

# Bangladesh 循環器病対策 実施協議チーム報告書

昭和54年7月

国際協力事業団  
 医療協力部

JAPAN INTERNATIONAL COOPERATION AGENCY

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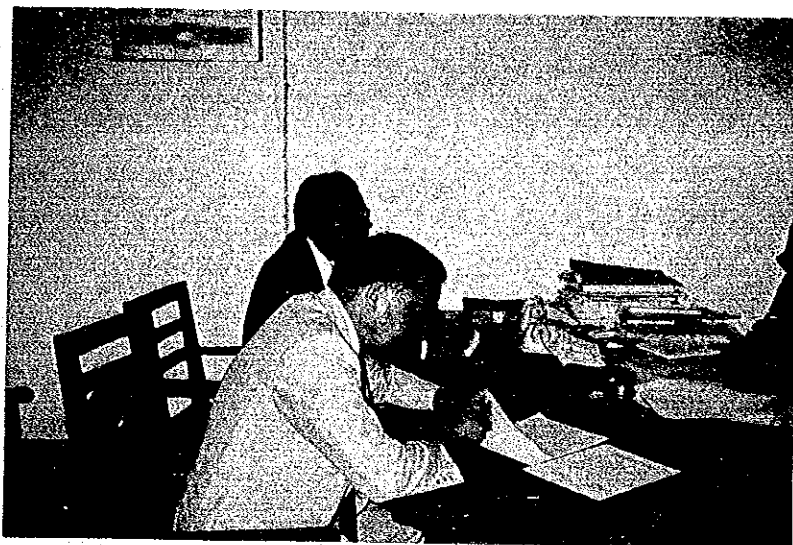
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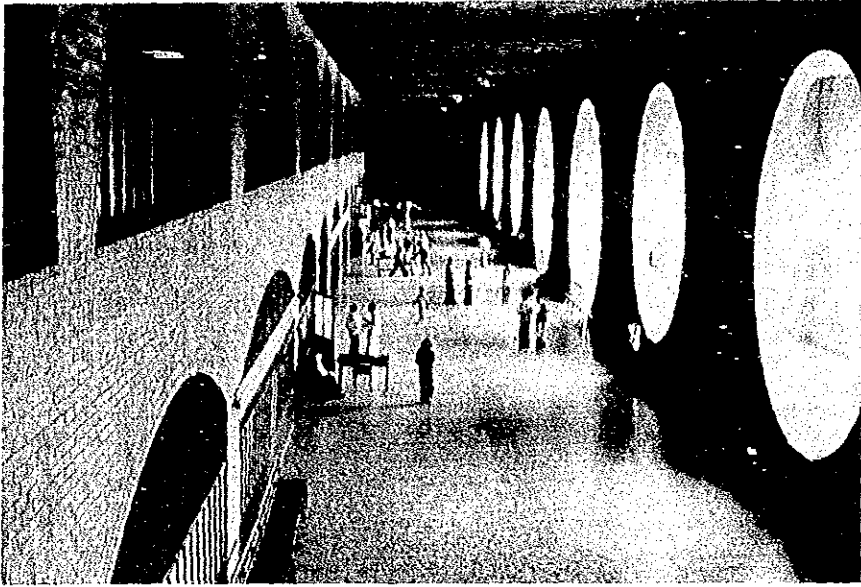




討議々事録署名



外務大臣との会見



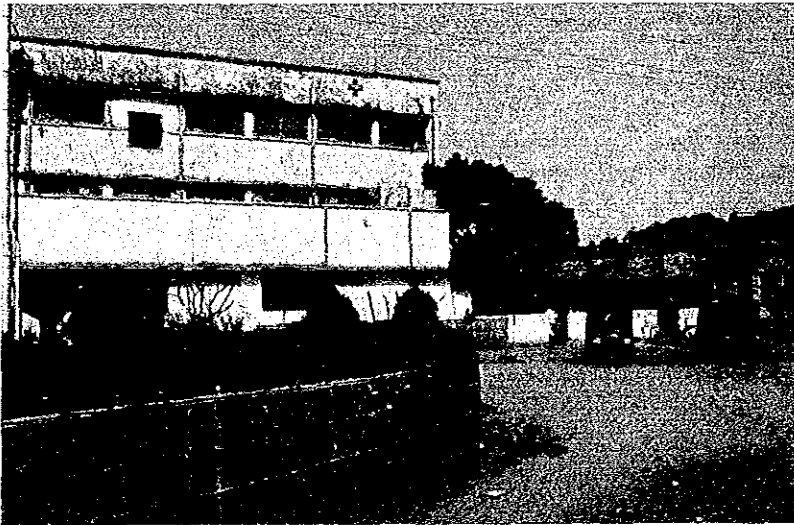
スラワルディ病院外来受付



スラワルディ病院心臓病患者曲直部団長診察



ダッカ医科大学（正面）



コレラ研究所（病棟）



## I. は じ め に

わが国のバングラデシュ国に対する医療協力は、現在家族計画プロジェクトを実施中であるが、さらに、近年両国において重要度を増しつつある循環器病対策について協力するため、本件調査チームが派遣された。

その結果、バングラデシュ国においては、循環器病研究所の機能の強化に焦点をあわせて技術協力を行なうことにより同国における循環器病対策に寄与する目的で保健・医療協力を行なうこととなった。今回の実施協議チーム派遣により医療協力実施の第一歩を踏み出すことができたことに対し、関係者各位、特に国立循環器病センターのひとかたならぬ御尽力に対し深甚なる謝意を表したい。

最後に、当該プロジェクトにするバングラデシュ国政府の大きな期待に応えるべく今後共一層の協力を関係者各位に願います次第である。

昭和54年5月

国際協力事業団

理事長 長谷川 正 男

## Ⅱ. 実施協議チーム派遣の経緯

バングラデシュ循環器病研究所に対する協力要請は昭和51年12月に在バングラデシュ大使を通じて53年度無償協力予算要求案件として提出されたものである。バングラデシュ側がこのような要請を提出した背景としては、バングラデシュにおいて心臓病、とりわけリウマチ性心臓病が国民の保健問題のうえで重要な地位を占めており、大統領直轄の国民経済審議会でも重要施策として検討されていたことが挙げられる。昭和52年7月同国を訪問した鳩山外務大臣は調査のため専門家を派遣したいと発言した。その後昭和52年10月ダッカを訪問した早川特使は調査のため専門家の派遣を予定しており、その結果によって機材の供与を考慮したいと発言した。これらの経緯にかんがみ、昭和53年3月20日より3月29日まで国立循環器病センターの安西定運営部長及び榊原博生理機能検査部長の2名を基本的な調査を行なうため派遣した。安西専門家らの調査の結果、バングラデシュの循環器病研究所に対して技術協力を行なうことは同国における循環器病対策の推進に大いに資するものであるとの結論を得た。その結果同年9月18日より27日まで再度安西専門家を派遣して、本プロジェクトの基本的性格付け、技術協力の具体的内容、バングラデシュ側の準備状況の確認等を行なった。調査の結果、バングラデシュ側は既に循環器病対策に関する国家計画を立案しており、その中に日本からの無償資金協力、技術協力が体系的に組込まれていることが判明した。バングラデシュ側の計画によれば、第一段階として循環器病研究所は130床で既に活動を開始しており、これに対して1979年度で我国の無償資金協力による主要機材の整備を期待している。我国よりの技術協力により段階的に活動分野の拡大を計画している。この3ヶ年の計画のために国家経済審議会（National Economic Council）は約250万ドルの予算措置を承認した。

3ヶ年計画終了後5ヶ年計画で地方病院、保健センター等のECG等を整備し、循環器病研究所で養成された医師等を配置するという計画である。

その他この時の調査で安西専門家とDr.Malikの間で技術協力計画のドラフトが討議された。

これらの調査報告を検討した結果、実施協議チームの派遣が適当であるとの結論に達し、今回討議議事録の署名のはこびとなった。

### Ⅲ. 実施協議チームの構成

|      |         |                    |
|------|---------|--------------------|
| 団長   | 曲直部 壽 夫 | 国立循環器病センター 病院長     |
| 団員   | 下 村 克 朗 | 国立循環器病センター 内科部長    |
| ”    | 小 澤 秀 樹 | 国立循環器病センター 集団検診部医長 |
| 業務調整 | 伊 藤 雅 治 | 国際協力事業団医療協力部医療第二課長 |

#### Ⅳ. 調 査 日 程

- 2月13日(火) 1 2.0 0 TG 303便にてダッカ着  
1 5.0 0 在バングラデシュ伊藤大使表敬  
1 6.0 0 JICA 事務所訪問, 田中所長と日程等打合せ
- 2月14日(水) 1 0.0 0 Shaheed Surawardy Hospital 訪問及び視察, 循環器  
病研究所 (Institute of Cardiovascular Diseases) のDr.  
Malik 所長と面会。大使館大住一等書記官及びJICA 田  
中所長同行。  
1 3.0 0 浜野参事官主催昼食会  
(於 Intercontinental Hotel)
- 2月15日(木) 1 0.0 0 第1回 R.D. 協議  
バングラデシュ側はMr. M. Ali, Joint Secretary,  
External Resources Division, Ministry of Finance  
1 5.0 0 在ダッカ日本人医師と意見交換。大住一等書記官同席
- 2月16日(金) 1 0.0 0 Dr. Malik と年次計画について協議
- 2月17日(土) 資料整理  
1 9.0 0 大使公邸で夕食会
- 2月18日(日) 休日
- 2月19日(月) 1 0.0 0 外務大臣表敬  
1 1.0 0 Dacca Medical College 訪問  
1 3.0 0 Dr. Malik 主催昼食会  
1 9.3 0 団長主催 Dinner Party
- 2月20日(火) 1 0.0 0 第二回R.D協議  
1 1.0 0 小児病院, 整形外科病院訪問
- 2月21日(水) National Holiday
- 2月22日(木) 1 0.0 0 R.D サイン  
1 1.0 0 厚生大臣表敬  
1 1.3 0 厚生次官表敬



|          |         |                          |
|----------|---------|--------------------------|
|          | 1 2.0 0 | Postgraduate Hospital 訪問 |
|          | 1 3.0 0 | コレラ研究所訪問                 |
|          | 1 9.0 0 | 厚生次官主催夕食会                |
| 2月23日(金) | 9.0 0   | DND Area 訪問              |
|          | 1 5.0 0 | 大使に帰国報告                  |
| 2月24日(土) | 3.0 0   | TG 304 にてDacca 発帰国       |

## V. 総論

バングラデシュ（以下バ国）循環器病研究所の整備に関するバ国よりの要請とわが国の対応との経緯を簡単に述べると次の如くである。まず昭和51年12月、バ国よりの要請に始まり、さらに翌52年6月、在ダッカ日本大使吉岡氏に強い要請がなされている。同年7月、鳩山外務大臣バ国訪問に際し、これに対して調査専門家の派遣を約している。10月、早川崇代議士が例のダッカハイジャック事件の答礼使としてバ国を訪問の際、さらに強い要請がバ国よりなされている。かくて昭和53年1月、外務、厚生両省関係者がその対応策を協議し、同年3月、国立循環器病センターが、厚生省より依頼を受けて2名の医師（安西定運営部長、榊原博内科部長）を派遣し、バ国における心臓病の実態、心臓病研究所（センター）の構想と運営計画、当該センター整備の援助に対する諸問題について調査した。これに基づいて、わが国として、無償資金協力と技術協力の両面からの援助の基本的方針が固まり、さらに同年9月、安西定運営部長（他に外務省より1名）が、本計画実施のより具体的事項の調査に派遣された。

以上のような経緯を経て、本チームは上述の無償資金協力の実施上の問題点、技術協力に関する実際上の諸問題について、現地を調査、バ国関係者と詳細に意見を交換して、本プロジェクトの効率的、効果的实施を計らんとし、併せて、これに基づいてRecord of Discussions の署名を行う目的で派遣されたものである。

## VI. 討議議事録署名に到るまでの経過

### 1) 概要

本件プロジェクトについては準備段階から国立循環器病センターの全面的な協力体制が確立していたこともあり、二回にわたる安西専門家等の調査報告をもとに外務省、実施協議チームの団員及び国際協力事業団医療協力部の関係者で協議を行ない、R. D. のドラフトを作成した。基本的な考え方としてはバングラデシュの循環器病研究所の機能の強化に焦点をあわせて技術協力を行なうことにより同国における循環器病対策に寄与するということである。従って具体的な活動内容としては、同国にまん延しているリウマチ性心臓病の予防をはじめとして、虚血性心疾患、リウマチ性心疾患及び先天性心疾患の診断と治療、心疾患の疫学的研究及びこのプロジェクトに関連する要員のトレーニングを含んでいる。

このような考え方に基き作成されたR. D. のドラフトを実施協議チームの派遣前にあらかじめ、外交ルートを通じてバングラデシュ側に送付し検討してもらった。その結果日本側R. D. 案に対するバングラデシュ側のコメントは次の通りであった。

(1) 日本人専門家の業務上の国内旅費及び宿舎費について日本側の負担として欲しい。

(2) IIの特権、免除については別途コメント予定の趣

これに対して実施協議チームに対し外務省より、(1)についてはバングラデシュ側の責任を明記するが、交渉の成行きによっては現地事情を考慮して実質的に日本側負担とすることで協議に臨む、(2)についてはバングラデシュとの農業協力プロジェクトの協定にならって対処するとの方針があらかじめ指示があった。

### 2) 協議内容

前述のような対処方針案をもって、2月15日午前10時よりバングラデシュ大蔵省においてわが方実施協議チームとERDのJoint SecretaryであるMr. M. Aliとの間で第1回目の協議を行なった。

#### (1) 署名者について

バングラデシュ側より本件R. D. の署名者について Ministry of Finance の External Resources DivisionのDeputy Chief としたい旨提案があった。現在バングラ

デシュはERDが全ての外国援助の窓口機関となっており、当然ERDの然るべき人が署名者となるべきであると説明を行った。わが方としては家族計画プロジェクトの例（保健・人口省のDeputy Secretary）もあり、Deputy Secretary と方針を固めていたが、先方の説明によればERDにはDeputy Secretaryはおらず、Deputy Chief はDeputy Secretary と同格のポストであるとの説明を了解し、MR. Saiful Haque との間で署名することを合意した。

(2) 特権・免除について

バングラ側がわが方案に難色を示した場合は農業協力プロジェクトの協定にならない。対案を用意していたが、結局討議のなかでバングラデシュ側がわが方の案を了解した。

(3) 日本人専門家の国内旅費と宿舎について、

本件については日本側負担として欲しい旨要望が出されたので、原則としてバングラデシュ側の責任という形でR. D. に明記するが、実質的には日本側が負担するという事で合意し、Vの1の(4)と(5)のパラグラフの後段に、taking into account local conditons and financial possibilities of Bangladesh authorities concerned; をつけ加えることとした。

(4) Coordinating Committee の機能について

Coordinating Committee の機能のひとつとして、To advise the Bangladesh authorities concerned with the implementation of the project at all stages and at all levels と記載されているが、これに対してバングラデシュ側より、この委員会がバングラデシュ当局のみならず、国際機関派遣の専門家又は第三国派遣の専門家及び機関に対して助言を行なえるよう、and all others concernedを追加するよう提案があった。これに対してわが方より本件プロジェクトは二国間協力プロジェクトであり、日本とバングラデシュ双方によって構成されるこの委員会が第三国機関又は国際機関に対して助言を行なうのは適切でない旨主張したが、第一回目の協議では平行線をたどり、二回目の協議に持越すことになった。

(5) Coordinating Committee の構成について

バングラデシュ側より議長を保健省次官とし、バングラデシュ側政府部内の関係当局を網羅する形で、提案があった。議長が出席不能の場合は循環器病研究所の所長が代行する旨Noteをつけ Vice - chairman 又はCo - chairman はおかないこと

で合意した。Coordinating Committee の構成員として保健省、循環器病研究所はもちろのこと計画省、大蔵省からの参加はバングラデシュ側の本件プロジェクトへの支援体制を確立するうえで不可欠であるとの説明を了解し合意した。

第一回目の協議ではこれらの点が討議され結局第二回目の協議に持越された点はCoordinating Committee の機能の点についてのみであった。大使館の大住書記官とも相談し、本省への請訓も検討したが、結局現地で二回目の協議に入る前にバングラデシュ側にinformalな形で日本側としてはこの点について全く譲歩する余地がない旨伝え先方政府部内の了解を取付けるよう依頼した。その結果2月19日に、Dr. Malik よりバングラデシュ側関係者の了解を取付けたので、22日のR.Dサインは事実上全く問題がなくなった旨連絡があった。

1974年2月22日無事R.Dのサインを終了した。

VII. RECORD OF DISCUSSIONS (討議議事録)

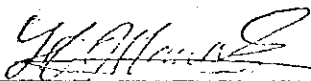
THE RECORD OF DISCUSSIONS BETWEEN THE JAPANESE  
IMPLEMENTATION SURVEY TEAM AND THE AUTHORITIES  
CONCERNED OF THE GOVERNMENT OF THE PEOPLE'S  
REPUBLIC OF BANGLADESH ON THE JAPANESE TECHNICAL  
COOPERATION FOR THE CARDIOVASCULAR DISEASES  
CONTROL PROJECT


The Japanese Implementation Survey Team (hereinafter referred to as "the Team") organized by the Japan International Cooperation Agency (hereinafter referred to as JICA) and headed by Dr. HISAO MANABE, Director-General of the Hospital, National Cardiovascular Center, visited the People's Republic of Bangladesh from February 14, 1979 to February 23, 1979 for the purpose of working out the details of the technical cooperation program concerning the Cardiovascular Diseases Control Project in the People's Republic of Bangladesh.

During its stay in the People's Republic of Bangladesh, the Team exchanged views and had a series of discussions with the Bangladesh authorities concerned in respect of the desirable measures to be taken by both Governments for the successful implementation of the above-mentioned Project.

As a result of the discussions, the Team and the Bangladesh authorities concerned agreed to recommend to their respective Governments the matters referred to in the document attached hereto.

Dacca, Bangladesh, 22 February, 1979.

  
\_\_\_\_\_  
(HISAO MANABE)  
Head of the Japanese  
Implementation Survey Team.

  
\_\_\_\_\_  
( N. SAIFUL HAQUE )  
Deputy Chief  
External Resources Division  
Ministry of Finance.

## THE ATTACHED DOCUMENT

### I. COOPERATION BETWEEN BOTH GOVERNMENTS

1. The Government of Japan and the Government of the People's Republic of Bangladesh will cooperate with each other in implementing the Control of Cardiovascular Diseases Project (hereinafter referred to as "the Project") for the purpose of contributing to the control of cardiovascular diseases in Bangladesh with main focus on strengthening the function of the Institute of Cardiovascular Diseases through technical cooperation and thus to promote the health conditions in Bangladesh.
2. The Project will be implemented in accordance with the Master Plan which is given in Annex I.

### II. DISPATCH OF JAPANESE EXPERTS

1. In accordance with the laws and regulations in force in Japan, the Government of Japan will take necessary measures through JICA to provide at its own expense services of the Japanese experts as listed in Annex II through the normal procedures under the Colombo Plan Technical Cooperation Scheme.
2. The Japanese experts referred to paragraph 1. above and their families will be granted in the People's Republic of Bangladesh the privileges, exemptions and benefits no less favourable than those accorded to experts of third countries working in the People's Republic of Bangladesh under the Colombo Plan Technical Cooperation Scheme.

### **XIII. PROVISION OF MACHINERY AND EQUIPMENT**

1. In accordance with the laws and regulations in force in Japan, the Government of Japan will take necessary measures through JICA to provide at its own expense such machinery, equipment and other materials necessary for the implementation of the Project as listed in Annex III, through the normal procedures under the Colombo Plan Technical Cooperation Scheme.
2. The articles referred to in paragraph 1. above will become the property of the Government of the People's Republic of Bangladesh upon being delivered c.i.f. to the Bangladesh authorities concerned at the ports and/or airports of disembarkation, and will be utilized exclusively for the implementation of the Project in consultation with the Japanese experts referred to in Annex II.

### **IV. TRAINING OF BANGLADESH PERSONNEL IN JAPAN**

1. In accordance with the laws and regulations in force in Japan, the Government of Japan will take necessary measures through JICA to receive at its own expense the Bangladesh personnel connected with the Project for technical training in Japan through the normal procedures under the Colombo Plan Technical Cooperation Scheme.
2. The Government of the People's Republic of Bangladesh will take necessary measures to ensure that the knowledge and



experience acquired by the Bangladeshi personnel from technical training in Japan will be utilized effectively for the implementation of the Project.

V. MEASURES TO BE TAKEN BY THE GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH

1. In accordance with the laws and regulations in force in the People's Republic of Bangladesh, the Government of the People's Republic of Bangladesh will take necessary measures to provide at its own expense:

- (1) Services of the Bangladesh counterpart personnel and administrative personnel as listed in Annex IV;
- (2) Land, buildings and facilities as listed in Annex V;
- (3) Supply or replacement of machinery, equipment, instrument, vehicles, tools, spare parts and any materials necessary for the implementation of the Project other than those provided through JICA under III above;
- (4) Transportation facilities and travel allowance for the Japanese experts for the official travel within the People's Republic of Bangladesh, taking into account local conditions and financial possibilities of Bangladesh authorities concerned;
- (5) Suitably furnished accommodations for the Japanese experts and their families, taking into account local conditions and financial possibilities of Bangladesh authorities concerned;

2. In accordance with the laws and regulations in force in the People's Republic of Bangladesh, the Government of the People's Republic of Bangladesh will take necessary measures to meet:

- (1) Expenses necessary for the transportation within the People's Republic of Bangladesh of the articles referred to in III above as well as for the installation operation and maintenance thereof;
- (2) Customs duties, internal taxes and any other charges, imposed in the People's Republic of Bangladesh on the articles referred to in III above;
- (3) All running expenses necessary for the implementation of the Project.

#### VI. ADMINISTRATION OF THE PROJECT

1. The Japanese experts will give necessary technical guidance and advice to the Bangladesh staff associated with the Project pertaining to the implementation of the Project, and the Bangladesh authorities concerned will be responsible for the administrative and managerial matters pertaining to the Project.
2. For successful implementation of the Project, the Coordinating Committee will be established with the members as listed in Annex VI.

The function of the Committee are as follows,

- (1) To formulate plan for the Project;

Continued/-

- (2) To review the implementation of the Project;
- (3) To advise the Bangladesh authorities concerned about the implementation of the Project at all stages and at all levels.

#### VII. CLAIMS AGAINST JAPANESE EXPERTS

The Government of the People's Republic of Bangladesh undertakes to bear claims, if any arises, against the Japanese experts engaged in the Project resulting from, occurring in the course of, or otherwise connected with the discharge of their official functions in the People's Republic of Bangladesh except for those arising from the willful misconduct or gross negligence of the Japanese experts.

#### VIII. MUTUAL CONSULTATION

There will be mutual consultation between the two Governments on any major issues arising from, or in connection with this Attached Document.

#### IX. TERM OF COOPERATION

The duration of the technical cooperation for the Project under this Attached Document will be five years from February 22, 1979 to February 21, 1984.

Continued

## ANNEX I MASTER PLAN

### 1. Objective

The project aims to contribute to the development of the national cardiovascular diseases control programme through the upgrading the level of prevention, diagnosis and treatment of cardiovascular diseases.

### 2. Implementation

The Institute of Cardiovascular Diseases has responsibilities for the implementation of the Project with the guidance of the Coordinating Committee. The Government of Japan will cooperate with the Government of the People's Republic of Bangladesh in carrying out the Project through dispatch of Japanese experts, acceptance of Bangladesh personnel for training in Japan and provision of equipment.

### 3. Activities under the Project;

Activities will include the followings,

- (1) Prevention of rheumatic heart diseases and other cardiovascular diseases.
- (2) Diagnosis and treatment of ischaemic, rheumatic and congenital heart diseases and other cardiovascular diseases.
- (3) Epidemiological research on cardiovascular diseases.
- (4) Technical guidance and advice to the doctors, nurses and other personnel assigned to the Project.

ANNEX II JAPANESE EXPERTS

Experts

in cardiology  
in cardiac surgery  
in radiology  
in anaesthesiology  
in pediatric cardiology  
in rheumatic cardiology  
in nursing  
in laboratory technique  
in physiotherapy  
in other related fields mutually  
agreed upon as necessary

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Note: One of the Japanese experts will be nominated  
as a Team Leader.

ANNEX III THE ARTICLES TO BE PROVIDED BY THE  
GOVERNMENT OF JAPAN

Machinery, equipment and others for the Project  
mutually agreed upon as necessary.

**ANNEX IV BANGLADESH PERSONNEL**

**Cardiologist**

**Cardiac Surgeon**

**Radiologist**

**Anaesthetist**

**Nurse**

**Laboratory technician**

**Electro-Medical Technician**

**Other personnel necessary for the implementation  
of the Project.**

**ANNEX V LIST OF LAND, BUILDINGS AND FACILITIES**

The Government of the People's Republic of Bangladesh offers enough land, buildings and facilities to the Project.



ANNEX VI COMPOSITION OF THE COORDINATING COMMITTEE

Chairman Secretary, Health Division  
Ministry of Health, Population Control and  
Family Planning.

Bangladesh side

Japanese side

Director of ICVD

Team Leader

Deputy Director of Health

Heads of Divisions of ICVD

Experts

Section Chief, Health Section  
Ministry of Planning

An official of  
Embassy of Japan

Deputy Secretary (Development)  
Ministry of Finance

Resident Representative  
of JICA

Representative of ERD  
Ministry of Finance

Representative of Health Division  
Ministry of Health, Population  
Control and Family Planning

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Note: In the absence of the Chairman in any meeting,  
Director of ICVD or any other official designated  
by the Chairman will act as substitute.

The Cardiovascular Diseases Control Project (Tentative)  
February, 1979

| Fiscal Year | Trainee to receive   | Expert to dispatch<br>(6 Months)                      | Expert to dispatch<br>(3 Months)                             |
|-------------|--|---|--|
| 1979        | cardiologist (senior) 2名<br>cardiac surgeon (senior) 1名<br>paramedical staff (inner medicine and surgical medicine) 2名<br>Dr. Malik (observation tour) 1名 (6名) | cardiologist<br>cardiac surgeon (2名)                  |  |
| 1980        | cardiac surgeon (senior)<br>anaesthetist ( " )<br>radiologist ( " )<br>nurse ( " )<br>各1名 (4名)   | cardiologist<br>cardiac surgeon (2名)                  | radiologist<br>laboratory technician (2名)                    |
| 1981        | epidemiologist (senior)<br>physicist ( " )<br>paramedical physiotherapist<br>paramedical technician<br>各1名 (4名)  | radiologist<br>anaesthetist (2名)                      | nurse<br>laboratory technician<br>cardiac surgeon (3名)       |
| 1982        | cardiologist (senior)<br>cardiac surgeon ( " )<br>paramedical nurse (operation)<br>paramedical technician (M.E.)<br>各1名 (4名)                                   | pediatric cardiologist<br>rheumatic cardiologist (2名) | physiotherapist (pending)<br>nurse<br>radiologist (3名)       |
| 1983        | anaesthetist (senior)<br>radiologist ( " )<br>cardiologist ( " )<br>paramedical nurse ( " )<br>各1名 (4名)  | renal surgeon<br>nephrologist (2名)                    | rehabilitation doctor<br>laboratory technician<br>nurse (3名) |

## Ⅷ. 調査視察機関の概況

### 1) 循環器病研究所

本プロジェクトに従って援助計画の対象となるShaheed Suhrawardy Hospitalは、現在建築中の国会議事堂を含め各種の官庁舎の並ぶ広大な敷地内にあり、将来のMedical complexの一翼となる主要な病院である。建物は1963年創立、1965年診療開始、1972年より1978年まで整形外科病院として運営されていたが、本援助計画が予想されるに及んで整形外科は後述の病院に転居し、1978年6月Dr. Malik (cardiologist)が本病院のDirectorとしてPost-Graduate Hospitalより就任した。現在はベッド数75床(内心臓患者30床)、外来患者400人(内心臓患者20人)の一般病院として運営されているが、病院の将来計画によると現在の建物の後部に事務部をとり囲んで8階建ての病棟4棟(各400床)が増設され、このうちの一棟が循環器疾患患者に充てられる予定である。既にこの一棟の一階部分(48床)は患者監視室を含めて工事が完了し、モニター用の配線も設置されて、医療機器さえ持込めばいつでも使用出来る状態にある。この二階以上の部分は今後援助計画が進行するのと並行して漸次400床にまで増設の予定である。

この他に本計画に関係する部分として昨年度まで整形外科で使用していた手術室の他、現在使用中のX線撮影室、各種臨床検査室、その他随時使用可能な空室が多数ある。現在これらの検査室には検査要員は配置されているものの、その設備や医療機器は極めて貧弱で、老朽なX線単純撮影機2台、1チャンネル心電計1台、顕微鏡2〜3台、PHメーター、血球カウンター各1台等、手作業で諸検査を行う場合の必要最低限の機器のみが閑散と置かれている程度であった。

### 2) その他

#### i) Children's Hospital

院長Dr. kumar, 現在164床。16か月前に開院したばかりの小児専門病院で、近い将来には220床にまで増床の予定である。外来1日1,000人。消化器疾患、呼吸器疾患、栄養失調が主で、医師21人、看護婦44人が診療に従事している。intensive care unitもある。

## ii) 整形外科病院

Children's Hospitalと同じ建物内にあり、主としてダッカ市内から送られてくる整形外科患者を対象としている。病院内に Physical Therapy Occupational Therapyの訓練室や、義肢製作所などがあり、治療からリハビリテーションに至る一貫した治療体系は、過去18年間インド・バングラデシュの医療に携わってきたアメリカ人院長の努力に負う所が大きい。

## iii) Dacca Medical College

1946年創立。バングラデシュの8医科大学の1つである。医学生数200人。外来患者は月4～6.6万人。病床数1,050, Emergency beds 150, 常時1,200～1,300人程の入院患者があり、病室が満床で廊下にベッドをおいて患者を収容している場面が院内の各所にみられた。教授30人, 医師120人, 看護婦80人, 看護学生150人。医科大学とは云い乍ら検査室の装備は殆んど皆無である。

## iv) Post Graduate Hospital

現在は古いホテルに間借り中で、心臓患者のベッド数は17床である。教授24人, 医師20人。建物は裏の隣接地に新しく建設の予定で、現在基礎工事中である。完成後は心臓疾患患者40名を擁し、1)の循環器病研究所と有機的な関連をもって運営する方針であると云う。

## v) Cholera Research Institute

本年よりDiarrheal Disease Research Instituteと改称された。19年前に米国の資金で設立され、現在尚米国側65%（創立当初85%）の関与でWHOの協力の下に運営されている。本施設は医療面、研究面共に極めて高度の内容をもち、病室も研究室も近代的に装備されており、医療援助計画の範とするに足るものと云えよう。常時42～50床を備え、患者の多い時は200～300人の収容が可能である。月に数百人の患者があり、1日でそのまま帰宅させるか、1～2日間入院させるか、症状に応じて数多くの患者をさばっている。疾病の発生状況、フィールドを選んでの人口動態等、この国の貴重な統計資料が作られている。図書室も完備している。

## Ⅸ バングラデシュの循環器病及びその対策の現状と 本プロジェクトの役割

まず、バングラデシュにおいて、循環器病がどれ位の頻度にみられるかを知るために、Prof Malik が1976年に報告した先天性及び後天性心疾患 (Congenital and acquired heart diseases (A survey of 7,062 Persons)) をみると、農村地域住民 (2,324人)、ジュート工場労働者 (500人)、ダッカ市内の病院外来患者、 (4,238人、富裕階級の人々の受診は稀)、合計7,062人のうち、循環器病患者は、207人で、2.92%にあたる。その内訳は表1に示すように、高血圧、リウマチ性心臓弁膜症が多く、虚血性心疾患がこれに続く。これらの疾患の原因を考えると、Prof Malik および、現地滞在の石川医師、吉野医師、金田保健婦たちの意見を総合して、溶連菌感染による扁桃炎および腎炎が、高血圧発生の原因となったりリウマチ熱反復によりリウマチ性心臓弁膜症を惹き起こすことが考えられている。とくにリウマチ性心臓弁膜症は、貧困階級ないしは中等度の階級の人々に多く、これらの人々が貧困と過密の生活環境にあることから、不良な衛生環境に関係があることが指摘されている。虚血性心疾患は、富裕階級ないしは中程度の階級の人に多い。栄養摂取状況は、国民のほとんどが低栄養の状態にあり、一般には欧米諸国のような動物性脂肪の過剰摂取は考え難いが、富裕階級ではとくに一般の人々とは異なった栄養摂取をしているのかも知れない。また、この国では、ヤシの実の汁を飲用する習慣があり、ヤシの実の中には多量のコレステロールを含有することが関係しているのも知れないと指摘する者もある。先天性心疾患の頻度は低い。先天性心疾患の患者は幼少期に死亡する者が多いため、実際にはより以上の患者が居ることが予想されている。

次に、ダッカ医科大学の入院患者のうち、死亡者の死因をみると、1974年には消化器疾患が1位であったが、その後循環器疾患が増加し、1976年には消化器疾患を僅かに上回って1位となり、全死亡患者の21%を占めた。国民全体の中で病院に入院して死亡する患者は極めて限られた人であり、この死因統計から国民の疾病動向を伺うことはできない。ただ、循環器病が、この国の最高の医学の分野では重要な位置を占めていることを示唆する資料である。

では、国民全体の死因はどうなっているであろうか。バングラデシュでは、全国的な

死因統計はない。前記の医師、保健婦が地方で日常活動している中で体験してきたことは、圧倒的に下痢が多く、脱水症状のため末端のディスペンサリーに診療を求める前に死亡している。次いで、咳、気管支炎、結核であり、菌検査ができないため、結核と他とを分けられない。高血圧の患者は田舎でもかなりみられ、矢張溶連菌感染から腎炎を元に発生するものと考えられる。コレラ研究所では、特定の地域で調査を行っており、この地域はダッカ東方約60Kmの農村部で、人口263,507人の郡単位のMatlab地区である。この地区の総死亡数は5,393人で人口1,000対死亡率は"Asia 1979 year book"という本に示されている20（バングラデシュ）と大体一致している。死因別の死亡数は表2に示すように、死因の第1位は赤痢であり、男女計で総死亡の20%近くを占める。第2位発熱、第3位呼吸器疾患、（感冒、発熱、咳、結核を含む）、第4位破傷風、第5位水症、第6位下痢となる。これらの分類病名が示すように、大まかな疾病分類しかできていないのは、検査ができないため、症状により病名をつけざるを得ないからである。これらの中で、循環器疾患としては、第9位のリウマチ性疾患138人、第13位の心臓病58人であるが、第5位の水症と分類されたものの中には腎疾患が多く含まれていることが考えられ、高血圧やリウマチ性心臓病と関係が深いもののがかなりあることが予想される。又第3位の呼吸器疾患は、乾季の異常な乾燥による障害や結核もあることながら、扁桃炎との関係もある。赤痢をはじめとして、下痢症は、腸管伝染病に対する対策の重要性を物語っている。コレラ研究所が長年の活動の成果としてコレラを撲滅し、今年1月より、国際下痢症研究センターと名称をかえて、下痢疾患全般に対処する態勢を本格的に固めた。死因統計には出ないが、低栄養は重大な問題であり、下痢と低栄養が現在、最大の課題である。しかし、心臓病に焦点をあてて、その原因疾患や深い関連をもつ疾患をとりあげていくことは、これに次ぐとも考えられる課題となろう。

ここでもう一度、バングラデシュの死亡率が人口1,000対20であることに戻って、これをアジアの他の国の死亡率と比較すると、戦乱のインドシナ3国の21~18と匹敵し、インド、パキスタン、インドネシアの14よりも高い（日本は6）。これらの国と同様に多産多死の様相を呈しており、バングラデシュとしては、出生を抑えることによって、子供の育成に費す力を節減することが重要な施策となっている。したがって、保健に関する省がMinistry of Health and Population controlであり、両者が同等のウェイトをもって位置づけられ、2つのDivisionとして、それぞれの次官を置いている。

Population control には、ZPG (Zero Population Growth) Project として、モデル地区をもうけて精力的な事業を展開している。ダッカ郊外のDND 地区は人口11万人面積22mile 平方であるが、単に産児制限を指導するだけでなく、妊産婦新生児保健、寄生虫駆除から、早婚防止教育、識字教育、戸籍作成、人口動態統計、職業教育までを含めて実施している。この地区はDistrict Medical Officer が常駐し、JICA から山下保健婦がFamily Planning の技術協力の一員として加わって新生児クリニックを担当している。Dr. Natiur Rahman は、出生率が現在の47から28まで下がり、死亡率が16に下がると、人口成長率は1.2%に押さえられると目標を語り、上記の幅広い事業を通じて村づくりを進めていかなければならないことを強調していた。

バングラデシュの現在の経済、保健、医療事情は、循環器病研究所を作るよりも以前に進めなければならない問題が多い。又、循環器病研究所を作るためには、保健医療関係技術者の養成、医療器材の供給体制の確立をはかることはもとより、もっと基礎的な問題として、衛生知識が低いこと、衛生環境の不良などが大きな障害となることが予想される。しかしコレラ研究所の組織化された活動、ZPG計画に精力的に取り組むこの国の人々を決して無視できない。医学、医療技術の頂点ともいえるプロジェクトを持込むことによつて、そのすそ野を広く作りあげる可能性も生じてくることを期待することも必要である。

表1

Distribution of Various Conditions in 207 Individuals with Heart Diseases Detected During a Survey of 7062 Persons.

| Disease                          | Number of individuals affected | Percentage |
|----------------------------------|--------------------------------|------------|
| Hypertension                     | 83                             | 1.10       |
| Rheumatic valvular Disease       | 53                             | 0.75       |
| Ischaemic heart Disease          | 24                             | 0.33       |
| Cardiac arrhythmia               | 16                             | 0.22       |
| Congenital heart Diseases        | 13                             | 0.18       |
| Cardiomyopathy and Cor pulmonale | 18                             | 0.25       |

表2 Deaths by cause, sex, 1975 in Matlab

|   | <u>Males</u> | <u>Females</u> | <u>Total</u> |
|---|--------------|----------------|--------------|
| Total   | 2,781        | 2,612          | 5,393        |
| 1 Dysentery                                     | 552          | 480            | 1,032        |
| 2 Fever   | 278          | 240            | 518          |
| 3 Respiratory (incl. cold,<br>fever, cough, TB) | 243          | 180            | 423          |
| 4 Tetanus                                       | 204          | 200            | 404          |
| 5 Dropsy  | 185          | 188            | 373          |
| 6 Diarrhea                                      | 112          | 120            | 232          |
| 7 Old age                                       | 119          | 106            | 225          |
| 8 Measles                                       | 65           | 117            | 182          |
| 9 Rheumatism                                    | 70           | 68             | 138          |
| 10 Drowning                                     | 74           | 50             | 124          |
| 11 Skin diseases                                | 41           | 53             | 94           |
| 12 Gastro-intestinal<br>(Other than cholera)    | 56           | 36             | 92           |
| 13 Heart diseases                               | 36           | 22             | 58           |
| 14 Jaundice                                     | 14           | 26             | 40           |
| 15 Accident                                     | 20           | 13             | 33           |
| 16 Liver diseases                               | 11           | 9              | 20           |
| 17 Child birth                                  | -            | 20             | 20           |
| 18 Suicide                                      | 10           | 10             | 20           |
| 19 Murder                                       | 10           | 4              | 14           |
| 20 Smallpox                                     | 5            | 2              | 7            |
| 21 Venereal diseases                            | 2            | 3              | 5            |
| 22 N.T.N. diseases                              | 1            | 2              | 3            |
| Cholera (proved)                                | 1            | 0              | 1            |
| Others  | 623          | 610            | 1,233        |
| Unknown   | 49           | 53             | 102          |



## X. 本計画実施上の問題点

### 1) 機材供与について

本件プロジェクトは54年度無償資金協力と結びついた形の技術協力であるが、無償資金協力によって供与される大量の機材をいかにして有効に活用し技術協力の成果を挙げ、循環器病研究所の機能を向上させるかが最大の課題であろう。このプロジェクトの性格からして機材は無償資金協力と技術協力計画の双方から供与されることになるが、いづれにしても今回の調査から明らかとなった基本的留意事項は次の通り。

- (1) 現在国際的に循環器病の範囲として心臓病の他に脳血管、腎血管等の病気を含めて考えるというのが一般的になっているようであるが、バングラデシュの循環器病研究所は同国における疾病構造から判断して脳血管の分野を除外することが適当であろう。したがって協力の期間中は心臓病を中心として技術協力を行っていくことになるが、無償資金協力による供与機材からも脳血管関連のものを除外するのが適当である。仮にバングラ側が日本の国立循環器病センターの機構をまねて脳血管部門を持ったとしても人材その他の理由でわが国から供与した機材が死蔵される恐れが多分にある。
- (2) バングラ側の要員の質・量から判断してあまり高度な機材は供与機材から除外すべきである。機材の具体的内容としては心臓病を中心とした診断及び治療に必要な機材、基本的な検査室の機材、疫学研究に必要な機材、教育・訓練に必要な機材が中心となる。
- (3) 電圧の変動が相当大きいのでスタビライザーの設置を考慮する必要がある。
- (4) 検査室、手術室等のエアコンが必要である。
- (5) 機材はチャタゴンより内陸輸送となるが、バングラデシュ側の説明によれば、通関、内陸輸送は特に問題はないとのことであった。又、途中の風土、気候をよく調査し、供与機材が精密なものが多いだけに、充分慎重な梱包を要するものとする。
- (6) 保守管理、操作については、バングラデシュの雨期の湿度は外来者には想像もつかないという。従って日本のこれらの機材がこの湿度に耐えられるか十分な調査と準備が必要である。また、バングラデシュの電気事情は極めて悪い、現に Dr. Malik 所長らは発電機を絶対に欲している。供与機材を充分運転するにはどれ程の

容量の発電機が必要か十分な調査が必要である。これらの点はまた、医療機器メーカーの選定にも関連した重要事項である。

## 2) 研修員受入れについて

本件技術協力は5年間の協力期間を予定しているが、研修員の受入れについては協力期間の前半に重点をおくべきであろう。54年度無償資金協力によって供与される機材が実際現地で据付を終了し、活動するのは55年になると考えられるので、それ以前に最少限必要なバングラデシュ側の要員を訓練しておく必要があるであろう。研修員の受入れ機関としては国立循環器病センターの協力が予定されており、同センターで6ヶ月から1年の研修を行う必要がある。第二年次以降についても今回の実施協議チームと先方のDr. Malik との協議により別紙のようなtentative な年次計画を作成したが、毎年一回プロジェクトの進行状況を考慮してCoordinating Committeeで計画を見直すことで合意した。

現在バングラデシュでは公務員医師のサラリー及び勤務条件等から1,500~2,000名の医師が外国へ流出したまま帰ってこないという事が報告されたが、本件プロジェクトについてもこの問題は無関係ではないであろう。このプロジェクトのもとに受入れた研修員をカウンターパートとして定着させるにはかなりの努力が必要となってくるであろう。研修員のNominationについては本件プロジェクトの主要なカウンターパートであるDr. Malik が誠実な人柄でありバングラデシュ政府部内でも相当の発言力を持っていることから、日本人チームリーダーの指導のもとに彼に任せておいてもあまり心配する必要はないものと思われる。

## 3) 派遣専門家について

現在の循環器病研究所のスタッフの数は少ないが、幹部は相当の技術力を持っていることから日本側にしてもかなりの実力を備えた専門家を派遣する必要がある。長期の専門家派遣には派遣先の都合及び現地の生活条件等から相当の困難が予測されるが、少なくとも日本人専門家のうち一名は長期に滞在することが望ましい。特に協力期間の前半にあってはその必要性が高い。

6ヶ月交替で協力期間中を継いでゆく場合、宿舍の問題を解決する必要がある。6ヶ月間のホテル住は相当の精神力を必要とするし、仮に住宅を借上げる場合でも契約

期間が通常一年であることを考慮すれば、この点について何等かの解決策を必要とする。

現在の循環器病研究所には機材らしい機材が殆んどないことから判断すれば、無償資金協力による機材が現地に到着する以前に専門家を派遣しても全んど技術指導が不可能であると考えられるので、機材の到着後とするのが望ましい。

#### 4) その他

Coordinating Committee の構成上の問題点については、派遣専門家チームリーダーの立場を考えるべきで、従来の我が国の医療協力チームがともすれば対象国側に使用されてきた事実を考え、チームリーダーの発言力と権限を十分に確保しておくことが、極めて肝要である。

## XI. 今後検討すべき問題

計画の進展と共に検討すべき諸問題があるであろう。前述した如く受入れ研修員の職種、人家や派遣専門家のそれについても臨機応変の対応が必要であろう。また、供与機材のアフターケアは、当然我が国側で考慮すべきものとバ国側も期待しているに違いない。その他、現地派遣専門家のその時、その時の要望は絶えず発生するものであり、我が国の当事者が如何にこれに即応するかが本プロジェクト効果的完遂の基本ともいうべきではなかろうか。

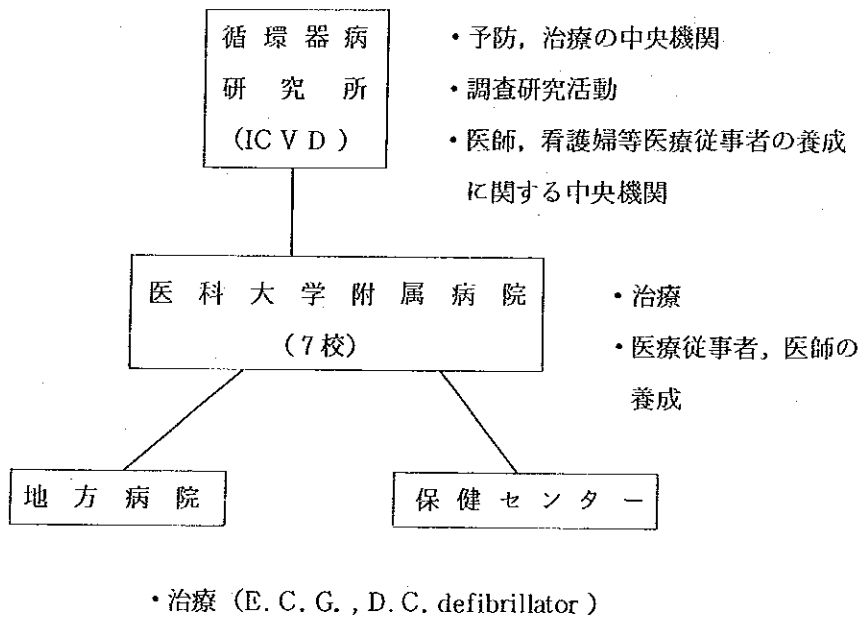
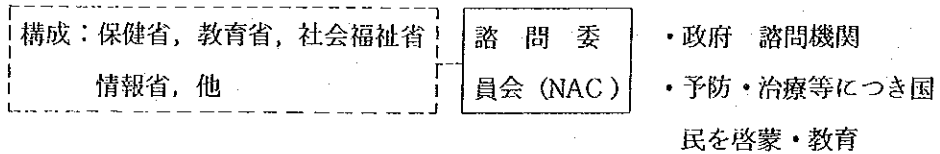
## XII. 総 括

バ国には本プロジェクト以前に協力をしなければならないものが多々あるようである。しかし、トップを引き上げることにより、全体のレベルアップを信じたい。何となれば、本調査において、バ国側の国造りの情熱は到る処に肌感ぜられ、また一般市民の明るさに接し、この考えを強くしたからである。

### XIII. 資料

#### Bangladesh 循環器病研究所プロジェクト

##### I 国家計画における体制と機能



保健・人口省：保健政策の決定，予算の配分決定

計 画 省：開発計画の承認，経済・技術協力の窓口

National Economic Council (NEC)：開発計画の最終決定

##### II 国家計画の概要

(I) 第1段階 (当初1978～79を予定)

・ICVD は130床で活動を開始

・我が国よりの無償資金協力による主要機材供与 (1979年度)

(2) 第2段階（当初1979～80を予定）

- ・我が国よりの技術協力により、段階的に活動分野の拡大
- ・医科大学附属病院に intensive coronary care unit の配置

※上記3ヶ年計画のために、Tk. 372, 68 lacs （約2.5百万ドル）の予算措置承認済み（NEC. 1977, 6, 11）

(3) 3ヶ年計画終了後の5ヶ年間の計画

- ・地方病院、保健センターにE, C, G等を配置
- ・ “ ” にI C. V. Dで養成された医師等を配置

(4) 3ヶ年計画終了後の10ヶ年間の計画

- ・医科大学附属病院に、総合的医療機材を配置

Ⅲ 医療従事者、医師等養成計画（於I CVD）

(1) 医師

- ・医科大学附属病院の医師の研修（1980年より毎年5人、6ヶ月）
- ・タナ（最小行政単位）レベルの医師の研修（1週間）

(2) 看護婦

- ・1979年より毎年約30人養成

# 業 務 報 告 書

(53年3月分)

昭和53年4月4日

国立循環器病センター

安 西 定

榊 原 博

## 1. バングラデシュ国における心臓病の実態

国全体の体系的な、実態を把握するために必要な調査統計は極めて乏しい。このため政府刊行物 (Statistical Pocket Book of Bangladesh), WHO報告書 (ダッカ駐在の作成したものおよびWHO調査員の報告), マリク教授の調査報告書, ダッカ大学栄養研究所の報告書, UNICEFの報告書等を入手するとともに, ダッカ大学附属病院の患者統計の解析のほか, 他の7医大附属病院の患者統計の提出を強く依頼した。(これは後日, 送付されてくる予定), さらに, ダッカ大学附属病院, 教育研修病院 (卒後) に入院中の患者を実際に, 診察調査するなど可能な限り, 心臓病の実態把握に努力した。

以上の結果については決定的なことは云いえないが, 総合的に考察して, ダッカ側のいうように, 心臓病患者は決して少なくないと思われる。とくに, リウマチ熱と関連深いリウマチ性心疾患が問題であると推察される。また, 日本と比較して高血圧症, 脳卒中が少ないのではないかと思われたが, これは興味深いことであった。

## 2. 心臓病研究所 (センター) の構想とその運営計画などについて

この問題についても調査団の重点テーマとして連日, 関係者から構想計画について聴取した。また, バングラ側の意見・希望についても聴取するとともに, 具体的な援助の可能性について技術的・専門的な立場からアプローチした。この結果を要約すると次の通りであった。

1) 本センターはnational level における心臓病についてのセンターと位置づけし,



心臓病対策に必要な治療、マンパワーの養成、研究調査の推進を行なうとしている。

本センターの整備は1978年～1980年の3ヶ年計画を基礎とし、step by step, year by year に、センターの整備とあわせて地方におけるサブセンターの整備（とくに地方の医大）を希望していることが明らかとなった。

- 2) 現在、運営されているシャーヒート・サラワルデイ整形外科病院を心臓病センターに転用する計画であって、すでに本病院の移転は3月25日（土）から始められていた。そして、現在の計画ではこのあとに、本センターを6月頃からスタートさせたいとしている。

このために必要な機材の援助を一期と二期に分けて強く要請しているところである。

- 3) 周囲一帯に新しい都市計画が進められているなかで、本センターを含めた各種の保健医療センター（小児医療、整形外科、結核、コレラ、ダッカ大学附属病院等）の建設・整備が進められつつあり、バングラ国の保健医療国家計画のなかで重要な位置づけがなされる模様である。

- 4) 心臓病の予防・治療・リハビリ等に関する専門家はごくわずかであり、マンパワーは極めて不足している。

このための研修・訓練とくにsenior クラスの研修受入れを強く希望している。

なお、今直ちに、心臓病センターで高度な技術を駆使しうるスタッフは医師を中心として約10名程度であると説明している。

- 5) 高度・特殊・大型機材例えばCCU、心臓カテーテル、心臓外科用器材の援助を強く希望しており、消耗品、などを含むランニングコストはバングラ側で予算確保の見通しがあると説明している。

#### 参考

- 6) なお附言するとバングラ国民の保健上重要な問題として各種の急性伝染病（とくにコレラ、マラリア）低栄養問題、家族計画、第一次医療（Primary care）の確保（とくに農村地域）等があると思われた。

#### 3. 心臓病センター整備の援助に対する技術的側面からの意見

技術的・専門的分野から各種の調査の実施とその計画・希望の聴取を行ったが、決定的なことは云いえないが、結論としては本センターの整備に対して適切な技術的援

助（研修員受入れ，機材供与を中心として）を実施することによって，バングラ国における心臓病対策の推進の原動力となることは間違いのないことであろうと考える。

以下，少し具体的に援助試案を提案すると次のようなものが考えられる。

- 1) 中心人物であると思われるダッカ教育訓練病院のマリック教授を高級技術員として日本へ招へいすること。
- 2) 保健大臣などバングラ側で強く希望している医師や技術者の研修員受入れ（6ヶ月～1ケ年）
- 3) 年次計画（3年～5年間）に基づいて，必要な機材の供与
- 4) 病棟新築（約300床），外来部門の改築などが実施される計画であるが，このような施設整備に対する援助についても充分，検討されることを希望したい。

(53年9月分)

昭和53年10月12日

国立循環器病センター

安 西 定

1. バングラデシュ国における循環器病の実態

このことについては昭和53年3月分業務報告書で報告した通りであるが今回の調査で新たに把握し、追加する必要があると思われるものを次に列挙する。

(1) 循環器病が国民の平均寿命の延びに伴って増加しつつある模様である。このうちで、リウマチ性心臓病が最も多いが、特に貧困階層、若年層に多く見られ、次いで高血圧症、虚血性心疾患、脳卒中、先天性心疾患なども広く国民一般に広がっている。

(2) 急性伝染病による死亡は漸次下降しつつあるのに反し、循環器病による死亡は増加しつつあり、現在では最も主要な死因となってきている。

ダッカ大学附属病院の入院患者の死因統計でも1974～1975年の間は死因第2位であったが1976年には第1位となっている。

(3) 循環器病を予防することに強い関心を持ち、最も多いリウマチ性心疾患はリウマチ熱に対する適切な化学療法を施行すること、脳卒中予防のためには、高血圧管理を実行すること、虚血性心疾患の予防には喫煙の問題や血圧管理などの施行が効果のあること等を認識して今後、予防対策の展開を望んでいる。

2. BDにおける循環器病研究所に対する協力の必要性意義

(1) 循環器病の実態にてらしてBD側では国家保健計画において、家族計画とならび最も優先度の高い施策として位置づけており、既に本年7月、同研究所をサラワルデイ整形外科病院を転用し、改築の上、発足させている。

(2) わが国の技術協力及び無償資金協力を期待し、同研究所を全国のNATIONAL

CENTERとして、整備するほか、5ヶ年計画、10ヶ年計画により、それぞれ循環器病について地方病院の整備、地域保健センターの拡充、及び地方医科大学の整備が計画されており、大規模な中、長期計画・施策である。

- (3) 上記施策と平行して、BDでは最近非政府団体である NATIONAL HEART FOUNDATION が組織されており、Voluntary 基金募金活動が全国的規模で行っている。

### 3. BD側の準備状況

- (1) BD側は循環器病研究所のために、既存のサラワルデイ整形外科病院を改築し既に、外来部門、検査部門、手術室を確保しているほか、30床のベットも整備され、すでに入院患者は満床となっていた。さらに、新築中の病床は2階まで建設を完了し100床を確保しているほか、3階、4階部分も将来、建築する計画である。また、サラサルデイ整形外科病院に併設されていた総合病院部門を将来計画されている800床～1,000床の総合病院さらには附近に存在する小児病院、整形病院などと診療、研究、人材養成の上で有機的に、密接に連れいして運営する計画である。このことは同研究所の発展と運営に極めて効果的、有効的な計画であると考えられる。結論的にはすでに改築した部分および新築した病棟において、適当な医療機材をセットすることが可能となっている状況であると判断された。

- (2) 本年7月に、同研究所が発足したとはいえ現在保有する医療機材の主なものは別紙1の通りであり、極めて不備である。

しかも、同研究所が循環器病のNATIONAL CENTERとして必要としている大型、かつ基礎的と思われる機材については、同政府で購入・整備する計画はないようである。このことから早朝の援助を強く希望しているものと判断した。

### (3) 人員

予算上、109人の定員が確保されており、技術協力の進行と同研究所自体での養成計画（年間30名の予算確保済）の推進にともなって必要な定員を確保していく旨を確認した。

### 4. 医療機材援助基本計画

1979年度1年間において、必要な機材を約4億円程度で援助する計画を当方が

もっていることを述べた。また、別紙2の考え方を述べ原則的に了解をえた上で具体的な機材選定の作業に入った。

この結果、予めBD側から提出されていた機材リストの内容について大筋の合意に達したが購入価格、生産メーカーの選択、生産状況、各機材の附属品の撰択等々からより詳細に検討すべきであるとの判断から、BD側は最終的には当方に一任することを申し出、当方もこれに同意した。

結論としてはBD側より提出された機材リストを尊重しつつ帰国後、関係者の意見をきいた上整理し、当方においてリストを作成の上10月末までにBD側に提示することとしてもなお、最終的にはこのリストを検討の上11月中旬にBD側より口上書で回答を求めることとした。

#### 5. 技術協力プロジェクト基本計画

1978年度1名の専門家受入れ予定のあること。1979年から略々5年計画で、毎年夫々、4名程度の研修員受入れと、日本側からの専門家派遣、並びに技術協力にふさわしい機材供与等の援助計画を当方がもっていることを述べた。

BD側から提出された研修員受入れと専門家派遣案について調整しこれはあくまで試案であり実際には改めて必要都度協議することを前提として大筋の合意に達した。

(別紙 1)

現在、バングラ側が保有する医療機材の主なもの

Present stock position of Instruments of Institute of Cardiovascular Diseases  
(Shaheed Suhrawardy Hospital Complex)

Dacca - 7.

|                              |             |
|------------------------------|-------------|
| 1. E.C.G. Machine            | 2 (Two)     |
| 2. Oxygen Flowmeter          | 4 (four)    |
| 3. Bleed Pressure instrument | 10 (Ten)    |
| 4. Stathescope               | 5 (five)    |
| 5. Saline stand              | 4 (four)    |
| 6. X-Ray view Box            | 1 (one)     |
| 7. Lumber Puncture Needle    | 12 (twelve) |
| 8. Sternal Puncture Needle   | 12 (twelve) |

(別紙2)

要請されている Equipment について grant-aid の対象とするものと Technical Cooperation の対象とするものとに区分する場合における最も基本的事項

1. CVD の National Centre として国内において、最高水準を旨として、高度特殊診療、教育訓練、研究調査を実施する計画であることを了承した。

このために必要とするもののうち大型でかつ基礎的な医療機械は grant-aid の対象とする。

従って、本格的に開始する第一年度の 1979 年度内にこのようなものは整備されることが望ましいと考える。

|   |            |                         |                 |
|---|------------|-------------------------|-----------------|
| 例 | CCU 一式     | ペースメーカー一式               | 巡迴診療車           |
|   | ICU 一式     | 生理機能検査関係<br>(心電計、血圧計など) | ベッド             |
|   | 心臓血管撮影装置一式 | 臨床検査関係<br>(血液・尿など)      | エアコン<br>(特定の部屋) |
|   | 心臓カテーテル一式  |                         |                 |
|   | 人工蘇生装置一式   |                         |                 |

2. 機器のための施設整備が既に終了し、医療機器の搬入・取付けが可能となっているものについて grant-aid の対象としたい。(1.のうちでも)
3. 機器を導入すれば直ちに、使用する Staff が採用されているか、採用の見通しのあるものについても grant-aid の対象としたい。(1.のうちでも)
4. 大型でかつ基礎的な医療機器については grant-aid の対象とし、1979 年度限りとするが、これ以外のものについては、Staff の訓練と密接な関係のある機器を中心として Staff の確保および利用状況と平行して「技術協力」の対象として年次的(5年間を予定)に整備することとしたい。

- 例
- |                       |                |
|-----------------------|----------------|
| 1. 生理機能検査関係（心電計UCGなど） | 4. 大型及び基礎的な機器の |
| 2. 臨床検査関係             | 付属品的なものが中心と    |
| 3. 看護関係               | なろう。           |

5. なお、今回は医療機器についての最終的な決定は list にあげられているものについての定価改定、実際の購入価格、生産メーカーの選択、生産状況（注文の生産のものもある）、純粋に技術的、専門的な面からの検討等が必要であるのでむりである。

で、機器の大分類又はカテゴリー別程度において合意に達したい。

最終的には我々が帰国して、貴国の希望を最大限に尊重しつつ、前記の諸要素について検討し3～4億の予算の範囲内で整理し10月中に回答したい。

これに基づいて11月中に equipment についての口上書を日本側に提出されたい。

（注 電圧、サイクル  
TAX, 手続等についての特殊事情はあるか。）



PATTERN OF MORBIDITY AND MORTALITY DUE TO  
CARDIOVASCULAR DISEASES IN BANGLADESH

Assignment Report. 3 April – 25 May 1977

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## 1. PURPOSES OF ASSIGNMENT

These were :

- (1) To review the pattern of morbidity and mortality due to cardiovascular diseases in Bangladesh;
- (2) To evaluate existing facilities for services, training and research, and
- (3) To assist in the organization and conduct of a national workshop on community-oriented control of cardiovascular diseases.

## 2. THE PROGRAMME

After discussion with the WHO Representative in Bangladesh, it was decided that the writer should visit the major medical institutions likely to be involved in cardiological activities and that arrangements should be made for a national workshop in cardiology to be held at the Institute of Post-graduate Medicine and Research from 9 to 20 May 1977.

Professor A. Malik, being the only professor of cardiology in Bangladesh, was requested to assist with the organization of the workshop as a national counterpart.

Visits were made to the following institutions :

The Institute of Post-graduate Medicine and Research;  
Dacca Medical College Hospital;  
Sir Salimullah Medical College Hospital;  
The Chittagong Medical College Hospital;  
The Institute of Diseases of the Chest, Dacca;  
The Sylhet Medical College Hospital;  
The Mymensingh Medical College Hospital;  
The Holy Family Red Cross Hospital, Dacca;  
The Post-graduate Orthopaedic Training Centre  
(Shaheed Suhrawardy Medical Complex);  
Adamjee Jute Factory and Residential Complex;  
ICI Pharmaceutical Manufacturing Complex;  
Claxo Pharmaceutical Manufacturing Complex  
Hoechst Manufacturing Complex, and  
Central Military Hospital at Dacca (Triservice)

At each institution, the Consultant met the Medical Superintendent of the Hospital, was introduced to the Principal of the medical college and then carried out extensive ward rounds and consultations with the professors of medicine with interest in the specialty of cardiology. Junior consultants were also available for discussion, and medical students were encouraged to present clinical cases, and they discussed their general academic and cardiological views with the writer.

### 3 EXISTING SITUATION AND THE MAIN PROBLEMS TO BE FACED

The existing situation has little changed from that described in the assignment report of the previous WHO Consultant under the project SEARO 0228 (Dr. Bubarj). While the exact incidence of the common cardiovascular diseases was not known because of the absence of any adequate data keeping or death certificates in the country, the personal views and personal records of the physicians interviewed suggested that the disease pattern included acute rheumatic fever, chronic rheumatic heart disease, hypertension, cor pulmonale, acute and chronic manifestations of ischaemic heart disease, cardiomyopathies and various conduction abnormalities.

From an analysis of the death registrations at the Dacca Medical College, it was possible to say that approximately half of the deaths in the medical departments were attributed to a cardiovascular cause. It must be emphasized, however, that the diagnosis was often made by relatively junior staff members, and none of the causes of death were confirmed by post-mortem examination.

Congenital heart disease as recognized by the physicians was not assessed as a significant problem being handled in most cases by paediatricians. Only two consultants were identified as having a specialized interest in the field of cardiology, one being the Professor of Cardiology at the Institute of Post-graduate Medicine and Research, Professor Malik, and the second being Dr Abyn Zafar, a physician who had received twelve years' training in the United Kingdom with particular emphasis on cardiovascular diseases, who had been posted to a provincial medical college at Rajshahi, where he could not practise cardiology.

No facilities were available in the country for even the most simple cardiological investigations, and all diagnoses were based on clinical examinations occasionally supported by radiological cardiac views and an electrocardiogram.

No facilities were available for regular cardiac surgery, either closed heart or open heart. Occasional operations had been carried out in the past by thoracic surgeons on various "extra cardiac" conditions such as constrictive pericarditis and patent ductus arteriosus.

In summary, it can be said that adequate services were not available for patients with cardiovascular diseases.

### 4 COMMON CARDIOVASCULAR DISEASES SEEN IN MEDICAL INSTITUTIONS

#### 4.1 Acute Rheumatic Fever

The only patients seen in hospital with acute rheumatic fever were suffering from the most severe manifestation of this condition. It was frequently suggested that, in general, patients with streptococcal sore throats and mild rheumatic manifestations were not referred to medical practitioners or allied health workers and thus these cases were not recognized. Currently, no project has been established for attempting to identify the frequency of either streptococcal infection, sore throat or acute rheumatic fever in the community.

#### 4.2 Chronic Rheumatic Valvular Heart Disease

Many severely afflicted patients were seen in hospitals. As no surgical relief was available physicians were merely able to alleviate congestive cardiac failure and discharge patients. In many cases, it was clear that continued drug therapy was not possible, and in nearly all cases there was no mechanism for a review of the patients.

#### 4.3 Systemic Hypertension and Complications

Many patients were seen in hospital with complications of severe, systemic hypertension. Stroke and renal failure were most common. There was no register of frequency of systemic hypertension in the community, and therefore the true incidence of primary and secondary systemic hypertension remains unknown. Although an occasional hypertensive follow-up clinic was in existence, the logistic problems associated with continuing anti-hypertensive therapy and regular clinical review were gigantic.

#### 4.4 Cor Pulmonale

The presence of severe recurrent respiratory infections was frequently recognized in hospital, and in a significant number of these patients cor-pulmonale or heart failure secondary to the lung disease was identified. In some areas such as Chittagong, the incidence of cor pulmonale outweighed that of other forms of congestive cardiac failure. At present there is no means of assessing the true incidence of either chronic bronchitis or cor pulmonale in the community.

#### 4.5 Ischaemic Heart Disease

The acute manifestations of ischaemic heart disease were seen frequently in hospitalized patients. The difficulty of making a diagnosis of definite acute cardiac infarction was emphasized because of the lack of availability of an electrocardiogram service and the universal difficulty of obtaining specific cardiac enzymes estimations. No satisfactory coronary care unit was identified in the country, and the only equipment suitable for cardiac defibrillation was of obsolete manufacture and lacking in regular service. It was not possible to assess the incidence of chronic ischaemic heart disease with angina pectoris and/or heart failure as these patients were usually not hospitalized.

#### 4.6 Cardiomyopathies

This condition with severe congestive cardiac failure occurring in the absence of identified systemic hypertension or valvular heart disease appeared quite common. Occasionally, there was an association between chronic anaemia and this type of heart failure; However, in the absence of any form of biochemical or histological examination, diagnostic identification could not be attempted.

#### 4.7 Major Conduction Abnormalities

Patients were seen in hospitals suffering from high degree heart block and syncope. The absence of any facilities for temporary or permanent cardiac pacemaking meant that all such patients perished. No attempts were being made to utilize the standard techniques of cardiac pacemaking for preserving life in these patients.

#### 5 SERVICES

A complex situation exists amongst the senior physicians in the country. Those holding high academic positions had, in general, been awarded post-graduate degrees some 10 to 15 years ago and as far as could be ascertained had not practised in any single specialty, specifically cardiology, from that time. As there is a complete absence of specialized cardiovascular facilities, it is not presently possible for any physician, even though he may have had skill in the past, to maintain his skill in the field of cardiovascular medicine. No cardiology or cardiovascular department is established in a medical college hospital, and the only area where there is a plan for a cardiology department is in the Institute of Post-graduate Medicine. It is suggested that all encouragement should be given to this institute to develop progressively some facilities for the appropriate investigation of patients presenting with cardiovascular disease.

All principals and heads of medical departments in the medical college hospitals stated that they were interested in cardiovascular disease, but, with the acute shortage of hospital beds and staff deficiencies, they could not see how, without special arrangements being made, departments of cardiology could be established in the foreseeable future.

A further outstanding deficiency was the limited number of trained nursing sisters; according to various estimates, up to 300 trained nurses are stated to be in the country. This small number made it impossible for patients with acute cardiovascular diseases to receive even basic nursing care.

#### 6 UNDERGRADUATE AND POST-GRADUATE FACILITIES

There was no evidence of specialized training in cardiovascular diseases in the medical colleges. Specifically, electrocardiography was not taught as a separate item, and undergraduates were not given any instruction in the basic cardiovascular investigations required for patients with heart disease. The post-graduate facilities were likewise very deficient with no evidence of professional post-graduate training in cardiology. There is no professional group of cardiologists such as a cardiac society or national heart foundation. As far as could be ascertained, no meetings devoted to cardiology had ever been held in Bangladesh.

#### 7 TECHNICAL FACILITIES

In no hospital or institute was a medical technologist or technician available to assist in cardiac investigations. The ECG machines owned by the hospitals were in an advanced stage



of deterioration. Only false and misleading data could be obtained from the recordings made with such equipment.

#### 8 GENERAL BIOCHEMICAL, HAEMATOLOGICAL AND RADIOLOGICAL FACILITIES

Facilities for the basic investigation of patients with cardiovascular disease were completely lacking in all institutes visited. No planning for preoperative or post-operative investigational surgical procedures had been undertaken.

#### 9 CORONARY CARE UNIT (CCU)

No coronary care unit or cardiac unit suitable for the management of patients with acute cardiac infarction was identified in the country. A few cardiac monitors were seen; they were limited in the facilities and often their use was restricted to the emergency situation which could occur in a general operating theatre. It was not found possible to question nursing sisters or allied health personnel in the same area, but in the absence of any evidence of resuscitation equipment in any hospitals visited it was assumed that cardio-pulmonary resuscitation was not taught adequately at any medical or paramedical level.

#### 10 CARDIOVASCULAR SURGERY

No centre for cardiovascular surgery has been or can be reasonably established in the country at this time. In the absence of appropriate cardiovascular investigation facilities it would be quite improper to recommend the establishment of a cardiovascular centre. Diagnostic facilities and simple procedures such as cardiac pacemaking must first be established.

#### 11 CARDIOVASCULAR TRAINING AND CARDIOLOGY

At the present time, there is no syllabus established in an institution for academic training in cardiology or cardiovascular diseases. In the absence of a professional body giving guidance in this field a plan for the immediate future seems unlikely.

It was ascertained that a number of physicians who had received specialized training in cardiology outside Bangladesh had visited the country to consider returning and establishing themselves as specialist cardiologists; however, apart from Dr Zafar, none of these trained cardiologists had remained in Bangladesh. It is pointed out that Dr Zafar cannot expect to remain proficient in techniques associated with cardiological investigation unless he is carrying out these procedures on a regular basis in an appropriately equipped department of cardiology. The Institute of Post-graduate Medicine and Research, Dacca, is the logical place for the development of an academic course in cardiology and cardiovascular medicine. At present, no specific syllabus for such training was available and no significant research output was evident. (Ref. Theses, dissertation publications and research activities, 1966-1976. Institute of Post-graduate Medicine and Research, Dacca-2, Bangladesh, p. 17)

## 12 RESEARCH

No academic research project in the field of cardiology or cardiovascular medicine could be identified during the visit. Plans were discussed for establishing simple community registration of such common diseases as acute rheumatic fever, systemic hypertension and congenital heart disease; however, without a greater degree of motivation, early results from such discussions could not be anticipated. It is evident that initially the Institute of Post-graduate Medicine and Research could be the most appropriate base for launching and co-ordinating any research project.

## 13 RECOMMENDATIONS

### 13.1 Establishment of Adequate Cardiology and Cardiovascular Services

#### 13.1.1 Government policy

Encouragement should be given to establish departments of cardiology, each under the leadership of a Professor of Cardiology first in the Institute of Post-graduate Medicine and later in the medical colleges over the next five years. A minimum of 20 beds should be allocated for the use of the Director of Cardiology for the admission of patients with cardiological problems. The first model unit should be established at the Institute of Post-graduate Medicine and Research, and this unit should set an example in training and pattern of services. Progressively, each of the medical college hospitals should have their own departments of cardiology with appropriate supporting facilities.

#### 13.1.2 Units for cardiological investigation

With the progressive establishment of the department of cardiology at the Institute of Post-graduate Medicine, similar facilities for appropriate investigation of patients may be established in a phased manner in other medical colleges. Such routine procedures as listed below should be available in these departments:

- (i) Studies for the assessment of right and left heart haemodynamics,
- (ii) continuous and stress electrocardiography,
- (iii) phonocardiography for the recording of heart sounds,
- (iv) echocardiography for investigating heart muscle and valve functioning (non-invasive),
- (v) cardiac pacemaking, both temporary and permanent,
- (vi) angiography (This technique is necessary for the full diagnoses of cardiovascular abnormalities), and
- (vii) coronary arteriography for the diagnoses and management of patients with ischaemic heart disease.

It is recommended that these techniques be introduced gradually in the major medical college hospitals.

Such a phased development should enable the more complicated procedures to be carried out on a regular basis by cardiologists with appropriate standards of practical training. Initially, the development should be confined to one centrally placed institute or hospital which has all the ancillary biochemical, radiological and haematological services.

#### 13.1.3 Coronary care units

Coronary care units for the management of patients with definite or suspected cardiac infarction should be established progressively in the Institute and medical college hospitals. Coronary units should be under the control of the department of cardiology and the head of the department should be responsible for the day-to-day management of patients in the coronary unit. Cardiologists should be given appropriate training to enable them to run coronary units, and special courses should be established in the country for training nurses and auxiliary health workers. Initially, units of four beds should be established with appropriate bedside monitoring equipment and emergency drugs.

Voluntary organizations should be encouraged to assist with the development of such coronary units.

Each department of cardiology should be encouraged to establish a suitable form of record keeping so that the state of development of cardiological services in the country can be reviewed progressively.

#### 13.1.4 Cardiovascular surgery/pre-operative and post-operative facilities

These facilities are not available in the country. After the departments of cardiology have been established and are progressing satisfactorily, attention should be given to the phased development of proper cardiovascular surgical facilities, with wards for pre-operative and post-operative care. Planning should commence immediately to produce a model of such a unit, and it is suggested that the staff of the department of cardiology at the Institute of Post-graduate Medicine and Research be encouraged to develop such a facility in phases commencing with such procedures as temporary and permanent pace-making. Until adequate facilities exist in Bangladesh for cardiovascular surgery, a form of regional collaboration should be established so that the patients requiring cardiovascular procedures should be able to receive this life saving therapy.

#### 13.1.5 Cardio-pulmonary services

Equipment to be used in cardio-pulmonary resuscitation should be made available to all referral hospitals. Such equipment as battery-operated, rechargeable cardiac defibrillators should be given absolute primary priority. On the delivery of such equipment

to the hospitals, the directors of each department of cardiology should be instructed to institute courses in their colleges, and the institutes to instruct all medical nursing and para-medical personnel on the appropriate use of such equipment. Purchase authorizations for all equipment should carry a service agreement with the suppliers.

## 13.2 Education and Training

### 13.2.1 Undergraduate training

Greater emphasis should be placed on undergraduate medical training in the field of cardiology and cardiovascular diseases. As directors of cardiology units are appointed they should be invited to conduct courses in cardiovascular diseases. These courses should be fully integrated into the undergraduate curriculum.

### 13.2.2 Post-graduate specialization

The Institute of Post-graduate Medicine should be requested to produce a syllabus of training for post-graduates who wish to specialize in cardiology. It is emphasized, however, that cardiological training cannot proceed until the Institute has facilities for practical instruction in the techniques associated with standard cardiology. Once trained cardiologists are produced then fellowships and scholarships could be arranged to units of excellence in other parts of the world for additional training. On receipt of this training, the graduates should be employed to practise in the specialty of cardiology in Bangladesh.

### 13.2.3 Paediatric cardiologists

No special training has been given in this area and the knowledge is lacking. It is recommended that in conjunction with the professors of paediatrics and of obstetrics and gynaecology, a trained cardiologist should be invited to collaborate and advise on the appropriate management and investigation of young patients with congenital heart disease. In course of time, this aspect of cardiology could be developed as a specialty.

### 13.2.4 In-service training and continuing education in cardiology for health and allied personnel

In order to help general practitioners and allied health personnel to become aware of the importance of cardiovascular diseases, it is necessary that educational material on the various cardiovascular diseases should be made available at the village level. The medical colleges and institutes should be requested to run workshops and training programmes in cardiology on a regular basis. Available professional education in general cardiology should be intensified, and courses should be co-ordinated by the Institute of Post-graduate Medicine and Research or by a professions society such as a cardiology society once it is established in the country. It is further recommended that post-graduate courses should be run for the general practitioners and general physicians to keep them alert to the ra-

pid developments in the field of cardiology.

#### 13.2.5 Training of cardiovascular nurses

It is recommended that departments of cardiology list as high priority the establishment of courses for trained nurses for permanent work in departments of cardiology, coronary care units and cardiovascular surgery. The courses should be organized by the directors of the department of cardiology in conjunction with the directors of the nursing services and the nursing colleges. No specialized cardiological facilities can function satisfactorily until a cadre of trained nurses is available to assist in the management of patients. Once assigned to a department of cardiology, such a trained nurse should not be transferred.

#### 13.2.6 Cardiac technicians

No cardiological department can function without the attachment of cardiac technicians trained in the electrical and mechanical skills associated with cardiology. It is strongly recommended that each department of cardiology, as it becomes established, select science graduates who have special training in biology, electronics, engineering and statistics and second them as trainee cardiac technicians to the department of cardiology possibly at the Institute of Post-graduate Medicine, for a course of three months before taking up their specialized posts. After completion of the training, these technicians should be guaranteed permanent employment in the departments.

#### 13.3 National Heart Foundation of Bangladesh

It is strongly recommended that the medical practitioners interested in cardiology establish a Cardiac Society of Bangladesh under the auspices of the Bangladesh Medical Association. Thereafter, a National Heart Foundation of Bangladesh should be launched with the collaboration of the professional Cardiac Society and the lay public. Including representation from the Government, as a national educational, training and research authority for the promotion of cardiovascular health in the country.

The aims of such a foundation should be aligned with those of other such foundations for active co-operation on a regional and model basis.

#### 13.4 Training in Cardio-Pulmonary Resuscitation

The Cardiac Society and National Heart Foundation of Bangladesh should activate a nation-wide programme of training in cardio-pulmonary resuscitation. In conjunction with other emergency services, a universal emergency call system such as dialing 000 for medical emergency assistance should be established.

#### 13.5 Community Health Education

As all community health education programmes must depend to a very large extent, on

the degree of general education in a community, a special point should be made to emphasize the need for integrating cardiovascular health education with the general education. Community health education programmes for both the prevention of cardiovascular disease and the early management of these conditions should be developed.

#### 13.6 Autopsy of Cardiovascular Patients

In order to train a cardiologist or cardiovascular surgeon, it is essential that, wherever possible, autopsy examinations should be carried out for teaching purposes. In the absence of such studies, the science of cardiology and cardiovascular surgery will not develop in Bangladesh.

#### 13.7 Education on Necessity for Continued Therapy and Regular Follow-up

As part of community health education, patients should be continually reminded that medication once commenced should be continued under the surveillance of their medical adviser. In support of such a programme, it is emphasized that a system of delivery of life saving cardiovascular drugs should be introduced at the community level so that therapy for all common cardiovascular conditions, including prophylactic penicillin therapy, should be available in and from all institutions in the periphery.

#### 13.8 Research

As active research programmes have not so far been instituted. It is strongly recommended that the initial registration programmes for conditions such as acute rheumatic fever, systemic hypertension, ischaemic heart disease and chronic rheumatic valvular disease, and congenital heart disease be instituted. Data obtained from registers will give a baseline for further planning in the country.

Candidates undergoing post-graduate training in cardiology should, as part of their programme, be required to undertake and publish for public review academic research projects with direct relevance to cardiology and cardiovascular surgery.

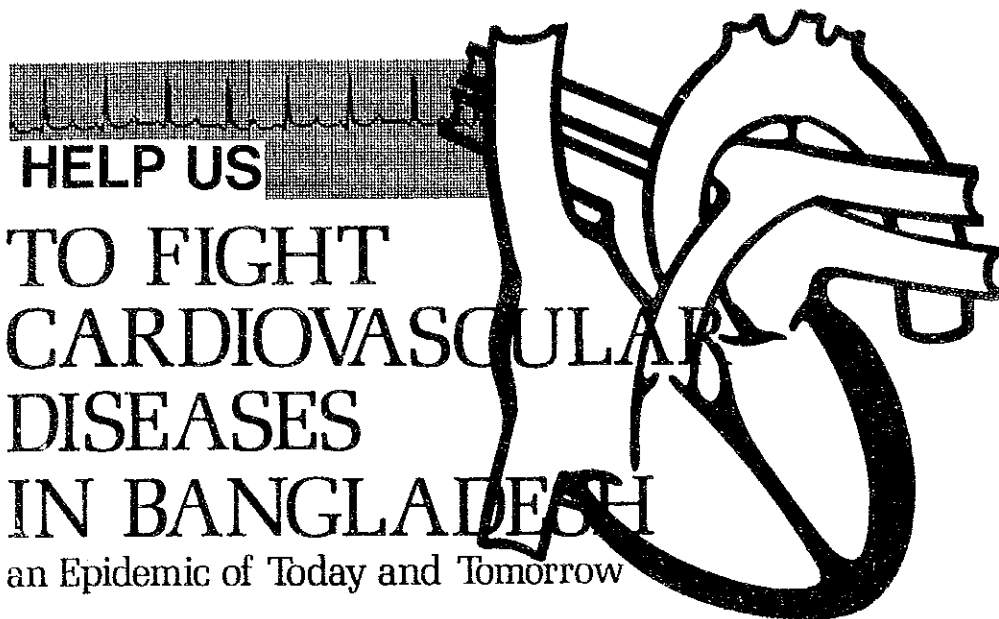
#### 13.9 Previous WHO Reports and Seminars

It may be noted that this report agrees essentially with the points made in the previous WHO Consultant's report (Dr Buharij).<sup>1</sup> The recommendations made in that report should be reviewed and implemented in conjunction with those made in this report.

It may be further noted that the recommendations of the Seminar on Development of Cardiac Resuscitation and Rehabilitation Services in South-East Asia are very appropriate and applicable to the situation in Bangladesh. The report<sup>2</sup> of that seminar should be further considered and the recommendations should receive consideration with a view to early implementation.

14      **ACKNOWLEDGEMENTS**

The writer wishes to thank all those colleagues in cardiology and those concerned with the development of cardiovascular services in Bangladesh for their willing co-operation during his assignment.



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## CARDIOVASCULAR PROBLEM IN BANGLADESH

### Introduction :

We have got many health problems in Bangladesh and one of the major health problem is Cardiovascular Diseases which mean diseases of the heart and blood vessels. According to World Health Organisation death rate from heart diseases amongst age group between 45 years to 55 years has risen sharply in recent years. Cardiovascular Diseases are greatest killer in Western Countries; and major killer in our Country also. The problem will be more serious with gradual control of infectious and other diseases.

### WHAT IS THE POSITION IN BANGLADESH ?

We have got all types of congenital and acquired heart diseases in Bangladesh where 80 million people are living. In a survey conducted in 1974-75 in and around Dacca of 7062 persons; 207 individuals were found to have some kind of heart disease. Distribution of the diseases were as follows: (Ref. Bangladesh Medical Research Council Bulletin 2: 115-119, 1976).

|                                    |             |
|------------------------------------|-------------|
| Hypertension.                      | 83 -(1.10%) |
| Rheumatic heart diseases.          | 53 -(0.75%) |
| Ischaemic heart diseases.          | 24 -(0.33%) |
| Cardiac arrhythmia.                | 16 -(0.22%) |
| Congenital heart diseases.         | 13 -(0.18%) |
| Corpulmonale, cardiomyopathy, etc. | 18 -(0.25%) |

### Death figures from Dacca Medical College Hospital :

Death figures from Dacca Medical College Hospital showed that from 1974-75 Cardiovascular Diseases were second killer, and in 1976 Cardiovascular Diseases became greatest killer and topped the list.



## TOTAL NO. OF ADMISSION AND DEATHS OF DACCA MEDICAL COLLEGE HOSPITAL.

| (A)  | 1974        | 1975        | 1976        |
|--|-------------|-------------|-------------|
| Total No. of Admission.                    | 33949       | 30572       | 30340       |
| Total No. of death.                        | 2049(6.03%) | 2009(6.57%) | 1909(6.29%) |
| No. of death from Cardiovascular diseases. | 302(14.7%)  | 352(17.52%) | 400(20.95%) |

### Major causes of death in Dacca Medical College Hospital .

| (B)  | 1974        | 1975        | 1976        |
|--|-------------|-------------|-------------|
| TOTAL  | 2049        | 2009        | 1909        |
| 1. Diseases of Gastro-Intestinal Tract.      | 418(20.4%)  | 293(19.56%) | 381(19.96%) |
| 2. Diseases of Cardiovascular System         | 302(14.7%)  | 352(17.52%) | 400(20.95%) |
| 3. Diseases of Respiratory System.           | 208(10.15%) | 137(6.82%)  | 185(9.69%)  |
| 4. Diseases of Nervous System & Head Injury. | 297(14.49%) | 270(13.44%) | 139(7.20%)  |
| 5. Diseases of Liver & Gall bladder.         | 147(7.17%)  | 186(9.26%)  | 164(8.54%)  |

### WHO SUFFERS FROM HEART DISEASES ?

Commonest Cardiovascular diseases in our Country are:

1. Hypertension.
2. Rheumatic fever and Rheumatic heart diseases.
3. Ischaemic heart diseases.
4. Congenital heart diseases & others.

Commonly people think that the heart disease is the disease of rich people, which is not correct. Rheumatic heart diseases are common amongst the poor people.

Hypertension and Ischaemic and other heart diseases can affect both rich & poor people.

### CAN HEART DISEASES BE PREVENTED ?

Certainly the Cardiovascular diseases can be controlled and prevented particularly the Rheumatic fever and rheumatic heart diseases, hypertension and its complications, Ischaemic heart diseases particularly its risk factors. Victims of these diseases can become useful members of the society without becoming burden to the family or society after getting modern treatment and knowledge of prevention.

#### A. RHEUMATIC FEVER AND RHEUMATIC HEART DISEASE.

Rheumatic fever commonly affects children of both sexes between 5-15 years of age who are living in slum condition in Urban areas. Repeated attacks of Rheumatic fever lead to Rheumatic heart diseases and damage one or more heart valves. Rheumatic heart disease can be prevented by adopting prophylactic measures.

#### B. HYPERTENSION :

It kills many people by its complications such as stroke, heart failure. Both of these major complications can be prevented by controlling the blood pressure adequately and the patient can live a normal life.

#### C. ISCHAEMIC HEART DISEASE / HEART ATTACK :

Common victims of this disease are of the age group of 45-54 years. Peoples at risk are Business executives, Administrators, Lawyers, Doctors, Engineers at the prime of their lives when they can contribute maximum to the society and to their families.

These attacks can be prevented by avoiding the risk factors:

1. SMOKING.
2. OBESITY.

3. HYPERTENSION.
4. HYPER LIPIDEMIA.
5. DIABETES MELLITUS.
6. PHYSICAL INACTIVITY.
7. GOUT etc.

Many sudden deaths are due to cardiac arrest. Good number of victims can be resuscitated and life can be brought back if external cardiac massage & mouth to mouth breathing are started immediately which can be done even by lay people at home or at any place outside hospital.

#### HOW TO TACKLE HEART DISEASES ?

Many of the Cardiovascular Diseases & its fatal outcome are due to our ignorance which can be prevented if we are aware of its simple methods of prevention. In advanced Countries Rheumatic fever & Rheumatic heart diseases which is a major killer in our Country has been controlled. Death from High Blood Pressure and Ischaemic heart diseases has been reduced by suitable measures:-

#### PRINCIPLE MEANS OF FIGHTING CARDIOVASCULAR DISEASES:

1. Mass Education Programme-particularly about preventive measures.
2. Education and training of Doctors, Nurses and Para-medical personnel.
3. Research-to know more about the problems of heart diseases in our Country.

#### NEED FOR A NATIONAL HEART FOUNDATION :

Government has already started the Institute of Cardiovascular Diseases at the Shaheed Suhrawardy Hospital Complex, Dacca, for prevention, treatment, research, rehabilitation and resuscitation of Cardiovascular Diseases & training of Doctors, Nurses & Para-medical personnel who will provide cover in all hospitals upto village level.

This gigantic problem cannot be solved by the Government alone. A non-Governmental Organisation must come up side by side to educate & motivate public for prevention of cardiovascular diseases upto village level for prevention, treatment, rehabilitation and resuscitation of cardiovascular diseases victims.

National Heart Foundation of Bangladesh has been formed with professional and non-professionals who have got interest in this field to do everything possible for prevention and control of cardiovascular diseases which is the epidemic of modern time.

The objects of the National Heart Foundation of Bangladesh.

- a) To provide an organisation for the benefit and services to patients suffering from Cardiovascular diseases and associated conditions.
- (b) To promote the Cardiovascular health, to educate and motivate public for prevention of cardiovascular diseases.
- (c) To study the courses, treatment, resuscitation and rehabilitation of patients suffering from Cardiovascular diseases and to diffuse informations concerning the same.
- (d) To act as advisory body to safeguard the social and economic interests of cardiovascular patients.
- (e) To promote lectures, discussions and correspondence on Cardiovascular and associated diseases for the information and benefit of patients and the public generally.
- (f) To co-operate with any similar associations for the furtherance of the objects of the Foundation.
- (g) To undertake & promote research work on cardiovascular diseases.
- (h) To provide, assist, endow, furnish, equip, maintain and manage, either directly or by arrangement with any person, corporation or institution:-
  - i) Medical, Surgical and Convalescent Homes:

- ii) Homes and Institutions for Nurses;
- iii) Boarding houses;
- iv) Restaurants and refreshment rooms;
- v) Schools and educational facilities;
- vi) Laboratories, research Institutions and clinics for the benefit of cardiovascular patients on such terms and conditions as the the Foundation may prescribe.

**HOW THE FOUNDATION IS FINANCED ?**

This is a non-Governmental Organisation and it is financed by its income from membership fees, donations/contributions from individuals and various agencies.

**WHAT YOU CAN DO ?**

You can help to fight out cardiovascular diseases:-

- i) Enroll yourself and your friends as members.
- ii) Donate generously.
- iii) Disseminate knowledge about the prevention of various heart diseases.
- iv) Arrange lectures/talks through Press, Radio, Television etc.
- v) Create strong public opinion against smoking.
- vi) Help to raise funds.
- vii) Organise branches of National Heart Foundation throughout the Country

**FEES AND DONATION**

|                          |            |
|--------------------------|------------|
| Admission Fee :-         | Tk. 25/-   |
| Annual Membership fee :- | Tk. 50/-   |
| Life Membership fee :-   | Tk. 1000/- |
| Donation :-              | any amount |

Cheque or Draft should be drawn in favour of National Heart Foundation of Bangladesh.

**NATIONAL HEART FOUNDATION OF BANGLADESH APPLICATION FOR DONATION / MEMBERSHIP**

The Secretary General,  
National Heart Foundation of Bangladesh,  
56/1, Shah Saheb Lane,  
D a c c a .

Sir,

Being desirous of donating to/becoming a Life/Ordinary Member of the National Heart Foundation of Bangladesh, I/We herewith remit the sum of Taka ..... (Taka ..... ) only towards my/our donation/subscription.

Yours truly,

**PLEASE USE BLOCK LETTERS.**

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Occupation : .....  
(Medical/Non-medical)

Name of Nominee in case of Institution : .....

Signature : .....

Dated ..... 19

## NATIONAL HEART FOUNDATION OF BANGLADESH

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23. Dr. Farida Hoque, Head Microbiology, Institute of Public Health, Mohakhali, Dacca.
24. Dr. M.N. Alam, Associate Professor of Medicine, I.P.G.M. & R., Dacca.

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## CONGENITAL AND ACQUIRED HEART DISEASES\* ( A Survey of 7062 Persons )

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Institute of Postgraduate Medicine and Research,  
Dacca.

Various cardiac diseases including rheumatic heart disease have been reported from this part of the world (Houghes and Yousuf, 1930; Banerjea, 1935; Kutumbiah, 1940; Ibrahim, 1957; Ibrahim 1966) thereby nullifying the earlier observation (Clarks, 1930) that rheumatic fever does not occur in the tropics. These studies were made mainly from hospitalised patients particularly with regard to rheumatic and ischaemic heart diseases. Since hospitalised patients are not likely to project a correct pattern of heart diseases in an area, it was considered worthwhile to carry out a survey of heart diseases (congenital and acquired) in the city of Dacca and in a village, in different groups of people.

### MATERIALS AND METHODS

Members of the public of all the age groups irrespective of occupation were examined for the presence of heart diseases in the following places :

1. Motijheel area of Dacca city, and,
  2. Village Kanchan, situated about seven miles from Dacca city.
- These were healthy individuals and had no complaint at the time of examination.

Adult persons as well as children of different age groups attending the out-patient departments of the Dacca Medical College hospital, Mitford hospital and Institute of Postgraduate Medicine and Research for any complaint were similarly examined. These persons were mostly from poor or middle strata of the society with poor or moderate nutrition. In addition, the labourers and other staff of a jute mill (Karim Jute Mill) were screened for the presence of heart diseases.

In all the groups of people examined, males were larger in number than females. X-ray of chest, electrocardiogram (ECG) and other investigations were carried out for persons who had complicated clinical findings.

---

\* Supported in part by a grant from the Bangladesh Medical Research Council.

## RESULTS

Table-I shows the number of persons examined at different places and the number of individuals detected with heart diseases. Of the 7062 persons examined, 207 individuals were found to have heart diseases, the percentage being 2.92%. Table-II shows the different cardio-vascular conditions detected in the 207 individuals. Hypertension was present in 83 (1.10%) persons. Rheumatic valvular disease, ischaemic heart disease and cardiac arrhythmia were found in 53 (0.75%), 24 (0.33%) and 16 (0.22%) persons respectively. There were 13 (0.18%) cases of congenital heart disease and 18 (0.25%) individuals with cardiomyopathy and corpulmonale.

TABLE-I.

Number of Persons Examined at Different Places with the Number of Individuals Detected with Heart Diseases.

| Place at which examined  | Number of persons examined | Number of persons detected with heart diseases. |
|--|----------------------------|---|
| Motijheel  | 1495                       | 9   |
| Kanchan  | 829                        | 8   |
| Karim Jute Mill  | 500                        | 5   |
| Out-patient departments of Dacca Medical College hospital, Mitford hospital and Institute of Postgraduate Medicine and Research. | 4238                       | 185   |
| Total  | 7062                       | 207   |

TABLE-II

Distribution of Various Conditions in 207 Individuals with Heart Diseases Detected During a Survey of 7062 Persons.

| Disease                         | Number of individuals affected | Percentage |
|---------------------------------|--------------------------------|------------|
| Hypertension                    | 83                             | 1.10       |
| Rheumatic valvular Disease      | 53                             | 0.75       |
| Ischaemic heart Disease         | 24                             | 0.33       |
| Cardiac arrhythmia              | 16                             | 0.22       |
| Congenital heart Diseases       | 13                             | 0.18       |
| Cardiomyopathy and Corpulmonale | 18                             | 0.25       |

TABLE—III

Age, Sex and Disease-wise Distribution of 189 Cases of Different Heart Diseases.

| Age in years | Hypertension |    | Rheumatic valvular disease |    | Ischaemic heart disease |   | Cardiac arrhythmia |   | Congenital heart disease |   |
|--------------|--------------|----|----------------------------|----|-------------------------|---|--------------------|---|--------------------------|---|
|              | M            | F  | M                          | F  | M                       | F | M                  | F | M                        | F |
| 14 and below | 0            | 0  | 13                         | 3  | 0                       | 0 | 0                  | 0 | 3                        | 2 |
| 15 to 29     | 5            | 1  | 13                         | 6  | 2                       | 0 | 4                  | 2 | 6                        | 0 |
| 30 to 44     | 9            | 8  | 8                          | 3  | 5                       | 0 | 6                  | 1 | 2                        | 0 |
| 45 to 59     | 26           | 13 | 5                          | 2  | 14                      | 2 | 2                  | 0 | 0                        | 0 |
| 60 to 74     | 12           | 7  | 0                          | 0  | 1                       | 0 | 1                  | 0 | 0                        | 0 |
| 75 and above | 2            | 0  | 0                          | 0  | 0                       | 0 | 0                  | 0 | 0                        | 0 |
| Total        | 54           | 29 | 39                         | 14 | 22                      | 2 | 13                 | 3 | 11                       | 2 |

M, Male  
F, Female



Age and sex distribution in hypertension, rheumatic valvular disease, ischaemic heart disease, cardiac arrhythmia and congenital heart disease are shown in Table-III.

#### DISCUSSION

The present limited survey carried out amongst 7062 people of various age groups in the Dacca city and in a village, revealed that all types of heart diseases are prevalent in this country. Major part of the survey was carried out in the out-patient departments of various hospitals in Dacca where rich people rarely visit, and females visit less frequently unless affected by some serious illness.

Rheumatic valvular disease was found commonly among poor and middle class people who live in poverty and overcrowding. Most of the patients were young and less than 30 years of age (Table-III). Tight mitral stenosis was found in 3 patients who were less than 14 years of age. These results are in agreement with other workers (Halim and Jacques 1961; Ray et al., 1963; Al-Bahrani et al., 1966). Rheumatic valvular diseases with the dreadful complications can certainly be prevented by chemoprophylaxis, economic prosperity with improvement of standard of living and avoidance of overcrowding.

Ischaemic heart disease includes angina pectoris, acute coronary insufficiency and myocardial infarction. These were commonly seen among rich and middle class of people in the urban area, the commonest age group being 45-59 years (Table-III). Females were less affected, probably due to hormonal influence, less or no smoking and menstrual effects (Stephen, 1976). Only two patients with ischaemic heart disease were found below 29 years of age. One of them had aortic stenosis and the other had familial hypercholesterolaemia.

Only 13 (0.18%) patients with congenital heart diseases could be detected in the present study. Exact incidence of congenital heart disease is certainly more than this because many of the cases of congenital heart disease die during infancy.

Hypertension was quite common (Table-II). As many as 83 (1.10%) persons had hypertension; 39 of them were in the age group between 45 to 59 years (Table-III).

#### SUMMARY

A survey was carried out amongst 7062 people of different age groups in Dacca city and in a village. It was found that 207 (2.92%) persons had some sort of heart disease. Hypertension was present in 83 (1.10%) persons. Rheumatic heart disease, ischaemic heart disease and cardiac arrhythmia were detected in 53 (0.75%), 24 (0.33%) and 16 (0.22%) persons respectively. Congenital heart

disease was found in 13 (0.18%) individuals, and 18 (0.25%) persons were suffering from cardiomyopathy or cor pulmonale.

Rheumatic heart disease was common in poor people of younger age. More ischaemic heart disease was found in well-to-do people but poor people were not immune from this.

#### ACKNOWLEDGEMENTS

The author wishes to thank Drs. Sadequzzaman, Omar Faruque, Lutful Kabir Akanjee and Abdul Ahad, and Mr. Ashad Ali Howlader for help in various ways.

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Establishment of an Institute of  
Cardiovascular Diseases at Dacca.

With gradual control of Infectious diseases, life expectancy of people is going up and there is higher incidence of morbidity and mortality due to cardio-vascular diseases in developing countries.

In a survey conducted in 1974-75 in and around Dacca of 7062 persons; 207 individuals were found to have heart diseases. Distribution of the diseases were as follows :

|                                   |            |
|-----------------------------------|------------|
| Hypertension                      | 83 - 1.10% |
| Rheumatic heart diseases          | 53 - 0.75% |
| Ischaemic heart diseases          | 24 - 0.33% |
| Cardiac arrhythmia                | 16 - 0.22% |
| Congenital heart diseases         | 13 - 0.18% |
| Corpulmonale, cardiomyopathy etc. | 18 - 0.25% |

Figures presented by professors of various medical colleges of Bangladesh in Cardiology Workshop held from 9th May to 20th May, 1977 in Dacca showed that all types of congenital and acquired heart diseases are prevalent in our country. Amongst these Hypertension, Rheumatic fever and heart diseases, Ischaemic heart diseases and Corpulmonale are more prevalent. Death figures from Dacca Medical college hospital showed that from 1974 - 1975 Cardiovascular diseases were second killer and in 1976 Cardiovascular diseases became greatest killer and assumed 1st place in the list.

At the same time there is little or practically no facilities available for modern investigations, emergency cardiac care, medical and surgical treatment in the country. Most of the cardiac patients can become useful members of the society if they get proper modern treatment and rehabilitation without becoming burden to family or society.

The importance of Cardiovascular diseases has been stressed in Twenty ninth World Health Assembly resolution dt. 17th May '76 'Realising that cardiovascular diseases are emerging both in relative and absolute terms as a public health problems

also in developing countries, promoting research on prevention, aetiology early diagnosis, treatment and rehabilitation'.

For promotion of cardio-vascular health, with prevention, treatment, training of doctors, nurses and paramedical personnel, rehabilitation of people of Bangladesh upto community level; it is proposed to start a Institute of Cardio-vascular Diseases at national level for whole country in phased manner.

The Institute can be set up immediately with modern equipments from Japan in existing buildings of Shahid Shurwardy hospital. The Institute will look after cases referred from various hospitals of Bangladesh and also Armed Forces cardiac cases.

Doctors, Nurses and paramedical personnel who will be trained in the Institute can subsequently be posted to medical college hospitals, District, Subdivisional and other hospitals and Rural health centres providing cover upto community level.

Immediately 100 beds can be started. There is scope for further increase of bed strength later on. The Institute will serve the following purposes :-

- i) Prevention, education, publicity of Cardio-vascular diseases.
- ii) Investigations such as cardiac catheterisation, angio cardiography etc.
- iii) Modern medical and surgical treatment including Intensive coronary care unit, closed and open heart surgery and pace making etc.

It must also have a mobile and stationery cardiac resuscitation unit on 24 hour alarm basis.

- iv) Training of doctors, nurses, paramedical personnel who will provide cardiac cover in Medical college and other hospitals and Rural health centre upto community level.
- v) Rehabilitation of cases after treatment.
- vi) Research and epidemiological studies of cardio-vascular diseases.

List of equipments is given in Appendices A,B & C attached so that the Institute can be set up in phased manner.

The Institute can start functioning immediately in existing buildings of Shahid Shurwardy hospital and can do cardiac catheterisation, angio-cardiography, Intensive coronary care unit, pace making and closed heart surgery; with availability of equipment as given in appendix 'A', in 1977.

The Institute will be full fledged in doing open heart surgery with availability of remaining equipments as given in Appendix 'B', in 1978.

All the medical college hospitals in Bangladesh will be provided with essential modern cardiac facilities by providing equipments as given in appendix 'C', in 1978. and 1979.



WORLD HEALTH  
ORGANIZATION

REGIONAL OFFICE FOR  
SOUTH-EAST ASIA

SEA/CVD/11  
19 June 1974  
RESTRICTED

ASSIGNMENT REPORT  
ON THE  
EPIDEMIOLOGY, CONTROL AND MANAGEMENT  
OF CARDIOVASCULAR DISEASES IN BANGLADESH  
WHO PROJECT: SEARO 0228

by

DR (MRS) D. BUBARJ  
WHO SHORT-TERM CONSULTANT

19 December 1973 - 2 January 1974

SEA-70/1827





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## 1. PURPOSES OF ASSIGNMENT

These were:

- (1) To assess the current state of training, services and research in cardiovascular diseases, including stroke;
- (2) To recommend measures for improving the training of health personnel for the promotion of services to cardiology patients, integrated with the existing health services, and
- (3) To advise on epidemiological studies aimed at the prevention and control of cardiovascular diseases, including stroke.

## 2. THE PROGRAMME

The programme was arranged by Dr T. Hossain, Secretary, Ministry of Health and Family Planning, assisted by the Acting WHO Representative, Dr Z. Sestak.

Visits were made to the Institute of Post-graduate Medicine, Dacca Medical College, Salimullah Medical College, The Diabetic Centre in Dacca and Chittagong Medical College. Ward rounds were attended and basic problems in cardiovascular diseases were discussed. A list of physicians met is given in Annex 1.

## 3. THE EXISTING SITUATION

The suffering from the recent commotion in the country is still striking. Efforts are being made to emerge from the difficult economic situation but this still has a direct bearing on health problems; the health services are making efforts to regain impetus. The health records on disease prevalence are inaccurate and deficient, because records of cardiovascular diseases from sources such as hospital admissions and out patient clinics are rather scanty. Only a limited number of deaths is medically certified, so the actual extent of cardiovascular disease is not known. Some fragmentary information on the prevalence of cardiovascular disease was supplied to the consultant in a personal communication (see Annex 2). From Dr R.K. Khondaker's data and other physicians' experience, the approximate percentage of cardiovascular patients in general medical wards is about 10-15, and most of the emergencies also belong to this group of patients. The information given in this report on the frequency of various cardiovascular diseases is based almost entirely on consultants' bedside impressions. These are summarized below.

### 3.1 Chronic Rheumatic Heart Disease

Patients suffering from chronic rheumatic heart diseases were met in all the hospitals visited. The great majority of them were in severe congestive failure. The history of rheumatic fever is seldom obtainable. According to physicians' statements most of the children and young adults with acute rheumatic fever do not reach the hospital and in most of the instances neither adequate treatment nor facilities for subsequent prophylaxis are provided. Mitral valve disease is evidently more prevalent than aortic heart disease.

### 3.2 Hypertensive Disease

Hypertension seems to be rather common. It was striking to observe a number of relatively young patients of about 30-50 years of age, with cerebrovascular involvement which could to some extent be attributed to the unrecognized diagnosis and the inadequate treatment of hypertension. The usual diagnosis was "essential hypertension", with no mention of eventual renal or other more specific etiology. In this context a study on stroke deaths in the rural community of the tea growing area in Sylhet district is worth mentioning. A population of about 30 000 in a period between 1950 to 1955 was studied. The study revealed that stroke was responsible for 9.6% of all male deaths and 7.5% of all female deaths, making a total of 8.7% of all deaths. The author<sup>2</sup> points out that the figures are certainly under estimated since, in the population group of 60 and above, only about 33% of deaths are registered.

### 3.3 Ischaemic Heart Disease

All physicians met, agreed that ischaemic heart disease has been on the increase, notably in urban populations. At ward rounds, however, only a few cases of chronic ischaemic heart disease were seen, mainly in the older age group. No case of acute myocardial infarction was seen.

### 3.4 Cor Pulmonale

Cor pulmonale due to chronic bronchitis and emphysema is one of the important causes of cardiac disability. According to Dr S.M. Chowdhury as well as Dr R.K. Khandaker's data (see Annex 2) the incidence of cor pulmonale in Chittagong is unusually high.

### 3.5 Cardiomyopathies

Physicians working in Chittagong have also revealed that the prevalence of cardiomyopathies is rather high in that area. The problem of cardiomyopathies deserves special attention. Moreover the quite common diagnosis of pure mitral incompetence of rheumatic origin should, to some extent, be considered as cardiomyopathy of unknown origin.

## 4. SERVICES

In Bangladesh there are about 8000 physicians, and the physician/population ratio is 1 to 10 000. Some two thirds of these physicians are practising in the city. There are only 700 registered nurses, of whom only two thirds are in active service, making the doctor/nurse ratio about 10 to 1.

There are some 57 hospitals, with approximately 7000 beds and a bed occupancy of around 14 000. The ratio of medical beds to the total number of

WILLIAMS, D.M. (1960) East Pakistan Med.7:12 (1)

beds in the hospitals visited by the consultant is as follows:

|                                     | Beds  |         |
|-------------------------------------|-------|---------|
|                                     | Total | Medical |
| Dacca Medical College               | 900   | 250     |
| Salimullah Medical College          | 500   | 90      |
| Institute of Post-Graduate Medicine | 250   | 25      |
| Chittagong Medical College Hospital | 750   | 150     |

#### 4.1 Manpower

Medical care in general, and nursing care in particular, require a great deal of improvement. The above-mentioned, large, urban institutions seem not to lack adequate medical manpower, sufficiently assisted by young house officers, but the nursing staff, even in these large central institutions, is very scarce. Nursing care is, therefore, provided by patients' relatives, who are found in abundant numbers in the wards.

The environmental conditions in these institutions, such as bed accommodation, general cleanliness, and sanitation, deserve full attention and assistance.

#### 4.2 Equipment

The equipment necessary to carry out a basic cardiac investigation is inadequate. Only one or two ECG machines were found in a single large hospital. This situation is even worse when it is considered that not only in-patients but also a very large number of out-patients require this type of service. The same applies to the X-ray facilities, and often even a plain chest X-ray could not be carried out due to lack of X-ray plates. There is also a temporary serious shortage of some indispensable drugs.

#### 4.3 Laboratory Facilities

Laboratories of the Central Hospital could undertake only a few elementary analyses required in diagnosis and treatment of cardiac diseases. The only exception is the biochemistry laboratory at the Diabetic Centre in Dacca, which is adequately equipped and where a variety of analyses is performed by well trained personnel.

#### 4.4 Coronary Care Unit

This unit occupies a part of a large hospital ward. The consultant was told that the unit had four monitoring systems and two defibrillators. While visiting the wards two monitoring systems were seen but with no patients attached to them.

#### 4.5 Cardiac Surgery

The cardiac surgeon at the Institute of Post-graduate Medicine explained that some closed heart surgery has been performed recently.

#### 5. TRAINING

There are eight medical colleges in the country. In a course of three years of clinical training the undergraduates have approximately 100 lectures in medicine, of which some 15 are in cardiology.

All consultants in medicine have completed their training in western medical schools, mainly in the United Kingdom.

The Institute of Post-graduate Medicine in Dacca was established in 1965 to provide post-graduate training in various basic and clinical subjects in order to prepare future teachers, specialists and consultants for medical colleges and hospitals in Bangladesh. The Institute has various departments, including the department of cardiology, with, so far, a limited involvement in post-graduate training in cardiology.

#### 6. RESEARCH

Attempts have been made to follow up systematically the frequency of various types of cardiovascular diseases (see Annex 2).

The following research projects have been undertaken at the Diabetic Centre in Dacca:

- (1) The study of blood cholesterol in health and diseases, which includes, among others, 500 cardiac patients;
- (2) The effects of dietary fats on plasma lipids, and
- (3) The electrophoretic pattern in health and disease based on the study of serum protein in normal, diabetes mellitus, and coronary heart disease patients.

The investigations carried out by the Nutrition Research Programme at the Diabetic Centre in Dacca in the period 1962-1964 should also be mentioned. The study of nutritional patterns in rural and in urban areas provided evidence that carbohydrates make up respectively 83% and 75.6% of the calorie dietary daily intake: proteins, 10.3% and 11.4%, and fats, 7% and 13.0%.

The Cardiology Department of the Institute of Post-graduate Medicine at Dacca plans to launch studies on the incidence of ischaemic heart diseases, as well as other acquired and congenital heart diseases in Bangladesh.

7. RECOMMENDATIONS

7.1 Establishment of Cardiological Services

- (1) Cardiological services should be planned in advance to meet the ever increasing demand in the country.
- (2) The trained personnel and equipment available for cardiological care should be concentrated in one institution in order to promote the development of a standard pattern of services and of facilities for training teams consisting of specialized health personnel for all the medical colleges in the country. This development is essential to promote integrated health services by means of improvement of a two-way referral system.
- (3) A coronary care unit should be installed in the capital city of the country and should be adequately staffed with trained physicians, nurses and an electronics technician for repair and maintenance.
- (4) An elaborate medical record system with health statistical services should be established. Such a system is essential to assess the prevalence and magnitude of specific cardiovascular ailments in the country.

7.2 Training in Cardiovascular Diseases

- (1) The elements of cardiovascular diseases and emergency cardiac care should be incorporated in the curricula of the training programme for medical and paramedical personnel.
- (2) Physicians, cardiologists, anaesthetists, nurses and laboratory technicians should be specially trained in cardiology for diagnosis, treatment (including cardiac surgery) and repair and maintenance of electronic equipment.
- (3) Short courses in the prevention, diagnosis and treatment of rheumatic fever should be organized for physicians and paramedical personnel.

7.3 Research

- (1) Epidemiological studies of cardiovascular diseases as well as operational research to enable better planning of specialized cardiovascular services should be encouraged.
- (2) The biochemical laboratory of the Diabetic Centre in Dacca should undertake studies on serum lipids and lipoproteins as related to dietary habits in healthy people and patients with cardiovascular diseases.

8. ACKNOWLEDGEMENTS

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PHYSICIANS MET DURING ASSIGNMENT

|                     |  |
|---------------------|--|
| Dr T. Hossain       | Secretary of Health and Family Planning                                      |
| Dr A. Malik         | Professor of Cardiology<br>Institute of Post-graduate Medicine               |
| Dr A. Asraf         | Cardiac Surgeon, Professor of Surgery<br>Institute of Post-graduate Medicine |
| Dr H. Islam         | Professor of Medicine<br>Director of Institute of Post-graduate Medicine     |
| Dr Yusuf Ali        | Professor of Medicine<br>Dacca Medical College                               |
| Dr H.D. Ibrahim     | Professor of Medicine<br>Director, Diabetic Centre, Dacca                    |
| Dr R.K. Khandaker   | Professor of Medicine<br>Salimullah Medical College                          |
| Dr S.E.M. Choudhury | Professor of Medicine<br>Chittagong Medical College                          |
| Dr D.Q. Khaleque    | Director of Health Service (Curative)  |
| Dr A.K. Monsur      | Director of Health Service (Preventive)                                      |

## PREVALENCE OF CARDIOVASCULAR DISEASES

TABLE 1

PRELIMINARY SURVEY OF CARDIOVASCULAR DISEASES  
(PROFESSOR H.D. IBRAHIM) 1953

|                                       |        |        |
|---------------------------------------|--------|--------|
| Total admissions to the Medical wards | 15 632 |        |
| Cardiovascular Diseases               | 717    | 100.0% |
| Rheumatic heart diseases              | 310    | 43.2%  |
| Hypertension                          | 225    | 31.4%  |
| Ischaemic heart disease               | 45     | 6.3%   |
| Arrhythmias                           | 45     | 6.3%   |
| Cor pulmonale                         | 42     | 5.9%   |
| Luetic heart disease                  | 20     | 2.8%   |
| Thyrotoxic heart disease              | 12     | 1.5%   |
| Congenital heart disease              | 9      | 1.3%   |
| Other forms of heart disease          | 9      | 1.3%   |

TABLE 2

INCIDENCE AND RELATIVE FREQUENCY OF CARDIOVASCULAR  
DISEASES - MEDICAL UNIT II, CHITTAGONG MEDICAL COLLEGE  
HOSPITAL FROM 1965 TO 1969 (PROFESSOR R.K. KHANDAKER)

| Year    | Total Admission | Cardiovascular<br>Diseases | Percentage |
|---------|-----------------|----------------------------|------------|
| 1965    | 1 752           | 196                        | 11.41      |
| 1966    | 1 855           | 216                        | 11.62      |
| 1967    | 1 492           | 170                        | 11.12      |
| 1968    | 1 241           | 150                        | 12         |
| 1969    | 1 403           | 158                        | 11.2       |
| 5 years | 7 743           | 890                        |            |

TABLE 3

DIFFERENT TYPES OF CARDIO-VASCULAR DISEASES ADMITTED  
DURING THE PERIOD 1965 TO 1969 (PROFESSOR R.K. KHANDAKER)

| Type of Diseases  | No. |
|---|-----|
| Rheumatic heart disease   | 200 |
| Coronary artery disease   | 150 |
| Hypertension and hypertensive heart<br>disease                    | 125 |
| Cor pulmonale   | 300 |
| Congenital heart disease  | 30  |
| Miscellaneous cardio-vascular diseases,<br>i.e. cardio-myopathies | 85  |
| Total..   | 890 |







JICA