beglin.

EQUIPMENT & SUPPLIES:

Our problems in the importation of equipment required for our work have not been alleviated during the past year. We requested a Customs Exemption from the GOP who pointed out that the UNESCO Agreement, which permits importation without Customs of scientific equipment, was applicable to our operation. Despite this, we have had equipment held up in Chittagong for as long as 9 months, and only by virtue of laboratory personnel searching the Chittagong docks have we succeeded in obtaining much of our material. Recently an added requirement has been placed upon us of obtaining import licences for all air shipments. We continue in our attempts to develop a modus operandi whereby equipment needed for the care of patients or for research can be in use while the procedural details are carried out.

Supply procurement techniques in general continue to improve. For much of this, credit must be given to the effective support we receive at the NIH, particularly from Mrs. Doris Parkinson, in filling our orders and sending us our essentials. That things can work is proven by the smoothness with which numerous packages of equipment were shipped from the States and arrived on schedule to permit the special study being conducted in collaboration with personnel of Columbia University in New York City; all items arrived on time in good working order and the project was fully operational within nine days after the team arrived.

(more)

The major equipment obtained during the last year (15 November to 31 December, 1964) is as follows:

PROPERTY OF U.S. GOVT.
ON
MEMORANDUM RECEIPT.

<u>Quantity.</u>		<u>Total Cost.</u>
8	Airconditioners, Windowtype, Coolerator	\$ 1,852
14	Airconditioners, Windowtype, Career	3,416
1	Automobile, Station Wagon, Plymouth, Savoy	1,647
1	Boat, Aluminium, 14' ft Sears	265
1	Centrifuge Accessories High Speed Attachment for (International) PR-2	560
2	Circuit Breaker, Westinghouse	93
2	Clipper, Hair, Small Animal	59
1	Counter, Laboratory, Adams	92
1	Disintegrator, Electric (Waring Blender)	279
1	Dispenser, Tape	39
1	Freezer, Horizontal, Re- veo	944
1	Handle, Forceps, Biopsy	60
2	Illuminator, Nicholas, B&L	66
4	Jars, Anerobic	260
2	Laboratory, Bedside, Rochester	159
1	Lamp, Laboratory, Multi-Ray	42
1	Machine, Combo-Punching	199
1	Machine, Dry-Ice " Snowman "	130
1	Mirror, Test-Reading	21
2	Motors, Outboard, 28 H.P., Johnson	755
1	Proctoscope	33
1	Refrigerator, Kerosene/Electric, Electrolux.	130
1	Sigmoidscope	33
1	Sonifier, Branson	920
1	Sterilizer, Cylindrical Type, Mounted, AMSCO	1,950
1	Stimulator, Heart	195
2	Switch, Pressure Control Assy	322
2	Transformer, Auto	54
2	Transformer, Harmonic-Neutralised Voltage, Sola	270
2	Typewriters, Underwood (11" & 15" Career)	382
1	Vacuum Stoppering Tray, Virtis	1,275
1	Waterbath Incubator Shaker, Precision-Dubnoff	595
		\$ 17,097

(more)

- 7 -

U.S. GOVT. SURPLUS PROPERTY

<u>Quantity</u>		<u>Total Cost.</u>
4	Balances, Ohaus	\$ 157
2	Centrifuge, Intl, Size-2	1,690
1	Centrifuge, Sorval	85
4	Colorimeters (Klett, Rubicon)	1,253
1	Cooker, Pressure, Aloe	124
1	Drying Apparatus, Hotpack	35
1	Freezer, Upright, Horizontal	225
1	Galvanometer	39
1	Lamp, Operating, B&L	142
1	Ph Meter, Beckman	550
7	Microscope, B&L	875
2	Microscope, A.O., Spencer	302
1	Photonephelometer, Coleman	468
1	Pipette Washer, Tech	67
1	Power Supply, Fisher	58
2	Shaker, Pipette, Yankee	90
1	Spectrophotometer, Coleman	394
1	Steriliser, AMSCO, 1600 Watts	475
1	Stirrer,	51
9	Stools, Surgical	171
1	Table, Autopsy	587
1	Transformer, Powerstat	260
2	Vanslyke Apparatus	780
4	Waterbath (Precision, Labline, Hotpack)	502

PURCHASE WITH U.K. FUNDS

5	Automobiles (Austin A7-4, 1100-1)	£ 2,095
2	Calculating Machines, Diehl	956
1	Gel Electrophoresis	225
1	Ph Meter, Vibron Research	434
3	Microscope, Cooke-McArthur	481
1	Still, Water, Manesty	43
		£ 4,234

(more)

PURCHASE WITH LOCAL CURRENCY

<u>Quantity</u>		<u>Total Cost.</u>
1	Almirah, Steel	Rs. 300
1	Automobile, Chevrolet Carryall	6,758
1	Battery, Nine-Plate, Exide	206
10	Beds, Cholera, Metal(Adult/Child Size)	2,404
1	Bed, Divantype	150
2	Bench, Work	1,350
1	Black Board	225
2	Boat, Shark	8,475
5	Books, Permanant	179
4	Cabinet, Steel, Filing	1,400
45	Cages, Breeding, Rabbit	5,760
75	Cages, Maintenance, Rabbit	6,000
4	Card Sisteps	2,150
15	Chairs, Armless, Caneseated	441
4	Chairs, Armless, Woodentop	104
1	Chest of Drawers	350
3	Dictation machines, Philips	1,312
1	Extinguisher, Fire	194
4	Fans, Table	890
1	Furniture Set, Cane	115
3	Lamp, Petromax, Sola	226
1	Lamp, Table, Alladin	118
1	Microscope, B&L	1,563
3	Motor, Outboard (5½, 28 HP Johnson, 18 HP Westbend)	5,632
2	Pumps, Hand & 500'ft 1½" dia Pipe	1,686
9	Rack, Angular Iron	2,925
1	Rack, Wooden	325
1	Refrigerator, Kerosene/Electric, Electrolux	1,500
1	Regulator, Pressure-Gauge, Oxygen	260
3	Scales, Weighing, Portable.	315
75	Stools, Laboratory & Hospital, Wooden	1,850
6	Stretchers (Adult/Child size) Wooden	462
2	Tables, Operation, Animal, Wooden	100
3	Tables, Half-Secretariate, Wooden	510
7	Tables, Laboratory, Wooden	800
2	Tables, Wooden	330
2	Tables, Work	450
4	Type-writers, Remington (11", 15", 20" Career)	4,102
1	Valve, Flow-Meter	190
1	Vice, 5" Bench	115
		Rs. <u>62,712</u>

PURCHASE WITH DOLLAR FUNDS

1	Calbiometer	Rs. 305
1	Microscope, Ortholux, Leitz	1,311
2	Radios, Transistors, Philips	86
		<u>1,702</u>

UNITED STATES AGENCY FOR INTERNATIONAL DEVELOPMENT

Office of the Provincial Director,
C/o American Consulate General,
Adamjee Court, Motijheel,
DACCA-2, East Pakistan.

Cable : USAIDPAK

20th July, 1964.

In reply please refer to
Letter No. 100.

Dr. Oscar R. Oseasohn,
Acting Director,
Pakistan-SEATO Cholera Research Laboratory,
Institute of Public Health,
Mohakhali,
DACCA-5.

Dear Dr. Oseasohn:

Although the Pakistan-SEATO Cholera Research Laboratory is not a direct A.I.D. project in the usual sense, we agree that the success of the laboratory in accomplishing its purpose is heavily dependent on support of U.S. A.I.D./Pakistan and its success also contributes materially to the advance of the public health goals of U.S. A.I.D./P and the Government of Pakistan. A.I.D. support is outlined in the Agreement between the International Cooperation Administration and the Department of Health, Education and Welfare, dated August 13, 1959; in the Memorandum of Understanding between ICA and the National Institutes of Health dated July 22, 1960, and in the Agreement between A.I.D. and the Government of Pakistan dated December 30, 1961.

The purpose of this letter is to clarify at the working level the support which will be furnished by U.S. A.I.D./Pakistan to the CRL operation.

In accordance with the cited agreements, U.S. A.I.D./Pakistan will participate in giving operational and administrative support to the CRL and its American personnel. The Government of Pakistan has agreed that expenses incurred in this support shall be limited to rupees paid from and subject to availability of funds contained in the Trust Fund established June 1, 1956. The following support will be provided to CRL and its American personnel. American personnel in this letter means U.S. citizens assigned to CRL and accepted by the GOP as members of the CRL staff.

- a. Living accommodation and facilities equal to those provided regular A.I.D. employees, for all CRL American personnel,
- b. Cost of (a) international travel of American personnel and their dependents proceeding to and from post assignments and (b), subject to prior approval of the U.S. A.I.D./P Director, other international travel directly related to and necessary to the conduct of the CRL program in Pakistan.

continued

Such travel will include per diem and transportation costs, when carriers will accept rupees, and subject to the same regulations as apply to travel by A.I.D. personnel.

- c. When payable in rupees, shipment of unaccompanied baggage, and cost of shipment of effects and automobiles, in accordance with A.I.D. regulations.
- d. All allowances provided to direct-hire A.I.D. personnel which are payable in rupees will be provided to U.S. Government personnel assigned to the CRL. Such allowances may be provided other American personnel if Authorized individually by the U.S. A.I.D./P Director, under the same policies applied to non-Government Americans assigned to or employed by A.I.D.
- e. Gasoline, oil, and maintenance for CRL or U.S. Government-owned vehicles and boats, with the understanding that CRL will provide those spare parts which are not stocked by the Motor Pool.
- f. Motor Pool transport may be provided, in emergencies, subject to availability.
- g. Administrative support such as the clearing and forwarding of official NIH shipments; assistance in procurement other than normal day-to-day operational needs; and temporary provision on memorandum receipt and subject to immediate recall of available A.I.D. equipment and furnishings as needed by CRL.
- h. Such other administrative support as is provided to direct-hire A.I.D. personnel.

If this meets with your approval, it is requested that you so indicate by signing and returning the two carbon copies of this letter which are attached.

Sincerely yours,

Signed - George Gurow
Provincial Director.

Signed - Robert Oseasohn, M.D. Acting for

ACCEPTED FOR CHOLERA RESEARCH LABORATORY

A.S. Benenson, M.D., Director.

PAKISTAN-SEATO CHOLERA RESEARCH LABORATORY

Fourth Meeting of the
DIRECTING COUNCIL

Dacca, East Pakistan - January 18-19, 1965

DIRECTOR'S FINANCIAL REPORT

DIRECTOR'S FINANCIAL REPORT

During the last year the Laboratory has been operating at full level, permitting a realistic valuation of our financial requirements. It appears that our technical operation has reached the point where it is now limited by our financial resources.

1. CRL Operating Fund :

The liquidation of obligations which had remained unpaid at the end of the fiscal year resulted in a bigger balance than had been expected. Appendix I represents the final statement of expenditures for FY 1963 after liquidation of obligations which were still outstanding in the report submitted to the Directing Council last year. This shows a total expenditure of Rs.394,660 during the year. Appendix II represents the statement of expenditure for FY 1964. The total expenditure from this fund increased Rs.53,803 during the year to a total of Rs.448,463, exceeding our income for the period FY 64 by Rs.28,463. This apparent deficit was absorbed by the carry over of Rs.56,962 representing the restricted portion of the fund from the previous year. (Money which by the laws of the contributing nations cannot be used for capital improvements).

2. NIH Research Agreement :

Appendix III presents the final statement of expenditures for FY 1963 after liquidation of obligations which were outstanding on July 1. Appendix IV presents the financial transactions for FY 1964. It is evident that expenses have doubled going from Rs.630,193 to Rs.1,105,561. Thanks to the carry over of Rs.623,810 from the preceding year, sufficient funds were available.

3. Capital Reserve Fund :

Appendix V presents the final status of the Capital Reserve Fund as of the end of FY 63. Appendix VI presents the status as of the end of FY 64. While the first year remained essentially constant because the transfer of funds from the Operating Fund almost balanced expenses, in FY 64 the Capital Reserve dropped by Rs.47,424. As the operating fund becomes completely obligated, construction will become impossible unless another source of funds is discovered.

4. U.K. Funds :

For the FY 1964, £13,000 were made available because they failed to order supplies which we had requested in the previous year.

A most important change in British funding has taken place during this year; this now being established as a grant-in-aid. This is given with the understanding that the assistance will be for the purpose of paying for United Kingdom based staff (who shall not number more than two at any one time), for equipment supplied from the United Kingdom, and for any local costs arising out of the employment of such staff and the installation of the equipment. We have been assured that the Crown Agents will continue to function as our Agents, placing local orders. A bank account in the name

continued

of the CRL has been opened in a London Bank in which this money will be deposited. For the time being we have let the funds remain in the treasury. This direct control of our finances will simplify and improve our techniques for monitoring our funds.

Statement of U.K. expenditures shown in Appendix VII.

5. SEATO-NIH Cholera Research Fund :

SEATO-NIH Cholera Research Fund and other support was furnished as follows :

\$ 91,949.00 were obligated by the Chairman of the NIH Cholera Advisory Committee for the SEATO-NIH Cholera Research Fund in support of our operations during FY 64, and \$ 98,142.00 was provided by National Heart Institute and Office of International Research, (Appendix VIII). The purchase value of NIH non-expendable property now in possession of this laboratory on memorandum receipt is \$ 28,704.00, which represents an increase of \$ 11,000.00 value during FY 64.

During the year, \$ 228.00 were expended from our dollar contingency fund with the American Consulate General, Dacca, leaving a balance of \$ 2,133.00.

6. US AID Trust Fund :

Rs. 194,558 were expended out of the Trust Fund for the support of U.S. personnel of the Laboratory, for the provision of gasoline and oil, and the maintenance of CRL vehicles by the AID. (See DC4/5 - Auditor's Report).

7. Other GOP Contributions :

GOEP provides the Laboratory with approximately 20,000 square feet of laboratory space. The value of the contribution is estimated to amount to Rs. 150,000 per year. In addition, the utilities provided are estimated conservatively to come to Rs.100,000 per year and other incidental costs are estimated at Rs.150,000.

8. Other Support :

The Commonwealth of Australia provided the travel of Dr. and Mrs. Glasse from Melbourne to Dacca and have expended 3,360 Australian Pounds for their support, for a total expenditure of £A.3,849, equivalent to Rs. 41,071.

continued

9. SUMMARY :

The final summary of the Financial Report for our FY 1964 is presented in Appendix IX in which all funds have been converted into Pakistani currency. A breakdown of the support provided by the various countries involved in this effort is presented in Appendix X.

10. Financial Prognosis :

Appendix XI presents the CRL Budget for the FY 1965 revised after the several countries had agreed to the increase in the operating fund. The trend of financial expenditures of the three years is shown in Appendix XII and Graph 1. The trend for the Operating Fund has been limited by the amount of money available. The expenditures from the NIH Research Grant have increased to the point where they essentially match the funds now available to us. The expansion of the Vaccine Study area in September 1964 results in marked increase in our fund requirement. The assumption of cholera care responsibility for the Dacca area and for the Matlab area has resulted in a marked increase in requirements in a service for the Government of Pakistan. In Mohakhali, since the cholera wards at Mitford have been closed, our ward expenses have mounted precipitously, as shown in Appendix XIII. In Matlab the availability of the treatment center has resulted in the congregation of cholera cases from as far as 15 miles away. 80% of the patients treated are not in our vaccine group but are being treated for humanitarian purposes. It is hoped that some arrangement may be made whereby the cost of at least some of this medical care could be covered.

Our budget performance for the first six months of the year has contrasted with our budget as shown in Appendix XIV. As of mid year, we appear to be in a healthy position. However, it is to be noted that our heavy expenses for travel both from the Operating Fund and from the NIH Research Fund will lie in this quarter when this and the Honolulu meeting are both being held, and the increased expenses for the Matlab operation appear in only the third quarter.

CRL OPERATING FUND

FINAL STATEMENT OF EXPENDITURES FOR F.Y. 63 (JULY 1,
1962 TO JUNE 30, 1963) AFTER LIQUIDATION OF
OBLIGATIONS.

CRL OPERATING FUND :

Opening balance as of July 1, 1962	Rs. 245,005
<u>Less :</u>	
GOEP Share transferred to CRF for F.Y. 61-62	Rs. 70,002
	Rs. 175,003
Contribution by Government of East Pakistan.	Rs. 210,000
Contribution by U.S. Govt. PL 480 (Sec. 104 K)	Rs. 210,000
	Rs. 595,003
<u>Less :</u>	
Advance Contribution by US Govt. for the period from July 1, 1963 to December 31, 1963	Rs. 105,000
	Rs. 490,003
Interest on fixed deposit.	Rs. 4,373
Miscellaneous receipt (sales of empty bottles etc).	Rs. 217
	Rs. 494,593

DISBURSEMENT :

1. Personal Services	206,587	
2. Travel & Transportation of Persons.	18,635	
3. Transportation of things	6,027	
4. Rent, Communication & Utilities:	20,562	
5. Printing & Reproduction	1,204	
6. Other Contractual Services	35,060	
7. Supplies & Materials	82,514	
8. Equipments	24,071	
TOTAL EXPENDITURES FOR F.Y. 1963		Rs. 394,660
<u>TOTAL UNUTILIZED BALANCE :</u>		Rs. 99,933
U.S. share of unutilized balance 57%		Rs. 56,962
GOEP share (Unrestricted Portion) 43%		Rs. 42,971
(Includes Rs.7,539 added after final Liquidation of obligations).		

CRL OPERATING FUND

STATEMENT OF EXPENDITURE FOR F.Y. 1964
(JULY 1, 1963 TO JUNE 30, 1964.)

CRL OPERATING FUND:

AMOUNT.

Opening balance F.Y. 63-64 after liquidation of obligation of F.Y. 62-63.	Rs. 99,933
<u>Less:</u>	
GOEP Share transferred to CRF for F.Y. 62-63.	" 42,971
	Rs. 56,962
Contribution by the GOEP for F.Y. 63-64.	" 210,000
Contribution by the U.S. Government PL 480 (Sec. 104 K) for F.Y. 63-64.	" 210,000
Interest earned on Fixed deposit.	" 3,041
<u>TOTAL FUND AVAILABLE FOR F.Y. 63-64.</u>	Rs. 480,003

DISBURSEMENT:

1. Personal Services.	Rs. 313,954	
2. Travel & Transportation of persons.	" 10,899	
3. Transportation of things.	" 2,505	
4. Rent, Communication & Utilities.	" 7,484	
5. Printing & Reproduction.	" 3,458	
6. Other Contractual Services.	" 18,483	
7. Supplies & Materials.	" 90,167	
8. Equipment.	" 1,513	
<u>TOTAL EXPENDITURE FOR F.Y. 1964</u>		Rs. 448,463

TOTAL UN-UTILIZED BALANCE:

....

Rs. 31,540

U.S. Government share of unutilized balance	56%	Rs. 17,662
GOEP Share (Unrestricted portion)	44%	Rs. 13,878

NIH RESEARCH AGREEMENT FUNDS

FINAL STATEMENT OF EXPENDITURES FOR F.Y. 1963
(JULY 1, 1962 TO JUNE 30, 1963)

INCOME:

AMOUNT.

Opening balance as of July 1, 1962.	Rs. 493,008
NIH Contribution (Includes funds for the period July 1, 1963 to December 31, 1963).	" 746,245
Interest earned on Fixed deposits.	" <u>14,751</u>

TOTAL FUND AVAILABLE:

Rs. 1,254,004

DISBURSEMENT:

1. Personal Services.	Rs. 258,491
2. Travel & Transportation of Persons.	" 207,875
3. Transportation of things.	" 4,322
4. Rent Communication & Utilities.	" 2,532
5. Printing & Reproduction.	" -
6. Other Contractual Services.	" 31,020
7. Supplies & Materials.	" 59,882
8. Equipment.	" <u>65,572</u>

TOTAL EXPENDITURES FOR F.Y. 1962-63.

Rs. 630,194

BALANCE AS OF JULY 1, 1963.

Rs. 623,810

INCOME:

AMOUNT.

Opening balance of Dollars as of July 1, 1962.	\$ 76,000
--	-----------

DISBURSEMENT:

Personal Services.	\$ 18,302
Other Contractual Services.	\$ 3,571

TOTAL EXPENDITURE FOR F.Y. 1962-63.

\$ 21,873

BALANCE AS OF JULY 1, 1963.

\$ 54,127

NIH RESEARCH AGREEMENT FUNDS.

STATEMENT OF INCOME AND EXPENDITURES FOR
F.Y. 1964 (JULY 1,1963 TO JUNE 30,1964)

RUPEE

INCOME:

AMOUNT:

1. Opening balance as of July 1, 1963	Rs. 623,810
2. NIH Contribution for F.Y. 63-64	Rs. 773,619
3. Interest earned on fixed deposits	Rs. 11,688
<u>TOTAL FUND AVAILABLE F.Y. 63-64:</u>	<u>Rs.1,409,117</u>

DISBURSEMENT:

1. Personal Services.	Rs.586,838
2. Travel & Transportation of Persons.	Rs.280,392
3. Transportation of Things.	Rs. 9,154
4. Rent, Communication & Utilities.	Rs. 24,627
5. Printing & Reproduction.	Rs. 9,048
6. Other Contractual Services	Rs. 16,867
7. Supplies & Materials	Rs.117,729
8. Equipments.	<u>Rs. 60,906</u>

TOTAL EXPENDITURES DURING F.Y. 63-64 Rs.1,105,561

BALANCE AS OF JUNE 30, 1964 Rs. 303,556

DOLLAR

INCOME:

AMOUNT:

1. Opening balance as of July 1, 1963	\$ 54,127
---------------------------------------	-----------

DISBURSEMENT:

1. Personal Services	\$ 18,412
2. Rent, Communication & Utilities	\$ 345
3. Other Contractual Services	\$ 169
4. Supplies & Materials	\$ 1,008
5. Equipments	<u>\$ 1,703</u>

TOTAL EXPENDITURES DURING F.Y. 63-64 \$ 21,637

BALANCE AS OF JUNE 30, 1964 \$ 32,490

CAPITAL RESERVE FUND

FINAL STATEMENT OF INCOME AND EXPENDITURES FOR
F.Y. 1963 (JULY 1, 1962 TO JUNE 30, 1963)

INCOME:

AMOUNT.

- | | |
|---|----------------|
| 1. Opening balance as of July 1, 1962 | Rs. 114,386 |
| 2. GOEP Share of unspent balance of OPF for
F.Y. 61-62 transferred to CRF. | " 70,002 |
| 3. Interest earned on CRF fixed deposit. | <u>" 3,826</u> |

TOTAL FUND AVAILABLE:

Rs. 188,214

EXPENDITURES:

- | | |
|--|----------------|
| 1. 27.7.62 -- Charges for re-location of main
cable lines. | Rs. 1,975 |
| 2. 4.10.62 Charges for construction of Blower
motor housing & incinerator housing. | " 1,875 |
| 3. 19.10.62 Charges for ventilation, fly proofing
etc., in ward & wash house. | " 19,144 |
| 4. 28.12.62 Plumbing works in Bacteriology
Section. | " 1,000 |
| 5. 8.1.63 Renovation of animal house. | " 12,297 |
| 6. 25.6.63 Construction of Generator shed. | <u>" 5,991</u> |
| | Rs. 42,282 |
| 7. 26.1.63 Refund to US/AID as per audit
recommendation No.6 of Audit Report
No.817. | <u>Rs. 799</u> |

TOTAL EXPENDITURE DURING F.Y. 1963:

Rs. 43,081

BALANCE:

Rs. 145,133

CAPITAL RESERVE FUND

STATEMENT OF INCOME AND EXPENDITURES FOR
F.Y. 1964 (JULY 1, 1963 TO JUNE 30, 1964)

INCOME:

AMOUNT.

1. Opening balance as of July 1, 1963.	Rs. 145,133
2. GOEP Share of unspent balance of OPF for F.Y. 63 transferred to CRF.	" 42,971
3. Interest earned on CRF fixed deposit.	" <u>3,531</u>

TOTAL FUND AVAILABLE:

Rs. 191,635

EXPENDITURES:

1. 6.8.63 Additional works in Generator shed.	Rs. 2,598
2. 13.9.63 Addition and alteration of Room No.13	" 405
3. 29.10.63 Renovation of Epidemiology Section.	" 1,312
4. 11.12.63 Renovation of Nurses Room.	" 1,321
5. 21.4.64 Construction of Shaitnal house.	" 42,839
6. - Construction of Ward-Garrage Building.	" <u>45,234</u>

TOTAL EXPENDITURE FOR F.Y. 1964.

Rs. 93,709

BALANCE:

....

Rs. 97,926

Note: The GOEP share of the unspent balance of the CRL Operating Fund for F.Y. 1964 (Rs.13,878) will be transferred to the Capital Reserve Fund during 1965.

UK/CRL FUND

STATEMENT OF EXPENDITURE FOR F.Y. 1964
(APRIL 1, 1963 TO MARCH 31, 1964)

Total contribution of U.K. Government. £ 13,000-0-0

Disbursement (as per information supplied by D.T.C.)

1. Personal Services.	£ 3058-0-0
2. Travel & Transportation of persons.	£ 1094-0-0
3. Transportation of things.	£ 2220-0-0
4. Supplies & Materials.	£ 2038-0-0
5. Equipment.	£ 4067-0-0

<u>Total Expenditure for F.Y. 1964.</u>	<u>£ 12,477-0-0</u>
---	---------------------

<u>Unutilized balance:</u>	<u>£ 523-0-0</u>
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SEATO-AID-NIH CHOLERA FUND

STATEMENT OF EXPENDITURES FOR F.Y. 64
(JULY 1, 1963 TO JUNE 30, 1964)

Heads of a/c.	Payment during F.Y. 64	Unpaid Obligations as of June 30, '64.	Total Committed during F.Y. 64
1. Personal Services.	\$ 466	\$ 0	\$ 466
2. Travel & Trans.of Person.	3,205	4,208	7,413
3. Transportation.	7,062	8,866	15,928
4. Contractual Services.	2,045	14,480	16,525
5. Supplies.	24,392	7,269	31,661
6. Equipment.	4,021	15,935	19,956
TOTALS:	\$ 41,191	\$ 50,758	\$ 91,949

OTHER SUPPORT BY U.S. N.I.H.

Heads of a/c.	NHI	OIR	TOTAL
1. Personal Services.	\$ 63,704	\$ 16,396	\$ 80,100
2. Travel & Transportation of Persons.	4,480	5,714	10,194
3. Transportation of Things.	4,947	2,901	7,848
TOTALS:	\$ 73,131	\$ 25,011	\$ 98,142

SUMMARY FINANCIAL REPORT FOR F.Y. 64
ALL FUNDS IN PAKISTAN CURRENCY

DC 4/4
Appendix - IX

ALL FUND AVAILABLE
F.Y. 64.

EXPENDITURE:

Personal Services:

Travel & Transportation of Persons:

Transportation of things:

Rent, Communication & Utilities:

Printing & Reproduction :

Other Contractual Services :

Supplies & Materials:

Equipment:

Capital Reserve Fund Exp.

Total Expenditure:

CRL Operating Fund.	NIH Research Agreement	CRL Capital Reserve Fund.	Bank of Bethesda Account	Dollar Contingency Fund.	SEATO-AID- NIH Cholera Fund	UK/CRL Fund.	OTHER SUPPORT				TOTAL
							GOP	US/AID	NIH	Australian Government	
<u>480,003</u>	<u>1,409,118</u>	<u>191,635</u>	<u>260,351</u>	<u>11,356</u>	-	<u>172,380</u>	-	-	-	-	-
313,954	586,838	-	88,562	-	2,243	40,549	-	103,126	385,281	35,851	1,556,404
10,899	280,392	-	-	-	35,659	14,506	-	-	49,033	5,220	395,709
2,505	9,154	-	-	-	76,619	29,437	-	-	37,749	-	155,464
7,484	24,627	-	1,659	-	-	-	-	18,876	-	-	52,646
3,458	9,049	-	-	-	-	-	-	-	-	-	12,506
18,483	16,867	-	813	-	79,478	-	400,000	13,204	-	-	528,845
90,167	117,729	-	4,848	1,097	152,290	27,024	-	59,352	-	-	452,507
1,513	60,906	-	8,191	-	95,986	53,928	-	-	-	-	220,524
-	-	93,709	-	-	-	-	-	-	-	-	93,709
448,463	1,105,561	93,709	104,073	1,097	442,275	165,444	400,000	194,558	472,063	41,071	3,468,314

BREAKDOWN OF SUPPLORT BY CONTRIBUTING
NATION DURING F.Y. 64.

EXPENDITURES FROM U.S. GOVT. SUPPORT:

1. CRL Operating Fund.	Rs. 251,139	
2. CRL Canital Reserve Fund.	" 32,834	
3. NIH Research Agreement (Rupee).	" 1,105,561	
4. SEATO-AID-NIH Cholera Fund.	" 546,348	
5. Other Support.	" <u>667,718</u>	
		Rs. 2,603,600

EXPENDITURES FROM GOEP SUPPORT:

1. CRL Operating Fund.	Rs. 197,324	
2. CRL Capital Reserve Fund.	" 60,875	
3. Other Support.	" <u>400,000</u>	
		Rs. 658,199

EXPENDITURE FROM U.K. GOVT. SUPPORT:

" 165,444

EXPENDITURE FROM GOVT. OF AUSTRALIA:

" 41,071
Rs. 3,468,314

PERCENTAGE OF EXPENDITURE.

U.S. Government.	Rs. 2,603,600	-	75.07%
Government of East Pakistan.	Rs. 658,199	-	18.98%
U.K. Government.	Rs. 165,444	-	4.77%
Government of Australia.	Rs. <u>41,071</u>	-	<u>1.18%</u>
	<u>Rs. 3,468,314</u>	-	<u>100.00%</u>

PROPOSED REVISED CRL BUDGET
FISCAL YEAR 1965July 1, 1964 - June 30, 1965
November 6, 1964.

	CRL OPERATING FUND		UK/CRL FUND		NIH RESEARCH AGREEMENT		SEATO-AID-NIH CHOLERA FUND			
	Budgeted	Revised	Budgeted	Revised	RUPEE		DOLLARS			
					Budgeted	Revised	Budgeted	Revised	Budgeted	Revised
PERSONAL SERVICES:	Rs. 312000	Rs. 337400	£ 5000	£ 5000	Rs. 554472	Rs. 940865	\$ 25000	\$ 34500	\$ 2000	\$ 2000
Professional	36000	39206			199792	260124				
Technical & Supporting.	276000	298194			316680	640741				
Consultants	-	-			38000	40000				
TRAVEL & TRANSPORTATION OF PERSONS:	25000	25000	250	250	370000	357000			5000	10000
In Pakistan	10000	10000			40000	40000				
Outside Pakistan	3000	3000			120000	120000				
Consultants	12000	12000			210000	197000				
TRANSPORTATION OF THINGS:	18000	7000	250	250	30000	15000	8000	8000	16000	20000
Shipping & Clearance	18000	7000			30000	15000				
RENT, COMMUNICATION & UTILITIES:	13000	10000	-	-	25000	22000	1200	1200	1000	1000
Rent	1000	-			20000	17000				
Communication	12000	10000			5000	5000				
PRINTING & REPRODUCTION:	7000	7000	-	-	18000	11000			1000	1000
OTHER CONTRACTUAL SERVICES:	33000	20000	-	-	75000	55000		1500	60000	51000
Repairs	25000	12000			63000	43000				
Other	8000	8000			12000	12000				
SUPPLIES & MATERIALS:	70000	90000	2000	2000	255909	184894	1000	2000	40000	40000
Laboratory & Hospital	20000	25000			148000	100000				
Office & Janitorial	20500	25000			14000	10000				
Research Animal & Feed	7000	7000			37000	12000				
Fuel	3000	3000			7000	8000				
Hospital Food	11200	15000			40000	28000				
Linen & Uniforms	2000	5000			6000	10000				
Educational	2300	2000			1000	1000				
Other	4000	8000			2909	15894				
EQUIPMENT:	22000	20000	2500	2500	83000	75000	1500	1500	25000	25000
Laboratory & Hospital	2000	2000			46300	20000				
Transport	-	-			-	15000				
Office	17000	15000			18200	25000				
Books (Permanent)	-	-			-	1000				
Other	3000	3000			18500	14000				
TOTALS:	Rs. 500000	1/ Rs. 516400	£ 10000	2/ £ 10000	Rs 1411381	3/ Rs. 1660759	36700	4/ 48700	150000	5/ 150000

- 1/ Deficit amount Rs. 16,400/00 will meet from the unspent balance of U.S. share of CRL Operating Fund for F.Y. 63-64 amounting to Rs. 13,757.87 plus the interest to be earned out of the Fixed deposit.
- 2/ U.K. budget covering period April 1, 1963 to March 31, 1964.
- 3/ Deficit amount of Rs. 24,9378/00 will meet from the unspent balance of Rs. 289,378/00 of F.Y. 1963-64. The remainder of unspent balance amounting to Rs. 40,000/00 to be transferred to OPF to bring the U.S. Govt. contribution to OPF to Rs. 250,000/00 for F.Y. 1964-65.
- 4/ Deficit amount \$ 12,000.00 has already been provided by NIH.
- 5/ U.S. \$ 25000.00 transferred to Bank of Bethesda a/c during F.Y. 1964-65 has been included.

* After final close of accounts, the unspent balance of U.S. Share of CRL Operating Fund is Rs. 17,662 and the balance of NIH Research Agreement (Rupee) is Rs. 303,556.

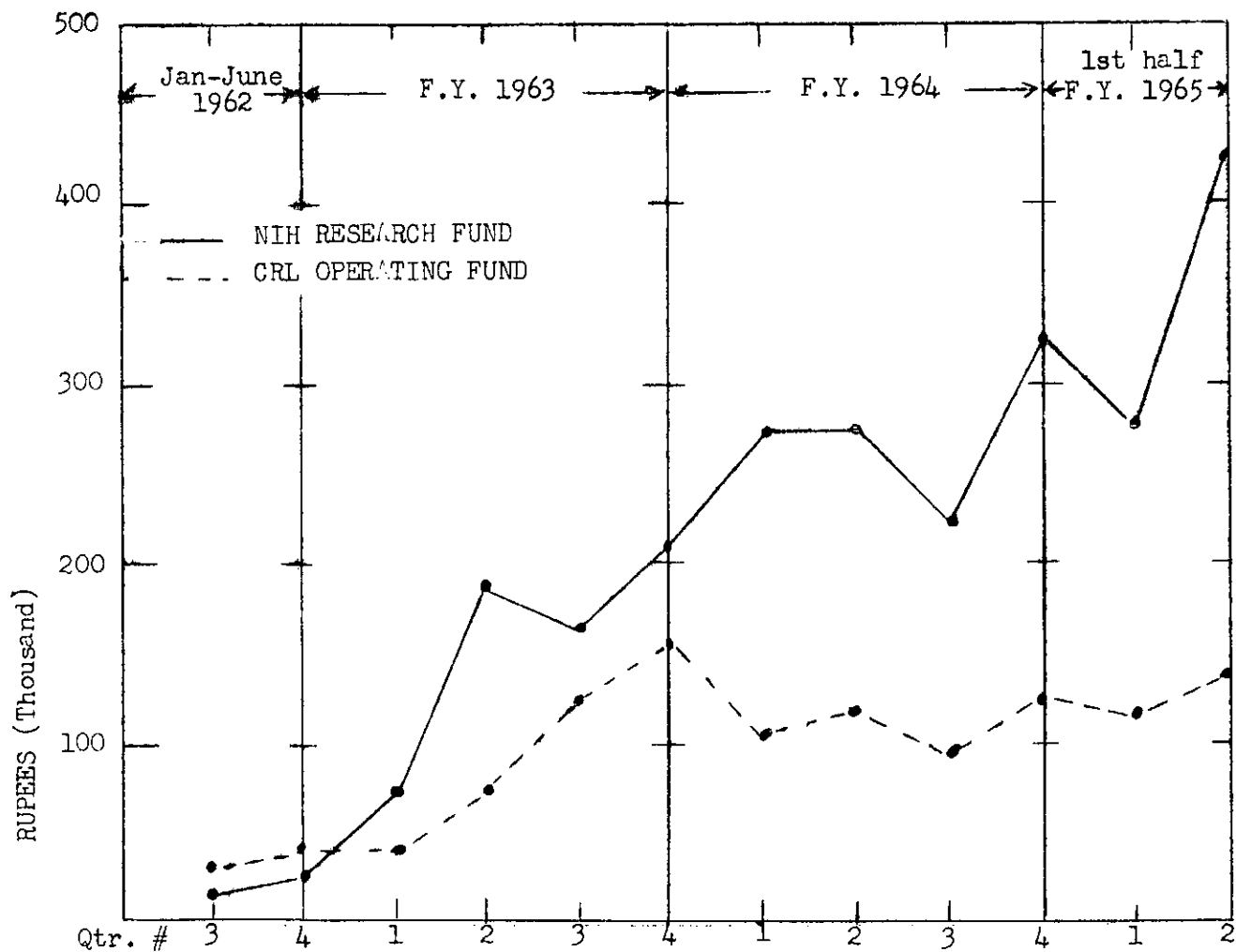
EXPENDITURE REPORT.
January 1, 1962 to December 31, 1964.

BUDGET HEADING	1962 (6 months)		F.Y. 1963		F.Y. 1964		1965 (6 months)	
	Operating Fund.	NIH Research Rupees.	Operating Fund.	NIH Research Rupees.	Operating Fund.	NIH Research Rupees.	Operating Fund.	NIH Research Rupees.
1. Personnel Services.	41,657	32,344	206,587	258,491	313,954	586,838	170,778	409,513
2. Travel & Transportation of persons.	2,861	10,900	18,635	207,876	10,899	272,540	5,395	153,218
3. Transportation of Things.	1,886	-	6,028	4,822	2,505	9,154	4,540	4,550
4. Rent, Communication & Utilities.	1,100	-	20,562	2,532	7,484	24,627	5,370	6,253
5. Printing & Reproduction.	-	-	1,203	-	2,358	9,049	3,899	7,797
6. Other Contractual Services.	4,041	-	35,059	31,020	17,901	16,867	12,715	26,096
7. Supplies & Materials.	13,719	1,041	82,514	59,881	84,167	116,515	48,021	75,432
8. Equipment.	5,523	-	24,071	65,572	1,512	57,981	1,792	25,723
TOTAL :	70,787	44,285	394,659	630,194	440,780	1,093,571	252,510	708,582

(6 months only)

(6 months only)

QUARTERLY EXPENDITURES OF
CHOLERA RESEARCH LABORATORY



STATEMENT SHOWING THE EXPENDITURES OF CRL WARD
FOR THE PERIOD FROM JULY 1, 1964 TO DEC. 31, 1964.

Heads of a/c.	July '64.	Aug. '64	Sept. '64	Oct. '64	Nov. '64	Dec. '64	Total
1. Personal Services.	18,016	16,352	16,182	16,593	16,887	17,903	101,933
2. Travel & Transportation of Persons.	-	111	7	11	-	-	129
3. Transportation of Things.	-	-	-	-	-	-	-
4. Rent, Communication & Utilities.	-	-	3	-	-	-	3
5. Printing & Reproduction.	-	-	230	-	-	-	230
6. Other Contractual Services.	336	-	230	64	-	125	755
7. Hospital Supplies.	2,184	4,155	2,646	3,813	11,044	7,552	31,394
8. Hospital Food.	2,814	3,501	3,569	4,123	6,089	7,901	27,997
9. Other.	882	212	1,200	738	229	72	3,333
10. Equipment.	-	450	-	350	-	1,250	2,050
<u>TOTALS:</u>	24,232	24,781	24,067	25,692	34,249	34,803	167,824

STATEMENT OF BUDGET PROVISION AND EXPENDITURE FOR THE
PERIOD FROM JULY 1, 1964 TO DECEMBER 31, 1964

HEADS OF ACCOUNTS :	CRL OPERATING FUND			NIH RESEARCH AGREEMENT FUND					
	Budget Provision for F.Y. 64-65	Expenditure from 1.7.64 to 31.12.64	Balance left over for remain- ing period for F.Y. 64-65.	RUPEE			DOLLAR		
				Budget Provision for F.Y. 64-65.	Expenditure from 1.7.64 to 31.12.64	Balance left over for remain- ing period for F.Y. 64-65.	Budget Provision for F.Y. 64-65.	Expenditure from 1.7.64 to 31.12.64.	Balance left over for remain- ing period.
1. <u>PERSONAL SERVICES :</u>	Rs. 337,400	Rs. 170,778	Rs. 166,622	Rs. 940,865	Rs. 409,513	Rs. 531,352	\$ 34,500	\$ 16,317	\$ 18,183
Professional.	39,206	17,920	21,286	260,124	105,748	154,376			
Technical & Supporting.	298,194	152,858	145,336	640,741	295,780	344,961			
Consultant.	-	-	-	40,000	7,985	32,015			
2. <u>TRAVEL & TRANSPORTATION OF PERSONS :</u>	25,000	5,395	19,605	357,000	153,218	203,782	-	12	-12
In Pakistan.	10,000	2,561	7,439	40,000	57,345	-17,345			
Outside Pakistan.	3,000	-	3,000	120,000	20,320	99,680			
Consultant.	12,000	2,834	9,166	197,000	75,553	121,447			
3. <u>TRANSPORTATION OF THINGS:</u>	7,000	4,540	2,460	15,000	4,550	10,450	8,000	97	7,903
Shipping & Clearance.	7,000	4,540	2,460	15,000	4,550	10,450			
4. <u>RENT, COMMUNICATION & UTILITIES :</u>	10,000	5,370	4,630	22,000	6,253	15,747	1,200	302	898
Rent.	-	-	-	17,000	3,642	13,358			
Communication.	10,000	5,370	4,630	5,000	2,611	2,389			
5. <u>PRINTING & REPRODUCTION:</u>	7,000	3,899	3,101	11,000	7,797	3,203	-	-	-
6. <u>OTHER CONTRACTUAL SERVICES:</u>	20,000	12,715	7,285	55,000	26,096	28,904	1,500	-	1,500
Repair.	12,000	4,835	7,165	43,000	9,032	33,968			
Other.	8,000	7,880	120	12,000	17,064	- 5,064			
7. <u>SUPPLIES & MATERIALS:</u>	90,000	48,021	41,979	184,894	75,432	109,462	2,000	129	1,871
Laboratory & Hospital.	25,000	9,842	15,158	100,000	39,475	60,525			
Office & Janitorial.	25,000	7,535	17,465	10,000	4,704	5,296			
Research Animal feed.	7,000	3,358	3,642	12,000	6,265	5,735			
Fuel.	3,000	452	2,548	8,000	1,277	6,723			
Hospital Food.	15,000	15,886	- 886	28,000	11,765	16,235			
Linen & Uniforms.	5,000	6,074	- 1,074	10,000	2,875	7,125			
Educational.	2,000	-	2,000	1,000	-	1,000			
Others.	8,000	4,874	3,126	15,894	9,071	6,823			
8. <u>EQUIPMENT :</u>	20,000	1,792	18,208	75,000	25,723	49,277	1,500	-	1,500
Laboratory & Hospital.	2,000	220	1,780	20,000	14,410	5,590			
Transport.	-	-	-	15,000	7,685	7,315			
Office.	15,000	1,556	13,444	25,000	3,362	21,638			
Books (Permanent).	-	16	- 16	1,000	-	1,000			
Others.	3,000	-	3,000	14,000	266	13,734			
<u>TOTALS :</u>	Rs. 516,400	Rs. 252,510	Rs. 263,890	Rs. 1,660,759	Rs. 708,582	Rs. 952,177	\$ 48,700	\$ 16,857	\$ 31,843

PAKISTAN-SEATO CHOLERA RESEARCH LABORATORY

Fourth Meeting of the

DIRECTING COUNCIL

Dacca, East Pakistan - January 18-19, 1965

REVIEW OF THE AUDITOR'S REPORT
AND THE DIRECTOR'S COMMENTS.

REVIEW OF AUDITORS' REPORT AND DIRECTOR'S COMMENTS

Enclosed herewith is a copy of the audit report covering the financial operations for the period from July 1, 1963 through June 30, 1964.

In Exhibit "A" of the audit report there is a transcription error. The U.S. Government contributions to the General Operating Fund for fiscal years 1962 & 1964 are shown as Rs.210,000.00 & Rs.105,000.00 rather than the correct figures of Rs.105,000.00 & Rs.210,000.00 respectively. The totals (Col.5) of this fund for fiscal year 1962 & 1964 was actually Rs.210,790.35 and Rs.423,041.00 rather than Rs.315,790.35 & Rs.318,041.00 as shown of the audit report.

AGENCY FOR INTERNATIONAL DEVELOPMENT
UNITED STATES A.I.D. MISSION TO PAKISTAN

Office of the AD/Controller
Karachi, Pakistan

AUDIT REPORT

Project No. 391-11-510-138
PAKISTAN SEATO CHOLERA RESEARCH
LABORATORY

Period Covered: July 1, 1963 through
June 30, 1964

Audit Branch

December 8, 1964

Report No. 915

Project No. 391-11-510-138
PAKISTAN SEATO CHOLERA RESEARCH
LABORATORY

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E X H I B I T S

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Project No. 391-11-510-138
PAKISTAN SEATO CHOLERA RESEARCH
LABORATORY

I - SCOPE OF EXAMINATION

The Financial and Administrative Regulations of the Pakistan SEATO Cholera Research Laboratory (CRL) as approved by the CRL Directing Council requires an annual audit of the financial transactions of the various funds directly available to the Director of the Laboratory. Accordingly the Director, CRL requested US A.I.D./P Controller's Representative, Dacca, to audit CRL's accounts for FY 1964. This audit was performed intermittently from July 20, 1964 through September 18, 1964.

The audit was conducted in accordance with generally accepted auditing standards implemented by the Office of the Assistant Director/Controller (AD/C) as prescribed by A.I.D./W Manual Order 790 series, and covers the period July 1, 1963 through June 30, 1964. During the audit, CRL's accounting records relating to General Operating Fund, Capital Reserve Fund and Research Fund established through an Agreement with National Institute of Health (NIH) of USA were examined in detail. Cash on hand was physically verified and bank balances were verified with certificates furnished to US A.I.D./P Controller's Representative, Dacca, by the various banks with whom CRL maintains Current (Checking) Accounts and Fixed Deposits. Expendable and non-expendable property records were examined for adequacy and a test check was made of equipment storage and utilization.

The procedures followed by CRL were examined for compliance with the various regulations and policies established and approved by the Directing Council.

II - GENERAL COMMENTS

The CRL, Dacca, was established in 1960 as part of a Cholera Research Program sponsored by SEATO. The Governments of the United States of America, Pakistan, United Kingdom (UK) and Australia have assisted the laboratory by providing funds, equipment and technical personnel.

The Government of Pakistan (GOP) and US A.I.D./P entered into an agreement on October 14, 1960 to establish the laboratory at Dacca. This agreement was revised on December 30, 1961, and on July 7, 1963 its term was extended to June 30, 1967. According to revised agreement of December 30, 1961, CRL would be financed from the

following sources:

A. The SEATO - A.I.D. - NIH Cholera Research Fund

Pursuant to an agreement dated May 29, 1959 between SEATO and USA, A.I.D./W has provided \$940,000.00 to the NIH of United States Public Health Services for a world-wide cholera research program. CRL's requirements of imported supplies and equipment and other commitments which cannot be met in local currency are financed from this fund which is administered by NIH. All the records relating to this fund are maintained at NIH which furnishes periodic statements of expenditures to CRL. The Director CRL has no direct control over this fund with the exception of an amount of \$76,000.00 which was deposited in FY's 1962 and 1963 with the Bank of Bethesda, Bethesda, Maryland for US dollar support to CRL. (See Section IV A and C).

B. General Operating Fund

This fund is created by equal contributions of GOP and the USA (PL 480, Section 104(K) Rupees) in each fiscal year. A total of Rs.1,155,000.00 has been made available by GOP and USA for expenditure from this fund since FY 1962. It supports the basic operations of CRL and a portion of the research. The portion of unspent or uncommitted balance at the end of each FY which is unrestricted is transferred to the Capital Reserve Fund.

C. NIH Research Agreement Rupee Fund

This fund consists of rupees available from the USA under PL 480, Section 104(K) provided by NIH under Research Agreement No. 196802 for expanding the scope of cholera investigation. Amount contributed to this fund totaled Rs.2,053,619.00 through FY 1964.

D. Capital Reserve Fund

This fund was created by equal contributions of GOP and A.I.D. in 1962. In subsequent years, it has been financed by the transfer of the non-restricted share of the unspent and uncommitted balance of General Operating Fund. A total of Rs.314,183.25 has been contributed to this fund through FY 1964.

E. Other Contributions

US A.I.D./P provides operational and administrative support to CRL's American personnel and also gasoline, oil and maintenance for CRL's vehicles and gasoline and oil for the CRL's boats from Rupee Trust Fund. The total cost of this support for FY 1964 amounted to Rs.194,558.00.

In addition to its annual rupee contributions to the General Operating Fund, GOP has provided the physical plant and a 20-bed hospital unit for CRL at the Institute of Public Health and the cost of maintenance and repair of such plant and the operating cost of the utilities installed therein.

The Government of UK has provided £10,000 annually for personnel and equipment, and the Government of Australia is presently providing a husband and wife team of Anthropologists and has also donated two jeep station wagons. (See Section IV G).

III - SUMMARY OF FINDINGS

The audit disclosed that the financial and administrative operations of CRL were in accordance with the Regulations and Policies established and approved by the Directing Council. Satisfactory records are being maintained at CRL to properly reflect the expenditures from the various funds operated by the Director of CRL.

IV - ACTIVITIES, OPERATIONS AND PROGRAMS REVIEWED

A. Expenditures from SEATO-A.I.D.-NIH Fund

According to the Financial Summary of US A.I.D./P Operations as of June 30, 1964, the status of Project No. 391-11-510-138 Pakistan SEATO Cholera Research Laboratory was as follows:

Obligations	FY 1962	\$150,000.00
	FY 1963	200,000.00
	FY 1964	<u>190,000.00</u>
		\$540,000.00
Expenditures		<u>87,000.00</u>
Pipeline		<u><u>\$453,000.00</u></u>

CRL, Dacca is one element of the Cholera Research Program sponsored by SEATO to which the US Government made an initial contribution of \$400,000.00 in FY 1960 and subsequently increased it to \$940,000.00. The initial contribution of \$400,000.00 is not reflected in US A.I.D./P accounts as it was not allotted to US A.I.D./P, but the subsequent yearly contributions have been allotted to US A.I.D./P and these are reflected in US A.I.D./P accounts.

These funds are under the administrative control of NIH. The large amount shown in "Pipeline" is due to non-reporting of the expenditures to US A.I.D./P by A.I.D./W or NIH.

NIH has advised CRL that the following expenditures were incurred during FY 1964 (calculated to nearest \$):

Personnel Services	\$ 466.00
Travel	7,413.00
Transportation of Things	15,928.00
Other Contractual Services	16,525.00
Supplies and Materials	31,661.00
Equipment	19,955.00
Total	<u>\$91,948.00</u>

Recommendation No. 1

A.I.D./W Action

Expedite the reporting of expenditures chargeable to obligations reflected in US A.I.D./P accounts.

B. Local Currency Funds Operations

Exhibits "A", "B", "C", "D" and "E" present a summary of local currency funds operations. CRL books of account, vouchers and bank statement were checked in detail and it was found that expenditures recorded in the ledgers were duly supported by payees' receipts, vendors' invoices, travel authorizations, etc., and conformed to the financial regulations of CRL.

C. Bank of Bethesda Account

During FY 1964 the transactions affecting this account were as follows (calculated to nearest \$):

Total Amount Deposited	\$76,000.00
Expenditures through FY 1963	<u>21,872.00</u>
	\$54,128.00
FY 1964 Expenditures	\$21,638.00
FY 1964 Obligations	<u>94.00</u>
	<u>21,732.00</u>
Unobligated balance	<u>\$32,396.00</u>

Details of FY 1964 expenditures are as follows:

Personnel Services	\$18,412.00
Rent, Communication and Utilities	345.00
Other Contractual Services	169.00
Supplies and Materials	1,008.00
Equipment	1,704.00
Total	<u>\$21,638.00</u>

D. US A.I.D./P Support

US A.I.D./P, Dacca expenditures in support of CRL's US Personnel for FY 1964 are as follows (calculated to nearest rupee):

Miscellaneous Repairs, Utilities etc.	Rs.13,204.00
Electricity	18,876.00
Kerosene Oil	3,336.00
House Rent	64,800.00
Vehicle Operations and Maintenance	49,627.00
Gasoline and Oil for Boats	6,389.00
Post Allowances	24,021.00
Education Allowance	14,305.00
Total	<u>Rs.194,558.00</u>

E. NIH Support

NIH also provides support to CRL in covering the salaries, etc., of NIH personnel who are stationed at the CRL and some of their support costs. According to CRL's Financial Report for FY 1963, NIH expenditures in support of CRL were as follows:

Salaries and Wages	\$69,272.00
Supplies	187.00
Transportation	5,699.00
Travel	7,868.00
Total	<u>\$83,026.00</u>

F. Contingency Account with US Consulate General, Dacca

In FY 1961, an allotment of \$2,000.00 which was increased to \$4,000.00 in FY 1963 was made to US Consulate General, Dacca, for CRL expenditures for purchase of supplies and materials. Expenditures incurred out of this fund through FY 1964 amount to \$1,867.00 leaving a balance of \$2,133.00.

G. United Kingdom Contribution

According to information provided to CRL by the UK High Commission, Dacca, FY 1964 expenditures in support of CRL were as follows:

	<u>Sterling</u>
Professional Salaries	£ 3,058.00
Travel of Consultants	1,094.00
Shipping and Clearance	2,220.00
Laboratory Equipment	6,105.00
Total	<u>£12,477.00</u>

H. GOEP Support

GOEP continued its support of CRL by paying the operating costs of electricity and telephone service for the CRL and supplying the physical plant for its operation.

I. Property Accountability, Utilization and Storage

CRL records controlling the expendable and non-expendable property are considered adequate. A test check of the accountability storage and utilization of CRL equipment and supplies was made during the audit. No adverse findings were noted.

Project No. 391-11-510-138
PAKISTAN SEATO CHOLERA RESEARCH
LABORATORY

EXHIBIT "A"
(Finding B - page 4)

Summary Status of Local Currency Funds At June 30, 1964

	<u>Contributions</u>			<u>Misc.</u>		<u>Expenditures</u>	<u>Transfer to</u>	<u>Uncommitted</u>
	<u>GOP</u>	<u>NIH</u>		<u>Receipts</u>	<u>Total</u>	<u>and</u>	<u>Capital Reserve</u>	<u>Surplus</u>
	<u>Rs.</u>	<u>Rs.</u>	<u>Interest</u>	<u>Rs.</u>	<u>Rs.</u>	<u>Obligations</u>	<u>Fund</u>	<u>Rs.</u>
			<u>Rs.</u>			<u>Rs.</u>	<u>Rs.</u>	
<u>General Operating Fund</u>								
July - December 1961	105,000.00	-	-	-	105,000.00	12,479.55	92,520.45	-
Jan. - June 1962	105,000.00	210,000.00	790.35	-	315,790.35	70,785.64	70,002.35	175,002.36
July - June 1963	210,000.00	210,000.00	4,372.50	217.18	424,589.68	394,660.22	42,971.00	(13,041.54)
July - June 1964	210,000.00	105,000.00	3,041.00	-	318,041.00	455,436.00	10,809.00	(148,204.00)
Totals	630,000.00	525,000.00	8,203.85	217.18	1,163,421.03	933,361.41	216,302.80	13,756.82
<u>Capital Reserve Fund</u>								
	<u>Contributions</u>		<u>Transfers from</u>			<u>Expenditures and</u>	<u>Uncommitted</u>	
	<u>GOP</u>	<u>US A.I.D.</u>	<u>Operating Fund</u>	<u>Interest</u>	<u>Total</u>	<u>Obligations</u>	<u>Surplus</u>	
	<u>Rs.</u>	<u>Rs.</u>	<u>Rs.</u>	<u>Rs.</u>	<u>Rs.</u>	<u>Rs.</u>	<u>Rs.</u>	
FY 1962	2,680.00	96,000.00	92,520.45	-	191,200.45	2,680.00	188,520.45	
			70,002.35	634.14	70,636.49	74,769.00	(4,132.51)	
FY 1963		(799.55)	42,971.00	3,826.16	45,997.61	42,281.00	3,716.61	
FY 1964			10,809.00	3,532.00	14,341.00	93,475.00	(79,134.00)	
Totals	2,680.00	95,200.45	216,302.80	7,992.30	322,175.55	213,205.00	108,970.55	
<u>Research Fund</u>								
	<u>Contribution</u>		<u>Interest</u>			<u>Expenditures and</u>	<u>Uncommitted</u>	
	<u>NIH</u>		<u>Rs.</u>	<u>Total</u>		<u>Obligations</u>	<u>Surplus</u>	
	<u>Rs.</u>			<u>Rs.</u>		<u>Rs.</u>	<u>Rs.</u>	
FY 1962	533,755.00		3,537.39	537,292.39	44,284.52	493,007.87		
FY 1963	746,245.00		14,751.41	760,996.41	630,193.32	130,803.09		
FY 1964	773,619.00		11,688.00	785,307.00	1,119,738.00	(334,431.00)		
Totals	2,053,619.00		29,976.80	2,083,595.80	1,794,215.84	289,379.96		

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EXHIBIT "B"
(Finding B - page 4)

Analysis of Local Currency Funds FY 1964

	<u>General Operating Fund Rs.</u>	<u>NIH Research Rs.</u>	<u>Capital Reserve Rs.</u>	<u>Total Rs.</u>
Surplus of FY 1963 as per Audit Report No. 871	152,244.00	630,680.00	175,562.00	958,486.00
Add back: Transfer to Capital Reserve	35,432.00	-	(35,432.00)	-
Obligations of FY 1963	39,856.00	32,505.00	10,000.00	82,361.00
	227,532.00	663,185.00	150,130.00	1,040,847.00
Deduct: Disbursements Liquidating FY 1963	(22,600.00)	(39,374.00)	(4,997.00)	(66,971.00)
Obligations	204,932.00	623,811.00	145,133.00	973,876.00
Transfer to Capital Reserve	(42,971.00)	-	42,971.00	-
Net Surplus of FY 1963	161,961.00	623,811.00	188,104.00	973,876.00
Contributions in FY 1964:				
NIH	105,000.00	773,619.00	-	878,619.00
GOP	210,000.00	-		210,000.00
Interest Earned	3,041.00	11,688.00	3,532.00	18,261.00
Total Funds available in FY 1964	480,002.00	1,409,118.00	191,636.00	2,080,756.00
Expenditures	(455,436.00)	(1,119,738.00)	(93,475.00)	(1,668,649.00)
	24,566.00	289,380.00	98,161.00	412,107.00
Transfer to Capital Reserve	(10,809.00)	-	10,809.00	-
Net Surplus at June 30, 1964	13,757.00	289,380.00	108,970.00	412,107.00

Include undisbursed obligations
of FY 1964

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LABORATORY

EXHIBIT "C"
(Finding B -
page 4)

Summary of Local Currency Receipts and Dis-
bursements during FY 1964

Opening Balances:

Cash in Hand	Rs. 9,541.00
Current Account (National & Grindlays Bank)	67,496.00

Fixed Deposits (National & Grindlays Bank):

General Operating Fund	Rs. 84,152.00	
NIH Research Agreement Fund	756,789.00	
Capital Reserve	<u>117,871.00</u>	958,812.00

Advances:

General Operating Fund	268.00	
NIH Research Agreement Fund	<u>4,730.00</u>	<u>4,998.00</u>
		Rs. 1,040,847.00

Contributions:

GOP contribution to General Operating Fund	210,000.00	
US contribution to General Operating Fund	105,000.00	1/
NIH contributions to Research Fund	<u>773,619.00</u>	1,088,619.00

Interest on Fixed Deposits:

General Operating Fund	3,041.00	
NIH Research Agreement Fund	11,688.00	
Capital Reserve Fund	<u>3,532.00</u>	<u>18,261.00</u>
	Total	Rs. 2,147,727.00

Disbursements:

Expenditures against FY 1963 Obligations

General Operating Fund	22,600.00	
NIH Research Agreement Fund	39,374.00	
Capital Reserve	<u>4,997.00</u>	66,971.00

1/ Rs. 105,000.00 for GOP fund was included in Rs. 756,789.00 in NIH Research Agreement Fund shown in Opening Balances and transferred on July 1, 1963.

Brought Forward Rs. 66,971.00

FY 1964 Expenditures:

General Operating Fund	Rs. 440,781.00	
NIH Research Agreement Fund	1,093,570.00	
Capital Reserve Fund	48,475.00	<u>1,582,826.00</u>
Total Disbursements		1,649,797.00

Closing Balances:

Cash in Hand 5,000.00

Current Account:

National Bank of Pakistan	619.00
National & Grindlays Bank	57,794.00

Fixed Deposits:

National & Grindlays Bank	-
NIH Research Agreement Fund	304,271.00
Capital Reserve Fund	79,400.00

Advances:

General Operating Fund	24,708.00	
NIH Research Agreement Fund	5,138.00	
Capital Reserve Fund	<u>21,000.00</u>	<u>497,930.00</u>
Total		<u><u>Rs.2,147,727.00</u></u>

Closing Balances of Rs.497,930.00 represent:

	<u>Undisbursed Obligations</u>	<u>Uncommitted Surplus</u>	<u>Total</u>
General Operating Fund	Rs.14,655.00	Rs.13,757.00	Rs.28,412.00
NIH Research Agreement Fund	26,168.00	289,380.00	315,548.00
Capital Reserve Fund	45,000.00	108,970.00	153,970.00
Totals	<u>Rs.85,823.00</u>	<u>Rs.412,107.00</u>	<u>Rs.497,930.00</u>

(All figures are calculated to the nearest rupee)

Project No. 391-11-510-138
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LABORATORY

EXHIBIT "D"
(Finding B - page 4)

Summary of Expenditures & Obligations from General Operating Fund & NIH Research Fund
for Fiscal Year 1964

	<u>General Operating Fund</u>				<u>NIH Research Agreement Fund</u>			
	<u>Expenditures</u>		<u>Obligations</u>		<u>Expenditures</u>		<u>Obligations</u>	
	<u>Rs.</u>	<u>Rs.</u>	<u>Rs.</u>	<u>Rs.</u>	<u>Rs.</u>	<u>Rs.</u>	<u>Rs.</u>	<u>Rs.</u>
1. Salaries & Wages:								
a) Professional	30,300		6,188		184,835			
b) Technical & Supporting	283,655		-		334,293			
c) Consultants	-	313,955	-	6,188	17,710	586,838	2,500	2,500
2. Travel & Transportation of Persons:								
a) In Pakistan	6,075				51,970			
b) Outside Pakistan	(3,627)				100,420		12,000	
c) Consultants	8,451	10,899			120,149	272,539	-	12,000
3. Transportation of Things:								
Shipping & Clearance	2,505	2,505			9,154	9,154		
4. Rent, Communications & Utilities:								
a) Rent					11,873			
b) Communications	7,484	7,484			12,754	24,627		
5. Printing & Reproduction	2,358	2,358			9,049	9,049	1,100	1,100
6. Other Contractual Services:								
a) Repair	8,969				3,907			
b) Others	8,932	17,901	935	935	12,960	16,867	360	360
7. Supplies & Materials:								
a) Laboratory & Hospital	20,920		1,532		70,823		1,670	
b) Office & Janitorial	21,437		-		4,787		-	
c) Research Animals & Food	6,307		-		7,417		-	
d) Fuel	1,786		-		6,505		-	
e) Hospital Food	16,846		-		17,571		-	
f) Linen & Uniforms	6,055		-		972		-	
g) Educational	52		-		375		-	
h) Other	10,764	84,167	6,000	7,532	8,065	116,515	4,833	6,503
Carried Forward		439,269		14,655		1,035,589		22,463

		General Operating Fund				NIH Research Agreement Fund			
		Expenditures		Obligations (Outstanding)		Expenditures		Obligations (Outstanding)	
		Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
Brought Forward			439,269		14,655		1,035,589		22,463
8. Equipment:									
a) Laboratory & Hospital			50			27,155		2,925	
b) Transport			-			14,082		-	
c) Office			1,462			5,199		780	
d) Books Permanent			-			68		-	
e) Other			-			11,477		-	
			<u>1,512</u>			<u>57,981</u>		<u>3,705</u>	
TOTAL			<u>440,781</u>		<u>14,655</u>		<u>1,093,570</u>		<u>26,168</u>

Project No. 391-11-510-138
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LABORATORY

EXHIBIT "E"
(Finding B -
page 4)

Expenditures and Obligations from Capital Reserve Fund
Fiscal Year 1964

	<u>FY 1964</u> <u>Expenditures</u>	<u>FY 1964</u> <u>Obligations</u> <u>(Outstanding)</u>
Additions in Generator Shed	Rs. 2,598.00	-
Additions and Alteration in CRL building	3,038.00	-
Construction of House at Shaitnal	42,839.00	-
Construction of Garage	<u>-</u>	<u>Rs. 45,000.00</u>
TOTAL	<u>Rs. 48,475.00</u>	<u>Rs. 45,000.00</u>

Presentation of Appendices to Financial
Regulations.

1. Description of CRL Accounting Procedures.
2. Terms of Salary Advance.
3. CRL Travel Regulations.

DESCRIPTION OF CRL ACCOUNTING PROCEDURES

The CRL accounting procedures have been established to adequately maintain a systematic record of income, expenditures, stores and property.

Our budget accounting system involves a uniform classification method for classifying the laboratory's financial transactions by object class. The budget headings adopted are as follows :-

- Personal Services.
- Travel & Transportation of Persons.
- Transportation of Things.
- Rent, Communication & Utilities.
- Printing & Reproduction.
- Other Contractual Services.
- Supplies & Materials.
- Equipment.

All CRL financial transactions are posted to the General Ledger under one of the above noted headings by relevant fund.

Financial statements are prepared on a monthly, quarterly and fiscal year basis; each statement showing the details of management of CRL funds for the corresponding period.

Stock record cards, noting item, receipt, issue, balance on hand, cost, source and location, are maintained by the Property & Supply Section.

Non expendable property received at CRL is promptly marked with an identifying number and recorded on CRL property cards. These cards show source, date of receipt, complete item description (including model and serial number), manufacturer's name and address, cost, and location. Acquisition documents are also maintained for each non expendable item.

PAKISTAN-SEATO CHOLERA RESEARCH LABORATORY

CRL TERMS OF SALARY ADVANCE

(To be annexed to financial regulations paragraph 4.4 as revised
19 November 1963)

1. Salaries may be advanced to permanent CRL employees for bonafide emergencies. The emergency situation necessitating the advance, such as illness or death in the family, acute need of housing, etc., must be verified before the request for advance can be approved.
2. Applications for salary advance must be requested in writing, together with justification, and must be approved by the Director or his designated authority prior to disbursement. Collateral or security to cover the entire amount of the advance must be provided.
3. Only under unusual circumstances will an advance be made exceeding 30% of the annual salary of the employee making the request. These require the personal approval of the Director after adequate justification.
4. Repayments of the salary advance will be made by payroll deductions from the employee concerned; in no case will the recovery period extend beyond one year.

PAKISTAN-SEATO CHOLERA RESEARCH LABORATORYCRL TRAVEL REGULATIONS

- 1.1 Official travel is that which is requested by the laboratory and performed in the interest of and at the expense of the CRL.
- 1.2 All official travel must be approved by the Director or his delegated authority in advance of actual departure.
- 1.3 Travellers will receive necessary compensation to cover the costs of expenses incurred in the performance of their official duties.

TRANSPORTATION :

- 1.4 Unless special conditions arise which make it otherwise desirable, the full round trip ticket will be obtained by the Administrative Section in advance of the trip to be performed. A cash or cheque advance or reimbursement will be issued to the traveller when special conditions warrant.
- 1.5 Class of travel will be determined by the Director or his delegated authority and in all cases will conform as near as possible to that prescribed in the AID and/or PHS travel regulations.

OTHER ALLOWANCE EXPENSES :

- 1.6a. Per diem - The traveller will be reimbursed by an amount at a daily set rate which will defray the expenses of food, lodging, local travel and any costs incidental to absence from a fixed residence. Upon application to the accountant, a traveller may receive an advance of funds not to exceed 75% of the estimated per diem for any single complete trip.
- b. The present scheduled rate of per diem allowance, based on surveys of costs carried out by US AID, shall be as follows :

<u>GRADE</u>	<u>MAJOR CITIES*</u>	<u>OTHER</u>
CRL - 7 & above	Rs. 75.00	Rs. 40.00
CRL -10 thru CRL 7a	Rs. 50.00	Rs. 30.00
CRL -15 thru CRL-11	Rs. 20.00	Rs. 20.00

- c. For purposes of per diem computation, each day is divided into four quarters, the first beginning at midnight; per diem is paid for each complete period of absence.

continued

- 2 -

- d. The per diem rate is reduced by $\frac{2}{5}$ & $\frac{1}{5}$ of the schedule rate, when the traveller is provided with food and lodging accommodation, by the CRL.
 - e. Visiting personnel, already on a per diem allowance, do not receive an additional per diem for local travel.
- 1.7 Employees will be allowed per diem during the entire authorized travel period except when annual leave is taken. Per diem will be continued for those persons in travel status who become incapacitated due to illness or injury, not due to his own misconduct for a period not to exceed 14 calendar days. This period may be extended by order of the Director. If a holiday occurs during authorized travel, per diem will be paid; however, no other compensation will be granted.
- 1.8 CRL employees whose main duty station is the laboratory in Dacca and who are assigned to field study work away from Dacca will not be considered to be in travel status and will not be paid per diem. They will, however, receive 30% salary differential as a special allowance.

* Major cities in Pakistan are Dacca, Chittagong, Karachi, Lahore, Rawalpindi and Peshawar.

PAKISTAN-SEATO CHOLERA RESEARCH LABORATORY

Fourth Meeting of the

DIRECTING COUNCIL

Dacca, East Pakistan - January 18-19, 1965

BUDGET PROPOSAL FOR

FISCAL YEAR 1965 - 1966

PROPOSED CRL BUDGET

DC 4/7

Fiscal Year 1966

July 1, 1965 - June 30, 1966

Heads of Accounts	CRL Operating Fund Rupee	UK Fund Pounds	NIH Research Agreement		SEATO- NIH NIH Cholera Fund Dollar
			Rupee	Dollar	
PERSONAL SERVICES:	Rs. 364360	£ 5500	Rs. 1103741	\$ 40000	\$ 2000
Professional	40000		374362		
Technical & Supporting	324360		689379		
Consultant	-		40000		
TRAVEL & TRANSPORTATION OF PERSONS:	20000	275	390000		8000
In Pakistan	5000		150000		
Outside Pakistan	1000		50000		
Consultant	14000		190000		
TRANSPORTATION OF THINGS:	10000	275	20000	80000	15000
Shipping & Clearance.	10000		20000		
RENT, COMMUNICATION & UTILITIES:	15000		20000	1200	1000
Rent	-		15000		
Communication.	15000		5000		
PRINTING & REPRODUCTION:	10000		40000		1000
OTHER CONTRACTUAL SERVICES:	20000		50000	1500	60000
Repair	10000		40000		
Other	10000		10000		
SUPPLIES & MATERIALS:	100640	2200	217259	2000	38000
Laboratory & Hospital.	25000		110000		
Office & Janitorial	25000		15000		
Research Animal & Feed.	10000		15000		
Fuel	2000		9000		
Hospital Food	18000		30000		
Linen & Uniforms	5000		12000		
Educational	1000		1000		
Other	14640		25259		
EQUIPMENT:	10000	2750	71000	2300	25000
Laboratory & Hospital	1000		20000		
Transport	-		15000		
Office	5000		15000		
Books	-		1000		
Other	4000		20000		
TOTALS:	Rs. 550000	£ 11000	Rs. 1912000	\$ 55000	\$ 150000

JUSTIFICATION FOR PROPOSED BUDGET INCREASE F.Y. 1966PERSONAL SERVICES:

On the basis of experience in the first quarter of this fiscal year, the total expenditure in CRL Operating Fund is estimated to Rs. 337,400/00 for F.Y. 65. We have requested Rs.364,360/00 or an increase of Rs.26,960/00 to cover the annual pay increment of CRL personnel during F.Y. 66. The NIH Research Agreement (Rupee) current year expenditure is estimated to Rs.940,864/00 whereas we requested Rs.1,103,741/00 or an increase of Rs.162,876/00 during F.Y. 66, to cover payment of Education allowance, Post allowance of Non-Govt. U.S. citizen employees, and annual pay increment of CRL personnel etc..

TRAVEL & TRANSPORTATION OF PERSONS:

We have estimated the expenditure of Rs.25,000/00 in OPF during F.Y. 65. We do not propose any increase under this category during F.Y.66 in fact we will try to avoid some of the travel expenses. We have requested only Rs.20,000/00 or Rs.5000/00 less in this Fund. In NIH Research Agreement (Rupee) Fund in this category we have estimated a total expenditure of Rs.357,000/00 for F.Y. 65 and requested for Rs.390,000/00 or an increase of Rs.33,000/00. Since International Travel of US Govt. personnel, who are directly related to and necessary to conduct the CRL program, will be provided by the US/AID, Pakistan, our estimate under this sub-head has been made for Rs.50,000/00 for F.Y. 66 as against Rs.120,000/00 for F.Y. 65. Provision for this Rs.50,000/00 is to meet the expenditure of transfer allowance and R & R Travel of the non-Govt. U.S. citizen employees of CRL.

With the expansion of vaccine Field Trial Area there has been considerable increase of Internal Travel and, in accordance with our experience based on 1st quarter F.Y. 65, expenses for Internal travel will raise to Rs.150,000/00 during F.Y. 66. The travel for consultants has been estimated to Rs.190,000/00 during F.Y. 66, as against Rs.197,000/00 for F.Y. 65 on a drop of Rs.7,000/00.

In consideration of above there has been an overall increase of Rs.33,000/00 in the total estimate under this category.

TRANSPORTATION OF THINGS:

An increase of Rs.3000/00 for General Operating Fund and Rs.5000/00 for NIH Research Agreement (Rupee) Fund respectively has been requested for F.Y. 1966. This increase is proposed to cover higher clearing forwarding and demurrage charges etc., at Chittagong Port. Also, because of program expansion, additional supplies will be required in F.Y. 1966.

(more)

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RENT, COMMUNICATION & UTILITIES:

Under this heading an additional Rs.5000/00 for General Operating Fund have been requested for F.Y. 1966. This request has been made to offset higher Post rates and an increased volume of communication (i.e. letters, cable etc.,). No increase, however, was requested under this category for the NIH Research Agreement (Rupee) fund. In fact, our projected budget shows a Rs.2000/00 cut.

PRINTING & REPRODUCTION:

Due to the increased patient load in our Hospital Ward, it has been necessary to have additional copies printed of the various forms used on CRL Ward. An increase of Rs.3000/00 in this Fund has been requested for F.Y. 1966.

In the NIH Research Agreement (Rupee) under this category we have estimated a total expenditure of Rs.40,000/00 as against Rs.11,000/00. This increase is mainly to cover both the cost of CRL reprints and the special types of forms and cards etc., introduced in the vaccine field trial area.

OTHER CONTRACTUAL SERVICES:

Expenditure under this head has been estimated to Rs.20,000/00 and Rs.50,000/00 for F.Y. 66 in OPF and NIH Research Agreement (Rupee) Fund respectively without any request for increase. This shows a decrease of Rs.5000/00 in the NIH Research Agreement (Rupee) fund.

SUPPLIES & MATERIALS:

Current year's expenditure in Operating Fund under this category has been estimated to Rs.92,652/00. An estimate of Rs.100,640/00 or an increase of Rs.7988/00 has been estimated for F.Y. 66. This increase is less than 10% to offset the general increase of Prices of commodities in every year.

In NIH Research Agreement (Rupee) we have estimated an expenditure of Rs.184,894/00 during F.Y. 65. We have requested Rs.217,259/00 or an increase of Rs.32,365/00 to offset the general increase of prices of commodities and also, because of program expansion, additional supplies will be required in F.Y. 1966.

EQUIPMENT:

No additional amount under this category is requested.

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