バングラデシュ国
リウマチ熱・リウマチ性心疾患抑制
パイロットプロジェクト
評価調査団報告書

平成5年8月

国際協力事業団
医療協力部

バングラデシュ国リウマチ熱・リウマチ性心疾患抑制パイロットプロジェクト評価調査団報告書
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序　　文

バングラデシュ国リウマチ熱・リウマチ性心疾患抑制パイロットプロジェクトは、1988年８月３日にＲ／Ｄが署名され、1988年11月１日から1992年10月31日の４年間にわたり協力が実施された。

国際協力事業団は、本プロジェクト期間の終了する約６カ月前に、技術移転の効果を評価し、今後の方針決定の参考とするため、大國真彦日本大学医学部付属板橋病院院長を団長とする評価調査団を平成４年４月27日から５月８日まで派遣した。

本報告書は、その調査結果を取りまとめたものである。

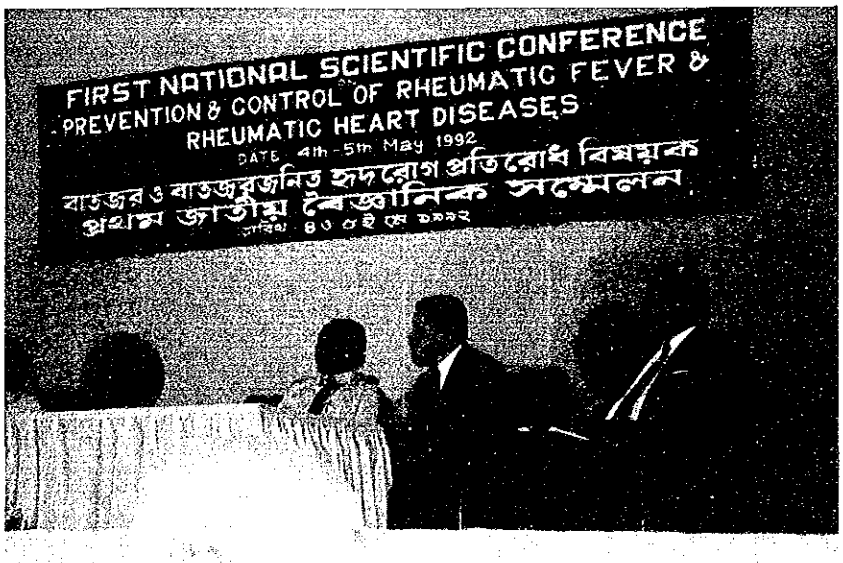
ここに、調査団員各位、ならびにプロジェクトに協力いただいた関係者に心より感謝致します。

平成５年８月

国際協力事業団

理事　小　澤　大　二

◀ ナショナル
コーディネーション
コミッティー
▼



◀ ナショナル
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1．エバリュエーション調査団の派遣

1-1　調査団派遣の経緯と目的

リウマチ熱は連鎖球菌の上気道感染による非化膿性合併症であり、発熱、発汗、頻脈等の症状を呈し、また、これらによる炎症性病巣が心臓等に生じたものがリウマチ性心疾患である。

これらの疾患は、先進国においては保健衛生関係の社会的基盤の整備、衛生教育の向上に伴い減少してきているが、開発途上国では依然猛威をふるうことがあり、バングラデシュにおいては都市及び農村地域における貧困層の子供が主として罹患している。

バングラデシュに対する技術協力としてわが国は1979年２月から1986年２月まで「循環器病プロジェクト」を実施したが、その成果を踏まえて、当国から農村地域及び都市部に対する保健医療行政を進める方策のひとつとして本件技術協力を要請してきたものである。

本プロジェクトは、パイロットプロジェクトとしてリウマチ熱及びリウマチ性心疾患に関する早期診断技術の確立、疫学調査技術の導入、既往患者に対する有効的な治療の実施、検査技術及びその他周辺医療技術のレベルアップを図り、また、予防体制作りにかかる計画策定を通じて、その成果を全国展開の際の基盤として活用していくことを目的として、1988年11月から４年間の予定で協力が開始された。

本プロジェクトの協力期間は本年10月末で終了するが、これに先立ち、次の目的で評価調査団を派遣した。

- これまで実施した協力について、当初計画に照らし、プロジェクトの活動実績、管理運営状況、カウンターパートへの技術移転状況等について評価を行う。
- 目標の達成度を判定した上で、今後の協力方針についてバングラデシュ政府と協議する。
- 評価結果から教訓及び提言等を導き出し、今後の協力のあり方や実施方法改善に資することとする。

1-2　調査団の構成

	担　当	氏　　名	所　　属
団長	総　括	大　國　眞　彦	日本大学医学部付属板橋病院院長
団員	疫　学	堀　部　　博	愛知医科大学衛生学教授
団員	臨床検査	藤　川　　敏	獨協医科大学越谷病院小児科助教授
※団員	循環器病	吉　武　克　弘	国立病院医療センター国際医療協力部
団員	協力評価	橋　口　道　代	国際協力事業団医療協力部 医療協力第一課

※　吉武団員は、短期専門家として派遣した。

1-3　調査団の日程表

日順	月日（曜）	調査日程	宿泊地	調　査　内　容
吉	4/23（木）	東京→バンコク	バンコク	移動 TG 641 11:00～15:30
武	・	バンコク	ダッカ	移動 TG 321 11:30～12:50
専	・	→ダッカ		
門	・			新崎リーダーとの打ち合わせ
家	・			評価調査事前準備等
	・			
1	4/27（月）	東京→バンコク	バンコク	移動 TG 641 11:00～15:30
				（大國、藤川、橋口）
		名古屋→		移動 TG 645 10:30～14:20
		バンコク		（堀部）
2	/28（火）	バンコク	ダッカ	移動 TG 321 11:30～12:50
		→ダッカ		JICA事務所打合せ、大使館表敬
3	/29（水）		〃	*ICVD所長表敬、ﾌﾟﾛｼﾞｪｸﾄ訪問
				大蔵省ERD**
				保健省（次官、DGHS****表敬）
				ﾌﾟﾛｼﾞｪｸﾄ外来視察、
				専門家ﾁｰﾑ との打合せ
4	/30（木）		〃	保健省（additional Secretary 表敬）
				ｶｳﾝﾀｰﾊﾟｰﾄからの聞き取り調査
				ﾅｼｮﾅﾙｺｰﾃﾞｨﾈｰｼｮﾝｺﾐｯﾃｨｰの打合せ
5	5/ 1（金）		〃	資料整理
6	/ 2（土）		〃	小児病院（ｼｼｭﾎｽﾋﾟﾀﾙ）視察
				ｶｳﾝﾀｰﾊﾟｰﾄからの聞き取り調査
				ﾅｼｮﾅﾙｺｰﾃﾞｨﾈｰｼｮﾝｺﾐｯﾃｨｰの打合せ
				ﾅｼｮﾅﾙｺﾝﾌｧﾚﾝｽ打合せ
				ｼﾞｮｲﾝﾄｴﾊﾞﾘｭｴｰｼｮﾝﾚﾎﾟｰﾄ署名
7	/ 3（日）		〃	ﾅｼｮﾅﾙｺｰﾃﾞｨﾈｰｼｮﾝｺﾐｯﾃｨｰ
				***ICDDR'B 視察
8	/ 4（月）		〃	ﾅｼｮﾅﾙｺﾝﾌｧﾚﾝｽ
9	/ 5（火）		〃	ﾅｼｮﾅﾙｺﾝﾌｧﾚﾝｽ
10	/ 6（水）		〃	ﾐﾆｯﾂ署名
11	/ 7（木）		バンコク	JICA事務所報告
		ダッカ		移動 TG 322 14:00～17:10
		→バンコク		（大國、堀部、藤川）
12	/ 8（金）	バンコク→東京		移動 TG 640 11:00～19:00
	・			（大國、藤川）
	・	バンコク→大阪		移動 TG 622 08:45～16:00　（堀部）
吉橋	・			延長R／D案の準備
武口	/10（日）		バンコク	JICA事務所報告
専		ダッカ		移動 TG 322 14:00～17:10
門		→バンコク		（吉武、橋口）
家	/11（月）	バンコク→香港		移動 CX 708 09:30～13:05
		香港→東京		CX 508 14:35～19:30

* ICVD : Institute of Cardiovascular Diseases（循環器病センター）
** ERD : Economic Relations Department
*** ICDDR'B : International Centre for Diarrhoeal Disease Research, Bangladesh
**** DGHS : Director General of Health Services

1-4　主要面談者

バングラデシュ保健省（Ministry of Health and Family Welfare）

Mr. Syed Ahmed	Secretary
Dr. K.M. Fariduddin	Additional Secretary
Prof. M.A.T. Siddique	Director General of Health Services
Prof. Abu Zafar	Director, Institute of Cardiovascular Diseases
Prof.KMHS Sirajul Haque	Project Director, Pilot Project of Rheumatic Fever and Rheumatic Heart Diseases

バングラデシュ大蔵省（Ministry of Finance）

Mr. Khondoker Abul Hossain	Deputy Secretary, Economic Relations Department (ERD)

プロジェクト専門家チーム

新　崎　康　博	チームリーダー
森　川　泰　夫	業務調整
渡　慶　次重美	疫学

在バングラデシュ日本大使館

斎　木　俊　男	大使
市　橋　康　吉	公使
井　上　圭　三	書記官
伊　東　久　雄	医務官

ＪＩＣＡバングラデシュ事務所

今　津　　武	所長
内　藤　治　男	次長
石　井　羊一郎	所員

1-5　終了時評価の方法

評価調査は次の方法で行った。

- Ｒ／Ｄにあるプロジェクトの協力目標、当初計画、活動内容の確認
- 協力実績（専門家派遣、研修員受入、機材供与）の確認
- 管理運営状況、技術移転状況についてのヒアリング、及びその結果の評価表へのとりまとめ。

  専門家チームからのヒアリング

  カウンターパートからのヒアリング……事前にエバリュエーションシートを送付し、記載を依頼、それを基にヒアリングを行った。
- 調査結果及び提言を盛り込んだジョイントエバリュエーションレポートの取りまとめ及びバングラデシュ側と調査団間での確認、署名
- 協力期間終了後の対応方針についての協議

2．要　　約

前期方法にしたがって評価調査を行った結果、日本・バングラデシュ双方で次のような結論に達した。

【全般的評価】

本技術協力を通じ、バングラデシュ側はリウマチ熱・リウマチ性心疾患抑制のための考え方、知識及び技術を習得した。特に、技術協力の対象となったセンターが本疾患のナショナルレファレンスセンターに成長したことは、当国の保健医療向上の中で大きな意味を持つ。しかしながら、本センターの能力向上のためには、更なる技術移転が必要な事項もある。

【部門別評価】

診断技術の向上

これまでバングラデシュでは行われていなかった患者登録、診療記録のシステムの導入などは評価に値する。また、診断技術については、若干の問題点を残すもののほぼ完了の域に達している。

予防対策

当初考えられていた本プログラムのＰＨＣレベルへの浸透は、疾患の性格上現段階としては時期尚早と判断し、予防体制は整備されていない。むしろ本疾患予防のための方策として、一般医師への啓蒙が重要であり、この面での技術協力は今後も必要である。

臨床検査技術

細菌、血清検査部門ともある程度の技術移転を行い、大量の検体の検査が多項目にわたって行われ、新しい事実が証明され始めている。しかしながら、バングラデシュ独自で継続的に実施できる検査法の開発、検査基準の設定、検査結果からの病態研究など、技術移転が完了されていない項目もいくつかある。

疫学的研究

疫学調査の実施については、計画立案など独自で実施できるまでに技術移転は完了している。しかしながら、集まったデータの解析、調査結果のプロジェクト活動への反映については更に協力が必要である。

研　　修

プロジェクトに関係するメディカルスタッフの教育については、カウンターパート自身で内容的にも予算的にも実施できるようになった。

医療機材保守

当初計画には医療機器保守は含まれていなかったが、プロジェクト開始後、その必要性が認識され、長期専門家が派遣された。結果としてはカウンターパートに十分な技術移転が行われた。

特記事項として

・当該疾病対策のための独立した組織を作った。
・これまでバングラデシュでは行なわれていなかった２次予防システムが策定され、実施されるようになった。
・当該疾病についての研究が開始された。
・学校検診によって得られたデータは、同国の子供の健康状態の評価にも活用できる。

評価結果はジョイントエバリュエーションレポートに取りまとめ、評価調査団団長と先方プロジェクトディレクターの間で署名した。

また、この結果を踏まえナショナルコーディネーションコミッティーの席上で評価結果等を確認した。

ナショナルコーディネーションコミッティーでの確認内容は次のとおりである。

・パイロットプロジェクトの達成事項（バングラデシュ側プロジェクトディレクターからの報告）

本疾患を抑制するためには医師の診断能力の向上が第一に重要であり、衛生教育等ＰＨＣへの広がりは段階的に行うべきであることを確認した。

・日本の技術協力の評価をジョイントエバリュエーションレポートに沿って確認した。
・1993年６月までの計画がバングラデシュ側から発表された。
・上記計画に基づき、日本の技術協力の延長要請が口頭にて表明された。これに対し日本側から延長手続きには正式要請書の提出が必要であること、また延長の可否については評価調査の結果を基に検討する旨回答した。
・1993年６月以降のバングラデシュ側の計画

以上の点をミニッツにまとめ評価調査団団長とバングラデシュ保健省アディショナルセクレタリーとの間で署名した。

3．プロジェクトの当初計画

3-1　バングラデシュの要請とわが国の対応

わが国は同国に対する医療協力事業として循環器病研究所（ＩＣＶＤ＝Institute of Cardiovasucular Diseases）における心臓病の診断・治療に必要な技術向上を目的としたプロジェクトを昭和54年（1979年）から７年間実施した。

リウマチ性心疾患及びその前段階とも言えるリウマチ熱はＩＣＶＤの手術患者の約６割を占め、同国の心臓疾患の原因の中で高率を示しているために、その対策を講じるための技術協力が昭和61年（1986年）にわが国に対して要請された。

3-2　プロジェクトの成立と経緯

1986年８月　　バングラデシュ政府より要請書提出

1987年６月　　事前調査団派遣（要請の背景・内容・技術協力の妥当性についての確認のための調査・協議）

1988年２月　　長期調査員派遣

（具体的計画の策定）

① ケースファインディングの方法と実施体制の計画策定

② 対象フィールドの決定

③ カウンターパートの配置に関する協議

④ 必要機材のリスト作成

⑤ 施設（プロジェクトオフィス／ラボラトリー）の施設規模・内容の計画策定

1988年７月　　長期調査員派遣（機材チーム、疫学チーム）

1988年７月　　実施協議調査団派遣、Ｒ／Ｄ署名（８月３日）

1988年11月１日　　プロジェクト開始

3-3　プロジェクトの目的及び当初に設定した目標

・プロジェクトの目的

ＩＣＶＤのリウマチ熱・リウマチ性心疾患抑制対策の能力を強化し、全国規模でのプログラムを行う際に応用し、バングラデシュ国の公衆衛生の向上に資する。

・日本の技術協力の目標

ＩＣＶＤに対する協力項目は次のとおりである。

① 溶連菌感染／リウマチ熱／リウマチ性心疾患の診断技術の向上

② リウマチ熱／リウマチ性心疾患の効果的予防方法の研究

③　溶連菌感染／リウマチ熱／リウマチ性心疾患の細菌学、血清学的研究

④　疫学的研究

⑤　プロジェクト関係の医師及びヘルスアシスタントの教育

⑥　その他

3-4　プロジェクトの活動計画

プロジェクト暫定実施計画（次頁）を参照して下さい。

活動項目

ケースファインディング（方法・システムの確立、スタッフの教育・訓練、実施）

疾病の予防（一次、二次予防）

感染についての研究（細菌学・血清学）

疫学的研究（マススクリーニングの結果分析、病院でのデータ及び面接データの分析、健康教育の結果分析）

医師、ヘルスアシスタントの教育

プロジェクト（パイロット）エリアについて

・バングラデシュ側の考え方

保健省としてはリウマチ熱・リウマチ性心疾患抑制をナショナルプロジェクトと位置づけており、要請書に記載されている８地区のパイロットエリアをカバーしたいと望んでいる。また、それに必要な措置はバングラデシュ側で講じる。

・日本側の考え方

バングラデシュ国のローカルコストの負担能力や実施体制から、対象エリアは当初ダッカ市とその近郊とし、プロジェクトの成果を見極めた後に地方に拡大するのが現実的である。しかし、日本側が協力するのは、プロジェクトに従事する医師、看護婦、臨床検査技師に対する教育、訓練とし、また派遣専門家が直接参加するのはダッカ市とその近郊における調査、研究活動に限定することを条件にバングラデシュ側の計画を了承した。

3-5　プロジェクトの投入計画

プロジェクト暫定実施計画（次頁）を参照して下さい。

プロジェクト施設（プロジェクトオフィス及びラボラトリー）の建設をＲ／Ｄの中でうたった。

3-6 計画変更事項とその内容

計画打合せ調査団（平成２年８月）

カウンターパート配置問題

当初、ＩＣＶＤの医師数名、地方の実施機関（医科大学等）及びパイロットエリア内のウポジラヘルスコンプレックスの医師がカウンターパートとして任命されることになっていた。

ところが、実際にはセンターに隣接するＩＣＶＤの医師を兼任させる形をとったため、各医師は多くの患者を抱えていることから臨床業務に多くの時間をとられ、プロジェクトの活動に専念できない状況となった。

こうした状況のもと、プロジェクトの進捗をはかり、かつ将来的に本プロジェクトがバングラデシュ独自で円滑、効率的に運営されるためには、プロジェクト専任のカウンターパートが不可欠であり、同国に事態の改善を求めた。

バングラデシュの反応には鈍いものがあったが、計画打合せ調査団の議事録確認の際に日本側専門家チームリーダーのカウンターパートとして、専任のプロジェクトディレクターを配する旨を確認し、事態の改善を図った。

プロジェクトの組織

当初技術協力の対象はＩＣＶＤとなっていたが、現実にはＩＣＶＤのスタッフがプロジェクトに関与できる体制ではなかったこと、また、プロジェクトの結果を広く衛生行政に反映させていく理由からも、プロジェクトをＩＣＶＤから独立させ、Director General of Health Services の直轄にするよう申し入れ、実現した。

プロジェクトプロフォルマの改定

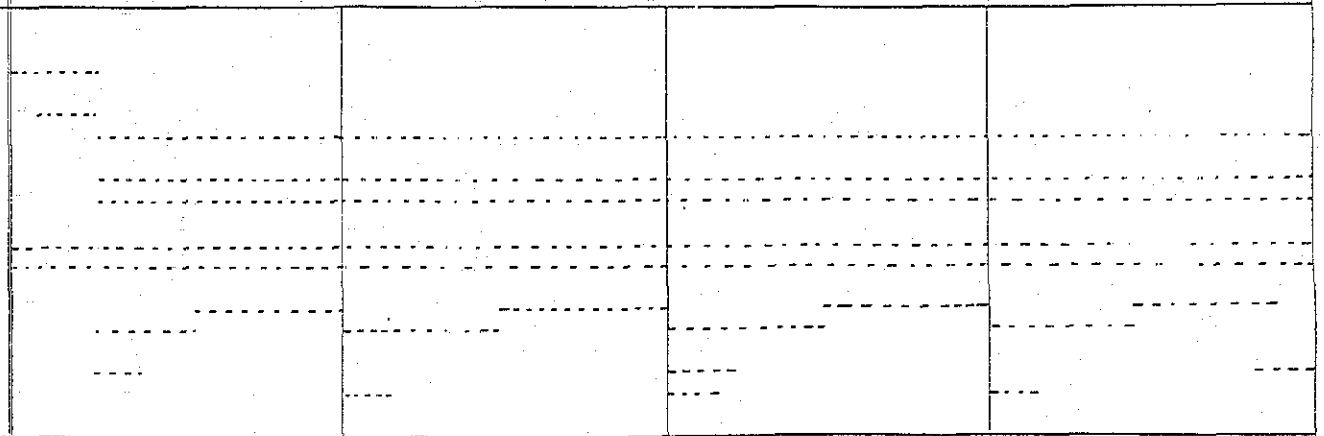
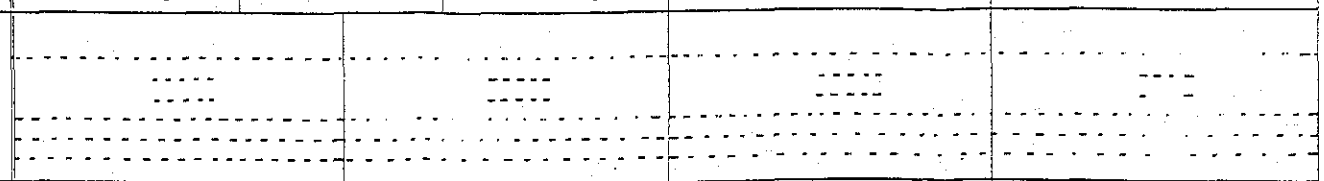
バングラデシュとしては技術協力を開始する際、先方実施機関が提出するＴＡＰＰ（Technical Assistance Project Proforma）がPlanning Commission によって承認される必要がある。当初ＩＣＶＤから提出されたＴＡＰＰが技術協力のＲ／Ｄと相容れない部分があり、それを明確にするためにもＴＡＰＰの改定を申し入れた。改定作業には長い時間がかかったが、おおむね日本側のアドバイスを受け入れた形で改定された。

3-7 バングラデシュ側実施機関

3-6 計画変更の事項と内容、プロジェクトの組織を参照願います。

プロジェクト暫定実施計画

Tentative Implementation Schedule of the Pilot Project on Control of RF and RHD in Bangladesh

	1st. year		2nd. year	3rd. year	4th. year
	1988	1989	1990	1991	1992
1. Objectives	1) Promotion of diagnostic capability of beta-hemolytic streptococcal infections, rheumatic fever and rheumatic heart diseases 2) Study on effective and efficient methods of prevention and control of rheumatic fever and rheumatic heart diseases 3) Bacteriological and serological study of beta-hemolytic streptococcal infections, rheumatic fever and rheumatic heart diseases 4) Epidemiological studies in the fields concerned 5) Cooperation for the training which will be conducted by the Institute of Cardiovascular Diseases for medical doctors and health assistants 6) Other relevant research activities mutually agreed upon as necessary				
2. Program and activities (1) Case finding a) Establishment of methods and system for case finding b) Training and education of staff c) Implementation of case finding (2) Control of the diseases a) Primary prevention b) Secondary prevention (3) Research of streptococcal infections a) Bacteriology b) Serology (4) Study of epidemiology a) Study of mass screening result b) Analysis of hospital data and interview data c) Analysis of health education effects (5) Training of medical doctor and health assistant by ICVD					
3. Counterpart training in Japan	Administrator 3M Bacteriologist 6M Clinical Pathologist 6M	Cardiologist 6M Serologist 6M Health Educator 3M	Bacteriologist 6M Epidemiologist 3M Clinical Pathologist 6M	Cardiologist 6M Serologist 6M Health Educator 3M	Cardiologist 6M Cardiologist 6M Epidemiologist 3M
4. Japanese expert (1) Cardiologist (2) Bacteriologist (3) Serologist (4) Epidemiologist (5) Clinical pathologist (6) Coordinator					
5. Mission	Implementation team Detailed design team		Planning & consultation team	Advising team	Evaluation team
6. Equipment	▲	▲	▲	▲	▲

4. プロジェクトの実績

4-1 プロジェクトへの投入実績

4-1-1 専門家派遣
4-1-2 研修員受入
4-1-3 機材供与

} ジョイントエバリュエーションレポートを参照願います。

4-1-4 調査団派遣

1987年6月15日～6月24日 事前調査団

総括	曲直部嘉夫	国立循環器病センター総長
企画協力	我妻 尭	国立病院医療センター 国際医療協力部部長
疫学	堀部 博	国立循環器病センター 疫学部部長
診断	上田 欽一	大阪市立小児保健センター 循環器科科長
治療	藤川 敏	獨協大学越谷病院 小児科助教授
業務調整	佐藤 忠	ＪＩＣＡ医療協力部医療協力課 課長代理

1988年2月1日～2月12日 長期調査員チーム

血清学	藤川 敏	獨協医科大学越谷病院 小児科助教授
治療	吉武 克宏	東京都八王子小児病院 小児科医長
細菌学	山田 俊彦	山梨医科大学微生物学講座 助教授
協力計画	斉藤 祐巳	ＪＩＣＡ医療協力部医療協力課
業務調整	大嶋 健男	元ＪＩＣＡ農業専門家 （バングラデシュ）

1988年７月28日～８月６日　実施協議調査団

総　括	曲直部嘉夫	国立循環器病センター総長
循環器内科	河北　成一	滋賀医科大学名誉教授
協力企画	我妻　堯	国立病院医療センター 国際医療協力部長
血清学	藤川　敏	獨協医科大学越谷病院 小児科助教授
治　療	吉武　克宏	国立病院医療センター 国際医療協力部
業務調整	斉藤　祐巳	ＪＩＣＡ医療協力部医療協力課

同時期に長期調査員も派遣した

（機材チーム及び疫学チーム）

1988年７月11日～７月20日	機材計画	山田　俊彦	山梨医科大学微生物学教室 助教授
	医療機材	長屋　嘉明	（株）メディオン
1988年７月11日～８月10日	計画立案 調　整	大嶋　健男	元ＪＩＣＡ農業専門家
1988年７月28日～８月５日	疫　学	堀部　博	国立循環器病センター疫学部長
	疫　学	渡慶次重美	ＪＩＣＡ特別嘱託

1990年８月16日～８月22日　計画打合せ調査団

総　括	曲直部嘉夫	国立循環器病センター名誉総長
小児循環器	大國　真彦	日本大学医学部付属 板橋病院院長
協力企画	我妻　堯	国立病院医療センター 国際医療協力部部長
疫　学	堀部　博	愛知医科大学衛生学教授
業務調整	青木利道	ＪＩＣＡ医療協力部 医療協力課課長代理

4-1-5　プロジェクト基盤整備

プロジェクト活動の拠点としてプロジェクトオフィス／ラボラトリーを建設した。

支払金額　　53,436千円

1988年５月30日　　実施計画書承認

1989年３月19日　　建設契約

1989年12月30日　　建設業者からＪＩＣＡ側への引き渡し

1990年３月25日　　バングラデシュ側への引き渡し

4-2　プロジェクトの目標達成度

別添評価表（技術協力計画および評価）を参照して下さい。

5．プロジェクトの評価

5-1　分野別評価

5-1-1　循環器病

①　患者登録・診療記録の整備・保管・利用状況

患者診療記録についての技術移転は、その習慣がほとんど欠如していたために用紙づくりから記録の習慣づけまで現在の段階にまで高めたがそこに至った努力は高く評価したい。とくにカウンターパートが自らその改訂版をつくるに至っている点は、評価に値する。ただし、まだ記載漏れや正確さにやや難点があり、せっかくの貴重な症例がもったいないということからさらなる技術指導が必要であり、敢えて評点３が与えられている。

②　診断技術の向上

診断技術は心疾患の聴診にやや難がある以外はほぼ、技術移転完了と判断した。

③　予防・治療技術の向上

２次予防及びフォローアップ基準の統一はほぼ完成の域に近い。

１次予防・溶連菌咽頭炎治療に関しては、ペニシリン投与対象患者の臨床診断基準がまだ完成していない。従って１次予防のためには膨大な数の咽頭炎患者にペニシリンを投与しなければならず（１人のＲＦの予防のためには1000人の咽頭炎患者にペニシリンを投与しなければならず、当国にとっての経済効率は悪い）、現在はまだ積極的に行われていない。ただし、溶連菌咽頭炎の臨床所見の調査が現在行われている点は注目したい。

④　論文発表

論分発表は現在まで各種学会（国際学会も含めて）で十数篇行われており、評価したい。しかしまだ、国際的な医学雑誌に投稿するまでに至っていない点から、さらなる技術移転を要する。

⑤　関連医療施設との連携

プロジェクト・センターとサブセンターであるヘルスコンプレックスとの連携はほぼできあがっており、全国展開の際のモデルになりうる。ダッカ市内の教育病院を本プログラムの協力関連病院として連携づけることは、形の上では成功しているが（この国では画期的なこと）、セクショナリズムの極度に激しいこの国では、実質的にはまだ成功していない。

⑥　その他

現在までに2000余人に対してペニシリン注射が行われているが、局所的感染１例と若

干の発疹がみられた以外はこれまでに、アナフィラキシー・ショックのような重篤な副作用はみられていない。またショック症状に備え、緊急蘇生の準備が処置室に怠りなく行われている事は、途上国の通例としていまだに少なく、これを評価したい。

⑦ 循環器病分野の総合評価

総合的にいって、特定の疾患についてその診断・治療・予防・フォローアップ・記録・登録・各種機関との連携・論文作成などの系統的取り組みが習慣としてほとんど皆無の土壌にあって、現段階までにいたる技術協力の努力は高く評価できる。しかし、技術移転完了というにはまだいくばくかの余地が残っている点からこの項の総合評価は3としておきたい。

5-1-2 ＰＨＣ

① 予防体制整備

当初考えられた本プログラムのＰＨＣレベルへの浸透は、専門家が現地で活動を始めてみた結果、疾患の性格上、現段階では時期尚早と判断され積極的には行われていない。ダッカ市内における教育病院の小児科医や循環器医ですら、正確な診断と適切な治療・フォローアップができていない段階では時期尚早ということである。予防体制整備の評価点を２と低くしてあるのはこのためであるが、パイロット段階においいては専門家による技術移転はさほど必要がないというコメントをつけておきたい。治療医の積極的な活動がなくても予防可能な各種疾患、例えばＥＰＩ対象疾患、下痢性疾患、各種ビタミン欠乏症などと本疾患は本質が異なる点は充分に理解されている。新聞やラジオ・テレビでの本疾患への一般への意識喚起は何回か行われており、そのこともあってセンターで始められた本疾患の外来は一日100人を越す患者で賑わっている。

② 一般医師への啓蒙活動

一般医師への啓蒙は、本疾患の制圧の主体は医師にあるということから積極的に行われなければならない。この面での技術協力は今後も必要である。

5-1-3 臨床検査

本プロジェクトセンターが建築される以前のプロジェクト初期から、Ａ郡連鎖球菌迅速診断キットの検討を手始めに簡易検査が行われていた。しかし本格的な活動は、1990年久野専門家の派遣により開始され、その後軌道に乗り、1991年には学童から採取された大量の検体検査が多項目について行われ、同年秋にはLaser immunoassay 法による測定LA2000が稼働したことにより多くの興味ある新事実が証明されてきた。しかし、バングラデシュ側カウンターパートが独自に、しかも自助努力で完全に運営するまでには至っておらず、細菌部門、血清部門にもまだ技術移転の完了していない項目が残っている。しかし、これらの項目も若干の延長がなされれば、ほぼ終了すると思われる。

① 細菌学検査部門

患者、学童などについては1990年７月～1991年６月までに2224検体に対して培養、同定の検査が行われ、その後も継続されており、連鎖球菌を含めた一般細菌検査についての基礎的な技術移転はほぼ完了した。溶連菌の群別検査についても技術移転は完了している。

Ａ群連鎖球菌については、Ｔ型分類の測定技術移転が開始されたばかりで未だ完了していない。しかし、この点については、バングラデシュなど途上国で発見されるＡ群連鎖球菌の菌株数が多数で、しかもその半数以上にはＴ型抗血清では分類不能株であることが報告されており、技術移転は延長期間終了までかかると思われる。

また、抗生剤感受性検査についても充分な技術移転は完了していない。

② 血清学検査部門

Laser-immunoassay法によるLA 2000 の使用によりCRP, ASO, TP, Albumin, IgG, IgA, IgM の定量が行われており、技術移転が完全に行われたことにより非常に興味ある結果が得られている。連鎖球菌抗体については LA 2000 による ASOの測定のほか Manual法によるASK, ADNase-B, ASP の測定もバングラデシュ側のカウンターパートにより行われている。但しASOがLaser immunoassay法による測定という経費のかかる方法しか技術移転されていないため、Manualによる Microtiter法を指導する予定である。これは今年６月以後の専門家の派遣により１～２カ月間で修得可能である。

しかし、現在バングラデシュの大学病院を含め一般的な病院で行われている血清反応は凝集法によるCRPとASOの測定である。

特にASO 測定は160～200単位で陽性となるものを使用しているため、学童の平均のASO が400単位、場所により500単位であることを考えると、このキットによる測定では連鎖球菌感染症の確実な診断は不能である。しかも将来、Microtiter法が当地で普及するには時間がかかることが予想され、凝集法による500単位、800単位、1,000単位程度で陽性を示すキットまたは現在使用されているキットを応用しての測定法を検討すべきである。また、可能ならバングラデシュ国内で安価に入手できるキットを開発することを検討する必要があり、将来の課題である。

③ 検査の標準化

センター内での検査法は標準化されている。しかしASO 測定については問題が残っており凝集法、用手法によるマイクロタイター法、Laser immunoassay法のうちLaser法のみが現在センターで行われている。凝集法は一般的にバングラデシュ国内で行われている方法であり、マイクロタイター法はまだ技術移転が完了していない。Laser immunoassay法は試薬が高価であることから将来的にバングラデシュ国内で一般化され

る方法ではない。

したがって、国際的にも通用するマイクロタイター法が中心となるべきであり、プロジェクト期間内にはセンター内における技術移転は完了するものと考えられるが、協力病院への技術移転はおそらく延長期間内にも終了しないことが予想され、バングラデシュ側の自助努力が期待される。

④ 検査データの精度管理

現在のカウンターパートに対する技術的な精度管理、同一検体についての精度管理など一般的な精度管理についての技術移転は完了している。しかし、バングラデシュ側の新しいカウンターパートはまだ勤務していないため延長期間内に終了する予定である。

日本側の課題として、試薬類の使用期限が切れているものが数種あり、これらは本来使用すべきではないが、新しい試薬とともに精度管理を厳重にしながら使用しているのが現況である。これらのデータは学術研究には使用不能である。現地購入できない試薬に限り年１回の空送を年２～３回の分割納入にし航空便にするべきである。

⑤ リウマチ熱・リウマチ性心疾患に関する病態の研究

先述したように、当研究室ではリウマチ熱に関する一般的な検査が可能となったのみで、研究段階まではまだ手がとどいていない。しかし、現在までにすでに着手している事項は下記の項目で、これらの大半はおそらくプロジェクト終了までには症例が加わり、研究課題として満足する結果が得られることと思う。

a）ARFのfollow upと分析

特にIgGで反応する型とIgMで反応する型に分類されることが判明した。これが心炎によるものと関節炎によるものの差なのか、別な要因による反応かは検討中である。

b）学童の臨床検査データからみた連鎖球菌感染状態の検討とリウマチ熱／リウマチ性心疾患病体

すでに提出されているように学童の赤沈、白血球数、IgG、IgM及び連鎖球菌抗体は日本の同年齢の学童に比較し非常に高い。この事実からバングラデシュの学童は頻回に連鎖球菌を初め、諸々の感染を反復して受けているものと考えられる。しかし、咽頭からのＡ群連鎖球菌の検出率は、それ程高くはない。従来、沖縄などの調査から報告されているような、新しい菌種が輸入されてリウマチ熱が蔓延するのとは異なり、バングラデシュでは多数の菌株にくり返し感染することがリウマチ熱の病因となっている可能性を示唆している。この点を菌型同定結果を加えて検討する予定である。

c）Ｃ，Ｇ群連鎖球菌とリウマチ熱

現在までに学童その他の群からＣ群及びＧ群連鎖球菌が証明される率が高いことが判った。これは先進国ではみられない現象のため、Ｃ，Ｇ群のリウマチ熱発症の関与

の検討が開始されている。

d）ペニシリンGによるリウマチ熱／リウマチ性心疾患再発予防効果の検討

バングラデシュのような連鎖球菌に広く汚染されている地域でのPCG投与がリウマチ熱の再発防止にどこまで効果があるかの検討がすでに開始されている。しかし、この結果が得られるには２～３年間の経過をみる必要がある。

e）ペニシリン投与中の咽頭細菌叢の変化とtreatment failureの原因

f）ペニシリン投与中の連鎖球菌血清抗体の変化と予防効果判定

g）バングラデシュにおけるリウマチ熱診断基準の設定

h）バングラデシュにおけるリウマチ熱治療基準の設定

e）～h）は全て連鎖球菌に高度に汚染されている地域が日本などの比較的汚染度の低い地域と同じ予防法、治療法、診断法を用いることの是非は大きな課題であり、プロジェクトの大きな目標でもあるが、すでに諸方面からの検討が開始されている。

⑥ 研究発表・論文

臨床検査分析の研究結果については下記のように、口頭発表、雑誌掲載が行われ始めている。実際に研究データが出て来たのは1991年秋からであり、今後、さらに多くの発表、学術雑誌への投稿が期待される。

1. Hashimuddin Ahemd, MA Rouf, MM Monzur Hassan et al: Study on immunoglobulins in patients of acute rheumatic fever (ARF) Oral presentation at The First National Conference on Rheumatic Fever and Rheumatic Heart Disease. 1992.
2. MM Monzur Hasan, MA Rouf et al: Serotyping of group A streptococci isolated from the patients attended the out patient department of rheumatic fever and rheumatic heart disease control project. Oral presentation at The First National Conference on Rheumatic fever and Rheumatic Heart Disease. 1992.
3. MA Rouf, Jashimuddin Ahmed, MM Hassan et al: Study on strepotoccal antibodies in acute rheumatic fever patient (ARF). Oral presentation at The First National Conference on Rheumatic fever and Rheumatic Heart Disease. 1992.
4. MA Rouf, MMM Hassan, MJ Ahmed et al: Prevalence of beta-haemolytic streptococci (BHS) in the throat of patients attended the National

Centre for Prevention and Control of Rheumatic Fever and Rheumatic Heart Disease. Chest & Heart Bulletin, XVI, 1:11-14, 1992.

⑦ 臨床検査分野の総合評価

1988年から開始された本プロジェクトは、センター建築のあと、機器の設置がほぼ完了したのが1991年であり、すでに細菌学的検査は行われていたが、主機種であるLA 2000が稼働開始したのが1991年秋、即ちプロジェクト終了の１年前である。したがって現在検討されている臨床検査部門のデータは約半年間のものにすぎない。この事実からすれば、すばらしい進歩と成果は得られており、バングラデシュ側のカウンターパート及び日本側専門家に敬意を表したい。とにかく大きく軌道にのった半年間であり、今後のプロジェクト終了までには、さらに残された技術移転、症例増加による残された課題の検討が期待される。

5-1-4 疫　学

リウマチ熱／リウマチ性心疾患についての対策を講じるためには、その診断治療方法や病態の研究だけでなく、関連要因の現状把握も不可欠である。本疾病の疫学像の把握はプロジェクトの他の部門にも関係する重要な事項である。

一般的には本疾病の疫学像は既に把握されており、取るべき対策もおおむね明らかにされているが、バングラデシュにおいてできるだけ少ない費用で効果的な対策を実施するには、当国における疾病の実態を把握し、国の実情（政治・経済・保健医療）に適した方法を採用することが望ましい。この考え方についてはプロジェクト関係者はおおむね理解していると判断された。

① 頻度調査およびデータ解析

連鎖状球菌性咽頭炎

リウマチ性心疾患の新発生を防ぎ、悪化を食い止めるには「リウマチ熱の新発生および再発」を防ぐ必要がある。リウマチ熱の発生を防ぐには「連鎖状球菌性咽頭炎を治療」し感染を予防することが必要である。これにはペニシリンなど抗生物質の利用が不可欠である。これまでには、バングラデシュの第一線医療をになっている農村地帯のヘルスセンターには、抗生物質としてサルファ剤が一種類供給されているだけであった。

リウマチ熱／リウマチ性心疾患抑制対策のためには、連鎖状球菌性咽頭炎の治療のためどのくらいの抗生物質が必要か、国家予算との関係においても、必要量を割り出す必要がある。そのためにも頻度の把握が不可欠である。

５～15歳の子供が少なくとも年１回かなりひどい咽頭炎を煩い、そのうち20%が連鎖状球菌性咽頭炎とし、そのうち80%が実際に治療に来ると仮定すると、その年令の子供1000人あたり160回分のペニシリンが必要となる。全国では５～15才の子供は、1992年

7月1日推定値は3525万人（総人口の29.8%）であり、一次予防だけでも少なくとも160×35250＝564万本／年のペニシリン、およびそのための注射器が必要になる。現地ではペニシリン120万単位1本60～80円であり、年3.9億円という試算結果となる。　プロジェクトにおいては、Savor 地区において連鎖状球菌性咽頭炎の頻度調査が実施されてきたが、その結果は5.8%という予想を下回る結果であったため、本年度さらに頻度調査を継続する必要がある。

リウマチ熱およびリウマチ性心疾患

一旦リウマチ熱になったものおよびリウマチ性心疾患になったものに対しては、2次予防のため、症例の登録と4週に一回の継続的なペニシリン治療が必要になってくる。リウマチ熱およびリウマチ性心疾患の有病率の把握のためには、一定地域集団を対象とする調査が必要である。これまで学校と家庭の訪問調査が実施されたが両者の結果を一本化することも必要である。これまでの成績としては学校調査では有病率が1000対2.6、家庭訪問調査では4.5で、地域全体としての当該年令の子供の有病率は3.9と考えられている。その大部分はリウマチ熱であるが、John's の診断基準を完全に満たすものが少ないとのことで、結果についてはなお検討の余地がある。調査漏れ、ヘルスアシスタントの調査精度についても抽出調査が計画され実施に移されている点は評価できる。

参考までに連鎖状球菌性咽頭炎と同様、ペニシリン等に必要な予算を試算してみると、リウマチ熱／リウマチ性心疾患の患者総数は、3.9×35250＝137,457 と推定される。二次予防のため、4週に1回ペニシリンを注射すると、年に13回すなわち179万本のペニシリンと注射器が必要となり、接種率50%とすると注射用ペニシリン代は年6262万円と概算される。

家庭訪問調査についてはバングラデシュのヘルスアシスタントがスクリーニングをしているので、その正確さが調査結果に影響いてくる。この確認のため、調査の一部について再調査を行っている。これまでの調査結果からはかなり多めにスクリーニングされており、少ない場合に比べれば調査漏れは少ないものと予想される。

これらの家庭、学校訪問調査資料は、整理され登録票が作成され、パソコンにより入力しているが、その後の点検では転写漏れが認められている。この作業はヘルスアシスタントが行っているが、改善のための対策を考える必要がある。例えば、リウマチ熱の新発生率を既存の資料から調べようとしたところ、番号の記入漏れのため、果たせなかった。予防活動の成果が真っ先に出るのはリウマチ熱の新発生率であり、データ入力についての改善は今後の課題である。

疫学調査資料は非常に多く、データの入力だけのためにパソコンが一台占有される状

況である。その結果、パソコンについての技術指導が制限された。また、担当者の帰宅後は盗難や故障を恐れるために、施錠してしまうため、担当者以外の人がパソコンを使用する機会がなく、結果的に担当者の負担が大きくなっている。入力作業は大変退屈な作業で、誤りが少なくない。入力でもっとも望ましい方法は、情報を入手した人が、その場で、その時に入力することであるが、現在とっている方法は、バングラデシュの現状を考えると次善の策である。

パソコンによる資料の分析は、疫学カウンターパートが採用されてからは、すでにＳＰＳＳ（社会科学のための統計パッケージ）などの訓練を受けていたこともあり、集計はおおむね円滑に進められている。

プロジェクト終了後のことも考慮し、パソコンで入力、分析をできる人をさらに訓練、教育しておく必要があると思われる。

② 疫学調査結果のプロジェクト活動への反映

リウマチ熱の予防は可能である。これまでの研究から国際保健機関はリウマチ熱の新発生率は0.9／1000と見積もっている。放置しておくと、0.9×35250＝31725が毎年リウマチ熱を煩い続けることになる。リウマチ性心疾患の新発生率は0.6×35250＝21150と推定される。予防対策が遅れればこのようなペースで新患者が発生し続ける。

リウマチ熱予防のための連鎖状球菌性咽頭炎治療体制とそのための住民や保健医療関係者の教育を行うことが必要である。バングラデシュにおける調査結果を生かして、国際保健機関等の示しているひな型も参考にし効率の高い国状に適した予防対策を策定する時期が来ていると思われる。

5-1-5 研　修

プロジェクト・スタッフの研修やヘルスアシスタントの研修はほぼカウンターパート自身で内容的にも予算的にも行えるようになった。一般医師のトレーニングが充分でないために予算的にも技術的にももっと支援が必要である。以前より派遣専門家から要請のあった研修用教材作成指導のためのオーディオヴィジュアルの専門家の派遣が果たされていない点から、この項は総合点としても３とし、追加支援の必要がありそうである。

5-1-6 医療機材

当初計画になかった項目であるが、専門家の着任後に必要性が認識され、専門家の派遣が行われ、技術協力が行われた。当初の目的はほぼ達成されて、いまやカウンターパートはかなりの実力をつけ、業務に専念している。この点からこの項は、これ以上の技術協力の必要はないものと判断する。ただし英文の作業マニュアルが不足している点は、供与側の体制不足として指摘しておきたい。

5-1-7　運営・管理

技術協力開始時点におけるプロジェクト組織の不備、カウンターパート配置の不備の状態から、現在のカウンターパートの数、プロジェクト活動の程度の高さは期待をはるかに越えたものであり、高く評価したい。しかし各部門の当初の目標達成という面からは、協力期間を越えてなおプロジェクト全体の運営管理面から、さらに徹底する必要があり、技術協力の余地が若干残っているということで、総合評価としては3とした。当初計画にプロジェクトセンターでの外来診療活動はなかったが、セクショナリズムの強い当国にあっては、仕方がないことであろう。目に見える形の活動がなければ、プロジェクトが評価されない状況で、現在本プロジェクトの活動がまずはこのような形から、この国の各方面から評価を受けはじめている事は、技術援助をする側にとっても、いい経験としたい。

5-2　重要な齟齬とその影響及び原因

カウンターパート配置　3-6 カウンターパート配置問題の項を参照下さい。

プロジェクトセンター、機材

5-3　評価の総括

本センターの能力の向上のためには、若干の技術協力を要する項目もある。

5-4　取るべき措置

上記評価結果をもとに、十分な技術移転のためには各部門で更に8か月程度の協力期間延長により技術協力を継続する必要がある。

5-5　結　論

本技術協力を通じ、バングラデシュ側はリウマチ熱・リウマチ性心疾患抑制のための考え方、知識及び技術を習得した。特に、技術協力の対象となったセンターが本疾患のナショナルレファレンスセンターに成長したことは当国の保健医療向上の中で大きな意味を持つ。

6. 教訓及び提言

6-1 計画策定に関するもの

バングラデシュ側が技術協力等を開始する際にどのような国内的手続きを取っているのか承知しておく必要があると思われる。ＰＰ（プロジェクトプロフォルマ）の作成段階からすでに技術協力が始まっている言ってもよい。本プロジェクトでは実施協議調査団とバングラデシュ側で署名交換したＲ／Ｄとは別に、ＰＰが起草されており、結果的にわが方の協力体制と相容れない部分が多く、数々の問題を解決し、プロジェクト開始後３年目から４年目になっても、日本の技術協力スキームやプロジェクトの立案のしかたに至るまで、専門家チーム等から助言を行った経緯がある。この作業を通して、プロジェクトに関わるスタッフたちの理解、協力を大きく得られるようになったものの、本来であればこれはプロジェクト開始前に行われるべきものである。通常ＰＰの類のバングラデシュ側文書は外国援助機関には見せないことになっているようであるが、今般のＰＰ改定作業については特別の決裁等の措置で日本側からの助言が可能となった経緯がある。今後バングラデシュに協力を行う際にはＰＰ等のバングラデシュ国内作業の状況も把握し、必要に応じてコメントしていくような措置が必要と思われる。

6-2 実施及び実施管理に関するもの

プロジェクト開始当初カウンターパートの配置がなされなかったことが専門家の派遣についても、カウンターパート研修員の受け入れに関しても、最大の問題であった。粘り強い交渉の結果ようやくこの問題は解決されるに至ったが、やはり、技術移転を十分に行うためにも専任のカウンターパートが配置されることをプロジェクト開始前に確認しておくことが必要である。

6-3 評価活動に関するもの

バングラデシュ側プロジェクト関係者からの評価聞き取りに関しては、日本から派遣された専門家の貢献度、熱意等に対し敬意を表するためか、具体的な習得技術や、それをどのように活用しているかというような話が聞き取りにくく、説明に苦労した。調査団側の評価表（技術協力計画および評価）とバングラデシュ側に記入を依頼したエバリュエーションシートを異なる様式にしたが、前者に統一したほうがより客観的な評価結果が得られると思われる。

また、合同評価結果のとりまとめについては、調査団とプロジェクトとで行なわれた評価結果をナショナルコーディネーションコミッティーで確認するという手続きをとったが、

当初バングラデシュ側は本件評価の意味を十分理解しておらず、ジョイントエバリュエーションレポートへの署名を拒否してきた。バングラデシュ側の国家プロジェクトの評価ではなく日本が実施した技術協力に対する合同評価であることを説明して漸くプロジェクトディレクターが署名に応じた。

6-4　協力延長に関するもの

ＰＰに記載されたプロジェクト期間が1993年６月末（会計年度末）までであり、また技術移転の進捗状況からも同会計年度末までの延長期間が必要であるというのが調査団のコメントである。協力期間延長についてはバングラデシュ側から非公式ながら要請書がすでに書面で出されており、（ＥＲＤからＪＩＣＡ事務所宛）また、ナショナルコーディネーションコミッティーの席上でもバングラデシュ側から口頭にて延長要請が表明された。ただし、正式延長手続きについてはバングラデシュ側大蔵省から在バングラデシュ日本大使館宛の正式要請が必要であり、至急手続きを進めるよう調査団から確認した。

付　属　資　料

① ナショナルコーディネーションコミッティー議事録

ANNEX 1 Annual Report, July 1990-June 1991

ANNEX 2 Interim Report, July 1991-March 1992

ANNEX 3 Joint Evaluation Report

② バングラデシュ　リウマチ熱・リウマチ性心疾患抑制パイロットプロジェクト技術協力研修及び評価

③ バングラデシュ側記載のエバリュエーションシート

④ 延長についてのR／D（案）

⑤ プロジェクトプロフォルマ改訂版

⑥ ナショナルカンファレンスについての新聞記事

① ナショナルコーディネーションコミッティー議事録

MINUTES OF MEETINGS
BETWEEN THE JAPANESE EVALUATION TEAM
AND
BANGLADESH GOVERNMENT AUTHORITIES CONCERNED
ON
JAPANESE TECHNICAL COOPERATION
FOR
THE PILOT PROJECT ON CONTROL OF RHEUMATIC FEVER
AND
RHEUMATIC HEART DISEASES
IN
BANGLADESH

The Japanese Evaluation Team (hereinafter referred to as "the Team") organized by Japan International Cooperation Agency (hereinafter referred to as "JICA") and headed by Dr. Masahiko Okuni, visited the People's Republic of Bangladesh from April 28 to May 7, 1992 concerning Japanese Technical Cooperation for the Pilot Project on Control of Rheumatic Fever and Rheumatic Heart Diseases in Bangladesh.

The Team held a series of discussions and exchanged views with the Bangladesh authorities concerned for the purpose of evaluating and reviewing the achievement of the Project and also the future prospects of Japanese Technical Cooperation. The results of discussions are referred to in the documents attached hereto.

Dhaka, May 6,1992

Masahiko Okuni

Dr. Masahiko Okuni
Leader,
Japanese Evaluation Team,
Japan Internatinal Cooperation Agency
Japan

6/5/92

Dr. K.M.Fariduddin
Additional Secretary
Ministry of Health and Family Welfare
Government of the People's Republic
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THE PARTICIPANTS

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Japanese Evaluation Team

Dr. Masahiko Okuni	Leader
Dr. Hiroshi Horibe	Member
Dr. Satoshi Fujikawa	Member
Dr. Katsuhiro Yoshitake	Member
Ms. Michiyo Hashiguchi	Member

Japanese Expert Team

Dr. Yasuhiro Arasaki	Team Leader
Dr. Shigemi Tokeshi	Expert
Mr. Yasuo Morikawa	Coordinator

JICA Bangladesh Office

Mr. Yoichiro Ishii	Deputy Resident Representative

Embassy of Japan

Mr. Keiichi Inoue	Second Secretary

BANGLADESH SIDE

Mr. Syed Ahmed	Secretary, Ministry of Health and Family Welfare (MH&FW)
Dr. K.M. Fariduddin	Additional Secretary, MH&FW
Muh. Fazlur Rahamn	Joint Secretary (Planning and Development), MH&FW
Dr. Khalil Ullah	Joint Secretary, MH&FW
Mr. S.Y. Khan Majlish	Deputy Chief (Planning and Development), MH&FW
Brig (Rtd.) Prof. Abdul Malik	President, Bangladesh Cardiac Society Hon. Advisor
Prof. Abu Zafar	Director, National Institute of Cardiovascular Diseases
Mr. A. Rashid	Joint Chief, Planning Commission

Dr. KMHS.Sirajul Haque	Project Director, RF/RHD Project
Prof.Md. Nurul Islam	President, Paediatric Society of Bangladesh
Dr. Shamsul Islam	Director, PHC, D.G. Health
Mr. Subash Chadra Ghosh	Director, IMED, Ministry of Planning
Mr. Khandaker Abul Hossain	Deputy Secretary, ERD, Ministry of Finance
Dr. M.A.Rouf	Deputy Director, RF/RHD Project

1. Achievement of the Pilot Project

(1) In accordance with the Annual Report and the Interim Report attached as Annex 1 and 2 the Project Director reviewed the achievement of the Pilot Project.

(2) Both sides confirmed that the Pilot Project should first improve diagnostic capability of medical doctors. Integration of Primary Health Care to the project is also important, but it should be implemented phase by phase.

2. Evaluation of Japanese Technical Cooperation

(1) Both sides confirmed that evaluation of Japanese Technical Cooperation was jointly conducted in accordance with the Japanese Technical Cooperation Scheme, and that the result is an important reference material in considering future prospect of the technical cooperation.

(2) Leader of the Team presented the joint evaluation report which was discussed in detail. (Annex 3)

3. Future plan of the Pilot Project up to June 1993

(1) Project Director presented the future plan up to June 1993 attached as Annex 4.

4. Request of extention of the Japanese Technical Cooperation

(1) In accordance with the presented future plan up to June 1993, extension of the Japanese Technical Cooperation was requested by Bangladesh side.

(2) Japanese side responded that the decision on extension of the cooperating period must be made by the decision making body in Japan, but the content of the request is justifiable based on the progress status of the project activities as well as on the results of the evaluation carried out this time. The opinion would be forwarded to the authorities in Japan.

(3) Japanese side mentioned that official request which is necessary to process the matter must be forwarded to Embassy of Japan in Bangladesh.

4. Future plan after June 1993

(1) Bangladesh side also presented that after June 1993 the Pilot Project would continue it's activities as National Center for Preventive Cardiology as mentioned in Annex 4.

(2) For this future plan the Team responded that it is gratifying that the result of the technical cooperation will be utilized and applied to the future plan.

5. Miscellaneous

(1) There was a question from Japanese side if any measures could be taken to facilitate disbursement of budget for the project from Bangladesh Government. According to the statement of Bangladesh side some improvement has been already made.

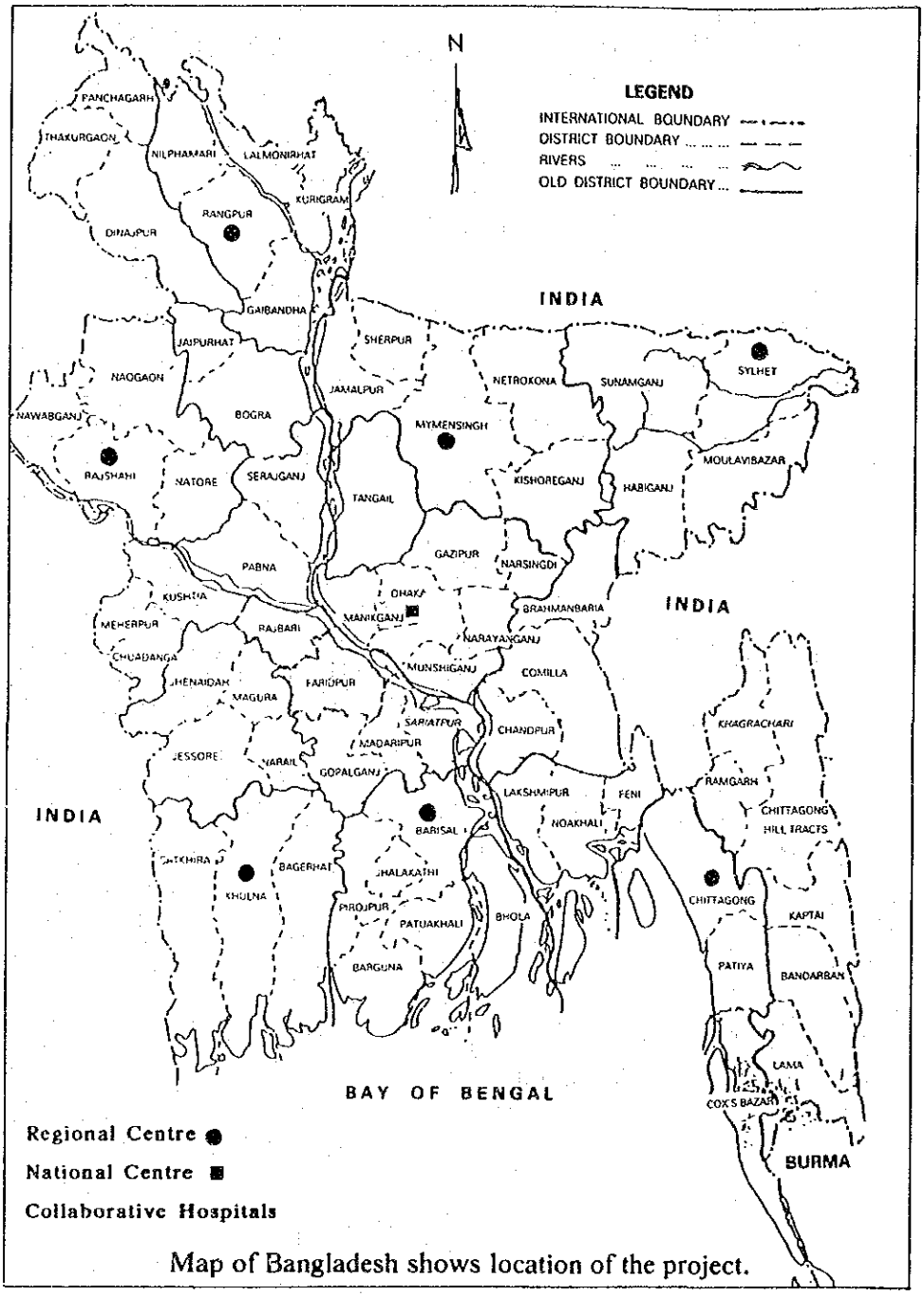
(2) There was also a suggestion from Japanese side that to make some incentive for the staff of the pilot project, promotion opportunity should be considered.

ANNUAL REPORT

July 1990 - June 1991

PILOT PROJECT FOR PREVENTION AND CONTROL OF RHEUMATIC FEVER AND RHEUMATIC HEART DISEASE IN BANGLADESH

MINISTRY OF HEALTH AND FAMILY WELFARE
GOVERNMENT OF THE PEOPLES REPUBLIC OF BANGLADESH
AND
JAPAN INTERNATIONAL CO-OPERATION AGENCY (JICA)
GOVERNMENT OF JAPAN



Map of Bangladesh shows location of the project.

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FOREWORD

Annual report of a particular organization is like a mirror which reflects not only the progress of performances, but also the difficulties, problems with the direction to solve them. This is the deliberation of third year of implementation of this pilot project. This period was devoted to organizational aspect of the national centre with revision of project proforma. With the initiative, drive and performance of the project personnels, supervision of the Director General of Health Services, policy design of the Ministry of Health and Family Welfare and tender care of JICAs Experts, implementation of the project with achievement of the goal is possible.

Project is now soliciting cooperation from everybody for its successful implementation

(Dr. KMHS Sirajul Haque)
Professor of Cardiology
(Current Charge) and
Project Director

PREFACE

It is my great pleasure to have the opportunity to express my views on the progress and achievements of the co-operation between the governments of Bangladesh and Japan towards the control and prevention of rheumatic fever and rheumatic heart disease in Bangladesh. Though we were confronted with many problems initially, many of them have been resolved on the basis of the decision of the meeting between the Japanese Consultation Team and the Bangladesh Government authorities, held on August 20, 1990. Now a full-fledged Management Authority with the required manpower has taken over responsibilities for the smooth implementation of this project on the basis of the technical expertise so far extended by the Japanese experts of this project.

Taking all circumstances into consideration, now that our plans have definitely taken shape, it is up to each of us to do our part so that we can go over the top.

I hope that in spite of our limitations we shall be able to achieve our objectives through this co-operation and control and prevent RF/RHD with our mutual, devoted and concerted efforts.

(Yutaka Kuno)
Acting Team Leader of Japanese Experts

CONTENTS

INTRODUCTION

The Ministry of Health and Family Welfare, Government of Bangladesh launched the Pilot Project for Prevention and Control of Rheumatic Fever (RF) and Rheumatic Heart Disease (RHD) on November 1, 1988 with the cooperation of the Government of Japan through the technical cooperation programme of Japan International Cooperation Agency (JICA) aiming to achieve its objectives by the end of October 1992. This is the second annual report highlighting the activities and performances of the project for the period July 1990 through June 1991.

BACKGROUND

Rheumatic fever is an inflammatory syndrome related to the beta-haemolytic Group A streptococcal infection, mainly of the throat. Characteristically it tends to recur. The name rheumatic fever emphasizes involvement of the joints, but it is the involvement of the heart that makes it important. The attacks of RF may affect the heart, causing damages to the heart valves and leading to high morbidity and mortality. RF and RHD are common in Bangladesh as well as in other developing countries. They are more common among the people of the low income group. Many of them do not have access to proper medical care because of poverty and ignorance. The shortage of medical facilities also prevent them from receiving adequate treatment.

RF and RHD are preventable diseases and have already been eradicated in the developed countries. In Bangladesh the cost of the secondary prevention for an affected child is approximately Taka 300 per year, but the surgical treatment of the damaged heart valve requires about Taka 300,000. Therefore, prevention of RF and RHD will not only decrease morbidity and mortality in the children but also will be economically beneficial.

The pilot project was started in selected areas of Dhaka city and Dhamrai upazila. As per P.P., it is expecting to extend its activity in 14 upazilas of outside districts with a regional centre in each medical college. The Record of Discussion and Agreement was signed by the respective government representatives of Bangladesh and Japan appointing the National Institute of Cardiovascular Diseases (NICVD) as the entity responsible for carrying out the project and committing JICA to extend technical cooperation including provision of foreign exchange component and training to the project personnel both in Japan and Bangladesh.

Some problems have been identified during the initial implementation phase of the project. They were discussed in the first national coordination meeting held on August, 20, 1990. The Agreement and Record of Discussion was jointly signed by Dr. Hisao Manabe, Director General Emeritus of Japan National Cardiovascular Disease Centre, then acting as leader to the consultant team of JICA and Prof. M. A. T. Siddique, Director General of Health Services, Government of Bangladesh. Accordingly the Ministry of Health and Family Welfare

has prepared the project concept paper (PCP) with a provision of 40 additional personnel for the project. The PCP was approved by the Executive Committee of the National Economic Council (ECNEC) on February 10, 1991 and all the positions have been created. The revised project proforma will be prepared and submitted to the Ministry of Health and Family Welfare.

Some part of this annual report is based on the revised PP which was prepared after June 1991.

LOCATION OF THE PROJECT

A. **National Centre** : Sher-e- Bangla Nagar, Dhaka - 1207

B. **Regional Centres** (7)

1. Mymensing Medical College Regional centre (RC)
2. Chittagong Medical College RC
3. Rajshahi Medical College RC
4. Rangpur Medical Colleg RC
5. M.A.G Osmani Medical College, Sylhet RC
6. Sher-e-Bangla Medical college, Barisal RC
7. Khulna (250 bed) Hospital RC

C. **Collaborative Hospitals (5)** :

1. National Institute of Cardiovascular Disease (NICVD)
2. Institute of Post Graduate Medicine and Research (IPGMR)
3. Dhaka Medical college Hospital (DMCH)
4. Sir Salimullah Medical College (SSMC) and Mitford Hospital
5. Dhaka Shishu Hospital (DSH)

D. **Project Areas**

(a) Under National Centre : Some areas of Dhaka city .
: Satetllite centre at Dhamrai, Dhaka.
: Control area at Savar, Dhaka
: NGOs may be considered to be involved in the project.

(b) Under Regional Centre : 2 upazilas under each regional centre (2X7 = 14)

OBJECTIVES OF THE PROJECT

General objective :

To establish a national strategy for prevention and control of RF and RHD in Bangladesh.

Specific objectives :

1. To conduct epidemiological studies on streptococcal infection, RF and RHD.
2. To impart training for doctors, paramedics and primary health care workers.
3. To detect and provide prophylaxis for streptococcal sore throat, RF and RHD in 5-15 yrs age group in project areas.
4. To cary out laboratory and other relevant non-invasive investigations.
5. To carry out research on various aspect of streptococcal sore throat, RF and RHD .
6. To arrange health education programme for general public, school teachers and students, patients and their relatives, community leaders.
7. To formulate a national strategy for prevention and control of streptococcal sore throat, RF and RHD, economical and convenient for Bangladesh to implement through practitioners, doctors and existing primary health care system.

WORK SCHEDULE

1988-90	: 1. National centre of the project.
1990-91	: 1. Collaborative Hospitals
	2. Mymensingh Medical College RC
1991-92	: 1. Chittagong Medical College RC.
	2. M. A. G. Osmani Medical College, Sylhet RC.
	3. Rajashi Medical college RC.
	4. Rangpur Medical College RC.
1992-93	: 1. Sher-e-Bangla Medical College, Barisal RC.
	2. Khulna 250 bed Hospital RC.

(Note : Schedule for implementation of the project : *annex - e)*

ACTIVITIES

i. EPIDEMIOLOGICAL

Epidemiological study of the project is done through field survey, clinical service and laboratory investigation. The survey is conducted with preformed questionnaire.

a) Regular Field Survey : consisting of (i) House Survey, canvassing every household in the selected area and (ii) School Survery, interviewing every schoolchild in the selected area at their school premises for the basic data and prevalence of RF/RHD.

b) Occasional Survery : to elicit attitude and/or consciousness. This helps us to know the attitude or the level of consciousness of a particular group of people on some specified issues, so that we can arrange, if necessary, a certain training or motivational programme for them ; e.g., survey on doctors' diagnosis and management of RF/RHD cases.

Methodology of Survey

The survery is designed by epidemiologists in consultation with the respective departments. The project doctors are assigned specific duties for the survey. Under their direct and continuous supervision the field level workers (Health Assistants) take part in the survey. The HA's are trained to detect cases of sore throat and doubtful cases of rheumatic fever and rheumatic heart disease. Their performances are evaluated regularly. They first pick up doubtful cases of sore throat and RF/RHD. These cases are referred to the health centre where medical officers trained in RF/RHD make the tentative diagnosis on clinical impression. They will order laboratory and other relevant non-invasive investigation to reach a definite diagnosis. Medical technologists of the respective project centres have been properly trained in all the required laboratory procedures. Their works are directly supervised by a trained doctor of the centre. The upazila health complex is supposed to provide routine investigation facilities, as the technicians there are trained for that. For specialized investigation patients are referred to regional health centres, if necessary regional centre will refer cases to National Centre. It is the responsibility of the regional centre to perform specialized investigations. But no regional centre could yet be made functioning, so the national cente is carrying the task. The national centre at Sher-e-Bangla Nagar will perform sophisticated investigations such as immunological studies as requested by the regional centres or as planned by the national centre itself. Furthermore, the national centre will collect and store all the samples taken at the regional centres for future reference as well as for any specialized investigations.

A) Field Survey

Different types of survey form are used : population catalogue form, house survey form and school survey form.
Until December 1990 the field survey had been conducted only in Dhaka district, covering the urban areas of Dhanmondi, Mohammadpur and Agargaon and rural area of Dhamrai upazila. These areas were surveyed initially during 1989-90, and resurveyed in 1990-91 to find out dropout cases.

Benginning in June 1991 the project has been extended to Mymensingh as a step. Activity was started in two upazilas of Ishwarganj and Bhaluka under the Mymensingh regional centre. As the project calls for the HA's to be posted in all the regional centres and upazilas, 8 of them are assigned to Mymensingh to work in 2 upazilas.

Results

1. Field Survey for Case Finding

A total of 16,018 children aged 5-15 were screened both by the school and house survey to establish the distribution and determinants of the prevalence during the period August 1989 through 1990.

Table- 1. School and HouseSsurvey Coverage

Area	School survey		House survey	
	No.of School	No. of Children	No. of house	No. of Children
Dhaka city	7	5841	3502	4188
Dhamrai	12	2457	3533	3532
Total	19	8298	7035	7720

2. Follow-up Survey for Dropout Cases

Although 579 children were referred to the project centre at the Dhamrai Upazila Health Complex, 222 of them (38.3%) did not report. Therefore, a follow-up survey was conducted to trace them in November 1990 through March 1991. As a result, 65 of them (29.3%) were recovered during the period. The 10% of them had moved to other areas and were impossible to follow at that time.

Table- 2.Rreferral, Dropout, Suspect and Definite Cases from School Survey

Area		Number of			
		Referral	Dropout	Suspect	Definite
Dhaka	RF	173	24	30	5
	RHD	82	32	5	14
Dhamrai	RF	36	3	10	0
	RHD	21	5	0	2
Total	RF	204	27	40	5
	RHD	103	37	5	18

Table- 3 : shows number of referral, drop out, suspect and definite case from house survey

Area		Number of			
		Referral	Dropout	Suspect	Definite
Dhaka	RF	161	68	15	27
	RHD	38	13	01	04
Dhamrai	RF	87	09	24	06
	RHD	19	02	00	02
Total	RF	248	77	41	33
	RHD	57	15	01	06

Table- 4. Prevalence* of RF/RHD among Schoolchildren by Areas

Area	RF	RHD	RF + RHD
Dhaka city	0.9	2.5	3.4
Dhamrai	–	0.8	0.8
Total	0.6	2.0	2.6

* Per 1000 schoolchildren excluding dropout and suspected cases. There was no statistically significant difference in the prevalence in both areas.

Table- 5. Prevalence* of RF/RHD in House Survey by Areas

Area	RF	RHD	RF+ RHD
Dhaka City	5.5	1.0	6.5
Dhamrai	1.7	0.6	2.3
Total	3.9	0.8	4.5

*Per 1.000 : $p < 0.01$.

Rheumatic fever and rheumatic heart disease appeared to be prevalent equally in both urban and rural children. There was no differences in prevalence by ages and sexes. Socioeconomic conditions, including living environment and crowding, seemed to bear no correlation to the development of RF/RHD in both rural and urban survey areas. A larger number of children should be covered to comment on the role of individual socioeconomic factors in the causation of the disease.

B) Epidemiology based on Laboratory Investigation

Throat swabs and urine and blood samples are collected from schoolchildren and outpatients. The results are shown in the laboratory activity report.

C) Epidemiology based on Clinical Examination

The doctors examine the throat and heart of all the children meticulously in the school survey as well as in the outpatient service of the national centre. The results are shown in the clinical activity report.

D) Limitations

There is shortage of floor space in the national centre. Epidemiology Section needs more space for record keeping and storage, data processing and other related activities. With the increase in activity it is also anticipated that the centre will need more computers for data entry and analysis.

ii. CLINICAL

A. RF/RHD OPD at National Centre

Functions

1. Detection and treatment of cases of sore throat and acute rheumatic fever in children
2. Patients' record system : Accurate filling up of patients' record form for future reference, follow up and research.
3 Primary and secondary prophylaxis : Administration of Benzathine penicillin to patients with streptococcal sore throat, RF and RHD.
4. Prevention and treatment of complications of patients suffering from chronic RHD.
5. Referral of patients to NICVD for cardiac catheterization and surgery.

Methodology

In RF/RHD OPD patients are first examined by Medical Officers and initial screening is done by them. Health assistants take measurements of height, weight, head and arm circumference. The patients are referred to paediatricians and cardiologists for detailed examination and definite diagnosis.

Laboratory investigations like ESR, ASO titre, throat swab for culture and grouping of streptococci are done. CXR, ECG and echocardiographic examinations are done routinely for ARF and RHD patients. RHD patients are then referred to NICVD for cardiac catheterization and surgery.

After confirmation of diagnosis, acute pharyngitis due to *B*eta-haemolytic group-A streptococci are given primary prophylaxis either in the form of a single dose of Benzathine penicillin injection or a course of oral penicillin 6 hourly for 10 days.

RF and RHD patients are entered in the OPD reference book for secondary prophylaxis. RHD patients are made aware about prophylaxis against infective endocarditis.

Lastly, all the definite cases of RF and RHD are enlisted in the National Registry

Criteria for diagnosis of RF : Diagnosis of definite Rheumatic Fever is based on revised Jones criteria (1965).

Criteria for diagnosis of RHD :Diagnosis is based on clinical manifestation and investigations including CXR, ECG, echocardiography and cardiac catheterization.

Pimary Prophylaxis

Ten patients of acute pharyngitis due to *B*eta-haemolytic streptococci Gr-A are given primary prophylaxis in the form of Benzathine penicillin injection (single doze) or oral penicillin 6 hourly for 10 days.

Secondary Prophylaxis

One hundred and thirty five patients are getting secondary prophylaxis for Rheumatic fever and Rheumatic heart disease in the National Centre

Registration

Registration is done in the National Registry of this project from :

(i) National centre

(ii) Satellite centre at Dhamrai upazilla

(iii) Collaborative hospitals

Six hundred patients have been registered so far.

Eight thousand four hundred and forty two patients attended the OPD from July 90 to June 91. After clinical screening and laboratory investigations 1,369 patients were entered in our examination card for investigation, diagnosis and treatment. Of the total 1,369 patients there were 693 females (50.6%) and 747 males (46.4%).

Results

One hundred and sixty five (12%) patients had definite rheumatic fever, and 97 came with aute rheumatic fever. Two hundred and fourteen (15.6%) cases had chronic Rheumatic Heart Disease. Two hundred and sixty (19%) patients were diagnosed as suspected rheumatic fever. Of eighty (5.8%) patients with acute sore throat 42 were diagnosed as acute pharyngitis due to beta-haemolytic group A streptococci. Forty patients are follow up cases without secondary

prophylaxis. Seventy one (5.2%) had arthralgia but normal ESR and ASO and were excluded after careful check up. Five (0.4%) patients were diagnosed as congenital heart disease (Table 2).

Definite Rheumatic Fever

Majority of patients (72%) of Acute Rheumatic Fever presented which polyarthritis and 28% with carditis. All ARF cases with carditis were admitted to NICVD and Dhaka Shishu Hospital and some of aRF patients in Social Welfare Outreach project of World Vision Bangladesh in Mohammadpur, Dhaka. One case of chorea and 3 cases of subcutaneous nodules were observed in 97 aRF patients.

Types of Valvular Lesion

Mitral valve was most commonly affected. Out of 214 Chronic Rheumatic Heart Disease, mitral regurgitaton was the commonest lesion (51.5%). Next common lesion was mitral stenosis comprising about 25%. 43 patients had multiple valvular disease, of them 31 had mitral regurgitation with stenosios and 7 had combined aortic valve disease with mitral involvement (M.S & A. R), 3 had aortic stenosis with regurtitation and 2 had aortic stenosis with mitral stenosis (Table 3). 5 patients underwent Closed Mitral Commissurotomy (CMC) for mitral stenosis. One had mitral valve replacement and one both mitral valve and aortic valve replacement.

Table -6 : Sex distribution of patients referred to OPD

Sex	No. (%)
Male	: 674 (49.4)
Female	: 693 (51.6)
Total	: 1 3 6 9
(100)	

Table - 7 : Results of 1369 patients referred

	No (%)
Definite RF	: 165 (12.1)
Suspected RF	: 260 (19.0)
RHD	: 214 (15.6)
Acute Sore Throat	: 80(5.8)
Follow up	: 40 (2.9)
Congenial Heart Disease	: 5 (0.4)
Normal (polyarthalgia, normal ESR, ASO)	: 71 (5.2)
Others	: 534 (39.0)
Total	: 1369 (100)

Table - 8 : Types of Valvular Lesion

	No (%)
Mitral Regurgitation	: 110 (51.4)
Mitral Stenosis	: 61 (28.5)
Mitral Regurgitation & Stenosis	: 31 (14.5)
Mitral Stenosis & Aortic Regurgitation	: 7 (3.3)
Mitral Stenosis & Aortic Stenosis	: 2 (0.9)
Aortic Stenosis & Aortic Regurgitation	:31.3)
Total	: 214 (100)

B. Clinical activity of the project at Dhamrai

Functions of the OPD

1. Detection and treatment of cases of sore throat and acute rheumatic fever in children.
2. Patients record system : Accurate filling up of patients record form for future reference, follow up and research.

3. Primary and secondary prophylaxis : administration of parenteral penicillin to patients with streptococcal sore throat , RF and RHD.

4. Prevention and treatment of complications of patients suffering from Chronic RHD.

5. Referral of patients to national centre if necessary.

Methodology

Medical Officer incharge of the project at Dhamrai attends OPD once in a week. Doubtful cases screened by Health Assistants are referred to the OPD. Some patients attend the OPD directly. Patients are examined and screened by the concerned Medical Officer. If necessary patients are referred to national centre of the project for detailed examination and definite diagnosis. Laboratory investigations like ESR, ASO titre, throat swab for culture and grouping-typing of streptococci are done. CXR, ECG and echocardiographic examinations are done routinely for ARF and RHD patients.

After confirmation of diagnosis of acute pharyngitis due to beta-haemolytic Gr. A streptococci are given primary prophylaxis either in the form of single dose of injection Benzathine Penicillin or a course of oral penicillin 6 hourly for 10 days.

Rheumatic fever and RHD patients are entered in the OPD reference book for secondary prophylaxis. RHD patients are made aware about prophylaxis against infective endocarditis.

Lastly, all the definite cases of RF and RHD are enlisted in the National Registry for registration.

Criteria for diagnosis of RF : Diagnosis of definite RF is based on Revised Jones Criteria (1965).

Criteria for diagnosis of RHD : Diagnosis is based on clinical manifestation and investigations including CXR, ECG, echocardiography and cardiac catheterization.

Results :

305 patients attended RF & RHD OPD at Dhamrai upazila health complex from July '90 to June '91. After clinical screening and laboratory investigations 151 patients were entered in e

xamination card. The results are shown in the following table :

Table 9 shows types of patients attended at OPD of Dhamrai

	No (0%)
Definite RF	49 (32.5)
Suspected RF	53 (35.1)
RHD	16 (10.6)
Acute sore throat	0 (0.0)
Follow up	1 (0.7)
Others	32 (21.2)
Total	151 (100)

iii. LABORATORY

At present different tests mostly related to Rheumatic fever are being carried out. The instruments and equipments have been installed in the laboratory of the national centre. Local counterparts have been trained and technology has been transferred.

A. Sections of the Laboratory :

To accomplish definite diagnosis of rheumatic fever, laboratory support is mandatory. In order to fulfill all the diagnostic criteria of rheumatic fever, the national centre is enriched with a most modern laboratory.

The laboratory of the national centre is divided with the following sections :

I. Bacteriology Section :

It deals with the following activities :

a) Isolation and identification of streptococci by culture method.

b) Serogrouping and serotyping of beta-haemolytic streptococci.

c) Maintenance of streains for future studies.

d) Strep I. D. test for immediate detection of streptococcus group-A from throat swab.

e) Antibiogram studies.

II. Immunology Section:

This section is busy with the following performance.

a) A. S.O. titration.

b) C. R. P. determination.

c) Anti-deoxyribonuclease (ADNase-B) test.

d) Anti-streptokinase (ASK) test.

e) Anti-streptococcal polysaccharide (ASP) test.

f) R. A. test.

g) Immunoglobulin (IgG , IgM & IgA) estimation.

III. Clinical Pathology and Biochemistry Section:

The function of this section is limited with the following investigations .

a) Blood routine examination.

b) Estimation of haematocrit values.

c) Urinalysis (routine).

d) Total serum protien estimation.

e) Serum albumin, globulin estimation.

f) Serum bilirubin, SGOT, SGPT estimation.

g) Serum LDH, CPK, CK-MB estimation.

h) Serum Cholesterol, LDL, HDL, & Triglyceride estimation.

B. List of equipments :

1. Autoclave.
2. Autostill (distilled water plant).
3. Autowashig machine.
4. Anaerobic jar.
5. Audiovisual units.
6. Binocular Microscope.
7. Colony Viewer.
8. Colony counter.
9. Camera (video)
10. Carbon-di-oxide incubator.
11. Cell counter.
12. Deep freezer. (-20° C to -80° C).
13. Deep chamber. (-20° C).
14. Dehumidifier.
15. Desiccator.
16. Electric balance.
17. Filtering apparatus.
18. Hot air sterilizer.
19. Heating stirrer.
20. High speed centrifuge.
21. Haematocrit centrifuge.
22. Laboratory centrifuge.
23. Refrigerated centrifuge.
24. Incubator.
25. Ice maker machine.
26. Illuminating Lens
27. LA 2000 Immune Chemistry Analyser.
28. Microplate dropper (auto).
29. Microplate diluter (auto).
30. Microtiter plate reader.
31. Micro-oven.
32. Media dispenser (automatic).
33. Photomicroscope.
34. Pippet washer.
35. Refrigerator (medical)
36. Refrigerator chamber
37. Spectrophotometer.
38. Slide processor (auto).
39. Slide projector.
40. Slide shaker.
41. Transparent Overhead projector.
42. Ultrasonic cleaner
43. Vaccum pump.
44. pH meter.
45. Water-baths.
46. Shaking water-bath.

C. Materials & Methods :

Samples of throat swab, blood were obtained from the patients of out-patient departments and in-door from the national centre and as well as from different collaborative hospitals .

The period of study continued from July 1990 to June 1991. Different parameters of investigation were carried out. These include bacteriological studies, serological studies, clinical pathology and biochemical analysis.

In addition to patient oriented investigations, samples of throat swab, blood and urine were also obtained for analysis from healthy school children of rural and urban areas of Dhaka district.

Methods used :

1. Throat swab : Disposable cotton tipped throat swabs are routinely used. In some special circumstances disposable Rayon strip soaked in transport medium (Ref : Culturette Becton Dickenson and Co., USA) swabs are also used. 5% Sheep blood agar plates are also used for innoculation of throat swab and incubated at 37°C aerobically for 24-48 hours.

2. Grouping of streptococcus beta-hemolyticus :

a. Nitrous acid extraction method	: is used for antigen extraction.
b. Latex-slide agglutination method	: is employed for grouping (The reagent ref : Eiken Chemical Co. Ltd. Japan).
3. Maintenance of Strains	: The strains are preserved in Todd-Hewitt broth and Trypticase- Soya broth at +4° C, - 25°C and - 80° C for future studies.
4. Strep-I.D. Test :	Strep - I. D. Kit (Ref : Marion Scientific, Kansas City, Missouri 64114, USA) is used for this purpose.
5. A. S. O. Titration	: I. Latex slide agglutination method (The reagent-ref : Eiken Chemical Co. Ltd. Japan).

	2. By LA 2000 Immune Chemistry Analyser (the reagent ref : Eiken Chemical Co. Ltd. Japan). Latex agglutination
6. C.R.P. Estimation	: 1. Micro-tube precipitation method employed. (The reagent ref : Eiken Chemimcal Co. Ltd. Japan).
	2. By LA 2000 Immune Chemistry Analyser (The reagent ref. : Eiken Chemical Co. Japan).
7. R. A. Test	: RA test kit (Ref : Eiken Chemical Co. Ltd. Japan). Latex slide agglutination
8. Immunoglobulins (IgG, IgM & IgA)	: Done by LA 2000 Immune Chemistry Fractions Analyser (The reagent ref : Eiken chemical Co. Ltd. Japan).
9. A. S. P. Estimation	: Haemagglutination test done by Micro-plate titration method (Ref : Behring Co. Ltd., Germany)
10. A. S. K. Estimation	: Passive particle (gelatin) -- agglutination test done by Micro-plate titration method. The reagent ref : Fujireibo Inc. Japan).
11. ADNase-B Estimation	: Enzyme neutralization test done by Microplate titration method (The reagent ref Carter- Wallace Inc. NJ. USA).
12. Haematocrit Value	: Determined by capilllary tube centrigugation method (Drummond Scientific Co. USA).
13. Urinalysis	: Done by Combur 9 test kit (Ref : Boehringer Mannheim Ltd. West Germany).
14. Biochemical Analysis	: Done Spectophotometrically (The reagent ref : Boehringer Mannheim Ltd. West Germany).

Table - 10 shows the results of different laboratory tests

Name of the Investigation	No. of samples *	Results (%)
1. Throat swab culture on blood agar plate.	2224	Positive : 408 (18.3) Group G : 247 (60.5) Group A: 85 (20.8) Group B: 27 (6.61) Group C : 49 (12.0) Negative : 1816 (81.7)
2. A. S. O.	2347	>200 units : 985 (42.0) ≤200 units : 1362 (58.0)
3. Strep I. D. test	1213	Positive : 38 (3.13) Negative : 1175 (96.9)
4. E. S. R.	2436	> 10 mm : 1355 (55.6) Upto 10 mm : 1081 (44.4)

—* Sample source = Patient from OPD of the national centre and its different collaborative hospitals.

N. B. = The percentage in different groups are from positive isolates of beta-haemolytic streptococci.

Table - 11 : shows the results of school survey sample analysis.

Period : 23rd August 1990 to 23rd September 1990.

School : Moneshwar Primary School, Dhanmondi Area, Dhaka.

Name of the Investigation	No. of sample tested.	Results : number (%)
1. Throat swab culture on blood agar plate.	329	Positive : 109 (33.13)
		Group G. 70 (21.27)
		Group A : 25 (7.6)
		Group B: 2 (0.6)
		Group C : 12 (3.6)
		Negative : 220 (66.8)
2. Strep I. D. test	830	Positive :33 (3.96)
		Trace : 4 (0.48)
		Negative : 793 (95.54)
3. Urinalysis		
A. pH	828	5 to 7 : 823 (99.4)
		8 to 9 : (0.6)
B. Protien (mg/dl)	829	Nil : 807 (97.3)
		30 to 100 : 22 (2.7)
C. Glucose (mg/dl)	829	Nil : 829 (100)

Table - 12 : shows the results of school survey sample analysis.

Period : 7th February 1991 to 24th February 1991.

School : Moneshwar Primayr school, Dhammondi Area, Dhaka.

Name of the Investigation.	No. of sample tested.	Results (%)
1. Throat swab culture on blood agar plate.	298	Positive : 70 (23.41) Group G : 49 (70.0) Group A : 17 (24.3) Group C : 8 (11.4) Negative : 228 (76.5)
2. A. S. O.	293	≤200 units : 205 (70) >200 units : 88 (30)
3. Urinalysis		
A. pH		5 - 7 : 267 (91.4) 8 - 9 : 25 (8.6)
B. Protien (mg/dl)	292	Nil : 2 81 (96.2) 30 to 100 : 11 (3.8)
C. Glucose (mg/dl)	,,	Nil : 292 (100)
D. Leukocytes (luk/mic.l.)	,,	Nil : 264 (90.4) 10 to 500 : 28 (9.6)
E. Nitrate	,,	Absent : 287 (98.3) Present : 5 (1.7)
G. Urobilinogen	,,	Normal : 292 (100)
H. Bilirubin	,,	Absent :292 (100)
I. R. B. C.	,,	Absent : 219 (75) 10 to 250 : 73 (25)
J. Specific gravity	,,	1001 - 1009 : 91 (31.2) 1010 - 1020 : 173 (59.2) 1021- 1031 : 28 (9.6)

A total of 17,805 laboratory tests of different categories were performed during the period of July 1990 to June 1991. Among these tests 9,852 were performed from the patients of out-patient department of the National Centre and from its collaborative hospitals. Total 7,953 tests were performed from the healthy school childeren in order to see the incidence of different values among this study population.

The summarized results of the different laboratory tests are given in Table 1, Table 2, and Table 3.

Discussion and conclusion

Since its installation, the functions of the laboratory is gradually increasing. Initially only a few tests like Strep-I.D. test., ASO, ESR and throat swab cultures were performed with various limitations. We are satisfied with the activities which were performed during the period of July 1990 to June 1991. Although the results of many tests like, T-typing of group-A beta-haemolytic streptococci; ASK; ASP; ADNase-B; RA; Immunoglobulin estimation tests and others are not included here because we started these tests recently and these tests are under the process of standardization, the sample size are also small.

In the coming session we are going to perform a wide spectrum of investigation so that we can give maximum service to the people of Bangladesh in order to diagnose rheumatic fever and hence its prevention.

iv. TRAINING

Training is one of the important project activities for proper implementation of the project. It is an important means for health manpower development. The project conducts training programme for doctors, medical technologists (lab), primary health care workers of government and NGOs. All training programmes are conducted by qualified personnels experienced in particular subject.

A. Training in Bangladesh

(a) Training of primary health care workers :

A total of 59 primary health care workers like Health Inspector (HI), Assistant Health Inspector (AHI) and Health Assistants (HA) were trained in 4 batches , each batch comprising of 14-15 participants.

Table - 13 : shows place of posting of PHC workers by designation

Sl. No. Place of posting	HI	AHI	HA	Total
1. RF/RHD control project	–	–	35	35
2. Bhaluka, Mymensingh	1	2	04	07
3. Ishwarganj, Mymensingh	1	2	04	07
4. Savar , Dhaka	–	1	04	05
5. Rajbari Sadar Upazila	1	1	03*	04
Total	3	6	50	59

* (1 from NGO)

The contents of the **two week long** training courses were as follows :

1. **Theoretical lectures** were arranged to give the trainees ideas about heart ; signs symptoms and treatment of streptococcal sore throat; epidemiology, socio-economic background, sign-symptoms, prophylaxis of RF and RHD. They were also exposed to project activities, geographical reconnaissance (GR) and its update, health education, community participation, job description and responsibilities of HAs, primary health care in Bangladesh.
2. **Practical Demonstration** on GR and it's update, identification of patients, throat swab collection from patients, pushing of benzathine penicillin injection, filling up of different forms used in the project.
3. **Field visits** : participants were also taken to Dhamrai field areas to acquint them with the works to be done in future. Practice and demonstration regarding GR and its update, school survey and house to house survey were done.
4. **Evaluation** of the training programmes were done. Significant differences ($p < 0.01$) between pre and post test results were observed in all batches.
5. **Certificates** were given away to the participants after successful completion of the course.

(b) Training of Medical Technologists (lab)

Eleven Medical Technologists (lab) from different satellite centre, control area, collaborative hospitals and regional centres were trained in one batch. Contents of the **week long** training programme were as follows :

1. **Theoretical** lectures were delivered on project activities, epidemiological, bacteriological, hematological, serological and immunological aspects of streptococci. Sterilization, quality control in laboratory and maintenance of laboratory record were also discussed.

2. **Practical** demonstrations were done on preparation of media, throat swab collection, inoculation, identification of streptococcus *B*-hemolyticus ; grouping, typing, preservation of strain. Estimation of ESR,Haemoglobin, ASO, CRP, collection of blood, serum separation, preservation ; sterilization methods were also demonstrated.
3. **Field visit** : participants were also taken to field areas at Dhamrai for a school survey to demonstrate throat swab collection, blood sample collection and their transportation to the laboratory at National Centre.
4. **Evaluation** of the training programme was done. Significant difference ($P<0.01$) was observed between the results obtained in pre and post test.
5. **Certificates** were given away to the participants after successful completion of the training programme.

(c) Training of Doctor :

A total of 30 doctors from the National Centre of the project, collaborative hospitals, regional centres, satellite centre and control area were trained in 2 batches. The contents of the **week long** training programmes were as follows:

1. **Theoretical** lectures were arranged on epidemiology, manifestations, laboratory diagnosis treatment and prophylaxis of RF& RHD. Besides, lectures on health education, community participation, epidemiological methods in RF&RHD surveillance, streptococcal sore throat, introduction of the project were delivered. Brief idea about surgical aspects in RHD was given.
2. **Practical demonstration** on X-ray, echocardiography, cardiac cathteterization, electrocardiogram, case demonstration, filling up of different forms used by the project. Group discussions were also arranged.
3. **Visit to field areas** at Dhamrai upazila were arranged. Participants learned about methods of epidemiological surveillance and filling up of different forms for survey.
4. **Evaluation** of the training programmes were done. There were significant differences ($p<0.01$) between pre and post test results.
5. **Certificates** were given away to the participants after successful completion of the training programme.

Table- 14: Shows no. of personnel trained in Bangladesh

Category of personnel	Bangladesh	No.of Batches
Doctors	30	2
Medical techonologist (lab)	11	1
PHC workers (HI, AHI, HA)	59	4
Total	100	7

B. Counterpart Training in Japan

As per the Record of Discussion signed on 3rd August, 1988, between the Government of Japan and Bangladesh, Japan has been providing training opportunities in Japan to the Bangladeshi counterparts of this project. The main objective of such training is to provide specialized training in their respective fields so as to enable them to contribute their knowledge and experience in such a project type of technical co-operation programme.

Keeping in view of the above objective, 7 (seven) personnel received the training in different fields concerning this project since inception of the project.

After returning on successful completion of the training, the participants in the meantime, have shown their excellent performance in applying their acquired knowledge and aptitude in implementing the programme of this project. But at the same time due to some of their irregular participation, their acquired knowledge could not be utilized fully.

During the period from July 1990 to June 1991 no project personnel have received training due to unavoidable circumstances.

V. HEALTH EDUCATION

Health education is essential to solve various health problems in Bangladesh. The sickness and death due to certain diseases are related to ignorance and apathy of people.

Lack of knowledge about health and disease, socio-cultural prejudices, unhygienic health habits are also quite common. So the need and importance of organising health education programme to prevent and control RF and RHD is no doubt important.

The Bureau of Health Education as a collaborative agency provided necessary educational support to ongoing health education progamme of the project.

To create awareness among the people different methods and medias were used. A short description is given below :

1. **Pamphlets** : Ten thousand (10,000) phamphlets were printed for distribution among general people. The pamphlet contains simple messages in Bangla and some detailed description of the diseases and their prevention.

2. **Brocheures** : Four thousand (4,000) brocheures were printed containing informations about the project and it's activity with coloured illustrations in English for distribution among educated people and policy makers.

3. **Posters** : Ten thousand (10,000) posters containing simple messages in Bangla with illustrations were printed and have been displaying at different public places for general mass.

4. **Educational slide** : Three hundred (300) educational slides were prepared for presentation of scientific papers, training of health manpower and holding meeting, seminar etc.

5. **Films** : One short video film for imforming and motivating general people was prepared. One news film was also prepared by department of films and publications for showing at cinema halls of the country.

6. **Radio programme** : Five (5) radio programmes were broadcasted (Radio Bangladesh, Dhaka) informing and motivating general people by the project doctors.

7. **Advertisement** : Fifteen (15) advertisements have been published in daily papers and weekly magazines with same contents as used in the posters.

8. **Meeting/Seminar** : Ten (10) meetings, seminars & campaigns were arranged at different places of the country.

9. **Educational sessions** : This is a continuous process. Health Assistants and doctors while in survey educate people, patients and their parents, students and their teachers, community leaders.

10. **Exhibition** : This project participated in an health exhibition in connection with observance of World Health Day on 7th April '91 at Osmani Memorial Auditorium. Honourable Prime Minister, Honourable Minister for Health and Family Welfare and other distinguished guests visited the stall.

VI. ELECTRO-MEDICAL ENGINEERING

1. Installation of Machineries and Equipment

Since the beginning of installation work from January 1990 most of the equipment have already been installed except a few as on June 1991.

a)	Total number of equipment so far received	:	152
b)	Total number of equipment already installed	:	139
c)	Total number of equipment not yet installed	:	13

During the installation work special measures have been taken for protection of some equipment in Bangladesh environment. For example Delay Timer Switches have been installed for the protection of compressors against the frequent power failure and voltage fluctuations, Generator line has been changed through ATS (Automatic Transfer Switch) to provide uninterrupted power supply to the equipment and for that case some extension of power line has also been done. U.C gas pressure reducer valve has also been set up to supply controlled pressure gas to the equipment. Battery charger has been installed for automatic charging of battery so that gas generator can be started whenever needed.

The following equipment could not have been installed for the reasons stated against them.

a) Multipurpose Immunochemistry System (LC 2000) :

After arriving in the project the equipment was checked and tested and it was found that some sensing elements were not working properly, probably for keeping the equipment for long time without maintaining the proper environmental condition of the Chittagong Port. Action has already been made to procure the sensing elements and we hope the equipment will be in good condition after installing these elements.

b) Automatic Cleaning Machine :

It was also found damaged after arrival. Request has already been made for its replacement.

c) Color Doppler Machine :

After arrival the sector Probe was not found (may be lost during transportation). Request has already been made to supply another Sector Probe.

Remaining 10 equipment are Dehumidifiers. Delay Timer Switches for the protection of compressors of Dehumidifiers are being procured locally. The Dehumidifiers will be installed after procuring the Delay Timer.

2. Maintenance of equipment

To increase the efficiency and long life of serviceability of equipment, the preventive maintenance is very important.

Here in this project a great stress has been given on the preventive maintenance. Routine maintenance of each and every equipment are being carried out with a very strict regulation. Maintenance sheet showing the life history (i.e. date and number and type of problem occurrence on equipment) had been fixed to the equipment so that any service personnel can understand the equipment very quickly. Operators of each equipment will be trained soon on preventive maintenance.

3. Procurement of Manuals

It is sometime very dangerous to operate an equipment without maintaining the operation procedure stated in the operation manual. It is found most of the damage to an equipment occur only because of improper operation.

Sevice manual of an equipment is very much important thing for a sevice engineer. Some manuals are in Japanese language. These are translated in English with the help of Japanese technical experts. These manuals are stored very carefully in the maintenance department to avoid loss. One set of manual is fixed to the cover of the equipment for the convenience of the operator.

4. Making Operators Manual

Operation procedures of each equipment are rewritten in easy english in such a way that every operator can understand them. These manuals are being fixed to the corresponding equipment so that the operator can read them and operate the machine in a correct way.

5. Transfer of Technology

With a view to transfer technology by Japanese expert to Bangladeshi counterpart, both practical and theoretical knowledge of about fifty percent of equipment have been taught so far and rest will be completed very soon.

6. Future plan

(1) To complete the installation work of the rest equipment.
(2) To complete the preparation of manual sheets for the operators.
(3) To train operators on equipment.
(4) To instal equipment in the regional centres : Mymensingh, Chittagong.
(5) To continue regular maintenance work.

VII. POST GRADUATE STUDENTS PROGRAMME

Post graduate students of different post graduate medical institutes (e.g. NICVD, IPGMR) have done a number of thesis/ dissertations under supervision and guidance of senior faculty members of the project in collaboration of concerned institutes. They have included a good number of patients of the Project in their thesis. Courses for which the thesis/dissertations were done including title, author's name and short summary is given below :

A) Thesis for Doctor of Medicine in Cardiology Course

1) **'Clinical and immunological study of acute rheumatic fever'** by Dr. Md. Afzalur Rahman. Thesis was forwarded to faculty of post graduate medicine and research of Dhaka University for acceptance.

2) **'P wave analysis in valvular heart disease'** by Dr. Anwarul Haque Chowdhury. Thesis forwarded to Dhaka University for acceptance.

3) **'Pulmonary Hypertension in Mitral stenosis : Clinical and non-invassive evaluation and hemodynamic correlation'** by Dr. Md. Nur Hossain. Thesis forwarded to faculty of post graduate medicine and research of Dhaka University for acceptance.

4) **'Prevalence of RF / RHD in Bangladesh (Dhaka city) and relation of ABO blood group with rheumatic carditis'** by Dr. U.H. Nasera Begum (to be submitted).

B) Dissertation for Fellow of College of Physicians and Surgeons (Medicine) course.

'Clinical study of rheumatic heart disease' by Dr. Md. Habibur Rahman (to be submitted to College of Physicians and Surgeons on September 1991).

C) Thesis for M. Phil in Microbiology :

Study on bacteriae with pharyngitis with special emphasis on the groups and types of streptococcus beta-haemolyticus by Dr. Afzalunnesa Binte Lutfar (ongoing).

VIII. PRESENTATION AND PUBLICATION OF SCIENTIFIC PAPERS

Several papers have been presented in various national and international conferences/congresses during the period July, 1990 to 30th June, 1991. Name of authors, title and name of congress/conference including dates are given below :

1. Haque KMHSS, Yoshitake K, Arzu MS, Malik A, Zaher A, Hossain M, Mahmud RS : Current Status of RF/RHD in Bangladesh and introduction of Pilot Project for its control and prevention. Presented at XIII Annual General Meeting of Chest and Heart Association of Bangladesh held at Dhaka on 28th December, 1990.
2. Mahmud RS, Hossain M, Tokeshi S, Arzu MS, Jalil Q, Yoshitake K, Haque KMHSS, Zafar A : Consciousness of general people about Rheumatic Fever and Rheumatic heart disease in Dhamrai Upazilla. Presented at XIII Annual General Meeting of Chest and Heart Association of Bangladesh held at Dhaka on 28th December, 1990.
3. Rouf MA, Hassan MMM, Hossain M, Mahmud RS, Yoshitake K, Haque KMHSS, Kuno Y, Tokeshi S, Khan AK : Prevalence of streptococcus beta

hemolyticus among school children of Dhaka city. Presented at XIII Annual General Meeting of Chest and Heart Association of Bangladesh held at Dhaka on 28th December, 1990.

4. Tokeshi S, Mahmud RS, Hossain M, Arzu MS, Jalil Q, Haque S, Yoshitake K, Haque KHMSS, Zafar A : Study of consciousness about Rheumatic fever and Rheumatic heart disease in Dhka city. Presented at First International Conference of Bangladesh College of Physicians (BCPS) and Surgeons held at Dhaka from 22nd -- 24th January, 1991.
5. Hossain M, Tokeshi S, Mahmud RS, Arzu MS, Jalil Q, Haque MS, Hossain M, Yoshitake K, Haque KHMSS, Zafar A : Prevalence of Rheumatic fever and Rheumatic heart disease in rural schools : Dhamrai experience. Presented at First International Conference of BCPS held at Dhaka from from 22nd -- 24th January, 1991.

Three abstracts have been submitted and accepted for oral presentation at **10th Asian-Pacific Congress of Cardiology** to be held at Seoul, Korea, in October, 1991. Name of authors and title of papers are given below :

1. Haque KMHSS, Tokeshi S, Hossain M, Mahmud R S, Arzu S, Hossain M, Yoshitake K, Kuno Y, Khandakar RK, Malik A : Rheumatic fever and Rheumatic heart disease : house to house survey experience in Bangladesh.
2. Hossain M, Tokeshi S, Mahmud RS, Arzu MS, Jalil Q, Zafar A, Malik A : Epidemiology of Rheumatic fever and Rheumatic heart disease in rural and urban schools : Survey of 8102 children.
3. Hassan MMM, Rouf MA, Kuno Y, Tokeshi S, Ahmed J, Yoshitake K, Haque S : Group distribution of beta-heamolytic streptococci among the school children of Dhaka city in Bangladesh.

Two scientific papers have been published during the period July 1990 to June 1991. Name of authors, title of papers and name of journals including volume and dates are given below :

1. Haque KMHSS, Yoshitake K, Arzu MS, Malik A, Zafar A, Hossain M, Mahmud RS, , Khan AM, Zaman MM : Current status of Rheumatic fever and Rheumatic heart disease in Bangladesh (Editorial). Chest and heart bulletin XV(1) : January, 1991.
2 Rouf MA, Hassan MMM, Hossain M, Mahmud RS, Yoshitake K, Haque KMHSS, Kuno Y : Prevalence of streptococcus beta hemolyticus among school children of Dhaka city. Chest and Heart bulletin XV(1) : 1-5, January, 1991.

IX. RECRUITMENT OF PROJECT STAFF

The following staff were recruited in the fiscal year 1990-91 as per instruction of the Ministry of Health and Family Welfare.

Table - 15 : shows name and number of posts with memo number of MOHFW

Sl. No.	Name of post	No. of Post	Memo No. of the MOHFW
1.	Statistical Assistant	1	Project impl-1/post creat-3/90
2.	Driver	2	374/1 (3) dt 27. 11. 90
3.	Cleaner	1	,,
4.	Health Assistant	35	Project impl-1/post creat-3/90 60/1(3) dt 5.3.91

X. COLLABORATIVE HOSPITALS

Introduction :

Five important hospitals/institutions in the Dhaka city are regarded as collaborative hospitals. They are NICVD, IPGM&R, Dhaka Shishu Hospital, DMCH, SSMC and Mitford Hospital. The concerned departments for RF/RHD of these hospitals are Paediatrics, Cardiology, Microbiology/Pathology. Moreover there is a standing instruction from the Director General of Health Services to the Directors of the concerned hospitals to co-operate and organise the concerned departments to help proper functioning of the OPD and in-patients services to RF/RHD patients.

Training of manpower

The National Centre of the project arranged training programmes for the doctors working in paediatrics and cardiology departments and also for the medical technologists (lab) of the collaborative hospitals for better services to the patients in their respective hospitals. So far 9 doctors and 4 medical technologists received training .

Initiation of activties

a) NICVD

It is the main collaborative hospital of the project. Patients attending OPD of the national centre collect OPD tickets from NICVD and these paients are referred to the RF & RHD OPD. Many cases are referred to NICVD for investigation and treatment. NICVD also has been extending their facilities of X-ray, ECG and in some cases of laboratory investigations to the out patients of this centre. Since January 1991, 43

patients of RF/RHD were admitted in NICVD. The Director and other teachers of the institute have been helping project's activities by delivering lectures to the training programmes of this project.

b) IPGM&R
Dr. Abdul Hannan, Paediatrician of this project met and discussed with Prof. MQK. Talukdar, Prof. Sadequzzaman and Dr. Moazzem Hossain, Associate Prof. regarding starting OPD activities of RF/RHD. Accordingly OPD has been functioning every Tuesday in the paediatric OPD since 4.2.91. Dr. Ainun Afroza, Paediatrician, Research Assistant (Paed) and Dr. Abu Siddique, Assistant Prof. of Cardiology are directly involved in the OPD and in-patient services.

c) DMCH
The activities of the project has been initiated in DMCH following a discussion meeting of the Project Director with the Director & Professor of Paediatrics and Cardiology. The meeting was held in the office room of the Director, DMCH. Dr. A. Hannan and RP Paediatrics were also present in the meeting. It had been decided that patients of RF and RHD will be attended in the room of RP (paed) every Sunday. Dr. Alok Saha, MO paediatrics and Dr. Delwar Hossain, Registrar, Cardiology are directly involved in the management of the OPD.

d) Dhaka Shishu Hospital
This collaborative hospital started OPD Work in the Ist week of November 1990. OPD services are given twice weekly (Saturday &Thursday). Dr. Azad Ibnul Ahmed under the guidance of Dr. Monzur Hossain, Associate Prof. of the hospital manages OPD in-patients.

e) SSMC & Mitford Hospital
This hospital has been running OPD of this project every saturday. Earlier on 4.2.91 there was discussion meeting of the project experts with the Director and Professor of the concerned department and with the Principal. The hospital authority assured to arrange a separate room for OPD, but till then the room of the RP paediatrics will be functioning as RF & RHD OPD. Dr. Ehsan Duadri & Dr. Alamgir Bhuian Assitant Registrar of Paediatrics & Cariology respectively are involved in managing the OPD.

Meetings
The national centre arranges monthly meeting of the collaborative hospitals. There had been 5 such meetings. The meeting is attended by the Professor / Head of the department of paediatrics, cardiology and microbiology and some of the physicians interested in RF/RHD. The meeting discusses different problems arising out of patient's management in the collaborative hospitals & also on different theoritical & practical aspects of RF&RHD. The members attending the meeting have been divided

into different working groups to submit & recommend the position papers (earlier supplied by the project) on doctors training mannual.

Discussion

So far a total of 308 paients have been treated in the collaborative hospitals, of which 80 cases were ARF, 142 cases as RHD & 86 cases as suspected RF. The collaborative hospital has been running both out-paitent and in-patient services. It has been observed that the activities of RF/RHD becomes difficult sometimes because of lack of medical manpower & space for OPD. This is especially true for DMCH and Mitford Hospital. In both the hospitals RF/RHD patients are seen in the room of RP Paediatrics & this decision has been taken by the Director and concerned Professors prior to the initiation of OPD activities.

Asstt. Registrars trained in RF&RHD of these hospitals also remain busy in the management of the hospital ward. So the need for separate doctors for the OPD is felt. There is also needs for some essential items like iron shelf, weighing machine, measuring tapes, registers & other, Dhaka Shishu Hospital OPD is run by a Medical Officer partially paid by the project.

Table : 16 — Patients examined & treated in Paediatrics and Cardiology Departments

Name of the hospital	RF	RHD	Suspected RF	Total
NICVD	10	33	0	43
IPGM&R	18	19	32	69
Dhaka Shishu Hospital	27	24	29	80
DMCH	9	40	23	72
SSMC & Mitford Hospital	16	26	2	44
Total	80	142	86	308

XI. ANIMAL RESOURCES

In vitro examination, is not sufficient for getting final and conclusive results of any research works. With this objectives the national centre of the project is going to establish an animal house so that different laboratory research activities can be accomplished on different animal models.

The animal house will be enriched with different categories of animals like sheep, rabbit, guinea pig, rats etc. Preparation of medias, raising of antiserum and other update research works on rheumatic fever will be performed on these animals.

Medias are prepared with 5% sheep blood. Weekly requirement of blood is about 200 ml. e.g., about 200 plates. At present we are using prepared medias commercially available. An animal house is going to be constructed in National Centre. 8 sheep will be required to meet the present need of the laboratory.

CO-OPERATION FROM EXPERTS

The Experts are dispatched by Government of Japan for transfer of technology in respect of prevention and control of RF and RHD in compliance with agreement based on the record of discussion signed between the two government. Government of Bangladesh provides land, local counterpart and other staff, etc., on the other hand the government of Japan provides experts, materials, training of local counterparts in Japan and a combination of these elements is used to create the integrated project so as to provide training, experiment, education, research, diffusion and advice of techniques etc. in their respective fields.

Government of Japan assigns experts on long and short term basis for the project. The list of experts assigned during the reporting period is enclosed (Annexure --c)

COOPERATION FROM NGOs

Participation of interested NGOs may also be considered to share experiences and to expand activities beyond limited project areas. No logistic support will be provided. NGO personnel will be trained in the project provided the expenses are borne by concerned NGOs. Motivational and technical know-how will be transferred for mutual benefit.

World Vision of Bangladesh

Social welfare project of World Vision of Bangladesh, 19/7, Babar Road, Mohammadpur Dhaka, is cooperating and helping us in admitting patients when hospital seats are not available. They are also providing facilicities to poor patients who can not afford to purchase medicine. So far we have admitted 8 (eight) patients to centre since March 10, '91.

BUDGET

A. JICA

Table - 17 : Particulars of expenditure for logistic support of technical cooperation for the period (July 90 - June 91

Sl. No.	Head of expenditure	Total Expenditure (Taka in lakh)
1.	Machineries & Equipt. (F.E)	296.97
2.	Machineries & Equipt. (Local).	1.34
3.	Vehicles	3.24
4.	Furniture	0.60
5.	Manpower (Local)	5.27
6.	Training in Bangladesh	1.33
7.	Medicine	5.10
8.	Vehicle Maintenance	2.52
9.	Fuel, Oil, Lubricant (FOL)	1.22
10.	Office Stationery	2.85
11.	Other Contingency	4.49
	Total :	324.93

B.GOVT. OF BANGLADESH (July 90 - June 91)

Table - 18 : Budget allocation :	**Taka in lakh**
1. CDST	18.00
2. Establishment & others contingency	15.00
Total :	33.00

Thirty threee lakhs taka was allocated for the year 1990-1991. Out of which 18.00 Lakhs was for CDST and 15.00 Lakhs for establishment and other contingency. Taka 11.25 lakh was released to meet the expenditure. Taka 7.20 lakh was incrurred and the rest 4.05 lakh Taka was surrendered.

Table - 19 : Detail break up of expenditure.

1. Pay & allowances	1.95
2. Fuel oil for Vehicles.	0.90
3. Telephone bill, Gas bill.	0 .78
4. Other Contingency & TA / DA.	2.33
5. Training.	1.24
Total	7.20

COMMITTEES

(a) National Co-ordination Committee

A national Co-ordination committee has been formed as follows :

1. Chief patron : Honourable Minister for Health and Family Welfare.
2. Chairman : Secretary, Ministry of Health & Family Welfare.
3. Co-Chairman : i) Additional Secretary, Ministry of Health and Family Welfare.
   ii) Director General of Health Services.
   iii) Team Leader of Japanese Experts.
4. Member Secretary : Project Director, RF & RHD control project.
5. Members :

(a) Bangladesh side :

1) Director, NICVD.
2) Representative form ERD.
3) Representative from IMED.
4) Representative from Planning Commission.
5) Director, Primary Health Care, DGHS.
6) Representative from Bangladesh Cardiac Society
7) Representative from Paediatric Association of Bangladesh.
8) Deputy Project Director/Microbiologist in charge of laboratory at national centre.

(b) Japanese side :

1) 8 members from Japan : -
   - Experts except team leader.
   - Other personnel to be dispatched by JICA.

- Resident Representative of JICA Bangladesh Office.

The committee will meet from time to time to assess the progress of work and to take future action programme.

Note : Official (s) of the Embassy of Japan may attend the coordination committee meeting as observer (s).

(b) Working committee

A working committee has been formed for project implementation as follows :

Bangladesh Side :

1. Chairman : Joint Secretary (Dev.), MOHFW.
2. Member Secretary : Project Director, RF/RHD control project.
3. Members : Chief of each section of the project.

Japanese Side :

1. Team leader of Japanese Experts.
2. JICA Experts.
3. Coordinator of RF/RHD project.

The Committee will meet every 3 months to assess the progress of work.

PROGRESS AFTER AGREEMENT ON 20 AUG. '90

According to the agreement signed between authorities of the Government of Bangladesh headed by Professor M.A.T. Siddique, Director General of Health Services and Japanese Consultation Team led by Dr. H. Manabe, held on 20th August 1990, the following actions have been undertaken : --

1. A new full time Project Director has been appointed on 16.9.90 who has been working under the supervision of the Director General of Health Services.

2. Director General of Health Services has issued instruction to all the head of the concerned institutions, vide Memo No. DGHS / Hospital / RHD - 211/90/19289/1 (100) Date 14.11.1990.

3. As per agreement number 2, Director General of Health Services in consultation with the Project Director and Team Leader of Japanese experts of the project has assigned all Counterparts, doctors and other personnel

4. NICVD, IPGMR,DMCH, SSMC and Mitford Hospital, Dhaka Shishu Hospital have been inducted as collaborative hospitals of the project.

5. PCP has been prepared by the Ministry of Health and Family Welfare (MOHFW) in concurrence with Director General of Health Services and Project Director in accordance with the the agreement signed.

6. PCP has been approved by ECNEC with the instruction to include expenditure incurred for foreign experts to be incorporated in the revised Project Proforma.

7. Revision of Project Proforma is under way as per contents and guidelines of the approved PCP and draft P.P. will be sent to the Resident Representative of JICA as requested.

8. The National Centre of the project has been formally inaugarated by the then Advisor to the Acting President Professor M.A. Majed and His Excellency Ambassador of Japan Mr. Takeo Iguchi, Mr. Khandakar Asaduzzaman Secretary MOHFW, were present as guest of honour and special guest respectively in the inauguration ceremony held on 29.1.1991.

9. Other progresses after the agreement is shown in the following table :

Table - 20 : shows progress after agreement

activities	before 20.8.90	after 20.8.90
1. Fund alloted from GOB side	36.00 lakh	33.00 lakh
2. Manpower of the project	19 Persons	75 Persons
3. Clinical activity :		
a) Number of the Patients visited national centre of the project.	1064	7311
b) Echocardigraphy	200	150+54
c) E.C.G.	350	300+30
d) Out-door shifted from NICVD		On 8.10.1990
4. Epidemiological Activity :		
a) in Dhamrai & Dhakh city area	Not complete	Complete
b) in Mymensingh,	–	initiated on 10th June, 1991
c) in Chittagong	–	selected two Upazillas

MANPOWER OF THE PROJECT

Name of of the post	No. of post as per original PP	No. of post as per revised PP	Manpower at present
5. Training			
In Japan :			
a) Doctor	5		–
b) Health Education Officer	1		–
c) Medical Technologist (Lab)	1		–
In Bangladesh :			
a) Doctors	5		30
b) Medical Technologist (Lab)	Nil		11
c) HA, AHI, HI	13		59
6. Health Education Materials and others			
a) Leaflets	10,000		
10,000			
b) Brocheure	–		4,000
c) Poster	–		
10,000			
d) Education slide	200		300
e) Video short film	–		1
f) News film (cinema)	–		1
g) Radio programme	2		3
h) Advertisement	5		10
7. Research and Publications			
a) Publications	–		2
b) Papers presented to national and international congresses.	6		8
8. Laboratory Activity :			
Sample investigated	5,277 (Aug. 89 to July 90)		11,274 (Aug 90 to June 91)

1. Project Director (Full time)		–	1	1
2. Associate Professor (Epidemiology)		–	1	–
3. Assistant Professor (Epidemiology)		--	1	–
4. Associate Professor (Microbiology)		–	1	–
5. Assistant Professor (Microbiology)		–	1	1
6. Assistant Professor (Cardiology)		–	2	2
7. Paediatrician.		–	2	2
8. Medical Officer		–	5	5
9. Clinical Pathologist		–	1	1
10. Health Education Officer		–	1	–
11. Statistical Officer		–	1	–
12. Electro Medical Engineer		–	1	1
13. Project Officer		1	1	1
14. Senior Staff Nurse		–	3	2
15. Satistical Assistant		1	1	1
16. Medical Technologist (Lab.)		–	4	2
17. Accountant		–	1	–
18. Accounts Assistant		1	1	1
19. L.D.A cum Typist		1	2	1
20. Store Keeper		–	1	–
21. Health Assistant	45	80	80	
22. Driver		10	10	4
23. Laboratory Attendant		–	4	–
24. Peon (M.L.S.S.)		1	3	1
25. Security Guard		–	4	3
26. Cleaner		1	3	1
Total	75	96	136	

FUTURE OF THE PROJECT

This pilot project will be completed in June, 1993. In the light of experience and information gathered a national strategy for control of RF/RHD will be developed for implementation. The strategies so developed will be implemented in phases to cover the whole country within existing health service delivery system i.e. from tertiary (National Centre, NICVD) through secondary (Medical Colleges and District Hospitals) and primary health care (Upajila Health Complex & community level) with involvement of doctors, paramedics in particular and general people at large the overall primary health care structure.

Information and experiences gathered will be utilized for development of proper stystem of diagnosis, treatment and follow-up of RF/RHD cases by the Medical College Hopspitals & District Hospitals.

The pilot project will continue its activities as **National Centre for Preventive Cardiology** with supervision of Director General of Health Services with clinical support of NICVD, IPGMR, Medical Colleges and District Hospitals. This National Centre will be responsible for :

1. Co-ordination of prevention of RF/RHD, Hypertension and Ischemic Heart Disease in the country.
2. Training of doctors, Health Personnel and community leaders.
3. Research on preventive aspects of cardiovascular diseases.
4. Collaboration with national, international organization for prevention of cardiovascular diseasses.

The well-equipped laboratory attached to the National Centre will conduct basic and applied research. It will be utilized as National Reference Laboratory on streptococci, RF/RHD. Prevention of hypertensive heart disease & Ischemic heart disease will be undertaken if permisible within the facilities available.

In future the project will be made self-sustained and self-sufficient if income generation and cost sharing is allowed.

The prevention and control programme will be intregrated with the existing Primary Health Care Programme with a view to extending it throughout the country. Collaborative Hospitals and Regional Centres with their field areas of study at upazila level will continue functioning for control and prevention of Cardiovascular Diseases.

CHRONOLOGY OF EVENTS

1990

Aug 11 : Dr. Monwar Hossain, Dr. Razia Sultana Mahmud deputed to the project.
Aug 15 : Dr. M.A. Rouf joined as Deputy Project Director.
Aug 20 : First meeting of National Co-ordinantion Committee held with Mr. K. M. Hossain, Additional Secretary, MOHFW in the chair and delegates from Japan including Dr. Hisao Manabe attended. An agreement was signed to solve the problem identified.
Sep 16 : Prof. KMHS. Sirajul Haque joins as full time Project Director.
Sep 25 : Out patient department shifted to the project building.
Nov 19 : Six doctors (Dr. Kazi Omar Faruq, Dr. M. M. Monzur Hassan, Dr. Md. Mostafa Zaman, Dr. Qumrul Jalil, Dr. Md. Iqbal Hossain, Dr. Md. Shahed Arzu, deputed to the project.
Oct 1 : Registration of the RF/RHD patients begins.
Dec 20 : Dr. Abdul Hannan deputed to the project as paediatrician.

1991

Jan 14 : Two week long training programme for 14 PHC workers from Bhaluka and Iswarganj upazilla under Mymensingh district started.
Jan 22 : A week long training programme for 20 doctors from different project areas started
: Dr. Monwar Hossain and Dr. S. Tokeshi each present a scientific paper in the 1st international scientific conference of Bangladesh College of Physicians and Surgeons (BCPS).
Jan 29 : Advisor to the acting president incharge of MOHFW Prof. M.A. Majed distributed certificates among the trainees and formally inaugurated newly constructed project building. His Excellency Ambassador of Japan Mr. Takeo Iguchi and Mr. Khandakar Asaduzzaman, Secretary, MOHFW were present as guest of honour and special guests respectively.
Feb 2 : Collection of samples of blood, urine, throat swab from normal healthy children of Moneshwar Govt. Primary School Dhanmondi, Dhaka started.
Feb 4 : Meeting of the Project Director & Team Leader of Japanese experts with the Director, Principal & Prof. of Paediatrics and Cardiology of SSMC & Mitford Hospital regarding OPD activities of RF & RHD.
Feb 12 : RF & RHD OPD starts at IPGM&R.
Feb 16 : Dr. K. Yoshitake, Prof. Sirajul Hoque & Dr. Kazi Omar Faruq attendfd heart camp at Alampur in Veramara of Kustia.

Mar 3 : Dr. AKM Nurul Islam deputed to the project as Paediatrician & Dr. Jasimuddin deputed as Clinical Pathologist.

Mar 7 : Meeting with Director of DMCH regarding OPD activities of the Project. Prof.of Paediatrics, Cardiology, RP (Paediatrics) were present. Project Director and Dr. A. Hannan attended the meeting.

Mar 14 : Project Director & Team Leader of the Japanese experts visited Satkhira & deliver lectures about RF & RHD to the local elites. It was sponsored by Prof. M.R Khan.

Mar 21 : Project Director & Team Leader of Japanese experts visited Rajbari & delivered lectures in 2 seminers. One organised by Civil Surgeon & Consultant of the Sadar Hospital and the other organised by the local Pourashava.

Mar 31 : Project Director, Team Leader of Japanese experts & Prof. R.K. Khondakar visited Narsingdi and delivered lectures on RF & RHD at seminer sponsored and organised by local doctors.

April 1 : Appointment of 4 subordinate staff of the Project (1 Statistical Assistant, 2 Driver and 1 Cleaner).

April 26 : 3 scientific papers sent to the 10th Asia Pacific Congress of Cardiology to be held on October 6-11, 1991.

April 28 : Mr. Yasuo Morikawa joined as Co-ordinator.

April 30 : Dr. Katsuhiro Yoshiktake, Ex-Team Leader of Japanese experts left Bangladesh for Japan.

May 15 : Mr.Yutaka Kuno appointed as acting team leader of Japanese experts.

May 23 : Appointment of 35 Health Assistants.

May 25 : A week-long training programme for 11 Medical Technologists (Lab.) from collaborative hospitals, regional centres, satellite centre and control area started.

May 30 : Mr.Takeo Oshima, Ex-Coordinator left Bangladesh for Japan.

June 1 : A week-long training programme for 10 doctors from collaborative hospitals, regional centres, satellite centre and control area started.

June 8 : 2 weeks training programme for 45 PHC workers started. The training was given in 3 batches.

June 10 : Activities in Mymensingh regional centre at Ishwarganj formally started.

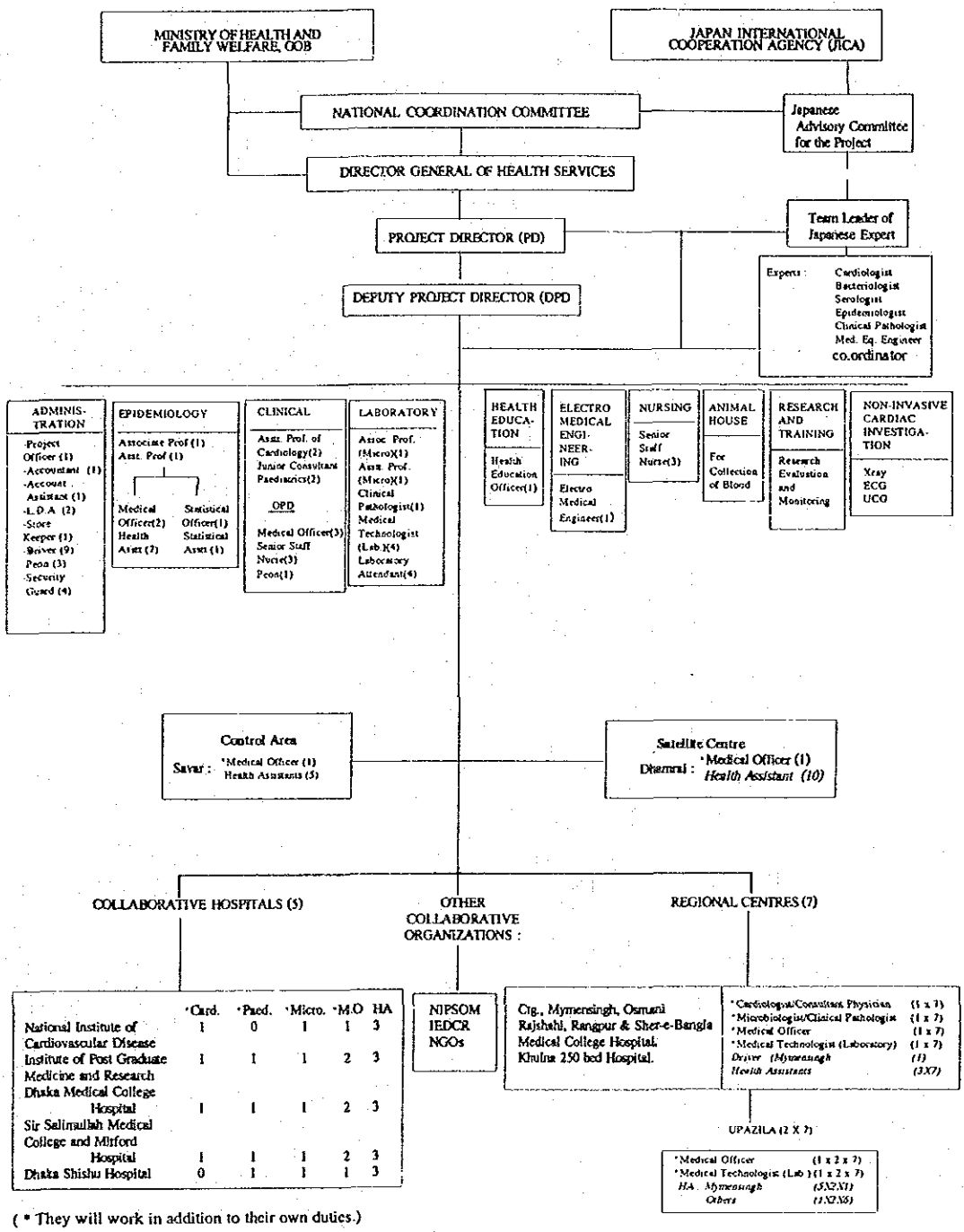
June 19 : A Japanese team (2 from JICAs local office and 2 from Japan) visits the project for audit.

June 29 : Prof. MAT Siddique, Director General of Health Services visits the national centre.

June 30 : 5th meeting of the Collaborative Hospitals held.

Annex - a

ORGANOGRAM



(* They will work in addition to their own duties.)

Annex - b

JAPANESE COMMITTEE FOR RF/RHD PROJECT

1. Dr. Hisao Manabe
   President Emeritus
   National Center of the
   Cardiovascular Disease,
   Osaka, Japan.

2. Dr. Seiichi Kawakita
   Professor Emeritus,
   Shiga University of Medical Science,
   Institute of Cardiovascular Disease,
   Kyoto, Japan.

3. Dr. Masahiko Ookuni
   Professor of Pediatrics and
   Director of Nihon University Hospital,
   Tokyo, Japan.

4. Dr. Takashi Wagatsuma
   Director, Department of International Cooperation,
   National Medical Center, Tokyo, Japan.

5. Dr. Hiroshi Horibe
   Professor of Public Health
   Aichi Medical College
   Nagoya, Japan.

6. Dr. Tetsuo Kamiya
   National Center of the Cardiovascular
   Disease,
   Osaka, Japan.

7. Dr. Satoshi Fujikawa
   Assit, Professor,
   Dokkyo Medical College
   Tokyo, Japan.

8. Dr. Toshihiko Yamada
   Associate Professor of Microbiology,
   Yamanashi Medical College
   Yamanashi, Japan.

Annex-c

LIST OF THE EXPERTS DISPATCHED FROM JAPAN DURING 1990-91

Name	Designation	Duration of Stay	
a. Long Term Experts			
(1) Dr. Katsuhiro Yoshitake	Ex- Team Leader, Cardiologist	02.11.1988	to 31.04.1991
(2) Mr. Yutaka Kuno	Acting team leader, Clinical Pathologist	28.03.1990	to 28.03.1992
(3) Dr. Shigemi Tokeshi	Epidemiologist	02.11.1988	to 31.05.1991
(4) Mr. Takeo Oshima	Ex-Coordinator	02.11.1988	to 31.05.1991
(5) Mr. Kazushiro Suzuki	Medical equipment engr.	16.9.1089	to 15.12.1991
(6) Mr. Yasuo Morikawa	Coordinator	29.04.1991	to 31.10.1992
(b) Short Term Experts			
(1) Dr. Satoshi Fujikawa	Serologist	08.01.1991	to 17.01.1991
(2) Dr. Toshihiko Yamada	Bacteriologist	08.01.1991	to 17.01.1991

Annex-d

FACULTY MEMBERS AND BANGLADESHI COUNTERPARTS

	Date of Joining
Prof. Brig. (Retd.) Abdul Malik, FRCP, FACC, FCPS, Honorary Advsier.	04-06-1991
Full time :	
1. Dr. KMHS. Sirajul Haque, MBBS, FCPS, Project Director and Prof. of Cardiology (Current Charge)	16-09-1990
2. Dr. M. A. Rouf. MBBS, DMBT, Deputy Project Director, Microbiologist	16-08-1990
3. Dr. Monwar Hossain, MBBS, MD., Asstt. Prof. of Cardiology.	11-08-1990
4. Dr. Razia Sultana Mahmud, MBBS, D. Card., Asst. Prof of Cardiology	11-08-1990
5. Dr. Abdul Hannan, MBBS, FCPS. Paediatrician.	15-01-1991
6. Dr. Quazi Omar Faruq, MBBS, D. Nutr., M. Phil., Epidemiologist.	03-12-1990
7. Dr. M. M. Monzur Hassan, MBBS, M. Phil., Microbiologist.	10-12-1990
8. Dr. Md. Mostafa Zaman, MBBS, MPH, Eqidemiologist.	15-12-1990
9. Dr. A. K. M. Nurul Islam, MBBS, DCH, Paediatrician.	04-03-1991
10. Dr. Jasimuddin Ahmed, MD (Rumania), Clinical Pathologist.	04-03-1991
11. Dr. Qumrul Jalil, MBBS, Medical Officer.	03-12-1990
12. Dr. Md. Iqbal Hossain, MBBS, Medical Officer.	09-12-1990
13. Dr. Md. Shahed Arzu, MBBS, Medical Officer.	06 - 3-1990
14. Mr. Imtiaz Alam Khan, B.Sc. Engr., Electro- Medical Engineer.	01-12-1990
15. Md. Mustafa Salim Khan, B.A., Project Officer	23-01-1990
Part time :	
16. Dr. Abdul Kadir Khan, MBBS, M. Phil., Assoc. Prof. of Biochem., NICVD.	

Annex - e

SCHEDULE FOR IMPLEMENTATION OF THE PROJECT

Sl. No.		1988-90		1990-91		1991-92		1992-93	
		July '88-June '89	July '89-June '90	July '90- Dec. '90	Jan. '91- June '91	July '91-Dec. '91	Jan. '92-June '92	July '92-Dec. '92	Jan. '93-June '93
1.	National Centre								
2.	Satellite Centre, Dhamrai								
3.	Collaborative Hospitals								
4.	Mymensingh Medical College Regional Centre								
5.	Chittagong Medical College Regional Centre								
6.	MAG Osmani Medical College, SylhetRegional Centre								
7.	Rajshahi Medical College Regional Centre								
8.	Rangpur Medical College Regional Centre								
9.	Sher-e-Bangla Medical College, Barishal Regiobal Centre								
10.	Khulna (250 bed) Hospital Regional Centre								
11.	Control Area, Savar								
12.	Evaluation								
13.	Reporting and Dissemination of Results, Experience								

Activities	Epidemiological	Case finding	Lab.	Non Invasive Investigation	Recording	Registration	Prophylaxis	Follow up	Health Education	Training	Monitoring/Evaluation	Research	Reporting
National Centre	+	+	+	+	+	+	+	+	+	+	+	+	+
Satellite Centre	+	+	-	-	+	+	+	+	+	-	-	+	+
Collaborative Hospitals	-	+	+	+	+	+	+/-	-	+	-	-	-	+
M MCH, RLC, with Upazilas	+	+	+*	+	+	+	+/-	-	+	-	-	-	+
Other Regional Centre with Upazilas	-	+	-	-	+	+	-	-	+	-	-	-	+
Control Area	+	+	-	-	+	+	+	-	+	-	-	+	+

[* including Chittagong]

Annex - f

JONES CRITERIA (REVISED) FOR GUIDANCE IN THE DIAGNOSIS OF RHEUMATIC FEVER *

Major Manifesations

- Carditis
- Polyarthritis
- Chorea
- Erythema Marginatum
- Subctaneous Nodules

Minor Manifestations

- **Clinical**
  - Previous rheumatic fever or rheumatic heart Disease
  - Arthralgia
  - Fever
- **Laboratory**
  - Acute phase reactants, Erythrocyte sedimentation rate. C-reactive protein, leukocytosis
  - Prolonged P-R interval

Supporting Evidence of Streptococcal Infection

- Increased Titer of Anti-Streptoccal Antibodies ASO (Anti-Strptoltsin O), other
- Positive Throat Culture for Group A Streplyococcus
- Recent Scarlet Fever

The presence of two major criteria or of one major and two manor criteria indicates a high probablity of acute rheumatic fever, if supported by evidence of preceding Group A streptococcal infection

** Courtesy : Technical Report series 764, WHO, Geneva, 1988*

BANGLADESH

RF/RHD

EXAMINATION CARD

PILOT PROJECT FOR CONTROL AND PREVENTION OF RHEUMATIC FEVER AND RHEUMATIC HEART DISEASE IN BANGLADESH, 1990

Annex - g

I. PATIENTS' PARTICULARS 1. HOSPITAL/FACILITY ..... 2. EXAMINER ..... SIGNATURE .....

3. SERIAL NO..... 4. DATE OF RECORD...../...../ 5. QUESTIONNAIRE NO ..... 6. POPULATION CATALOGUE NO.....
7. REGISTRATION NO. ..... 8. REFERRED FROM ..... 9. ATTENDING SCHOOL 1☐ no 2☐ yes 10. NAME OF SCHOOL .....
11. NAME ..... 12.SEX ☐ MALE ☐ FEMALE 13.BIRTH DATE ...../...../ 14.AGE.....YRS. .....

II PAST HISTORY

1 IMMUNIZATION

1☐measles 2☐pertussis 3☐tetanus 4☐diphtheria 5☐BCG
6☐potio 7☐Small pox 8☐others.....
9☐not immunized

2 PAST HISTORY OF RF or SUGGESTIVE SIGN & SYMPTOM.

(If the patient had more than one attack then use pen/pencil of different colour for date and sign/symptoms of different attacks.)

A. DATE a. 1st attack ...../...../.....b. 2nd attack ...../...../.....
c. 3rd attack ...../...../.....d. 4th attack ...../...../.....
B. from the record of i. Hospital.....
ii. Doctor .....
C. sign & symptom iii. others .....
1☐ arthritis (∄ Joint swelling) 2☐ arthralgia (∃ Joint swelling)
3☐ carditis 4☐chorea 5☐ subcutaneous nodule
6☐ ASO titre (.....IU/ml) high ☐ normal ☐ not done ☐
7☐ throat culture. positive ☐ negative☐ not done ☐
8☐ fever above 100°F
9☐ ESR (.....mm/hr) high ☐ normal ☐ not done ☐
10☐ CRP (.....ng/dl) high ☐ normal ☐ not done ☐
11☐ other antibody .....high ☐ normal ☐ not done ☐

3 TREATMENT FOR PAST RF OR SUGGESTIVE SIGN & SYMPTOM

1. bed rest 1☐ none 2☐unknown 3☐yes (from / / to / /)
2. aspirin 1☐ none 2☐unknown 3☐yes (from / / to / /)
3. penicillin injection
1☐ none 2☐unknown 3☐yes (from / / to / /)
4. penicillin oral
1☐ none 2☐unknown 3☐yes (from / / to / /)
5. steroid 1☐ none 2☐unknown 3☐yes (from / / to / /)
6. others.....

4 PAST HISTORY OF OTHER DISEASES

1.....Date / /
2.....Date / /
3.....Date / /

III ALLERGY

1☐ none
2☐yes
sensitive to .....
3 reaction .DATE...../...../.....
1☐ skin eruption 4☐ anaphylactic shock
2☐ cough 5☐ others.....
3☐ rhinorrhoea / sneezing .....

IV PRESENTING SIGNS & SYMPTOMS

1 PATIENTS WITH SIGNS & SYMPTOMS

a. MAJOR CRITERIA	b. MINOR CRITERIA
1☐ polyarthritis	1☐ fever above 100 °F.
2☐ carditis	2☐ arthralgia
3☐ subcutaneous nodule	3☐ previous history of RF/RHD
4☐ erythema marginatum	4☐ high ESR
5☐ chorea	5☐ positive CRP
	6☐ leucocytosis (⩾12.000)
	7☐ prolonged PR interval

c SUPPORTING EVIDENCES

1☐high ASO or another antibody
2☐positive culture for group A streptococcus
3☐history of recent scarlet fever

2 PATIENTS WITH SORE THROAT.

1☐ fever above 100°F 10☐ enlarged cervical lymphnode
2☐ hoarsness 11☐ redness of pharynx
3☐ cough 12☐ exudation on pharynx and tonsil
4☐ rhinorrhoea 13☐ petechiae lesion in pharynx
5☐ conjunctivitis 14☐ strawberry tongue
6☐ skin eruption
7☐ skin infection
8☐ tenderness on anterior neck
9☐ shabby erosion on the edge of the nostrils
tonsillar enlargement 1☐ 0° 2☐ 1° 3☐ 2° 4☐ 3°

V CHIEF COMPLAINTS

1☐ fever
2☐ sore throat.
3☐ arthralgia
4☐ previously told to have R F / R H D
5☐ past history of arthritis or arthralgia
6☐ heart murmur
7☐ oedema
8☐ shortness of breath
9☐ palpitation
10☐ others.....
.....

VI PHYSICAL FINDINGS

1 weight.. ..... kg 2. height .....cm
3. arm circumference .....cm
4. head circumference .....cm
5. skin fold thickness .....cm.
6. blood pressure ..... mm Hg

CARDIOVASCULAR FINDINGS

7 heart murmur
1☐none
2☐yes 1☐ systolic
2☐ diastolic

8 PAST HISTORY OF HEART SURGERY

1☐none
2☐yes. DATE
3☐ C M C / /
4☐ open valvotomy / valvoplasty / /
5☐ valve replacement / /
6☐ pace - maker / /
7☐ other heart surgery / /

9 OTHER ABNORMAL PHYSICAL FINDINGS

1. .....
2. .....
3. .....
4. .....

VII LABORATORY DATA

1 Date / /

2 RBC ..... /cmm 3 Hb.....g/dl 4 Ht.....%

5 WBC..... /mm³

(*1* neutro.....%, *3* mono.....%, *5* baso.....%

2 lymph.....%, *4* cosino..... % *6*. others.....)

6 ESR.....mm /1st Hr, 7CRP.....mg/dl

8 Total protein.....g/dl. 9A/G ratio.....

10 IgG.....mg/ dl, 11 IgA .....mg/dl 12 IgM.....mg/dl

13 ASO..... IU/ml 14 Anti DNase – B.....titre

15 ASK..... titre

16 Other antibody.....

17 Urine protein 1☐ +++ 2☐ ++ 3☐ + 4☐ ± 5☐ –

18 Throat culture

1 ☐ Streptococcus *2* Positive grouping.....*3* T–typing.....

4 ☐ Other organism.....

.....

5 ☐ negative

6 ☐ not done

19 Strept. ID Test

1 ☐ positive *2* ☐ negative *3* ☐ not done

20 ECG *1*. date / /

2 ☐ normal

3 ☐ border line.....

4 ☐ abnormal .....

5 ☐ not done

21 UCG *1*. date / /

2 ☐ normal

3 ☐ border line.....

4 ☐ abnormal .....

5 ☐ referred to.....

6 ☐ not done

22 CHEST X-RAY *1* date / /

2 C T R .....%

3 lung congestion 1☐ + 2☐ –

4 other findings .....

.....

5 ☐ not done

VIII DIAGNOSIS (1)

1 ☐ acute pharyngitis

due to *1* ☐ viral

2 ☐ bacterial (confirmed)

1 ☐ Streptococcus ß - hemolyticus

2 ☐ other bacterial

.....

.....

3 ☐ bacterial (not confirmed)

2 DIAGNOSIS (2) (See "Guideline")

1☐ X-1 : acute RF ℣ carditis (definite)

2☐ X-2 : acute RF ℣ carditis (definite)

3☐ X-3 : chronic RHD (definite)

4☐ Y-1 : past history of definite RF

5☐ X-4 : suspected RF

6☐ Y-2 : (☐ A ☐ B ☐ C) : past history of suspected RF

7☐ Y-3 : (☐ A ☐ B) : past history of suspected RF

8☐ Y-2 : (☐ a. ☐ b) ; follow - up case ; ℣ PC * injection

9☐ Y-3 : (☐ a. ☐ b) : follow - up case ; ℣ PC * injection

10☐ Y-2 : (☐ c. ☐ d) : no follow - up case

11☐ Y-3 : (e) : no follow - up case

* PC : PENICILLIN

IX TREATMENT

1 PENICILLIN INJECTION PLAN

frequency

1 ☐ one injection

2 ☐ every three weekly injection

3 ☐ every four weekly injection

duration

4 ☐ only one injection

5 ☐ up to 18 yrs of age

6 ☐ up to 30 yrs of age

7 ☐ 5 yrs from now

8 ☐ .....yrs from now

9 ☐ forever

10 dosage .....

2 ORAL PENICILLIN / OTHERS

name of drug.....

duration

1☐ 7 days

2☐ 10 days

3☐ up to 18 yrs of age

4☐ up to 30 yrs of age

5☐ 5 yrs from now

6☐ .....yrs from now

7☐ forever

8 dosage .....

X FOLLOW-UP

Write down any sign & symptom related to RF/RHD

1. / /	*1*☐ no abnormalities 2☐ attack of RF 3☐ other abnormalities		8. / /	*1*☐ no abnormalities 2☐ attack of RF 3☐ other abnormalities	
2. / /	*1*☐ no abnormalities 2☐ attack of RF 3☐ other abnormalities		9. / /	*1*☐ no abnormalities 2☐ attack of RF 3☐ other abnormalities	
3. / /	*1*☐ no abnormalities 2☐ attack of RF 3☐ other abnormalities		10 / /	*1*☐ no abnormalities 2☐ attack of RF 3☐ other abnormalities	
4. / /	*1*☐ no abnormalities 2☐ attack of RF 3☐ other abnormalities		11 / /	*1*☐ no abnormalities 2☐ attack of RF 3☐ other abnormalities	
5. / /	*1*☐ no abnormalities 2☐ attack of RF 3☐ other abnormalities		12 / /	*1*☐ no abnormalities 2☐ attack of RF 3☐ other abnormalities	
6. / /	*1*☐ no abnormalities 2☐ attack of RF 3☐ other abnormalities		13. / /	*1*☐ no abnormalities 2☐ attack of RF 3☐ other abnormalities	
7. / /	*1*☐ no abnormalities 2☐ attack of RF 3☐ other abnormalities		14. / /	*1*☐ no abnormalities 2☐ attack of RF 3☐ other abnormalities	

MINISTRY OF HEALTH AND FAMILY PLANNING,
GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH
AND
JAPAN INTERNATIONAL COOPERATION AGENCY,
1986 - 1992

BANGLADESH

Annex - b

GUIDELINES OF PENICILLIN PROPHYLAXIS AND FOLLOW UP FOR RF & RHD PATIENTS.

X-GROUP: SYMPTOMATIC PATIENT

DIAGNOSIS	DIAGNOSTIC CLUE (should be satisfied)	TO BE INCLUDED	TO BE EXCLUDED	DURATION TO BE GIVEN(minimum requirement)	FOLLOW UP
X-1 Rheumatic fever without carditis	• Revised Jone's criteria		• Collagen disease • Malignant disease	• Up to 18 yrs of age • 5 yrs from last attack	• Every six month for 5 yrs from last dose of prophylaxis
X-2 Rheumatic fever with carditis	• Revised Jone's criteria			• Up to 30 yrs of age or more • 5 yrs from last attack in the case whose attack is after 25 yrs	• Same as X-1
X-3 Rheumatic heart disease	• Heart murmur (confirmed with ECG. UCG. X-Ray and past history of RF)	• Post operative state of Rheumatic valvular disease	• Congenital heart disease • Other diseases which cause heart murmur	• Same as X-2	• Frequency will depend upon the patient's clinical state
X-4 Suspected rheumatic fever	• Arthralgia • Fever • High antibody • High ESR		• Collagen disease • Malignant disease	• Same as X-1	• Same as X-1

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PILOT PROJECT FOR CONTROL AND PREVENTION OF RHEUMATIC FEVER AND RHEUMATIC HEART DISEASE IN BANGLADESH, Feb. 1990

ESR can be replaced by CRP
Antibody : Anti-streptococcal antibodies

Please turn over

GUIDELINES OF PENICILLIN PROPHYLAXIS AND FOLLOW UP FOR RF & RHD PATIENTS.

Y-GROUP: ASYMPTOMATIC PATIENT

DIAGNOSIS	DIAGNOSTIC CLUE (should be satisfied)	TO BE INCLUDED	TO BE EXCLUDED	DURATION TO BE GIVEN (minimum requirement)	FOLLOW UP
Y-1 Past history of definite rheumatic fever	• Revised Jone's criteria		• Collagen disease or others	• Up to 18 yrs of age • 5 yrs from last attack	• Every 6 month for 5 yrs from last dose of prophylaxis
Y-2 Past histroy of suspected rheumatic fever	• Polyarthritis (painful joint swelling) • Fever	A. High antibody with ESR not done B. Antibody not done with high ESR C. Antibody not done with ESR not done	a. High antibody with normal ESR b. Normal antibody with high ESR c. Normal antibody with normal ESR d. Antibody not done with normal ESR	• Same as Y-1	• A. B. C. should be followed up same as X-1 • a. b. should be followed up for 5 yrs from the first visit • c. d. not to be followed up
Y-3 Past history of suspected rheumatic fever	• Polyarthralgia (without joint swelling) • Fever • High ESR	A. High antibody B. Antibody not done	a. Normal antibody b. ESR not done c. Normal ESR	• Same as Y-2	• a. b. should be followed up for 5 yrs from the first visit • c. not to be followed up

EXAMINATION CARD COLOUR : Red : X - 1, X-2 and X- 3. Y - 1. Blue : Y - 2 (a, b). Y - 3 (a, b).
Green : X - 4. Y - 2 (A, B, C,). Y - 3 (A, B). White : Y - 2 (c, d). Y - 3 (c).

Any above mentioned patient should report, if they have sore throat with fever, or joint pain with fever, to RF/RHD clinic.

UNIVERSITY OF MINNESOTA
TWIN CITIES

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MESSAGE

September 26, 1990

To Whom It May Concern:

Re: Pilot Project on the Control of Rheumatic Fever and Rheumatic Heart Disease in Bangladesh. A Joint Effort by the Ministry of Health and Family Planning of the Government of the People's Republic of Bangladesh and the Government of Japan Through the Japan International Cooperation Agency

I have had the opportunity to read and to study the Progress Report (November 1988 - June 1990) regarding the above referenced project. I find this to be a very well conceived program with careful planning and implementation having been carried out in the period between 1988 and 1990.

It is obvious that rheumatic fever and rheumatic heart disease remain important public health problems in the country of Bangladesh and a multi-faceted approach such as the one used in this program is an ideal way to address this disease. The concomitant involvement of physicians, epidemiologists, microbiologists, along with nurses and primary health care individuals, covers all of the aspects needed for a successful program.

The emphasis on case finding, the emphasis on secondary rheumatic fever prophylaxis, and the concept of attempting primary prophylaxis are very appropriate. I am particularly impressed with the recognized need for education, not only of school children and the public, but also for professional education for physicians and primary health care workers. In this regard, I think this latter aspect could be even strengthened.

The planners, the participants, and the governments of the two countries are, in my opinion, to be congratulated for successful undertaking this very worthwhile and needed public health program.

Sincerely,

Edward Kaplan

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