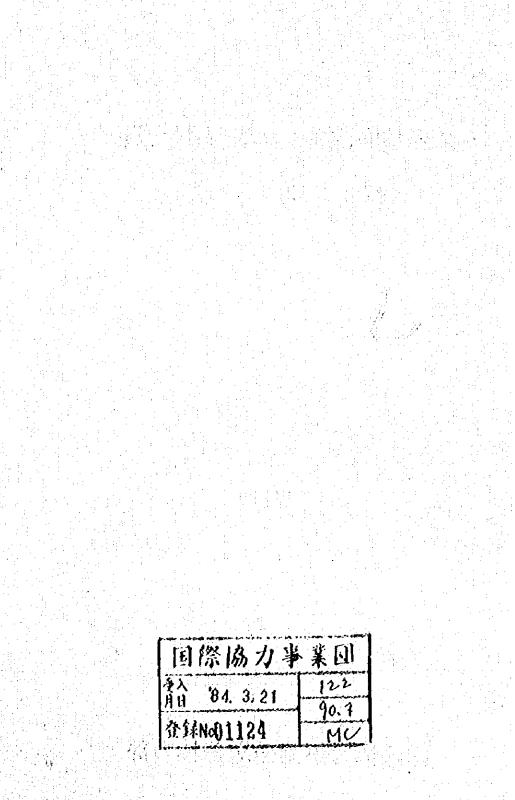


タイ国医療協力基礎調査団

報告書

昭和150年 2 月

国際協力事業団医療協力部



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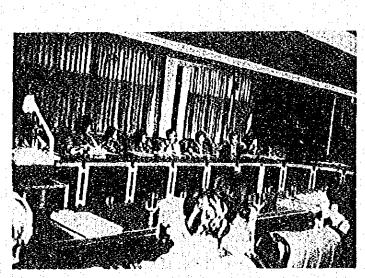
国長の医療協力事業の成果に務み、タイ国政府は、国立皮膚科学研究所、婦人病院等に対する7案件の 国際協力を我が国に要請してきている。

これらの要請に応えて、我が国としては、タイ国が最も必要とし、またわが国も十分に協力し得るプロ ジェクトを選定するため、広く基礎的調査を行うべく、昭和49年11月から12月にかけて調査制を派 意した。

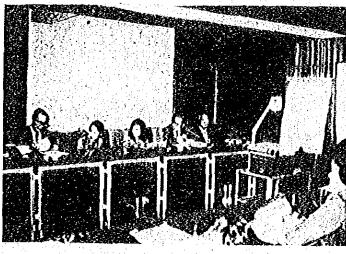
本書社その調査報告を取り録めたもので、ここに本調査の任にあたられた調査団長を社じめ団員の方々 夢びに調査の話遣に毎協力をいただいた関係機関の方々に対し、この機会をかりて読みなる謝意を表する とともに、新規プロジェクトの実施にあたっては、皆様の鐔理解と毎高力を賜わりますようお願いする次 第であります。

国際協力事業団

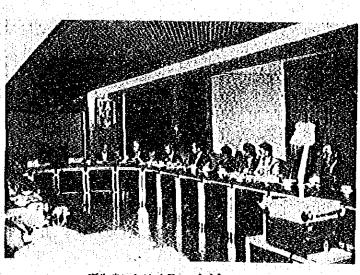
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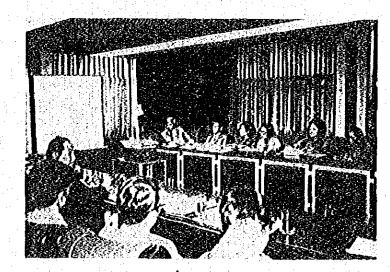
弾生省におけるFinal Meeting (1974.12, 16)



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「「「「「「「」」」 「厚生省におけるFinal Meeting をから Dr. Amorn 次官補, 黒子印長, 林田員, 吉本団員, 福永田員, 伊田団員 (1974.12.16)

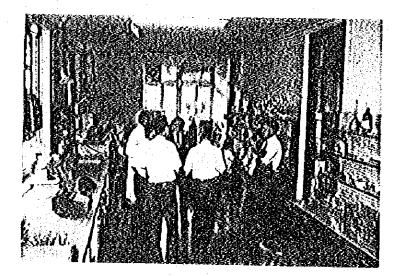




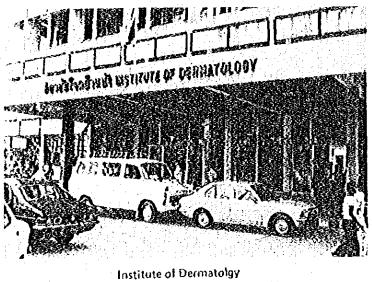
パンコック市の衛生行政事情を説明する

Dr. Wilaiwarn Pratumrat (Director of Health Promotion Div., City Health Dept., Bangkok Metroplis.)

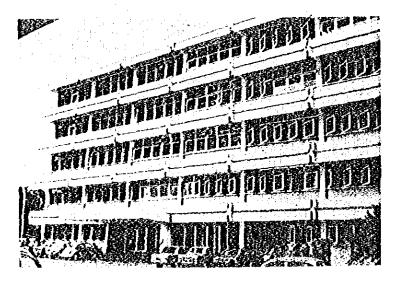
(1974.11.29)



Women's Hospital 検査室 右側から鏡木審記官,林朗負,黒子胡長,伊田紹員 (1974,12,2)

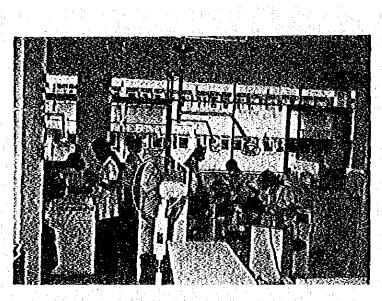


(1974.12.2)

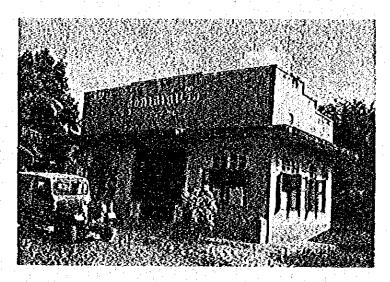


School of Dentistry, Mahidol University

(1974,12.2)



School of Dentistry, Mahidol University 実習室 (1974,12.2)



Kanchanabury 2nd Class Health Center Health worker 及び Midwife 在1名が常動する (1974.12.4)

- V - ·



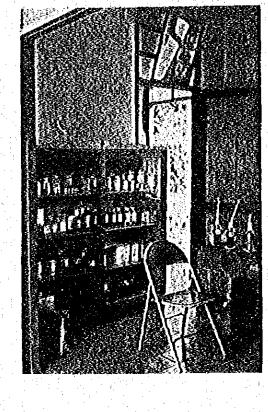
Kanchanabury 2nd Class Health Center 正面入口より内部を望む 手前の部屋は来訪者待合室, 奥の部屋に Health Worker のDesk がある。



-- VI --

Kanchanabury 2nd Class Health Center 待合室より講習室を望む

(1974.12.4)

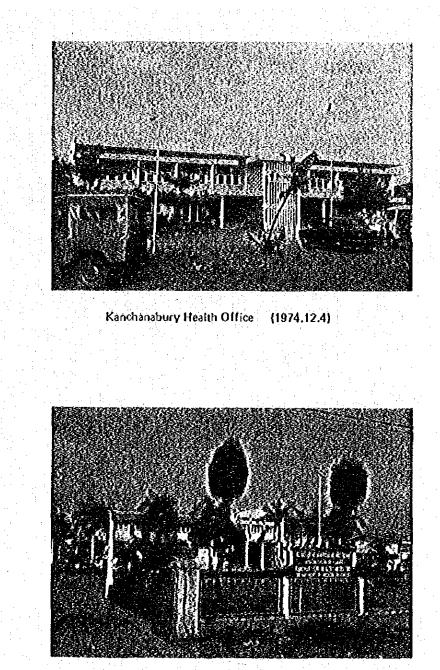


Kanchabury 2nd Class Health Center

正商入口の左側にある 処置室

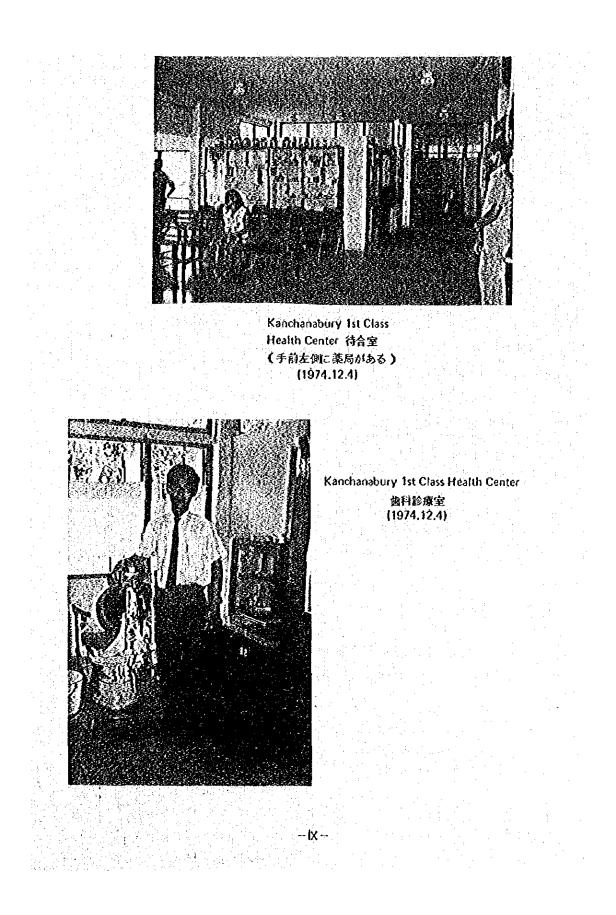
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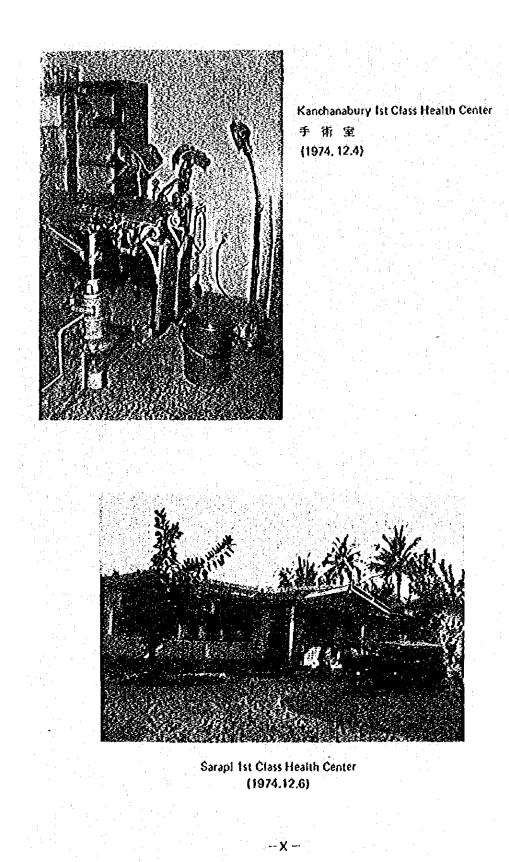
Kanchanabury 2nd Class Health Center の Health Workerの事務室 菜品ケースには、重貫, ビタミン税, アスビリン, 経口避妊薬等が保管されている。 (1974.12.4)

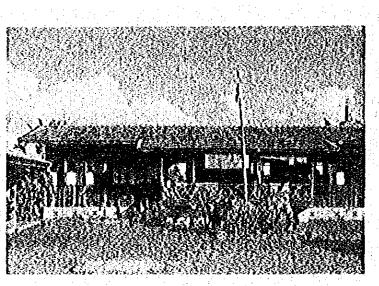


Kanchanabury HospitalのLaboratoryはKanchanabury Health Office として Department of Medical Sciences, Ministry of Public Health の管轄下に入り、 Department より 2名の Technician が派遣されている。 (1974,12.4)

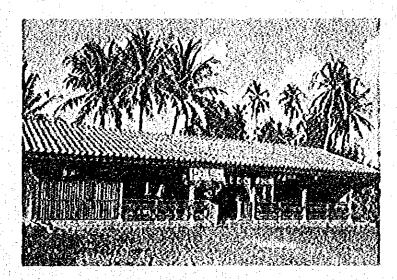
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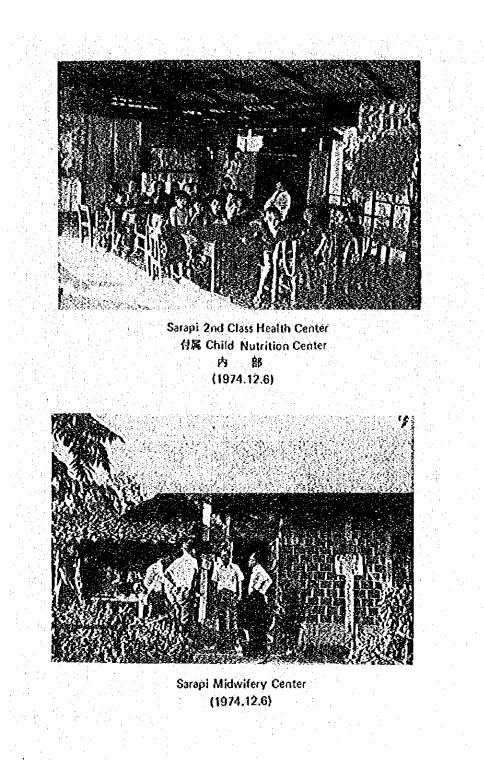




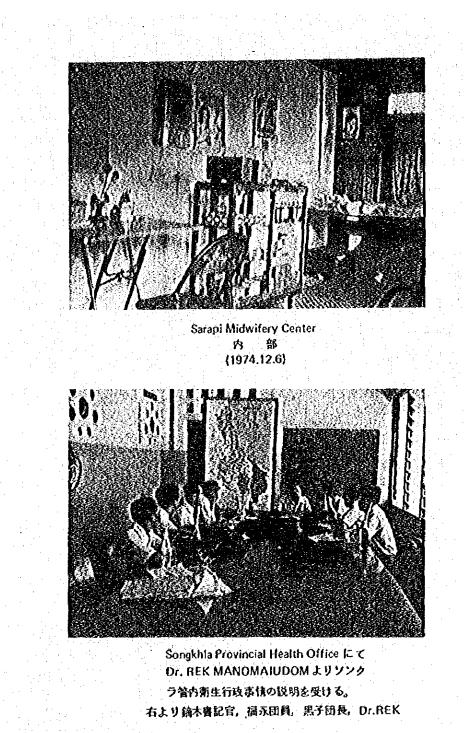
Sarapi 2nd Class Health Center 左側に付属 Child Nutrition Center がある。 (1974.12.6)



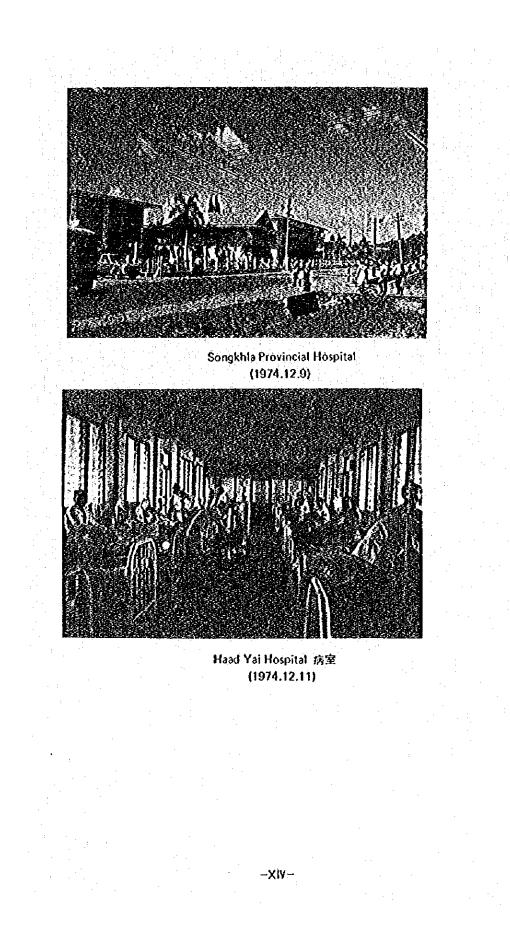
Sarapi 2nd Class Health Center 付属 Child Nutrition Center 右側に 2nd Class Health Center の建物がある。(1974.12.6)

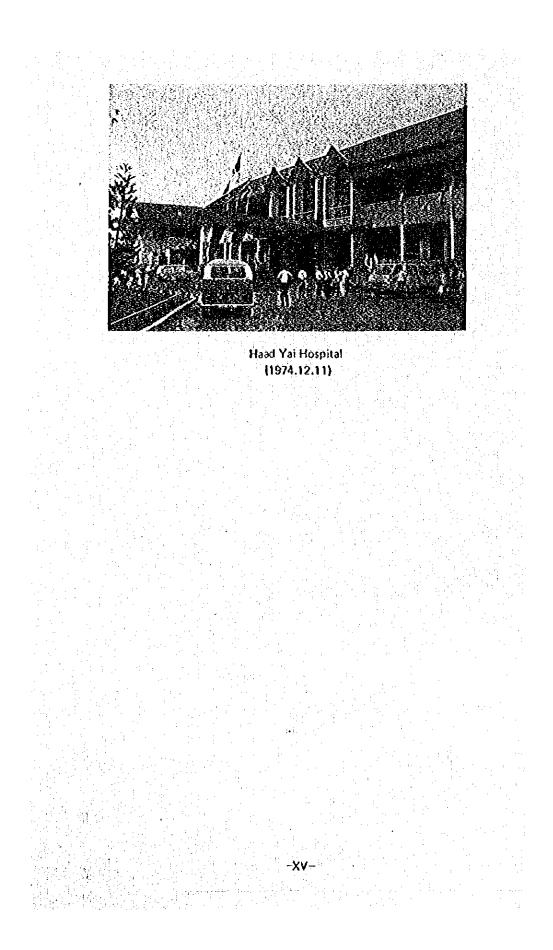


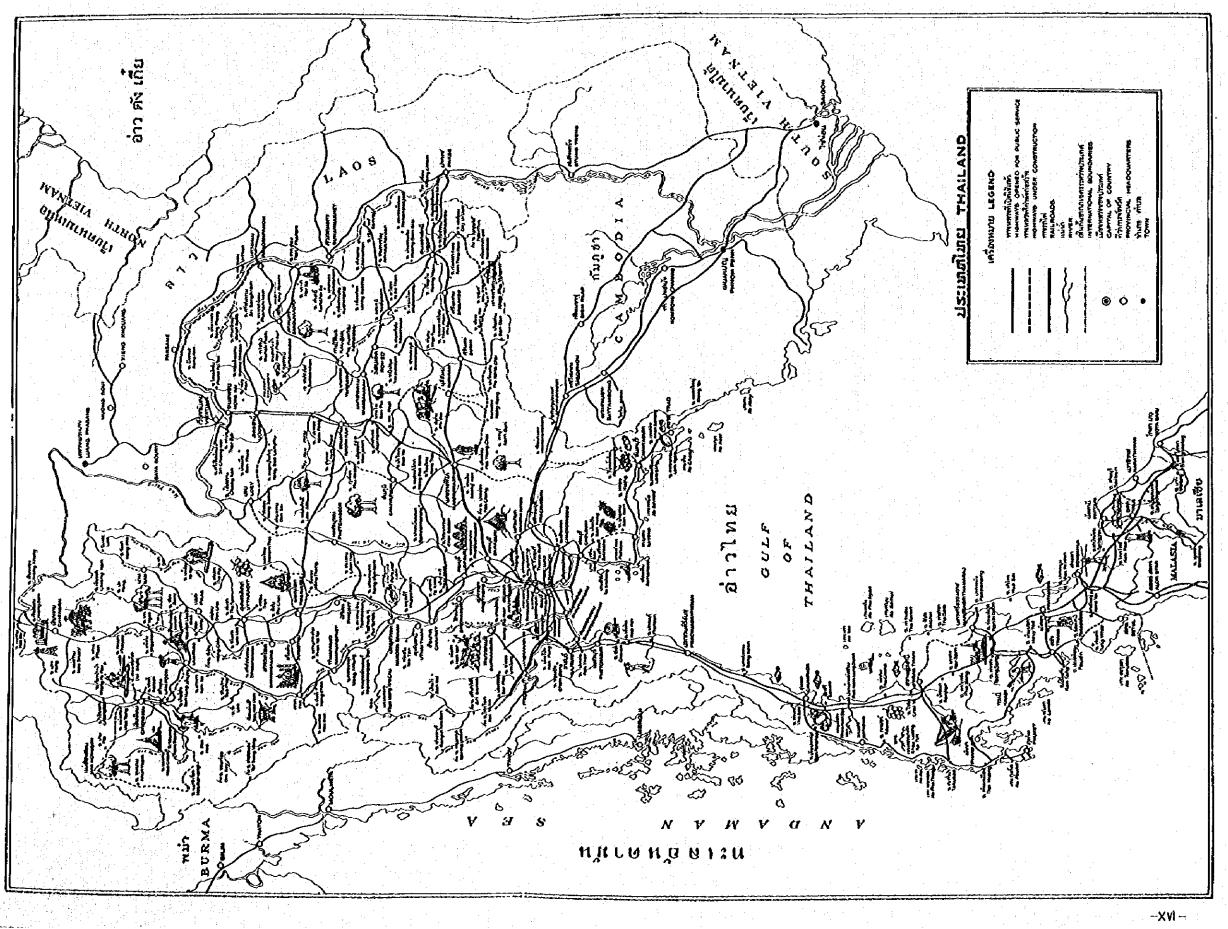
Xİ



林团員, 吉本团員, 伊田砌員, Dr. SAWANAN (1974.12.9)







| 調査団派遣の経緯および目的

メイ国に対する医療協力事業は、過去の医療協力事業実績からみて、他の開発途上諸国に対する医療協 力事業と比較した場合、1ヶ国に対するブロジェクト実施数は最大である。国立病院(スリサケット及び プリラム診療団、昭和41年~44年)、マヒドン大学熱帯医学部(医動物、昭和41年~昭和46年) 中央防部病院(昭和41年~44年)、オビドン大学熱帯医学部(医動物、昭和41年~昭和46年) 中央防部病院(昭和41年~昭和44年)、精神病院(昭和41年~昭和42年)、ポリオ対策(昭和43 年~昭和44年)、栄養研究所(昭和44年)、精神病院(昭和47年、専門家派流、研修員受人)、以 上各事業に対する協力は既に終了し、ウイルスセンター(昭和41年~昭和19年)、柔品研究所(昭和 41年~昭和49年)、ラマチボディ医科大学(限科及び実験病理部門、昭和43年~昭和49年)各ブ ロジェクトは、昭和49年度をもって終了する予定である。現在実施中の医療協力事業は、医療協力プロ ジェクト中、最大のタイ国立がんセンター(早期がん診断及びがん治療、昭和43年~昭和51年)及び 昭和49年まり新規事業として開始した家族計画(昭和49年~昭和53年)の2プロジェクトである。 これら過去の医療協力事業の成果に発みタイ国政府社、タイ国内医学、医療関係諸機関等の要望を受け て、DTEC (Department of Technical and Economic Cooperation, Ministry of National Development) を通じて、国立皮膚科学研究所、婦人病院中央検査部、出血熱対策、 マヒドン大学基帯医学部寄生虫、微生物、免疫部門、マヒドン大学ビアクイ肉科学校、飲食物分析計画及 び保健所整備拡充計画に対する医療協力を我が国に要請越した。

これらの要請に応えて、我が困としては、国際協力事業団海外医療協力委員会から出されている医療協 力のあり方に関する基本方針(医療協力の重点は、研究施設を含めた公衆衛生分野ならびに医師等医療徒 事者に対する教育施設等の状充強化に対する協力に置き、 プロジェクトの大型化,総合化を考慮する) に基づいて、タイ国が最も必要とし、またわが国も十分に協力し得るプロジェクトを選定するため、広く 基礎調査を行り目的をもって基礎調査団が派遣される運びとなった。

Ⅱ 調査団編成

団 長 黒 子 武 道 くろすたけみち 東京都神経科学総合研究所 研究部疫学研究室東京都専門参事

> 団 員 林 融 生 はやししげか 横浜市立大学医学部 寄生虫学教室教授

団 員 吉本静夫 よしもとしずお 国衆務力事業研医療務力部 医療第二課長

閉 員 伊 田 八朔雄 いだやすや 宮妹県桑館保健所長

団 員 「福 永 利 彦 ふくながとしひと 大阪大学数生物病研究所 防疫学部

調査団行動日程	
	日より12月18日まで24日間
航道期间 第144 4 9 4-11 77 6 3 1	
[月25月 10:30 東京発	15:00 バンコック着 JL761
1月25月 10:30 朱小兒 26 火 9:00 大使館	JICA 訪問 10:50 DTEC 訪問
14:00~15:30	
27 水 9:00~10:00	같이 가지 않는 것 같아요. 이렇게 가지 않는 것 같아요. 이렇게 하는 것 같아요. 이렇게 하는 것 같아.
	Dep.of Health CPublic Health Days Ceremony
	WHO Area Representative 事務所訪問
16:30~18:20	
이 가지 않는 물고 있었다. 그 가지 않는 것이 많이	Dep.of Medical Sciences 訪問
15:40~17:00	
17:50~19:20	사람은 실험을 가지 않는 것 같은 것 같
29金 9:30~10:55	Bangkok Municipality Health office 訪問
이 방법 이 가지 않는 것 같아요. 나는 것 같아요. 이 것	Neurological Research Center 訪問
15:55~16:50	Dep of Neurology & Neurosurgery, Sodet Chaopraya
	Hospital 訪問
18:15~19:25	調査団員打合せ
2月 2月 9:20~11:00	Women's Hospital 訪問
11:00~13:30	Institute of Dermatalogy 訪問
14:10~14:35	Phyathai School of Dentistry訪問
3次 9:30~16:30	Faculty of Tropical Medicine 訪問
18:00~20:30	Director, Dep of Medical Sciencesと打合せ
4水 10:30~12:20	Kanchanabury 1st, 2 nd Health Center 訪問
14:10~15:40	Kanchanabury Health Center 訪問
15:40~16:10	Kanchanabury 病院訪問
5木 12:30	パンコック空港発 14:15 チェンマイ空港着
6会 9:10~11:00	チェンマイ大学医学部訪問
11:20~13:00	チェンマイ大学Faculty of Associated Medical Science
	及びFaculty of Nursing 訪問
14:15~15:05	Sarapi District Ikalth Center 訪問
7 <u>1</u> ;50	チェンマイ空港発 9:50 パンコック空港着
8 11 10:00	バンコック空港発 12:15 HATYAI 空港着

12月 9月 9:10~10:20 Songkhla Provinciat Health Office訪問
10:30~11:25 Malaria Eradication Center 訪問
12:00~13:00 College of Nursing 訪問
13:00~15:15 Songkkla Provincial Hospital訪問
16:30~18:00 調査閉員打合せ
10火 9:30~ 9:40 Songkhla大学訪問
10:10~13:15 Immigration office SADAO 管内国境周辺視察
11水 9:10~10:40 Haad Yai Hospital 訪問
11:00~11:50 Ban-Pru 及びPu-Tong 2nd class II.C 訪問
11:55~13:20 Pung-La ist class H.C 訪問
13:30~14:10 Ban Prig H.C 及びMidwifery Center 訪問
14:25~15:00 Immigration Office SADAO 訪問
12 木 12:25 ~ HATYAI 空港発 14:50パンコック空港着
16:30~17:00 HotelKで、Dr.ナットーよりMycotoxiconathology Proposal
13金 8:10~ 8:30 厚生大臣Dr.ウドーンと懇談
9:30~11:40 厚生省にて企画,萩針担当局課長と会議
14 土 9:00~23:15 ホテル会議室にて調査団員打合せ 報告書作成
15日 10:00~17:00 同 上
16月 9:30~11:00 厚生省KてFinal Meeting
11:30~11:50 DTEC 訪問(Director-GeneralK函会)
14:00~17:00 調査団員打合せ,調査団意見案検討
17 天 AM 報告書作成
12:00~13:40 Bangkok Metropolice Health Officerと懇談
PM
18 水 10:50 パンコック空港発 21:00 東京着 TG 600
이 같은 전화 실험에서 한 같은 사람들은 것은 가장 있었다. 이 것은 가장
에 있는 것은 것은 것이 있는 것이 있는 것은 것은 것이 있는 것을 알려요. 같은 것은 것은 물론이 있는 것은 것은 물란을 것을
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N調査結果の概要

1 要請案件

今回の調査団は、海外医療協力委員会の医療協力のあり方に関する動告の報告に沿って、Project Finding を行なりために低適された。調査団出発前にタイ側よりDTECを通じて正式に要請されていた 案件は、国立皮肉科学研究所、婦人病院中央検査部、出面熱対策、マヒドン大学熱帯医学部寄生虫、教生 物、免疫学部門、マヒドン大学ピアタイ油科学校、飲食物分析計画および保健所整備拡充計画等であった が、調査団が現地に滞在中に新らたに、Neurological Research Center, Establishment of Institute of Brain Researchおよびマヒドン大学医学部病理学科(Research on Mycoloxins)の案件がつけ加えられ、これらについても調査を行った。

また、DTECを通じて要請された案件のりち、次の2プロジェクトについては、内容が大巾に変更され た。

飲食物分析計画プロジェクトの変更。

飲食物分析計画プロジェクトれ、他の3つのプロジェクト 1) Improvement of Diagnostic Laboratory Services Project , 2) Medicinal Plants Research Project, 3) Arthropod-Borne Virus Research Project を包含させたStrengthening of the Development of Medical Sciences Programme の新プロジェクトに統合拡大して提起された。 このうちの2) および3) のプロジェクトは、医療協力を行なってきたものであり、現在、専門家の短期 派遣、研修員の受人等化よりフォローブップ中である。

マヒドン大学熱帯医学部,寄生虫,養生物,免疫学部門プロジェクトの変更。

マヒドン大学熱帯医学部寄生虫,数生物,免疫学部門ブロジェクトは, The Five Year Development Plan of the Faculty of Tropical Medicine : Establishment of the Diagnostic Centre for Bacterial and Parasitic Diseases of Public Health Importance in Thailand and Southeast Asia の Project Title として,全く別詞のプロジェクト K変更された。

2 タイ側とのMeeting の損要

常生省会議室において,11月26日と12月16日の2回,タイ偶衛生省次官,要請案件関係局課長 要請案件防殺長,DFEC 関係者とのMeeting が行なわれた。第1回Meeting では、黒子引長まり、今 国の基礎調査団の来訪目的,任務は,協力可能なブロジェクトを現態において選定することではなく,要請 案件につき全般的な調査を行ない,その結果を日本に持ち帰って日本政府,JICA に報告し,ブロジェ クトの最終決定は東京で行なわれる旨の挨拶が行なわれた。

第1回のMeetingでは、主として各要請案件について、タイ朝関係者からプリーフィングが行なわれた。

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第1回Meeting で確定されたスケジュールに従い調査団は,パンコック,カンチャナプリ,チェンマ イおよびソンクラ地方の要請案件関係施設を現地調査したが,最近(昭和49年10月以降)実施された衛生 省の大市な機構改革により,中央組織授構における各部門の業務内容,地方組織との関連性が充分に理解 できなかったため,12月16日の衛生省第2回Meetingに先立ち,12月13日,衛生省保健計画,衛生枕計, 疫学,地方衛生関係課長より衛生行政方針,各利ivisionの機能,地方衛生行政との関連性等について 説明を受けた。

第2回ミーティングでは、黒子団長から再度調査団の目的、任務について説明がありプロジェクトの選定については、海外医療協力委員会の勧告にあるプロジェクトの大型化、総合化の方針が一つの基準として参考になろう。また、今回の調査団の調査結果に基づき、東京でプロジェクトの選定を行ない昭和59年5月頃までに新規プロジェクトの協力内容を協議するための実施調査団が派遣される予定である旨の扶拶が行なわれた。

これに対し、タイ鋼から調査団の得た具体的な印象を開かせてほしい旨の要望があったが、調査団とし て杖立場上個々のプロジェクトについて印象を述べることは困難であるため、これに応じなかった。 また、Dr、Amorn 次官補から、現時点で杖タイ倒でも各プロジェクトに Priorityをつけることは閉

難であり、プロジェクトの選定は日本側に委せたい旨の発言があった。

なお、発生省官居社、昭和51年から始まる第4次5ヶ年計画に限準を合わせ、National Health Plan を美定する構想をもっており、今回の各プロジェクトについても官房の主導によりスクリーニング したい意向がある。会議の席上、官房保健計画課長より5ヶ年計画に関連して、今回の要請案件に対する 官房内研究グループの見解乃王社 Priority Setting に関する報告が行なわれた。何課長社プロジェ クト選択の Criteria として、A Policy Problem Priority、B Cost of the Country C Degree of relation to Solve-Problem, D Economic return, E Spin-off, F Technical risk, G Coodinate and Conceat of foreign Aid, H Potential need for development をあげ、各プロジェクトの次表による評点に基づいて、Priority を優別に検討 する作業を始めた。この検討作果は、出席者の多数から反対を受け中止せざるを得なくなったが、第生省 官房グループにこのよりな動きがあることは、重視すべきことである。しかしながら、昭和49年10月以降 の第生省の大中な技術文本の主要点社、地方組織の一本化(国立病院と保健所をともに Provincial Chief Medical Officerの下に統合させる)かよび本省の官房の強化(地方組続を官房が栽括、計画 に関連する課を官房に移着する)にあるが、官房の調整指展社未だ限られたものであり、各局、課の果務 を統合ないしは調整する力をもっていると社考えられないので、日本調が官房の調整能力に朗待すること に社問題があるう。

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CRITERIA-FOR-SELECTION の評価方法

•		~ +	0	>	l
A	Statement in 3rd Five Year Plan or emerging	Present	· · ·	None	
	& being accepted as Policy	4	÷.		
в	Country's expense to Support the running	needless			
÷.,	cost after be accepted	additional	· ·	need more	
C	Relation of activities and technique	related		not related	
	use in solving the Problems				
· ·					
Ð	Impact of the projects output for	Present		none	
÷	economic return				
		1			
E	Effect of the Project on another Program	Present		none	
	activities				
•					
F	Possibility of deviation from primary	none		Possible	
	objectives after operation				
G	Foreign aids support to ensure the success	Present		none	
	of Program				
			l		
15	Effect of the Project on the Potential need	Present		none	
	for development in near future				ļ

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3 調査結果のまとめ

現地調査の結果、タイ鋼から要請のあった各条件の中から何れかを選ぶといった単純な Project finding を行なうよりは、むしろ、これらの案件を機能的に相互に関連づけた核合的なものとしてとら えて、そのなかから類現プロジェクトを見い出したいという考へ方に調査団一行の意見がまとまった。 各要請案件については、公式にはタイ倒から何ら Priority 社付けられていないが、現在衛生省の最 重点施業社 rura) health の向上であることから、Health Center の整備に関するプロジェクトに高 い Priority があるものと考えられ、調査団としても、現地調査の結果、その重要社を更に病感した。 しかしながら、この要請社、建物、設備の充実に重点を置いたもので、資金協力的色彩の強い協力とな ることを十分に考慮する必要があるものと思われ、技術協力としての医療協力実施上、本件を真正面から 取り上げることは適当でないとの印象を得、本件に協力する場合にもHealth Center の検査機能の強 化に主眼点を置いてプロジェクトをmodifyする必要がある。

一方,今回の全般的な調査結果から,調査造一行はDepartment of Medical Sciences の National Health Laboratory としての役割は,非常に重要であるといり認識を持った。 National leal th Laboratory service の system としての確立, 即ち, National Central labo ratory -> Regional Health Laboratory -> Provincial Health Laborasory -> First Class Health Center Laboratory -> Second Class Health Center Laboratory Kd2 系列を考慮して、National Realth Laboratory service を演化することにより Diagnostic Service のみならず Health Service への積極的な参加が未端にまで及ぶことが期待される。 Department of Medical Sciences の現状を見た場合, Food Analysis Div., Parasitology Jab.等は、既化協力済みの Virus Research Inst, Medicinal Plants 部門に比べて, man-power 及びFacilities の点において著るしく劣っている。Parasitology 部門についてれ Faculty of Tropical Medicine, Mahidol University の寄生虫部門が,タイ国内はもとよ り,東南アジア全体をみても,よく整備強化された機関であるので。これとの協力も含めて, Depart--ment of Medical Sciencesのこれらの分野での強化を考慮する必要があるものと思われる。また。 Department of Communicable Diseases Control hollight Alleanorchagic Fever Control Project の要請は,極めて重要な案件と考えられるが, rescarch work を伴なわない形 で提出されているので, Department of Medical Sciences のVirus Research Institute との関連において考慮することが望ましい。

上述の如く,新規プロジェクトは、Department of Medical Sciences の強化,特化その弱点 部門であるFood Analysis Div.,と parasitology Lab. の強化化中心を置くが、これらの部門の activityの強化は、rural area のHealth Center Lab. Service化まで及んで、はじめてそ の目的が達成されるものと考えるべきものである。

タイにおけるデング出血熱は、なお最重要なウイルス性疾患であり、また、そのPathogenesis も似 説の感を出ておらず、ウイルス研究所設立に協力してきた日本としては、この点留意する必要があろう。 デングウイルスの生態学的研究および出血熱に対する疫学的調査は、この国で殆んどなされていないとい

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ってよく、Virus Research Inst.とDept.of Communicable Diseases Control との協力が 強く望まれるゆえんである。

以上述べた如く、新規プロジェクトは、タイ鋼のいくつかの要請案件を、我が国が実施し得る範囲内で より効果的に統合しようとするもので、 Dept.of Medical Sciences ↔ Faculty of Tropical Medicine, あるいは、 Dept.of Medical Sciences ↔ Dept.of Communicable Diseases. Control の協力関係などタイ朝の充分な理解を得ることが新規プロジェクト実施のための必須の条件に

なるものと考えられる。

1 タイ国立皮膚科学研究所(National Institute of Dermatology of Thailand) 要請機関: Dept. of Medical Services, Ministry of Public Health 主 曾 局: 同 上

要訪の競要:熱帶皮膚疾患の臨床診断と治療,皮膚科専門医の訓練,医師と関連技術者の再教育, 病因の研究,一般啓蒙等本研究所のかかげる目的達成のため,1974年から始まる5ヶ年計画で 日本からの専門家派遣,資機材の供与を要請,特に研究室関係の器材として初年度Microbiolo gy, 次年度 Immunology,3年度 Biochemistry 等の Section 充実のための具体的要望 が出されている。

視察の印象:設立後日が浅い関係で,まだ完成した研究所としての機能に達していないが, Leprosy やMatnutrition, Parasite 等に起因するものも含めて熱帯に重要な皮膚疾患は多く,その 総合的な研究所として中心的役割を果してゆこうという熱意が見りけられた。

2 婦人病院中央検査部(Central Laboratory in Women's Hospital) 要請機例: Dept. of Medical Services, Ministry of Public Health 主 管局: 同 上

要請の概要:広い構内に各病棟、手術室、各種検査室が散在して機能的でないため、中心部に高屋化 した建築物をたて、機能の集約化を計画、既に建築プランは一部開始された。 このうち検査部門 の一部分をなす Microbiology , Biochemistry, Clinical Pathologyの各 Section に関連して専門家の派遣、研修員のFellowship,機材の供与を受請している。

視察の印象:設立後20故年を経て伝統ある大病院であるが,さらに総合病院に発展する計画もすすめ られており、機構、施設の面で大きな変革をする時期に来ているように見受けた。したがって、 技術的、財政的な面でも外部からの援助を期待しているもようである。

3 Haemorshagic Fever Control

主管部局: Dept.of Communicable Disease Control, Ministry of Public Health 流行状況: タイ国において出血熱の存在が臨床的, ウイルス学的に確認されたのは 1958 年であるが、 本病の最初の流行は1954年, パンコック市に発生したものと推定される。特に大規模な血清学 的調査は行なわれていないが, Acdes acgyptiおよび患者血清から従来知られている 4型のデ ングウイルスを含む数株のウイルスを分離している。

デング出血熱(DHF)は1958年以降,例年流行を採返しているが,流行の発生は主として 中央平原部および東南から西南部務岸の都市部に限定しており、1964年以降は北部および東北 部の都市部にもかなりの流行がみられている。 1967年より1973年に至る過去7カ年間のDHF屆出患者数,死亡者数やよび数命率を表1 に示した。いずれも1971年以降増加の傾向にある。また、最近5カ年間(1970-1974) にかける年令15才以下、人口10万対平均罹患率社、全国で59.4、地域別ではCentral Regionの81.4が最高率で、ついてNorth-Eastern Region 70.3、Northern Region 56.8 の類で、Southern Region が24.6 と最低の罹患率を示した。またProvince 別権 患率で最高率であったのはNorthern RegionのPhare で人口10万対400以上、ついでCentral Regionの Chantaburi 375,罹患率が160~250 の間にあったものはNorth-Easte rn RegionのYasothorn、Chaiyaphum かよびKhonken、Central RegionのRayong かよびNakhon Pathom であった。

全般に罹患率15以上のprovince 数はCentral Regionに最も多く18,ついでNorth-Eas tern Region9, Northern Region 5, Southern Regionは最も少なく2であった。 年間における流行の発生は5月から11月の間で,最大の発生は7月および8月である。性別に よる罹患率の差は殆んど認められない。

- 施行対策:施行対策としては媒介蚊の駆除が行なわれており、患者発生地区における薬剤(Malathion, Fenifrothion),家屋内外の発生場所の排除等を実施している。次期5カ年計画期間 (1975 - 79)における本病対策計画は既に公案衛生省の承認を得ている。すなわち、Malathion およびFenifrothionの撒布, Abate 使用を主として都市および準都市部,施行発生のリスクの高いと想定される地区,前年度において発生率,死亡率の高かった地区について選択 的に実施することになっている。
- 要請の内容:期間 5 カ年(1975 79),殺虫剤,シープまたは小型トラック,撒布用機具(大型および小型 UL V撒布機)の供与,fellowship 等の要請がある。(表 2 参照)
- 意見:DHFはその発生率,死亡率の両から,特に小児間の施行病という観点から本病対策は公衆 衛生上最重要な課題の1つと考えられ,対策の確立が望まれる。既に公衆衛生名においてもVector Controlおよび環境衛生の改善等の施策を失態しているが,費村住民の都市部への移動, 高出生率と相俟って都市部の環境衛生は十分でない。一方,流行時の検査体制については1部 Virus Research Institute (Dept.of Medical Sciences)において実施されており, また1部研究活動も行なわれているが,公衆衛生名レベルにおける本病の特質の research programme 相実施されていない。

本病の届出患者数はとと2~3年来再び増加の傾向にあり、局出伝染病中急性下痢症についで 第2位を占めている現状に鑑み、単なる Vector control にとどまちず、ウイルス学的、昆虫 学的研究ブログラムを含む効果的かつ総合的なブロジェクトの開始が緊急と考えられる。

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表1 タイ化おけるデング出血熱 (1967 - 1973)

	196		196		196		197		19		197	•	19	73
	C	D	С 	D	С ————	D	C	D	<u>C</u>	D	c	D	С	<u> </u>
	2060	61	6032	65	8673	101	2766	16	11522	209	23782	685	8280	315
议命 律 2	3.	1	1.	1	1.	2	1	.7	2.	6	2.	9	3.	8

表2 要請内容 (1975-1979)

Insecticides	Vehicles	Equipments	Fellowships
70,0001,itres	8	HD ULV Sunit HV ULVIAunit	Academic 5 Training 12

4 熱帯医学部の5カ年開発計画:タイかよび東南アジブ地域に公衆衛生土重要な細菌性,寄生虫性疾患の診断センター設立(The Five Year Development Plan of the Faculty of Tropical Medicine: Establishment of the Diagnostic Centre for Bacterial and Parasitic Diseases of Public Health Importance in Thailand and Southeast Asia.) 要請機関: Faculty of Tropical Medicine, Mahidol University.

主 谷 局:総理府(Office of the Premier, Bureau of State Universities) 要請の概要:熱帯医学における網菌性,寄生虫性疾患の占める比重性種めて大きい。これらの教育,

- 研究,診療上最も基本的な要素は正確な診断,病原体の確認にある。本学部自然常医学の教育と
- 研究機能の他にSEAMEO機構のタイ国における National Centre ともなっており、上記諸
- 疾患の診断法の研究開発,および諸機関からの診断確認依頼に応じればならない。従って表題の Diagnostic Centre設立を計画し,充実発展を期している。 1975 年から始まる 5 ヵ年計画 で協力援助を要請し,その内容はM 要請案件英文資料 4.の如く,専門家の紙遺, Fellowship,

模材の供与からなる。

視察の印象: Rural Health の重視にともなって Health Centre や Dept. of Medical Sciences 等の各レベルでそれぞれ Laboratory の拡充をはかってゆかねばならない。一方, こ の行政 ラインでの機能を力強く支えてゆくためにこの国自らが大学レベルでの研究開発を推進す るため表題の如き Centreの設立は必須のものと思われる。本学部は従来果して来た役割, 機能 すぐれたスタッフからみてこの任務を十分送行してゆけるものと見受けた。

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5 ビアタイ歯科学校に対する援助(Assistance to the Phyathai School of Dentistry) 要請機測: Phyathai School of Dentistry, Mahidol University

主 管 局: 総理府(Office of the Premier, Bureau of State Universities) 要請の概要:設立徒まだ年月が浅く,その充実発展に有能な教育スタッフとすぐれた設備を備えるべ く焼意努力中のところである。今回さらに肉科材料のコースを卒前,卒後のコースとして新設す る計画をたてた。気温,湿度ともに高いタイおよび熱帯地域に適した南科材料の研究開発,その 選択,使用に関する教育上必須のものと思われるので,これが開設充実に援助をもとめたいとい う趣旨にもとづく。1972年からの5カ年計画で初年度に研究室開設のための専門家派遣,必要 機材の供与をもとめ,さらに3年を経てfollow upと指導のための専門家派遣を要請している。 祝祭の印象: 既設の教育,実習設備は多く日本製で,最新型のものが整備されていた。新設の部門に やはり日本からの援助を期待していることがよく理解された。

6 Strengthening of the Department of Medical Sciences Programme 主智機即: Department of Medical Sciences

委請の概要:DTECを通して、日本観に提出されていた案件は、飲食物分析プロジェクト(Food and Beverage Analysis Project)であったが、現地での第1回目の会議(11月26日)に おいて、Director-GeneratであるDr、Manasvi から、integrateされた形のプロジェ クトに変更したいという発言があり、同席していたDTEC からの代表者も日本倒もこれを了承 した。

改めて出された案件は"Strengthening of the Department of Medical Sciences Programme"というもので、次の4つの分野にわたるものであった。

a. Improvement of Diagnostic Laboratory Services Project,

- b. Improvement of Food Analysis Project,
- c. Medicinal Plants Research Project,

d. Arthropod borne Virus Research Project,

この案件の内容については、日要訪案件英文負料もを参照願い、ここでは簡単な説明にとどめる。

a Improvement of Diagnostic Laboratory Services Project

Diagnostic Laboratory Servicesとして、ここではintestinal parasitesとenteric bacteria に重点がおかれている。特に、寄生虫の疫学的調査によると、タイ国民の60番が1種か それ以上のintestinal parasiteを持っており、寄生虫病のコントロール社急がねばならない。 b Improvement of Food Analysis Project

タイの輸出の90多は農作物(米、メイス、タビオカ、その他)が占めており、それらがpesticides やmycotoxins で汚染されると、国家的規模の economic loss をもたらす。 このようにタイに おいては、国民を飲食物の汚染から読るという目的だけでなく、国家の収入顔としての経済的な理由 からも、Food Analysis Laboratory の強化プロジェクトは、その必要度が大きいと考えられる。 c Medicinal Plants Research Project

これは、生薬(medicinal plants)研究の結果を、タイにおける薬品工業に応用することを目 的としたプロジェクトで、1967年以来日本との協力が続いているが、さらにこのプロジェクトが継 続されるよう希望している。

d Arthropod-borne Virus Research Project

このProject 社,デング出血熱と日本脳炎の生態学的及び疫学的研究に重点がおかれ、Department of Communicable Disease Control から出された出血熱コントロール・プロジェク ・トを調査,研究面で支持しようとするものである。

調査の税要: この Department は,表に示すように、10の Division から成っている。この中で、

Radiation Protection Service Div.とMedical Research Div.を 除いて他のDiv. は全て視察した。

 Entomology Div: このDiv 枝,かって、 WHOのAedes Research Unit があった ところ(1966 - 1973年)で、WHO staff が引き上げて以後、タイ人スタッフによって仕 事が進められている。Aedes mosquito の Larvaeの実験室内飼育が行なわれており、野 外蚊の収集とそれからのウイルス分離も隣接し たウイルス研究所との共詞実験として、始めら れている。 Dept. of Medical Sciences Office of the Secretary Entomology Div. Provincial Health Laboratory Service Div. Radiation Protection Service Div. Clinical Pathology Div. Toxicology Div. Drug Analysis Div. Food Analysis Div. Medical Research Div. Virus Research Institute

2) Provincial Health Laboratory Service Div. このDiv. は現在45のProvin-

cial Health Laboratoryを持っており、培養液その他の reagents,試験管,遠心器,冷成庫 等の機材を供給している。我々が訪れたカンチャナプリ病院,ソンクラ病院,ハジャイ病院へもこれ らの機材が供与されていた。

又, このDiv. では,各地方病院のmedical technologists を対象に短期間の研修も行ってい る。WHOとUNICEF からの援助もわづかであるが人っており,現在WHOから2名のMedical officer が滞在中でLaboratory Diagnosesの training を行っている。このDiv. はまた1 年コースの衛生検査技師学校を持っており,高校卒業者(12年間の教育受了者)が人って来る。現時 点では, 1クラス30名である。1965年の設立で,現在までに355名の卒業生を送り出している。 このDiv. の計画では, 1976年までにRegional Health Laboratory を9ヶ所, Provinci al Health Laboratory を64ヶ所にふやすことになっている。

3) Clinical Pathology Division

CODivision Kt, Bacteriology, Parasitology, mycology, Biochemistry,

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Haematology, Secology のsection がある。この中でも、National Laboratoryとして、 機能しているのは、Bacteriology sectionぐらいで、特にParasitology、やmycology section 社設立後、未だ日が投く、man-power、facility の両面で劣っている。各地方の Provincal Health Laboratoryへ、このDivision から Bacteriology の診断別抗原及び 診断用血清が供給されている。

4) Toxicology

このDivision は、毒性物質の分析と研究を行っている。

動物(主化ラット)を使って慢性及び急性毒性試験が行われているが、規模は大きくない。特に動物 合が不備で、マウスの供給はVirus Research Institute から受けている。

5) Drug Analysis Division

とのDivision は、市販されている薬剤(タイ国達及び外国からの輸入品)の検査、麻薬の検査 等を行っている。Office of Foods and Drugs Committee が市販の薬剤及び飲食物から抜 き取ったサンプルをこのDivision かあるいは次に記すFood Analysis Divisionで分析し、 Drug Acts又はFood Actsに違反していれば、上記のOfficeが行政処分することになる。 6) Food Analysis Division

このDivision では、a) 水質検査(数生物学的及び化学的検査)、b) 清菜飲料水、新鮮食品、 カンプノ、ミルク及びミルク製品、果物、野菜等の数生物学的検査、c) 種々の飲食物について、防 腐割、色素、甘味科等の食品添加物の分析と專性検査を行っている。又検出食品のチェックをして、 certification を与えることも、このDivision の主な役割の1つである。しかし、このDivsionのfacility は非常に代弱で、とてもNational Laboratoryとしては機能し得ないと思 われた。

7) Virus Research Institute

1963年、日本政府の協力で設立された。その後、1973年まで10年余にわたり技術協力が続けられ、現在はfollour-up slageに入っている。

Enterovirus, Respiratory virus, Haemorrhagic fever diagnosis, Rabies, Arbovirus, Immunochemistry, Electron Microscopy, mouse colony 等の section がある。日常業務としては、各病院又はBangkok municipality Health Officeなどから送ら れてくる specimens について、ウイルス分離、血清学的診断、分光抗体法による診断等を行い、 Arbovirus と poliovirus に関しては、epidemiologic studyも行われている。Entomology Division との協力で對外蚊からのウイルス分離が始められたことは興味深い。これまでの日本の .援助によって、必要な機材は始んどととのっているといってよい。

8) medicinal plants Section

このSection は、Medical Research Divisionに属していて、伝統的ビタイ国で使用されている生薬(medicinal plants) を分析し、有効成分の摘出を行い、その薬理学的効果を明らかにする仕事をしているが、その結果をタイにおける楽品工業に応用することが最終目的である。

1957 年以来、日本との技術協力がナナめられ、man-power 及びfacility の両面でよく充実 している。

上述のように、Department of Medical Sciences の各部門を、11月28日午前9時30分から、午後2時30分頃まで、視察したが、これらの施設は公衆衛生省から3~4km はなれたヨッセー 地区に集められている。その構内は殆んど空境がなく、駐車するにも用る程である。

Medical Research Divisionのうち, medicinal plants section 社, ヨッゼ地区化 あるが, 生物学的教剤の製造をしている Section 社, 4~5 km 社なれた Governmental Pharmaceutical Organization of Thailand にあり, 我々社時間の都合でこれを視察することが. 出来なかった。以下化, 1970年-- 1972年における名生物学的製剤の製造量を終考までに記す。

	Quantity produced				
Biological producis	Biological products 1970		1972		
Freeze-dried smallpox vaccine (dose)	3,554,225	3,696,750	5,241,850		
Diphtheria toxold precipitated (ml)	484,120	203,120	e ja 🚽 🕺		
Pertussis Vaccine (ml)	153,330	50,370			
Diptheria toxoid & pertussis vaccine (ml)	228,710	69,980			
Rables vaccine (mt)	752,640	1,003,840	1,248,960		
Typhoid-paratyphoid vaccine (mt)	272,950	261,250	573,150		
Cholera vaccine (ml)	15,672,700	7,281,100	6,514,750		
Tetanus Toxoid (ml)	48,420	91,300	64,228		
D.T.P. vaccine (doses)	79,998	444,128	997,260		
Diphtheria-Tetanus toxoid (doses)	-	105,590	193,580		

Production of Biologicals

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Department of Medical Sciences を視察した感想ないし印象を要請案件状関連して以下K記

1) このDepartment は、日本でいえば、予研と国立衛生試験所の両者の役割を果すべく期待されてい るが、man-powerの面でも、facilities の頃でも、日本の両機関よりはるかに小規模な機関であ る。

2) 本来社このDepartment が果すべき役割を,力不足から大学所植機関に依存している。その一例が, parasitology Laboratory で,マヒドン大学のFaculty of Tropical Medicine社,寄生 虫病のコントロールあるい社, Laboratory diagnosis 等の面で,このDepartmentの別代りを しているのが現状といえる。 3) Improvement of Food Analysis Projectは、行政上の要請が非常に強いと考えられる。この分野では、大学関係機関の直接の肩代りが全くないからである。

4) デング出血熱に関しては、デングウイルスの生態学的研究、出血熱に対する枝学的調査が必要で、単 にinsecticidesによる蚊のコントロールのみで、どれだけ効果が上がるか疑問であり、さらに環境 汚染の問題が残る。Virus Research Institute とEpidemiology Division, Departme nt of Communicable Disease Control等との協力が重要視されるゆえんである。

5) Department of Medical Sciences のNational Health Laboratory としての役割は 非常に重要で、これが充分強化されて始めてHealth Laboratory Serviceのネット・ワークの確 立が期待される。この意味では、Virus Research Institute だしても、なお不充分で、例えば 全国的には、デング出血熱と臨床的に診断された患者の約10多弱しか、血清学的診断では cover され ていない。Virus Research Institute は、衛生検査技師の training と、診断用血清及び抗 原の供給を下認相線に対して行うべきで、少くとも Regional Health Laboratory は、その region の血清学的検査を日常的に行なえるように ならねば上記の coverage を 100% 近くに上げるこ とは、不可能と考えられる。

7 Improvement and Expansion of Health Centre

主管部局: Rural Health Division, Under-secretary of State for Health,

Ministry of Public Health

主旨及び背景;

タイ国人和約 3900 万人のうち80考以上が農村地域化居住しており、高い人口増加率(3.3%) を示 す。その結果, Health Service の需要は増大する一方で、実際の Service 社これに追いつけな い現状にある。特に農村地域住民の経済的貧困は、教育を起ちせ、疾病予防の知識の欠如、不常生な環 境、低栄養状態と相まって、健康阻害の大きな原因となっている。これが改善のためタイ国政的はUN ICEF, A.I.D の援助を得て 1953 年以来 rural health services の強化拡大を柱かって きた。 1961 年に社、この計画社 National Development Planに組み込まれ、"Rural Health Centre and Health Services Expansion programme"の名で知られている。しかしながら 1971 年までに、First Class Health Centre 233(予定 555), Second Class Health Centres 1936(予定 4378), Midwifery Centres 2903(予定 3000)が設置されたにとど まり、わずか全人口の好をカバーするにすぎない。そこで、"Improvement and Expansion of Health Centres"のNew Projectにより、Health Centre 等の質的・量的拡充を柱かり、 Rural Healthの支資を推進するものである。

目 的:

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Rucal llealthを改善する目的で次の事項を推進する。

1) Health Centre, Midwifery Centreの増設及びStaff のための住宅の建築及び設備の拡

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2) Health Officials の確保
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3) Provincial Health Office, Health Centre, Midwifery Centre の医療機材, 医 薬品、設備等の供給

4) Field Work のための交通手段の確保

5) Health Personelの Training のための各種援助

間: 15年以上(1972年~1986年) 期

稹: 1

322 を新設 First Class Health Centre

Second Class 2764

1827 Midwifery Centre

Provincial Health Office のClinic 部門の別棟建築

First Class Health Centreの基準

人口 5万に1カ所

Staffing:

Physician

Midwife

Nurse 1 Junior Health Worker 2

1

を最低限度の定数とする。

1.

設 備:

Bed 10 (emergency case Okb)

Service :

basic health service を提供し、Provincial Hospital との間に referral system を確立する。

Second Class Health Centre の基準。

人口 5000 亿1カ所 (tambol level)

Staffing :

Junior health worker

Midwife

Service の内容

Maternal and Child welfare,

Environmental sanitation

C.D control

Health education

Medical care of minor ailments

Sale of simple remedies

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Midwifery Centre の基体 入口 2000 K 1 力所 (Muban level) Staffing : Midwife $\mathbf{1}$ \cdot Service の内容 M.C.H School Health Medical care of minor ailments immunisation -要請内容: 1) Expertの話遣 Total Field of Operation Man/Months 1978 1974 1975 1976 1977 of Expert ÷ 4 – 1 Strengthening 4 / 12 1/3 1/3 of Rural Health 1/31/3 Services Short term Consultant 1973 ~ 1976 年Kおける Project の cost benefitを評価するための適切を指導

2) Fellowship

Field of Study/ training/Study tour	Total Man/Months of Fellowship	1974	75	76	71	78	
Organization and Practice on Rurat Health Services	25 / 15	5/3	5/3	5/3	5/3	5/3	

1975~1978年 毎年Medical Officer 2名, Public health Nurse 3名につき3カ月 間のgroup training fellowship

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3) Supplies and Equipment

Description .	Cost	of equi	pment re	queste	1	total Cost
	1974	75	76	77	78	US \$
Portable X-ray Machine	15000	15000	15000	15000	15000	75000
Endotracheal Anaesthetic	5000	5000	5000	5000	5000	25000
Sets	1997 - N	•			n an an an seo. Ta tha tha the seo	
Standing Sphyngomano	375	375	375	375	375	1875
meters			len har e	110		
Tracheotomy Sets	5000	5000	5000	5000	5000	25000
Electric Autoclaves	20000	20000	20000	20000	20000	100000
(size 16/28)			:	· · · · ·	an a	

視察の印象:

都市と費村のHealth Stateを比較するに大きな差が認められる。費村における Health State社 極端に悪く, 経済的貨用, 衛生知識の欠如も手伝って, 人口増加率も高く, Health servicesの立ち 遅れに拍車をかける結果となり, 悪循盤を形成している。しかもタイ国人口の80多以上社費村地域に住ん でおり, これを考慮すると費村地域の Health Stateの改善なくしてタイ国の Health Stateの改善 社期待出来ないとも獲得できるであろう。かかる観点から, この Project (Improvement and Ex pansion of Health Centres) 社長的て重要で当を得ていると思われる。但し, Health Perso nnelの確保, Diagnostic ability の強化がともなら必要があり, 同時に中央の病院, 検査, 研究 機関, 医科大学(大学医学部)も強化され, 同機測との緊密な注けいシステムを確立することが望まれる。

そのためには、Pilot Studyとして、ある地区をモデル地区に選びモデルHealth Centre を指定 してかかるシステム化を試みるためのCooperationを行なうことも一方法と考えられる。

8 Neurological Research Project

主管部局: Neurological Research Centre

施設の観要:Neurological Research Centre はPrasat Neurological Hospital

に付属し、1971年に設立、持経科学および行動科学の研究機関として活動している。現在実施 されている研究課題としては、外傷の後遺症に関する律経学的、心理学的研究、神経系の感染症、 特経駅科学、神経系の中毒性疾患、老年者の神経学的、行動学的研究等である。病床数60、週3 日間特殊外来を開設し、研究上実味のある症例を選択収容している。

要請の程粋:本年10月, 無岩教授(九大, 脳神経研究所)が当施設を訪問し, 本ブロジェクトの開設 を suggest した。(別添10月 6 日付, 黒岩教授より所及 Dr. Prasop宛書簡コピーを参照) 要請の内容:正式文書社ないが, Dr. Prasop によれば, 協力要請の期間は 3年(1975~77)。 予定する研究課題は, 中毒性神経系疾患, 神経系の感染症および神経筋性疾患である。協力の要

Naurological Research Project に関する黒岩九大教授より Dr. Prasop 宛書簡

NEUROLOGICAL INSTITUTE KYUSHU UNIVERSITY FACULTY OF MEDICINE Fulucka, Japan

October 16, 1974

Prasop Ratanakorn, N.D. Director, Prasat Neurological Hospital

and Neurological Research Center Bangkok, Thailand

九川大学医学部

"皮片经合己充所

Dear Doctor Ratanakorn:

I would like to express my cordial gratitude for your great kindness and hospitality given to me during my last visit to Bangkok. I was very happy to be able to see you and your staff. I would like to express my strong impression that your neurologists are doing very excellent works, especially you are going the leading role in the Thailand neurology. I would like to continue the mutual relationship in future for the mutual benefits.

I would like to recommend the OTCA staff in Tekyo about the Neurology I would like to recommend the ULCA statt in Tokyo about the Neurology Project in Thailand (<u>Neurological Research Center and Ramatibodi Hospital</u>). In order to promote this move, it is essential that the inspecting groups visit these places in November, 1974. I would like to ask you to talk with Dr. Vejjajiva and also Minister of Health, and to contact with Department of Technical Economical Cooperation (DTC) of Thailand Covernment on these matters. Through DIC the project or preliminary talks should be reached to the OTCA of the Japan Embassy. Banchok, hefore Newmber wist. Pleace to the OICA of the Japan Embassy, Bangkok, before November visit. Please contact with Mr. Kaburagi of the Japan Embassy. I explained him the importance of the Project on Neurology. He was afraid of the agreement of the talks within the Thailand Government for setting the project. I would like to ask you on these difficult problems because I believe that you are very capable in dealing with these administrative matter.

The Keurology Project will include: 1) Exchange fellowship problem (Training program)

 Facilities (cquipments)
 Others (exchange of knowledge project)
 The main topics on the neurology will be on toxic diseases, such as Minamata disease, infectious diseases, neuromuscular diseases. To develop these specialists need time of several years in order to prepare the situation like those Japan is now facing. I would also like to exchange of knowledge on the wide scope of the neurological diseases.

Again, I thank you, and please promote these move with Dr. Vejjajiva. Please excuse me for the direct suggestion to you as above. I hope that everything will be successful.

Truly yours, Ilurian

Yoshigoro Kurolwa, M.D. Professor and Chairman of Neurology 請は,研究機材の供与,研究者の交換,研究者(専門家)の派遣等である。

第1年度 Neuroscientist特に Toxic disease に関する専門家1名,6カ月の旅費, 第2年度 Fellowship 1名,かよび研究器材の供与,第3年度は持経系の感染症,寄生虫性 疾患, 神経病理学師の筋力研究等

見:工場廃液の水質汚染による慢性中毒などを直接研究対象とするということであるが,具 体性,緊急性を欠いている。なお, 現に多く海外から器材面の供与をうけており, プロジェクト の必要性は少いものと思われる。

Establishment of Institute of Brain Research

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主管部局: Dept. of Neurology & Neurosurgery, Somdet Chaopraya Hospital (Dept. of Medical Services, Ministry of Public Health)

Dept. of Neurology & Neurosurgery 社 1959年K Sundet Chaopraya Hospital 内に設置されている。本病院社タイ国における最大の精神病院で病体数 1000, 精神, 神経科疾 患のセンターとなっている。Dept. of Neurology & Neurosurgeryの取扱外来患者数社年 間約1万名,ベッド数100,人院患者年間 900~1000である。Neuroradiology,Neuropa thology, Neuroscintilation, Neurosurgery およびNeurophysiotherapyの部が ある。専門スタッフは10名, そのうち4名社英国およびカナダで朝後中である。

要請の目的: 脳, 裆軽系疾患の科学的な治療についての要請が強くなっているにも拘らず, 専門家の 養成が極めて困難である。医療施設, 研究認識の整備拡充が必要である。 神経疾患の援学的研究 中枢神経系の急性および慢性疾患等, 基礎的, 降床的研究および救住センターとしての機能を企 図している。

要請の内容:協力要請の期間は 5 年 (1975 ~ 79) である。 1965 ~ 67 年 の間にコロンボブランド よる器材供与」専門家派達,Fellowship の援助を受けている。

新規要請は主として影材供与に関するものである。専門家族遺については Neuroradiologist 1名, 1年かよびmedical engineer 1名である。Fellowship については解研究施設の 視察2名, 3~6ヵ月, (neurosurgcon かよび neurologist), neuropathologist(電子 顕微鏡技術の習得)1名3~6ヵ月 neurological nursingに関するもの1名, 3~6ヵ月

意見:交通事故による頻認損傷,斟中权神経系の新生物,感染症等の増加に伴い、との分野の研究,医療の推進は極めて重要なものと思われる。

10 Mycotoxin Research Project

主曾部局: Dept. of Pathology, Mahidol University

要請の理由:mycoloxinの食品汚染は衛生および経済的観点から極めて重要なものである。食産物 は通常大中なmoldの汚染があり、その産生毒物は人および家畜に対して肉性反応を示すものが多 い。これらの有害作用には催奇性,変異原性,発格性が含まれている。特にアンラトキシンとRey-ざs syndrome, 肝癌との関係を明らかにする必要がある。研究課題としては、①タイにおける 食品中の毒性mold分布の研究,そのmycologic,化学的,toxicopathological な研究 ②マイコトキシンと疾病との関連性,臨床,疫学的研究,特にReyd's syndromeの研究等があ 行られている。

意見:アフラトキシンを中心とするマイコトキシンの食品汚染については、近年わが国における 関心が高まっている。タイ国においてもこの問題は公衆衛生上重要な課題であるが、現在、公衆 衛生省に材何等の対策もない状況である。Dept. of Medical SciencesのFood & Bever age Analysis Divisionを含むプロジェクトの発足が必要であろう。

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- V] 要請案件英文資料
- . National Institute of Dermatology

The National Institute of Derratology of Thailand

Airs and Objectives:

- This is to be a contro for the assimilation of data, statistics and other relevant factors concorning Tropical Dersatology in Thailand and South -East Asia.
- 2) To carry out clinical investigation and the general treatment of skin diceases for the population of Thatland,
- 3) To provide instruction, when opportunity presents for doctors and marsus and opportally to act as a consultant centre on various factors pertaining to Tropical Derratology.
- 4) To carry out research work on pathogensis as to viden the scope of knowledge.
 5) To act as an associated contro for exchange of ideas in the field of investigation and treatment with Dermatology centres in Thailani and other countries.
- 6) To entighten the public on the causes of skin diseases sepecially those that derived from social habitats and it's provertive zeasure, by vorking hand with other local and foreign institutes.

The circle to ensure the increase in efficiency of the preventive and trustement of skin discusse so that it is level with the generally accepted international standard and thereby will be of beneficial value to all packing.

Rifelate and the reasons

Skin disasses is highly undestrable due to the fact that it can be readily observable. Statistics show that skin disesses in Thailand comprise of about 12-15 percents of all discasse. However, it is appeared that this figure will increase correspondingly to the rate of development of the country due to the increase in the use of chemical mixtures and compounds in every day life. Nost prophe know very little about the advantage, and disadvantage of chemicals. Ignorance of facts concorning skin discoses still prevails arong

.../ the zajority

the rejurity of the populace, however instruction of facts concerning the importance of clinical investigation, control for treatment it's provention etc. will curely help to reduce case incidents of skin disease.

Though statistics shows that death derived from skin discesses do not exceed those of other well-known discesses but it is expected that these obcurrences will be a mjor in causing the econnics drubback of the country. It is contain that this rateriation of National progress will be of noises in productage when compared with other discusses and it is simply due to the fact of ignorancy economics those undestrubbe discusses. Public objection in skin discesses isneeded here.

From the Modical view-point, ekin disease is a highly specialised branch of Mulical Science and Thai doctors who received any adequate training is still in the minority when compared with specialists in other branch of diseases. The clinical investigation and treatment is therefore not as satisfactory as can be expected. This incldent has not only caused waste in time and money but also the unnecessary loss of life.

At propert, Theiland is severly short of dectors and the reason is fairly apparent. Now greduates often socks additional knowledge abrend in order to attain higher competency in their fields of redeen treatment. Therefore, a local centre offering post - greduate course in Tropical Derivatelogy for dectors on' purses will help to trip the dutflow abread. This, in the long run, will cure the migration and help to increase the number of these specialiced res.

Today, large hespitals in Thailand has its own Dormatological Department but there is no close co-operative work carried out between these bodies. Therefore, this establishment a Dermatological Institute will sorve as a starting point for associated and co-operative work in the verification of the couse of skin disease. This will be of beneficial and apaired volue not only to the people of Thailand but also to these people living in countries within the Tropical goes and to making as a whole.

Apart from this reason along, other countries have realised the Reportence of the establishment of an institute for research work in Tropical

.../ Dormatology

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Dereatology ospecially that of Japan and U.S.A. Some of the forcenst authorities on Dereatology from Japan have made application for the establishment of a research centre hore due to the fact that Thailand has an alcost year round tropical climatic condition. This factor influenced the conclusion that there must be an abundance of local skin diseases and research work can be zost beneficially carried out here. The arrival at this conclusion was made after a team of Dermatological experts from Japan have made intensive study in 1966 in Bangkok.

The department of the Mary, Naval Medical School and National Naval Medical center, Bethesda, Karyland U.S.A.: in preparing Global Medicine Training Programme; has asked to include in the book, our publication on Superficial demathycesses in Sangkok, Miniland, in J.D.I. & 104: 1967 and to reproduce them for U.S. Military activities. This means that even U.S.A. has accepted the important of Tropical Dematology. This institute will surely be a right centre for this cooperative work internationally.

Scheme of administration

The National Institute of Dornatology of Thailand belongs to the office of the underscenetary of the State for Health. The administrative countities; under chairmanship of the minister of Health, have been appainted by the cabinets since Forember 21, 1968. The administrative counties compose of:-

- (1) The Hintster of Public Realth as the President,
- (2) The Secretary General of the State for Public Realth as Vice President.
- (3) The Director Ceneral of the department of Modical Service.
- (4) The Depu Secretary General of the State for Public Realth.
- (5) The secretary Conoral of the National Commando Dovelopment Board, .
- (6) The Scoretary General of the National research Council,
- (7) The Director of the Dudget Durons.
- (8) The Director Coneral of the Department of Health.

.../ (9) the Director

- (9) The Diroctor Constal of the Department of Medical Sciences.
- (10) The Doon of Siriraj Modical School,
- (11) The Down of Chulalongkorn Hospital, Hodical School.
- (12) The Dean of Colongmal Hedical School.
- (13) The Prosident of That Hedical Society.
- (14) Chairman of Dematological Group of Mailand.
- (15) Dr. Rendo Fotrajaras as secretary general and planning officer.

The Covernent have financed the six stroles building of the Institute, Staffs and some equipments in 1969. The Institute vill be situated in the compound of Honon's Hospital. The building is to be finished in next year and to vork in 1971. Hhen it is fully functioned, about 200 patients per day both male and funale can be treated here as out patients. The Institute also have about 30 bods for in patients. Actually the work have started since 1963. The statistics are as followed:-

Service section

		1963	1969
Number of out patients		3,637	4,047
in patients		55	70
biopaies ond sections	н 1919 - Настания 1919 - Настания	102	367
complete and cultures		302	230
photography		149	97

Research cootion

- Rosco Kotrajaras in Hycotana Journal of Department of Medical services
 171 50-60 : 1968
- 2) Bonco Kotrajaras in Pathogenesis of Dermatophytosis in Bangkok, Thailand J.D.I. : 1967

Execution Section

... / (1) Aublic education

- 27 --

(1) <u>Public o Vention</u>

- a. Thurd was a locture and booklote on "Dematophytosis in Diabetic" Policets" distributed by the Diabetic society.
- b. Booklots on skin discasos and skin cancer, distributed by National cancer Institute of Tualland.

(2) some to execution

- o. Conforunces
 - 1. Domatological Coaferoaces noathly for Domatologiets and others.

网络特别英国马马

- 2. Domatological classs contily for intures.
- 3. Domostological mostings annually for periods of That Modical Associations.
- 4. Dematological postings annually for doctors of Department of Modical services both in Bangkok and provinces.

Joint Frojecta

- 2) Dometological instruction to statent purses of the Department of Hedical services.
- 2) Post graduate instruction in Dervatology to graduate dectors from provinces arren wit the Dervatological group of Thailand.
- 3) Postatological concultation to Leprony clinic of Derpartment of Health, Histotry of Realth.
- 1) lycology instruction to podical students of Chulalongkorn University.
- 5) lycology instruction to notical students of Reachibboril Hospital.
- 6) Recearch in domatophy tosis associated with SIATO LAD
- ?) is cological test for scholarships of the Givil Service Departmente.
- 8) forthe lootures to provincial cospitals.

- 2. Central Laboratory in Women's Hospital
 - Project Requested for Poreign Technical Assistance
 - 2. Requesting agency : Department of Modical Survices and Haalth Ministry of Public health
 - 2. Project Title : Central Laboratory in Mosen's Hospital
 - 3. Source of Assistance: Japan
 - 4. Objective of the Project i To improve Central Indentity in Monon's Hospital, with 1357 bed one sity and served about 300,000 outputients and 53,000 in patients annually.
 - 5. Origin or back ground of the project i At the present, laboratories of the Hospital are separated due to the system and location of the units. Women's Hospital new has been in the process of changing to be a general hospital, a laboratory of which is planned to be a control one, including clinical Pathology, nicrobiology, biochemistry. It is hoped that this laboratory will function more efficiently in medical aspect with less man powers and loss cost of set up and mintemace
 - 6. Scope of project and work plan
 - a) Duration 4 yrs. (1973 1976)
 - b) Site of the project, Weach's Respit-1, Bungkek
 - c) Target able to handle 200 tests in Biochanistry, 400 specimen of
 - microbiology and 300 specimen of Olinical Fathology daily.
 - d) Hothod of operation. Set up control equipents. A clinical
 - pathologist will be doctor in charge with mid of Thui-
 - and qualified foreign modical technologist.
 - 7. Assistance requested.

a) Bepert

Field of operation	Tots1 Man/months of expert	1973 151	1974 Em	1975	1976	Total cost of amport (US,‡S)
1) Mod. toohnologist				1	1	
- Hicrobiology	1/12		1/12	i i	Í	
- Clinical Pathology	2/24		1/12	1/12		
- Biochenistry	2/24	· •		1/12	1/12	1
Total	5/60		2/24	2/24	1/12	

-- 29-

7.1 Justification of request for experts Toal modical technologist (B.S. degree level) are not enough. The foreign expert will help to set up the modern Laboratory and advise the local technologist to run the laty elater in. b) Fella ship.

	na la seconda. Na seconda de la seconda			eta La constante		
Field of study/	Totsl	1973	1974	1975 -	1976	Total cost
training / study tour	itin / siccibo					of Followst
	of Fallowship				· .	(15. 5 5)
1) led. technologist						
lister degree level			· · ·			
- Merediology	2/24	1/12	1/12	•	-	
- Clinical Pathology	2/24	1/12	1/12	•	•	
- dicobealstry	2/24	1/12	1/12	•	а. —	
2) Doctor - study tour				1/12		
Total	6/72	3/36	3/56	1/12		
	ļ					

7.2 Justification of request for followships, Having well trained wells: technologist to be in charge of each section, and a doctor who is in charge to the second refresh in brosder sepact.

Description	Cost of e	gui pros	1	103 (US.88)	total cost
	19:3	1974	1975	1976	(09. \$ \$)
I. Ultra centrifuge	10,000				
2. Lutopotte colory count	1,600				
3. Flucrescent microscope	12,000				
4. Septio bood	8,000				
5. Binocular microscope / 2	2,500				
6. Sefrigerator 50 ou. 14	2,500				
7. Rotary microtone precision					
vith ultra thin out	5,000	1.1			
8. Cryocut complete set	5,000				
is subcastic microtopo		:			
Kidle sharpener	2,000				!

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					an da San San San San San San San San San San
Description	Cuct of	uqtyju	ent ra	(\$,57) bore:	Tutul ocst
	1973	1974	بعاهد متدهده ا	1976	(03. \$ 9)
iv. Automatic blood cell count / 2	3,000				
II. Automatic tissue processor / 4 12. Olympus olosod olrouit	-				
televisión dicroscope 13. 3 - SH - Iux dicroscope Jeite	4,000 6,250				
14. Ph - motor 15. Autostalner	1,500 2,500		 		
Total	80,850				s) Total cast

•

Disseription	Cost of	Total cost			
	1973	1974	1975	1576	(US. \$ S)
I. Speatrophotoceter	[12,000		
2. Selence 0.1 mg.			2,000		
). Platelet Aggregometer			12,000		
4. Plase contratatoroscope / 2			6,000		
5. Lutomatic analyzer with					
flass photometer attachment		. :			
- 4 channel	Í		20,000		
6. Beckson Microsom high					
voltage electrophoresia					1
couplete set with densitameter					
end power supply	·	1	4,000		
7. Refrigerated contribuge		- 			
* Total	1.	ļ	101,000		

d) Project cost (to be completed by D 1 F C

ана алана алан Алана алан

3. Harmorrhagic Fever Control

Ministry of Public Health

Department of Communicable Disease Control Division of General Communicable Diseases Programse Responsibility - Wichit Maturosapas M.D.

Dangua Hacmorriggia Faver Control

Contonts

- 1. Surmary of DFF Control and Targot plan 1975 1979 P. 1
- 2. Situation of DiF in different parts of Thailand P. 2 3 1973 - 1974
- 3. Kep of Theiland Showing provinces and Communities regarded as the centers of endemicity P. 4 5
 4. Proposal of assistance requested P. 6

-32.

1. <u>Control of Ponego Hororrhegio Fovor Programe</u>: Planning proposal of DIF control in Thailand for 1975 - 1979 (5 years plan) which has been accepted by DHF and Encephalitis corrittee and Ninistry of Public Health, will be greatly dealing with the suppression of outbreak, epidemic and reduction of DHF cases in communities where DHF is being a child sence and the nest serious public health problem as well. The details of control and preventive procedures are as follows;

e. Specific control measure - ULV application of Malathion and Femitrothion ULV Concentrate Insecticides, Abato Sand Granulo Larvicide will be applied to communities of provinces and cities, particularly among urban and sub urban areas on the basis of center of endemicity, high risk of DUF outbrock and epidemic and proviously high cases and deaths reported. With the limitted fund, equipments and skilled personnel to carry out the programe there fore, the highly important conters of endemicity and high risk areas be aimed as the initial targets to be treated first. The details of control activities are as follows;

Phase 1 - ULV application in the quiescent period; during the nonth of January and March, the ULV applications at an interval of 10 - 14 days.

Phase 11 Intensive control measure; during the month of May and October, all committees of provinces and cities where high cases and outbrock of DHP over the past 5 provinces years have been reported; will be treated with ABATS every 3 months for all potential breeding places of Aedes Mesquitees or two ULV applications at an 10 - 14 days interval and repeat every two months. Aedes Mesquite density must be kept under control for at least the six rainy months of the year and this procedure should be accomplished intensively by the use of one of the two notheds monthened above or combining together an special occasion.

b. Conoral control and prevention;

Phase 111 - For the rest of provinces and communities where DiF situation at the present, is far toyon aserious health problem, all control and prevention measures are to be done by local health authorities such as general health education concerning to control and elimination of breeding places, prevention children from resource bits est. including outbreak interruption when for DNF cases occur.C.D.C. Bivision will assist only when epidemic arises.

ontrol Macsuros Tining		of integration	Areas and population targets			
			Provinces	Comunities	Population	
Phese 1	1975	15	8	127	1,176,770	
	1976	1997 - Maria Santa S	19	240	2,210,220	
	1977	Ħ	21	275	2 479,180	
	1978	34	21	275	2,479,180	
	1979	3 1	21	275	2,479,160	
Phc 30 11	1975	50	12	104	787,480	
	1976	#	21	182	1,346,460	
	1977	#	28	259	1,742,280	
1. Start 1.	1978	1	28	259	1,742,280	
	1979	h	28	259	1,742,280	
Phase 111	1975 - 1979	85	23	165	4,793,230	
Totel	1975 - 1979	75	2	699	8,814,790	

The details of plan operation are shown in the following table:

	Avorago no	rbidity reto for the w	holo kingdom 59.43	/ 100,000
Morbidity rates	Northorn region	North-Ocstorn region	Control rogion	Southern region
	56.84/100,000	70.25/100,000	81,41/100,000	24.59/100,000
> 400/100,000	Phero		.	
351-200/100,000	-	_	Chanthaburi	l di la si s
301-350/100,000		and the second		
251-300/100,000	-	나는 지수는 문화 문제 지수는	-	•
201-250/100,000		Yasothorn	-	-
161-200/100,000		• • • • • • • • • • • • • • • • • • •	Reyong	-
121-160/100,000	-	Chelynphun Khonkern	Nakion Pathon	
81-120/100,000	Utteredit	Rol St	Nontheburi	Krebi
		Nohe Serekten	Saraburi	
		Ubon Ratchethand		
			Nekhon Neyok	•
66-80/100,000	Nekhon Seven	Nakhon Ratchasina	Lop Burl	i faite de la service
			Prechinburi	
			Ang Thong	
			Tret	
45-65/100,000	Phitsenulok	Buri Run	Seint Preken	Songkhle
	Sukhothe1	Kalasin	Sciut Songkhren	
			Chonburl .	
			Ayuthaya	
			Chainat	
			Petcheburi	
			Prechuep Khiri Sh	ເກ
20-44/100,000	Kenpheeng Phet	Udon Theni	Recheburi	Yele
•	Uthei Theni	Nekhon Phenom	Pathon Theni	Nakhon Sri i
	Phichit	Sekon Nekhon	Bengkok	Surat Theni
	Lunphering	Si Sc Ket	Sciut Schon	· ·
	Chieng Kei		Suphan Buri	
	Tck		Chechoengeeo	
			Ancheneburi	
< 20/100,000	Lamphun	Surin	t=	Treng
	Potchebun	loei		Renong
and the second sec	Nen	Nong Khai		Phuket
	Chicng Rei			Chonphon
•	Mce Hong Son		and the second second	. Phuttalung
				Narathives
		and the second	•	Putteni
				Satur
				Phong - nge
		•		
al a su se su t			·. ·	

D.H.F. sitiation of various provinces in different parts of Thailand for 1975

Avorago norbidity rate, estimated from reported DiF cases of 5 previous years (1970. 1974) per 100,000 population aged below 15 years.

* Report of notifiable diseases, Central Spiderdologocal Office Office of Under Secretary Ministry of Public Health.

+ Approp. Tetal population of Thailand 39 Millions.

<u>ц</u>, а

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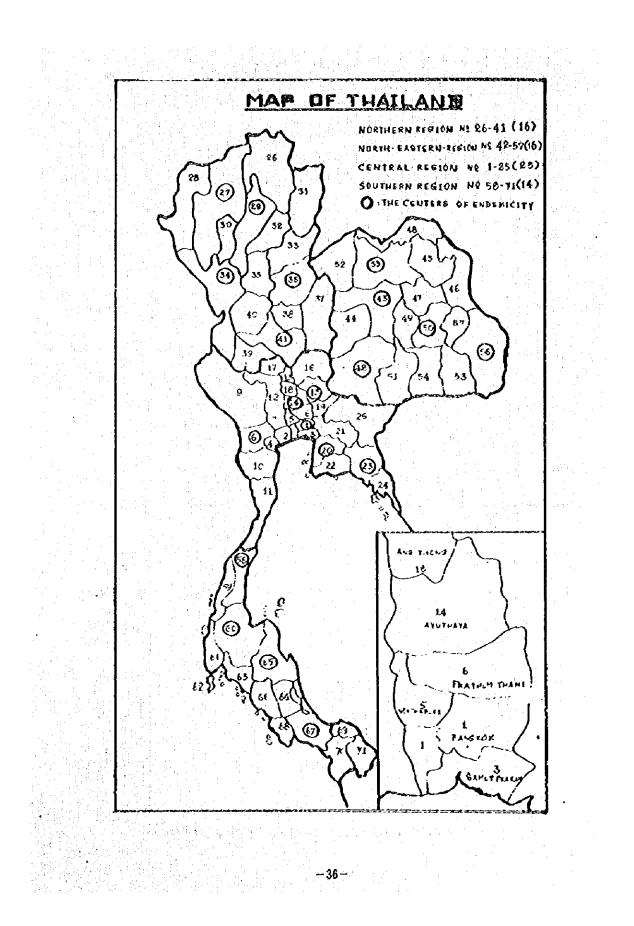
3/...

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per situation of various provinces in different parts of Thailand 1974 Average morbidity rates, estimated from reported cases for 5 previous years (1969 - 1973) per 100,000 population aged below 15 years

broidity rates	Northern region	North-eastern region	Central region	southern region
	75.05 / 100,000	69,24 / 100,000	95.84 / 100,000	19.04 /100,000
>400/100,000	Phre			-
51-400/100,000			Chanthaburi	-
301-350/100 ,00 0		(a) a set a for a set of a		
51-300/100,000		n se det loste do loste na loste de State de State		•
01-250/100,000			Nekhon Pethón	
61-200/100,000		•	Rayong	-
21-160/100,000		Yasothorn Khonkean Chalyaphun	Scrut Sòngkhren Nontheburi Sereburi	
81-120/100;000		Roi St Hehe Serekhen Ubon Retchetheni	Prachinduri Ang Thong Lop Buri Nekhon Nayok	
66-80/100,000	Uttaradit	Nekhon Retchesine	Strut Preken Sing Burl	-
45-65/100,000	Nekhon Seven Sukhothei Petchebun	Burt Ran	Retcheburi Chei Net Tret	Songkhla
			Petcheburi Chonburi Ayutheye	
20-44/100,000	Chieng Mei Iempheang Tak Phitsenulok Xampheang Phet	Kelnsin Nekson Phanon Udon Theni	Kanchenaburi Pethon Thani Chachoonguso Seruit Sakhon Suphan Buri Prechusp Khiri Khan	Sutat Therd Krebi Yala Nakhon Sri - Theserat
<20/100,000	Phichit Uthai Thani Iamphun Nan Chiang Rai Kao Hong Son	Nong Kiai Sakon Nakhon Loei Si Sa Xet Surin		Pheng-nga Phukot Treng Chorphon Renong Satun Pattani Phattalung Narathiyat

* Report of notifiable diseases, Central Spiderdologocal Office. -35-



PROVINCES	100 100	PRÓVINCES	NO	PROVINCES
CENTRAL REGION		NORTIERN RECION		
FANCKOX	26	CHIANG RAI	50	BOI ST
SAMUT SAXION	2.7	CHIANG MAI	52	1031
SAMUT PRAXAN	28	MA3 HONG SON	53	SI SA XET
SAMUT SONGKURAM	29	IANPANG	54	SURIN
MONTHABURI	: 30	LAMPÓON	.55	UDON TIVANI
PRATHAM THANE	31	NAN	56	UBON RATCHATHANI
NAKHON PATHOM	32	PURAS	57	YASOTHON
RATCHBURI	33	UTTARADIT	52	BURI RUM
KANCHANABURI	34	TAX		SOUTHISRN REGION
PETCHABURT	35	SUKOTHAI	58	CHUNPHON
PRACINAP XHIRI KHAN	36	PHITSANULOK	- 59	RANONG
SUPIRIN BURI	37	PHETCHABUN	60	SURAT THANI
SING BURI	38	PHICHIT	61	PHANG NGA
AYUTHAYA	39	UTHAT THANI	62	PHUK 3T
SARABURI	40	XAMPHAENG PHET	63	XRABI
LOP BURI	41	NAKHON SAWAN	64	PHATTALUNG
CHAT NAT		NORTHE EASTENN REGION	65	NAKION SI THAMPARAT
ANG THONG	42	NAXON RATCHASIMA	66	TRANG
NAKION NAYOK	43	KHON KA22	67	SONGKIELA
CHON BURI	14	СПАТУАРНИМ	68	SATUN
CHACHOZICSAO	45	saxon naxhon	69	PATTANI
RAYONO	46	NAKHON PHANOM	70	YAIA
CHANTHABURI	47	KALASIN	n	NARATHINAT
TRAT	48	NONG KHAI		
PRACHEN BURI	49	MAHA SARAKHAM		
	1	1		
				:

Assistances Requested; The proposal for DIF Control Programe assistance during 1975 - 1979, be listed as the following categories:

1. Insecticides; ULV Concentrated insecticides préferable are technical grade Fenitrothion and Malathion.

II. Transportation; Joops and small trucks to be used for ULW application, evaluation and follow up of control programs.

III, ULV Applicators; Kenvy duty ULV and light weight ULV Applicators are desperately required to cover all targets plan being increased annually.

IV. Fellowships and Training programs; Addes resquite elimination and DAT control are very difficult and complicated, it also need/neny high skilled personnel with experiences on epidemiology, enterplogy and well acquaintance with rachines and insocticides as well.

The details of assistance requested are in as the following table:

Yoer		Catégories Reqirèd								
	Insecticidos	Voluiclos	Equipments	Fellowships						
1975	F. 4,000 Litros M. 2,000 "	2	HD ULV Appl. 1 Unit LW ULV Appl, 2 "	Acedonic 1 Training 2						
1976	F. 6,000 " M. 4,000 "	2	HD ULV Appl. 2 " LW ULV Appl. 4 "	Academic Training						
1977	F. 8,000 " M. 6,000 "	2	ID ULY Appl. 4 " LW ULY Appl. 6 "	Academic Training						
1978	F. 10,000 = M. 8,000 =	2	10 ULV Appl. 1 " LW ULV Appl. 2 "	Acadendo Training						
1979	F. 12,000 " M. 10,000 "	*								

P. - Fenitrothion M. - Malathion HD - Hoavy duty rodol IN - Ideth witcht rodol. Diagnolie filler peper stould be included in requised proposed

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4. The Five Year Development Plan of the Faculty of Tropical Medicine

	· 동안 가는 것은 물건이 있는 것을 많은 것이 가지 못한 것 같아요. 가지 않는 것이 있는 것이 같이 있는 것이 있다. 이 가지 않는 것이 있는 것이 있는 것이 있는 것이 있는 것이 있는 것이 없다. 이 가지 않는 것이 있는 것이 없는 것이 없는 것이 있는 것이 없다. 이 가지 않는 것이 없는 것이 없 것이 없는 것이 없 않이 없는 것이 없다. 것이 없는 것이 없다. 것이 없는 것이 없는 것이 없는 것이 없는 것이 없는 것이 않이	
1. Requesting agency!	Faculty of Tropical Hedicine, Mahidol University,	
	Bureau of S.ate Universities.	
2. Project title:	The Five Year Development Plan of the Faculty of	
	Tropical Medicine: Establishment of the Diagnostic	
	Centre for Bacterial and Parasitic Diseases of	
	Public Health Importance in Thailand and Southeast	
	Asia.	

Project Request for Foreign Technical Assistance

3, Source of assistance: Japan

4. Objective of the project:

The Faculty of Tropical Medicine, Mahidol University is requesting the Government of Japan to assist in the "Establishment of the Diagnostic Centre for Bacterial and Parasitic Diseases of Public Health Importance in Thailand and Southeast Asia.

5. Background of the project:

Tropical Medicine and Public Health are essentially important to the countries in Southcast Asia since they are dealing with the diseases and the health of the people in the rural communities comprising of about 80% of the total population,

For economic development of a country, a strong and healthy population is needed; unhealthy communities retard national economy. Since the nations of Southeast Asia including Thailand are hampered in their social and economic development by the presence of indigenous tropical diseases which and be prevented and controlled, it is our duty to provide some protection for our people from those diseases. However, before effective treatment, prevention and control can be applied, we have to initially study and know the etiology, epidemiology, ecology and nature of the individual diseases. Moreover, modern medicine, may it be curative or preventive, cannot be practised and be of good progress without adequate laboratory support and sustained medical research in the country. These are the reasons why the Faculty of Tropical Medicine has been established in Thailand.

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The Faculty of Tropical Medicine was established within Mahidol University in 1960 with the aims and objectives toward teaching (for D.T.M.& H. M.Sc. and Ph.D. in Tropical Medicine), research and clinical work related to the curative and preventive aspects of cropical endemic diseases. It functions through (1) the Bangkok School of Tropical Medicine (teaching), (2) the Research Laboratories (in Bangkok and in field staticas in rural areas), and (3) the Hospital for Tropical Diseases (patients for teaching and clinical research).

Plan to establish the Diagnostic Centre

The objectives of the Faculty of Tropical Medicine are:-

1. Teaching the principles of endemic diseases, parasitology, preventive and community aspects of tropical and endemic diseases with special reference to Thailand and other Southeast Asian countries.

2. Promotion in the field, and in the Faculty laboratories of research in tropical, parasitological and certain microbiological diseases which are important to Thailand as well as other countries in Southeast Asia.

3. Clinical care of patients suffering from tropical and endemic discases and clinical research including controlled trials of new chemotherapeutic compounds and other medical problems of Thailand and neighbouring countries.

To fulfil the above mentioned objectives, it is realized that correct diagnosis of the diseases is of utmost importance. At present, the diagnosis of parasitic infections is based principally on the demonstration of causative agents. The diagnostic difficulties frequently occur in patients with tissue parasites, in whom only the clinical diagnosis can be made. Immunological diagnostic tests have been well established only in emorphisms, in which various immunological tests have been successfully developed (namely, gel diffusion test, immunoelectrophoresis, counter current electrophoresis, hemagglutination, complement fixation, latex agglutination and skin tests). In other parasitic diseases such as angiostrongylineis & gnathostomissis, the immunological tests are at early stages of development and have not been used for routine diagnostic service.

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In the bacteriological laboratory, only limited genera and species of bacteria can be accurately identified. This is due mostly to the lack of well trained bacteriologists to run the laboratory efficiently. In future development will be directed towards the diagnosis and typing of bacteria which are of public health importance in Thailand such as enteric organisms, cholers, streptococci, staphylococci, diphtheria and mycoplasma.

In view of the fact that the Faculty of Tropical Medicine is the SEAMED National Centre for Tropical Medicine and Fublic Health of Thailand, it should serve as a diagnostic center for the tropical and endemic diseases in Thailand. Being such a centre, the Faculty has received frequent consultations on the diagnosis of many tropical diseases, and very often are not able to respond favorably to such consultations owing to the fact that the diagnostic techniques for the diseases consulted have not been developed or being at the developmental stage as to provide firm diagnosis of the disease. It is considered as a matter of urgency then to establish the "Diagnostic Centre for Bacterial and Parasitic Diseases of Public Health Importance in Thailand and Southeast Asia". This Centre will serve 2 functions:-

> 1. To provide diagnostic service on bacterial and parasitic diseases of public health importance in Thailand and Southeast Asia.

2. To carry out research in the disgnostic areas.

6. Scope of the project and work plant

- a. Duration: 1975-1979
- b. Site of the projects

The Faculty of Tropicol Medicine, 420/6 Rajvithi Road, Bangkok 4.

- c. Target
 - 1. Parasitic infection

Parasitic infections of public health importance in Thailand are malaria, amoebiasis, opisthorchiasis, hookworm infections, fileriasis, gnathostomissis, angiostrongyliasis, paragonimissis, etc. and those considered potentially of public health importance include trichinosis, schistosomiasis and visceral larva migrans. The development plan consists of :-

1.1 Training the present staff to be able to identify various species of parasites. Tools needed for the identification of the parasites include:

- Tools for morphological identification, e.g. various staining procedures, the scanning electron microscope and the ordinary electron microscope.

- Tcols for biochemical identification, e.g. enzyme staining. - Immunological tools.

1.2: To establish immunological tests for the diagnosis of parasitic infections. The tests that have already been established are gel diffusion; immunoelectrophoresis, counter durrent electrophoresis, heragglutination, latex agglutination, complement fixation tests for amoeblasis, and indirect immunofluorescence test in malaria. The battery of these tests should be able to apply to other parasitic infections. The material most needed is the appropriate antigens specific for the disease, and these should be purified in such a way that non-specific reaction or broad reaction due to sharing of the antigens among the parasites can be eliminated. The antigens need not be prepared in the Faculty of Tropical Hedicine but can be sent over from other laboratories.

1.3. To develop the tests which are of high sensitivities such as the radioimmunoassay, and the quantitative estimation of the immunoglobulin especially the IgE by the RAST technique.

1.4. To develop clinical ancillary unit, such as.-

- X-ray unit.
- Scanning equipment.
- Clinical blochemical unit, e.g.for isoenzyme determination.

2. Bacterial Diseases

The bacterial diseases of public health importance in Thailand include enteric bacteria, cholera; tubercle bacilli, staphylococci, streptococci, bacteria of upper respiratory tract infections (pheumococci, mycoplasma,

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psittacosis). The less public health important bacteria which need further development include anaerobic bacteria.

d. Method of operation

1. Train the local staff to be able to isolate and identify a much broader spectrum of pathogenic bacteria (c.g.anaerobic organisms. sycoplasma, rickettsia and chlamydia) and other parasites of public health isportance.

2. Improve and re-equip the present microbiology laboratory so as to be able to carry out routine and research work on bacterial diseases of public health importance.

3. Develop advance immunological tests for the diagnosis of bacterial, and parasitic infections.

7. Assistance requested

a, Expert

Field of operation	Total Man/Honth of 'expert	1975 м/н.	1976 M/M	1977 H/N	1978 N/M	1979 H/M	Total cost of expert (US\$)
Professor or Associate						A 14	and the second
Professor in Immunology of	9/27	1/6	2/6	2/6	270	2/3	
Bacterial or Parasitic Infections						-	

7.1. The experts are needed for the establishment and development of the Diagnostic Centre for Bactetial and Parasitic Diseases. They will review the current situation of the work and make recommendation for further development. They will also advise and train the young staff in the department concerned.

b. Pellowship

Field of study/ training/study tour	Total Man/Months of fellowship	1975	1976	1977	1978	1979	Total cost of fellowship (U.S.\$)
1. Training	5/60	1/12	1/12	1/12	1/12	1/12	
Total	5/60	1/12	1/12	1/12	1/12	1/12	

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7.2. Justification of request for fellowships

The young staff in the Faculty of Tropical Medicine have limited basic knowledge and experience in diagnostic techniques in bacterial and parasitic diseases. They need further training at the well-developed academic institutions such as those in Japan (University of Tokyo, for instance).

1.10

e. Supplies and equipment

. . . .

	 ()				A (11 6 6)	Total cost
Description	1975	or equ 1976	1900 1977	1978	ed (U.S.\$) 1979	(U.S.\$)
As described below*	+	+	+	+	+	
Tetal	+	+	, +	+	•	

* The equipment listed are arranged according to priority. The equipments which are of necessity, but are already available in our Faculty are not listed.

1. Equipment for microbiology leboratory

- Lamina flow cabinet for safe handling of highly contaminated specimens.

- Walk-in incubator.
- Anacrobic cabinet.
- Incinerator.
- Roller drum.
- ~ Reciprocating shaker.
- 2. Equipment for Immunology laboratory
 - Immunofluorescence.
 - Spectrophotometer.
 - Deep freeze
 - Gel slab polyacrylamide electrophoresis densitometer.
 - Preparative immunofocussing equipment.
 - Automatic microtiter equipment.
 - Refrigerated fraction collector.

- 3. Radioisotope equipment for development of radioimmunoassay.
 - Woll scinctllation counter.
- Microfuge.
 - Variable automatic diluter.
 - Liquid dispenser.
 - Chromatography equipment,
 - Flow inducer.
- 4. Ancillary equipment
 - Clinical Stochemical unit.
- X-rays unit including T.V., and anglography
 - Scanning equipment.
 - Electro Encephalogram.
 - Electre Myelogram.
 - Surgical equipment.
 - Pathological equipment.
- 5. Scanning electron nicroscope.
 - 6. Electron microscope.
 - 7. Expendable supplies, glassware.
 - 8. Reagents and chemicals.

7.3. Justification of request for equipment

Scientific equipment and supplies are necessary for the development of the diagnostic laboratories in the Paculty of Tropical Medicine. Ressons are herein given to justify the request:-

7.3.1. Equipment for microbiology laboratory

a. Lamina flow cabinet is necessary for safe handling of highly contaminated specimens. The instrument should provide both product and personnel protection.

b. Walk-in incubator is large size incubator. It is useful for a large scale culture of microbial specimens, and for a small scale production of microbial veccine.

c. Anacrobic cabinet is necessary for anaerobic culture of microorganisms. It is intended to replace the anaerobic jar.

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d. Incinerator is useful for disposing of carcasses of snimals.

e. Rooler drum will be used primarily for tissue culture. It is useful also for the immunoadsorbent study employing cyanogen browide activated sepherose.

f. A reciprocating shaker is intended for use in the mass production of bacterial antigen such as lipopolysaccharide from Gram negative bacteria.

7.3.2. Equipment for immunology laboratory

a. Immunofluoréscence equipment are needed for many disgnostic spplications vizi

- Direct and Indirect issunofluorescence tests for bacterial and parasitic infections.

- Demonstration of surface antigens on cells such as lymphocyte or macrophage. For the lymphocyte, this technique can help in enumerating the number of B.cells.

- Demonstration of immune complex in the tropical diseases chosen for study.

b. Spectrophotometer has a wide application such as for protein determination, enzyme assays, standardisation of the number of bacterial or red blood cells used in the bacteriolytic test, hemagglutination, and complement firation tests.

c. Deep freeze is needed for storage of very labile materials. Though some deep-freezes are already available in the faculty, they are not sufficient to meet the demand.

d. Gel slab polyacrylamide electrophoresis kit and the necessary densitometer are needed for the qualitative and preparative work on purification of the antigen and antibody.

e. Preparative immunofocussing equipment is needed for the sophisticated preparation of highly purified antigen.

f. Automatic microtiter equipment is needed for a large scale, work on disgnosis of microbial infections. g. Refrigerated fraction collector is useful for purification of antigen and antibody. Refrigerated type is specified to obviate the unpleasant working condition in the cold room when low temperature atmosphere is needed.

7.3.3. <u>Redioisotope equipment</u> listed are required for development of radioimmunoassay (RIA). This technique is one of the most sensitive technique currently used in the diagnosis. Light infections can be diagnosed by the RIA, where other tests fail to do so. The test is also useful for the determination of IgE and other pharmacological mediators of hypersensitivities.

7.3.4. Ancillary equipment

The equipment listed are essential in a way that they provide useful and reliable clinical information so that results from the diagnostic center can be appropriately assessed.

7.3.5. Scanning electron microscope

This is very useful for the taxonomic classification of the parasites newly discovered. It also facilitates identification of species of parasites.

7.3.6. Electron microscope

This instrument is used to study various bacterial and parasitological problems of academic interest. For example, to study the fine detail of the structures of bacteria and parasites, to examine the sub-cellular fraction of the parasites, to demonstrate the binding site for macromolecule on the surface of the microorganisms, to study the pathology of the organs infected by pathogens etc.

	Totel cost	Cost of assistance (U.S.\$)							
Description	of the project	1975	1975 1976		1978	. 1979			
Expert									
Pellowship									
Equipment									
Total									

d. Project cost (to be completed by DIEC)

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8. Counterpart contribution

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Table A. (If ALD project)

	Total counterpart contribution (Raht)	1975	1976	1977	1978	1979
Ol Personal services						
02 Travel						н. 1947 - 1947 - 1947 - 1947 - 1947 - 1947 - 1947 - 1947 - 1947 - 1947 - 1947 - 1947 - 1947 - 1947 - 1947 - 1947
03 Transportation of things	and and a second se Second second					· .
05 Rent and utilities						
06 Printing and reproduction		t at s	1			E
07 Contractual services						
08 Supplies and materials						
09 Equipment						
10 Construction						
Total						

		Total counter-			[
	Description	part contribution (8aht)	1975	1976	1977	1978	1979
1.	Conterpart						
	personnel		•				
	a. Professional staff						
	b. Other staff						
2.	Land and buildings						
3.	Equipment						
4.	Miscellaneous	· · · · · · · · · · · · · · · · · · ·					
	Tótal						

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9. Benefits expected to receive from assistance requested

9.1. Thailand will have the diagnostic centre for bacterial and parasitic infections. This centre is expected to provide diagnostic service to all hospitals and institutions all over Thailand. Its establishment will greatly reduce expenses to be used in setting laboratories in places and institutions in which technical personnel do have much work load already in carrying out routine tests.

The Centre will also give services to other academic institutions in Southeast Asia.

9.2. The centre will function as a training ground for doctors, scientists and technicians to be familiar with advance diagnostic methodology.

9.3. Research carried out by the centre will be of most valuable to the country in solving diagnostic problems of significant national interest.

9.4. Standard of teaching and research will be raised. It follows then that students from neighbouring countries as well as those from Thailand will. Setter benefit from the course.

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5. Phyathai School of Dentistry

· PROJECT REQUEST FOR FOREICN TECHNICAL ASSISTANCE

1. REQUESTING AGENCY:

Department: Phyathai School of Dentistry, Mahidol University. Ministry: Office of the Premier.

2. PROJECT TITLE:

Assistance to the Phyathai School of Dentistry (The Establishment and organization of a course in Dental Materials for the undergraduate and graduate dental students.)

3. SOURCE OF ASSISTANCE:

Japan

4. OBJECTIVE OF THE PROJECTI

The general objectives of the Physical School of Dentistry is as follows:

4.1 To educate dentists and the broad spectrum of auxilliary personnels i.e. dental technician, chair-side assistants, cto.

4.2 To foster and conduct active research programs in basic and applies areas of dentistry.

4.3 To provide preventive, diagnostic, and therapeutic dental services to the compunity.

4.4 To establish graduato and post-graduate educational programs.

The objective of the course in Dental Naterials is as follows:

1. To educate the dentists the basic knowledge in the science of dental materials so that he will be able to evaluate materials and discriminate between materials on the basis of their chemical, physical and mechanical properties.

2. To conduct a research program in dental materials, which according to the heat and humidity in this country may reacts differently and results as an unfavorable products.

5. ORIGIN OR BACKGROUND OF THE PROJECT!

Due to severe shorings of qualified dentifies. (Dentists-population ratio = 1156,000 in January 1969), the Government of Thailand plans to increase the number of qualified dentist and a new school of Dentistry is established in Mahidol University. Similar to most new dental schools in developing countries, this new school is rather short of qualified teachers and other facilities. Therefore it is really in need of foreign technical masistances including fellowships for its teacher for further

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study abroad and also laboratory equipments. The school is planning to establish a division of Dental materials. For this, an advisor, preferable a dental teacher with the experience in this subject is necessary to assist in the organization of the ourriculum and the set up of the dental materials laboratory. Also followships for the teacher for further study of the subject in foreign country is also needed.

6. SCOPE OF THE PROJECT AND WORK PLANS

- a) Duration 5 years
- b) Site of the project: Physical School of Dentistry,
 - Bangkok, Thailand.
- c) Targets

	1972	1973	1974	1975	1976
Dental students	85	125	158	185	185
Interns	8	10	15	15	20
Graduaté students	2	2	3	3	3
Post graduate, students	6	6	8	8	10
Dental technicians	10	20	20	25	30
Dental aids(Chair-side assis- tants)	10	- 25	30	30	30
Total number	121	188	234	266	278

d) Kathod of Operation: Teaching institution responsible for dental education, service and research.

7. ASSISTANCE REQUESTED:

a) Expert

Walt of A-outlin	Total Kan/Nonths of- Exports			
Field of Operation	1973	1974	1975	1976
Dentol Kateriale	1/4	-	-	1/6
• · · · · ·				

The expert requested in 1973 will introduce the proparations of establishing a research laboratory and suggest the essential equipments.

In 1976, his visit is again requested to follow up and guide the performance in the laboratory.

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b) Fellowship

	Total Nan/Months			
Field of Study	1973	1974	1975	1976
Dental Natorials	1/24	-	-	-

In accordance with the expert's visit and suggestion, a followship is required to train a researcher how to use various machines and equipments. At the end of his training he will return to operate the work in the laboratory under the guidance of the expert who also returns for a period of six months or until he is satisfied with the task performed.

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o) Supplies and equipment

As suggested by the expert.

6. Strengthening of the Department of Medical Sciences

DEPARTMENT OF MEDICAL SCIENCES

STRENTHENING OF THE DEPARTMENT OF MEDICAL SCIENCES PROGRAME

The Department of Medical Sciences was established in 1942 with the main objectives to assist medical and health personnel in diagnosis, treatment and prevention of diseases by laboratory investigations, to serve as the national food and drug testing laboratories, to prepare biological products for disease control, and to promote medical research. In fact, its roles and activities are similar to those of the so-called "National Institute of Health" in developed countries. Therefore it is most desirable to expand and atrengthen the activities of the Department so that it can function more efficiently in order to protect the people against epidemics and environmental hazards, to improve the quality of medical care, and to support the disease prevention and health promotion programmes through laboratory services, epidemiological surveys and health research activities.

Despite its key role in the health development of the nation, the budget of the Department of Medical Sciences amounts to only 1.3 percent of the total budget of the Ministry of Public Health. It is obvious that this very small percentage of the total NOFH budget does not at all reflect the important role the Department of Midical Sciences serves in the health development of the country. Notern medical practice, as woll as public health measures to survey and control infectious diseases, require the services of well-run laboratories with modern equipment and well-trained personnel. Laboratories are necessary in the diagnosis and management of patients, so that they can be more effectively and intelligently treated, and in many instances, good laboratory practice will save the patient's life as well as money. In the area of preventive modicine, a good laboratory is absolutely essential for surveillance, prevention, and control of discases. For the protection of health and walfare of the public, the control of foods, water, drugs and other environmental hazards would not be possible without the competent laboratory services. For this reason, it is importative that the strengthening of the Department of Kedical Sciences be given a very high priority, if not the highest.

There are four areas of luboratory services on which special emphasis should be focussed, neasily, disgnostic laboratory services, food analysis, modicinal plant research, and arthropod-borne virus research,

1. Inprovement of Diagnostic Latoratory Services Project

Parallel to the expansion of rural health services, laboratory facilities must be developed in order to cope with the increasing numbers of clinical specimens being sent for laboratory investigations. The expansion and consolidation of various disease control programmes have also created an increasing demand on laboratory extension, Success in the control of

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malaria, tuberculosis, venereal diseases etc. depends much upon the adequate and competent laboratory services for case detection and evaluation of the control programmes.

The results of epidemiological surveys in the past have indicated that about 60 percent of the Thai people harbour one or more kinds of intestinal parasites. Economic loss due to parasitic diseases in Thailand is incalculable. But so far the control of intestinal parasites through mass feeal examinations and mass treatment has not been carried out on the nation-wide scale. Therefore it is imperative that the mass campaign for the control of intestinal parasites be launched as soon as possible. Gastro-intestinal diseases caused by enteric bacteria also require more intensive control measures. To support the programmes for the control of these two important groups of gastro-intestinal diseases, diagnostic laboratory facilities in parasitology and tectoriology must be improved and expanded.

Assistance Requested (a) Expert

(ъ)

Experts	1975	1976
Parasitology	1 x 12 months	.
Bacteriology	→	1 × 12 months
Fellowships		

· · ·	1975	1976
Parasitolo;y	1 x 12 months	1 x 12 months
Bacteriology	1 x 12 months	1 x 12 months

(c) Equipment

(Please see the attached list.)

2. Isprovement of Food Analysis Project

During the recent years the adulteration of foods together with the contamination of pathogenic microorganisms, pesticides, heavy metals, and aycotexing in foods or food products have been recognised as new health hazards. The strengthening of the food analysis laboratory is therefore essential, not only for the protection of consumers, but also for economic reasons. Agricultural products including foods are main exports of Thalland, accounting for 50 percent of all exporting goods. Moreover, agricultural products are the most important source: of the national income. About 75 percent of the lobour force are engaged in agricultural products. The presence of toxic autotances such as pesticides and aycotoxins in agricultural products will seriously affect the national economy, as these contaminated products would be rejected by the importing countries. The presence of pathogenic organisms in foods and food products to be exported to forcing countries will

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statiarly cause an economic loss to this country. There is an urgent need, therefore, to investigate into these problems so that the appropriate measures for the quality control of foods can be uniertaken.

This project is also important for the control of gastrointestinal diseases and for the improvement of food sanitation.

Assistance Requested

(1) Experts		
	1925	1976
Food Chemistry		1 x 12 months
Pesticides and Mycotoxins Analysis	1 x 12 months	- 1
(b) Fallowships		
	1025	1976

		1972	17/0
Food Microbiology		1 x 12 months	1990 - 1 990 - 1990 - 1990 - 1990 - 1990 - 1990 - 1990 - 1990 - 1990 - 1990 - 1990 - 1990 - 1990 - 1990 - 1990
Pesticides Analysis	· · · ·		1 x 12 months
Quality Control of food		1 x 12 months	-
Instrumentation		-	1 x 12 months

(c) Equipment

(1) Double-beam spectrophotometer with recorder.

(2) Gas chromatograph programmed temperature with recorder.

(3) Autoclavo, electric, automatic, horizontal type.

3. Medicinal Plant Research Project

The research in the field of medicinal plants, with the cooperation of the Government of Japan, was initiated in 1967. The results have been very encouraging and it is strongly felt that the project should be continued, and that more extensive study on local medicinal plants should be undertaken. This project will aim at the application of the results of modicinal plants studies to the pharmaceutical industry in Thailand.

Assistance Requested

(a) Experte	1975	1976
Phytochemistry	1 x 6 months	-
Pharmacology	1 x 6 months	-
Pharmacy	-	1 x 6 months
(b) Fellowshirs		
	1975	1926
Phytochemistry	•	1 x 6 months
Pharmacology	-	1 x 3 months
Botany or Taxonoay	1 x 3 months	-
Pharmacognosy	1 x 3 months	-

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(c) Equipment

Two cers to be used in the survey of medicinal plants and for the maintenance of the botanical gardens.

4. Arthropod-sorna Virus Research Project

This project will deal mainly with entomological studies on victors of dengue haemorrhagic fever and Japanese B encephalitis with the purposes to support the Haemorrhagic Fever Control Programme and to investigate the epidemiology of Japanese B encephalitis in Thailand. In view of the widespread outbreaks of dengue haemorrhagic fever and the endemic occurrence of Japanese B encephalitis in a northern province (Chiengmai), it is necessary to conduct further studies on the epidemiology of these two diseases so that effective control measures can be formulated. The observed immunological relationship between the two diseases also needs clucidation.

Assistance Requested

(a) Experts

	1975	1976
Kedical Entonology	1 x 12 months	1 - 1 - 1
Virology		1 x 6 months
(b) Fellowshirs		
	1975	1976
Nedical Entomology	이 같은 사람들이 가지 않는 것	1 x 12 months
Spidemiology	1 x 12 months	-
(c) Equipment		

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(To be negotiated)

EQUIPMENT REQUIRED FOR THE STRENGTHENING OF DIAGNOSTIC LABORATORIES PROJECT

	Total	
	Number	Iten
	15	Nicroscops-Binocular, Student Nodel
	15	Nicroscope Light
÷ .	15	Replacement bulbs for Nicroscope Light
	2	Teaching Microscope
	2	Incubator, Large
	2	Vater Bath, Serological, 10-Rack
	6	Bot Plate-Kagnetic Stirrer Combination
	1	Autoclave, Large Horizontal
	1	Autoclave, Vertical
	2	Hot Air Oven, Large
	. Ż	Centrifuge, Small, Table Model
	1	Balance, Analytical, Mettler (or If Hot Mettler, with Weichte)
	1	Balance, Torsion
	4	Specirophotometer
	1	Pipette Wasbor, Automatic, with Rack
	1	pH Meter
	2	Shaking Machine, Serological
•	25	Burner, Bunsen
	2.	Flamo Photometer

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7. Improvement and Expansion of Health Centre

1. NAME OF THE PROJECT:

Improvement and expansion of Health Center

2. RESPONSIBLE DEPARTMENT:

Health Department, Ministry of Public Health

3. INTRODUCTION:

Imporvement and expansion of health centers has been made since 1953 with the purpose intensively expanding and strengthening of rural health. In 1961, this project was included in the economic development plan of the country in order to effectively develop health infra-structure in all the amphase and tembon as indicated in the objective and target.

It was evident subsequently that rural performance according to that project during the Plan Period (1967 - 1971) had met with difficulties which might be blassified as institutional and methodological of work. Hence, a subcommittee was set up by order of the excutive committee of NEDB in October 16,1969 to modify the project and to solve the problem of manpower shortage. 4. FRINCIPLE AND BACKCROUND:

There are approximately 34.5 million Theis at present, of which not less than 8% (about 29.3 million*) lives in rural area. The high population growth rate of 3.% will make the total increase of about one million each year. Consequently needs for health services are increasing while provisions of health services could not meet the people's needs. This couples with low socio-economic status contributes to more health problems.

low socio-economic status of the rural population results in educational backwardness and the lack of knowledge to prevent themselves and their families from getting diseases. Bad sanitation in rural areas, and inedequate nutrition are the main etiology of human's health deterioration. Decreased life expectancy, higher death rates, perticularly caternal and infant mortality and death rate from communicable diseases would produce adverse effect on the economy and security of the country.

As previously mentioned, this project has been in operation since 1953 and will continue to expand. By the end of 1971, there will be 233 first class health centers (expected target 555 health centers), 1,936 second class health centers

* Statistics of the Division of Registration, Hinistry of Interior, 1969

(expected target 4,378 health centers), and 2,903 midwifery centers (expected target 3,000 midwifery centers). These health and midwifery centers could cover only one-third of the population for the whole country. The expansion will never meet the need the expected targets if the rate of increase remains the same since population in the next decade is projected at 50 million in 1980 or 68 million in 2,000. The Government, in this case, will be forced to rise specialized campaigns in dealing with the problems which will result in higher cost of investment and operation.

Present difficulties with this project includes:

- 1. People are less interested in disease prevention and promotion of
 - health than in medical services.
- 2. Shortage of various levels of health personnel, especially physicians
 - which hinders the attainment of stated objectives.
- 3. Inadequate supplies of equipment and medicine.
- 4. Inedequate transport.
- 5. Shortage of operational funds.
- 6. Inadequate inservice training and supervision.
- 7. Less return due to the difference in operational policy and people's

felt-needs.

5. OBJECTIVES:

- 1. To adequately cover the people especially those living in rural areas with a network of health and midwifery centers.
- 2. To establish first-class health center, second-class health center and midwifery center in each corresponding amphoe, tazbon and group
 - of remote villages.
- 3. To improve on the efficacy of operation of these centers for greater return over investment cost.
- 4. To improve medical services to meet the people's felt-need.
- 5. To prepare to:
 - 5.1 fees such emergencies in consistent with the Plan of National Emergency Propagedness;
 - 5.2 phase in specialized health projects according to phase-status of the project.

6. TARGETI

Target in the establishment of health and midwifery centers are based on administrative division of the country area system.

- To establish at least one first-class health center in each anphoe and sub-amphoe (excluding municipal ones). It should be in the same location as the district office and is expected to cover about 50,000 people.

- To establish at least one second-class health center in each tember (except nunicipal tembers or those with first-class health centers). It is to cover about 5,000 people.

- To establish a midwifery center at bigger village level to cover about 2,000 people.

According to the administrative areas, the number of anyhoe and tanbon with one kind of health or midwifery center is as follows:

1	•	Number of amphée	538
5.	-	Number of sub-amplice	30
	<u></u>	Number of municipal empha	13
	-	Number of amplies and sub-amplies with	555
	•	a first-class health center	$1_{11} = 100$
2.	*	Number of tembon	5,054
		Number of municipal turbon'	239
	÷	Number of tember with first-class	437
	2	health center	
Ξ.	÷	Number of tembon with a second-class	4,378
		health center	
э.	•••	Number of tembon (population over	3,000
		5,000 each) with a midwifery center	

7. PLAN OF ACTION:

1. Building and couldcent

1.1 Build new health or midwifery centers according the target

giving priority to:

1.1.1 the location (see annex 1);

1.1.2 the geographical population characteristics and other

necessities,

This plan is expected to be completed first in the Northeast where most of the underprevileged section of the population live. It is to be an integral

part of the Northeast economic development plan.

1,2 To removate and improve on existing health centers with regard to:

1.2.1 the office and living quarters (see annew 2)

1.2.2 the furniture, equipment and other material

(see detedls on page 5)

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VOI D	BUILDING			REBUTIDING			REMARKS	
YEAR	1st H.C.	2ND H.C.	N.V.C.	1ST H.C.	2ND H.C	н.v.c.	NETAAAS	
1972	10	162 (120)	200	2	30	30	1. Numbers in brackots	
1973	10	286 (110)	200	8	30	40	represent those of second-class health	
1974	20	276 (110)	200	10	_ 40	50	centers upgraded from	
1975	20	276 (110)	200	10	50	60	midwifery centers. 2. Suilding cost of mid-	
1976	20	276 (110)	500	10	50	70	vifery centers is non-	
1977	20	276 (110)	200	n	50	85	governtental sources	
1978	25	271 (110)	500	n	50	85		
1979	25	27 <u>1</u> (110)	200	11	50	85		
1980	25	2n	200	11	50	85		
1981	25	271	27	n	50	25		
1982	. 25	128	<u> </u>	1 11	50	90		
1983	25	-	-	12	50	90		
.984	25		-	12	50	90		
985	25	} ·		12	50	90		
986	25	-		12	51	114		

1.3 Target for the building or rebuilding of health and midwl fery centers

NOTE

1ST H.C. = FIRST CLASS REALTH CENTER

200 H.C. = SECOND CLASS HEALTH CENTER

M.W.C. = MIDWIFERY CENTER

2. Inprovement of health personnels

2.1 Modify the staffing pattern of the health center (see annex 3)

in accordance with the planned improvement of the quality and quantity of work.

2,2 Correct stortage of personnel in the existing health canter.

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Improvement on the staff efficiency and operational methodology:
 3.1 Revise the operational methodology of the health and miduifery centers by vey of:

3,1.1 The revision of records and reports explasining simplicity, reliability and completeness.

3.1.2 The revision of first-class health center's activities in order to become an effective care to a group of second - class health centers and midvifery centers. Kodification of the activities will be based on the result of the plot project of the same nature in Pitsenalcks, Chlengmai.
3.1.3 The revision of the job description and manuals category of health staff.

3.2 Revise the administrative, supervisory, and reporting systems at central and peripheral levels.

3.3 Integration of certain specialized field campaign into the basic health services system. Experience in this regard from the Pitsanuloke and Chiengrai projects will be utilized.

3.4 Improvement of the medical care capetalities of the centers to meet the need of people as well as an integra part of preventive medicine. This could help relieve the rural hospital of minor disease case-load could in from peripheral ereas and at the same time could take convalescent cases from the hospital.

3.4.1 Retraining of the health center physician to raise his medical capability.

3.4.2 Training in medical care for nurses, sonitarians and midwives, to cope with minor diseases.

3.4.3 Provide for better equipment, adequate medical supplies.

3.4.4 Organizo a referral system among the hospital and the health center complex.

8. BUDGET:

Buiget is to be derived from governmental and non-governmental.

8.1 Regular buleats

8.1.1 Operational expenditure of existing health and midwifery conters (see annex 4);

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8.1.2 Renovation of health and midwifery centers, living quarters

and replacement of other natorials and equipment (see annex 5):

8.1.3 Building or rebuilding of health centers, and living

quarters (see arrex 6);

. 8.1.4 Other expenses for equiping health and midwifery centers (see annex 7).

8.2 Non-governmental budget:

8.2.1 Midvifery kit for the surse and midvife, medical quipment of the health and midwifery centers, and powdered milk are to be provided by UNICEP. 8.2.2 Private funds are used in the building of ridvifery centers. PROJECTED TOTAL EXPENDITURE DURING THE PERIOD OF THIRD DEVELOPMENT

YEAR	OFERATIONAL (BAHT)	RENOVATION (PAHT)	rebuilding (Paht)	BUILDING AND/OR EQUIPING OF NEW H.C & X.W.C. (EAHT)	TOTAL (P&BT)
1972	131,619,300	3,280,976	7,850,000	44,542,000	187,292,276
1973	148,808,300	3,280,976	12,800,000	70,396,000	235,285,276
1974	166,699,200	3,280,976	16,450,000	77,956,000	264,386,176
1975	186,331,650	3,280,976	18,550,000	77,956,000	286,118,626
1976	207,268,070	3,200,976	18,850,000	77,956,000	307,355,046
1977	228,905,920	9,385,300	20,075,000	77,956,000	336,332,220
1978	251,586,130	9,385,300	20,075,000	81,736,000	362,782,430
1979	279,121,430	9,385,300	20,075,000	83,236,000	391,817,730
1930	308,548,300	9,385,300	20,075,000	85,036,000	423,044,600
1981	337,914,240	9,385,300	20,075,000	81,212,700	448,647,240
1982	363,565,170	16,332,650	20,225,000	50,803,000	450,923,320
1983	387,812,360	16,332,650	21,000,000	24,112,560	449,257,510
1984	413,097,990	16,332,650	\$1,000,000	24,112,500	474,543,240
1985	439,661,540	16,332,650	21,000,000	24,112,500	501,106,690
1996	464,185,120	16,332,650	21,900,000	21,219,000	523,636,770
TOTAL	4, 915, 184, 720	144,994,630	280,000,000	902,339,700	5,642,519,050

MOTE: Building expense from Governmental budget is for health centers only

9. ELPECTED RATURNS:

The project sine at developing and expanding existing bealth dervice system, with following expected returns:

9.1 <u>Pirsei</u> ::

9.1.1 Health services will be spread out all over the rural areas to the advantage of those who live in remote places.

9.1.2 Certain communicable diseases such as typerculosis, lappress, tractions, etc., and malaria could be more effectively reduced.

9.1.3 Batter provision for the integration of specialized succession.

9.1.4 Better collection vitel and boalth statistics.

9.1.5 Replacement of expensive progress such as Mobile Medical Service is possible.

9.2 10010011

9.2.1 For national security purpose, bealth service served by permanent units could be regarded as a psychological advantage in a counter insurgency movoment.

9.2.2 Health personnel could belp or sortige in sould terring popula's affirs at greas-root lovel.

9.2.3 Effective organization at peripheral level could halp ast a pooe for other governmental agenties to redeploy their own personnel so that better cooperation is possible.

10 TALCARION

Systuation will be done periodically throught-

10,1 in evaluation sub-committee which would follow-up and evaluate the eccentruction and operation of health center and utilization health performer.

10.2 Improve on the reporting and resording system for hotter evaluation. 10.3 Analysis the performance would be done by the proposed health

plenning and ander the Risdetry of Public Realth.

Annex 1:

CRITERIA FOR THE SELECTION OF LOCATION OF HEALTH AND HIDVIPERY CENTERS. PAret-class health center:

1. Should be in the same tambon as the district office;

2, Should be located in populated abea;

3. Should not be near the second-class health center,

4. Road condition should be as followst-

4.1 With convenient road communication (trave) coald be made by four-

wheel drive wehicle); it should be about 40 and 15 kilometers away

from the hospital and second-class health center respectively; 4.2 With inconvenient road communication; it should be about 20 and 8

kilometers eavy from hospital and second-class health center

respectively.

Other environmental factors should also be taken into account as deemed necessary.

5. Its compound should not be less than three rais.

Second-pless health center:

1. Should not be located in the same tambon as the first-class health center.

2. Should be located in the populated area of the tambon .

3. Should be 8 to 15 kilometers away from other centers, depending on the condition of the road.

4. Its compound should not be less than one and a half rai (three rais are required if to be cone the first-class health center in the future) Hiddfery center:

1. Should be located in the vilage of more than two thousand population,

2. Should be at least 4 kilometers sway from the other centers.

3. Should be located in the plecewhere class health center is expected in the future,

4. Its compound should not be less than one rai (one and a half rai is required if to be come a second-class health center in the future)

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			· · ·		5 .
n an					
	4. <u>Haterial</u> i				· · · · ·
		<u>1.Q</u> .	MONTHLY. (BH	IT,) YFARLY (BHT.	1
	Gas and oil;				•
	for car or boat			5,000	
	for motorcycle		e e Seg	500	
	for hicycle			650	
	Transfort spare parts				
	for car or beat			2,500	
	for notorcycle			500	
	for bicycle		e de la composition de Recordance de la composition de la compo	200	•
	Drug			20,000	
	Medical equipment				
	household commodities			200	
	Kiscellaneous			200	
		Ti	ÓTÁL	30,950	, ·.
t the	For one 2nd class H.C.	Overall exp	ponditure	Baht 33,380	•
÷.,	1, Salary:				
· · · . ·	CATEBORY OF STAFF	NO.	KONTHLY (BHT.)	YEARLY (BHT.)	
	Health vorker	1	720	8,640	
·	Kiđa je	1	720	8,640	•
	Practical nurse	1	690		
:	TOTAL	1	690	8,280	
· .		,		25,560	
•	2. Maintenance:		14		
	Electricity and vater supply	н 	and and a second se	1,000	
	Motorcycly or boat reparation			500	
	Furniture reperation			200	-
	Por dien			2,000	
	Transportation			170	
				3,870	

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1977 - Constant States, and S			
	n an		
3. Katerial:	80	KONTHLY (BHT.)	YEARLY (BHT,)
	· · · · · · · · · · · · · · · · · · ·	• •	
Gas and oil:			500
for refriger	and the second		500
for boat or	Botoreyely		500
Bicycle			2,000
Drug			300
Kedical equipment			100
Household comoditi	69		1∞ 50
Kiscellaneous			
	TOTAL		3,950
For one H.V.C.1	Overall expend	iture Baht	12,110
1. Salary:			
CI.TEBORY OF STATE		D. MONTHLY (BHT.)	
Night to	1	720	8,640
	TOTAL 1		8,640
2, Kalntenences		•	
Kotorcycle or bost	, reperation		500
Fer dien			1,000
Transportation in	luding presuim		170
	TOTAL	•	1,670
3. Katerial:		. ¹ .4• 1	
Gas and olls		to para anti-	
	r motorcycle		500
the second se			500
Bicycle		- 1 -	800
Drug	TOTAL	· · · ·	1,800
	IVIED		
		· · · ·	
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:	NO. 0	P CENTE	RS				· · · ·		
ÁR	asr.8.C	2ND, HC.	H.W.O.	SALARY	OTHER WACE	MAINTENANCE	MATERIALS	total	
72	233	1,936	2,003	95,775,000	1,587,110	15,793,240	18,453,950	131,619,300	
73 73	243	2,212		109,827,020			20,025,650		
74	253	2,488		124,573,740			21,587,350	166,699,200	
75	273	2,744		140,633,870			23, 379, 550		
76	293	3,000	2,363	157,966,720	2,341,280	21,788,320	25,171,750	207,268,070	
77	313	3,256	2,453	275,738,800	2,587,950	23,615,220	26,963,950	228,950,920	
78	333	3,512	2,453	195,061,870	2,846,950	24,921,160	28,756,150	251,586,130	
9	358	3,758	2,633	218,751,300	3,151,300	26,555,7:0	30,663,600	279,121,430	
10	383	4,004	2,773	244,143,580	3,470,870	28,272,800	32,661,050	308,548,300	
ם ו	408	4,250	2,973	269,310,760	3,806,410	30,090,570	43,766,500	337,974,240	
2	433	4,496	3,000	291,226,60	4,158,670	31,619,430	36,560,550	363, 565, 170	
3	458	4,475	3,000	313,962,430	4,528,670	32,069,910	37,251,350	387,812,360	
4	483	4,450	3,000	337,749,630	4,917,100	32,504,910	37, 926, 350	413,097,990	
5	508	4,425	3,000	262,795,320	5,324,960	32,939,910	38,601,350	439,661,540	
6	533	4,400	3,000	385,780,650	5,753,210	33,374,910	39,276,350	464,185,520	
						· · ·			
•									•
5	ĩv	L	p.	, (23,287,120	50,194,800	389,647,350	452,055,450	4,315,187,720	•

• • • • • • • • • • • •

	TOTAL	•	24, 645,000	8,240,120	088 707 91	-3,280,976			TATL		46,926,500	9,385,300		
		15% MENOVA-	8,613,750	ALTOCATED	ALL NO	AVERACE PER YEAR) BULDINGS 61)	TSCO NOIL	10,270,500	AVERACE PER TEAR		
976) 	(BULL DURING 1957 - 1961)	BULIDING	57,125,000				S LIVING QUARTER (1977 - 1981)		ELEVEN TO FIFTEEN-YEAR-OLD BUILDINCS (BUILT DURING 1957 - 1961)	BULIDINC	000"02.7"89			
7 8	DURINC	N.W.C.	\$ 3				ARCER		TO FID LT DUR	CLASS M. W. C	ŝ			
ATERS (1		2ND CLASS H.C.	- 33		۰. •		DNC OR		NELAN)	and No. No. No. No. No. No. No. No. No. No.	R			
NC CUT	3	LIST CLASS H.C.	23		:		s FI			CLASS	8			
TATES LIVE	3(9) (99)	LOK RENOVA- TION COST	6,247,000				FOR STLFF 1			TION CORT	18,368,500			
KENOVATION EXPENSE FOR SIMPP'S LIVING QUARTERS (1971 -1976)	(BULL DURING 1962 - 1966)	BULIDING	68,470,000				RENOVATION ECPENSE FOR STAFF		DURING 1962 - 1966)	BUTIDIC	183,685,000			
NOITY		MWC	201				RENOV		PIERR-	W. C.	8		•	
RENOV		END CLASS M.W.C H.C.	245			· .	•			ZND CLASS M. C. H. C.	5]	÷	
		LST CLASS H.C.	k.				•		S S S S S S S S S S S S S S S S S S S	LCLSS R.C.LSS H.C.LSS	\$			
SMLC		5% RUZNUA-	9,284,250		: • .	·			(9461 1976)	A RENOVA-	18,287,500			
	(1461 - 4961 ONIMA UTING)	BULLDING	482 283,685,000		•	•		.•	TO FIVE-YEAR-OLD BUTIDINCS (BUTIE DURING 1972 - 1976)	BULLDING	365,750,00018,287,500			
Annex 5		ZND CLASS MUC								JUL WS	1650 2.000			
	Be	LST 2ND LLSS CLASS H.C. H.C.	\$				т. 		14 A 19 19 19 19 19 19 19 19 19 19 19 19 19	LST ZW CLASS CLASS M. W.C. R.C. R.C.				
ľ		1 SO H	\$	J				• •		N SO	8	J	÷	

RENOVATION EXPENSE STAFF'S LIVING QUARTERS (1982 - 1986)

TATOL		8,66,250	EVERACE 16,332,650
ULDINGS	15% RENO-	27,552,750	EVERACE PER TEAR
ELEVEN TO PTETERN TELR OLD BUTIDINGS (BUTLE DURING 2967 - 1971)	BULIDING	50 1,620 1.000 365,750,000 36,575,000 63 977 429 123,685,000 27,552,750 21,663,250	
ALL	2-W.K	8	
OL NEW DO	SS	\$	
	LST CLASS E.C.	\$	
S) (9)	TOR RENO- LET 200 VALTON COST CLASS CLASS M.W.C E.C. E.C.	36,575,000	
SEE TO TEN TEAR OLD BUILDINGS (BUILT DURING 1972 - 1976)	BULDING	365,750,000	
	O AU	8	
х 10 1011 1011	C ND CLASS	2,620	
3	LST Z ND SLASS CLASS H.C. H.C.	8	
2	SE RENOVAL IST 2 ND TICK VORT DIASS CLASSICH.C.	17,585,500	~
AND THE STAR-OF BUILDED AND THE START OF START O	LISOO SMITTER	100 1,380 827 350,710,000 17,585,500	
PUC TI	a X X	8	
	LET ZNE MAND R.C. R.C.	88. 21	
	N SON	8	

NOTE: 1. Building cost of bealth and middlery centers hp to 1971:

Bhr 515,000	Bht 140,000	Bht 30,300	fery centers from 1972 onwards:	Bht 775,000
-one lat-cleas H.C.	-one 2nd-class H.C.	-one M.W.C.	2. Construction cost for bealth and miduafery centers from 1972 onwards:	-one lat-cleas H.C.

Bht 180,000 Bht 30,000

-one 2nd-class K.C. -one M.V.C.

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	REB	UTIDING		PIRST CLASS	SECOND CLASS	HIDVIPERY CENTERS	TÓTÁL (BAHT)
EAR	1ST CLASS H.C.	2ND CIASS H.C.	H.W.C.	HRAETH CENTER	HEALTH CENTER	CENTERS	(unit)
1972	2	. 30	30	1,550,000	5,400,000	900,000	7,850,000
1973	- 8	30	10	6,200,000	5,400,000	1,200,000	12,800,000
1974	10	40	50	7,750,000	7,200,000	1,500,000	16,450,000
1975	10	50	60	7,750,000	9,000,000	1,800,000	18,550,000
1976	10	50	70	7,750,000	9,000,000	2,100,000	18,850,000
1977	n	50 -	85	8,525,000	9,000,000	2,550,000	20,075,000
1978	11	50	85	8,525,000	9,000,000	2,550,000	20,075,000
1979	11	50	85	8,525,000	9,000,000	2,550,000	20,075,000
1980	11	50	85	8,525,000	9,000,000	2,550,000	20,075,000
1981	11	50	85	8,525,000	9,000,000	2,550,000	20,075,000
1982	11	50	90	8,525,000	9,000,000	2,700,000	20,225,000
1983	12	50	90	9,300,000	9,000,000	2,700,000	21,000,000
1984	12	50	90	9,300,000	9,000,000	2,700,000	21,000,000
1985	12 .	50	90	9,300,000	9,000,000	2,700,000	21,000,000
1986	12	51	114	9,300,000	9,180,000	3,420,000	21,000,000
•							
•		-	· ·				
TOTAL	164	701	1,149	119,180,000	126,180,000	34,470,000	280,000,000

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EXPENSE FOR THE REPLACEMENT OF OUR HALTH CENTER (During 1971 - 1986)

j

NOTE: Building cost for new health and aldvifery centers:

- One lat-class H.C.	Beht	775,000
- One 2nd-olase H.C.	Baht	100,000
- One Hill C.	. Baht	30,000

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Annex 7

BUTIDING COST PER UNIT OF HEALTH OR MIDWIFERY CENTER OCHPIEN

1. For one lat-cless H.C.

	Noa	PRICE (BAHT)
1,1 - 1st-class H.C. office	1	300,000
- Living Quarters for Physician	1	60,000
- Living Quarters for senior staff	2	100,000
- Hving Quarters for junior staff	5	200,000
- Generator	1	30,000
- Vator supply	1	30,000
- Kitchen	1	25,000
- Fence and drive	ī	30,000
TOTAL		775,000

Note: 1. Additional expense of Baht 30,000 is required to clear away the old . health center from the building site.

2. Two houses (for baht 120,000) for physiclans necessary in certain 1 health centers,

3. Additional expense of Baht 200,000 are required to build construction five houses for junior staff (fourth grade) if fully staffed.

	No.	PRICE (BAHT)
1.2.1 Furniture:		
- Refrigerator (5 oubic feet)	1	11,000
- Matal locker (4 drevers)	1	1,000
- Cupboard for keeping medicine	1	1,500
- Stretcher	1	300
- Wheeled chair	1	3,000
- Table	2	600
- Berich	2	600
- Stool	2	300
- Shelves for keeping medicine	1	1,000
- Fertition between fatient's beds	2	600
- Powler's bed	2	3,600

1.2 let-class H.C. materials and couldment:

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			•
	- 22 - 1997 -		
		No. FRICE (BAHT)	
	atient's bed	8 4,000	
and the second second second second	ardrobe	10 2,000	an an the second se
	xmaination bed	1 600	
	urgical lamps	1(set) 7,000	
	able, chairs for doctor	1(set) 1,000	
	able, chairs for staff (third		
	able, chairs for staff(fourth		
- 1	ypevritor (Thei)	1 5,000	
	TOTAL	46,000	
1,2,2 <u>Squim</u>		No. FRICE(BAHT)	
and the second second	coller for medical equipment	150	
	soller for syrings and needles	1 100	
and the second	ressing drum and bandage 5"	1 150	
	pressing drum and bandage 6	1 200	
	ressing drumand bandage 84	1 250	
- 1	pressing drum and bandage 10	1 350	
	Scale with metric measuring	1 300	
	lancoater	400 1	
_	Oto-laryngo-ophthalacscope	1(s6t) 800	
-	fracheotomy set	1(set) 2,000	:
-	Subtion pump	1(set) 5,000	
•	Dxygen tank	1(set) 5,000	
•	Storlliver	1 10,000	
	licrosoope	1 5,000	
•	table instrument, edjustable 0	(ayo) 1 200	
	Surgical table	1 500	
el Secolo de Caración de Carac	Surgloal bod	1 8,000	
	Coststrics) bed	1 1,500	
•	Support for keeping modical e	quismant ? 3,600	
	stand for normal suffice admini	stration 2 400	
	Heenicy have to r	1 (not) 500	
	701A L	44,400	
		74	
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an a		
	Nor	PRICE (BAHT)
1.2.3 <u>Transportation</u>		
- Andulanța	1	70,000
- Đi¢ycle	2	1,400
TOTA L	e e de la composition br>La composition de la c	72,400
1.) Xistelleneous	No	PRICE(BAHT)
- Medical Instrument		20,000
- Other utilities for patient		7,000
Overall budget for the establishment		
of the let-class H.C.		964,500
2. <u>Tor. 2nd-class H.C.</u> :		· · · · · · · · · · · · · · · · · · ·
	<u>No</u> .	PRICE(BAHT)
2.1 - 2nd-class H.C. offits	1	60,000
 houses 	3	120,000
TOTAL		160,000
2,2 2nd-clars H.C. valarials and equipment	• • •	
2.2,1 <u>furiture</u>	No.	PRICE(BAHT)
- Table, chairs for steff(fourth grade)	2(sst)	800
- Ketal locker (4 deave ts)	1	1,000
- Cuptoard for keeping indicine	1	1,000
- Exemination bed	1	800
- Bezoh	2	600
- Table	2	600
- Fallent's bed	1	500
~ Vardrote	1	200
- Colasen lasp	1	300
- Refrigerator (2 suble feet)	1	5,000
- Water tank (400 gell,)	3	2,700
- Stratcher	1 (set)	300
TOTAL		13,800
	1. A.	
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		. :
		i.
		. •
	₩ <u></u> PRICE(PAHT)	
2.2.2	6 Muffent	
	- Table instrument, adjustable (Mayo) 1 200	
	- Cuptcard for keeping medical equipment 1 1,800	
	- Boiler for medical equipment 2 150	
	- Boiler for syringes and needles 1 100	:.
	- Dressing drum and bandago 6 ⁴ 1 200	
	. Dressing drum and bandage 8 ^a 1 250	:
	TOTAL 2,700	
	No. <u>Krice(Bahti)</u>	
2.2.3) Transportation	
	- Motercycle or outboard motor-boat 1 5,000	
2.3 <u>Use</u>		
	- Medical instrument. 5,000	
	- Housevare for patient 2,000	
	overall budget for establishment of	
	one 2nd-class H.C. 208,500	
	l <u>dví (erz čentor</u> i	
3.1	- M.W.C. office	
	1	•
•	2. reteriels and evalueent	
3.2.1	l Purattare	
an a	- Table, chairs for staff (fourth grede) 1(set) 400	
	- Ketal locker (4 drivers) 1 1,000	
	- Capboard for keeping medicine 1 1,000	
		•
	- Table 2 ,600 - Fatlent's bed 2 ,500	
•		•
	2 - Mertrode 1 200 - Colegan lemp 1 300	
	3-33afrigerator (2 catio fest) 2 5,000	
	- Veter tark (400 (11),) 3 2,700	
	* Stretcher 1 300	
	rotal 113,400	
	에는 것은 것이 같은 것이 같은 것이 가지 않는 것이 같이 있는 것이 있다. 것이 있는 것이 같은 것이 같은 것이 같은 것이 같은 것이 같은 것이 같은 것이 같은 것이 있는 것이 있는 것이 같은 것이 없는 것이 같은 것이 같은 것이 없다. 것이 있는 것이 없는 것이 없는 것이 없는 것이 있는	
	ατα μεταλογικά της προσφαιρικής του ποι π απαγραφορ ια το προσφαιρικό του προσφαιρικό του προσφαιρικό του προσφ Το χρητικό του προσφαιρικό του προσφαιρικό του προσφαιρικό του προσφαιρικό του προσφαιρικό του προσφαιρικό του π	
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	PRICE (BAHT)
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3.2.2 goulmant	200
- Table instrument, adjustable(Hayo))	
- Cupboard for keeping medicine 1	1,800
- Boller for medical instrument 1	150
- Soller for syringes and readles 1	100
- Dressing drum and bandage 6 ⁿ 1	200
- Dressing drum and bandage 8° 1	250
TOTAL	2,700
3,2,3 Transportation	
- Notorcycle or cutboard motor-boat 1	5,000
TOTAL	5,000
3.3 <u>Kipoollanoovs</u>	
~ N.V.O. uUlities	1,000
Overall budget for establishment	
	52,100
of one N.W.C.	
4. Rebuilding of 201-class H.C. from M.Y.C.	
. The first product of the second se	PRICE (BAHT)
4.1 - Additional building cost	30,000
- House for Junior staff 3	120,000
4.2 2nd-class H.C. paterials and equipped	
es por itea 2.2	21,500
as per iten 2,3	7,000
Overail budget for rebuilding one 2nd-class	
H.C. free K.V.C.	178,500
	· ·
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	HEALTH CENTERS HEALTH CENTERS				MIDWIPERY CENTERS			TOTAL BUILDING COST (BAHT)	
YEAR		BUILDING	.	BUILDING	NO.		EUIEDING COST (PART)		NON-GOVERN. MENTAL SOURC
	NO COST NO	NO.) . 6 09T		oovermen Pal source	NOI-OUVERI- MINTAL SOFOL			
7445	10	9,645,000	162	30,477,000 (19,635,000)	200	4,420,000	6,000,000	44,542,000	6,000,000
1973	10	9,645,000	286 (110)	56,331,000 (19,635,000)	200	4,420,000	6,000,000	77,956,000	6,000,000
1974	20	19,290,000	276 (110)	54,246,000 (19,635,000)	200	4,420,000	6,000,000	77,956,000	6,000,000
1975	20	19 ,2%, 000	276 (110)	54,246,000 (19,635,000)	200	4,420,000	6,000,000	77,956,000	6,000,000
1976	20	19,290,000	276 (110)	54,246,000 (19,635,000)	200	4,420,000	6,000,000	77,956,000	6,000,000
1977	20	19,290,000	276 (110)	54,246,000 (19,635,000)	200	4,420,000	6,000,000	77,956,000	6,000,000
1978	25	24,112,500	271 (110)	53,203,000 (19,635,000)	200	4,420,000	6,000,000	81,736,000	6,000,000
1979	25	24,112,500	271 (110)	54,703,500 (19,635,000)	200	4,420,000	6,000,000	83,236,000	6,000,000
1980	25	24,112,500	272	56,503,500	200	4,430,000	6,000,000	85,036,000	6,000,000
1981	25	24,112,500	271	56,503,500	27	596,000	810,000	81,212,700	810,000
1982	25	24,112,500	128	25,688,000	•	-	-	50,800,000	
1983	25	24,112,500	*	-		. 	-	24,112,500	-
1984	25	24,112,500	-		-	-	-	24,112,500	•
1985	25	24,112,500	-	-	-		-	24,112,500	
1986	28	21,219,000	-	-	-	-	_	21,219,000	-
				·	<u> </u>				
TOTAL 15 TEARS	22	s10,569,000	2,76/ (830)	551,394,000 [148,155,000]	1,227	40,376.0a	54,810,000	902,339,700	54,810,000

- 26 -BUTLOING COST FOR REALTH AND MICHITERY CENTERS (1972 - 1996)

upgreded from added fory centers,

2. Numbers in brackets represent the building cost of 2 nd-class health centers opgreded from alde fory centers,

.

3. Building cost of midwifery centers are from Non-governmental sources.

Assistance received

The following items of requirements are arranged in respective priority.

1, Vehicles:

- To be used for supervisory vorks by Assistant Provideial Health
 - Chief Medical Officers and Nurse Supervisors.

2. Ambulances:

- To be used for strengthening the referral system,
- between network of health centers and hospitals.
- 3. Man Motorcycles:
 - To be used for sanitary works by health workers in charge of
 - health centers and health stations.
- 4. Endotrachesi Ansesthetic Seter
 - to equip or reequip some of the centers,
- 5. Sterilizers used with gasoline:
 - To equip or recould some of the centers.
- 6. Vacuum Extractorat
 - To equip or recould some of the centers.

7. Fellowhipst

- Fellowships for observation tour on family planning.

Since capacity to give services of the health centers and health stations is rather limited due to shortage of facilities according to the insufficiency of the government budget, health services can be made available and accessible to only minor part of the population and cannot anticipate repid increase of both needs and decends.

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8. Neurological Research Centre

PROPOSAL OF NEUROLOGICAL ASSISTANCE REQUIRED BY THE NEUROLOGICAL RESEARCH CENTRE FROM JAPAN

Som 4 years ago, proposals were discussed at WD (World Health organization) for programmes of mutual co-operation amongst Asian Neurological countries to promote the neurological sciences in this part of the world. It was tentatively suggested that Japan might provide technical aid and assistance for approved research projects in the Asian countries.

As a sequel to these suggestions, Professor Prasop Ratanakorn and his colleaques of the Prasat Neurological Institute and the Neurological Research Centre, together with Dr. Athrait Vejjajiva of the Rarathibodi Hospital, were fortunate in being able to have discussions with Professor Toshigoro Kuroiwa of the Kyushu Neurological Institute in October of this year. The resting took place in Bangkok during the visit of Professor Kuroiwa together with officials of the Japanese Enbassy. Following a series of discussions it was agreed to embalk upon a programe of research which would emphasize 3 topics 1-

1. Toxic neurological disorders (eg. Minamata disease)

2. Infectious diseases of the nervous system

and

end

3. Neurotuscular disorders

Talks then dwelt on the requirements to implement this threepronged research programme. A long term view was taken of this programme and therefore of its requirements were themselves considered to be basically threefolds :-

1. Research Equipments

2. Exchange fellowship programme

3. Exchange of information facilities

Consequently the Neurological Research Centre under the supervision of Professor Frasop Ratanakorn, the Secretary General to the Neurological Research Roundation of Thailand under the Royal Prattonage and Dr. Dusit Aundaranu, the Director of the Neurological Research Centre and Praset Neurological Hospital would wish to make a submission to the Japanese Government's OTCA for approval of this programe in principle. If this approval could be obtained, then Professor Presop and his colleaques could proceed with defining the programe in detail in conjunction with -Professor X. Kuroiva and his Japanese colleaques.

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9. Establishment of Institute of Brain Research

at

Project for establishing Institute of Brein Research

The Department of Neurology and Neurosurgery, Sondet Chropraya Hospital, Bangkok 6, THAILAND.

Department of Neurology and Neurocurgery was established in 1959 at Somdet Chaopraya Hospital, the largest (1000 bods) Hental Hospital and Psychiatric Teaching center in Shailand. Since then, The department has gradually developed and expended.

Reasons for proposing the Project

1. In Thailand, There has not been any place fully function as an Institute of Brain Research.

2. There has been a great demand for Sciencetific care of diseases of Nerrous system all over the country.

3. The lack of Research center concerning Brain diseases.

4. The lack of a real large and academic center for Neurological and Neurosurgical training, so that the trainees can be distributed to all provinces all over the country.

Time To complete the project

This project, if possible, with assistant and aid from external sources, should be completed in 5 years, 1975-1970.

Present states of the Department of Neurology and Neurosurgery

Facilities

1. Five steried building with active Neurological and Neurosurgical services occupying 3 floors. The services consists of:-

a. Out patient clinic with total number of 10,000 - 13,000 patients attending annually.

b. One hundred beds admitting warus serving 900 - 1,000 patients suffering from diseases of Nervous system annually.

c. Division of Neuroradiology serving total of 1,500-2,500 patients for Neurological investigation annually.

d. Division of Neurophysiology, consisting of

- EEG. investigation 800-1,100 cases per year.

- EMG, investigation 50 cases per year.

e. Division of Neuroscintilation which performing radioisotope investigation of C.N.S. 300-400 cases per year.

f. One operating room serving 120-150 operation annually.

q. Division of physiotherapy serving 2,400-2,600 services per year. h. Division of anosthesia with 300-500 services per year.

By 1977, The Neurological and Neurosurgical Services can be expended to occupy the whole 5 stories.

 Three steried building which has served as Neuropathology and Laboratory sections. The Department of Neuropathology has performed 50-70 autopsies annually which were 50-60 % of death rate in the hospital.

Personnels

1. Dr. Batal Chitanondh, M.D., C.N.P. (Penn.,) F.I.C.S. Director of the Rospital.

Senier Consultant in Neurology and Neurosurgery.

2. Dr. Surapong Ambhanwong, M.D., F.R.C.S.(C)., Dip. Amer. Board of Neurosurg.

- Chief of The Department Neurosurgeon.
- 3. Dr. Preecha Stamathumrong, N.D. - Neurologist

4. Dr. Akom Sorasuchart, M.D., D. Psych. (Toronto), M.C.N.S., N.C.S.E. (CANADA)

- Neuro-Psychistrict and Electroencephalographer.

5. Dr. Chintana Lekanapichonchat, N.D., Bd. of Ped. (Thailand) - Pediatric Neurologist.

6. Dr. Pensri Wearssilp, M.D. - Neurologist.

 Dr. Sunan Praeathepong, N.D.
 (He is being trained in Neurosurgery at University of Edmonton, Alterta, Canada, and will return in 1976).

8. Dr. Norong Dusitanond, M.D.

- (He is being trained in Neurosurgery at University Hospital, New Castle, Great Britain, and will return in 1976)
- 9. Dr. Somchai Jiaravuthisarn, H.D. (He is being traiced in Neurology and Research at Montreal Neurological Institute Xc.0111 University, Montreal, Canada, and will return in 1979).
- Dr. Birichai Chnyaeirieobbon, N.D.
 (Ee 16 being trained in Neurology and Neurophysiology at Hontreel Neurological Institute, Hc.Gill University, Hontreel, Canada, and will return in 1979).

Department of Neuropathology.

Dr. Srisomboon Indravasu, M.D. Dip. Amer. Board of Neuropath.

Department of Physiology and Laboratory. Dr. Phannee Kanchanaguha, N.D.

Conclesion: By 1979. The department will have enough qualified personnels in Neurosurgery, Neurology, Neurophysiology and Research fields, except one for Neuroradiology.

- 3 -

Objective of the Project establishing Institute of Brain Research

1. To improve qualities and facilities of Sciencetific Services to the patients suffering from diseases of Nervous system.

2. To expand research works concerdings-

 Epidermiology of local diseases of Nervous system.
 Basic clinical and statistic distribution of C.N.S. diseases in Thailand, primarily concerning convulsive diserders, parasitie infestation of C.N.S., extrapyramidal tract diseases and cerebro vascular diseases.

iii. Advance research in local infection and infestation of C.N.S.

iv. Public education aiming for prevention of the infection and infectation of C.N.S.

3. To be a center of other Brain Research in Thailand available to any researcher inside and outside of this country.

4. To be a center of Neurological and Neurosurgical training serving

the whole country.

Aid from japaness Government via Colombo plan in the past:-

Equipment.

1965-1966

- 1. Mobile x-ray unit 300 MA. (Ritachi)
- 2. Diagnostic x-ray unit 500 MA, (Hitachi)
- with Disgnostic tilted toble,
- 3. High speed film drying apparatus.
- 4. X-ray developing tank
- 5. Electromyograph (Sanei)
- 6. Polygraph (Sanei)
- 7. Anesthesis table
- 8. Instrument Trey table

1967-1968.

1. Electroencephalograph 16 chernels (Sanei)

2. Encephalo-analyser (Sanei)

- 3. Echoencephalograph (Nippon Electric Co.)
- 4. Fundoscopic canera
- 5. Narabayashi's fixed positioning head holder for stereotaxic apparatus.

Personnels

1. Dr. Takashi Ishizaki, Neuropathologist dame to work and supervise. and did some research as an expert at the department in 1965 - 1967. (2 years)

2. Dr. Hachiro Sata, Electroencepholographer, came to work and supervise at the department in 1965 - 1967 (3 years).

3. One Medical electronic engineer came for 2 weeks to set up the EEO. machene.

4. Dr. Udom Lakesanavicharn, Thai Neurosurgeon of our department, went to Kyoto University Hospital for practice and observation for 3 months.

Needs for external aid.

I Equipment:-

A. For Neuroradiological service.

- 1. One Set of Neuroradiological investigative unit, consists of
 - a. Diagnostic x-ray unit 500 MA. with accessories.
 - b. Matched set of Immage intensifyer with complete accessories.

o. Complete set of brachial and femoral catherization.

- d. Matched set of high speed film developer and dryer.
 e. Matched set of filted table with accessories.
- Complete set of Tomogram apparatus.
 complete component of subtraction unit.
- 2. One Unit of Scintilation camera.
- 3. Two units of bipolar cautery, complete set of cooggulator and all sizes forceps.

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B. For Department of Neuropathology:-

Complete set of Electronmicroscope Magnification x 300 to x500,000. & Ultra microtome (50 A⁰ to 4 micron)

- C. For Department of physiology and Laboratory.
 - 1. Instrument for setting up bacteriology, labi
 - a, Autoclave, with temperature control
 - be Incubator, with temperature control
 - e. Binoccular microscope, 2 units.

2. Chloride analyser 3. Nicrogasometer.

II. Personaels

- 1. Incase of the x-ray diagnostic unit with Immage Intensifier is granted, one Medical engineer is reguired to set it up. This may need
 - 4-6 weeks time.
- 2. One japanese Neuroradiologist to work with this unit for 1 year period.
- 3. One Scholarship for chief of the department Queurosurgeon) to go for observation at various Institute of Brain Research in Japan. (3-6 months).
- 4. One scholarship for Neuropethologist to go to Japan and practice with Blectron Microscope. (3-6 months).
- 5. One Scholarship for Neurologist to go for observation at various
- Institute of Brain Research in Japan (3-6 months)
- 6. One Scholarship for Neurological Nursing to go for observation at varisons Institute of Brain Research in Japan (3-6 months).

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10. Resarch on Mycotoxins Faculty of Medicine, Ramathibody Hospital

RESEARCH ON MYCOTOXINS OF THAILAND

Mycotoxins are of considerable importance to developing contries such as Thailand from both the health and economic standpoint. Agricultural commodities of tropical countries are usually heavily infested with molds because of improper storage and transportation, and also because of the high temperature and humidity. Many kinds of molds can produce substances which are toxic to the biological systems of animals and men. The potential biological effects of these toxins include teratogenic, mutagenic, and carcinogenic effects.

Thailand and Japan are rice producing countries. It is therefore quite important to avoid the contamination of mycotoxins in foodstuffs, which may cause toxic effects on liver, kidney, nervous system and bone marrow. Incidences of cancer of the liver in South East Asia and in Japan are quite high comparing to other countries. Mycotoxins have been shown to effectively produce carcinoma of the liver in animals and their carcinogenic responsibilities in humans should be confirmed.

Greater awareness of these toxic effects may lead to a more stringent regulation on the standard of agricultural products imported by developed countries regarding the toxic contaminants. It is thus very important for exporting country to acquire scientific capabilities in research and monitoring of the mycotoxins for their own legislation and law enforcement regarding the agriculture standards. In term of hazards to human health a better knowledge of mycotoxins based on epidemiological and experimental studies may give some clue to the causes

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of certain diseases, degenerative and neoplastic, in term of their possible causes and effects relationship to the mycotoxins.

In Thailand, the magnitude of the problem is reflected by a previous survey made by Shank et al (from MIT, Boston, U.S.A.), which showed that between 34-81% of food products (spices, peppers, grains, legumes etc.) are contaminated by fungi which include Aspergillus, Penicillium, Fusarium and Rhizopus. Among 162 isolates, 49 proved to be toxigenic and these included species of all the genera commonly identified in food samples.

In another study of the same group of investigators, it was shown that the incidence of primary liver cancer in people aged 15 years and older in the Southernmost part of Thailand was about one third of that in the Central South Western part of Thailand. In comparison, the actual consumption of aflatoxins among population who lived in the central South Western part of Thailand is about 10 times of those who live in the Southernmost part of the country. This suggests the relationship between aflatoxin and primary hepatoma.

As far as acute poisoning in humans who ingested mycotoxin along with their food, studies have shown that autopsy material of children who died after suffering from Reye's syndrome in the North East of Thailand may yield a higher level of aflatoxin content than autopsy material from children who died of other causes.

While these information are of interest and point out the possible health hazards the mycotoxins may cause, more work needs to be done before a definite cause and effect relationship

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could be worked out. The knowledge gained in the study would help the agricultural scientists as much as the health scientists.

Research Plan: There are two aspects of the work to be conducted.

1. Survey of Toxigenic molds in foodstuffs in different parts of Thailand.

1.1 Field survey and Collection of toxic molds. A survey of agricultural products which are used as food for either humans or animals should be made in different parts of the country. Samples of agricultural products will be collected in plastic bags and brought to Bangkok for processing in the mycology laboratory.

1.2 Mycologic Study. Samples will be processed for mold growing in the mycology laboratory for preliminary testing for toxicity. Toxigenic mold will be identified and stored for future chemical and toxicopathologic study.

1.3 Chemical Study. Molds will be grown in Standardized cultivation medium and extraction, purification and identification be made.

1.4 Toxicopathologic Study. Toxin will be tested for their acute and subacute toxicity by using animals (such as rats or quinea pigs mice and bird) or by tissue culture system. Chronic toxicity study will be studied in animals. The toxicopathologic study could be approached by

1.4.1 Morphological changes at the tissue and cellular levels by light and electron microscopy. Autoradiography and histochemistry may also be used.

1.4.2 Biochemical Study. This would involve study of the alterations of the pattern of nucleic acid and/or protein synthesis by using radioactive precursors of protein or nucleic acid. 2. Possible relationship between mycotoxin and diseases. Based on certain clinical and epidemiological evidences, relationship between mycotoxins and certain diseases may be determined. Example for such study is the Reye's Syndrome which is supposed to be a form of acute aflatoxicosis in children. The study will be approached by epidemilogical survey of the kinds and amounts of mycotoxin metabolites in the blood and urine of affected population group. Cases of Reye's syndrome will also be studied in the hospital from the clinical and toxicological standpoints.

Thai Staff:

1. Epidemiologist. Part time Investigators.

1.1 Dr. Siripat Watanakaset (Biostatistics)

1.2 Dr. Anuwat Limcharern. (Public Health and Epidemiologist)

Both are members of the Department of Internal Medicine and Community Health of this faculty.

2. Mycology. Part time worker.

2.1 Miss Roongnapa Prajaktum. She has a B.S. in Medical Technology and has worked in Medical Mycology for 3 years. She is going for further training in the U.S. Public Health Service Center at Atlanta, Georgia for 4 months beginning in July 1973. We hope that she would have an opportunity to study the toxonomy of toxigenic molds during the training.

3. Chemistry. We do not have a chemist who is an expert in mycotoxin chemistry at present. However the Department of Chemistry of the Faculty of Science of our university has a group of chemists quite actively engaged in research on chemistry of

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natural products. We are trying to recruit one of the members of this group to be involved in the project.

1.1

n de la segu

4. Toxicopathology. We have three pathologist who have been trained in acute and chronic toxicity study and will be involved.

4.1 Dr. Subhakij4.2 Dr. Vitya

4.3 Dr. Panya

. . . .

Dr. Subhakij has some experience in the growing of molds, extraction, isolation, and identification of toxins and is in change of our program in mycotoxicopathology at the present time.

11. Mobile Medical Team, Thambon Medical & Health Care

Ressons Provided Along With the Request for

Jepanese Assistanco to Operate

1. Hobile Medical Team 2. Inthon Medical & Mealth Caro

1. Nobile Hedical Tean

1.1 Purposes

1. To expand medical certice in the remote areas which regular certices from Ministry of Public Health can not cover due to the chortage of budget, man power, and equipment.

2. To convince the villagers in such area to change their attitude from using uncorrect modical cervice performed by quacks to utilize proper medical service provided by health center, hospital or mobile medical team service spot

3. To tighten relationship between the government and rurel people by using mobile medical team service as media

1.2 Implementation

1. ARD Office will request for cooperation from both central and provincial modical institutes to provide doctors, nurses, para medics and senitary officials to be team members.

2. ARD Office will allocate budget for salary, perdies, accommodation, expendable materials, POL, vehicle repairs, core sorts of medicine, accommodations for doctors and murses and other miscellaneous things ossential for the operations.

3. Japanese government will provide mobile Medical Ven with medical service instruments, sesential medical instruments, medicines, available doctors who will perform tropical disease research in cooperation with Thai doctors and nurses

<u>Operations</u> wobile medical team will have fixed shedule of sick calls in the horation where there is density of inhabitants but far away from health center or hospital. Service must include the provision of health and semitation knowledge besides remady. In the case that there is patient whose symptom is beyond the mobile medical team capability, delivery of such patient to the health center or hopital is to be done.

1.3 Establishment of Hobile Hedical Team A mobile medical team

consists of 1-2 doctors, 2 surses, 3 para assics drivers according to

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the number of vehicle.

e og ser en som en Te som en som

 $(1,1) \in \mathcal{F}_{1}$ Prior to sick call operations, preparation of medicines, medical instruments, rehicle condition checking and operational route survey must be done. Anticipated operations plan must be prepared in cooperation with the changess and amphur every month. Such plan must not duplicate the regular work plan of Ministry of Public Health and should depend on the area where health and sanitary assistance are highly required by the villagers.

. **.** .

11

1,4 Area of Operations Trang, Suphanburi, Songable, Kespang Petch, Kanchanaburi which are about to be opened as ARD Changwada in 1974-1975.

1.5 Chart comparing mobile medical team operations eseistance (see the attached chart).

en di be Tablet

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te^{ll} ser qui a

-3-1.5 Chart Comparing XMT Operations Expenses 1.5 Chart Comparing XHT Operations Day Shown in RTO FT 2517 Budget with Assistance Requisition As per one test As per one tess Changvad that will receive KHT services are Trang, Suphanburi,

Songkhla, Kaapazg Petch, Kanchanaburi

No.	Description on RTG Budget	Assunt of	Description of Assistance	Amount of
		Baht	Requirement	Boht
3. ¥	ages for laborers and drivers	27.360	1. Jeep, CJ.6, hard top, 2 en	2,000,000
			per team totalling 10 ca.	
s, ć	ost of perdies, accommodation,	57,680	2. Medical instrucents for	250,000
	transportations and others.		the new five teams	
3. 0	cost of Medicines, medical	202,000	3. Medicines and modical	500,000
I	lastruments, POL, and other		supplies for the operation	8
	expendable materials		of mobile team	
		287,040		
7	here will be 5 mobile medical			
t	esna: Total	1,500,000	Totel	2,750,000
				tin sharan af

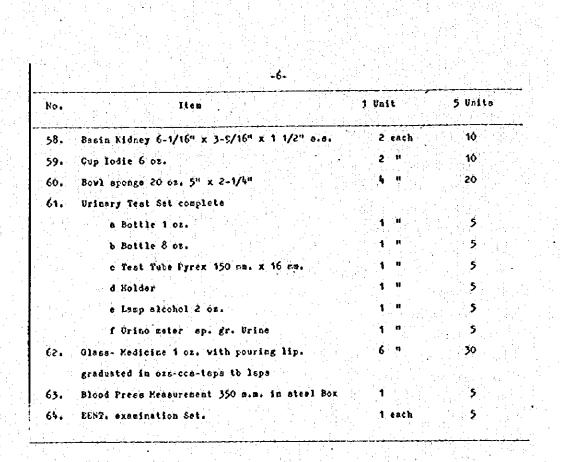
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1	unit	òf	Xedical	Tool	Requirement

	1 unit of Medical Tool Requireme	ent -
1 1971 1 19 <u>11 - 1</u> 9		· · · · · · · · · · · · · · · · · · ·
No.	Itom for t t	
 1.	Kidney Basin 8" & 10" 2	10
2.	Jar Dressing	5
3.	Measure - Oraduated 500 c.c.	5.
4.	Tray - instrument	5
5.	Gloves size 6 1/2 & 7 8 2	20
6.	Tube, rectal rubber 20 fr. 2	10
7.	Tubing, latex for irrigator	「「「「」」。 「「」」」 「」」」 「」」」 「」」」 「」」」 「」」」
8.	Thermometer clinical	10
9.	Thereozeter rectal	10
10.	Tongue - depressor setal	
11.	Stethoscope B.D.	5. S.
12.	Tiesus Forceps 6" (1 into 2 testh) 2	10
13.	Dressing forceps 6"	
15	Homoctatic Forceps Kolly 2 1/2" 2	10
15.	Sponge Holding Forceps 1	5
16.	Forceps - eterilizer, Yaugha 1	5
17.	Knife Mandle No.3	•
. 18.		
.19,	Needles, Iuer 20 G x 1 1/2" box of 12 1 bo	s box
20.	Needles, Juer 24 G x 3/4" box of 12 1 be	s box
21,	Needles, suture, surgeon's 1 \$1	igi 5 -
22.	Needles Holder, Mayo - Heger 8" e.s. 1	5
23.	Scissors, operating, straight 5 1/2 sharp/blunt 1	5
24.	Bandege Sciesors 5" 1	5
1 25.		\$
26.	Scissore, directing, Kayo, curved on first	5
27.		15
28.	Syringe, luor 5 c.c. 3	15
	45 A. C. S. A. BERT, A. C. T. BART, A. B. A. B. A. B. A. B. A. B. A. B.	

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No.	Itea	1 Unit	9 Unite	· · ·
a and a second				
. 29.	Probe, operating 6"	1	3	
30.	Olase, medicine, plastic	3	15	
31,	Ratuoglobin - Tellquist	1	5	
у.	Finger - cots latex	i dos.	5	
33,	Rubber Catheter 8 fr. (for zole)	1	5	to per l'inclusion. El periodici del control
34.	1 16 fr. (for female)	1	5	
33.	Tourniguet	1	5	
36.	Nurse Instrument Case	1	5	
37.	Yound Curette		5	
38.	Medicine Cup	3	15	
39.	Eye cleaning glass	2	10	4
40.	Dadine Eye cleaning glass	1	5	
45.	Filter Paper	1 plg.	5	•
42.	Absobent Gaure (1" x 1 yd.) 8 0.90	20	100	
43.	Adhesive Plastors Curity ready cut assortment	i set	5	
	of 4 rolls 1/2", 3 rolls 1" 2 rolls 2"and			
· · ·	1 roll 3" Regular			· · ·
44,	Alcohol Burner	i	5	ана 1997 — Полона 1997 — Поло
45.	Stirring Red	1 · · · ·	5 . 5 .	· ·
46,	Keasuring Cylinder 100 c.c.	1	5	
\$7.	Glass Funnel 6"	1	5	
48.	Irrigator with handle complete set	- 1	5	•
49.	Bed - pen	1	. 5	
50,	Ksle-glass	1	5	
51,	Venelt-glass	1	. 5	
52.	Ics-cap	1	· 5	en en sterre
55,	Scale-Adult 150 kgs. x 100 gms.	1 each	5	
54.	Vater Bottle	1	s	· · ·
55.	Scale-Boby 15 kgs, x 10 gas, without chart	1 each	5	
56.	Sterilizer Jastruseat 12" x 6" x 4"	1 4		
57:	Basin Kidney 10" x 4 1/2" x 2-1/6" 8.8.	1 ** 2 #*		
	· · · · · · · · · · · · · · · · · · ·		10	
n de la secola de la Secola de la secola d				
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	and the second	- 1		· ·



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2. Tambon Hedical & Hesith Caro

2.1 Purposes

 Arrange to have 1-2 paraxedics in each tambon of ARD area operated by selecting those who have finished Standard YI of participate a six month training course and send them back to work in the area where they are from.

2. Rural paramedic training is an activity that promotes the cerability of CAO in medical service and dicease preventive sepects particularly for the area outside sunicipal and sanitary zones according to section 31 (4) of CAO Regulations Act.

3. This is to share the burden of doctors and nurses in curing simple diseases as well as to help them in disease prevention in every tarbon of ARD area operated that lacks of primary medical services.

In the case that there is a patient whose symptom is beyond para modice capability, such patient must be delivered to receive health center or bospital services.

4. To have information sources so that respective offices will be informed by the paramedics about some certain desperate diseases or communicable diseases.

5. To help convince villagers to pay more attention in femily planning.

6. To provide additional supporting source to the performance of mobile medical team in such area.

2.2 <u>Peramedice Statue</u> A paramedic will be permanent suployee of CAO according to the cablust resolution. This is to help solve shortage of doctors and nurses at tanbol level in priority case.

2.3 Operations and Control

At present, there are 939 paramedice working in each tembon of ARD area operated and another 200 is in training course. Their post is located at the second class health center but they

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LAVE

have to perform doily work out in the village.

Their respective supervision offices are the District Officer's Public Health Section and the Governor's Public Health Branch. Usually paramedics performance will be operated on behalf of the District Officer and the governor unless there is special assignment.

Paramedics will be selected as paramedic supervisor who will work on control; follow up and inspect the operations of paramedics. The supervisor also cakes operational reports to the respective office at changwad level and ARD Office (10 paramedics provide one supervisor)

Paramedic Supervisor will be selected and promoted to be fourth grade paramedic (regular official) working for public health section chief on providing administrative and tecnical assistance besides screening supervisor's report to the section chief (20 paramedics provide one fourth grade paramedic.

2.4 Vork Characteristics

Provide to have 1 or 2 paramedics to work in each tambon having on anticipated work schedules at the second class health centers and in the villages. Operational report is to be sent in to the respective office at changead level.

Faramedic supervisor is responsible for the control, follow up, and inspection of operations. Operational Report is to be sent in to the changead office and ARD office.

Fourth grade paramedic reviewe/screens and submite administrative and technical ideas relating with paramedic operations to Public Health Section Chief. 2.5 <u>Area of Operations</u>

Trang, Suphanburi, Songkhla, Kampang Petch and Kanchanaburi which will become ARD area operated in 1974-1975 2.6 <u>Peramedice to be in the Training Course provided to the</u>

5 Changvade	
1.	Trang
2.	Suphanburi

	Total	200 Paratadi
5.	Kanchanaburi	40 48.
4.	Xeppang Petch	40
3.	Songkhla	40 ex.

2.7 Support provided by ARD Office

Salery, perdies, government forsuler sedicines.

40 en. 40 en.

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¢ e

2.8 Support provided by the Japanese Government

Bicycles, motorcycles, small sets of operation instrument, big bus, sicro bus, expert to analyse the operations 2.9 Chart comparing RTO budget with the request for mesistance from the Japaness Oovernment (see details)

destatance mquest will be for the Tarbol collecting changed and a following changed a first and the followin

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111 訪問施設

1. Bangkok Metropolis

訪問日: 11月29日 9:30~10:55

1) Health Department

機構図(資料参照)の如く、8Division, 6 Public Health Sectors から成る。各sector のもとに4~9 Health Centres (計 37)があり、他に14 Sub-centresがある。Public Health Sector はDepartment of Health に直結し、各Division と Public Health Sectorの間に functional relationshipがある。

Metropolis の両債は1,600km²,人口390 万, 23 districts に分かれる。Staff member 社次のとかりで行りivision , Sector, Health Centre 等に配因されている。

physician	117	Public Health Nurse	355				
Dentist	47	Sanitary Inspector	196				
Veterinarian	26						
Pharmacist	25	Total	1,327				
Health Educator	3						
Social Worker	47						

2) Comprehensive Health Centre (First Class)

最初にHealth Centre が設置されたのは 1946年で, Maternal and Child Health Centreの形で発足した。その後、UNICEFの援助のもとにComprehensive service を提供 するCentreとして総合化され,数も37ヶ所に増加し現在に至っている。提供される主なservice 社次のとおりである。

(I) Curative services

患者は1日平均60~80である。

(2) Prevention of disease

主として次の予防接種が行なわれるが,法による強制接種は種痘のみである。

Small pox, D.P.T., Cholera, Typhoid, Tuberculosis, Poliomyelitis.

(3) Health Promotion

Well-baby clinics

lical th Centre 及び Sub-centre において健康診断、ミルク及び肝油等の提供(乳幼児・ 就学前の発育不良児等に対して行なわれる)

② 且產婦,新生兒,乳児家庭訪問

これはMalernity hospital, Ante-natal clinics, Well-baby clinics 等との注 Hいで行なわれる。 (4) School Health Services

① Sick-clinics

② Immunization

3 Protection of eyesight

() Tuberculosis survey

Ministry of Public Health の Tuberculosis Control Division との速けいの もとに行なわれ, 600 校 370,000 生徒が対象となっている。

(5) Dental Services

学校生徒,一般住民ともに対象となるが,学校生徒に対してはMobile unitsがServiceを 提供する。

(6) Social Services

貧困家庭について、Social Worker が相談に応じる。学童に対しては、昼食、学用品、被激、

Fellowship 等を与える Foundation of Municipal School Children がある。

(7) Special Clinics

① Skin clinics ② Tuberculosis clinics ③ Veneral disease clinics ④ child guide clinics (mental health)等が行なわれている。

(8) Day Nursery

いわゆる保育所で,母親が働いている就学前の幼児が対象で給食も行なわれ健康増進にもつながる。

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次にHealth Centre のStall memberは かかむね次のとかりである。

Physician

Public Health Nurse

Graduate Nurse

Dentist

Dental Hygienist Eldf.Dental Nurse

Social Worker

Nurse-aid

Technician-aid

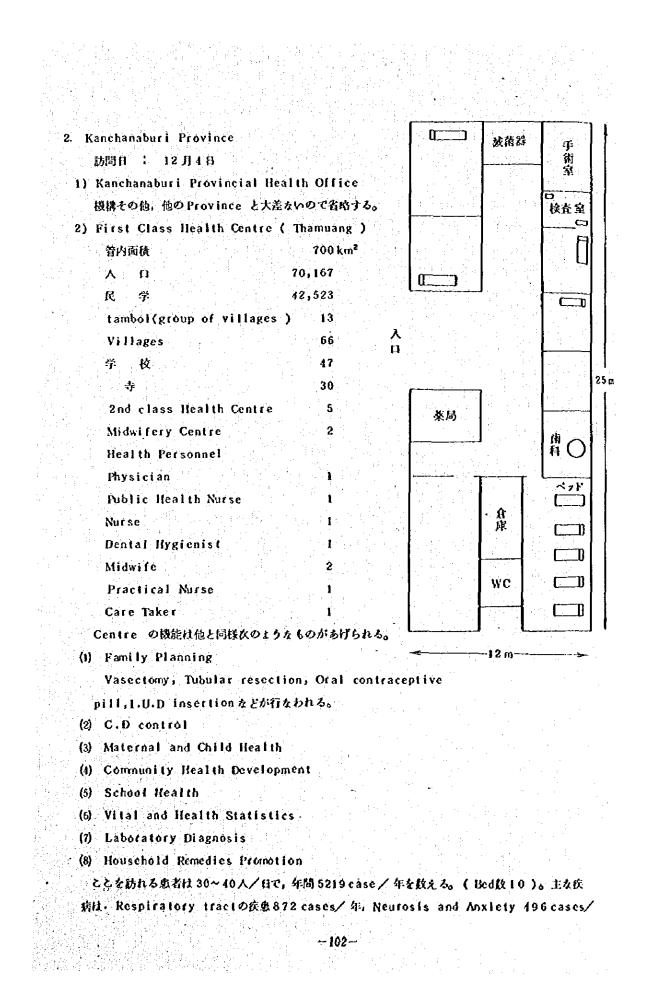
Parl-time Sanitarian

Ċlerk

その他

1961年以後、Ilealth Centre と病院との間化、診納、治療、人院等化関して、refferal systemが確立され、現在、11病院との連わいがなされている。

その他Health Centre の化事として, Family Planning Activity Community Development Project が行なわれており、一部のCentre ではObstetricianのServi ce も提供されている。



年, Dermatitls 287 cases/年, Gastrointestinal disorder 242 cases/年, Mataria 62 cases/年, Conjunctivitis 52 cases/年, Dysentery 26 cases/年, Accidents, Poisonnig and Violence 143 cases/年, Veneral Disease 27 cases /年

問題点:

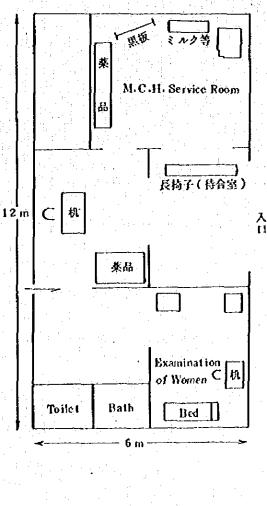
- ① Ambulance services の必要性
- ② Operation theatreの設備改善
- ③ Laboratory 設備(microscope)等の拡充

13

- 3) Second Class Health Centre
 - 曾內人口 6,494

学校

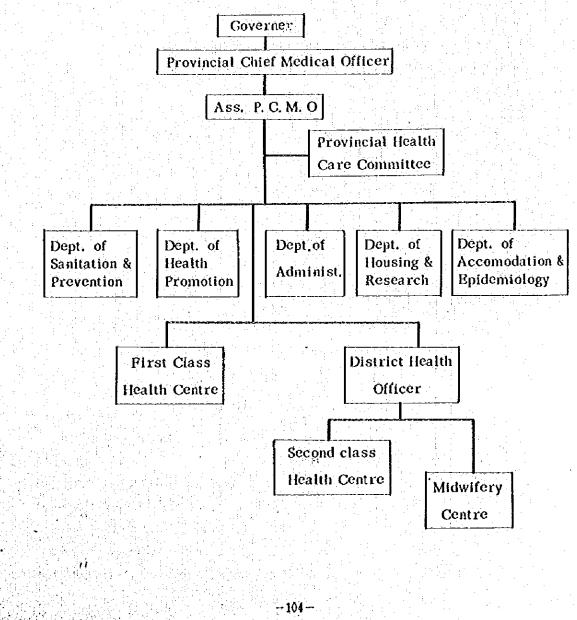
とのCentreを訪れる患者は主化, Common cold, 虫さされなど, M.C.H service, Immunization, 学校検診(限, 耳身, 皮膚)等が主な事業である。なお, Centreの見取図社図 のとおりである。



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置いてある薬品は、Choroquine Phosphate, Aspirin, Phenacetin, Caffeine, Vitamin B₁, B₂, C, Sulfa 剤, ヨードカリ、Chlorpen syrup, ゲンチアナ, Sodium bicarbonate, ヨードチンキ, リーゾール、Chlorinate lime, Lactogen など。 患者は平均5人/日程度である。

- 3. Chiang Mai Province
 - 訪問日 : 12月6日
 - 1) Chiang Mai Provincial Health Office
 - 模構は図の通りである。



P.C.M.O の主な仕事は次のとおりである。

(i) Consultant of the Governer

(2) Education of Community

(3) Directing, Controling & Supervision of Health Centre District Health

18

8

42

37

6

8

24

9

84

Office

(4) Deligated Job of Ministry of Public Health

Province の観要

District Health Centre Pist Class

Health Centre Second Class

Midwifery Centre

Physician

Sanitarian

Nurse

Practical Nurse

Midwife

主友事業

(1) Communicable Disease Control

(2) Matnutrition 対策

(3) Health Promotion

(4) Personnet Training

問題点:

(1) fleatth Promotion の重要性をいかにして地域住民に認識させるかに苦慮している。

(2) Fransportation : 道が悪く自動車が人れない地域が多く小型シープが必要

(3) 医薬品が不足している。

llealth Office K柱Clinic部門が併設されているが、ことでは上に、 V.D. Control, Family Planning Consultation, Maternal and Child Health Clinicsが提供 される。但し、近くに Chiang Mai大学の付成時院があるため、住民社llealth Office の Clinics 社あまり利用していない。その他、Mobile Team があり、 Physician 1、 Nurse

1, Practical Nurse 1, Midwife 1, Public Health Officer 10計5名で構成され,

各tambolを訪れている。

2) First Class Health Centre (sarapi)

Back Ground

A11 5万 このうち85年は, Rural area K住む。

-105-

問題点:

(1) Under utilization of health services

10多はHospital へ、5多はHealth Centre へ,残りの者は施設を利用していない。 (2) Health Centre の serviceの内容が狭い範囲に限られる。即ちM.C.H. Nutrition Careが主。

(3) Personnel

不足している。特にRural area で Physician を確保するのは至難(とれを解決するため、 政府は新卒医師に 2 年間の義務年限を設けて, Rural area での勤務を法制化し、実施の段階に 人った。)

(4) 予算が少ない。

(5) 2nd Class & 1st Class Health Centre とのCommunication があまりよくない。 また、1 st Class Health Centreと Hospital との間には Physician 同志の個人的なつ ながりが優先し、公の Referal system はまだ確立されていない。

解決策: Pitot Project として、次のようなことが考えられてきた。

(1) Voluntary serviceの強化

Midwifery Centre の指導のもとに、Health Post をかき、更に VoluntaryのHealth Communicator をおいて地域住民とMidwifery Centre との機械しをさせる。

(2) Second Class Health Centre にChild Nutrition Centre, Well Child Clinicを置き、乳幼児の健康増進をかねて衛生教育を行なう等である。

Health Personnel(First Class Ilealth Centre)

Physician

Nurse Practical Nurse

Midwife

Health Worker

Dental Hygienist

Administrator

以上 Sarapi地区はPilot Project が行なわれた地区でIlealth Service は一応, 軌道にのっている地区と考えられる。

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4. Songkhla Province

訪問日 : 12月9日~12月11日

3

面 積 6,735km²

人 口 726,524

Hospital

Health Centre First Class 4 Health Centre Second Class 66 Midwifery Centre 54

1) Provincial Health Office

核株:図参照

Provincial Chief Medical Officer のもとに、2名のDeputy P.C.M.Oがあり、1 名はHospital を担当、他社名 Department (Sanitation Training C.D.C.) Health Centre (First Class)及びChief District Officer を監督する。Second Class Health Centre とMidwifery Centre 社Chief District Officer の監督下にある。 更にHospital社First Class Health Centreに対して、また、First Class Health Centre 社 Second Class Health Centre 及びMidwifery Centre に対してTechnical Sur Yort を行なり。

Health Personnel :

Provincial Health Office,各Hospital,各Centre等のHealth Personnel は1項 料4の表のとおりである。

2) First Class Health Centre

6カ所の Second Class Health Centre を指導している。

管内人口: 64,816 とのうち/0兆は rural areasK住む。特に重要な業務は, C. D. control, Sanitation, Immunization である。患者は, Health Worker, Midwife の手にあまる 場合,当Centreに来る。 19 VillagesKVolunteer活動が行なわれている。その内容はM.C. H及びC. D. Control である。Child Nutrition Centreが併設されてかり、Pre School age People の体位の向上に役立っている。Family Planning は年間 600 Reproductive Women につき, Oral contraceptive Pill 1125 cases, Intra Uterine Device 162 cases を実施。

タイ南部における疾病の主なもの社, Respiratory tractの疾患, 寄生虫病, 姉結核等である。 管内の乳児死亡率社以然高く 40/1000 live birth をこえる。なお, 10才以下の子供の Sample survey結果では 200検体中の寄生虫の陽性率は Ascaris 76%, Enterobius vermicuralis 22%, Necator Americanus 34%, Trichuris trichura 1.8%を示した。

3) Midwifery Centre

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管内人口 992

民家 89

学校 2

llealth Problemはllealth Centre の場合と同じであるが,特に交通の使が悪く交通の手段 としてNotorcycle は必須である。

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4) Songkhla Provincial Hospital

1921年に設立された,現在Bed 数350 を有する。Ikalth Personel は以資料4.の表のとお りである。Out Patient 54942/年, In Patient 1333/年, Operation 798 cases/ 年,X-raydiagnosis 8623/年, (Chestが主), Laboratory test 14t,885 cases/ 年で予算社約 1000 万 Bahts でこのうち半分は政府予算,他は病院収入である。入院患者のうち, 主な疾病は次のとおりである。

主な	医病れ次のとおりてある。		
1.	Gastro-enteritis, Diarrhoea	1141	cases/年
2.	Accident	812	
3.	Peptic utcer	265	
: 4: ;	lleart disease	203	
5.	Anaemi a	200	이 아이는 것 같은 것 같은 것 같은 것이 같은 것이 같은 것이 같이 했다.
6.	Pulmonary tuberculosis	60	(但し外来患者4401cases/年)
7.	Carcinoma	187	
8.	Influenza	175	
9.	Pneumonia and Pneumonitis	162	
10.	Malaria	113	
11	Hypertension	95	

なか,病院にかいて社, Preventive side のものとしてWell-baby clinics, Ante-na tal Clinics, Family Planning consultation, chest clinics, School heelth services, Mental health services, Community medicine services 等を実施して

....

5) Haad Yai Hospital

630

e Ballina (

Personnel については以近料4の表のとおりである。

Bed 数 300, In-Patient 15461cases/年, Out-Patient 47251cases/年, Ope ration 3598cases/年(このうちminor operation 3598cases/年), Delivery:no rmal 1359cases/年, abnormal 141cases/年を数え, Family Planning consultati on としてHOral Pill 63cases/年, 1.U.D 62cases/年, Sterilization: male 42cases/年, female 275cases/年が実施された。

1978年までに 600株に増株予定で Rehabilitation clinics, school for murses of tropical medicine の新設を計画している。このために病院の建てかえが必要とされている。

なお、病院化Princess Mother Mobile Unit があり、Physician 2を含む8名で構成さ れている。

6) Immigration Office (Sadao)

特に過来はマレイシアとの交通がさかんである。Passport 所持者に対しては接及伝染病及び

Tuberculosis, Leprosy の検疫が行なわれ, suspected case は通過が認められない。しかし, Boarding pass (7日間滞在可能)の所持者は無条件で通過が認められている。したがって、Cholera その他の伝染病の移人は当然あり得るものと思われる。

5. Office for WHO Representative to Thailand

日 時: 11月27日 13:45~15:20

税 要: WIO Representative (Acting Representative, Dr.P.Stern)を
 訪問, WIO のプロジェクト活動状況,特だ Country Health Programming について懇談した。
 WHOの short-term consultant が laboratory technicianの養成コースに参加している。
 現地大使館、JICA,専門家も含めて従来WHO との接触社なかったようであるが,各分野特に
 health manpower, 載計, training, Sanitation等にWHOの援助あるい社勧告が行 なわれ
 ているから,WHO OFFice と接触を保つことが必要である。

6. pept. of Communicable Diseases: Control, Ministry of Public Health

日 時 : 11月28日 15:40~17:00

 親 愛: 従来, Dept. of Health (Disease Prevention & Control)のDivision であったが、本年10月の機構改正に伴ってdepartment に升格し、同時にMalaria Eradication, Y.D, フイラリア、案, 結核等の control, general CDC のdivision かよび伝染病院、案病院、 結核病院を包含する。本department は国レベルの防疫対策の実施に関連してかり、大規模の伝染病 流行に際しては地方衛生行政機関を援助し、その防疫対策を実施している。epidemiological ser vices 全般についての立案, 評価, 統計等については、Epidemiology Division(Planning & Evaluation, office of the under-Secretary of State の管轄下にある。

特定の伝染病対策 (specific control programme) は、漸次 general health services として地力衛生部局に移行される傾向にある。全般に Epidemiology Division, 研究施設等との 間に十分な連絡がないように思われる。

1. The Women's Hospital

日 時 : 12月2日 9;20~11;00

観 要 : Dept, of Medical Services, Ministry of Public Health の所管 ドかかる病院で、1951年4月当時の7年省により168年, 産婦人科病院として開設され,後に137 年の小児病院を併設して,現在21の診療および倒達部門をもつタイ国有数の大きな病院となるだいたった。さらに1968年から総合系院とする5ヵ年計画が給まり,男性患者も次第に包含されつつある。

1970年現在で医師数100,由科医6,薬剤師9,医療技師6,歯科技師4,石護婦334,見智有護 婦244,栄養上5等を擁し、1カ年間の外米患者数383,467 人院患者数は産婦人科練54,877 小児科練4,175 に達している。

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		by Women's Hospital	6 8 8	
s Hospital		ipioma I yr course		
Laborataries in Women's Hospital	Medical technician	Diploma 2 yr		
		or Eachalor		
		11 Doctor	 A second s	
		Cast	Pathology Biochemistry Microbiology & Bl. Bank Clinical pathology Fudocatiology	

現在も患者数は入院、外来ともに増加の傾向にあるが、病棟、付属施設等広い構内に散在し、時間的、 経貨的に得策でないので中央検査棟、手術棟その他を中心部に高層化して建築し機能の集中を計画して いる。

8. The Institute of Dermatology

自時:12月2日 11:00~13:30

模 要: Dept. of Medical Services, Ministry Public Healthの所管, 1972年化皮膚科疾患の専門研究機関として設立された。現在まだ完成にいたっていない、即ち研究部 門として10のDepartmentを計画しているが、その中 1) Altergy Immunology, 2) Clinical Investigation, 3) Histopathology, 4) Industrial Diseases, 5) Mi crobiology, 6) Leprosy & V.D. の開設が終り、今後Biochemistry, Biophysics, Ph ysiology, Veterinary の4部門を逐次開設強化して少く方針である。

との他に臨床部門として40床をもち、外来、人院、検査を含めて医師8人、Resident 2名を接している。まだ創成期にあるため、国の内外からの援助による発展を期している。

9. Phyathai School of Dentistry, Mahidol University

日 時 : 12月2日 14:10~14:35

校 要 : この国における正規の歯科医師の経度な不足に対応するため、1969年 Mahidol University の1学部として設立された。南科医師の他、関連する広い範囲のスタッフ即ち由科技師, 治療助手(Chair-side Assistant)等の養成、ならびに歯科学における診断、治療、予防に関す る研究を任務とし、さらに卒後教育の構想をも持っている。

教育、実習設備器具類は日本製が多く、最新の型のものがそろえられているように見受けた。ただ開 発達上国のとの分野に共通した問題点として人材の不足から教育スタッフ光実に相難を感じているよう である。

10. Faculty of Tropical Medicine, Mahidol University

日 時 : 12月3日 9:30~16:30

税 要 : タイ国立医科大学として1960年3月起王され,1961年8月より開校された。 初めUniversity of Medical Sciences と称したが、着干の変遷を程て現在社 Mahidol University にある11学部の1つを形成している。なお、1965年東南アジア地域8ヵ国からなる SEAMEO 機構が発足し、プロジェクトの一つとして熱帯医学を関するTROPMEDが設立される だ伴って、その中央理事会事務局(CCB)およびタイ国におけるNational Centre が本学部に併 設され、熱帯医学の教育、研究に関して国内、国際的中心をなすにいたった。

東南アジア地域で重要なる伝染性疾患、寄生虫、予防医学、地域医療等に関し基礎ならび化応用面の 教育、研究、診療を目的とし、学部としては、事務局、教育部門(Bangkok School of Fropical Medicine), 研究部門, 付屆病院(Bangkok Hospital for Tropical Medicine), TRO PMED として事務局, 教育部門, 研究部門の構成からなり, 事務局と学部教育部門の建物, 11階建研

究棟, 120床の病院の他看護婦宿舎,研究用附帯施設を有する。 機能を教育,研究,診療に大別すると 1)教育:すべて医学部卒の医師に対する卒後教 育であり, Tropical Medicine, Helminthology等 10 のDepartment, 計約 80 名の 教育スタッフが担当する。各年4月から9月に至る半年の期間が主として教育にあてられ, ①D. T.M.& Hコース, 24週間, 学生数約10名 (D. T.M. & H. Bangkokの Diptom を授与) ②M. Sc.コース, 2カ年間 約10名 ③Ph . D. コース, 2~3年間の他 ④1カ年コースのPractical Nurse 姜成コース,約20名をもつ。この他にTROPMED 段能として東南アジア地域の他国からも 医師および他分野の科学者を含めた衛生昆虫学その他のコースが随時設定され、これらに8カ国から過。 去 270 名の参加があった。 2) 研究: 1973 年に新築 1974 年に開所した新研究棟に各 Departme nt がほとんど移転を完了し、学部、TROPMEDの二つの研究機能は事実上合一している。機材、ス タッフともに国際的水準に達し,活発な研究活動が展開されている。現在中心的課題として 各種寄生虫病,地域における健康と社会経済発展の問題があるが,近年とくに隣接する国々と共同 でメコン開発計画に伴った熱帯医学のプロジェクトに強力に取組んでいる。また国内暦地にいくつかの station を持ち、Ilealth Centre の協力を得て現地の調査研究も行っている。 3) 診療:附属的 院社外来と人院患者の2部門からなるが,患者社専ち他病院,医師等の紹介により来所し,マラリア, 釣虫症、フイラリア症等が多く、一部は学用患者として扱かわれている。熱帯熱マラリアのクロロキン 抵抗株の発見、それに対処するサルフィ剤、ピリメサミンの使用等治療法の開発に貢献してきた。

予算については1972-1973年度 1年間の例をあげると経常費,人件費,建築費を含め国家予算 から105,822米ドル相当支出されたが,研究費としてれ,総計53,682米ドル相当のうち国の支出れ 僅か9,750米ドル相当と5分の1に満たない。したがって研究費の大部分を外国援助にもとめている 現状である。

11. Chiang Mai University, Chiang Mai

日 時 : 12月6日 9:10~13:00

税 要:現在 10のFacultyがある。医学部(Faculty of Medicicine)社1975年
USOM(United States Operation Mission)の援助により設立された。1970年まで、Univ. of Illinois との間に教授交換, 旅遊等の援助があったが,現在では教育器材供り, training grant, research grant等の援助をうけている。Department 社解創,生理,生化学,寄生 虫,来物,歯科,病理,酸生物,決医,外科,產科 よび婦人科,小児科,X線,整形外科, 物理療法,眼科,麻酔 よび予防社会科学等がある。teaching stafftt教授および副教授 20,
助教授 41,教師149 である。研究,教育社主として地方に特有な疾患,農村医学に重点をおいてい る。また結尿病,リウマチ性心疾患,栄養問題の研究施設がある(1973)。

医学部学生の教育は6年, 4年間はBachelor of Science in Medical Scienceのコース,

その後2年のM.D.のコースがある。学生数は第一学年122,第2学年113,第3学年101,第4 学年63,第5学年68,第6学年60計527名(1972年)である。

School of Medical Technology, Chiang Mai University 社 1966 年に設置され医学 部のキャンパス内にある。 7つのdivision, clinical Microscopy Clinical Chemistry, Clinical Microbiology, Clinical Inmunology, X-Ray & Isotope, Medical Illustration & LUIIIsto-Cytology がある。医学部の関連 Department の教授,大学 病院中央検査室をLUM政策行の長をLUK本校校長上りなる委員会により運営されている。

人学資格損失学部と同様で、National Education Councilの試験に合格する必要がある。 修業年限は4年である。

Faculty of Nursig

従来相感学部の1 department であったが 1972年に Faculty に対格した。 Fundamental Nursing, Médical Nursing, Surgical Nursing, Midwifery & Obstetrics Nursing, Pediatric Nursing, Psychiatric Nursing, Public Health Nursing ましてNursing Administrationの8 departmentがある。Teaching Staff 社

現在61名、その半数は病院勤務を行っている。

教育プログラムは6種である。現在455名が在学している。

1. Practical Nursing (1960年以降),修業年限1年

2. Diploma in Nursing(1961年以降), 3年

3. Certificate in Midwifery (1964年以降), 6ヶ月

4. Rachelor of Science in Nursing,4年一

5. Bachelor of Science (Post diploma in Nursing) 2年

6 Bachelor of Science in Nursing & Midwifery (1967)

12 Malaria Eradication Center in Songkhla

日 時: 12月9日 10:30~11:25

夏 要:本部は Songkhla にある Provincial Health Office の一両二階にAdmini stration, Laboratory 等の各専用の室を占有している。タイ国におけるMalaria eradicati on 社会国を 5つの Region に分け、最南部の半島部分にある Region 4 が受持ち区域で、さらに 5つ の Zone に広れ、14の Province を含む。その面積は72,520kn²,4,300,000 の人口を包容する。 ビルマ、マレーシアと国境を接し、国境近くに山岳森林地帯があり、ゴム林が主要産業になっていると ころに特色がある。 Songkhla の Headquarterに社事務局、薬剤散布作業、衛生教育、検査室、疫 等,昆虫学の 6部門あり、5つに別れた各Zone 社さちに数項の sector に分けそれぞれに調査課、激 参談を配置して作業をすすめている。 1974 年現在従事者総計 880名に達するが、うち、政府取員81名 常動 185名,非常動 613名その他で構成されている。 現在地域内にAttack Phase の地区は少く,森林地帯に限局しつつあるが,治安,住民の協力の面 から作業実施困難な地帯になっている。その他は大部分 Consolidation Phaceになり、その cover ageは年々増大し、1974年で住民の69、26%に達したが、将来90%を目標に努力中である。

1.1

1973年の資料によれば血液検査の件数が家庭訪問で発見および外来えの患者から計327,760,集団 検血又は特別調査による 188.315 合計 346,075, その中マラリア原虫場性 31,842 (9.2%)で 、あった。その70ないし80% HPI、falciparum,のとりHPI、vivaxでPI、malariae 枝極め て少数である。 1973 年のマラリア原虫陽性者は前年, 前々年にくらべて増加しており, 1974 年もそ の傾向を示している。その理由としてfalciparumのクロロキン耐性(約80%),屋外での緑染の多 いことが考えられ,住民の移動,前期の長いこと,治安問題,薬剤撤布の拒否,また联員の転出,新規 採用の困難さ等作業実施の面でも幾多の問題点を抱えているととがうかがえた。それにもかかわらず、 規模、予算、人員およびその作業量からみて、衛生行政機関としては、目覚しいものがあるのはWHO の Support もさるととながら、Specific Projectとしての campaign の存在意義を考えさせる ものであった。

Ш 衛生行政

辪

1. 18

1) 中央機構(Ministry of Public Health)

「政構図(K資料1.) にみるとおり、1974年10月、大幅な機構文革が行なわれた。改革の目的は観視の分散に ある。その実現のために Under-Secretary of State for Health とRural Administrat ionを直結させるとともに、中央においてはLine and Staff機構を採用している。更に Adviso ry Committeeとしての機能をもつHealth Planning Committee (Deputy Minister が座長となり、Budgeting Bureau、大学、その他学課経験者等により構成)が発足した。同委員 会社 Health Plan等に関し、情勢分析、技術上、予算上の検討を行ない Priority等を審議するこ とになっている。

Department of Medical Servicesは主として小児病院,婦人病院,国立がんセンターをは じめBangkok 内の名国立病院(大学病院を除く)を受けもちlleatth Serviceの治療面を担当す る。

Department of Health 社歯科術生, Rural Water Supply Sanitation, 学校保健, 環境保健(Environmental Health), 産業保健(Occupational Health)等を担当する。 Department of Communicable Disease Controlは伝染病防疫を担当する。

Department of Medical Sciences社主化試験検査(Laboratory Services)を担当す る中央機関である。

Office of Food and Drugs Committee は介品衛生, 來事衛生関係の監視業務を担当している。

更に官房としてOffice of the Under-Secretary of State for Health があり、各 Department のProject 社どのOffice の承認を得て実施される。また、各Department社 スタッフ的な立場から地方の各後間に対し技術上の助育、援助を行なうことになっている。 2) 地方機構

Bangkok Metropolis とその他の地方では異なった機構をもつので分けて述べる。 (1) Bangkok Metropolis

図のとおり、Office of Under-Secretary of State のもとに、Department of Healthがある。Department 社Environmental Health Public Health Nursing, Health Promotion, Health Supports, Public Health Dentistry, Administr ation, Communicable Disease Control 及びPublic Health Veterinary の8 Divisionsを有し、更にこれと社別に6 Public Health Sectors があってDepartment に直結している。各Public Health Sector はそれぞれ 4~9(計37) Health Centres を受け持つ。各 Division 社名 Public Health Sector をスタッフ的女法場から support

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する点で中央機構と類似する。

(2) Province

各Province の機構は機部において社多少異なるが概ね図のような機構である。即ちGover nerのFic Provincial Chief Medical Officer(以下P.C.M.O という)がおり、He alth Office の各Department 及びFirst Class Health Centreが直結している。 更にP.C.M.O と直結するDistrict Health Officer がわり、この下にSecond Class Health Centre 及びMidwifery Centre がある。一方、Provincial Hospital が P.C.M.O の監督下にあり、Hospital、First Class Health Centre、Second Class Health Centre、Midwifery Centre の間には、大々技術面のfunctional relations hipがある。

以上,中央,地方機構の観略を述べたが, Policymaker であるMinister のPolicyに従って, Office of the Under-Secretary of State for Health Hiealth Plan 及 びStrategy を作り各 Department 及びP.C.M.O に示す。各 Department 代そのPlan 及びStrategyをもとに独自の Projectを組み、P.C.M.Oと協力して Projectを実行している。

2. 行政の方針及びHealth Plan

行政の方針は前述の如く Decentralization of Authority である。タイ国政府はこの方針の もとに次の三つの Plan をたて、実行に移しつつある。

(1) Development and Expansion of Rural Health Centres

(2) Hospital Improvement

(3) Integration of Health Services

1) Development and Expansion of Rural Health Centre

これは主として、①lkalth Centre の建設 ②lkalth Centre における人材の確保 ③ llealth Centre の設備拡充強化を主軸とする。

2) Hospital Improvement

これは主として、①公的時能の建設 ②公的肩腔にわける人材の確保 ③公的南院の設備拡充強化 を主頼とする。

従って1)及び2) れいわゆる lleal th 貨幣の量的拡充である。これに対して 3) れいわば1ke a 11 h Service の貨的拡充ともいうべきものでその要点は次のとおりである。

3) Integration of Health Services ...

lleal th Serviceの主友要素社

Maternal and Child Health

Family Planning

Health Education of Population

Medical Care

Nutrition

Sanitation

Communicable Disease Control

Veneral Discase Control

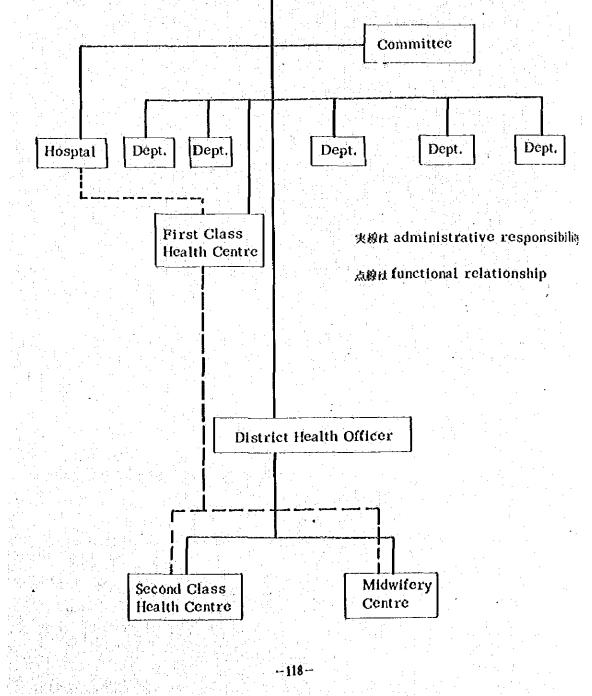
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Governer

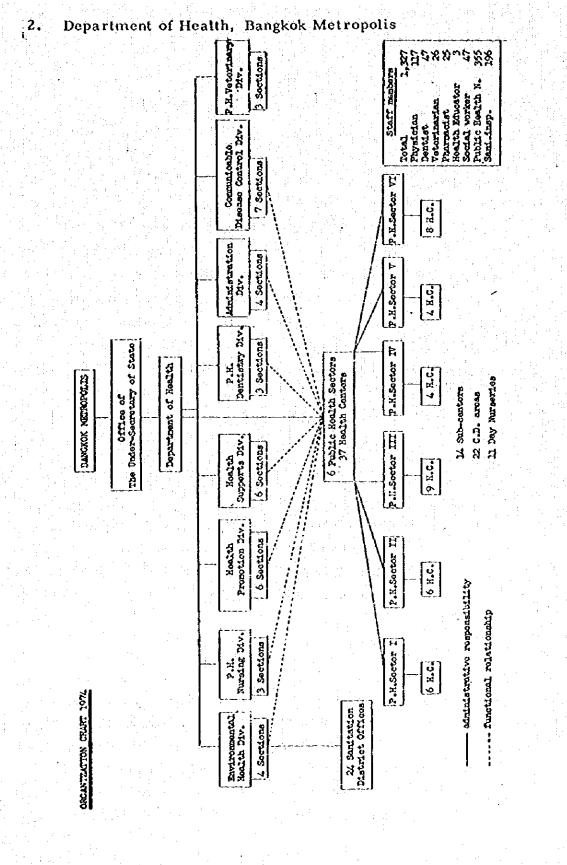
Provincial Chief Medical Officer

(Deputy P. C. M. O.)

1.11



inistry of Heelth Prime Minister of Minister of Minister of Realth Civil Service Commission Civil Service Commission Civil Service Commission State University Burean State Der Nealth State University Burean Ministry of Interia	Dr. Chitt Hemachudha (Deputy) Dr. Amorn Nondasuta, Dr. Nuam Settachan orwas of the Difference State for Health	Deputy - Under Secretary Deputy - Under Secretary Inputy - Under Secretary (Under Secretary (Under Secretary) (Administration)	1 1 1 1 1			- Office of the - Office of the - Office of the Secretary Secretary - Entomology Mv	- V.J. Control - Radiation XV. Protection - Matter Eradica		I"	- Leprosy Nospital Lineuture.		 Zistrict Bealth Dr. Chom Debyasuvarn Office Malth Contains Malth Contains 	Madatary ()
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											: 	119	



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Burecu of Public Health, Bangkok Notropolis

8 Divisions (36 Sections)

6 Public Health Sectors

37 Comprehensive Health Centro (P.Y. 2516)

Providing - Maternal and Child Health Service

- Fanily Planning & cancer dotection
- Convenicable discase control
- Early Diagnosis and Treatment
- School health services
- Public Health nursing Homo visit
- Day nursery for Pro-school children
- Dental Health service
- Social service
- (Community development and Sanitation)

and 14 sub-centres (M.C.H.)

- 11 day sursories
- 22 con. Dev. aroas
 - 24 Sanitary district offices
 - 1 Mobile Heelth unit
 - 1 Hobile Dontal unit

Spec	ial olinio		Seeni	<u>918</u>	
	Eye clinic		4		
· · ·	Eye, our, noso	, throat	3		
	Skin clinio		18		
	T.D. olinio		7		
	Y.D. olínio		23	(2 JUL -	(only
	Hontal Health	olinio	3	full tico à l	8088100/vk. at H.O. 27

City Health Department, BANCKOK HETROPOLIS

General Information

The Bureau of Public Health administers the extensive public health programme of the city serving an area of 1,600 Sq.Km. which included a population of 3.9 million, divided into 23 districts. The responsibility is concerned with preventing disease and improving public health and sanitation rather than with treatment.

Before the establishment of BANGKOK NETROPOLIS in December 1972 the responsibility of Public Health Bureau covers an area of 290 Sq.Km. of 3.1 million population.

The Bureau of Public Health consists of five Divisions: the Health Education and Development Division, the Health Promotion Division, the Communicable Disease Control Division, the Sanitation Division, and the Slaughterhouse Division; and 36 Health Centers. The Health Education and Development L.vision

The Health Education and Development Division is reponsible for the administrative affairs of the Burchu of Public Health and for maintaining liaison between the Burchu and all other units of the Municipality and the Government. The Division conducts a continual programme of health education, procures and stores all medical supplies for the Burchu, trains nurses and prepares budget, personnel, statistics and other portinent data.

Health Promotion Division

The Health Promotion Division is concerned with improving the health of all dity residents both through programmes designed particularly for infants, pre-school children, schoolchildren, mothers and mother-to-be with emphasis on Funit: Janning and general programs of dental hygiene and mental health.

The Communicable Disease Control D vision

The Communicable Disease Control Division is responsible for the prevention and control of all communicable diseases; to which end it institutes all necessary controls and pursues all pertinent laboratory investigations and research. The Division is also responsible for issuing death corificates.

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Sanitation Division

The Sanitation Division is responsible for the prevention and control of contagious and infectious diseases, and for enforcing ordinances and regulations concerning the sanitation of public places, and controlling trades hazardous to health The Slaughterhouse Division

The Slaughterhouse Division maision strict sanitary control over all slaughtering activity in the city, including, of course, that of the Hunicipal Slaughterhouse which is one of the largest inthe world. The Division is also charged with ensuring against the sale of infectious meat to the public, to which end it maintains a corps of inspectors. <u>Health Contres</u>

Through its Thirty-six Health Centres, 14 subcentres and two mobile unit stratergically loc: ted throughout the city, the Bureau of Public Health provides the people with all essential public health services including: elinics for general ailments, particularly of infants and children; special clinics for skin diseases, tuberculosis and venoreal diseases; classes for new and expectant mothors; immunization ageirst a variety of infectious diseases; courseling on various aspects of sanitary living, personal hygiene and nutrition; assistance to families unable to cope with the basic needs of their children; the free distribution of milk and cod liver cil to infants and children; and day care services for children of day nursories attached to the Health Centre. The number of mile and will be 14 within this year.

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COMPREHENSIVE HEALTH CENTERS

Scope of the Service

1. To decrease the infant mortality rate by operating a daily clinic for general minor ailments and providing A.N.C. Services for expectant mother as well as 'well-baby clinics' for infants and pre-school children.

2. To reduce the morbidity rate by operating 'sick clinics' and 'well-baby clinics'.

3. To protect children from disease through health education by means of 'mother class', and 'mother-craft class' and by providing immunization against infectious diseases, namely Small Pox, Liphtheria, Whooping Cough, Tetanus, Poliomyclitis Tuberculosis, Clolora and Typhoid.

4. To promote health by distributing milk and C.L.O. by educating the public the value of nutrition and personal hygiene, and by home visits teaching child care and infant feeding as well as offering general counsel.

5. To preserve mental health by relieving distress through home visits, child guidance clinics, assistance of the "problem family" and day care services in the day nurseries.

6. To correct health deficiencies through "well-baby clinics" and health inspection of school children.

7. To improve the environment by home visits and advice on sanitation in the home and neighbourhood.

8. To control certain communicable dideases such as Tuberculosis, leprosy and Venereal Diseases by treatment, follow-up and prevention, including health education, in close co-operation with appropriate authorities.

9. To upgrade general health standard by providing comprehensive health and social services.

Comprehensive Health Centers of the Bangkok Metropolis

The first health center was established in the form of a Maternal and Child Health Center in 1946. Since, service has been expanded. When the Public Health Bureau of the municipality accepted UNICEF assistance, there were six Health Centers acattered throughout Bangkok. Naternal and Child Health Services have been upgraded, expanded and integrated into comprehensive services in all Health Centers.

The number of Health Centers is increasing in order that x3 may adequately serve the population. At present there are 33 Health Centers, 14 Subcenters and 11 day nurseries.

The municipal Comprehensive Health Centers serve the people within the municipal area as regards maternal and child health, school health, dental health, communicable diseases control, and sanitation and social sorvices. A general sick clinic serves those in need of curative services and is operated in co-operation. with the hospital nearby through a referral system. Briefly these services are:-

1. <u>Curative services</u> in the morning of every day from 8:30 to 12:00. Approximately 80 patients daily are served, including school children who fall ill.

2. <u>Prevention of discase</u> through vaccination to project against Small Pox, Whooping Cough, Diphtheria, Totanus, (D.P.T.) Cholera, Typhoid, Poliomyelitis and Tuberculosis.

3. <u>Health promotion</u> through 'well-baby clinics' at Health Centers and Sub-centers where babies are given a thorough check up and milk and cod liver oil are distributed to infants and pre-school children whose health appears below par. Home visits are made to newborn infants referred from the 12 maternity hospitals, cases from the 'ante-natal clinics', 'well-baby clinics' and 'sick-clinic' sessions.

4. School Hoalth services upgrade the health of municipal school children by providing 'sick-clinic' services, immunization,

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physical check-ups and social services for 4,000 to 5,000 school children assigned each Health Center. Special services include the protection of cycsight (with the co-operation of voluntary organizations) and tuberculosis surveys undertaken with the co-operation of the Tuberculosis Control Division in the Hinistry of Health. Outside the area of Health Centers, health services for school children are provided by the School Health Services Section at the headquarters of the Bureau of Public Health. In all, then, a total or 370,000 children in 600 schools are served. Furthermore, sanitary inspection and improvement are carried out in all schools within the responsibility of the Bureau.

3 -

5. <u>Dental services</u> are available at all Health Centers for school children and the general public. Mobile units provide services for school children in municipal schools.

6. <u>Social services</u> are undertaken by social workers to assist 'problem families' referred from the home visiting nurse, from the sick clinic, from teachers and from hospitals. An important aid in this work is the Foundation for Municipal School Children that provides lunches, study equipment, clothing and fellowships.

7. <u>Special clinics</u> for the purpose of controlling communicable diseases:

(1) <u>Skin clipic</u> for case-finding, follow-up, tracing case contacts and treating leprosy;

(2) <u>T.B. clinic</u>

(3) <u>V.D. clinic</u> providing treatment.

There is close collaboration with the appropriate central authority for the control of these communicable diseases.

The V.D. olinic is run by the Communicable Disease Control Division in the Bureau of Public Health using drugs provided by the Health Department, Hinistry of Health.

(4) <u>Child guid olinics</u> organized and integrated into Mental Health Clinic activities at Health Center No. 2, No. 3 and No. 21. 8. <u>Day Nurseries</u> located at Health Centers have proved useful for upgrading the health of pre-school children and for relieving working mothers. Bleven day nurseries are operating, each with a capacity of 50 children. The fee for this service is at the minimum of three bahts a day.

Personnel at each Health Center consists of .

2 doctors

2 public health nurses

- 6 graduate nurses.
- 1 dentist
- 1 dental hygicalst or dental nurso
- 1 social worker
 - 2 nurse-aids
 - 1 technician-aid
- 1 part-time sanitarian
- 1 to 2 clorks
- 1 chauffeur
- 1 janitor and 3 auxiliaries

Actually Hoalth Centers offer preventive, curative and health promotive services at the main center and preventive services at Sub-centers. There are 14 Sub-centers. Each Sub-center is run by a P.H. nurse. In the morning nurses visit cases at home based on assignment from the head nurse at each Health Center. In the afternoon these nurses run the clinics already noted.

In addition to these services, complaints of nuisances may be registered at every Health Center in order to serve those people who live far from the City Hall. These complaints are referred to the responsible divisions, usually on the Aame day. <u>Referral system</u>

The referral system has been operating since 1964. Complicated cases from 'sick elinics' can be referred for further investigation, final diagnosis, specific treatment and/or admission to hospital according to the area of responsibility of

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the Health Center. A referral card may be returned by post. Conversely, the services of the Health Center are available for patients referred from hospitals. By now 14 hospitals are involved in this project.

Care of Newborn Infants

In 1964, Public Health nurses were sent to the maternity wards of several large hospitals in Bangkok each day to visit mothers and newborn infants scheduled to leave next day in order to acquaint them with services in the Health Centers and Sub-centers and especially about child care. Appointment to a particular Health Center or Sub-center was made and the mother was requested to brin; the baby to the 'well-baby clinic' at the age of one month. Later, these Public Health Nurses referred cases for home-visis to the appropriats Health Center or Sub-center.

An evaluation made after a year of operation of this system found that there was an increase in the attendance at the 'well-baby olinic'.

Care of newborn infants is the most important aspect of maternal and child health services to decrease the infant mortality rate which is the main objective of the Local Health Authority. In 1965 two hospitals in Bangkok referred newborn cases for home visits by a health visitor from the Health Center. This allowed mothers to be discharged earlier than usual and supplemented care through home visits by public health nurses at the Health Center.

In June 1966, some modification was made. Five maternity hospitals agreed to co-operate in the care of newborn infants by sending a daily list of mothers discharged from maternity wards, with addresses, to the Dureau of Public Health which in turn would provide home visits for health care and advice to postnatal and newborn cases within the area of the Health Center.

Since 1969 eight maternity hospitals have referred cases to the Bureau. In 1972 another 6 maternity hospitals joined. Part-time Obstetrician In 1964, an obstetrician from 2 teaching hispitals and one municipal hospital was assigned to attend the ante-natal clinic session at 3 Health Centers once a week. This new plan allowed the Health Center to improve the ante-natal clinic session and relieved the overloaded maternity (A.N.C. & P.N.C.) sessions in the hospitals. Furthermore, complicated cases can be adminuted to the hospital more conveniently for specific treatment. Because of a shortage of professional staff this project ended in 1966 but the referral system continued. In 1968 a volunteer obstetrician joined the Maternal Care and Family Planning Clinic in Health Center No. 10 and ended two years later.

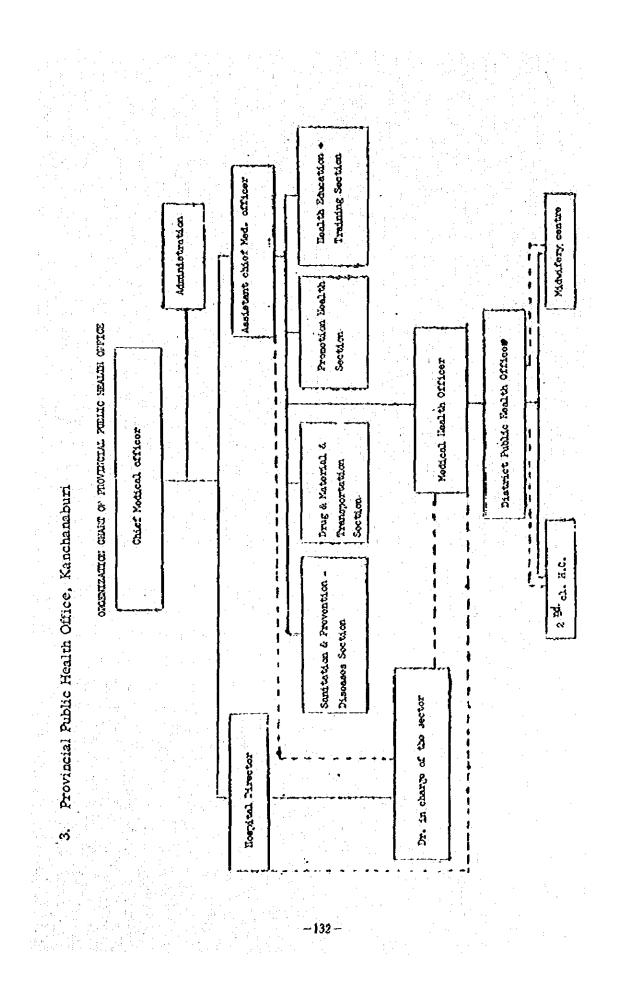
Fanily Planning activities Since October 1966 Family Planning services were made available as an integration of N.C.H. services in the Comprehensive Health Center. At the end of 1968 the number of acceptors was only 1444 and at the end of 1969 only 2575. In 1970 acceptors increased to about 600 cases nonthly. In 1970-1971 the Bureau of Public Health emphasized on training existing staff in Family Planning both in theory and field practice. More than 30 doctors, 200 nurse and 32 social workes attended F.P. courses arranged at appropriate intervals.

In 1969 Saturday F.P. clinic was established in one Health Center in the Southern part of the city to serve working mothers and ended up three years later.

<u>A Community Development Project</u> was organized in 1965, Every Health Contor solected a sample area of about 100 families and a Committee of 10 to 15 members was formed after a thorough survey of the health and socio-economic environment. Intensive health care was provided poople in the area. Community development was accomplished through the Committee according to the needs of the area, with priorities being set up to improve the living standard of the people, and vocational training for housewives being provided if necessary. At present there are 22 G.D. areas.

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	Programme of Hea	1th Centers
	Morning session	afternoon session
	8.30 - 12.00	13.00 - 16.30
Konday	sick clinic	Pro & post natal & cancor-detec
Tuesday	13	Well-baby clinic tion
Vednesday	11	Family Planning clinic
Thursday	n de la companya de l La companya de la comp	Well-baby clinic
Friday	11	Staff meeting & various meetings



Protion of Provincial Public Realth office

Kanchanaburi is a bordering town of Thailand The boundary on the west annex to the Republic of Unica Burma Ititotal area is 19,486 square. Silemetres, and divided ruling area into 9 districts and I subdistrict, 75 communities (Tambol) and 456 villages with the population of about 390,844. Three quarters of the landscape in the northern area consists of mainly mountainous, dense juggle and toilfull tracks. Another one fourth is progressively developed with thick inhabitants, good communication. Ground is ejecupied with agricultural corps and industrial factories.

Duty of the Provincial Public Health Office

The responsibility is devided as follows

I. Administration.

2. Sanitation and Prevention of discases.

2.I Legislative controlling of Public Health law in dealing with

the factorics, Hotels, Medical art octivity, etc.

2.2 Prevention of infectious discases.

2.3 Sanitation and village boolth development such as refuse and

sovege disposal, making rivy, water supply and enviveonmental

sonit tion etc.

2.4 Control of communicable discises.

3. Realth promotion

3.I Family planning service.

3.2 Maternal and child health service

3.3 School health service

3.4 Nutrition

3.5 Social velfair service

4. Bealth Education and Training

4.I Community Health Education.

5.2 School health education

4.3 Preservice and In-service training.

W.4 Audio - visual aids.

5. Drugs, material and transportation.

Couse of delsesses reported in the area,

1. Diseases of Rural area.

Kolaria, upper respiratory tract infection, G.I. Diseases,

Kolnutrition an aneamin, skin diseases etc.

2. Social communicable diseases.

Venereal diseases, Tuberculosis, Leprosy etc.

3. Occosionally endemic discases

Buteric fever, Dierrbca, Heemorrbagic faver, Respiratoryinfection, Influenza etc.

Number of Redical and Fcolth Offices.

HospitalIMedical Health centres22 nd. class health centres36Midwifery centres74District Publice Boalth centres10

Public Health Project of Kanchapaburi Pravince

As mention previously the three quarters of the area is underdeveloped and mostly, dense jungle and hilly, and people earn their living by mining and logging. In the remote area most of the population have low education. On the contrary to the rest of one founth of the area which most of the inhabitants have good education and rather developed with good semitation. As it is learned that major ports of the ground in this region in largely grown with agricultural&rops and scatter with industry factories, from which there are many problems have to be tackled about the occurence of discases according to the season and locality. Prevention of discases and promotion of health are different in Section.

For reason in an underdeveloped area the activity of sanitation, Health service is/⁽¹⁾)tigesling with the control of malinic, solutrition, skin discasss, O.I. Diseases included communisable dissesses. But in developing area, the sanitary work is mainly based on Family planning, Provention diseases, medical care and control of communicable.

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diseases, egyenereal diseases, Tuberculosis, and giving insummation against diseases liable to happen in some season, for instance cholora Diptheris and whooping cough vaccination.

From observation of local condition and certain kind of diseases which may occur due to change of weather and its servounding, the Provincial Public Health office have been planning the work as in the following:

- 3 4

A. Integrated Medical Health Service

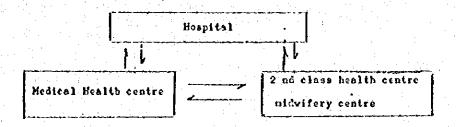
I. Curative programm

I.I Indoor service = 2 nd class health centre, modical health centre, hospital and Provincial Public

health office

1.2 Outdoor service = nobile medical health units

1.3 Organizing Referal Systen = by 2 ways confundation



2. Health From tion Program

2.1 Indoor service main work = Family planning

2.1.1.2 nd class health centre, midwifery/ = Oral pill, Condon. 2.1.2 medical health centre = oral pill, condon, I. U. D. Vascetomy

2.1.3 Hospital = oral pill, condom, I.U.D. vescetamy, ^Tubal steriligation

2.2 Outloor service

2.2.1 By health personels = F.P. maternaland child health service

shhool health vervices, natrition and

health education, village health and

schitation development

2,2.2 By Hobile Family planning unit of medical health centre and

Proincial Public health office = I.U.D. Vasectomy est. .

3, Envirógmental Sanitation Program

3.1 Controlling and advising of proper sanitary condition .

-135--

- 3.2 Prevention of environmental pollution
- 3.3 Promotion of community sanitation such as, water supply drainage, Refuse disposal etc.
- . Prevention of infecticus discases program
- By infunitation against diseases to the public according to age and local condition. Action is taken place both indoor and outdoor service 5. Control of Communicable diseases program
 - 5.1 By controlling social diseases such as venereal diseases, Tuberculosis, and leprosy.
 - 5.2 Sontrolling the occasional endenic diseases such as harmorrhagic fever, diptheria, whosping cough, cateric fover, diarrhea, influenza etc.
 - B. Inservice training program
 - I. Training of Midwifes and parses.
 - 2. surgical training of physicians working in redical health offices
 - 3. Training of local volunteer health personels.
 - C. Mescerebind hiboratory Proprian
 - I. Centrel Laboratory
 - 2. Lescarch on Malerial paresites and resistant strain.
 - D. Fetio clinic voluntur medical unit of Princess nother.
 - I. By using helicopter for serving people is remote areas
 - 2. By Eadio clinic service, editse medical tratment to those who live in
 - the resole orcas, the centra is situated at Frovincial Respital.
 - E. Extension and upgrade of heath centres centre
 - 1. Upgrade of midwifery in everyvillage to be the second class health center
 - 2. Promote district second class health cintres to be indical health centre

Problems

Problems which is generally happer/ most of governent office

- I. Lock of active personels due tot
- I.I. B6 fixed position.
 - Let Bisinclination of working in an underdevelopment areas especially
 - doctors and marson,

I.J Education system enumerated in the regulation for producing personels is too difficult in finding the local people for edecation fund provided.

2. Insufficient Pinance

Budget provided is not enough for medical activities allowances for active persentls an fuel for vehicles.

3. Office shortage

The number of health centres are not available in all communities, at present there are only 2 medical health centres, 36 secondaless bealth centres and 14 midwiferpontres

4. Lock of transportation

Vehicles are important factor in carrying out the work to visit •people in the villages and strarging mobile redical health unit. The hospital and medical health centre have not enough endulance in organizing referel system.

4.1 notorcycle should be supp lied to the active personels in the centro second class health and midevifery for visiting and advising the villeders.

4.2 Medical health centre should be provided with vehicles which will enable the activepersonals to do their works, especially for mobile medical health unit and transfer potienty to the hospital.

4.3 The Provincial Fublic health office should have at least 2 vehicles avialable for inspecting work, and use as mobilenedical unit.

Conclusion

Kanchanaburi has an enormous area, about 3/4 israral area, only I/4 is developing area. So the problem of public health service must be devided into 2 methods and the project must be provided in integrated medical health services, that is to bring medical health service directly to the people such as mobile medical health unit using motorcycle,motorcar belicopter and Radioclinic, and establish the service sentros with appropriate financial support and supply of able personels to work there.

	Sho Co	manity	Karlth	Bovalon	nent.			
		Conchanal	- 1	NOVINC 8				
		•	!	Annu	1 Acoo	mplish	ment	****
Acti	vitice		1970	1971	1972	1973	1974	
1. Villages		Total	430	430	430	430	4500	Except the
2, CHD [*] Villag	63	n)	127	162	265	286	300	municipal
	- Roople	. t i	118068	136716	145749	226323	271467	Villages
	-House		19627	23334	26270	37668	47342	
	- Mate	f.	13	97	100	156	179	
	- Schools	8	173	118	129	217	243	İ
3. Sanitary Pr	ivy	Ħ	11615	13687	15491	18500	23537	
	- House	b	10710	12873	1631	17315	22135	
	- Wate	ų	385	362	376	521	500	
	- Schools	B	420	452	484	664	822	ļ
4. Senitary 16	11		618	1093	1675	1797	2333	€
	- House	n	567	7013	1605	1721	5537	
	- Wats	8	25	37	36	39	47	
	- Schools	4	26	29	34	37	55	
S, Water Suppl	y j	4	55	86	63	103	ш	1
	- Bouse	K	19	31	20	15	11	
	- Wats	-1	8	1 17	18	22	28	
	· Johools	N	28	38	51	61	n	
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	= H.use	•	906	592J	3857	4429	5676	
	- Hats '	,	16	51	6	90	88	·[·
	• Schools	4	22	. 53	61	150	104	
	·		 	<u> </u>	 	 	l	

CHD* • The Borraunity Kealth Development -138-

Thanuang First Class Realth Contor Kenchanaburi Province

Docombor, 4 , 1974

This denter is fourteen kilometers south from the provincial capital and one hundred and sixteen kilometers from Bangkek. Communication is very conveniently by car and by train. The center was established as second class health center in the year 1940 by the people. The major work in that time emphasized on provention of diseasees and first aid because the center had only one canitarian.

Up to the year 1947 The Health department set up the first class health denter. The health personnel were composed of one dector, one nurse, one sanitarian and one midwife. The number of cases were increased and the building was too small for the health personnels and the patient to stay in ; there fore, in the year 1972 the government gave the budges Baht to construct the building which you are here now.

In this district the people carn their living by growing crops such as sugar ease, rice, caeswa, etc.

Area	700	83+	kilometers
Population (in 1974)	70,167		· · · · · · · · · · · · · · · · · · ·
Walo	35,939	a tu	
Fomalo	34,228		
Bonses	42,523		
Sumbor of tambon(group of villages)	13		
Sumber of villegos	66		
Number of solool	47		
Number of wat (Monastery)	30	• •	
First dass builth with	j k		
Second	5-	· ·	. *
riduife	2-		

Tapiska Intorosting Statistics in this district

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Public Realth Statistics in 1974

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Health unit in Thamung district.

First Class Health Center

Second Class Health Center

Midwifery Center.

First Class Roalth Centor Themuang District, Kanohanaburi Province

Total Personnel

Dootor

Public Health nurse

Nurso Dontal Hygionist Realth workor

T.B.Health worker

Midwifo

Fractical nurse

Caro Taker

Function of the Boalth Conter.

This center is under control of provincial chief modical officer. The system of working is multipurpose or integrated health services. The center provides out patient clinic services in the morning and public health services in the afformoon .

The latter include

I. Family planning

- Vassotony

-140-

- Tubal resoction

- Orel contraceptivo pill

- I.U.D. insortion

 Control of communicable diseases, including reporting and isolation of dases, disinfection, prophylaotic immunication and other control activities
 Survey, report, and control of endemic diseases.
 Natornal and Child health, safe child delivery, home delivery, home

visiting sto.

5. Community health development, including senitary water supply,

participating with people in the villages to construct axall water supply, drainage, refuse disposal, suggestion the villagers to

construct the sanitary privy, house cleaning ect.

6. School bealth

7. Vital and hoalth statistics

8. Laboratory Diagnosis.

9. Household Remodies Promotion

Work Done in 1974 (from January to Novombor 1974)

I. Modical oare

Wisif Sundar of patients^Athe health center 30 to 40 daily about

5,219 a year

· Patients received treatment as divided in to the following groups

- Respiratory system	877	10880
- Neurosis and anniety	495	H
- Dormatitie	287	. H
	gastrointestigal 2	42 #
- Kelaria	65	н
- Conjunctivitie	52	n
- All kind of dysontery	26	#1
- Diarrhoos	43	0
- Accidents 'poisoninge, & violen	co I43	ti
- Yenoreal disease	27	

-141-

2. Family planning

•	VAEGOLOAV			1.1.1
	Oral contracepti	vo pill	accoptors	
•	I.U.D. acceptors			:•
				n Biele

3. Maternal and child health services

· : ·	a.Anto natal	SX811		y da k			78			¢889	8
•	b.Post natal	818 1 1		· •	•	· .	30	;		ų.	
•	c.Deliveries	attended		17. 1917 - 1917 1917 - 1917	i.	· .	10			1	: : :
	d. Home visi	tings	n de la composición de				157		e se e		

17

217 196 Cases

cas03

•

4. Incunisation

a.Cholera	5,680
b.Small por	222
0.D.P.T.	39
d.B.C.O.(0 - 4 year)	610
e.Anti rabies vacoine	39
f.Antivenene serum	

5. School Health

a.Number	ót	school	tospos	i)ity	 15
b.Number	of,	school	δόγε	n de la composition d La composition de la c	5,724

disturbor of school boy received treatment 2,163

6. Poriodic physical examination and modical caro services through

mobil teames and first-aid services 8 times per month in rural area

Assistanco requested

The following itoms of requirements are arranged in respective priority

I.Ambulance

- To be used for taking sovere cases from his home to First class

health center and some severe cases from first class health

contor to hospital

2.Blectrical lamp to be use operating.

3. Air conditioner for operating room.

4. Two eyes microscope(electrical microscope) to be used for

exemination stool and blood.

4. Provincial Health Office, Songkhla

Songkhla Health Centers

General cendition of Songkhla province

Populatión	(Decimbor 1973)	• • • • • • • • • • • • • • • • • • •	704831	
	(October 1974)	726524	
Area			6735	s g .kn
Location		Longtitude	100 37	
		Latitude	7 11	
Distance fi	rom Bangkok			
		by train	974	kan.

by cor 1280 by ship 725

kø.

kn.

weather

Rainy susson from October to February

Hot season from March to September

average Temperature 24 c in the morning 32c in the afternoon

Songkhla Provincial Chief Medical Office

Administration - see appendix 1

Hospitals

1. Songkhla Hospital (provincial Hospital)

350 beds

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2, Hadd Yai Hospital

300 beds

3. Neurological Hospital

150 beds

			0		
		<u></u>	Centors		
	f	* ***********************************	.	19.000 € 19.000 € •	
District	Population 1943	Ταπρόκ	1 st class H.O.	2 nd class H.C.	Midwifory center
²sta1	704831	114	4	66	54
''uang	141215	17		10	6
Hodd Yal	186759	23		11	12
34dao	48609	5	1	4	8
Sanod	83276	13	1	3	?
Tatawee	25544	9	1	6	4
FitaPoom	58553	8	1	5	4
.Jhana	52345	13	- 1	6	8
Topa	37701	7	-	6	1
sadayot	25998	8	-	2	- 1
'atingpra	44831	11		8	3

Personels	Provincial	Health	Songkhla	Hadd Yal	Neurological
	C.N.O.	center	Hospital	Hospital .	Hospital
Physician	2	4	17	14	5
Centist	1	in teres ∎ante de la constante ante de la constante de la const ante de la constante de la const ante de la constante de la const	1	1	1
Phomacist			2	1	1
Nurse	5	. 11	57	38	18
Health work	er 4	57		-	-
Miawife	5	118	-	5	-
Addited nure	0 1	5	41	36	16
 Tab Technician	•	1	6 6	6	2
 Olerk.	5	1	3	23	8

Expected Number of Health and Midwifery center

	1st class Health Center	40-8
· · · ·	2nd class Health Center	104
	Midwifery Center	776
Ехрес	ted Number of Health Nar	pozor
	Physician	10
den en	Nursé	30
	Health worker	134
	Midwife	900
	Practical Nurse	134
	Lab technician	10
	Dental Hyginist	10
	Olork	10
	Fotal	1238

Existing staff (1973) VS. Expected Number of staff (1973)

Ε. Ε.	spected No of 3	toff Existing	NO hort
Bhyșićian	4		
Nurso	12	11	1
Health worker	78	57	21
Vidwifo	128	118	10
Practical Nurse	78	5	73
Dental Hygienist	4		4
Laboratory technici:	on 4	1	3
Clerk	4	1	3
ала 11 ¹ Стала Стала Стала Стала Стала otal 312	197	115	

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Standard NQ o	t staff	Existing stoff	NO of shortage
• • • • • • • • • • • • • • • • • • • •			
Physician	10	a 4 - 4	6
Nurse	30	41	19
Health worker	134	57	17
Hidwife	900	118	782
practical Nurse	134	5	129
Dental Hygienist	10		10
Lab Technician	10	1	9
Clork	10	1	9
Total	1238	197	1041
······································			

Assistane requested

The following items of requirements are arranged in respective priority

1. Yebioles :

To be used for supervisory works by

1. Provincial Chiof Medical Officer

2. Deputy Provincial Chief Kedical Officer

3. Nurso - supervisor

2. Ambulances :

To be used for strongthening the referral system, between not work of health centers and hospitals (5 Destrict 1st class H.O.)

3. Hal Motorcycles 1

to be used for sanitary works by health workers in charge of health centers and health stations. (66 Health workers)

4. Anesthelig Machino

To be used in the operating theaters of the first class Health conter (5 Health centers)

5. Sterilizors used with gosoline 1

To equip of the First class Hoalth center (5 Health center)

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6. Opobation instruments&equipments

to equip or reequip some of the center

7. Vacuum Extractors and other Obstetrics instruments :

To equip or reequip some of the centers

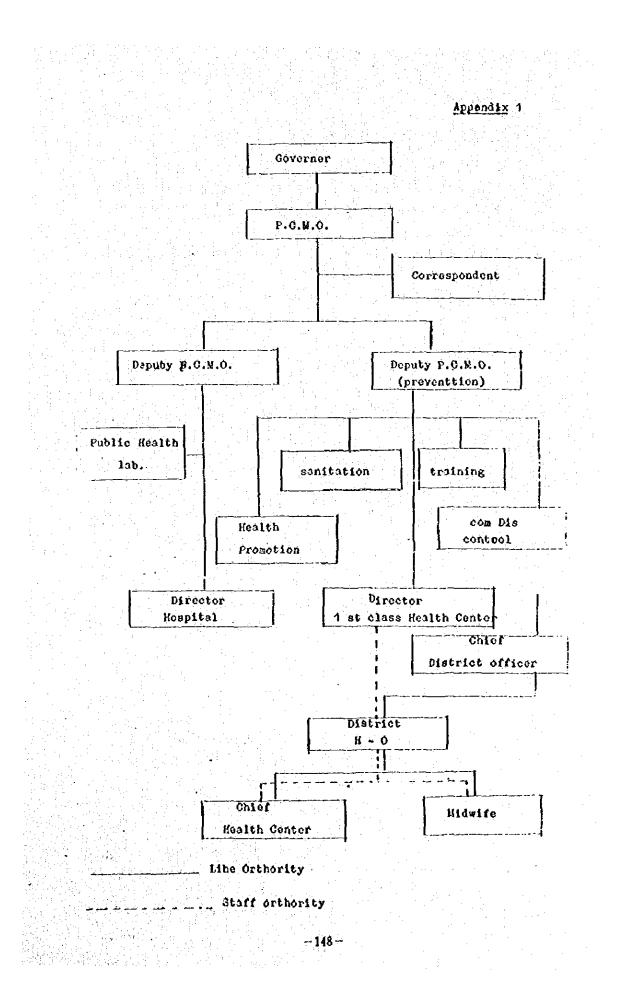
8. Fellow ships i

Yellowship for observation tour on family planning and rural health

.

9. Drug (Antibiotics, vitamine, intestinal antiseptics) To equip some of the centers

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COLLING OF MURSING, SONGKELA, THAILAND

College of Nursing, Songkhla is under the Division of College of Nursing, the Office of the Under-Secretary of State, Ministry of Public Health, the College enrolled its first class in day 6, 1966. This College is one agong seven colleges of the Ministry of Iublic Health. However, there are not enough available nurses to meet the ever-incommating descad. This trane will continue, and the demand for nursing in Thatland has increased sharply of recent years.

.ith the rapid expansion of medical and health services nurses have also been called upon to assume preater responsibilities. The siniums curriculum for the basis nursing education has therefore been revised, taking into consideration the more comprehensive kmerledge and skills needed by the nurse.

The Curriculus :

In order to neet the requirements of the curriculum, the students will need to have completed their high school education (12 years) before they will qualify for admission into the College of Aursing. This college offer a course leading to a Diplome in Nursing and Midsifery.

In 1976, the College will offered at least two Pest-Besie Fursing Fregrames 1 - Kurse Practitioner Programe

- Euree Administrator Programme

The programme is and year diploma course, or two years course looding to a bachelor's degree will offered. Those two programmes provide special proparation for nurses and head surses .

This College is also responsible for the truining of Wirsing Auxillaries - practical nurse, and training kidwifery for practical nurse (a course of 6 months).

Aunder of the Students :

Appreximately 50 - 80 youn; girls are celected each year to attend a three years and six menthe course.

Dpon (raduation, each of thes is obliged to corve in the Provincial Nospital or in a Health Centre in the provincial whore sho received the followship - where she crass from; and working for the people in rural area.

Source of Income ! from the government's budget only . <u>Teaching Staff</u> : - 22 full-time staff - 35 part-time instructors from the College of Sducation, Universities , Fechnical College, and Son, Khla Hospital.

Clinical Fractice 1

Songkila Rospital will provide practice on its wards for the students, and the College will accept responsibility for the safety of this service .

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5. Chiang Mai University

PROGRAM OF STUDY LEADING TO THE DEGREE OF BACHELON OF SCIENCE, IN MEDICAL SCIENCES FOR STUDENTS CODE 17.....

FIRST YEAR PROGRAM (FIRST SEMESTER)

COURSE CODE	COURSE TITLE	SEM.CR.	PRE
BIOL 104	LIFE SCIENCE	4(3/3-1/3)	NONE
CHEM 101	GENERAL CHEMISTRY	4(3/3-1/3)	NONE
ENGL. 101	FUNDAMENTAL ENGLISH 1	3(3/3-0/0)	NONE
MATH 101	MATHEMATICS FOR MEDICAL STUDENTS	3(3/3-0/0)	NONE
PHYS 104	GENERAL PHYSICS I MECHANICS		oncurren sistration h Mathlo
DR11 CO 161	BEHAVIORAL SCIENCES I	3(3/3-0/0)	NONE
BEH.SC. IGI	BEHAVIORAL SCIENCES 1		
	τοτλι	21	
		1	} .
FIRST YEAR P	ROGRAM (SECOND SEMESTER)		
FIRST YEAR P	ROGRAM (SECOND SEMESTER)		
PIRST YEAR P	<u>Rogram</u> (second semester) Zoology	3(2/2-1/3)	Bio1.10
BIOL III	ZOOLOGY	0	r Bio1.10
DIOL III CHEM 102	ZOOLOGY GENERAL CHEMISTRY	4(3/3-1/3)	Biol. 10 Biol. 10 Chem. 1 Encl. 10
DIOL III CHEM 102 ENGL 102	ZOOLOGY GENERAL CHEMISTRY FUNDAMENTAL ENGLISH II	0 4(3/3-1/3) 3(3/3-0/0)	r Bio1.10
DIOL III CHEM 102	ZOOLOGY GENERAL CHEMISTRY	0 4(3/3-1/3) 3(3/3-0/0)	Biol.10 Chem,1
DIOL III CHEM 102 ENGL 102	ZOOLOGY GENERAL CHEMISTRY FUNDAMENTAL ENGLISH II GENERAL PHYSICS 1 SOUND AND	oi 4(3/3-1/3) 3(3/3-0/0) 4(3/3-1/3) 3(3/3-0/0)	Biol.10 Chem.1 Engl.10 Fhys 10 Beh.Sc
BIOL III CHEM 102 ENGL 102 PHYS 203	ZOOLOGY GENERAL CHEMISTRY FUNDAMENTAL ENGLISH II GENERAL PHYSICS 1 SOUND AND ELECTROMAGNETISM	0 4(3/3-1/3) 3(3/3-0/0) 4(3/3-1/3)	Biol.10 Chem.1 Engl.10

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		· .	
SECOND YEAR	PROGRAM (FIRST YEAR SEMESTER)		
	المتنا يتصربني فالمتحد بالتباع المتحديني بنام أجراهم فستجر متاسبته		
COURSE CODE	COURSE TITLE	SEM.CR.	PRE.
BIOL 201	VERTEBRATE BIOLOGY	4(3/3-1/3)	Biol III
CHEM 201	ORGANIC CHEMISTRY	4(3/3-1/3)	Chem 102
ENGL 291	ENGLISH FOR SCIENCE STUDENTS I		1 1 I I I I I I I I I I I I I I I I I I
матн 206	ELEMENTARY STATISTICS	3(3/3-0/0)	Math 101
PHYS 204	GENERAL PHYSICS : LIGHT AND INTRODUCTION TO MODERN PHYSICS	5 4(3/3-1/3)	Phys 203
	ELECTIVE	3(3/3-0/0)	NONE
	ΤΟΤΛΙ	21	
	La contra de la co	·	1
SECOND YEAR	PROGRAM (SECOND SEMESTER)	n in the solution An the sign	
BIOL 223	GENETICS	4(3/3-1/3)	Biol 101 and
DIOL 223	GENETICS	4.07.0-17.07	111
			Chem 102 and Math 206
	CONTRACT MULTION CONTRACT	-	
BIOL 317	COMPARATIVE DEVELOPMENTAL	1	Biol 201
BIOL 317	ANATOMY	4(3/3-1/3)	
CHEM 202	ANATOMY ORGANIC CHEMISTRY	4(3/3-1/3)	Chem 201
CHEM 202 CHEM 226	ANATOMY ORGANIC CHEMISTRY BIOPHYSICAL CHEMISTRY	4(3/3-1/3) 36/2-1/3)	Chem 102
CHEM 202 CHEM 226 ENGL 292	ANATOMY ORGANIC CHEMISTRY BIOPHYSICAL CHEMISTRY ENGLISH FOR SCIENCE STUDENTS I	4(3/3-1/3) 36/2-1/3)	Chem 102
CHEM 202 CHEM 226	ANATOMY ORGANIC CHEMISTRY BIOPHYSICAL CHEMISTRY	4(3/3-1/3) 36/2-1/3)	Chem 102 Engl 291

THIDD Y	FAD.	PROCRAM	(FIPST	SEMESTER)	
IMADI	, DUUC	T KOOKIUM	ALL NO L	OPHICOL PRO	

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	THIRD YEAR PI	<u>ROGRAM</u> (FIRST SEMESTER)		
	COURSE CODE	COURSE TITLES	SEM.CR.	PRE.
1. A.	ANAT 301	HUMAN GROSS ANATOMY	8(6/6-2/6)	Biol 223 and 317
	ANAT 303	HUMAN DEVELOPMENTAL ANATOMY	2(1/1-1/3)	Biol 223 and 317
	BIOCHEM 301	BIOCHEMISTRY FOR MEDICAL STUDENTS	8(6/6-2/6)	Biol 223, 317 Chem 202, 226 and Phys 204
	PREV.MED. 30	INTRODUCTION TO PREVENTIVE	1(1/1-0/0)	NONE
	BEH, SC. 301	BEHAVIORAL SCIENCES III	2(2/2-0/0)	Psy 103
	CLIN.MED.301	INTRODUCTION TO CLINICAL	0(0/1-0/0)	NONE
	CUN MED 305	MEDICINE 1 CORRELATION CLINIC	0(0/2-0/0)	NONE
1 - A	CERTIFICOT COL			
		τοτλι	21	
	THIRD YEAR PI	OGRAM (SECOND SEMESTER)		
1	ANAT 304			
1. A.	ANA 1 304	HUMAN NEUROANATOMY	4(3/3-1/3)	Anat 301, 303 and Chem 202
	esse missic		ern hich	226 Anat 301, 303
-	ANAT 306	HUMAN MICROSCOPIC LANATOMY	0(414+210)	and Chem 202
	PHYSIOL 305	PHYSIOLOGY FOR MEDICAL	10/6/6 //91	226 Anat 301, 303
		STUDENTS		and Phys 204
	CLIN.MED. 306	CORRELATION CLINIC	0(0/2-0/0)	NONE
- 1	· · · ·	TOTAL	20	

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		• • • • •		
FOURTH YEAR	PROGRAM (FIRST SEMESTER)			
COURSE CODE	COURSE TITLE	SEM.CR.	PRE.	
ратн 401	PATHOLOGY FOR MEDICAL STUDENTS	6(3/3-3/8) and	Anat 304,306 Biochem 301 Physiol 305	
PARASIT 401	MEDICAL PARASITOLOGY FOR MEDICAL STUDENTS	4(2/2-2/4)	Blochem 301	•
MICROBIOL 401	MICROBIOLOGY FOR MEDICAL STUDENTS	7(3/3-4/9)	(· · · · · · · · · · · · · · · · · · ·	
CLIN.MED. 401	INTRODUCTION TO CLINICAL MEDICINE II	00/1-0/0)		
CLIN.MED. 409	METHODS OF CLINICAL DIAGNOSIS	2(2/2-0/0) and	Anat 304,306 Blochem 301 Physiol 305	
PSYCH 401	SY STEMIC PSYCHIATRY	2(2/2-0/0)		
ратн 495	CLINICO-PATHOLOGICAL CONFERENCES	QQ11-0/0)	1	
	TOTAI.	21		
	· · · · · · · · · · · · · · · · · · ·	J		•.
FOURTH YEAR	PROGRAM (SECOND SEMESTE	R)		
ратн 402 .	PATHOLOGY FOR MEDICAL STUDENTS	5(3/3-2/6)	Path 401	
РАТН 403	CLINICAL PATHOLOGY	4(2/2-2/6)		
РНСО 401	PHARMACOLOGY FOR MEDICAL STUDENTS	7(6/6-1/4) and	Anat 304 Blochem 301 Physiol 305	
	CLINICAL MEDICINB	3(3/3-0/0)		
	PRINCIPLES IN PREVENTIVE MEDICINE	2(2/2.0/0)	NONE ·	
	CLINICAL PARASITOLOGY	K1/t-0/0)	Parasit 401 -	
	CLINICO-PATHOLOGICAL CONFERENCES	0(0 11-0/0)	NONE	
ANAT 491	APPLIED ANATOMY CONFERENC	1 · · · ·	Blochem 301	
		and .	Physiol 305	
	TOTAL	22 ·		

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STUDY PROGRAM LEADING TO THE DEGREE OF DOCTOR OF MEDICINE

THIS STUDY PROGRAM FOLLOWS THE STUDY PROGRAM LEADING TO THE BACHELOR DEGREE OF SCIENCE IN I-EDICAL SCIENCES (MEDICINE) FIFTH YE. 9 PROGRAM COURSE TITLES IFOTAL I SUMESTER Incommendence

•	FIFTH YE.9 PROTEN	4		
COURSE CODES	COURSE TITLES	TOTAL	SUMESTER CREDITS	PREREQUITES
HED 501	SYSTEMIC LECTURES AND CLERKSHIPS IN	352	10(10/2-0/0)	B.S. DEGALE IN MEDICAL SCIENCES (MEDICINE)
SURG 501-3	SYSTEMIC LECTURES AND CLERXSHIPS IN GENERAL SURGERY, ORTHOPEOIC SURGERY AND PHYSICAL MEDICINE, AND ANESTIES SICLOGY	311	, '9{9/P+0/0}	
68.67N 501	SYSTEMIC LECTURES AND CLERXSHIPS IN OBSTETRICS AND GYNECOLOGY	176	5(5/P-0/0)	
PCO 501	SYSTONIC LECTURES AND CLERXSHIPS IN PEDIATRICS	176	5(5/2-0/0)	
RADIO 501	DIAGNOSTIC ROCATGENOLOGY, RADIOTHER RADIOISOTOPES AND CLERKSHIPS IN RADIOLOGY	PY86	3(3/2-0/0)	
PREV.MED	PUBLIC HEALTH ACHIEVISTRATION AND HA	X0R32	2(2/2-0/0)	
of# 501	SYSTEMIC LECTURES AND CLERKSHIPS IN CRHTHALMOLOGY	65	2(2/7-0/0)	•
0701 501	SYSTEMIC LECTURES AND CLEAKSHIPS IN DIOLARYMOOLOGY	65	2{2/P-0/0}	¥ a statistica de la constatistica de la constatis
PSYCH 571	CLERKSHIPS IN PSYCHIATRY	55	2{2/2-0/0}	*
FOREN MED 501	Systemic lectures in forensic redicine	30	2(2/2+0/0)	•
				b b
CLIN.1/20 691	CLINICO-PATHOLOGICAL CONFERENCES, GRAND ROLMOS AND SPECIAL LECTURES	69	0(11-0)	•
CLIN,HED 695	TUKR CLINIC	60	0(11-0)	H
- 	TOTAL	1972	42(42/4P-0/0)	

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COURSE CODES	COURSE TITLES	TOTAL HOURS	SEHESTER CREDITS	PREREQUISITE
HEO 671	CLERKSHIPS IN INTERNAL INTERNAL	350	0(10/7-0/0)	STRTH YEAR STANDING
	CLERNSHIPS IN GENERAL SURGERY, ORTHOPEDIC SURGERY AND PHYSICAL NEDICINE, AND ANESTHESIOLOGY	320	10(10/?-0/0)	
	CLERKSHIPS IN OBSTETRICS AND GYNECOLOGY	160	5(5/8-3/0)	
PED 671	CLERKSHIPS IN PEOLATRICS	160	5(5/2-0/0)	la la
PREV, HED 671	CLERKSHIPS IN CORLINITY MEDICINE	160	5(5/17-0/0)	#
FOREN HED 671	CLERKSHIPS IN FORENSIC MEDICINE	32	1 (1/2-0/0)	14 -
ELECTIVE 671	ELECTIVE	128	3(3/?-0/0)	
ELECTIVE \$72	supper clerkships	3	1(1/2-0/0)	
сі ін нео 691	CLINICO-PATHOLOGICAL CONFERENCES, GRAND ROUND AND SPECIAL LECTURES	60	0(11-0)	
CLIN HED V 695	TUKR CLINIC	60	0(12-0)	n - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999
a the state of a second wat at so	TOTAL	1432	20(20/2-0/0)	میلیدهان و این از این این این این این این این این این این
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General Information

Paoulty of Mursing, Chiang Esi University

نسب وأسعره مندسه

Faculty of Muraing, formerly was a Mursing Department in the Faculty of Medicine, Chiang Mai University since 1960, and was promoted as a faculty in August 15, 1972

The Faculty of Fursing is devided in to departments as follows:-

- 1, Department of Fundamentals of Nursing
- 2. Department of Medical Mursing

3. Department of Surgidal Mursing

4. Department of Midwitery and Obstratios Hursing

5. Department of Pediatrio Mursing

6. Department of Psychiatric Mursing

7. Department of Public Health Mursing

8. Department of Nursing Administration

The Progress Opened

- 1. Prestical Mursing, Since 1960
- 2. Diploma in Mursing. Since 1961
- 3. Certificate in Midwifery. Since 1964

4. Dachelor of Science in Nursing, Since 1967

5. Bacholor of Science in Mursing. (post diplom in Mursing) Sings 1971

6. Pachelor of Salence in Mursing and Midsifery, in 1974

Mesher of Students and graduates 1974 - 1975

	No. of Present students	No. of expected graduates	No. of graduates
B.S. C. in Nursing	144	34	159
B.S.o. in Nursing (post diploma)	15	10	8
Diploma in Nursing	243	63	538
Hidrisory	80	80	307
Practical Nurse	73 .	23	567

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	Nursia	S FAOL	1 117- 01	iong	Kai V	niver	sity			
			; of Nu	•					1 1 1 1 1 1	
		Expected Number of instructors								
• •	Departsonts	Med. Neg.	Surg Noz	Ó.B. Neg.		Peych Neg.	Fund. Neg.	P.H. Neg.		Total
	1974 - 1975									
	Kaster Degree	1.	Z	1	1	1	-	1	1	8
	B.8. Degree	6	10	9	5	3	8	6	3	50
1997 - 1997 1997 - 1997 - 1997 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1	Diploss	2			-	-	1	-	с. –	3
•.	Çertificato	-	-	-	-	-	1	-	•	1
e".	1975 - 1976			:			1,7			
1. 1. ¹ .	Naster Degree	2	- 5	1	1.	-1	•	1	2	10
	B.S. Degree	6	13	11	6	5	8	6	3	58
	Mplona .	1	. •	•	· •.	₽	1	-	-	5
•	Certificate	-	-	-	•	-	. 1	- .	- '.	. 1
		No.	of ine	truct	òr ne	eded d	n 6a¢	h dep	artaeat	6
	Døgartseata	Ked. Beg.	Surg. Neg.	Ú.B. Negi			Paych Nsgi	1.	Nog. Adm	Total.
 .	1976 - 1977						· · ·		1	<u> </u>
	Ph. D.	•	-	-	•	-	-		•	-
	Kester Degree	2	3.	2	2	2	1	2	2	16
	B.S. Degree	10	17	16	4	3	ų	5	-	59
:	1977 - 1978									
	Ph. D.	-	1	•	-	-	•	-	-	1
	Kaster Degree	3	4	3	2	2	S	S	2	20
	B.S. Degree	13	19	16	8	4	4	5	-	69

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, Chiang Xa	i University	Ning and stati States and	
Enstructors and Qualifications	1974 - 75.	1975 - 76	Expected to be in 1976-1977
- Kaster Degree - abroad			
M.S. in Nursing Education	2	2	2
N.S. in Bureing Administration	2	2	5
H.S. in Kursing	3	4	5
H.S. in Faychlatric Nursing	1	1	1
М.Р.я.	1		
- Xaster Degres - Theiland			
M.A. in Nursing Education	. • •	1.	3
- 3.5. Degree - abroad	3	3	3 3
- Baohelor Degres - Theiland		4	
8.8. in Muraing	18	29	40
· B.A. in Murcing Education	21	55	55
B.S. in Nutrition		+	1.
3.8. in Poll, Sureing	\$	5	5
- Diplosa in Nursing	3	2	2
- Certificates in Nursing and Teaching	1	1	1 1 1
Total	61	24	88

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6. Activites of the Virus Research Institute

Brief Statement of the Activities of the

Virus Research Institute

Bungkok, Thailand

The Virus Research Institute, Department of Medical Sciences, Ministry of Public Health, Thailand was established in 1953.

The responsibilities of this Institute include fundamental and applied research in virology, providing diagnostic examinations and special investigations in virus diseases which are of public health importance in Thailand. This Institute also serves as a MHD National Influenza Centre.

The Virus Research Institute has 8 main sections, namely Enterovirus, Arbovirus, Respiritory Virus, Miscellaneous Virus (Rabies), Immunochemistry, Electron microscopy, Experimental Animal, and Preparation Sections.

The staff is composed of 7 medical dootors, 1 veterinarian, 10 technologists 11 technicians, 1/, laboratory helpers, 2 clerks, and 3 drivers.

With the existing fascilities, the Institute is able to do the following laboratory activities:-

1) Tissue culture work. Primary cells being used are monkey kidney cells, pig kidney cell chick embryo fibroblast cell. Cell lines being maintained end used are FL, HEp-2, Hela, KB, LLNK2, and BHK21.

2) Isolation of viruses in tissue culture, suckling mice, and embryonated eggs.

3) Neutralization test in tissue culture and animals for identification of

isolates and quantitation of virus antibodies.

4) CF and HI tests.

5) F.A. techniques for rapid diagnosis.

6) Preparation of antigens and antisers in tissue culture and animals.

The activities carried out during the past few years are as follows:

A. Disgnostie examinations

Ying diseases	1962	1970	1971	1972	1223
Polionyelitis	308	87	256	164	357
Other enterovirus infections	· · · ·	15	34	73	54
Haemorrhagic fever	372	603	517	1531	709
Japanese encephalitis (JE)	22	239	57	60	25
Influenza	440	651	328	182	20
Messles	+		- ,	27	5
Mimps, RS, Herpes, etc.	່ 1	8	9	20	65
Smallpox	7	29	15	24	31
Rutella	2	6	8	27	9
Total	1152	1638	1224	1788	1270

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8. Investigations

1) Enteroviruses

-Evaluation of policeyelitis vaccination in Bangkok.

-Longitudinal study of enterovirus infections in children in Bangkok . -Pollow-up scrological study after poliomyelitis veccination in study groups.

-Virological studies of diseases suspected of enterovirus infections: myo-pericarditis, encephalitis, meningitis, infentile disarboes, etc.

2) Arboviruses

-Epidemiological study of JE; antibody survey in human sera and animal sera.

-Field trials of JE vaccination in epidemic area,

isolation of dengue viruses from mosquitoes and patients' sera.

3) Respiratory viruses

-Influenza; surveillance: sero-distributes, isolation identification and sero-antibody survey.

-Meesles; investigation on the efficacy of live messles vaccine in study groups.

4) Rabiesvirus

-Test production of sucking mouse brain rables vaccine (SMBV) and tissue culture rables vaccine.

-Olinical and serological studies in the prophylaxis before and after exposure to infection with SNBV and other types of rables vaccine.

-Petency test of rables veccines.

-Surveys for the incidence of robles in dogs.

5) Miscellaneous

-saillpox; surveillance. -rubella; sero-diagnosis, sero-entiboly survey.

6) Other activities.

-Investigations on the causative agent of upideals viral conjunctivitie. -Study on hegatitis B antigen in dongers and in viral hepatitis patients by cross over immuno-electrophoresis.

-Electron microscropy of viruses and infected materials.

				Lator	atory diagn	osis
Year	Total no. of Total no. of polio cases polio cases registered tested		Pos	itive	Negative	Other** enterovirus
			No.	%	No. 3	No.
1963	148	121	93	76.85	23 23.14	
1964	362	123	87	70.73	36 29.26	
1965	94	28	22	78.57	6 21.42	1
1966	392	222	190	85.58	32 14.41	4
1967	135	155	132	88.38	18 11,61	-
1968	156	164	151	92.07	13 7.92	
1969	359	308	283	91.88	25 8.11	15
1970	145	87	71	81.60	16 18.39	1 <u>2</u>
1971	514	256	243	94.92	13 5.07	7
1972	344	164	140	85.36	24 14.63	3
1973	727	357	297	83.19	60 16.80	9

Polionyclicis cases confirmed in Virus Research Institute Bangkok, Thailand, 1963 - April 1973.

* Figures from Division of Epidemiology

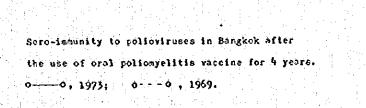
** Diagnosis by mean of virus isolation

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. Type distribution of poliomyelitis in Thailard 1963 - April 1973.

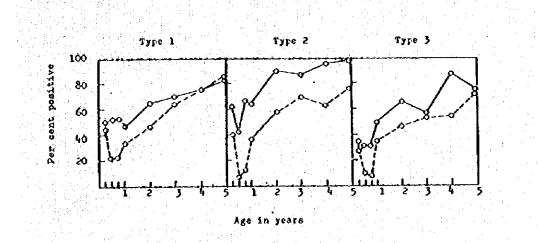
				Typ	e dis	tributi	on	
Total no. o Year polio tases	polio cases	es cases		ype 1	Ty	pe 2	Ty	pe 3
	registered'	istered' confirmed	No.	*	No.	×	No.	*
1963	148	93	79	84.94	2	2.15	12	12.90
1964	362	3) 87	19	21.83	63	72.41	(<u>)</u>	5.74
1965	94	25	6	27.27	9	40.90	2	31.81
1966	392	190	177	93.15	2	3.68	6	3.15
1967	135	137	86	62.77	46	33.57	5	3.64
1968	156	151	62	41.05	66	43.70	23	15.23
1969	359	283	251	88.69	10	3.53	22	7.77
e de la composition de la composition de la composition de la composition de la composition de la composition de							1 . • •	신문원
1970	145	71	32	45.07	16	22.53	53	32.39
1971	514	243	104	42.79	119	48.97	50	8.23
1972	344	140	53	37.85	39	27.85	48	34.28
1973	727	297	230	77.44	32	10.77	35	11.78
						n dan sebelah sebelah sebelah sebelah sebelah sebelah sebelah sebelah sebelah sebelah sebelah sebelah sebelah s Sebelah sebelah s		

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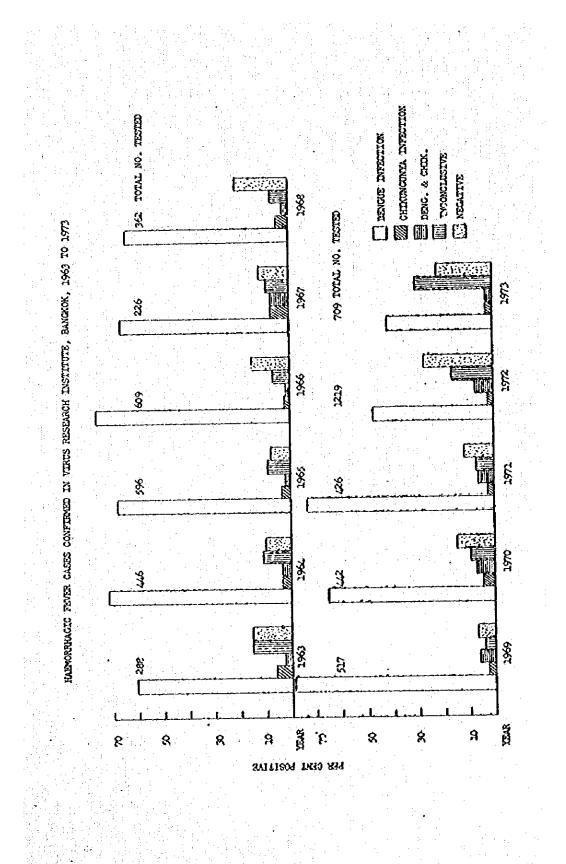


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7. Division of Food and Beverage Analysis

Division of Food and Baveroge Analysis

Department of Medical Sciences, Ministry of Public Health, Bangkok,

Food and Esverage Analysis Division is in charge of all analysis of food and beverage. Samples are received from various sources. Most of them are from exporters, importers, food producers and health inspectors. Food and beverage samples are analysed both chanically and microbiologically. This Division composes of three sections and a secretarial office. Research projects which last for year or two are also set up. Information of the routine work done by each section is a follows 1

1. Food Analysis Section

Chemical Analysis Unit

- Determination for quality of foods under registrations according to legal regulations.

. Identification of fats and oils,

- Detection of food adulterations and other toxic contasinants in food stuffs.

- Evaluation of nutritive values of prepared meals for school children with cooperation of Institute of Food Research and Product Devaloxyzant.

- Quantitative analysis of mercury in foodstuffs by flussless storic absorption spectrophotometer.

- Determination of food additives e.g., preservatives, sweetening agants and food colours.

 Analysis for specific data in some foodstuffs in order to set up legal regulations.

Ricrobiological Examination Unit

- Bacteriological examination of foods under registrations according to legal regulations.

- Determination of bacteriological quality of exported frozen food and other food products. Health Certificates are issued to certify those which are of food quality.

- Detection of food infection and pathogenic bacteria is suspected food.

- Media preparation.

2. Beverage Analysis Section

Chanical Analysis Unit

. Checking of latels and net volumes of soft drinks.

. Invastigation for foreign addiasats in solt drinks and concentrated syrups.

· Determination of preservatives and excetening agents.

- Identification of synthetic color in soft drink and syrup.

Microbiological Analysis Calt

· Determination of standard plate counts, yeast and mold counts.

· Enumeration of coliform bacterie.

3. Mater (nalyais Section

Chemical Analysis Unit

- Quantitative analysis of pineral and chewical contents.
- Excisiontion for physical properties of water.
- Determination of B.O.D. and D.O. in compete
- Residual chlorine examination in oblorine treated water.

Bacteriglogical Examination Unit

- . Collecting water supply samples from eixty different spots in Bangkok.
- Determination of standard plate count in ice and water simples.
- Enumeration of coll-form bacteria in ice and water eamples,
- Media preparation.

Details of samples examined by Food and Beverage Analysia Division from Jan, to Dec. 1973.

Decoription of samples	Number of	sagoles
	bact. examined	ches, analysed
Exported food and food products	1565	267
Food under registration	226	181
Food requested for regulation		25
Other food stuffs	•	55
Food colora	•	108
Soft drinks	46	48
Concentrated syrups	56	57
Fruit juice	5	•
Uther beverages		23
Bottled drinking water	17	20
toter supplied in Bargkok	3952	158
later sugrised in other provinces	648	•
Ics and ice proparing water	341	•
Aster from swimping pools	120	1
Fater from natural sources	154	96
Fola1	7130	1009

Rescorch Projects

1. Besteriological examination of prepared meals collected from all flight kitchens in Bangkok. Number of food samples examined in the year 1973 is 128.

2. Aflatoxin determination in foodstuffs and foeds. Number of samples examined is 222.

3. Publicide residue analysis of food and water by F L 9 and gas chromatography. Mumber of samples analysed in the year 1973 is 431.

タイ国の医療事情に関する資料としては、PUBLIC HEALTH IN THAILAND, B.E.2516 (1973) EDITION, MINISTRY OF PUBLIC HEALTH, BANGROK, THAILAND BLUPublic Health Statistics, DIVISION OF VITAL STATISTICS, DEPAR IMENT OF HEALTH PROMOTION, MINISTRY OF PUBLIC HEALTH #53. 入口, 出生率, 伝染病発生数, 医師等医療徒患者数, 国立, 州立, 市立, 個人別病院, 保健所数かよ びペッド数は次のとおりである。

1) 人口, 出生半等

Estimated mtd-year population	1957	1968	1969	1970	1971
Live birth rate (crude) Death rate (crude)	31 157 052	31 839 060	33 021 068	34 003 775	35 361 325
	35.8	37.3	34.3	33.7	34,5
Natural increase (%)	7.4	7.3	7.4	6.6	6.4
Infant mortality rate	2.8	3.0	2.7	2.7	2.8
Maternal mortality rate	27.9	26.5	26.2	25.5	22.5
Stilibirth ratio	2.8	2.7	2.6	2,3	2,1
	1.7	1.6	1.6	1.5	1.3

Some notes on **Population and other Vital Statistics**

2) 伝染病報告件数死者数

Typhoid & Paratyphoid	<u>ن</u> ن	623	1,266 17	1,984 26							o.
A DESCRIPTION OF THE OWNER OWNER OF THE OWNER OF THE OWNER OF THE OWNER OF THE OWNER OF THE OWNER OF THE OWNER OF THE OWNER OF THE OWNER OF THE OWNER OF THE OWNER OF THE OWNER OF THE OWNER OF THE OWNER OF THE OWNER OF THE OWNER OF THE OWNER OWNER OF THE OWNER	0		4								
Whooping Cough		1,863	3,239	2,447			_				Ministry
° c° ŏ ≷	. J	а н	33	8,4		ezu	ď	1	3		fice,
Diphtheria C	o	4	118	TTT		Influenza	ರ	2,208	118	5,929	the Central Epidemiological Office,
Diphtheria	່ ປີ	1,501	2,026	2,325		······································	 0	N		57	iologi
	à	-		ļ		Malaria					ldem
sgic Polio. myelitis	 ರ	146 2	514 3	346 9		W	ုပ္န			10,050	e Ep
<u>че</u>						xodu	0		1		Centre
norrhaeg Fever	<u>d</u>	47	239	685		Chickenpox	ರೆ		41	476	the (
Haemorrhacgic Fever	сi	2,767	11,540	23,780			0		1	N	
Ĭ		57	174 1	313 2		Measles	Q		274	1,596	recieved in
Acute Diarrhea							.0		4	L.	
deningo- coccus Scrub Acute Наеп Menin- Typhus Diarrhea Bitis	ပ	6,509	14,981	32,178		Infecti- ous Hepatitis	<u></u>		726 1	4,072 72	notification cards
4 2	0	[1			Sand Street of S	ó		1		catio
Scrub Typhus	ರ	1	ł	6		Yaws	ರ		16	16	notifi
Meningo- coccus Menin- Bitis	ó	1	Ī	~		ć .	ó	4	2	22 32	
<u> </u>	IJ	s	R	8		Dysen- tery	ರ	599	1,349 23	3,739	ndivik
Yellow Fever	0		1	1		alitus	ò	225	ន្ត	53	the i
<u>به جر</u>	6			1		Encephalitis		986	1,030	1,236	ŝ
noiera Plague Fever	0) <u> </u>							Reports compile from the individual
ă	0 0					Rabies	6	6	106	116	comp
Cholera	0 3	- 1				. &	U	8	No.	917	ş
	6			' 		ราว	ó	2	ŝ	ន	Rep
Smallpox			 1	1		Tetanus	ંડ	1,012	1,256	1,517	5
No.		0461	1701	2721		Year		1970 1,	1971	1972 1	Sources:
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A -to	ar og falstin Kanana og Konstant for skalle forset af skalle som som som som som som som som som som	Registered	number	, این می این کار این کار این کار این کار این کار این کار کار - همینی چین کار کار کار کار کار کار کار کار کار کار
Age-group (year)	Physicians	Dentists	Pharmacists	Nurses
 	4 400	204	2 076	16 555
Total 2024	6 408 52	704 10	135	1809
25-29	1 143	209	544	3 848
30-34	1 222	188	500	3 1 5 2
3539	1 197	144	375	194
4044	973	56	247	1 88
45-49	633	38	165	. 173
50-54	219	29	89	1 13
5559	186	25	10	46
60-64	163	5	6	29
65-69	150	•	5	16
7074	144		2 1	9
75-79	139			3
8084	99			
85+	88	_		

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4) 国立、州立、市立、個人別病院、保健所数をよびベッド	1 (197))	
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	防設数	ベッド数
府院	209	40,905
総合病況	182	30, 279
Government	119	27,133
Ministry of Public Health	87	19, 136
Other Ministries	32	7,997
State Enterprise	13	532
Municipal	4	864
Private	46	1,750
特殊病院	27	10,626
Government	22	10, 521
Ministry of Public Health	20	10, 321
Tuberculosis & Chest Diseases		450
Infections Diseases	1	150
Mental	14	7,381
Mental deficients	1	440
Narcotics	1	500
Leprosy	2	1,400
Other Ministries	2	200
Tropical Diseases	1 1	100
Narcotics		100
State Enterprise	0	0
Municipal	0	
Infectious Diseases	0	0
Private	5	105
Tuberculosis	0	Ó
Maternity	1 = 1	50
Leprosy	1	20
Eye Diseases	3	35
Health Centers	2,443	2,700
Health Centers 1st Class	292	2,700
Government	233	2, 495
Department of Health	233 ·	2,495
Municipal	59	205
Health Centers 2nd Class	2, 187	0
Government	2, 173	0
Department of Health	2, 173	0
		- -

	1 1 1	
State Enterprise	1	0
Municipal	3	0
Maternal & Child Health Centers	35	468
Government	4	458
Department of Health	4	458
Municipal	31	10
Midwifery Centers	1,520	
Government	1,463	
Department of Health	1,463	
Private	57	

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