

### 実行方法の効率性 (Efficiency)

- (1) 当初の活動・投入計画はどの程度実現され、どのように変更されたか
- (2) S G H の救急部の機能および組織体制の強化
  1. 活動・投入資源の内容とその有効性
- (3) 救急医を専門領域として開発する。
  1. 活動・投入資源の内容とその有効性
  2. プロジェクトによってトリミングあるいは拡大された救急部の活動
- (4) サラワク州の救急医のための研修プログラムを確立する。
  1. 活動・投入資源の内容とその有効性
  2. 研修修了者のうち、サラワク州の医業及び救急医に従事している人の比率
- (5) プロジェクトの実施体制とプロセス・マネジメントに関する改善のための教訓
- (6) JICA 援助による投入の方法 (日本における C/P 研修、機材供与、日本人専門家による技術移転) に関しての改善に向けた教訓
- (7) マ国側による投入の方法に関しての改善に向けた教訓

### 効果 (Impact)

- (1) クチン市およびサラワク州の救急医はどのように向上したか (救急医数・ニーズはどの程度充足されたか)  
例) 利用患者の構成・分布の變化、非受診死亡例、紹介・転送件数と疾患内訳など
- (2) プロジェクトの実施は、サラワク州の救急医に今後どのような影響を及ぼすと予測されるか
- (3) その他に、どのような効果や影響が認められたか (病院、サラワク州、マ国の救急医業、その他)

### 計画の妥当性 (Relevance)

- (1) 本プロジェクトの課題と目標はサラワク州及びマ国の保健開発計画/救急医業計画との関係でどのような意義があるか
- (2) 本プロジェクトの課題と成果は、サラワク州のニーズの優先度に対応しているか。
- (3) 本プロジェクトの課題と成果は日本の援助方針に合致しているか
- (4) 外部条件や戦略、指環の設定は適切だったか、どのように改善されてきたか、それは適切だったか

### 自立性 (Sustainability)

- (1) プロジェクト終了後に維持発展されるべき成果は何か
  - (2) S G H 救急部の組織体制は、プロジェクト終了後も成果を維持発展できる形になっているか
  - (3) 研修ニーズの内容は、サラワク州の救急医ニーズ、及び対象スタッフの受容能力や知識・技術のニーズに適しているか
  - (4) 研修ニーズは、自力で維持発展できるようにしているか (講師、教材、予算、政策的認知、リーダーシップ)
  - (5) 救急医や研修コースの質を維持し自ら改善させられるメカニズムができているか
  - (6) プロジェクト成果のサステナビリティに影響を与えそうな要因としてどのようなものがあるか
  - (7) プロジェクトの成果 (機能、組織体制、専門性、研修コース) は、サラワク州政府およびマ国保健省によって認知され、政策的に支持されているか
- \* 以上の5項目 (とりわけ目標達成度、効率、自立発展性) に関して、以下の要因の関与を検討する。  
「政策的な支助、マ国側組織の卒業実施能力、経済/財政面、資機材を含む政府の適正さ、文化的特性、女性の関わり、環境保護」

2 当初のPDM

3-6 プロジェクトログフレームワーク

(Draft) Technical Cooperation Plan of the Project for Upgrading Accident & Emergency Care Service at Sarawak

1. Goal of Development : Contribution for improvement of accident and emergency care service in the State of Sarawak	Evaluation Indicators	Means of Verification	Important Assumptions
2. Goal of the Project : Improvement of pre-hospital care and development of human resources, as well as to upgrade accident and emergency care service at the Sarawak General Hospital (SGH), especially at its Accident & Emergency Dept. in line with the national plan for improvement of accident and emergency care service.	<ul style="list-style-type: none"> <li>• Mortality rate of preventable deaths in emergency cases</li> <li>• Disability rate in emergency cases</li> <li>• Reduction in number of preventable deaths in emergency cases in the Kuching area and in the selected district.</li> <li>• Disability rate in emergency cases in the Kuching area and in the selected district.</li> </ul>	<ul style="list-style-type: none"> <li>• Statistics in Sarawak, etc.</li> <li>• SGH annual report</li> <li>• Investigation of the actual conditions of emergency medicine at Sarawak.</li> </ul>	<ul style="list-style-type: none"> <li>• Administrative organization and financial measures support the pursuit of the development goal.</li> <li>• Working in closer cooperation with the Federal Government</li> </ul>
3. Outcome of the project : 1. Assist in the enhancement of the functions and organization of the Accident & Emergency Dept. of the SGH 2. Assist in developing accident and emergency care as a speciality 3. Develop training programmes for accident and emergency care in the State of Sarawak	<ul style="list-style-type: none"> <li>• Operation manuals</li> <li>• Technical manuals</li> <li>• Training curriculums and teaching materials</li> <li>• No of trainees</li> <li>• No of graduates of the courses</li> </ul> <p>Specific indicators should be developed and evaluated in the related area within the 1st year of the project</p>	<ul style="list-style-type: none"> <li>• The reports of the short-term Japanese experts</li> <li>• The quarterly reports of the long-term Japanese experts</li> <li>• Publications</li> <li>• Dispatch of planning &amp; consultation team, advisory teams, and evaluation team</li> <li>• Reports on training</li> <li>• Inspections</li> </ul>	<ul style="list-style-type: none"> <li>• Assignment of trained counterparts and physician instructors for a fixed term</li> <li>• Malaysian government should provide the necessary materials and funds for the development of training programmes</li> <li>• Malaysian government should provide the funds for training of Malaysian medical personnel in Malaysia</li> </ul>
4. Input of the project : ① Dispatch of Japanese experts  ② Training of counterparts in Japan ③ Supply of equipment ④ Others	<ul style="list-style-type: none"> <li>• Experts (long-term 4-5 persons)</li> <li>• Short-term less than 6 persons per year</li> <li>• Counterpart training 3-4 persons per year</li> <li>• Equipment ¥150,000,000 for 5 years</li> <li>• Others</li> </ul>	<ul style="list-style-type: none"> <li>• R/D, TSI</li> <li>• Confirmation of achievements for dispatch of experts, counterpart training in Japan and supply of equipment</li> </ul>	<ul style="list-style-type: none"> <li>• Start of operation of A &amp; E Dept. : around August 1992</li> <li>• Diagnosis and treatment by clinical depts. concerted and close cooperation among them.</li> <li>• Sufficient cooperation supported by clinical depts. concerned</li> <li>• Assignment of trained counterparts</li> <li>• Assurance of necessary staff engaged in accident &amp; emergency care</li> <li>• Assignment of long-term responsible person in charge of management of the A &amp; E Dept. and training in accident &amp; emergency care.</li> </ul>

### 3 改訂後のPDM

Technical Cooperation Plan of the Project for Upgrading Accident & Emergency Care Service at Sarawak

	Evaluation Indicators	Means of Verification	Important Assumptions
<p>1. Goal of Development : Contribution for improvement of accident and emergency care service in the State of Sarawak</p>	<ul style="list-style-type: none"> <li>• No of A/E patients</li> <li>• No of staff working in A/E</li> <li>• No of ambulances</li> <li>• Improvement of facilities in A/E</li> </ul>	<ul style="list-style-type: none"> <li>• Sarawak Medical Statistics</li> </ul>	<ul style="list-style-type: none"> <li>• Administrative organization and financial measures support the pursuit of the development goal.</li> </ul>
<p>2. Goal of the Project : Improvement of pre-hospital care and development of human resources, as well as to upgrade accident and emergency care service at the Sarawak General Hospital (SGH), especially at its Accident &amp; Emergency Dept. in line with the national plan for improvement of accident and emergency care service.</p>	<p><b>PRE-HOSPITAL CARE</b></p> <ul style="list-style-type: none"> <li>• No of cases brought by ambulances</li> <li>• Percentage of emergency cases</li> <li>• Response time &amp; scene time</li> <li>• No of treatment given</li> </ul> <p><b>A/E CARE SERVICES AT SGH</b></p> <ul style="list-style-type: none"> <li>• No of A/E patients</li> <li>• Patients by sex, age and area</li> <li>• Severity classification</li> <li>• Classification of diagnosis</li> <li>• No of treatment in A/E</li> <li>• Diagnosis vs treatment</li> <li>• Sources of referral vs diagnosis</li> <li>• No of cases directly send to OT</li> <li>• No of cases directly admitted to ICU/CCU</li> <li>• Explanation from MO or MA</li> <li>• Satisfaction of patients</li> <li>• Behavior of the staff</li> <li>• Satisfaction of the staff</li> </ul>	<ul style="list-style-type: none"> <li>• Pre-Hospital Care report</li> <li>• Basic Register Book</li> <li>• Patient Record</li> <li>• SURVEY of patient records</li> <li>• KP survey with questionnaires</li> </ul>	<ul style="list-style-type: none"> <li>• Working in closer cooperation with the federal government</li> </ul>
<p>3. Outcome of the project : 1. Assist in the enhancement of the functions and organization of the Accident &amp; Emergency Dept. of the SGH 2. Assist in developing accident and emergency care as a speciality 3. Develop training programmes for accident and emergency care in the State of Sarawak</p>	<ul style="list-style-type: none"> <li>• Operation manuals</li> <li>• Technical manuals</li> <li>• Training curriculums</li> <li>• Teaching materials</li> <li>• No of trainees</li> <li>• No of trainers</li> <li>• No of graduates of the courses</li> </ul>	<ul style="list-style-type: none"> <li>• The reports of the short-term Japanese experts</li> <li>• The quarterly reports of the long-term Japanese experts</li> <li>• Publications</li> <li>• Dispatch of planning &amp; consultation team, advisory teams, and evaluation team</li> <li>• Reports on training</li> </ul>	<ul style="list-style-type: none"> <li>• Assignment of trained counterparts and physician instructors for a fixed term</li> <li>• Malaysian government should provide the necessary materials and funds for the development of training programmes</li> <li>• Malaysian government should provide the funds for training of Malaysian medical personnel in Malaysia</li> </ul>
<p>4. Input of the project : ① Dispatch of Japanese experts ② Training of counterparts in Japan ③ Supply of equipment ④ Others</p>	<ul style="list-style-type: none"> <li>• Expert (long-term 4-5 persons short-term less than 6 persons per year)</li> <li>• Counterpart training 3-4 persons per year</li> <li>• Equipment ¥150,000,000 for 5 years</li> <li>• Others</li> </ul>	<ul style="list-style-type: none"> <li>• R/D, TSI</li> <li>• Confirmation of achievements for dispatch of experts, counterpart training in Japan and supply of equipment</li> </ul>	<ul style="list-style-type: none"> <li>• Start of operation of A &amp; E Dept. : around August 1992</li> <li>• Diagnosis and treatment by clinical depts. concerned and close cooperation among them.</li> <li>• Sufficient cooperation supported by clinical depts. concerned</li> <li>• Assignment of trained counterparts</li> <li>• Assurance of necessary staff engaged in accident &amp; emergency care</li> <li>• Assignment of long-term responsible person in charge of management of the A &amp; E Dept. and training in accident &amp; emergency care</li> </ul>

Project Indicators

EVALUATION INDICATORS

EVALUATION INDICATORS

MEANS OF VERIFICATION

1 GOAL OF DEVELOPMENT

2 GOAL OF THE PROJECT

PRE-HOSPITAL CARE

Number of ambulance cases  
 Percentage of emergency cases  
 Response time & Scene time  
 No. of treatment in ambulance  
 No of Pa on site

Pre-Hospital Care report

A/E CARE SERVICES SGH

No. of A/E patients  
 Patients by sex, age and area  
 Ratio of severity  
 Classification of diagnosis  
 No. of treatment in A/E  
 Diagnosis vs treatment  
 Responce time of Special wards  
 Sources of referral vs diagnosis  
 No. of operation cases treat ment  
 A/E direct to OT  
 direct to ICU/CCU, K. A. P.  
 Explanation from MO or MA  
 Satisfaction of patients  
 Behavior of the staff  
 Satisfaction of the staff

Basic Register Book

Patient Record

SURVEY of patient records  
 (indirect group)

Survey with questionnaires

3 OUTCOME OF THE PROJECT

FUNCTIONS & ORGANIZATION

SPECIALITY

TRAINING

Agenda of A&E meeting for indicators

1. Project Design Matrix: Revision

1-1.

Part of Log Frame Work is changeable. Especially Evaluation Indicators for 1. Goal of Project: and 2. Goal of Development should be changed because it is impossible to get such statistics.

1-2. Indicator of Goal of Project is beyond our capability. Possible data we could get from State Statistics will be?

1-3. Indicator of Goal of the Project must be changed.

Possible Data source: Ambulance Report

A&E Patient Record

Register Book of A&E

Feed Back form for referred cases

Case Report of Referred cases from other Hospital, Health Center, K. D

Others

1-4. Useful Statistics will be found after A&E Survey.

Probable indicators will be:

Numbers of Ambulance Call

Numbers of transported cases

Treatment on Ambulance

Response Time

Numbers of patients seen at A&E and the breakdown in each severity.

Change of patients resident area

Numbers of treatment done at A&E

Numbers sent direct to OT

Numbers of Specialist and MO who respond and come down to A&E

2. Among Outcome of project, Training program should be clarified

Develop training programs

Datuk Hardin hopes piling up of short training courses rather than a single long course because of more efficiency. By the end of Project, Curriculum, Training Textbook, Slides, and Trainers should remain.

\* Basic ECG Courses:

Advanced ECG course:

\* Basic Trauma Management Course:

Trauma Management Tutor Course:

\* Patient Assessment Course (Triage Course):

Philosophy of Triage

Triage at a Disaster Field

Triage at A&E

Severity and urgency of Trauma

Severity and urgency of Medical Cases

\*Initial Treatment of Trauma  
Initial Treatment of AMI  
Initial Treatment of Asthma so on ....

\*Airway Management Course: for MA and Ns  
Airway Keeping  
Maintenance of Intubated tube  
Ventilation(Mask bag, Demand bulb, Portable Ventilator, Ventilator)  
Assessment of Blood Gas, Pulse oxymeter  
Oxygen therapy  
Suction of airway  
Physiological airway therapy

\*Usage of equipment at A&E:  
\*Maintenance of equipment at A&E:

12 Nov. 1992 A/E Technical committee 5011

**Goal of the Project:** Improvement of pre-hospital care and development of human resources as well as to upgrade accident and emergency care service at the Sarawak General Hospital, especially at the Accident & Emergency Dept in line with the national plan for improvement of accident and emergency care service.

**Objectives:** #1. Enhancement of the functions and scheme of the A/E dept at the SGH  
 #2. Development of A/E care as a speciality.  
 #3. Development of training programs for A/E care in Sarawak

	Strategies	Activities	YEAR			
			92	93	94	95
OBJECTIVE #1	1. Cooperation of all staff of the SGH	1. Encourage commitment from specialist, medical staff, nursing staff, and all support personnel who help care for the emergency patient. ii) establishment of close inter-medical-paramedical relationship iii) firm transmission of information about emergency patient 2. For medical staff, care means a commitment to availability and education. i) prompt response to consultation (* *) ii) participation in on-the-scene teaching/discussion with MO/NO of A/E dept	•	•	•	•
	2. Reorganization of existing A/E dept	1. Introducing new operational policies 2. Modification of lay-out 3. Permanent A/E manpower (* *) 4. Formal and structured organization hierarchy: function/canopover	•	•	•	•
	3. Refinement of patient transfer within A/E dept and in the hospital	1. Revision of standing order/existing procedures for X-ray examination of A/E patient. Transfer orders to the wards/development of admission policy for A/E dept	•	•	•	•
	4. Upgrade level of pre-hospital care (ambulance service)	1. Establishment of medical emergency control center in A/E dept/ambulance service station 2. Training of A/E paramedic personnel (MA, NS)/ambulance driver/porter i) locally ii) C/P training in Japan 3. Upgrade equipment in the existing ambulances of A/E dept 4. Public education for proper usage of A/E dept	•	•	•	•
	5. Upgrade level of care at A/E dept through improving levels and standards of emergency care in terms of diagnosis, therapeutic and operative service	1. Proper usage of equipment ii) JICA donated iii) locally purchased 2. Implement the new operational policies and standing orders 3. Maximum utilization of all facilities available/provided newly renovated A/E dept	•	•	•	•

4 There is a possible limitation to this at present because the inpatient staffs may occasionally be tied up with various procedures from which they may not be able to respond as desired. eg) Surgeon occupied in operation theater.  
 A potential problem is noted as far as permanent A/E manpower is concerned.  
 Need to have a specialist post in A/E department to ensure a permanent head of the dept.

Objectives: #2. Development of A/E care as a speciality  
 #3. Development of training programs for A/E care  
 in Sarawak

Strategies	Activities	F YEAR			
		92	93	94	95
1. Education of the public for proper usage of the A/E dept	1. Production/dissemination of education pamphlets 2. Education/information through mass media 3. In-house public education programs		•	•	•
2. Development of training programs in the A/E dept at SCH	1. Rotation attachment for third posting MO at A/E dept. (*) 2. Education of MO & NO of the various disciplines in A/E dept. 3. Postgraduate training - training attachment of 6 months for MO with Part 1 (MRCP, FRCS) at A/E dept especially for those with interest/intention to pursue postgraduate qualification in A/E or emergency medicine. (*)		•	•	•
3. Formal recognition of A/E dept as a full-fledged clinical department in hospitals providing tertiary level health care	Formal petition and submission of working paper to Ministry of Health, Malaysia through Director of Medical Service, Sarawak		•	•	•
4. Active involvement of all specialists in the various hospitals in the State in providing expertise and services whenever required in the care of emergency patient.	Provision of consultative/therapeutic/operative services by all hospital specialists to doctors at A/E dept in the clinical management of emergency patient when referred upon		•	•	•
5. Upgrade level of pre-hospital care	Development of training programs to improve ambulance service in Sarawak (see ref. Outline of 5-year plan for the project: Training)		•	•	•
6. Upgrade level of care at A/E dept	Development of training programs to improve A/E care in Sarawak (see ref. Outline of 5-year plan for the project: Training)		•	•	•

\* To commence when the A/E department is fully functional.



## Evaluation Questions

Purpose of the Project: Improvement of pre-hospital care and development of human resources, as well as to upgrade accident and emergency service at Sarawak General Hospital (SGH), especially at its Accident & Emergency Dept. in line with the national plan for improvement of accident and emergency service.

Specific objectives (expected outputs of the Project):

- (1) Enhancement of the functions and organization of the A & E Dept. of SGH.
- (2) Development of accident and emergency care as a specialty (discipline).
- (3) Development of training programs for accident and emergency care in the state of Sarawak

### Achievement

Description of activities, inputs and outputs of the project

"Report of the Project"

Achievement of specific objectives

- (1) Were the functions and organizational structure of A&E in SGH strengthened?
- (2) Was the discipline of "emergency care" established?
- (3) Were training programs developed on accident and emergency care for the state of Sarawak?

### Effectiveness

Level of achievement of the purpose

- (1) Was the purpose of the project consistent?
- (2) How much were the performance and quality of pre-hospital services improved?
- (3) How much were the performance and quality of emergency services at A&E of SGH upgraded?
- (4) How much were human resources developed for emergency services in Sarawak?
- (5) What factors of project management or external factors affected the effectiveness of the project?
- (6) What efforts still remain to be made to achieve the purpose of the project?

## **Efficiency**

### Efficiency of project implementation

- (1) How efficient were the project in terms of comparison of project activities/inputs with project outputs?
- (2) Were the inputs of JICA \* efficient in terms of productivity and appropriateness?  
\* expert services, C/P training in Japan, equipment supply, etc.
- (3) Were the inputs from Malaysian Gov./Sarawak General Hospital satisfactory against the request by JICA?
- (4) Were there any particular factors in project management, or external factors, which affected the efficiency of project implementation?

## **Impacts**

### Expected and unexpected impacts of the project

- (1) What kinds of expected and unexpected, whether positive or negative, impacts of the project were recognized?  
\* hospital level, Sarawak level, Malaysia level and others
- (2) What impacts were recognized on the intended beneficiaries of the project?
- (3) How much community needs are met or unmet?

## **Relevance**

### Relevance and rationale of the project

- (1) How relevant was the project purpose in terms of priority in health needs and health development policy of Malaysia and Sarawak?
- (2) Is it still relevant today?
- (3) Is the project purpose/goal relevant in view of Japanese ODA policy?
- (4) Are the target groups/population of the project consistent?
- (5) Were the planned strategies, estimated assumptions and set indicator suitable for the project? What measures, if any, were taken to keep the project in due direction?

## **Sustainability**

Sustainability of the project achievement after completion of the project

- (1) What are the exact fruits of the project to be sustained?
- (2) What factors would affect the sustainability? What countermeasures are to be taken?
- (3) Are the project achievements recognized and supported by national and Sarawak government?
- (4) Are the project outputs self-sustainable in terms of organizational structure as well as technical, financial and managerial capacity?

## **Overall Assessment**

- (1) Did any of such factors as followings influence the project progress and sustainability?  
Political commitment, economic/financial factors, institutional/managerial capacity, appropriateness of technology transfer, appropriateness of donated equipment, social/cultural factors, environmental protection, WID, and others.
- (2) What lessons are to be learned for improvement of project planning and project management?

## **A. National/Sarawak**

- 1- Health Development Plan; national & Sarawak
- 2- Official plan on emergency services; national & Sarawak
- 3- Current system of emergency services
- 4- No. of specialists; absolute No., per population, national & Sarawak
- 5- No. of medical officers; absolute No., per population, national & Sarawak
- 6- No. of medical assistants; absolute No., per population, national & Sarawak
- 7- Current medical service system by facilities; types of facilities and their numbers, national & sarawak
- 8- Education/training/post-graduate programs; doctors & MA
- 9- Education/training programs on emergency care
- 10- Accreditation standards on emergency care (or A&E department)
- 11- Evaluation of post-basic training program on A&E.
- 12- Education/training program on emergency nursing
- 13- Disaster plan and policy; national & Sarawak

## **B. Sarawak State**

- 1- Demography
- 2- Trend of causes of deaths in the past 5-10 years
- 3- Coverage of mortality statistics (national registry and Sarawak Medical Office)
- 4- Trend of morbidity
- 5- Registered number of vehicles and motorcycles
- 6- Trend of number of traffic accidents
- 7- Trend of number of workplace accidents
- 8- % of households with telephone
- 9- Distribution of health facilities by types and target population
- 10- Any data that tell average distance between community and nearest KD
- 11- Distribution of medical officers in Sarawak
- 12- Age structure of M.O. in Sarawak
- 13- Composition of staff at different level of facilities by qualification
- 14- Causes of deaths and morbidity at different level of facilities
- 15- Emergency diseases/injuries consulting different level of facilities
- 16- Sibü & Miri; population, emergency service system, ambulance runs per day, number of patients at emergency OPD
- 17- QA programs & indicators in Sarawak
- 18- Kuching division & district; number of death cases and causes of deaths by age group & geographical area
- 19- Activities and publications of research unit of S.M.O.
- 20- Research report on accident & emergency cases in Sarawak
  
- 21- Number of doctors and MA in public sector and private sector
- 22- Other hospitals than SGH which provide with emergency services and ambulance services
- 23- Expenditures spent as counter budget (for local input) of the project

## **C. Sarawak General Hospital**

- 1- Organizational structure and number of staff by qualification and type of job
- 2- Trend and breakdown by department of annual recurrent cost and investment cost
- 3- Patient fees
- 4- Average monthly salaries of specialists, M.O., M.A.
- 5- Trend of number of inpatients and their diseases/injuries by clinical department
- 6- Trend of number and proportion of "through A&E" cases among inpatients by clinical department
- 7- Trend of number and types of surgical operations in OT and the proportion of emergency operations directly sent from A&E
- 8- Trend of number of hospital mortality and causes of deaths
- 9- Trend of number of ICU/CCU cases and proportion of "through A&E" cases
- 10- Distribution of working years of specialists, M.O. and MA
- 11- Structure of training program of SGH, and List of training courses for M.O., nurses and MA in 1992 and 1997
- 12- Program for inhouse doctors and flow of them after SGH attatchement

## **D. A&E department of SGII**

- 1- Change of organizational structure since 1992
- 2- Change of number of staff since 1992
- 3- Change of staff by job categories ( compared with that in NORMAH and KLH)
- 4- Change of number and types of equipment ( compared with that in NORMAH)
- 5- Change of operational policy and rules
- 6- Change of standing order and job descriptions
- 7- Change of types of diseases and injuries served
- 8- Change of scope of works
- 9- Change of scope of procedures in terms of diagnosis and treatment
- 10- Written technical manuals for standard emergency care and principal procedures at A&D
- 11- Number and proportion of patients who returned home without admission:  
Among intermediate triage cases, observed cases
- 12- Number of patients treated at resuscitation room by type of disease and injury
- 13- Distribution of time spent for treatment at A&E before admission
- 14- Trend of average time spent in resuscitation room before admission
- 15- Trend of number of patients observed at observation room and rate of admission after observation
- 16- Trend of average time observed
- 17- Number and types of essential procedures provided before admission
- 18- Number of laboratory exams done at A&E by type
- 19- Trend of health care cost and ambulance cost at A&E
- 20- Trend of number of A&E consultations by severity and shift  
(compared with those at polyclinics and those at NORMAH)
- 21- Trend of number of DOA (BID) cases
- 22- Trend of mortality at A&E
- 23- Trend of number of cases resuscitated by ambulance team, and their success rate (resuscitation: CPR, conscious loss, shock state (BP< ---))
- 24- Trend of number of cases resuscitated at A&E OPD, and their success rate
- 25- Prognosis of resuscitated patients (mortality rate)
- 26- Trend of number of runs per year (or per month)
- 27- Trend of number of dry runs and spent time for ambulance service: response, arrival, on scene, return to A&E
- 27- Trend of number of relevant procedures (to be specified) by ambulance team
- 28- Trend of profile of patients at A&E by triage category: catchment area, occupation, tribes etc. (compared with those of patients at NORMAH)
- 29- Number of cases who revisited A&E within 24 hours of the first visit

## **E. Training Courses**

- 1- Number of training courses created in the project and their types
- 2- The year when of the first course was conducted respectively
- 3- How many times respective courses were implemented; cumulative number, number of participants ( in each year and cumulative), courses which were conducted with self-reliance
- 4- Profile of each course: organizers (name and position) of each course, target, duration (days or hours), number of instructors (and their positions)
- 5- Trend of results of course evaluation by course
- 6- Trend of success rate in post-course examination by course
- 7- Number of people who have experience to contribute as instructor
- 8- Number and types of teaching materials:  
text books ( manual, handbook, hands-out etc.), AV materials (slides, OHP, video-film etc.), equipment (simulator such as Arrythmia Anne etc.) for each course
- 9- Working place of MA and M.O. who participated in those courses: when they took courses, and today
- 10- Working place of people who were sent to Japan for C/P training: when they were selected, and today





**JICA A/E CARE SERVICE PROJECT**  
JAPAN INTERNATIONAL COOPERATION AGENCY

SARAWAK GENERAL HOSPITAL  
JALAN TUN AHMAD ZAIDI ADRUCE  
93586 KUCHING, SARAWAK  
MALAYSIA

Fax No: 082-423229  
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082-230154

Your Ref:

Date:

Our Ref:

Dr. Haji Mohammad Taha Arif  
Director, Sarawak Health Department

June 2, 1997

Dear Dr. Taha

As is shown in TOR of project evaluation submitted in April, the final evaluation mission is visiting Malaysia on June 22, to exchange Minutes of Discussion on evaluation results and, at the same time, to wrap up the five year project on upgrading emergency medical service in Sarawak. In preparation for that mission, I have been engaged in a study on project evaluation according to JICA's evaluation guideline. After I will come back to Tokyo on June 10<sup>th</sup>, JICA will develop a draft of the Minutes based on the report of the evaluation study which I am now engaged in, and the final evaluation mission will bring it on June 22<sup>nd</sup>. For that reason, JICA request us to get preliminary agreement, during my stay in Malaysia, with Joint Coordination Committee about the findings of the study.

It is appreciated for you to kindly help arrange a meeting in this regards, inviting several persons from those who may represent the Joint Coordination Committee, and those who have played important role in the project. The findings of the study will be presented in that closed meeting to invite correction of data, addition of data/information, opinions regarding presented findings, and discussions.

Please find attached the brief summary of TOR of the project evaluation and evaluation questions prepared by the project evaluation team of JICA in April 14th. Proposed schedule of the meeting (consultation meeting on the findings of the evaluation study) is attached, which is still tentative.

Thank you very much for your kind consideration.  
Sincerely yours,

Dr. Naruo Uehara  
JICA expert on Project Evaluation

cc Dr. Yao Sik King, Sarawak Health Department (FAX. 424-959)  
cc Ms Makimoto, Department of Medical Cooperation, JICA HQ  
cc Ms Akiko Inagaki, JICA KL Office

## **Consultation meeting on findings of the evaluation study**

**Date:** June 9<sup>th</sup>, 1997

**Place:** To be arranged (probably in Sarawak Health Department)

**Tentative program:**

**9:00 AM - 12:00 AM**

1. explanation about evaluation guideline of JICA (N.U.)
2. evaluation questions (N.U.)
3. design of the study, methods and constraints (N.U.)
4. review of the project; goals, objectives, strategies, activities and achievement / outputs (TC)

**12:00 AM - 14:00**

Lunch (invited by JICA project team)

**14:00 - 16:00**

5. report of study findings and discussions
  - (1) on effectiveness
  - (2) on efficiency
  - (3) on relevance
  - (4) on impact
  - (5) on sustainability
  - (6) on general issues and lessons learned

\* N.U.: Dr. Naruo Uehara

\* TC: Technical Committee

## Minutes of Meeting on Evaluation Study

Date: 9th June, 1997

- Agenda: 1. Explanation on evaluation guideline of JICA  
2. Evaluation questions  
3. Design of the study, method and constraints  
4. Review of the project  
5. Report of study findings and discussions

Present: Dr. Ang Kim Teng      Principal Assistant Director, P&D Division, MOH  
Dr. Roaizat Bin Yon      Principal Assistant Director, P&D Division, MOH  
Dr. Lee Khoo Siew      Senior Medical Officer, Sarawak Health Dept.  
Dr. Liding Jonyian      Director, Sarawak General Hospital  
Mr. Mohd. Hosni Abdullah      Senior MA, Emergency Dept. SGH  
Mr. Chang Kuet Onn      MA, E/D, SGH  
Mr. Wan Akil Tuanku Abdullah.

1. Dr. Uehara welcomed all present and thanked for sparing their time.  
Dr. Uehara, Project Evaluator for JICA, explained that his evaluation study findings would be discussed at the Advisory Committee meeting on 17th June, and the report would be submitted to Ministry of Health by 19th June in readiness for the forthcoming visit by the Final Evaluation Team.
2. Dr. Uehara went on explaining on evaluation guideline of JICA, Evaluation questions, including the Project Design Matrix.  
In reply to Dr. Ang's question regarding any other JICA projects related to the field of Emergency Medicine, Dr. Uehara stated that in 1995, JICA started emergency care service project in Surabaya, Indonesia and also built two Emergency Medical Centres in Jakarta as well as in Bali without technical Cooperation, and that there are few more studies for emergency care service project underway such as in Honduras, Nicaragua by request of the respective government. Dr. Ang asked as to how evaluation study were carried out in terms of PDM, referring to the explanation of three PDM which have been revised as the project went along. Dr. Uehara answered that at the onset of the project the basic survey was not carried out by some reasons that made it hard to compare to the situations between the beginning and the end of the project.  
However, mid-term evaluation was carried out in August 1994 by the short term expert and KAP survey was implemented following his recommendations.
3. Referring to "Evaluation Questions" Dr. Ang pointed out that (1) of the Specific objectives i.e. "-functions of the A&E Dept." does not reflect "Improvement of pre-hospital care" of the Purpose of the Project, taking an example of Kuala Lumpur case where prehospital care service is provided by the independent

organizations and not provided by the hospitals. Dr.Rohaizat also pointed out the title of "Accident & Emergency Dept." has been replaced by "Emergency Dept" (24/04/95),and all wording of A&E Dept should be changed to Emergency Dept. in the report. All agreed that the titles appearing on the document like R/D may remain as it was,and "accident and emergency care servise" may remain as it is. The name of the A&E Dept. should be changed to Emergency Dept.

Dr.Ang pointed out that "emergency care " is not a speciality,but emergency referring to (2) of specific objectives,and that there is a suggestion in the 7th Malaysian Plan that Emergency Medicine be upgraded to Speciality,however, nobody has officially been gazetted as a specialist of Emergency Medicine in Maklaysia yet.

She also commented that (2) objective may be beyond the scope of this project.

4. Dr.Asoh,Chief Adviser of the project presented review of the project,quoting the Chronology and matrix for the activities.

Dr.Rohaizat pointed out the following wordings since the wording of "new" may implicate the wrong impression that there had been no such scheme existed before the project commenced;

Objective #1,Strategies 1. New physical

changed to "Upgrading of -"

Strategies 2.New organizational

changed to "Reorganization and restructuring"

Strategies 3. New operational policy

to "Development of operational"

Str.4. New functions

to "Enhancement of Ambulance Service"

Str.5 Change to "Enhancement of Disaster preparedness and

Dr.Lee suggested that #2/2/1 on the job training,"endoscopy" is not appropriate, to be changed to airway management,and so on,and also pointed out #2/2/4.of "computerization" should be placed at #1/2 of reorganization.

Dr. Ang commented on #2/3/3 of "formal petition" is not appropriate,because this may not be considered as project activities and suggested that "a gazetted physician was posted as a Head of Emergency Dept" be replaced with that.

5. Mr.Wan Akil presented his profile survey result in brief.

The 2 third of the patients visit the Emergency Department after working hours, 24 % of them are student whom he interviewed.

6. Dr. Uehara presented his evaluation findings on the project, using many statistical data that he has interviewed/collected.

Dr. Rozaihat suggested that New format, in particular pre-hospital care format, resuscitation flow chart may be used at the other hospitals, and that SGH should submit application form for the new format can't be used until it is approved by the special committee in MOH (Committee on Information & documentation). Also check lists are also recommended for application.

Dr. Ang suggested that those data presented by Dr. Uehara are so many and better be limit to certain data for presentation, although not all of them will be put on the report. She also asked for feeding back those data to Malaysian side, as they are very useful.

Dr. Ang also asked for quality indicators for his data, that could be used to develop the standards.

#### 7. Follow-up

Training is most important and requires standardization.

Dr. Lee requested JICA to follow to despatch experts in Emergency Medicine and Dr. Ang proposed use of inter-net to seek advise after the project.

Dr. Uehara advised that who is going to be responsible to arrange for continuous network via inter-net.

Members agreed that training for trainers will be required and important.

Another issue is the procedures as to how the training courses conducted could be officially recognized.

We require to seek advise from manpower training Division.

Also of the instructor certification.

Dr. Rohaizat stated that pre hospital care should be strengthened and not to transport patients only.

# Framework of Evaluation Study

## Project

**“The Project on Upgrading of Emergency Medical Service in Sarawak”**

## Type of Evaluation

Project evaluation at its completion.

Based on the project reports and results of preliminary studies, the five-year project of technical cooperation will be evaluated in a comprehensive manner in accordance with the evaluation guideline of JICA evaluation unit.

## Purpose of the Evaluation Study

- (1) To draw lessons which are helpful for planning and implementation of future projects on similar subjects.
- (2) To summarize lessons/recommendations for further development of emergency services in Sarawak
- (3) To provide with information and materials for decision making on whether any further cooperation activities should follow the project or not.

## Evaluation Body

Evaluation is made by the Joint Coordination Committee of the project and JICA.

## Scope of Evaluation

The scope of evaluation is referred to those described in the Project Design Matrix (Logical Framework of the project) as well as to the project period since 1992 till the time of its completion, July 31<sup>st</sup>, 1997 (actually until the time of evaluation study: May, 1997).

## Issues of Concern

Efficiency, Effectiveness, Impact, Relevance, Sustainability of the project are the key issues to be evaluated.

## Evaluation Questions

Please see attached.

## Evaluation Methods

- analysis of secondary data/information such as; reports/documents on activities and achievement of the project, hospital documents, government reports on health statistics and health services in Sarawak and Malaysia, results of questionnaire survey on pre-hospital care and patient satisfaction, and so forth.
- analysis of primary data/information collected by interviews with key informant, focus group discussion, record review, observation, and questionnaire surveys

## **Evaluation Study Team**

The evaluation study teams of JICA will carry out three main tasks; (1) planning of the evaluation study, (2) conduct of preliminary study for evaluation (3) final joint evaluation process, with conclusions and recommendations, in collaboration with JCC.

Dr. Uehara will visit Malaysia in mid April to conduct preliminary study and the final evaluation team will visit Malaysia in late June to exchange Minutes of Discussions.

Prof. Takeuchi of Kyorin University ( leader of the final evaluation team)

Prof. Maekawa of University of Tokyo ( in charge of management of evaluation study)

Dr. Uehara of International Medical Center of Japan ( in charge of design and conduct of preliminary evaluation study )

Other Japanese members engaged in the evaluation process are those as followings;

Dr. Kuropi of Fuji-Yoshida Municipal Hospital

Dr. Mochizuki of Kyorin University

Mr. Takao of Ministry of Home Affairs

Ms Makimoto of Dept. of Medical Cooperation, JICA Head Quarter

## **Schedule Plan of the Evaluation Study**

Please see attached.

## **Output of the Evaluation Study**

- Report of the evaluation study
- Minutes of Discussion on the evaluation study to be signed by JCC and JICA

Evaluation Team

## **Use of Evaluation**

The results of evaluation will be registered in the evaluation data-base of JICA evaluation unit so as to be utilized in planning and implementation of any future projects in Malaysia or with similar subjects.

Surveys conducted for collection of primary data

Survey	Purpose	Survey Methods and target	Target	Response
1 Interview with key informants in SGH	General view on project management, achievement and sustainability	Interviews (free opinions)	9	9
2 Questionnaire to A&E staff	View of A&E staff on achievement & effectiveness of the project	Questionnaire and interview	44	32
3 Questionnaire to ward staff	View of ward staff on achievement & impact of the project	Questionnaire to Head of Departments, Sister of Dept. MO and Staff nurse	?	38
4 Questionnaire on project management	Opinions of key persons committed to project management	Questionnaire to key persons of Technical Committee	7	3
5 FGP on C/P Training in Japan	Efficiency of C/P Training in Japan	Focus Group Discussions among selected no. of C/P who were sent to Japan	6	6
6 Questionnaire to C/P sent to Japan	Efficiency of C/P Training in Japan	Questionnaire to participants (some by Fax)	22	20
7 Questionnaire to C/P sent overseas other than Japan	Efficiency of third country training and exchange program	Questionnaire to participants (some by Fax)	16	14
8 Questionnaire to Japanese experts	Japanese Experts	Questionnaire to ex-JICA experts (by Fax)	?	27
9 Equipment survey	Appropriateness & efficiency of donated	Questionnaire to persons in charge of equipment management	2	2
10 Questionnaire on patient profile and patient satisfaction	Patient Satisfaction & Pre-Hospital care	already done by Technical Committee	1,000	1,000
11 Sample survey on case profile and outcome	understanding of case profile and outcome	survey forms for resuscitation room, observation room, asthma room, and consultation rooms (one week only)		
12 Peer review by Dr. Ernest Yeoh	Appropriateness of the achievement	quality assessment of medical records, self-assessment of basic procedures, review of course materials, observation & discussions	1	1
13 Questionnaire to staff engaged in emergency service in Sarawak	Human Resource for emergency service in Sarawak	Questionnaires to head of emergency unit and course participants (by mail)	20	16
14 Observation and interview on emergency service in rural Sarawak	Needs of, and impacts on, Sarawak emergency care	2 days' visit to district/divisional hospitals and KK	5 institution	5
15 Telephone survey	Publicity and knowledge on emergency service of SGH	interview by telephone calls	100 (244)	100
16 Survey on community deaths	Unmet needs	Analysis of National Registry data and interview with family of the deceased (uncertified death)	53	22
17 Consultation meeting with representative of JCO	Discussion and consensus development on findings of the study	one day workshop	6	6



## Report of the preliminary study on project evaluation

### Purpose of the Project

Improvement of pre-hospital care and development of human resources, as well as to upgrade accident and emergency service at Sarawak General Hospital (SGH), especially at its Emergency Dept. in line with the national plan for improvement of accident and emergency service.

### Specific objectives (expected outputs of the Project)

- (1) Enhancement of the functions and organization of the Emergency Dept. of SGH.
- (2) Development of accident and emergency care as a specialty (discipline).
- (3) Development of training programs for accident and emergency care in the state of Sarawak

**NOTE:** In April, 1995, Malaysian Government decided to replace the name of Accident & Emergency Unit by Emergency Department. For that reason, the department will be abbreviated as ED (Emergency Department) in the report.

## 1. Description of activities, inputs and outputs of the project

- (1) See attached the matrix of activities and achievement of the project according to specific objectives
- (2) See attached the table of chronology of the project
- (3) See attached the list of outputs

## 2. Verification of achievement of specific objectives

### 2-1. Were the functions and organizational structure of A&E in SGH strengthened?

**#1.** Reorganized structure of ED/SGH and developed operational policy were recognized by document. (see Appendix: organizational structure and operational policy of ED/SGH) Emergency department was transformed to be an independent department being separated from OPD. A specialist was posted as head of department, and a MA was assigned to be in charge of ambulance service. In 1997, two MA were promoted to senior MA. Although the post of nursing sister is not filled, a senior MA is in charge of management of medical care carried out by nurses and MA under supervision of medical officers. The posts of X-ray radiographer, laboratory technologist and pharmacy assistant are not filled yet, although allocation of a laboratory technician to ED is already approved.

The due functions of the department are defined as; (1) to provide 24-hours A&E services, (2) to provide 3 levels of A&E care such as pre-hospital care, hospital care and training of medical and para-medical staff in A&E services. The original statement of "to provide general outpatient clinic services to non-A&E patients after 4:15 P.M. and late at night after closure of private G.P. clinics" was excluded. A triage guideline with color coding system was introduced. Disaster plan was added as one of functions in pre-hospital service.

**#2.** The organizational structure of ED/SGH was strengthened also by increase of number of staff of MO (from 6 in 1992 to 9 in 1997), MA(15 to 23) and nurse (9 to 13).

(ref.1: personnel at ED/SGH)

**#3.** The ED/SGH extended its function in training of personnel for A&E service and in initiatives for disaster preparedness of the state.

ED/SGH was recognized as training institution for post-basic A&E course for paramedics, And also designated as training center for first respondents of life support by MASTEM. ED/SGH is chairing a sub-committee on cross-sectional disaster preparedness

plan.

**#4.** Reorganized structure and revised operational policy are supported by both ED staff and ward staff. (ref.2: Questionnaire survey for ED staff and ward staff in SGH)

- (1) Ninety percent of respondents of ED staff consider that the functions of ED/SGH was enhanced, and 100 percent of them that both organizational structure and operational management of ED/SGH were better established.
- (2) Ninety three percent of respondents from ward staff consider that the present function of ED/SGH is appropriate, 90 percent of them that organizational structure of ED/SGH is appropriate, and 93 percent that current operational management is appropriate.
- (3) In terms of efficiency of coordination between ED and other departments/wards, around 90 percent of ED and ward staff answered that it was improved, however, it was 21 percent who answered as "definitely improved".
- (4) According to the view of ED staff, standard operational procedures are appropriately followed by two thirds of ED staff. Seventy five percent of respondents consider that new triage system is appropriately followed.

## 2-2. Was the discipline of "emergency care" established?

**#1.** View of ED staff and ward staff on achievement regarding the establishment of discipline of emergency care is such as followings. (ref.2: Questionnaire survey for ED staff and ward staff in SGH)

Majority of respondents (89 - 100 %) from ED staff and ward staff consider that both discipline and scope of work of emergency care were better clarified, although the proportion among respondents from ward staff who answered "definitely yes" to the question on scope of work of ED was smaller than that among ED staff; 29% and 38% respectively. Interviews with specialists and sisters in the wards suggested that consensus development remain to be done about role sharing for certain type of cases, such as post-resuscitation cases.

**#2.** Documentation of standard clinical guidelines for emergency care at ED/SGH or Sarawak is not yet done, except for those directed in course textbooks.

However, an approach for standardization of basic procedures for paramedics is being made through development of checklist for self assessment.

**#3.** Some sort of technical/operational procedures were introduced to strengthen the discipline of emergency care, for example;

- (1) pre-hospital medical care by emergency medical technician team
  - (2) structured triage guideline
  - (3) standardized measures for resuscitation
  - (4) stabilization of critically ill/injured patients
  - (5) emergency nursing
  - (6) provision of laboratory service at Emergency Department
  - (7) conduct of X-ray and CT examination during stabilization process
  - (8) ultrasound examination
  - (9) proposed initiation of thrombolytic therapy for selected AMI (Acute Myocardial Infarction) cases
  - (10) proposed trauma team approach for poly-trauma cases
  - (11) preparedness for disaster and mass casualties
  - (12) new recording forms such as "patient record form for ED", resuscitation flow chart", "pre-hospital care record", "ambulance call information", "MA ambulance check list", "driver ambulance check list", "(equipment) repair"
- (see Appendix: new recording forms and check lists developed in the project)
- According to informants who know the activities of ED/SGH before project, the role of ED/SGH for emergency was deemed as equivalent to "mail post service", namely, to deliver patients to wards concerned as quick as possible. Now the concept of emergency care was better clarified, although its scope of work still remain to be shared by parties

concerned.

### **2-3. Were training programs developed on accident and emergency care for the state of Sarawak?**

#1. Thirteen types of courses/seminar were created in the project in relation to emergency service and below nine courses were established as educational courses for A&E personnel in Sarawak.

- (1) Combined EMS driver course and EMT course
- (2) First aid course
- (3) BTM course
- (4) ATM course
- (5) Basic ECG course
- (6) Intermediate ECG course
- (7) Ventilator course
- (8) Biomedical Engineering course
- (9) OT nursing course

#2. Teaching materials developed for the above courses are recognized.

(see Appendix : list of teaching materials developed in the project )

#3. One thousand five hundred seven people participated in the training courses.

#4. Courses for training of trainers/instructors (TOT courses) courses and their materials are not yet established, although human resources capable to organize as well as teach courses were identified through the above courses.

#5. Attachment of house officers to ED/SGH in rotation was not formalized.

However, house officers are attached to ED/SGH for two weeks during their attachment period in Surgical department. ED/SGH now offers training/educational opportunities on emergency medical care/services for paramedics in the post basic course, medical students of the University of Malaysia, Sarawak (UNIMAS), and first respondents of life support such as rescue team, firemen, civil defense team, etc.

### **3. Efficiency**

\* Efficiency measures the qualitative as well as quantitative outputs of the project in relation to the resource input (funds, time, personnel etc.).

#### **3-1. How efficient were the project in terms of comparison of project activities/inputs with project outputs?**

#1. Monetary inputs by both countries were done according to R/D and annual work plans. (see Appendix: Monetary inputs of JICA)

Renovation of A&E facilities was implemented by Malaysian fund. Local cost, such as running cost of ED/SGH, expenses for course participants, travel fees of JICA experts, repair cost for equipment, and administrative cost for project management including telephone fee and secretary service were financed mainly by Malaysian side. Dispatch of experts, C/P training in Japan, and provision of teaching materials and new equipment were mainly financed by JICA side.

#### **3-2. Were the inputs of JICA efficient in terms of productivity and appropriateness?**

##### **3-2-1. Dispatch of JICA experts**

#1. Twelve long-term experts and 26 short term experts were dispatched by JICA. Besides seven JICA experts were dispatched to present papers in the two national conferences organized by the project. (ref. 3: Questionnaire survey for JICA experts)

#2. The level of achievement of task was rated as 64% in average by long-term JICA experts and 67 % by short term experts.

#3. Thirty five percent of short term experts and 57 % for long term experts felt that the assigned period of work in the project was too short to complete their tasks.

Assignment of long term experts was rather appropriate in terms of both quantity and type of expertise in the first half of the project period. However, it was not necessarily so for the latter half of the project period, for JICA encountered certain difficulty in recruitment of qualified experts. The input of short term experts was rather extensive. It was helpful for introduction of the technical fields of emergency care, since emergency care is intrinsically a discipline which crosses over many clinical disciplines. However, in the view of productivity, input by short term expert was efficient only when their assigned task was specified in advance and when the objectives fit to their expertise.

### 3-2-2. Overseas counterpart training

**#1.** In total 23 counterparts (C/P) were sent to Japan for training. Most of MA and nurses are still working in ED/SGH but all medical officers has either resigned or transferred remain.

**#2.** Average of rated score by participants in training program in Japan was around 50% for language communication, around 70% for usefulness, and around 70% for efficiency, against their expectation.

**#3.** Nine counterparts attended ATLS course and two counterparts were sent for OJT in Singapore General Hospital. Five out of nine medical officers still remain

at

ED/SGH.

After the unstableness of attachment of medical officers to A&E after return from Japan was recognized, more medical assistants (MA) and nurses were selected as candidates.

Many of them encountered problems in language communication, so that JICA project team

managed to organize Japanese language course before their trip to Japan with aim to improve the efficiency of the training. The level of preparation and efficiency of training program much differed according to institutions which received Malaysian C/P. Increase of opportunities for participation in practice and necessity of customized program in

linkage

to the project was strongly recommended by participants.

Regardless of that weakness in efficiency, the visit to Japan itself was considered helpful

for development of their own image of the goal of emergency system in Kuching, especially

on critical care, ambulance service and emergency medical technician (EMT).

Eleven counterparts were sent to Singapore either for participating ATLS course or short term attachment for on the job training (OJT) in Singapore General Hospital. Especially

the

participation in ATLS course was effective for preparation of Basic and Advanced Trauma management course in the project.

(ref. 4. Questionnaire survey on overseas C/P training)

### 3-2-3. Provision of equipment

**#1.** According to utilization survey of 154 items in ED and OT/ICU in SGH, ninety percent of provided equipment percent were useful and 70 percent were actually used either often or regularly. Main reasons of less utilization were "less demands", "less needs", and "lack of operational skills". (ref. 5. Survey on utilization of provided equipment)

Equipment and ambulance cars were provided mainly for A&E department (142 items of

110 types), and also for OT, ICU and divisional hospitals in Sarawak.

The provision of equipment was effective for development of new A&E setting in SGH, as well as for its extension to divisional hospitals, in spite that some equipment in ED/SGH

became underutilized after the initial period of pilot approach. As every equipment was procured locally, only few went out of use because of problems in supply or SPEC. Laboratory equipment contributed to development of A&E laboratory which allowed quick reference for emergency patients. Since many of those were rather new to A&E in SGH, a JICA expert of medical engineer was dispatched to help establishment of equipment management system in the hospital. Also a training course for biomedical engineering was created. Although it was critical for maintaining reached technology level, since 1997 a new policy (contract out of all supporting service) has served for that purpose.

### **3-3. Linkage with other projects**

The counterpart of JICA project in Surabaya/Indonesia contributed to the first national conference on emergency medicine which was organized by the project in Kuching. And JICA experts and Malaysian C/P visited Surabaya to exchange experiences and views with each other. Exchange program among JICA assisted projects in Egypt and Thailand was implemented.

### **3-4. Were the inputs from Malaysian Gov. or JICA satisfactory in response to the request by the Technical Committee of the project?**

(1) Computerized system for management information and medical statistics was not realized because JICA side could not send experts and Malaysian side could not post clerk at ED/SGH.

(2) The delay of dispatch of JICA chief advisors brought about difficulty to certain extent in continuity and consistency of project implementation.

### **3-5. Were there any external factors, which affected the efficiency of project implementation?**

(1) The renovation of A&E was postponed and also the original plan was changed in scale against the expectation of the project plan, which necessitated revision of working plan of the project.

(2) The rapid turnover of medical officers, especially the shortness of attachment of medical officers after return from overseas training, reduced the efficiency of technology transfer to some extent.

## **4. Effectiveness**

\* Effectiveness is a measure of whether the purpose of the project has been achieved, or how likely it is to be achieved. This is a question of the degree to which the outputs contribute to achieving the intended purpose.

### **4-1. Was the purpose of the project consistent?**

The goals and purposes of the project was consistent throughout the project, although there was certain inconsistency regarding scope of the project, in terms of extension of the project input to divisional hospitals in Sarawak state.

### **4-2. How much was the pre-hospital care delivered by ED/SGH improved?**

#1. The average number of daily runs of ambulance increased from 2.2 in 1992 to 5.8 in 1996.

#2. The percentage of dry run was decreased from 18% in 1994 to 11% in 1996, and the percentage of emergency run was increased from 31 % in 1994 to 37% in 1996. The absolute number of emergency cases served by EMT ambulance team was doubled.

(In 1996 total number of ambulance calls was 2130, and the number of emergency run was 778.)

#3. The average response time (from ambulance call till dispatch of ambulance) for emergency calls was shortened from 6.24 minutes in 1992 to 1.28 minutes in 1996, which is shorter than the state level standard (3 minutes). The average arrival time was also shortened for both Zone 1 ( from 9 min. to 7 min. ) and Zone 3 (from 17 min. to 12 min.) patients, although it was elongated for Zone 2 patients (from 14 min. to 16 min.)

#4. The number of cases for whom CPR was done was 4.5 per month in 1994 (two-month survey) and 4.8 in 1996 in average. Although only CPR could be done in 1994, some other resuscitative measures were taken in 1996. Intubation was made for 38 cases, IV-

adrenalin was given to 180 cases. Survival of eleven cases after active resuscitation by EMT was reported in 1996, which includes eight cases of successful CPR (success rate of CPR was 14%).

Until 1994 only one MA was engaged in pre-hospital care delivered by ambulance car, and active treatment was not provided. Now EMT team composed of trained MA, nurse and driver provides with pre-hospital medical care. New recording forms for ambulance calls and pre-hospital care as well as various checklist to prepare for emergency call were introduced, and a buzzer was installed to facilitate quick response to ambulance calls. Installment of two-way radio-communication system also promoted pre-hospital medical control. (ref. 6. Profile of pre-hospital care and ambulance service of ED/SGH)

#### 4-3. How much was the emergency services at Emergency Department of SGH upgraded?

#1. The number of attendance at ED/SGH increased by 43% since 1992 (from 41,386 to 59,363).

#2. The percentage of emergency patients increased by 31 % since 1994 (from 4,612 to 6,051). The percentage of non-emergency cases also increased by 15% during that period.

#3. According to a sample survey, the number of critical cases treated in resuscitation room is between 3 and 12 per day, and X-ray examination was done for 55% of them, FBC 52%, Chemistry 47%, Blood Gas Analysis 23%, CPR 0%, intubation 10%, ultrasound 5%, and artificial ventilation 4%.

#4. Patients' satisfaction about quality of care at ED/SGH is high, especially among urgent cases. (ref. 7. Survey on patient satisfaction, ITM, 1995/1997)

(1) Ninety eight percent of patients (n=1000) responded that they are satisfied with treatment given by ED/SGH.

(2) the standards for state level quality indicators on patient satisfaction were cleared in the survey in 1995. Although it went down in the survey in 1997.

(standard is "not less than 75% out-patients surveyed say services provided are good.")

a) Friendliness of staff: June 95; 81%, March 97; 52%

b) Helpfulness of staff: June 95; 80%, March 97; 52%

b) Clear instruction and explanation: June 95; 77%, March 97; 51%

c) Examination by MA: June 95; 82%, March 97; 58%

d) Examination by doctors: June 95; 85%, March 97; 61%

However, high satisfaction rate was shown by patients of emergency cases ("attention is immediate"; 74%, "examination by MA is good"; 83%, "examination by MO is good"; 86%), and clear correlation was seen between urgency of case and satisfaction with provided care.

#5. Providers' satisfaction

(ref.2: Questionnaire survey for ED staff and ward staff in SGH)

#6. Peer review: Since specific outcome indicators were not available to be set, patient satisfaction, provider's satisfaction and peer review by emergency specialist in university were applied for assessment of quality. Satisfaction of patients was high, especially so among true emergency patients. Providers satisfaction was shown to be also very high. (ref.3.: Peer review report of Dr. Ernest Yeoh of University of Malaya)

#### 4-4. How much were human resources developed for emergency services in Sarawak ?

The participants of the educational courses implemented in the project counted 1507 in total. In A&E department of SGH, one staff took 6 courses in average. In A&E of divisional/district hospitals, 26% of MO/MA /Nurse staff have taken any course regarding A&E care since 1993, and 17% took courses which were developed in the project, including BTM course and ECG course. The rated score on usefulness of the course was around 90%.

(ref. 8. Questionnaire survey on human resource on A&E in Sarawak)

**4-5. What efforts still remain to be made to achieve the purpose of the project?**

- 1- establishment of QA/QI program in A&E and medical statistics with MIS
- 2- setting certain mechanism for better coordination and feedback between wards and A&E.
- 3- Integration of emergency communication system in Kuching
- 4- revision for, or development of, educational courses on A&E adopting to needs in rural setting.
- 5- decentralization of education/training courses in Sarawak, and development of TOT courses

**5. Impacts**

The impact of the project is both the foreseen and the unforeseen consequences to society, whether positive or negative, at hospital level, community level, state level or national level.

**5-1. What kinds of expected and unexpected, whether positive or negative, impacts of the project were recognized ?**

- 1- The project could have contributed to people's awareness of relevance of emergency service in Malaysia, through national conferences, and by presenting a certain model. (ref. Maraca meeting)
- 2- disaster preparedness
- 3- post-basic training course
- 4- view of ward staff (ref.)

**5-2. What impacts were recognized on the intended beneficiaries of the project?**

- 1- according to a telephone survey, 1/3 of residents or their family have consulted A&E/SGH during the last two years, and 40% know the contact telephone number to call ambulance car.
- 2- according to the National Registry, in 1997 more people were served by medical service before their death events, than in 1992.

**6. Relevance**

Relevance means a general assessment of whether the project is in accordance with both the ultimate goals the donor and recipient policy, as well as local needs and priorities.

**6-1. How relevant was the project purpose in terms of priority in health needs and health development policy of Malaysia and Sarawak?**

**6-2. Is it still relevant today?**

**6-3. Is the project purpose/goal relevant in view of Japanese ODA policy?**

- 1- public service
- 2- BIN

**6-4. Are the target groups/population of the project consistent?**

- 1- the public in Kuching
- 2- emergency patients in Sarawak

**6-5. Were the planned strategies, estimated assumptions and set indicator suitable for the project? What measures, if any, were taken to keep the project in due direction?**

- 1- indicators
- 2- strategies

## **7. Sustainability**

Sustainability is an assessment of the extent to which the positive changes achieved as a result of the project can be expected to last also after the project has been terminated. In many ways this is a question of the relation between the necessary local resources and how recipients view the project.

**7-1. What are the exact fruits of the project to be sustained?**

**7-2. What factors would affect the sustainability? What countermeasures are to be taken?**

**7-3. Are the project achievements recognized and supported by national and Sarawak government?**

**7-4. Are the project outputs self-sustainable in terms of organizational structure as well as technical, financial and managerial capacity?**

1- stability of doctor in charge of A&E

2- flow of A&E staff

3- recognition and incentives

4- linkage with post basic course

5- certain mechanism for continuing quality improvement and revision of courses. (supervisor, reference, information)

6- EMT

## **8. Overall Assessment**

**8-1. Did any of such factors as followings influence the project progress and sustainability?**

Political commitment, economic/financial factors, institutional/managerial capacity, appropriateness of technology transfer, appropriateness of donated equipment, social/cultural factors, environmental protection, WID, and others.

**8-2. What lessons are to be learned for improvement of project planning and project management?**



SARAWAK GENERAL  
HOSPITAL

OVER ALL  
REVIEW  
OF  
JICA  
PROJECT

# HOSPITAL UMUM SARAWAK

## OVERALL REVIEW OF JICA PROPECT.

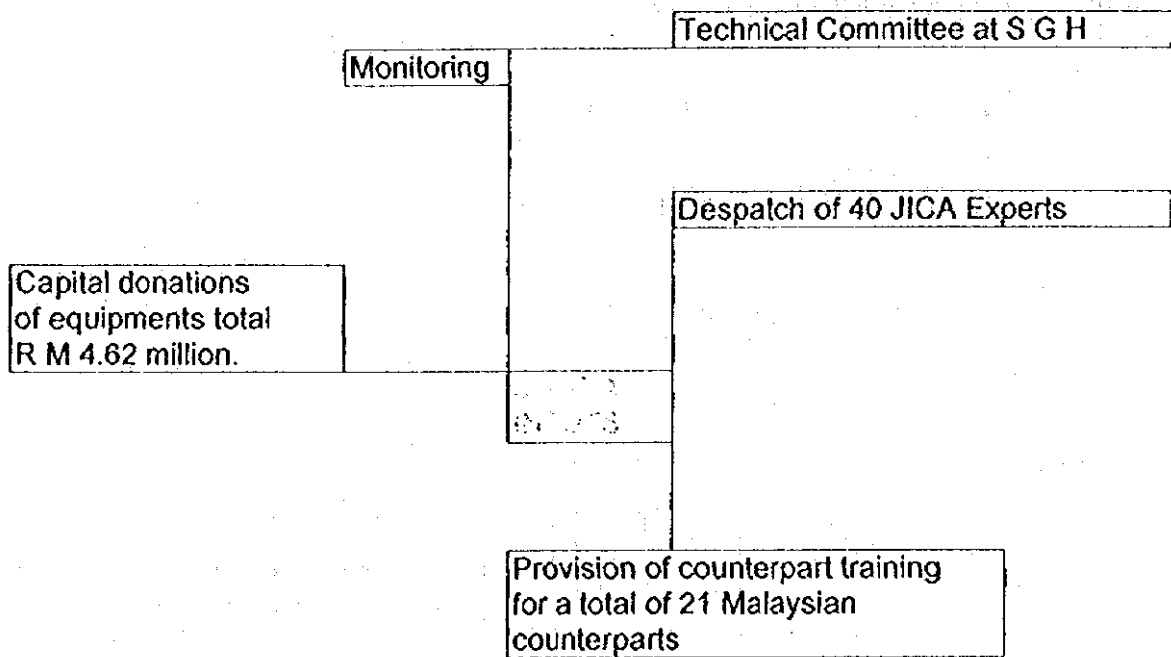
Terms of cooperation: Five ( 5 ) years from 01 August 1992 to 31 July 1997.

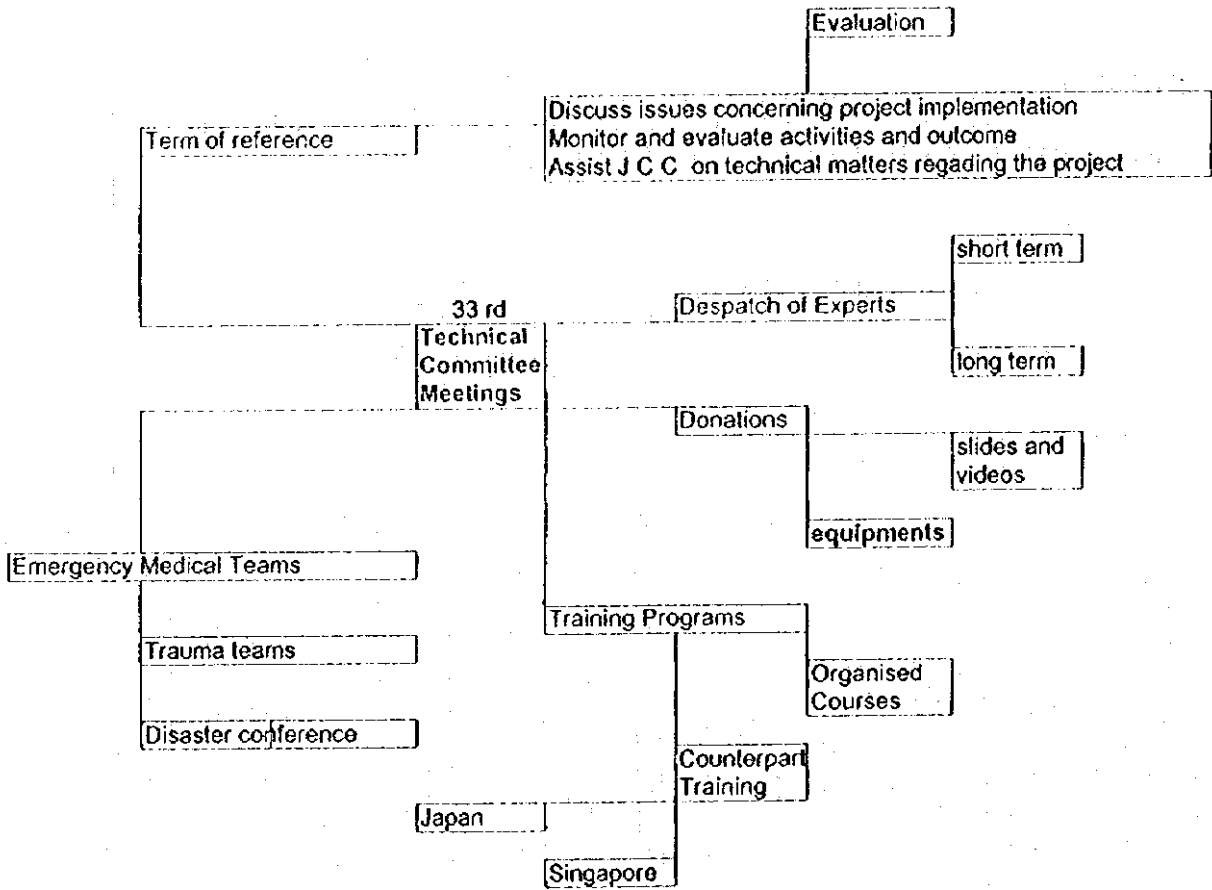
Purpose:

- @ Improvement of pre hospital care.
- @ Development of human resources
- @ Upgrading of A & E services at the Emergency Department  
of Sarawahk General Hospital.

### Specific Objectives:

- @ Enhancement of functions and organisations of the Emergency  
Department of Sarawak General Hospital
- @ Development of Accident and Emergency care as a  
Specialty ( Dscipline )
- @ Development of Training Programs for Accident and Emergency  
Care in Sarawak.





## Despatch of JICA EXPERTS:

CATEGORY	No of times Despatched	No of named persons
Neurosurgeon	3	2
Traumatologists	2	1
Emergency Medicine Specialists	3	3
Orthopaedic surgeons	3	3
EMT Ambulance svrice Specialists	3	3
Radiologists	3	3
Cardiologists	2	1
Anaesthesiologists	2	2
Paediatricians	2	2
Pneumologists	2	2
Nurses	4	4
Gastroenterologists	1	1
Medical Statistician	1	1
Coordinator	1	1
Chief Advisers	3	3
Proffect Evaluator	1	1
	36	33

**Duration of Despatch by number of Experts**

0 - 3m	>3m - 6m	>6m - 1y	>1y - 2y	>2y - 3y	>3y
26		7	3	1	1

Note: 7 EXPERTS came during special courses and conferences to present papers.

CATEGORY	1992	1993	1994	1995	1996	1997
Neurosurgeon	<--->				<--->	
Traumatologists		<-->				
Emergency Medicine Specialists		<-->	<--->		<-->	
EMT Ambulance srvice Specialists				<--->	<-->	<-->
Radiologists		<-->	<--->			
Cardiologists		<-->	<--->			
Anaesthesiologists			<-->	<--->		
Paediatricians				<-->		<-->
Pneumologists				<-->	<--->	
Nurses					<--->	<--->
Gastroenterologists			<-->			
Medical Statistician			<-->			
Coordinator	<--->					
Chief Advisers	<-->					
Project Evaluator						<-->
Biomedical engineer			<--->			

Counterpart training in Japan = 24

Year	1992	1993	1994	1995	1996	1997
M O	2	3	1		1	
M A		1	3	3	3	1
NURSE		2	1	1	1	1
	2	6	5	4	5	2

Note:

1995: 1 mo trained in Singapore

1996: 1 nurse trained in Singapore

As of now 1 MO retired, 3 in private practice.



## Training Programs

Courses conducted/ organised:

COURSES	1992	1993	1994	1995	1996	1997	Total staff trained
BTM				3			102
ATMC				1	1		44
Basic ECG				2	4		215
Int. ECG				2	2		95
First Aid				5	5		123
EMS, driver c							
Bioengineering				5	2		
BCLS	6	5	6	14	6	5	880
ACLS		1	2	3	4	1	240
Ventilator				1	5	1	166
OT Nursing	6	5	6	1	5	1	87
Postbasic A&E					2	2	61

## Resource Personnels / Facilitators for the various courses.

COURSES	Organisers	Coordinators	Lecturers
BTM	Emergency Department	Mohd Hosni	MA and Nurses at E D
ATMC			MA and nurses in E D
Basic ECG			MA and Nurses at E D
Int. ECG			
First Aid			
EMS, driver c			
Bioengineering			
BCLS	Anaesthesia	DR. Wong May Sum	Drs and sisters in OT and ICU
ACLS			
Ventilator			
OT Nursing			

### Donations of Equipments

The majority of equipments are donated to the Emergency Department of Sarawak General Hospital. However, selected ones are also distributed to other centres, such as Srikel, Sibul, Miri.

A total of RM 4,618,600 worth of equipments has been donated, among them ambulance, Ultrasound machine, ECG machines, etc.

YEAR	1992	1993	1994	1995	1996	1997
AMOUNT	491,105	1,381,515	942,420	716,489	999,210.00	

**TOTAL = R M 4,530,599.00**

### Summary of Main events

- 1990:      \* Request by Malaysian Government to JICA on behalf of Sarawak Health Dept.  
            \* Despatch of preliminary survey team/
- 1991:      \* Despatch of specialists for supplementary study team.
- 1992:      \* At respond time (from ambulance call to despatch off ambulances); 6.24 mins.
- 10/01/92 \* Record of discussion between JICA & Sarawak Health Dept. signed.  
01/08/92 \* Initiation of JICA Project.
- 1994:      - A&E renovation costing RM140,000.00  
            - Melaka meeting: Basic policy and plan to upgrade A&E services in the country.  
            - CPR actively practiced - Emergency Dept., SGH
- 1995:      \* April: name of A&E changed to Emergency Dept.  
            \* Survey of patient satisfaction by ITM  
            \* Rotation of housemen to the Emergency Dept, SGH (about 2 weeks)
- 1996:      \* Peer review report by Prof Ernest Yeoh of U M.  
            \* Wide range of resuscitative measures widely practised  
              in Emergency Department, SGH  
            \* Average response time: 1.28 minutes.
- 1997      \* Survey on patient satisfaction by ITM  
            \* Three Senior Medical Assistants in Emergency Department , SGH  
            \* Evaluation study by Dr N. Uehara ( April to June ).

Note: Ongoing training courses  
      : Counterpart training

Changes had taken place at the Emergency Department of S G H.

New, present location

Well equipped ambulance + good 2 way communication

Increase in number of long term staff

Improved skill and expertise of staff

Trained emergency medical teams

Dedicated staff with good leader

Much practised manuals

guidelines

procedures

Good interunit referral, coordination and cooperation

Critical mass of medical personnels trained ( 1507 )

Shortest response time

**Issues that need to be addressed further.**

- 1 Priority regarding development of Emergency Medicine services in Sarawak ,  
in particular Sarawak General Hospital.

Staffing: due to general shortage of Medical Officers, number of  
Medical Officers only 9.

Many of nurses are those taking Post basic A & E course.

Emergency Medicine Specialist or Specialist with special  
interest in Emergency Medicine a scarce resource.

- 2 Sustainability in terms of continuous replacement of dedicated and committed  
staff.

A Clinical Specialist to lead the Emergency Department is essential  
to lead the Emergency Department to maintain the achievement so  
far attained.

- 3 Poor incentives for staff working in the Emergency Department.

e.g. Medical Assistants, so far no higher posts ( U6 or U5 )

Flexibility in working schedule cannot be done due to only basic  
number of functioning staff.

- 4 Recognition of Emergency Medicine Department of Sarawak General Hospital  
as a Clinical Discipline.

e.g. attachment of Part II Medical Officers as requirement  
recognised posting for foreign elective medical students  
Availability of full time Emergency Medicine Specialist is essential.

- 5 Career development of medical assistants is currently none.

e.g. having recognised degree courses

Emergency Medicine Technicians in their rights.

## **PROJECT OVERVIEW: JICA Project for Upgrading of A & E Care Service in Sarawak**

The Project for upgrading of Accident and Emergency Care Service in Sarawak commenced on 1st August 1992. The Goal of the Project was to improve pre-hospital emergency care, develop human resources, as well as to upgrade accident and emergency service at the Sarawak General Hospital, especially at its Emergency Department, in line with the national plan for improvement of accident and emergency care service, thus contributing to the promotion of accident and emergency services in the State of Sarawak.

The Project came about as a result of an official request put forward in 1990, for Project Type Technical Cooperation by the Malaysian Government on behalf of the Sarawak Health Department. The Japanese Government responded with the despatch of a JICA Preliminary Survey Team in 1990 followed by a JICA Expert Survey Team in 1991 to Sarawak. These culminated in the Record of Discussion being successfully signed on the 10th January, 1992 between JICA and the Director of Health, Sarawak, on behalf of the Government of Malaysia.

Throughout the Project's five years duration, the project was effectively and successfully implemented and managed through three committees.

Firstly, at the national level, a Joint Co-ordinating Committee was established with representations from both Malaysian authorities, JICA experts and JICA officials. This committee was chaired by the Director of Planning and Development Division, Ministry of Health, Malaysia.

Secondly, at the State level, there was a Technical Committee chaired by the Director, Sarawak General Hospital, Kuching consisting of the JICA experts and their Malaysian counterparts. This committee held 33 meetings during the last five years and assisted the Joint Coordinating Committee to monitor the progress of the Project in accordance to the approved Annual Work Plans.

Thirdly, in Japan itself a Domestic Committee headed by Prof. Takeuchi, President of Kyorin University, assisted in the co-ordination of the assistance given by the agencies concerned in Japan. This included Kyorin University, University of Tokyo, Kitasato University Hospital, Fire Defence Agency and the Ministry of Home Affairs, Japan.

The specific objectives of the Japanese Technical Cooperation covered the following activities:

- a) Enhancement of the functions and scheme of the Accident & Emergency Department at the Sarawak General Hospital, Kuching.
- b) Development of the accident and emergency care as a speciality
- c) Development of training programs to meet the local needs for accident and emergency care in the State of Sarawak.

The following input from JICA adequately and quite successfully met the above objectives:

1) Despatch of Japanese Experts, both short and long-term.

These included at all times a Team Leader and a Project Co-ordinator stationed at the Sarawak General Hospital, Kuching. Altogether, a total of forty-five experts were despatched over the five years' duration of the project. The long-term experts included neurosurgeon, nurse, traumatologist, emergency medicine specialist and a medical engineer. The number of JICA experts stationed at the Sarawak General Hospital, Kuching at any one time varied between three to six.

2) Provision of Equipment.

Medical Equipment were provided to assist in effective technology transfer and to ensure smooth and timely implementation of the project's activities. The total capital donation amounted to RM 4.5 million. Among the capital assets donated were three fully equipped ambulances for Sarawak General Hospital, Kuching which aided the hospital to implement its Emergency Medical Team Ambulance Services.

3) Counterpart training.

Malaysian counterparts were sent to Japan for various training courses. This include seven Medical Officers and seventeen nurses and medical assistants. Two officers were sent to Singapore under a tripartite agreement. All these staff gained valuable experience and technical expertise from this counterpart training program.

4) Development of training modules and programs.

Many training courses were conducted and modules were developed to meet the training needs of the staff. Nine types of courses had modules successfully designed together with the relevant training materials which included videos and slides. These courses were the Basic and Intermediate ECG Courses, Basic and Advanced Trauma Management Courses, Advanced Cardiac life Support Course, Ventilator Management Course, Medical Equipment Course, Emergency Medical Technician Course, Emergency Medical Service Driver Course, Operating Theatre Nursing Course and Basic First Aid Course. These courses fulfil the training requirements of all categories of staff in the Emergency Department.

**Input from the Malaysian Government :** to enhance the function of the Emergency Department, provision was made to improve the physical facilities whereby renovation was carried out in the vacated Specialist Clinic premises. A total sum of RM140,000 was spent. The end result was the creation of a department, by the beginning of 1994, that followed the correct layout of what an emergency department should be; i.e with proper designated areas for triage, intermediate and resuscitation cases, observation rooms and treatment area. Notwithstanding, the building was not new as there are already plans under the Master Plan for Upgrading of Sarawak General Hospital, Kuching to have a new emergency department by 1999.

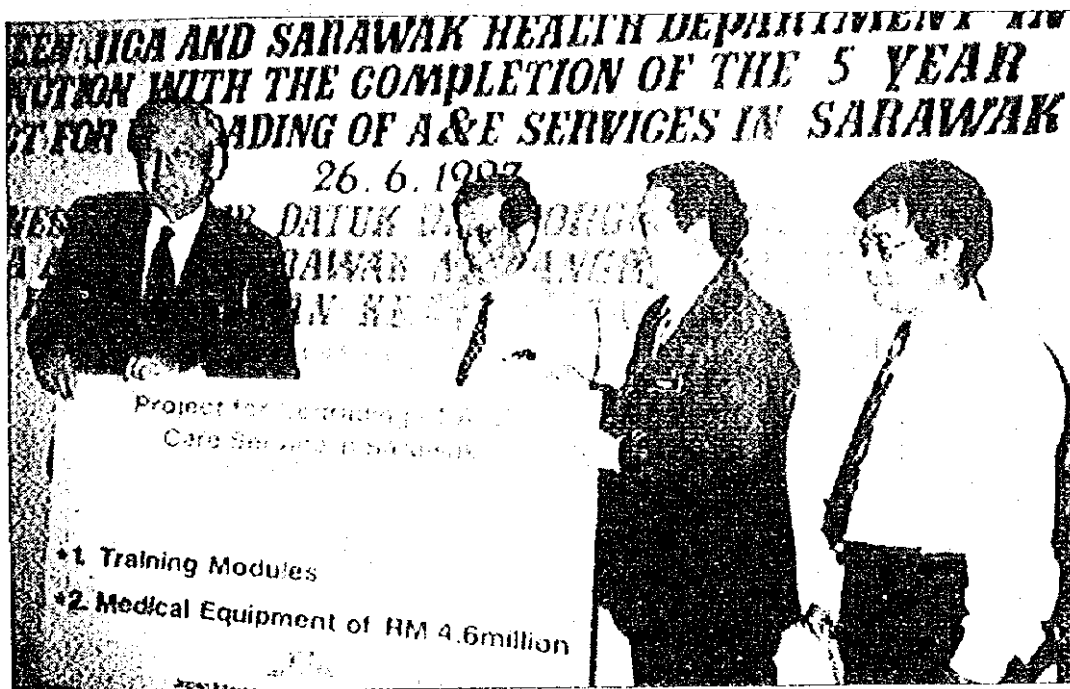


Standard Operating Policies and Admission Guidelines were formulated and followed by all staff in the Department. The Emergency Department had their own Medical officers and other supportive staff, and by early 1994 there was a Specialist to head the Department.

The Emergency Medical Team (EMT) Ambulance Service was successfully launched in January 1995. The ambulance response time was reduced from 6.2 min. in 1992 to 1.3 min. in 1996. The Service had been warmly welcomed by the public and similar services were started in Sibul Hospital in mid-1996 followed by Miri Hospital in early 1997. The pre-hospital emergency care services showed dramatic improvement with the implementation of the EMT training for the nurses and medical assistants and EMS driver training for the ambulance drivers, together with the relevant Disaster Management Courses.

Two National Conferences were successfully organised. They were the '94 National Conference on Emergency Medical Services and the '96 National Conference on Disaster Management. The response to these two conferences was overwhelming and signified the wide interest and concern over the issues of Emergency Care and Disaster Management.

With the Project drawing to its conclusion soon, as a whole, its goals and objectives have been achieved. The assistance from JICA towards the improvement of the Emergency Care Services at the Sarawak General Hospital, Kuching and the State of Sarawak is deeply appreciated.



Profesor Kazuo Takeuchi (kiri) dari JICA menyerahkan tanda kepada Dr. Mohammad Taha Arif (3 dari kiri) Pengarah Kesihatan disaksikan oleh Datuk Dr. George Chan (2 dari kiri).

## Kerjasama JICA dan Kementerian Kesihatan berkesan

Oleh Ahal Malasan

KUCHING:-Projek bagi meningkatkan rawatan pra-hospital dan pembangunan sumber manusia serta Perkhidmatan Kemalangan dan Kecemasan hasil kerjasama Agensi Kerjasama Antarabangsa Jepun (JICA) dengan Kementerian Kesihatan adalah selari dengan pelan nasional, kata Timbalan Ketua Menteri, Datuk Dr George Chan.

Beliau berkata demikian pada Majlis Penyampaian dan Penyerahan Peralatan Perubatan antara JICA kepada Jabatan Kesihatan Sarawak.

Antara sumbangan yang diberikan oleh JICA untuk memenuhi objektif projek itu ialah peralatan perubatan dan ambulans.

Sumbangan itu adalah untuk memperengkapkan bahagian kecemasan dan juga bilik pembedahan serta unit rawatan rapi di Hospital Umum Sarawak (HUS).

Katanya, hospital lain juga akan mendapat faedah daripada sumbangan tersebut.

Menurut Dr Chan, peralatan yang disum-

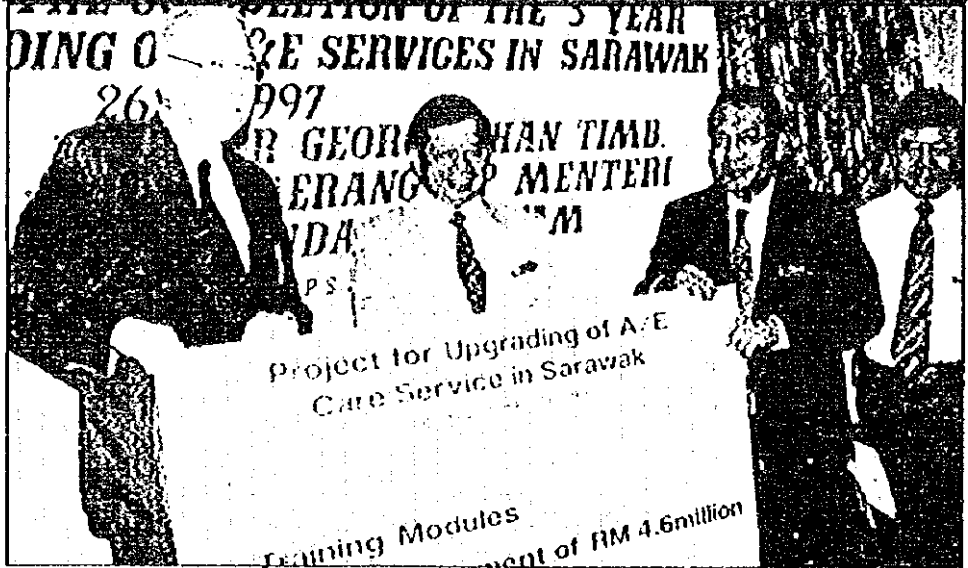
bangkan oleh JICA telah dapat mempertingkatkan lagi keberkesanan Unit Kecemasan dan Kemalangan hospital itu.

"Umpamanya peralatan makmal yang telah diterima membolehkan ujian dijalankan dengan segera ketika pesakit-pesakit masih berada di Unit Kecemasan, di samping membolehkan para doktor membuat diagnosis lebih cepat serta tepat," ujar beliau lagi.

Katanya, pihak Jabatan Kesihatan Sarawak telahpun membeli dua buah ambulans untuk kegunaan Hospital Bahagian Sibuan dan Miri dengan harga RM125,000 sebuah dan juga peralatan-peralatan lain.

Beliau berkata, peningkatan pra-hospital membolehkan orang ramai mendapatkan perkhidmatan ambulans pada bila-bila masa diperlukan.

Penggunaan harian ambulans menurut Dr Chan telah meningkat daripada 2.2 pada tahun 1992 kepada 5.8 dalam 1996.



日本国际协力事业团昨移交一批医药器材予古晋砂中央医院，标志五年资助计划的结束。  
 上图：副首长李督陈康南试驾该团所捐赠的一辆设备先进救护车。  
 下图：该团评估团团长竹内博士（左一）将医药器材移交给州医务司末哈默阿立医生，中为李督陈康南。

# PASTIKAN RAWATAN KECEMASAN YANG TERBAIK: GEORGE

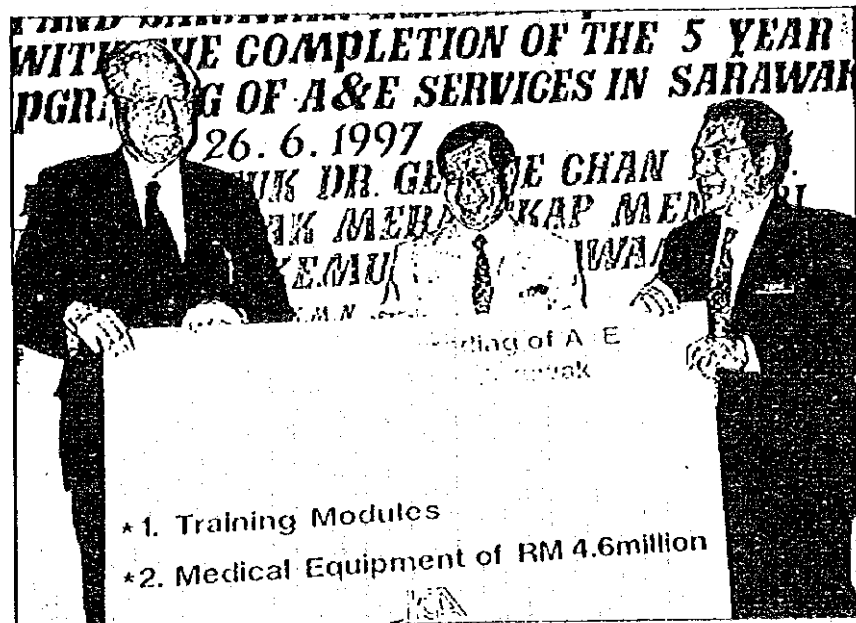
KUCHING:- Kerajaan akan memastikan perkhidmatan rawatan kecemasan di hospital-hospital negeri ini dipertingkatkan bagi menjadikan Unit Kecemasan dan Kemalangan sebagai yang terbaik, kata Timbalan Ketua Menteri, Datuk Dr George Chan Hong Nam.

Katanya, kemudahan-kemudahan perubatan dan rawatan yang disediakan juga semakin canggih sesuai dengan bentuk perubahan semasa.

"Peralatan yang lengkap terutamanya yang disediakan di dalam ambulans turut mengubah cara rawatan ke arah perkhidmatan yang lebih cekap dan cepat" tambahnya ketika berucap pada majlis penyampaian bahan bantuan perubatan oleh Agensi Perbadanan Antarabangsa Jepun (JICA) kepada Hospital Umum Sarawak (HUS) di sini semalam.

Turut hadir pada majlis itu ialah Pengarah Kesihatan Negeri, Dr Mohd Taha Arif dan Presiden Universiti Kyorin, Dr Takeuchi dan kakitangan JICA.

Datuk Dr Chan yang juga Menteri Kewangan dan Kemudahan Awam menyifatkan pembabitian JICA dengan aktiviti perubatan di Sarawak telah menunjukkan



Datuk Dr Chan (tengah) menyaksikan majlis penyerahan bahan bantuan perubatan oleh Dr Takeuchi (kiri) kepada Dr Taha.

peningkatan perkhidmatan itu di negeri ini.

"Semua pihak termasuk kakitangan hospital dapat menikmati bantuan yang disediakan oleh JICA itu dalam usaha untuk menyediakan rawatan terbaik di hospital-hospital" tambahnya.

Sehubungan itu, beliau juga menegaskan, kecekapan Unit Kecemasan dan Kemalangan juga berlaku kerana terdapatnya peralatan yang canggih dan latihan kepakaran yang turut disalurkan.

Penyerahan bahan bantuan perubatan itu juga merupakan

era baru untuk hubungan JICA dan HUS dalam jangka lima tahun akan datang.

Katanya, JICA mulaterlibat dengan HUS pada 1 Ogos 1992 melalui pelancaran projek bersama JICA-HUS dalam meningkatkan kemudahan perubatan di Sarawak. -UB

# 政府改善急救设备

根据九二年的统计，急救电话数目，7%的家庭拥有急救车出

加，由九一年的平均每天2.2次增至九六年的5.8次，所接到的紧急电话也跟著增加。  
「最重要的是，紧急案例的反应时

间，已经由九二年的平均6.24分钟减至1.28分钟。紧急反应时间是接到求救电话到救护车出发之时间。」

他今天在见证日本国际协力事业移交所赞助之医疗器材时表示，通过组织协助，日本政府在过去五年，来提供砂中央医院及其他医院许多援助，尤其是改善紧急与急救部门。他说，虽然这五年计划将在七月底期满，州政府及卫生部将继续改进急救设备。\*

## 日本五年来捐助本州 医疗器材与提供训练

（本报吉隆坡廿六日讯）在日本国际协力事业团穿针引线之下，日本政府在过去五年提供砂中央医院以及其他医院多种援助，包括捐助医疗器材、培训医务人员等。

这项五年援助计划将在下个月底圆满结束。

该五年计划最初于八八至九零年期间，由两名通过日本国际协力事业团安排下到砂中央医院服务的日本专科医生所提议。大马政府正式向日本政府提议之后，日本方面曾派团进行初步调查，并于九二年八月正式提供援助。

这项计划旨在提升医院紧急与急救部门，改善进院前的服务及发展人力资源。

在这期间，日本派出四十五名专家前来



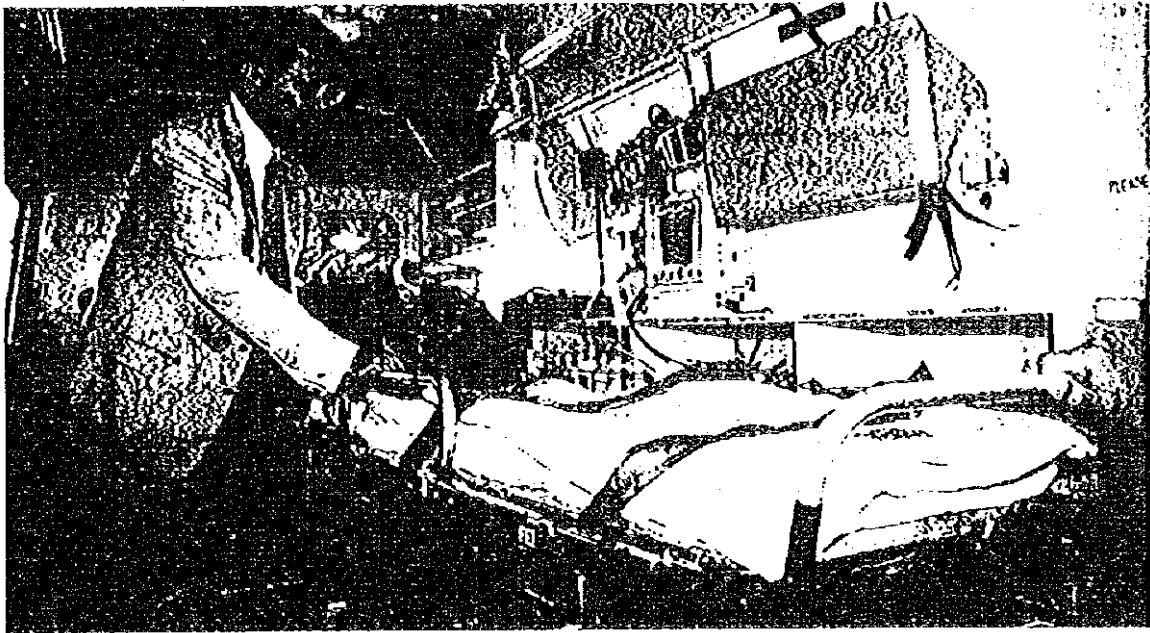
图：副首长拿爾陈康南医生试驾由日本捐助之救护车。

本州医院，包括33名医生，5名护士以及7名其他人员，其中12名专家为长期服务，其余则作短期服务。他们之中在紧急医药、外伤、神经学、紧急护理、紧急医药运输、医药工程等领域服务。大马方面，也派出23人到日本受训，其中八名为医生，7名护士及11名医药助理，受训领域包括紧急医药管理、紧急医药、紧急护理、紧急医药运输、医药工程。

与此同时，日本捐助价值450万元之医药设备给砂州医院，包括五架救护车、超音波机设备、急救医药运输设备、教育教材等。

这期间也主办了上项课程以及提供教材，超过1500人参加这些课程。

日本国际协力事业团代表兼杏林大学主席竹内今天在一项于砂中央医院举行之仪式上，移交所赞助之医药设备。\*



Datuk Dr Chan taking a closer look at the facilities available inside one of the new ambulance yesterday. PHOTOGRAPH: MOHD RADZI BUJANG

## Chan : Hospitals are now cleaner

KUCHING - Despite some shortcomings in the State's medical service, the public should acknowledge that hospitals are now cleaner and services by doctors and nurses better.

Stating this here yesterday, Deputy Chief Minister Datuk Dr George Chan said various steps have been taken to improve the services and facilities especially at the government hospitals.

He added that the pre-hospital services have also undergone many changes, with the response time for emergency cases by ambu-

lances has decreased from 6.24 minutes in 1992 to 1.28 minutes last year. (The response time is the duration when a request call for an ambulance is received until the despatch of an ambulance).

"The availability of radio communication, well-equipped ambulance, trained and committed staff makes these changes possible," he said.

He was speaking before witnessing the handing over of equipment, worth RM4.5 million, from Japan International Cooperation Agency (JICA) to Accident

and Emergency Services (A&E) of the Sarawak General Hospital (SGH) here yesterday.

The project, which was fully funded by JICA, started five years ago on August 1, 1992. It involved the improvement of pre-hospital care and development of human resources, as well as to upgrade accident and emergency services at the SGH.

Among the equipment donated by JICA were five ambulances, ultrasound machine and emergency medical transport equipment.

Professor Kazuo Takeuchi, president of Kyorin University, Tokyo and JICA evaluation team leader, presented a mock cheque for RM4.5 million to Health Director Dr Mohamad Taha Arif as a symbolic gesture of the completion of the five-year project.

Datuk Dr Chan also hailed efforts of the Department to improve the emergency services at SGH and also at other hospitals. "We also notice improvement in other health facilities and services too. Please continue with the good work," he said.



Mr Takashi (standing, middle) with Miri fire chief Mr Hamdon Arshod (third left) and firemen yesterday.

## Japanese paramedic visits Miri

MIRI, Wed.- A Japanese paramedic today arrived in Miri for a visit under a voluntary exchange programme to learn about the fire and emergency response services here.

Mr Takashi Watanabe, 31, a fire sergeant with the Yokohama Municipal Fire Bureau, called at the Fire and Rescue Services Department here and Miri Hospital.

He noted that the Miri Fire and Rescue Services Department maintained a good relationship with the community, including the hospital and the public.

Such ties enabled the

department to function effectively despite a lack of equipment and manpower, he said.

Takashi also visited the casualty and emergency ward of Miri Hospital. -BP

### 日本消防士长访英里

刻正逗留本州参与砂医务局推行的「提高医院紧急服务」计划的日本日本横滨市消防局鹤见消防署的消防士长渡边孝前日抵达英里访问，按照行程参观了英里中央医院、全科诊所及消防与拯救局。图为渡边孝（右一）昨早礼貌拜访



北砂消防与拯救局总监韩当，双方交换两国消防官员留时照。

现年32岁的渡边孝受访时表示，日本消防局组织结构结构与马来西亚有异，消防局由灭火、紧急医药及拯救单位合一组成，与美国的911紧急服务单位略同，包括受训的消防队员须具备上述三单位的特别服务技能。

他对于大马医药单位附于吉隆坡首先推广成立的电单车紧急服务队的组织概念赞不绝口，并指出此服务队在操作繁忙的大城市扮演紧急救先锋的角色，尤其在交通大阻塞时，可配合救护车，排除公路障碍，抢先赶到火场为遇难者提供医药服务，发挥救人分秒必争的作用。

他说，日本消防局未成立此类骑士医药队，此组织概念值得他因取长补短，仿效推广，以为公众提供最好的医药服务。

# 日本消防员曹长渡边访美里 盛赞急救队伍表现

【本报美里十一日讯】日本横滨消防局与急救队队长曹长渡边到访美里两急救单位，日本急救队伍有好评，及提供更多现代化急救知识。

为日本大阪急救队消防署就职过半年消防队成员的渡边曹长渡边(TAKASHI WAT-ANABE)，今日上午也在医务人员带领下参观美里消防局，及该部分数单位，了解本地火场应变工作。

他是于昨天抵达美里，并在本地短暂逗留三天访问。他是前来本州担任三个月自修急救人员及进行交流，主要是本州医务局以日本紧急送医单位接洽的五年计划。

此计划主要是提升医务人员应付紧急事件服务水平，然而他是其中一位被配来

本地服务急救人员。

渡边今日在记者询问时表示，本地的急救队伍与日本方面有所不同，主要是这里的急救单位是分为两方面，主要是消防局及医院急救队；但为日本方面这两个单位是合并成一，而且在工作上是并行。

而且他也表示，日本方面的急救队伍的行动也非常快，主要是当地的急救单位分散的各地，因此每隔一段距离的地方均建有消防及急救队伍，在接获紧急事件投报后，很快便可作出应变。

当局也迫不得已这么做，由于日本的一些大城市所面临的交通拥挤情况非常严重，如果一个急救单位应付紧急事故，在时间、运输方面将面对许多问题；而当地

局认为一旦紧急事件时争取时间是最重要。

此外，他对轮在部门通行的电单车急救队表示，是个非常好的建议。他说，由于一些地方如都市地区白天面临严重塞车，因此为了第一时间能赶到灾场为罹难者急救，不过，一旦有重伤者在场的得须待救护车。

另一方面，他表示，美里的消防局缺乏汽油灭火设备，只靠两辆消防车在灭火方面能力有限，因此他建议，当局应设立汽油火患的灌救器材，汽油火患是非常重要的。

他也披露，很多时候消防局与医院是正在同一阵线上，经常两者得负起急救的工作精神。

## 地方新闻 2



图片：美里消防局一行人与到访渡边合摄于消防局前。(左起四)为渡边。(右起五)为渡边。





【本报吉普廿六日讯】州副首长兼财政与公用事业部长拿督陈康南医生指出，州医务局的比曼心肌病症的调查队已于上星期开始深入乡区展开检查，以便把怀疑患此症的儿童尽快送往医院接受治疗。

他指出，从过去数星期调查看来，越快到医院的病患，院方也将能尽快地给他们治疗，甚至一些病患在影响至心肌时，在治疗后，病情也有进展。

他宣称，昨天共有卅九名疑患心肌炎病患在医院留医，目前疑患上心肌炎的人数也在减少中。

这是他在今早在出席一项日本国际合作

社代理移交设备及五年计划完竣仪式后，在受访时所作披露。

他表示，在下周将会对心肌炎病症的研究有一个更深入的结果。

【对研究心肌炎病症病源是需要一段时间；在首个阶段的第一星期内，须收集这些病菌及等其繁殖，次阶段则是在第二星期内等它繁殖大量病菌后，才能加以检定。】

## 陈康南 | 日本国际合作社代理赠医疗器材 大大提升急诊服务

【本报吉普廿六日讯】州副首长兼财政与公用事业部长拿督陈康南医生指出，日本国际合作社代理在过去五年内捐款给砂拉越中央医院的各种设备，将能提升该院的紧急意外部门的服务，同时也能当作其他医院在紧急单位服务的一个良好开始。

【很高兴能看到这些设备将加利用，比如化验设备将加快诊断，从而让病人在紧急部门时，医生也能作出快与准的诊断。】

他指出，今日所见证的是最后一批设备移交仪式，这包括两部送往美里与诗巫医院，价值十二万五千元的救护车及不同的医药设备及训练器材。

【现在我们迈向另一个新纪元，也将面对更多的挑战，而当前我们所要做的是

不断在改进。】

他指出，打个比方，目前我们可以从紧急意外救护车服务取得入院前的诊治。

【调查显示，一九九一年至九五年本州电话的数目已增加至六十七万，目前有卅四巴仙的住户家里有安装电话，而救护车出外服务也由九二年的2.2次增至九六年的5.8次，而紧急电话也在增加，不过在处理紧急意外事件的时间则由九二年的6.24分减少至1.28分，这与良好设施、训练有素的职员是息息相关的。】

他指出，尽管这项计划在今年七月卅一日宣告结束，不过州政府有信心在州医务局及大马医药部门将会履行其职责，以确保州内的紧急部门是国内最好的。

这是他在今早在出席一项日本国际合作社代理移交设备及五年计划完竣仪式上受委致词时，发表上述的讲词。

他宣称，这项五年计划是由九二年八月一日开始并到九七年七月卅一日结束，它也是配合国家政策与计划以方便国内紧急医药服务系统。



上图示：州副首长兼财政与公用事业部长拿督陈康南医生坐在日本国际合作社代理所捐赠给砂拉越吉普中央医院的一部救护车时摄。

下图示：移交仪式上，左一为日本吉普大学校长竹内，中为拿督陈康南医生，左三方州医务司哈达哈医生。

## 控方不满偷窃罪轻判提出上诉 高庭判监6个月罚款减5百

【本报吉普廿六日讯】两名友族青年在白天破洞行窃罪名

为理由，因为他们元，违反刑事法典第

在刑事法典第454条 454条文。

文下被控并认罪，担 控方在九七年

# Prestasi perkhidmatan hospital kerajaan baik

Oleh  
DUWIN UDIH

KUCHING, Khamis -- Prestasi perkhidmatan semua hospital kerajaan di negeri ini semakin meningkat, kata Timbalan Ketua Menteri Datuk Dr. George Chan Hong Nam hari ini.

"Sejak sekitar lima tahun lalu saya mendapati banyak perubahan berlaku di hospital kerajaan di negeri ini, dan ini termasuk perkhidmatan yang semakin baik," katanya ketika berucap pada majlis penyampaian dan penyerahan alat perubatan di Hospital Umum Sarawak (HUS) di sini, hari ini.

Alat perubatan itu diperolehi oleh Japanese International Cooperation Agency (JICA) kepada Jabatan Kesihatan Sarawak sempena siapnya projek lima tahun JICA menaikkan taraf perkhidmatan unit Kecemasan dan Kecemasan di Sarawak.

Projek itu yang bermula 1 Ogos 1992 sehingga 31 Julai 1997 dibiayai JICA dan Kementerian Kesihatan Malaysia.

Antara yang hadir pada majlis itu Pengarah Jabatan Kesihatan Sarawak Dr. Mohamad Taha Arif dan Presiden Universiti Kebangsaan

Ketua Pasukan Penilaian JICA, Profesor Kazuo Takeuchi.

Dr. Chan yang juga Menteri Kewangan dan Kemudahan Awam berkata, peranan dan sumbangan kakitangan Jabatan Kesihatan Negeri ini terutama golongan doktor dan jururawat harus dihargai.

"Golongan itu juga banyak berkorban dalam menjalankan tugas mereka lebih-lebih lagi dalam keadaan negeri ini kini sedang menghadapi wabak virus Cossackie B," katanya.

Menurut Dr. Chan, pihaknya juga berasa gembira dengan prestasi semakin baik yang ditunjukkan jabatan itu.

Sebagai contoh, katanya, satu kajian jabatan berkenaan mendapati pergerakan perkhidmatan ambulans telah bertambah daripada 22 kali pada 1992 kepada 58 kali pada tahun lalu.

"Malah masa untuk respons terhadap panggilan kecemasan juga telah turun daripada 6.24 minit pada 1992 kepada 1.28 minit pada tahun 1996," katanya.

Sementara itu, katanya, antara input yang diberikan JICA untuk mencapai objektif projek berkenaan ialah pembe-



DATUK Dr. George Chan Hong Nam (depan kiri) berbual dengan kakitangan Jabatan Kesihatan Sarawak di Hospital Umum Sarawak, Kuching, semalam.

Selain alat perubatan yang bernilai RM4.6 juta, nota dan bahan berkaitan latihan dalam bidang perubatan dan kesihatan juga diberikan.

Antara alat yang diserahkan pada majlis pagi ini ialah ambulans bernilai

RM125,000 seunit bagi Hospital Sibuan dan Miri.

Dr. Chan berkata alat perubatan dan ambulans telah disediakan kepada bahagian kecemasan, bilik bedah, dan juga bilik rawatan rapi di HUS.

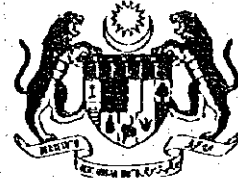
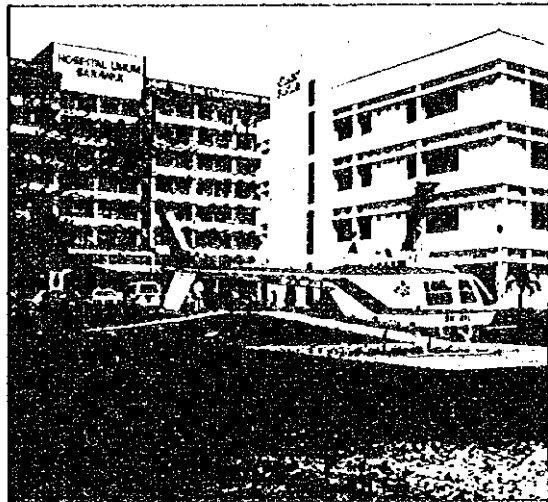
Hospital lain di negeri ini juga menerima derma dalam bentuk yang sama.

Selubungan itu, katanya, projek itu telah banyak membantu hospital di negeri ini dalam membantu membaiki dan

meningkatkan kualiti perkhidmatan.

"Alat makinal yang diterima daripada projek itu telah membolehkan pihak hospital menjalankan tugasnya dengan mudah dan cepat," katanya.

# UPGRADING OF ACCIDENT & EMERGENCY CARE SERVICE IN SARAWAK MALAYSIA



DEPARTMENT OF HEALTH  
MEDICAL SERVICES,  
SARAWAK AND THE  
MINISTRY OF HEALTH,  
MALAYSIA



JAPAN  
INTERNATIONAL  
COOPERATION  
AGENCY

*Technical Cooperation by Government of Japan*

## INTRODUCTION OF THE PROJECT

(1) **Background**

Following the successful cooperation programme carried out by two JICA experts, a neurosurgeon and an orthopedic surgeon at Sarawak General Hospital for two years since 1988 and at the same time the increase in numbers of traffic accidents as well as of logging industrial accidents in Sarawak state made the department to be aware of the importance of emergency care service. The Malaysian Government requested the Japanese Government for technical cooperation to implement this project in response to which Japan International Cooperation Agency despatched feasibility study and implementation survey teams, thereafter The Record of Discussions was signed on 10th January 1992.

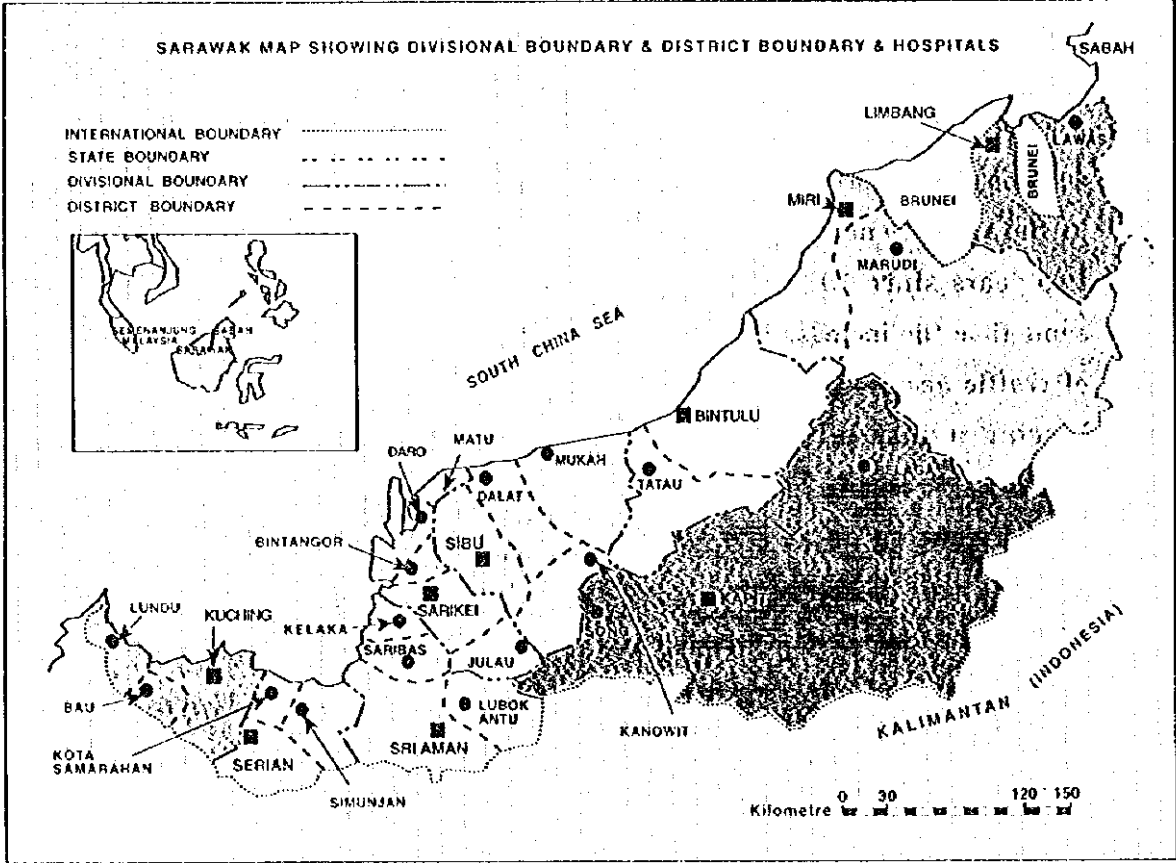
(2) **Terms Of Cooperation**

For 5 years From 1st. August 1992 to 31st. July 1997.

(3) **Executing Agency in Malaysian Government;**  
*Planning & Development Division,  
Ministry of Health,  
Department of Medical &  
Health Services, Sarawak.*

(4) **Cooperating Agency In Japan**  
*Kyorin University  
University of Tokyo  
Fire-Defense Agency,  
Ministry of Home Affairs.  
Kitasato University Hospital.*

# PROJECT LOCATION STATE OF SARAWAK



**SARAWAK MAP & HOSPITAL LOCATION**

**Level 1 : Hospital**  
*District Hospitals without Specialist services;*  
 Lundu,  
 Bau, Serian,  
 Sri Aman, Saratok,  
 Bintulu, Kanowit,  
 Mukah, Marudi,  
 Limbang, Lawas,  
 Sarikei, Kapit.  
 - 13 No.

**Level 2 : Hospital**  
*District Hospitals with specialist services;*  
 Sibu, Miri.  
 - 2 No.

**Level 3 : Hospital**  
 General Hospital,  
 Sarawak General  
 Hospital Kuching.  
 - 1 No.

## **GOAL & OBJECTIVES**

### ***Goal of the Project***

The goal of the project is to improve pre-hospital care and develop human resources, as well as to upgrade accident and emergency service at the Sarawak General Hospital, especially at its Accident & Emergency Department in line with the national plan for improvement of accident and emergency care service, thus contributing to the promotion of accident and emergency services in the State of Sarawak.

### ***Objectives of Japanese Technical Cooperation***

The specific objectives of Japanese Technical Cooperation with the Sarawak General Hospital will cover the following activities:-

- (1) Enhancement of the functions and scheme of the Accident & Emergency Department at the Sarawak General Hospital.
- (2) Development of accident and emergency care as a speciality.
- (3) Development of training programs to meet the local needs for accident and emergency care in the State of Sarawak.

which includes:-

- (a) Improve technique of ambulance team and make sure the ambulance service be adequate and prompt.
- (b) Reduce the waiting time for severe emergency patient, and provide quick and better service for the public.
- (c) Education of the public as to what is emergency and "What is not emergency" and "How to use ambulance service" is also an important element of this project.

## MANAGEMENT OF THE PROJECT

Annual work plan over the cooperation period for the various activities of the project is planned at the monthly Technical Committee and approved at the Joint Coordinating Committee which consist of members from boths Malaysian authorities and JICA experts and the officials.

Consultation Survey Team or Technical Guidance Team, composing of some members of the Technical Advisory Committee in Japan annually visit the project site where they exchange their views and discuss the various matters relevant to the management of the project.



*Accident & Emergency Department, Sarawak General Hospital visit by Dato' Lee Kim Sai, Minister of Health, Malaysia in October, 1991.*

## ACTIVITIES

For implementation of the project, the following activities are taking place:-

- (a) Develop and conduct various training courses for Medical Officers, Medical Assistants, Nurses, such as :-

First Aid Course

EMT Course  
(Emergency Medical Team Course)

Paediatric Update Course

ECG Course  
(Electro Cardio Gram Course)

Trauma Management Course

Emergency Life Support Course

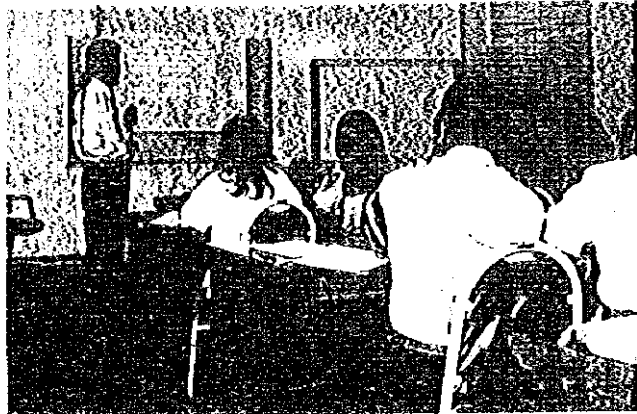
A & E (Accident & Emergency) Course

Emergency First Aid Course

Medical Engineering Course

In addition, for Ambulance drivers, other supporting staff, First Aid/ CPR Courses are also conducted.

These courses are organized and conducted by Malaysian staff in cooperation with Japanese experts from JICA.



*One of the Training Courses.*



*Emergency Life Support Course.*



*Vivisection of goat during trauma Management Course.*



**(b) Counterpart Training**

(i) Malaysian counterparts are sent to Japan to under-go various training courses :-

Annually 3 -5 Malaysians receive the opportunity to attend the courses in the fields of :-

Emergency Medicine Diagnosis

Emergency Nursing Course

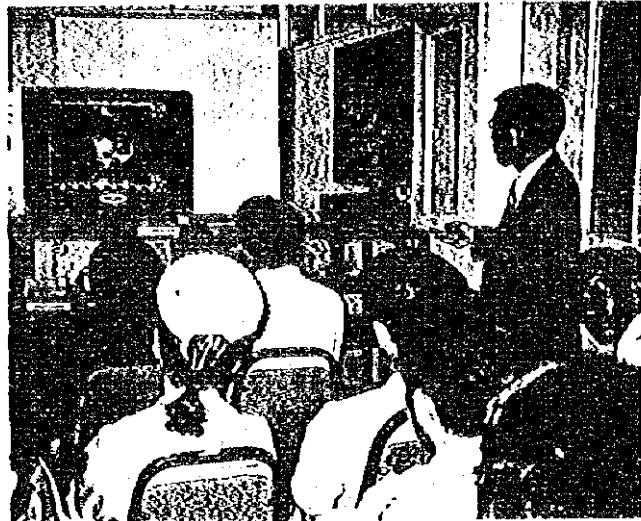
Emergency Medical Technique

Medical Engineering

Emergency Medical Service

Administration

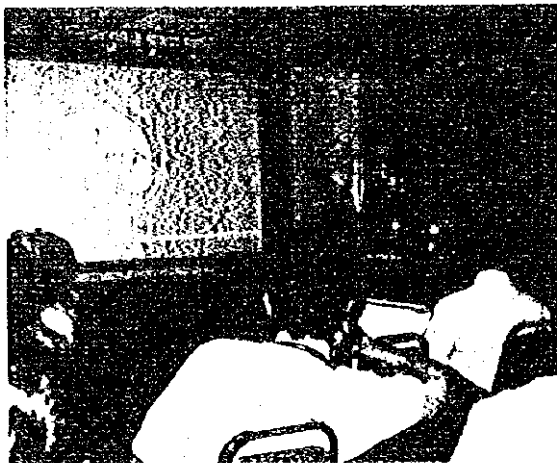
for the period of 3 - 9 months.



*ECG Course in progress.*

The institutes where the Counterparts are usually attached to are;

- Kyorin University
- Tokyo Metropolitan Fire Department
- Kitasato University Hospital
- Senri Emergency Medical Centre



*"Interventional Radiology" Seminar in progress.*

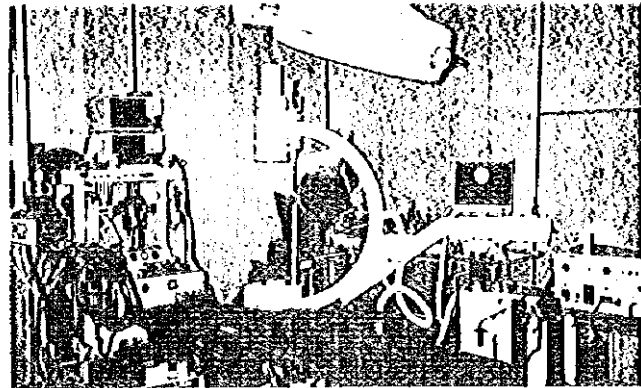
(ii) Malaysian Doctors and Nurses also benefit from the opportunity to go through 3 - 6 months Training Courses as a Tripartite training scheme, in the third country, such as Singapore, for an instance, at the Singapore General Hospital.

(c) **Provision of Equipment**

Medical Equipment are provided to help the project run smoothly and also assist in effective technology transfer.

Major items of medical equipment donated are :-

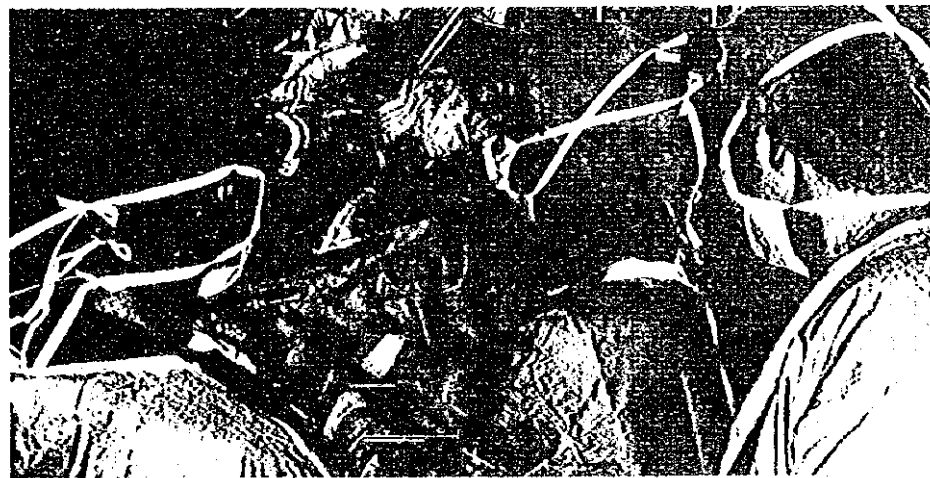
- Operating Microscope
- Fully equipped Ambulance
- Various kinds of Training materials
- Ultrasound Machine
- Mobile C-arm
- Multi - gas Analyzer
- Various kinds of monitors etc .....



*C - Arm*

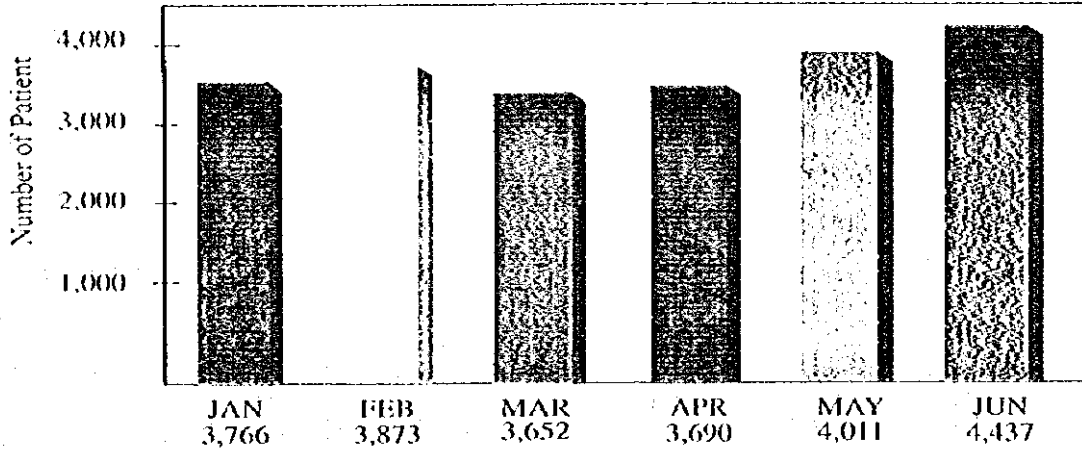


*Ultrasound machine used for diagnosis.*

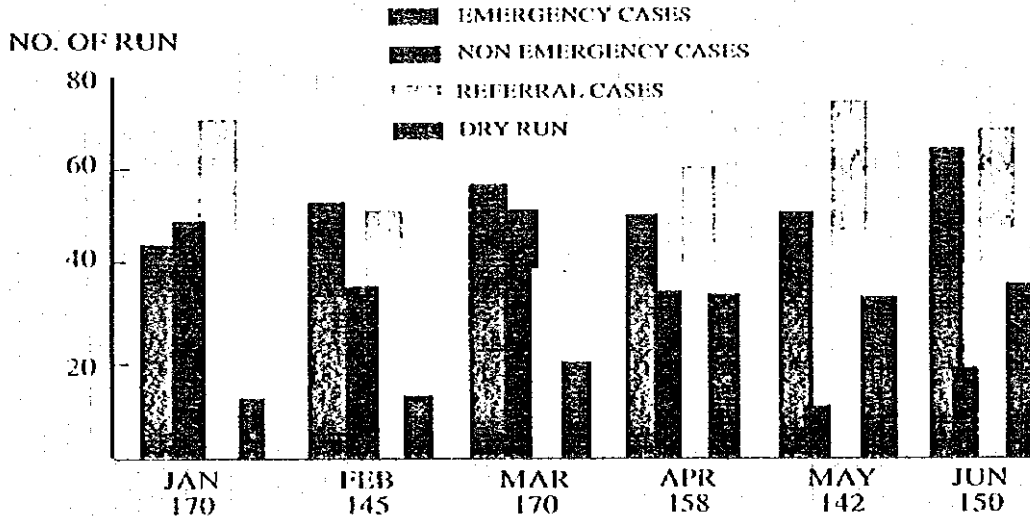


*JICA Neuro Surgeon on the Job Training using Operation Microscope.*

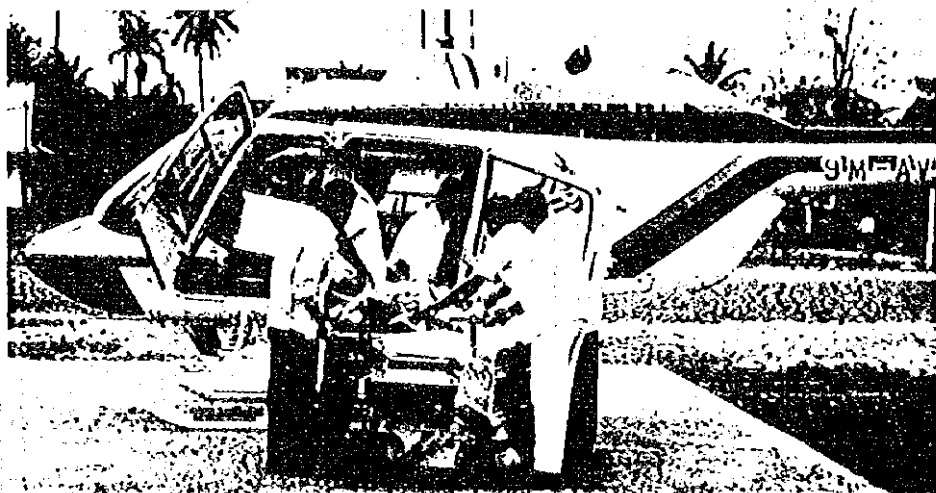
### A & E PATIENT 1994



### AMBULANCE SERVICE 1994



*Emergency referral from Kapit to Sinauek General Hospital*



## BASIC MEDICAL INFORMATION

### 6 PRINCIPAL CAUSES OF DEATHS IN GOVERNMENT HOSPITALS, MALAYSIA 1992

#### PENINSULAR MALAYSIA

1. Heart diseases & Diseases of Pulmonary Circulation	.. 17.09%
2. Certain Conditions Originating In The Perinatal Period	.. 10.33%
3. Accidents	.. 10.20%
4. Cerebrovascular Diseases	.. 10.15%
5. Septicaemia	
All Other Causes	.. 43.57%

Total Number of Deaths (19 717)

#### SABAH

1. Septicaemia	.. 14.27%
2. Certain conditions Originating In The Perinatal Period	.. 13.86%
3. Heart Diseases & Diseases of Pulmonary Circulation	.. 9.68%
4. Malignant Neoplasm	.. 8.03%
5. Pneumonia	.. 7.91%
All Other Causes	.. 46.25%

Total Number of Deaths (3 224)

#### SARAWAK

1. Heart diseases & Diseases of Pulmonary Circulation	.. 13.56%
2. Certain Conditions Originating In The Perinatal Period	.. 12.23%
3. Septicaemia	.. 10.38%
4. Malignant Neoplasm	.. 10.29%
5. Cerebrovascular Diseases	.. 9.86%
All Other Causes	.. 43.68%

Total Number of Deaths (2 109)

### 5 PRINCIPAL CAUSES OF HOSPITALISATION IN GOVERNMENT HOSPITALS, MALAYSIA 1992

#### PENINSULAR MALAYSIA

1. Normal Delivery	.. 19.90%
2. Complications of Pregnancy	.. 12.38%
3. Accidents	.. 11.08%
4. Diseases of the Circulatory System	.. 6.57%
5. Diseases of the Respiratory System	.. 5.99%
All Other Causes	.. 44.08%

Total Number Hospitalised ( 1 054 976)

#### SABAH

1. Normal Delivery	.. 24.19%
2. Complications of Pregnancy	.. 9.51%
3. Accidents	.. 7.16%
4. Diseases of the Respiratory System	.. 6.79%
5. Intestinal Infectious Diseases	.. 6.19%
All Other Causes	.. 46.16%

Total Number Hospitalised ( 154 235)

#### SARAWAK

1. Normal Delivery	.. 23.76%
2. Complications of Pregnancy	.. 10.08%
3. Accidents	.. 8.16%
4. Diseases of the Respiratory System	.. 7.88%
5. Certain Conditions Originating in The Perinatal Period	.. 5.70%
All Other Causes	.. 44.42%

Total Number Hospitalised (132 271)

*By Information & Documentation System Unit Ministry of Health, Malaysia (March 1994)*

## HEALTH MANPOWER 1992

	PENINSULAR MALAYSIA	SABAH	SARAWAK
<b>Total Number of Doctors:</b>			
-- Public	3 185	150	181
-- Private	3 822	181	200
<b>Doctor: Population Ratio</b>	1:2 180	1:4 788	1:4 592
<b>Total Number of Dentists:</b>			
-- Public	644	33	47
-- Private	780	26	32
<b>Dentist: Population Ratio</b>	1: 10 729	1: 26 864	1: 22 144
<b>Total Number of Pharmacists:</b>			
-- Public	376	23	24
-- Private	845	19	64
<b>Pharmacist: Population Ratio</b>	1: 12 512	1: 37 737	1: 19 880
<b>Total Number of Nurses:</b>			
-- Public	10 874	1 039	876
-- Private	N.A	N.A	N.A
<b>Nurse: Population Ratio *</b>	1: 1 404	1: 1 525	1: 1 997

\* Based on Public sector only









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