

ASIAN DEVELOPMENT BANK

PPA: MAL 19042

PROJECT PERFORMANCE AUDIT REPORT

ON THE

**HEALTH SERVICES DEVELOPMENT (SECTOR) PROJECT
(Loan No. 815-MAL)**

IN

MALAYSIA

April 1997

CURRENCY EQUIVALENTS

Currency Unit - Malaysian Ringgit (RM)

		At Appraisal	At Project Completion	At Postevaluation
RM1.00	=	\$0.4420	\$0.3916	\$0.3968
\$1.00	=	RM2.2624	RM2.5536	RM2.5202

ABBREVIATIONS

AOTA	-	Advisory and Operational Technical Assistance
AR	-	Appraisal Report
DHC	-	District Health Center
EA	-	Executing Agency
GHKL	-	General Hospital Kuala Lumpur
HECC	-	Health Education and Communication Center
HMIS	-	Health Management Information System
JKR	-	Jabatan Kerja Raya (Public Works Department)
M&R	-	Maintenance and Repair
MOH	-	Ministry of Health
OPD	-	Outpatient Department
PEM	-	Postevaluation Mission
PIU	-	Project Implementation Unit

NOTES

- (i) The fiscal year (FY) of the Government ends on 31 December.
- (ii) In this Report, "\$" refers to US dollars.

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BASIC PROJECT DATA
Health Services Development (Sector) Project - Loan No. 815-MAL

PROJECT PREPARATION / INSTITUTION BUILDING

TA No.	TA Project Name	Type	Person-months	Amount	Approval Date
735	Health Services Development	PPTA		\$220,000	26 Dec 1985
829	Study of the National Health Security Fund	AOTA	23	\$430,000	9 Dec 1986

KEY PROJECT DATA (\$million):	As per Bank Loan Documents	Actual
Total Project Cost	132.59	115.68
Foreign Currency Cost	62.15	60.96
Local Currency	70.44	54.11
Bank Loan Amount/Utilization	50.73	50.73

KEY DATES	Expected	Actual
Fact-finding		15 Jun-5 Jul 1986
Appraisal		14 Sep - 4 Oct 1986
Loan Negotiations		10-12 Nov 1986
Board Approval		9 Dec 1986
Loan Agreement		30 Mar 1987
Loan Effectiveness	30 Jun 1987	22 Jun 1987
First Disbursement	22 Jun 1988	
Project Completion	Dec 1991	Dec 1993
Loan Closing	30 Jun 1992	29 Sep 1993
Months (Effectiveness to Completion)	54	78

KEY PERFORMANCE INDICATORS (%):	Appraisal	PCR	PPAR
Economic Internal Rate of Return	n.c.	n.c.	n.c.
Financial Internal Rate of Return	n.c.	n.c.	n.c.

BORROWER: Malaysia

EXECUTING AGENCY: Ministry of Health

MISSION DATA:

Type of Mission	No. of Missions	Person-days
Fact-finding	1	56
Appraisal	1	126
Project Administration		
Inception	1	6
Review	6	117
Disbursement	3	56
Project Completion	1	24
Postevaluation	1	30

EXECUTIVE SUMMARY

The Project aimed to improve the health status of the Malaysian population. Health service delivery was to be enhanced through increased efficiency and improved service quality. To achieve these goals, the Project included physical infrastructure improvements of medical and support services, and institutional development activities. Subprojects supported 25 (5.90 percent) rural health facilities, and 25 (27.80 percent) hospitals existing in 1985. In addition, pharmacies, repair workshops, and training facilities were built or upgraded. The Government invested \$115.68 million in the Project, of which \$50.73 million was financed by the Bank loan. The Project was approved in December 1986.

The Project was designed as a sector loan, providing the Executing Agency with sufficient flexibility to alter subprojects to reflect changed priorities or to respond to implementation difficulties. This authority was used in a few cases only; most of the originally foreseen subprojects were implemented. However, implementation suffered from the lack of a Project office with the sole responsibility to supervise and monitor Project performance. This situation was rectified by instituting the Project Implementation Unit, which effectively expedited Project completion. Nonetheless, works were completed in 78 months, 24 months after the planned completion date.

A total of 81 new construction or upgrading works were implemented. The physical infrastructure for consolidating some of the pediatric faculties was created at the General Hospital in Kuala Lumpur. Similar health facilities were established in a number of other instances. However, most of the subprojects were smaller without a major impact on increasing capacities or service levels. Infrastructure requirements for four integrated medical stores were met, which changed their physical setting from a few spare rooms to proper stores. Engineering workshops were built to house maintenance workers who, previously, were assigned to various operational departments. Additional staff training capacity was created for about 215 students per annum. All of these facilities are in working condition.

Institutional results were less pronounced. Institutional development was a smaller component in the overall Project, yet covered eight different areas. The component was not designed to, and as a result did not, take place in an institutional context. Consequently, inputs did not produce measurable institutional changes.

Technical Assistance (TA) was provided to analyze whether establishing a health security fund was a viable option for financing the health care system. The resultant study was appreciated by the Government, and continues to be used as a reference document. However, the TA has not led to the introduction of a new financing system, and the issue is still under scrutiny in 1997, almost ten years after TA was provided.

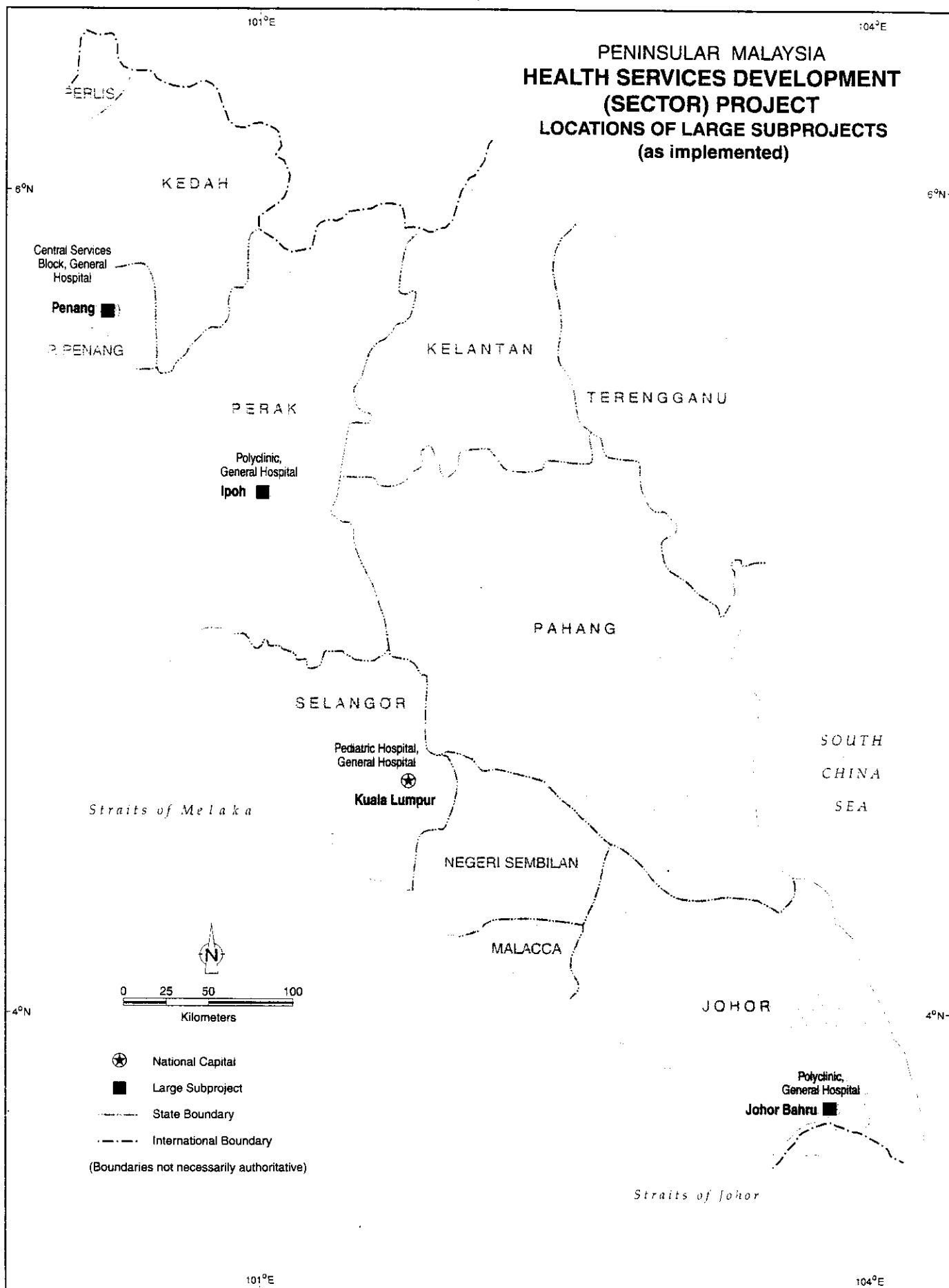
Aims to improve service quality and efficiency were not based on indicators by which these two performance criteria could be measured. Quality and efficiency improvements would have to be deduced from the types of inputs provided. For instance, X-ray units will help improve diagnostic results and treatment. However, the effects of the replacement of an elevator on efficiency gains would be more difficult to measure. These ambiguous objectives have the additional drawback that the Project's contribution to them is subject to a number of external factors beyond its control, as illustrated by the previous example: the X-ray unit will

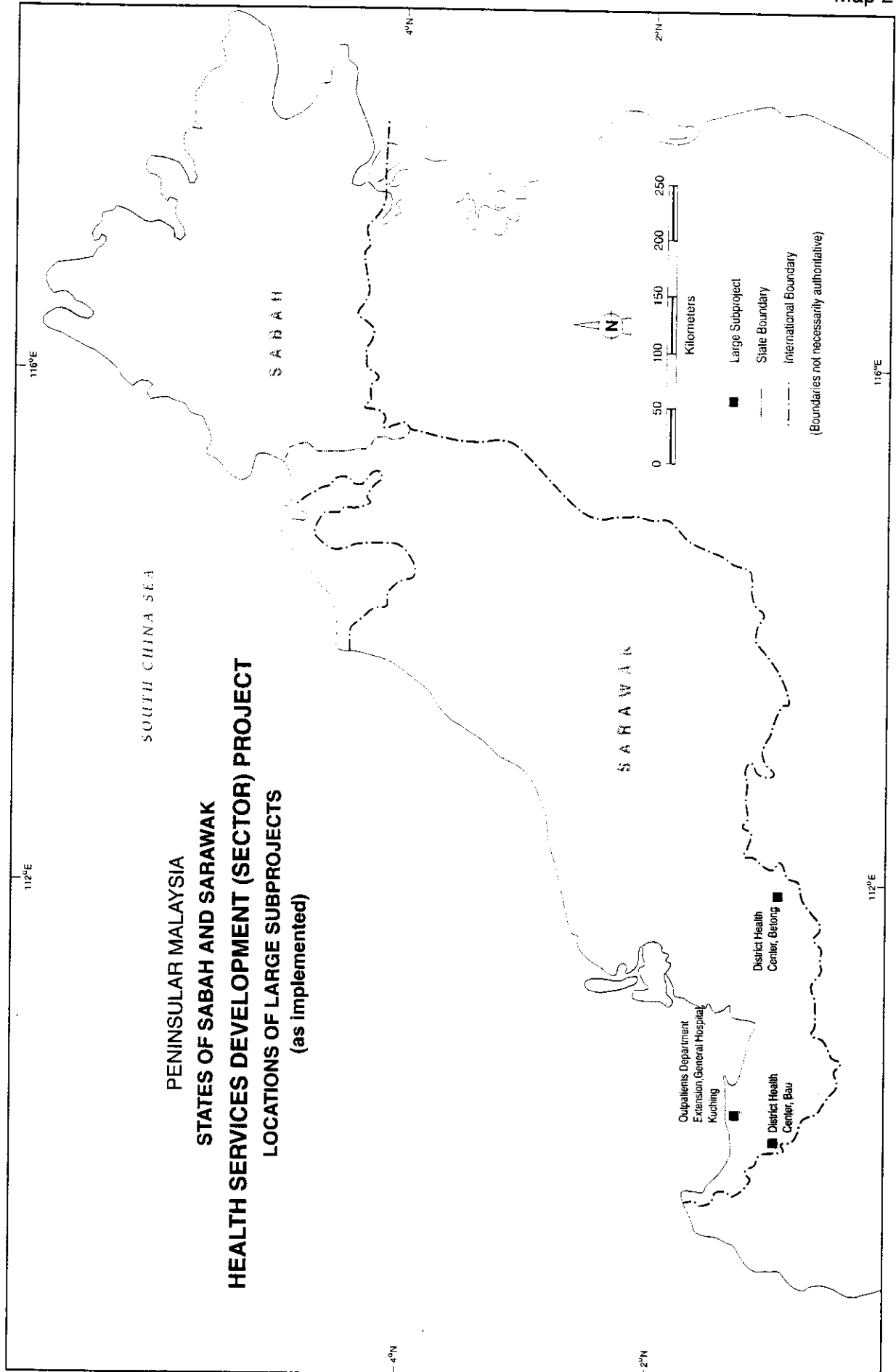
improve diagnostic skills only if operating and maintenance cost can be met, and trained staff are available to operate it.

The Project contributed to the overall performance of the health sector. The health sector's achievements, together with improved economic conditions, improved the health status of the Malaysian population. However, given the loose definition of the Project's objectives, the widespread of subprojects across seven subsectors, and the coverage of all states of Malaysia, the Project's contribution to these results cannot be singled out. Had the performance of the health sector or the economy not evolved, the Project is not likely to have attained the same results.

The Government continues to encourage private sector participation in the health sector. This requires rethinking of the public sector's role, as private providers of health care services are highly competitive in attracting well qualified doctors and nurses, and patients are willing and able to pay. The Government's response has been to privatize support services and to plan corporatizing some of its hospitals. In this way, hospitals would not be subject to civil service regulations and salary structures, thus their management could become more efficient and salaries may be increased. This, however, will not solve the problem for hospitals in remote areas that do not have a paying clientele and would have to offer even higher remuneration to health personnel to make positions attractive. The sector's main problem, namely the shortage of personnel, will remain and requires a comprehensive strategy for developing human resources.

The experience of this Project reconfirms the importance of undertaking a detailed institutional analysis to identify major constraints and problems inhibiting the quality of health services and the efficiency of the health service delivery system. This would enable effective remedial measures to be incorporated in the design of health projects to redress the identified institutional shortcomings. In many cases, it is more cost-effective to achieve efficiency gains through changing processes rather than upgrading physical health facilities. In addition, investments in constructing or rehabilitating physical health infrastructure should take into account how the anticipated incremental operation and maintenance and staffing requirements would be met.





I. BACKGROUND

A. Rationale

1. The Project's rationale was to support the Government's investment plans for the health sector. The Appraisal Report (AR) stipulated a wide range of issues faced by the health sector, including the malfunctioning of the referral system and resultant uneven utilization of health service facilities, inadequate funding to cover staffing costs in the long term, the need to more closely link budgeting of development and operating costs and developing financial plans against predetermined ceilings, and requirements for systematic maintenance schedules. While the AR contains ample information on all of these and more issues, it does not establish the cause and effect relationship between them. As a result, the Project supported initiatives that in themselves may have been needed but could not achieve desired objectives, as requisite complementary components were not included in the Project. For instance, the Project erroneously assumed that physical rehabilitation of health facilities would somehow contribute to professional staff appointments, thus increasing utilization rates. It also aimed to improve efficiency, cost-effectiveness, and cost control without corresponding measures.

2. Reasons for giving a sector, rather than a project, loan were threefold: (i) an acceptable sectoral investment plan existed; (ii) institutional capabilities were adequate to appraise, contract, and implement the Project and its components; and (iii) policies were found appropriate. The AR discusses policies briefly and lists 19 of them in a rather unstructured fashion. As with the issues, no in-depth analysis is provided to assess how the various policies support each other, and whether they form a consistent policy framework. Among others, the Government's drive to promote private sector involvement is mentioned without, however, analyzing subsequent effects on public health facilities and necessary countermeasures.

B. Formulation

3. The Project was the second loan to the sector and followed the Health and Population Project.¹ A project preparatory technical assistance (PPTA)² was approved in December 1985 and its final report submitted in June 1986. A Fact-finding Mission took place from 15 June to 5 July 1986, and was followed by an Appraisal Mission from 14 September to 4 October 1986. Loan negotiations were conducted from 10 to 12 November 1986. The Project was approved by the Board on 9 December 1986. The Ministry of Health (MOH), as the Executing Agency (EA), was involved in formulating the Project. As part of the regular planning process, the Ministry prepares its five-year investment plan, which is used to negotiate funding.

C. Objectives and Scope at Appraisal

4. The Project aimed to contribute to improving the health status of the population. Its objective was to improve health service delivery through increasing efficiency and service quality. This was to be attained through physical improvements of medical infrastructure and support services (Part A), and through institutional development (Part B). Part A was to include about 90 subprojects in seven categories: (i) staff training facilities, (ii)

¹ Loan No. 511-MAL: *Health and Population Project*, for \$25.8 million, approved on 21 April 1981.

² TA No. 735-MAL: *Health Services Development*, for \$220,000, approved on 26 December 1985.

rural health facilities, (iii) existing hospitals, (iv) new hospitals, (v) pharmacies, (vi) hostels and quarters, and (vii) biomedical engineering facilities (Appendix 1). All of the subprojects were to entail civil works for rehabilitation, upgrading and some new construction, and supply of equipment. Part B was to provide consulting services and training in eight areas: (i) health personnel planning, (ii) health services management, (iii) hospital management, (iv) quality assurance, (v) health management information system (HMIS), (vi) medical records training, (vii) nursing education, and (viii) biomedical engineering. The Project was supplemented by an advisory and operational technical assistance (AOTA)¹ to analyze the feasibility of a National Health Security Fund, aiming to change the revenue base for financing the curative cost of public health services. If this was found feasible, the technical assistance (TA) was to develop a strategy for implementing the fund.

5. The scope of the Project was changed twice. In November 1990, fellowships were increased by \$320,000, pooling unspent funds for consultants (\$240,000) and unallocated funds (\$80,000) to finance additional training. In February 1993, the remainder of the unallocated category (\$6.21 million) and savings from the "new hospitals" component (\$1.70 million) were shifted to finance increases in the components for upgrading and establishing rural health facilities and hospitals.

D. Financing Arrangements

6. The total Project cost was appraised at \$132.59 million, inclusive of contingencies (\$16.22 million), and interest and other charges, such as interest during construction (\$11.20 million), comprising \$62.15 million in foreign currency and \$70.44 million in local currency. The Bank loan of \$50.73 million was to cover 38 percent of the total Project cost. The borrower is Malaysia. The term of the loan is 20 years with a five-year grace period. Interest was to be determined according to the pool-based variable lending rate system. Actual total Project cost was reduced by 14 percent to \$115.68 million with the local currency component decreasing to 76 percent of the original amount. The entire loan was disbursed. The cost of the PPTA, excluding its grant portion of \$150,000, was to be recovered from the loan. The AOTA amounted to \$430,000. The Project was followed by the Third Health (Sector) Project,² which is under implementation, and several TAs.³ In total, the Bank's health sector portfolio included \$181.53 million in loan funds, and \$2.05 million for TA grants.

E. Completion

7. Implementation was expected to take 4.5 years anticipating Project completion by December 1991. An extension of the loan closing date by 15 months until September 1993 was granted to allow completion of delayed contracts. The Project was completed in December 1993. The Project Completion Report was prepared by the Bank's Infrastructure Education (East) Department in September 1994,³²¹ and circulated to the Board in December of the same year.

¹ TA No. 829-MAL: *Study of National Health Security Fund*, for \$430,000, approved on 9 December 1986.

² Loan No. 980-MAL: *Third Health (Sector) Project*, for \$105 million, approved on 31 October 1989.

³ TA No. 1079-MAL: *Third Health (Sector) Project*, for \$100,000, approved on 2 December 1988; TA No. 1214-MAL: *National Health Plan Study*, for \$400,000, approved on 31 October 1989 (supplementary funds of \$200,000 approved on 2 January 1992); and TA No. 1215-MAL: *Establishment of the National Health Security Fund*, for \$450,000, approved on 31 October 1989.

8. The Project Completion Report provides a general overview of the Project's achievements. In reporting on its benefits, though, it concentrates on physical infrastructure built and person-months of consulting services and training. Problems with staffing, thus operating facilities, were not discussed, although public health services are facing severe problems in this area. Recommendations focused on the HMIS, and the need to increase user charges and thus improve cost recovery; and suggested that cooperation between Jabatan Kerja Raya (JKR), MOH, and state/district level hospital administrators be improved.

F. Postevaluation

9. This Project Performance Audit Report (PPAR) was prepared by the Postevaluation Mission (PEM), which aimed to assess the achievements of the Project and identify lessons to be learned. The PEM reviewed Project documents and related correspondence, and other relevant publications. From 5 to 18 December 1996, it visited Malaysia and met staff of relevant departments of the EA to discuss Project goals, performance, and achievements. It also visited a cross-section of subprojects, including hospitals, rural health facilities, training institutions, biomedical engineering departments, and integrated medical stores, in the Federal Territory (Kuala Lumpur), Negeri Sembilan (Sembelan and Tampin), and Sarawak (Kuching, Bau, Semerahan, and Serian). Copies of the draft PPAR were provided to the Borrower, the EA, and concerned Bank staff for review and comments. Comments were taken into consideration in finalizing the PPAR.

II. IMPLEMENTATION PERFORMANCE

A. Design

10. The Project was designed as an integral part of the Government's Fifth Malaysia Plan. This ensured ownership of the Project. The Project constituted a mix of subprojects, widely dispersed in terms of subsectors and geographical region, concentrating on areas of the Government's Plan where major investments were required. The following selection criteria were used: (i) land availability; (ii) plans had been designed and approved; (iii) the JKR was ready to start construction; and (iv) operating budgets and staff for operating facilities had been designated. This was to ensure smooth implementation, thus minimizing commitment charges, and early start-up of operations. The Project combines physical infrastructure and institutional development components, which is a good attempt at overcoming limitations resulting from a strictly hardware-oriented approach. For instance, biomedical engineering workshops were to be complemented with consultants to develop training programs for maintenance and repair.

11. The design of Part B (institutional development) would have benefited from an institutional analysis as it comprised only part of what was needed for institutional change. For instance, the education of senior matrons on relevant nursing subjects was not accompanied by establishing training routines (education schedules, syllabus, resources, teacher education, etc.), although matrons were expected to return to their duty stations and conduct so-called "echo-training", i.e., pass on the knowledge they acquired during their training to other staff through locally arranged courses. The shortcoming of this approach lies in the dependence on individual trainees' abilities and working circumstances to organize and conduct further training. Systematic and effective institution development cannot be expected and has not been attained by such an approach.

12. The sector loan approach provided sufficient flexibility to accommodate changes that were made to ensure smooth implementation. The EA complied with requirements to appraise each subproject, and followed the prescribed format. As Government policies were found satisfactory, the Project did not emphasize policy reform issues, although it included one ambiguous covenant that suggests that cost recovery will follow current practices of the Borrower, which should review the structure of charges.

B. Contracting, Construction, and Commissioning

13. Contracting followed Bank procedures, with the exception of an agreed shortening of the bidding time from three months to 45 days. The average time for implementing contracts (construction and delivery of procured equipment) ranged from 9 months in Negeri Sembilan and Pahang, to 32 months in Terengganu and 38 months in Sabah. Severe difficulties with contractors were experienced in four cases (10 percent of all contracts), which necessitated retendering of contracts and caused delays in completing the Project. Civil works were designed and implemented according to JKR standards. In general, the EA was satisfied with the quality of work. Some health centers experienced delays in starting operations by up to 16 months, caused by the lack of staff and operating budget. While resources for the first few months of operation should have been built into the development budget, a number of health facilities still experience procedural problems in obtaining allocations for posts or operating budgets.

C. Organization and Management

14. A Project Implementation Unit (PIU) was established under the Planning and Development Division in November 1989. It managed, and still does, the implementation of all three Bank loans, and now is in charge of projects financed by the World Bank as well. The PIU is well organized, maintains necessary records, and has good contacts with all technical units involved in Project implementation. Its function is to meet the Bank's administrative requirements. Facilities are managed by MOH and hospitals at central, state, and district levels.

15. Project supervision by the Bank concentrated on implementation issues. One review mission had been briefed on the results of the Government's policy review. However, this did not seem to have entailed a policy dialogue. Cost recovery is mentioned in back-to-office reports, however, rather in terms of reflecting the Government's continued efforts to pursue the issue.

D. Actual Cost and Financing

16. The loan was fully disbursed. The Project experienced a cost underrun of 13 percent. The Bank's share in the Project increased from 38 percent to 44 percent. This resulted from reductions in the total Project budget and Government funding, the latter decreasing from \$81.86 million to \$64.95 million. Appendix 2 provides details on estimated and actual costs.

E. Implementation Schedule

17. The PIU was established more than two years after loan effectiveness. As a result, implementation during the early years was slow. Project completion was delayed by 24 months, largely a result of late contracting of works for engineering workshops, and extended construction periods required for some of the health centers in remoter areas. Improvements were made in comparison to the first project in that subprojects were selected for which land

had been secured. For one health center where the land could not be procured, the subproject was deleted to avoid further delays. Similar flexibility was exercised with other subprojects that were implemented slower than expected.

F. Technical Assistance

18. The PPTA for this Project produced a detailed report on the health sector. It commented on the Government's policies, obviously aware of related sensitivities, and suggested grouping the list of 19 policies into two categories. This would have improved their structure and focus, thus increasing implementability. The commentary did not, however, go into detail on all issues, and did not translate them into project components or recommend them for continued policy dialogue. As mentioned earlier, the Project did not emphasize policy improvements, and review missions did not entertain a policy dialogue. The weaknesses of the PPTA report are (i) the lack of establishing a cause-and-effect relationship between issues identified, and subsequently suggesting a project strategy that would address core problems; (ii) its inconsistency, i.e. situational analyses and proposed project components do not tally;¹ (iii) its failure to translate issues identified in the situational analysis into project components; and (iv) its inappropriate definitions of project objectives, which actually are targets for physical deliverables (outputs) rather than goals. As a consequence, a number of issues discussed in the PPTA report still require resolution (shortage of health personnel, efficiency improvements, etc.).

19. The Project was complemented by an AOTA. At the time of Project appraisal, Malaysia's economy was slow, threatening the sustenance of the public health sector which depended entirely on Government funding. The AOTA was to analyze the feasibility of establishing a National Health Security Fund that would ensure adequate funding of the health sector. The AOTA was carried out in two phases from 1988 to 1989. The Government appreciated the study. However, it was cautious in implementing recommendation to establish a fund for two reasons. Firstly, it was felt that the study was not fully suited to existing conditions. For instance, MOH felt that universal coverage was needed, but found it costly to collect contributions from the large number of self-employed. Those living in remote areas would be particularly difficult to reach and might not be willing to pay as their access to health services is limited. In addition, it was found that a number of those able to pay were not willing to do so as health services were perceived as a social service that the Government should be funding from tax revenues. Secondly, the recovery of the economy removed the pressure to implement a financing scheme. The Government had sufficient resources to follow its policy to provide health for all, rather than applying user-pay principles. Now, since per capita income has risen considerably and the public health sector is facing difficulties in attracting and retaining health professionals, substantial changes in the public health system are being considered. They include the corporatization of hospitals and, as a prerequisite, a health security fund, which now is being studied again.

G. Compliance with Loan Covenants

20. Most of the covenants were met. Exceptions were the one on cost recovery as the Government continued with its policies to provide health services charging nominal fees

¹ For instance, on page 21, the medical supply system is assessed as orderly and efficient, whereas on page 129, it is suggested that the efficiency of this system needs improvement.

only, and the one on hospital waste management, which should have followed environmental standards. Separate waste collection facilities are now being built.

III. PROJECT RESULTS

A. Operational Performance

21. The operational performance of subprojects is discussed in the following paragraphs. Appendixes 3 and 4 provide details on the status of Project components of Part A, and a summary of the site visits by the PEM.

22. **Training Facilities.** These facilities were installed as envisaged. However, they were not necessarily installed as separate training institutions, but as part of existing schools or hospitals. They provide an appropriate teaching environment.¹ Records are insufficient to precisely establish their capacity utilization, although a number of courses conducted and course participants indicate adequate utilization. There were problems related to in-service training because as staff shortages make hospitals reluctant to release staff for training. Maintenance is financed from the regular operating budget; however, no preventive maintenance program is in place.

23. **Rural Health Facilities.** All but one of the subprojects were implemented. Twenty-five rural health facilities were upgraded for \$9.12 million. These 25 facilities account for 5.90 percent of such facilities existing at appraisal (Appendix 5). MOH's standards for health facilities were applied, and capacities built accordingly. The facilities visited by the PEM were in full operating condition and well maintained. Staffing levels were appropriate and, in addition, the health facility was used for training of nurses. Laboratory facilities were somewhat crowded and could have benefited from a better layout and more space. Other than those visited by the PEM, however, rural health facilities are reported to suffer from personnel shortages, a common problem for the public health sector in Malaysia.

24. **Hospital Upgrading.** This component supported 25 hospitals (27.80 percent of facilities existing in 1985), investing \$63.16 million. Subprojects under this component can be further categorized as (i) major subprojects such as the Pediatrics Institute at the General Hospital Kuala Lumpur (GHKL) and the audiovisual center; (ii) medical equipment; (iii) medical departments and wards; and (iv) support facilities such as elevators, laundry, and kitchen equipment. Some alterations were made within this component that were in line with the overall scope and objective of the Project. The Pediatrics Institute has a total of 450 beds, 7 of which are for intensive care. Its departments include, in addition to general medicine, surgery (eye, ears-nose-throat, and plastic/reconstructive), burns, intensive care, and incubator unit. It has a semiautonomous status, being run independently although forming part of the GHKL with whom it shares some of the facilities such as X-ray and laboratories tests. Its capacity is fully utilized and expansion plans exist to absorb patients who are presently accommodated in the adult wards of GHKL. The audiovisual center, now renamed Health Education and Communication Center (HECC), is a modern, well-maintained facility. Its initial budget of RM9.00 million for the first five years of its operation, has been increased to RM90.00 million for the subsequent five-year period. Its campaigns include initiatives on acquired immunodeficiency syndrome, cancer,

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Since the Project was not concerned with developing or revising the curriculum, the PEM did not analyze whether teaching standards and content of training changed.

healthy living, and food hygiene. The remainder of the subprojects are reported in good operating condition, operating costs being met by the regular budgets of hospitals.

25. **New Hospitals.** One of the three subprojects of this component was postponed and included in the subsequent Third Health (Sector) Project. In 1994, the other two new hospitals in Bau and Betong reported low bed occupancy rates of 29 and 16 percent, respectively. Reasons for these low utilization rates include the following: (i) the lack of specialists requires that complex cases are referred to a larger hospital; (ii) infrastructure improvements increased mobility so locations that formerly were more isolated and thus warranted a hospital, are now well connected to larger cities that offer more sophisticated health services; and (iii) patients knowing of personnel constraints combined with high mobility, prefer to go directly to larger hospitals where their needs can be attended to immediately. The latter illustrates that the referral system is still not fully functioning as a result of (i) MOH's policy that whoever comes to a hospital will be attended to, regardless of whether the person was referred by a doctor or health center or not; (ii) low charges for medical services (RM1 for general practitioner, RM5 for specialists), which do not create an incentive for patients to seek advice from primary health care facilities first; and (iii) shortage of staff in health centers and smaller hospitals which limits services and makes MOH reluctant to more actively advocate the use of primary health facilities in view of their shortcomings.

26. **Integrated Medical Stores.** These were part of MOH's plan to replace medical stores at the state level, with requisite facilities at district hospitals. This eliminated one intermediate level in the supply chain. It also consolidated dispensaries and their stores at hospitals that previously were an array of vacant rooms. This resulted in closer cooperation between doctors and pharmacists at district hospitals, and between integrated stores and health centers in their coverage area. Initially, integrated stores were to keep four months' supplies, but with the privatization of the general (central) medical store at the beginning of 1996, stores were advised to keep a two-month stock as the private operator guaranteed delivery of medical supplies in less than 60 days. This was meant to keep stocks low, thus ensuring minimum wastage due to expiration and decreasing budgetary resources invested in medical supplies. However, the current budget system, which allocates a fixed amount for procurement of medical supplies per year, does not encourage pharmacists to minimize their stock at the risk of depending on timely delivery from the central medical store. Stocks are managed in such a way that medicines due to expire are bartered with other stores, suggested for prescription if appropriate, or issued to user departments. These management practices are employed to meet quality assurance targets to keep the amount of medicines written off low. Efficiency improvements that were to be attained through this subcomponent are not recorded and do not seem to be a major concern for MOH or hospitals.

27. **Hostels and Quarters.** One of the five subprojects was canceled from this component, whereas all the others are reported as implemented. These hostels provided accommodation for staff improving their living conditions at their work place. However, anticipated improvements of posting staff to more remote areas have not materialized as the overall shortage of medical personnel and better remuneration offered by private sector hospitals outweigh advantages created by providing staff accommodation.

28. **Biomedical Engineering Workshops.** These were set up to increase the number and types of repairs done by MOH, thus strengthening its position, vis-a-vis, private sector services. Contrary to the impression given in the AR, these workshops encompassed not only biomedical engineering facilities, but also mechanical, electrical, and sanitation

engineering. The PEM was informed that operating efficiencies were gained as repair facilities and staff were housed in the same building. However, indicators were not established at the outset of the Project so that changes in performance cannot be measured. Operating performance is affected by staffing constraints that remain problematic with a vacancy factor of 30 percent, and bureaucratic processes that require lengthy bidding and approval procedures to procure replacement parts. To redress these shortcomings, the Government privatized engineering and other services as of 1 January 1997. Facilities built and staff trained under the Project, if they have not left the services already, are expected to be taken over by the private sector. While all hospitals will be covered under the service agreement, some repair works may be excluded from the contract and, thus, be subject to additional charges. This has been the case for repairs of biomedical equipment.

B. Institutional Development

29. Some of the infrastructure built by the Project, particularly large-scale subprojects such as the Pediatrics Institute or HECC, provided the requisite physical setting for institution development. Both of the mentioned examples have been developed by MOH to functional entities. Part B, which was specifically designed for institutional development, however, has had relatively limited impact. Personnel planning practices did not change as a result of the Project's consultant services. Only now is the concept of job analyses based on workload and the subsequent effect on personnel planning becoming acceptable. Inputs provided for nursing education (B.2) were in part canceled (a suitable consultant could not be found) and otherwise not effective: nurses trained retired or left public service for employment with private hospitals. In any case, the approach of teaching individuals without introducing complementary changes in education systems, procedures, and curricula cannot be effective. Moreover, since the pool of nurse educators (teachers and matrons) was diminishing, establishing capacities and a systematic staff development scheme to replenish the pool regularly would have been more appropriate. Similar observations apply to other components of this part of the Project. Appendix 6 provides further details.

30. The limited impact of the institutional development component can be explained by two factors. Firstly, as mentioned earlier, the design was not based on an institutional analysis so that only broad areas were identified in which improvements were sought. Neither the situation at the outset of the Project was analyzed nor were performance indicators determined for the institutional units to be reformed by the Project. Secondly, the chosen means, namely, consultants' services and training, were not entirely effective as they were not integrated into an institutional development program. Consultants who individually performed well, did not necessarily succeed in making institutional improvements as their suggestions were not always implemented. In other instances, the impact of their work cannot be traced any more as the origin of systems or procedures are often not known. Staff trained under the Project often could not be retained, as some of them retired within a year or two after training, whereas others left for more lucrative jobs in the private sector. In any case, the number of staff to be trained did not promise a significant impact. None of these components directly focused on improving efficiency and cost-effectiveness, although these were part of the Project's objective. It seems that physical infrastructure improvements were automatically assumed to result in efficiency gains without changing systems and procedures.

C. Financial Performance

31. None of the hospitals that benefited from the Project, or other project components that operate independently, is generating revenue to any significant extent. This results from the Government's policies to provide medical services regardless of willingness or ability to pay. MOH estimates to recover approximately 5 percent of its cost. It is expected that the financial performance of hospitals will improve with their corporatization, which is envisaged to be implemented during the current Malaysia Plan.

D. Economic and Financial Reevaluation

32. Economic and financial evaluations are generally not required by the Bank for health projects. They were not done for the Project or any of its components at appraisal or completion for the following reasons: (i) a number of components cannot be singled out physically such as the replacement of elevators; (ii) a number of components cannot be singled out financially, such as integrated medical stores that are budgeted for under the general hospital budget; and (iii) an assessment of economic or financial benefits derived from, say, reduced waiting times to see a doctor in a more pleasant environment is difficult to estimate. In spite of these factors, the PEM considered calculating the cost-effectiveness of the new hospital in Bau. However, data indicates that a calculation of healthy life years gained, and costs associated with it, are distorted as difficult cases are referred to the General Hospital in Kuching. This reduces the mortality rate recorded by the hospital in Bau. Since the precise cause of death and average age of patients dying are not known, it is difficult to establish the number of healthy years gained. Moreover, information is lacking for the calculation of the costs and benefits of alternatives such as admitting the patient to the referral hospital. Consideration of alternatives and least cost concerns would have been desirable at project design.

E. Socioeconomic Results

33. The socioeconomic benefits of the various subcomponents range from increased convenience for staff and patients as a result of spacious and clean physical surroundings in hospitals and institutions, to better quality of health services in terms of improved diagnosis and care thanks to equipment such as X-rays, c-arm intensifiers, and incubators. Overall, the socioeconomic results of the Project seem positive, although overall improvements in the health status of the Malaysian population cannot be attributed directly to it. Benefits are described in Appendix 7.

F. Gender Issues

34. While health services benefit both genders, MOH's emphasis on family health care, including mother and child health care and family planning, ensures a positive impact on women's health. Appendix 8 illustrates that a large part of services are provided for mother and family health care.

G. Environmental Impacts and Control

35. One of the requirements under the Project was that MOH would ensure that requisite arrangements were made for the disposal of medical waste (Loan Agreement, Schedule 6, para. 30). Necessary provisions were made for water supply and sewerage treatment in appraisal reports for subprojects. Necessary facilities for collecting and storing (at

interim) solid medical waste are being constructed now as these services have been privatized. Overall, the Project has not had a negative environmental impact.

H. Sustainability

36. Project-financed facilities are funded by and dependent on budgetary support from the Government, given the low cost-recovery rate. Since the Government is fully committed to providing health care to all citizens, and at present can afford to do so, it is expected that health facilities can be sustained. However, the sustainability of health centers and hospitals will be affected by plans to corporatize public hospitals as discussed below.

37. Some of the Project's activities made minor contributions to institutional development. For instance, the quality assurance program has become an integral part of all divisions of MOH, and is continuously revised and updated. These achievements and their sustainability, however, cannot be attributed solely to the Project but rather are a result of MOH's own initiative and the influence of other projects.

IV. KEY ISSUES FOR THE FUTURE

A. Public and Private Health Services

38. The Government's commitment to encouraging private sector involvement necessitates rethinking the role and organization of public health services. The Government decided to privatize some of the support services such as laundry, cleaning, and engineering, and corporatizing some, if not all hospitals. Corporatization is hoped to (i) enable hospitals to retain medical staff as employment conditions and salary scales will be disconnected from civil service regulations, thus, facilitating working conditions to become somewhat more comparable to the private sector; (ii) increase operating efficiency as management is freed from administrative requirements of the public sector; and (iii) raise fees and retain revenues, thus attaining self-financing.

39. While corporatization will improve employment conditions, staff retention problems are likely to prevail for a variety of reasons. Salary increases, initially regulated and later dependent on the financial performance of the hospital, may still not match those offered by the private sector, which follows, but is not bound to, fee scales agreed to by the medical profession. MOH's involvement in establishing the fee scales is limited, and no control is exercised over their enforcement. This creates a circumstance that enables the private sector to escalate prices, if need be, to increase profits and continue attracting doctors and nurses. This trend is likely to continue as health services become more sophisticated and specializations more complex. If corporatized hospitals are to compete on these terms, service fees would have to be increased considerably, thus endangering affordability. As a result, the Government or MOH may be forced to subsidize health services for those who cannot afford to pay. This may be an equal burden on the budget, depending on the degree to which price escalation can be controlled. Corporatizing only a number but not all hospitals would add to pressure to compete for personnel on the remaining public hospitals.

40. Realizing anticipated increases in operating efficiency will depend not only on changed ownership as a result of corporatization, but also on different management practices including, to name two examples, personnel management and accounting systems. Apparently, it has proven easier to contract services out and confront the contractor in case of

malperformance, than to improve staff performance. Since most staff are expected to be retained after corporatization, deliberate efforts will be required to introduce a new management style. Similarly, the accounting system would require overhauling. For instance, at present, resources for major repairs are requested as and when needed. Depreciation is not accounted for and reserves for anticipated repairs are not made. Systems would need to be changed, and staff trained. Moreover, the contract for privatized services runs for 15 years and is priced based on negotiations between MOH and the contractors. This will limit the flexibility of corporatized hospitals to gain efficiencies in these service areas.

41. Corporatization is likely to improve the sustainability of some of the hospitals; however, some other hospitals will find it difficult to face quasi private sector conditions. Hospitals in outlying areas face extraordinary problems in attracting doctors who are normally posted there to fulfill their mandatory services after completing their studies. They, however, leave for specialization studies as soon as possible. The quality of services suffers as a result of high turnover rates of doctors, who in any case have little or no practical experience when starting on their assignment. This situation, combined with improved infrastructure, which increases mobility, contributes to low utilization rates of smaller hospitals and a continued malfunctioning or even worsening of the referral system. With corporatization, hospitals will be under pressure to generate business, thus will be even more inclined to accept patients without a referral. Smaller hospitals will end up in a vicious circle as their revenue situation will not allow them to offer attractive salaries to doctors and nurses without whom the revenue base will decline. Assuming the Government sustains its policy to ensure nationwide health service coverage, it would have to consider alternative strategies for these hospitals. Retaining them as public hospitals would solve their financial problem, although continue to burden the Government budget, while staff retention would remain an issue. These aspects need to be taken into account when planning new hospitals to be constructed under the current Malaysia Plan.

42. Current and, more so, future demands require MOH to continue its institutional development process. While the Project attempted to deal with certain aspects of this process, these were isolated cases. MOH would be well advised to base institutional changes on analyses that review process flows, including roles and responsibilities of different organizational units, information flow and decision-making processes; and identify areas where structural, organizational, administrative, or procedural changes can enhance performance. This type of analysis should include reviewing relevant parts of the HMIS to ensure that it is most responsive to the decision-making processes and information needs of its users.

B. Health Personnel

43. The lack of trained personnel, in particular doctors and nurses, poses the greatest problem to operating health facilities. The rapidly expanding private sector attracts doctors and nurses, and this makes it difficult to retain them in public sector health facilities. The mandatory service of doctors/staff physicians in rural hospitals after completing their studies, ensures that doctors are assigned to these facilities. However, this has given rise to adverse side effects in terms of high staff turnover because of short duration of assignment (sometimes for a few months only), and lack of senior doctors with more experience. The current gap, existing in the group of doctors with 5 to 10 years experience, will be aggravated when senior doctors retire and more junior ranks have not gained sufficient experience to replace them. Similar problems arise with nurses who are much sought after by the private sector.

44. The health personnel development system has difficulties coping with this situation. The Government's move to build a facility for management training, funded from the Third Health (Sector) Project, is useful, but additional efforts are needed to redress shortages of nurses and diversify their education and skills. Moreover, education is provided free of charge for medical staff employed by the public sector. Penalties, to be paid if trainees resign prior to completing their mandatory services with the public sector, are so low that this cost is easily met by the private sector.

C. Changes in Disease Patterns

45. Changes in disease patterns are a typical side effect of social and economic change: urban lifestyle, different work routines, exposure to pollution, and other factors lead to an increased incidence of coronary and respiratory diseases, cancer and human immunodeficiency virus/acquired immunodeficiency syndrome. These types of diseases require more sophisticated capacities in terms of both human resources and technical equipment, adding to the demands for public health services, which cannot be satisfactorily met under current personnel shortages. Responses to these challenges are likely to require cooperation rather than competition between the public and private providers of health services.

V. CONCLUSIONS

A. Overall Assessment

46. The Project is generally successful. Positive results were attained by major subprojects such as the Pediatric Institute and the HECC, and all of them seem operational. Some contributions were made to attaining the immediate objective of improving service quality. The Project's impact on its overall objective to improve the health status of the Malaysian population cannot be singled out and quantified as components were largely dispersed throughout the country and among subsectors, and other factors beyond the Project affect health conditions as well.

B. Lessons Learned

47. The experience of this Project reconfirms that institutional development needs to be based on an institutional analysis and be designed in such a way that desirable institutional changes are implemented immediately. For projects in the health sector, a detailed analysis must be undertaken to identify all the major institutional constraints that inhibit the quality of health services. The decision-making processes, work and information flows, procedures, and regulations of the hospitals and health centers concerned must also be reviewed to identify the internal inefficiency problems that affect the delivery of health services. The effective remedial measures can then be incorporated in the Project design to redress the institutional constraints and problems identified. The provision of consultant services and limited training of a few individuals are not sufficient to overcome institutional weaknesses. Often, efficiency gains can be achieved by changing processes rather than upgrading physical health facilities.

48. The Project experience also indicates that investments in constructing or rehabilitating physical health infrastructure need to take into account the affordability of incremental recurrent costs and staffing requirements. It is important to realistically project the anticipated operational and maintenance and staffing requirements, and determine how these

requirements will be met. In this respect, there is a need to review the planning and budgeting processes of the Government in allocating public resources to the health sector.

C. Follow-up Actions

1. For the Government

49. MOH is advised to analyze its health personnel training program and develop a human resource development strategy. In so doing, not only training capacities and curricula need to be reviewed, but also options for producing health personnel for the private and public sector.

50. In defining its strategy for health care financing, it is recommended that the Government review its current subsidy scheme with the aim to better target its recipients. This will improve cost-recovery and encourage cost sharing by the community, which was already part of the health sector policies at the time of appraisal. In addition, the financing strategy will have to consider mechanisms to ensure cost containment, with the MOH having a greater influence on the setting and enforcement of the fee scales for the private medical profession.

51. Further institutional reforms of MOH should be based on institutional analyses, and encompass not only structural changes but also a review and revision, as necessary, of responsibilities, decision-making processes, work and information flows, and procedures. The HMIS needs to be reviewed in this light and become more of a management tool tied to information requirements of decision makers, rather than a reporting system. If future reform programs aim to achieve efficiency gains, their purpose and specific goals for such efficiency improvements should be determined.

52. Facilities such as the Pediatrics Institute, and the Specialist Clinic in Kuching require repair works. The former needs repairs to the roof which should entail changing the roof structure. The Specialist Clinic needs adjustment to its air-conditioning and ventilation system to eliminate or minimize condensation gathering on walls and ceilings inside the building.

2. For the Bank

53. Identification and appraisal of health projects should pay increasing attention to a more rigorous institutional analysis. A careful analysis of issues and priorities in the health sector should also be undertaken as a basis for a constructive policy dialogue. Such analysis should include a discussion of the consistency and coherence of the existing policy framework and its positive and negative implications for achieving the sector's objectives, as well as elaborate alternative strategies, including their advantages and disadvantages, and reasons why they would be better than the existing policies.

APPENDIXES

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PART A: SUBPROJECTS BY STATE AND SUBSECTOR

State	Subsectors				A.6. Hostels/ Quarters	A.7. Engineering Workshops
	A.1. Training	A.2. Rural Health	A.3. Existing Hospitals	A.4. New Hospitals		
Perlis		<ul style="list-style-type: none"> Upgrading Health Center (HC) Kuala Sanglang 	<ul style="list-style-type: none"> Water Tank, GH Kangar Central Sterile Supply Department, GH Kangar 			
Kedah		<ul style="list-style-type: none"> Upgrade Health Center Naka, Padang Terap Upgrade Health Center Lubok Merbau, Padang Terap Health Office (MCHC+v DC+Store) Baling Labu Besar Kulim 	<ul style="list-style-type: none"> Improve Intensive Care Unit (ICU) DH Sg. Petani 1 Unit X-ray DH Petani 4-story ward block, DH Baling 			
Penang	<ul style="list-style-type: none"> Health Inspector Field Training Center and Hostel, B.M. 	<ul style="list-style-type: none"> Upgrading HC Prai SPT Upgrade HC Sg. Acheh S.P.S. 	<ul style="list-style-type: none"> Central Services Block GH Penang Additional equipment for ICU GH Penang Replacement of 6 elevators in GH + MH Penang 			<ul style="list-style-type: none"> GH Penang

Gray shaded areas indicate subprojects that have been canceled or exchanged with other subprojects.

Source: ADB Records.

Appendix

State	Subsectors						
	A.1. Training	A.2. Rural Health	A.3. Existing Hospitals	A.4. New Hospitals	A.5. Pharmacies	A.6. Hostels/Quarters	A.7. Engineering Workshops
Perak		<ul style="list-style-type: none">• Upgrade HC Tg. Tuallang Kinta• HCI Lawin Hulu Perak• Upgrade HC Kg. Gajah Pergak Tengah	<ul style="list-style-type: none">• Standby generator DH Taiping• Equip X-ray department DH Taiping• Water Tank HD Tg Malim, Batang Padang• Polyclinic and Canteen GH Ipoh• ICU, GH Ipoh• Polyclinic Jelang Ipoh Kinta• Observation ward & department/admission Hospital Bahagia Kinta				<ul style="list-style-type: none">• HB Ipoh
Selangor	<ul style="list-style-type: none">• Staff physician's hostel GH Kelang	<ul style="list-style-type: none">• HCI Kg Chodai Kuala Langat			<ul style="list-style-type: none">• Medical Storage Facility GH Kelang• Replace 3 elevators GMS PJ		<ul style="list-style-type: none">• Engineering department and workshop, GH KL
Federal Territory			<ul style="list-style-type: none">• Replace laundry equipment GH KL• Replace lifts GH KL• New Children's department, Children's hospital, GH KL• Audiovisual materials production center				

Gray shaded areas indicate subprojects that have been canceled or exchanged with other subprojects.

Source: ADB Records.

State	Subsectors						
	A.1. Training	A.2. Rural Health	A.3. Existing Hospitals	A.4. New Hospitals	A.5. Pharmacies	A.6. Hostels/Quarters	A.7. Engineering Workshops
Negeri Sembilan	<ul style="list-style-type: none">• Multipurpose training center, Seremban		<ul style="list-style-type: none">• Renovate elevators HB Seremban• 'C' Arm Image intensifier for OT GH Seremban		<ul style="list-style-type: none">• District Integrated Medical Store, Tampin		
Melaka		<ul style="list-style-type: none">• HCI Macap Baru, Alor Gajah, Melaka Utara	<ul style="list-style-type: none">• Replace elevators, Block B, GH Melaka• Install 2nd elevator in Block A, C, D & Labor Ward, GH Malaka				
Johor	<ul style="list-style-type: none">• JD Training School & Hostel (Part II) Pt. Raja, Batu Pahat	<ul style="list-style-type: none">• HCI Belitang/Bukit Tongkat (Felda), Kluang• HCI Air Tawar II, Kota Tinggi	<ul style="list-style-type: none">• New kitchen, GH J. Bahrui• Polyclinic, GH J. Bahrui• ICU & Cardiac Care Unit DH Segamat• Ward block, DH Jarantut• Water storage tank, DH Pekan• Inpatient pharmacy, DH Mentakab• Upgrade X-ray department, DH Mentakab• 2 wards and corridor, DH Jerleh			<ul style="list-style-type: none">• Nurses' hostel, Kota Tinggi	<ul style="list-style-type: none">• Engineering department and workshop
Pahang							
Trengganu		<ul style="list-style-type: none">• HC Cheneh, Kemaman• HCI Chukai Kemaman					

Gray shaded areas indicate subprojects that have been canceled or exchanged with other subprojects.

Source: ADB Records.

State	Subsectors				
	A.1. Training	A.2. Rural Health	A.3. Existing Hospitals	A.4. New Hospitals	A.5. Pharmacies A.6. Hostels/ Quarters A.7. Engineering Workshops
Kelantan	<ul style="list-style-type: none"> • Housemen's hostel GH Kota Bharu • Health inspectors field training center and hostel, Pasir Mas 	<ul style="list-style-type: none"> • Health center Kedai Lalat, Kota Bharu • HCl Kuala Balah, Jeli 	<ul style="list-style-type: none"> • 4-story ward block, DH Kuala Krai • Water tank, DH Kuala Krai 		
Sarawak		<ul style="list-style-type: none"> • KD Semarahan, Serian • KDI Jemukan, Simunjan • KD Balingian, Mukah • PK Tatau, Bintulu • MCHC & Labor Ward, Bintangor 	<ul style="list-style-type: none"> • Extend OPD, GH Kuching • Upgrade X-ray facility DH Lundu • 2 new wards, DH Serian • Improve DH Mukah • Upgrade Poly-clinic Sibu 	<ul style="list-style-type: none"> • District HC, Bau • District Health Center, Betong, Saribu • Hospital Sibu 	<ul style="list-style-type: none"> • Nurses hostel, HD Sri Aman • Staff quarters (block 6 unit class II, 6 unit class IV) Sri Aman • Staff quarters (block 6 unit class II, unit class IV, 24 'G'), Hospital Miri • 6 Division IV, DH Keningau • Engineering department and workshop GH Kuching
Sabah		<ul style="list-style-type: none"> • HCl Paitan Labuk Sugut • HCl Kaingaran Labuk Sugut • HCl Sukau Kimbatangan 	<ul style="list-style-type: none"> • OPD DH Tawau 		

Gray shaded areas indicate subprojects that have been canceled or exchanged with other subprojects.

Source: ADB Records.

PROJECT COST AT APPRAISAL AND ACTUAL
(\$ '000)

Item	Appraisal				Actual				Percent of Total Base Cost
	FX	LC	Total	Percent	FX	LC	Total		
Part A. Physical Works									
Training Institutions	690	1,413	2,103	2.00	1,110	1,566	2,676	2.54	
Civil Works	440	1,402	1,842	1.75	709	1,566	2,275	2.16	
Equipment	250	11	261	0.25	401		401	0.38	
Rural Health	2,600	4,876	7,476	7.11	4,118	5,001	9,119	8.65	
Land		923	923	0.88		144	144	0.14	
Civil Works	1,250	3,953	5,203	4.95	2,253	4,857	7,110	6.74	
Equipment	1,350		1,350	1.28	1,865		1,865	1.77	
Hospital Improvement	29,530	26,519	56,049	53.32	36,204	26,931	63,135	59.89	
Land		138	138	0.13		374	374	0.35	
Civil Works	19,540	26,348	45,888	43.66	24,947	26,557	51,504	48.86	
Equipment	9,990	33	10,023	9.54	11,257		11,257	10.68	
New Hospitals	8,010	14,039	22,049	20.98	5,957	17,716	23,673	22.46	
Land		231	231	0.22				0.00	
Civil Works	5,510	13,808	19,318	18.38	1,986	17,716	19,702	18.69	
Equipment	2,500		2,500	2.38	3,971		3,971	3.77	
Pharmacy Improvement	400	561	961	0.91	723	801	1,524	1.45	
Civil Works	290	561	851	0.81	567	801	1,368	1.30	
Equipment	110		110	0.10	156		156	0.15	
Hostels and Quarters	540	1,843	2,383	2.27	658	1,197	1,855	1.76	
Land		185	185	0.18				0.00	
Civil Works	520	1,643	2,163	2.06	655	1,197	1,852	1.76	
Equipment	20	15	35	0.03	3		3	0.00	
Biomedical Engineering	570	518	1,088	1.04	288	1,505	1,793	1.70	
Civil Works	170	518	688	0.65	276	1,505	1,781	1.69	
Equipment	400		400	0.38	12		12	0.01	
Subtotal Part (A)	42,340	49,769	92,109	87.63	49,058	54,717	103,775	98.45	
Part B. Institutional Development									
Fellowships	640	71	711	0.68	829		829	0.79	
Consulting Services	480	53	533	0.51	372		372	0.35	
Equipment	930		930	0.88	436		436	0.41	
Subtotal Part (B)	2,050	124	2,174	2.07	1,637		1,637	1.55	
Incremental Operating Cost									
Salaries		6,521	6,521	6.20				0.00	
Others	220	4,086	4,306	4.10					
Subtotal	220	10,607	10,827	10.30				0.00	
Total Base Cost	44,610	60,500	105,110		50,695	54,717	105,412		
Prior Technical Assistance	45	-	45		35	-	35		
IDC	11,200	-	11,200		10,230	-	10,230		
Contingencies	6,292	9,942	16,234		-	-	-		
Project Total	62,147	70,442	132,589		60,960	54,717	115,677		

FX=Foreign Exchange; LC=Local Currency

Source: ADB Records.

Major Subprojects	Estimated Base Cost		Actual Cost	Change
	\$ million	MR million	MR million	(%)
1 Central Services Block, GH Penang	18.5	48.51	55.81	115
2 Paediatric Hospital, GH Kuala Lumpur	11.1	29.11	32.24	111
3 Polyclinic, GH Johor Baru	6.0	15.73	21.07	134
4 Polyclinic, GH Ipoh	3.1	8.13	11.80	145
5 OPD Extension, GH Kuching	2.0	5.24	12.57	240
6 OPD Extension, DH Tawau	2.5	6.56		0
7 Hospital Sibu	17.2	45.10		0
8 District Health Center Bau	2.4	6.29	7.91	126
9 District Health Center Betong	2.4	6.29	8.93	142
Total	65.2	170.97	150.33	88

Source: ADB Records.

	Subsectors							
	A.1. Training	A.2. Rural Health	A.3. Existing Hospitals	A.4. New Hospitals	A.5. Pharmacies	A.6. Hostels/ Quarters	A.7. Engineering Workshops	
Planned Subprojects	6	26	38	3	4	5	5	
Actual Subprojects	6	25	35	2	4	4	5	
Planned Capacity	180 trainees per annum (p.a.) house 240 trainees	Not specified in Appraisal Report (AR)	Not specified in AR	Serve a combined population of 900,000 in 2 rural areas and one urban/rural area	180 Ministry of Health (MOH) health facilities	Accommodation for about 200 staff	Not specified in AR	
Actual Capacity	Total capacity for 215 regular students p.a. ad hoc short-term courses	Varies between facilities	Implemented with slight modification over initial plans	68 beds ea. hospital BOR: 28.6% (Bau) and 16.2% (Betong) Total admissions '94: 2,259 (Bau) 1,216 (Betong) Total outpatients '94: 39,288 (Bau) 28,638 (Betong)	As planned	As planned	Workshops provide services in electrical, mechanical, civil, and biomedical engineering.	
Type of Works and Procurement of Equipment	<ul style="list-style-type: none"> Renovation Expansion 	<ul style="list-style-type: none"> Upgrading Establish new 	<ul style="list-style-type: none"> Sterile department X-ray units ICU & CCU Pharmacy Departments/ward Kitchens, canteens Elevators Laundry Water supply & sewerage system Standby generator 	<ul style="list-style-type: none"> New facilities in Bau and Saribu Rebuild existing facility in Sibiu 	<ul style="list-style-type: none"> Improvements and upgrading or replacement of existing medical stores 	<ul style="list-style-type: none"> Additional staff quarters 	<ul style="list-style-type: none"> Upgrading, constructing, and equipping workshops 	
Estimated Cost	FX	LC	FX	LC	FX	LC	FX	LC
Land Cost (\$)			923	138			185	
Civil Works (\$)	444	1,402	1,251	19,544	5,508	561	519	166
Equipment (\$)	246	11	1,353	9,990	2,500	104	15	400
Total Cost (\$)	690	1,413	2,604	29,534	8,008	561	534	566
			4,876	26,519	14,039	1,843	1,843	518

Subsectors							
	A.1. Training	A.2. Rural Health	A.3. Existing Hospitals	A.4. New Hospitals	A.5. Pharmacies	A.6. Hostels/Quarters	A.7. Engineering Workshops
Operational Performance	<ul style="list-style-type: none">Facilities in good working conditionMaintenance financed from regular operating budget - no preventive maintenance schemeSufficient teaching staffTeaching improvements only insofar as teaching environment is concernedIn-service training capacities are underutilized because hospitals cannot afford to send staff on training	<ul style="list-style-type: none">Facilities in working conditionData on capacity and capacity utilization by health facility not available	<ul style="list-style-type: none">Facilities in working conditionOperations and utilization rates depend on the type of subprojectMajor subprojects like Pediatric Institute and Health Education and Communication Center operating at full capacity	Bau/Betong (1994 data) <ul style="list-style-type: none">68/68 bedsBed Occupancy Rate % 28.6/16.22,259/1,216 total admissions6/3 daily admissions (average)7,095/4,029 total patient days2,236/1,212 total discharges32/13 total deaths3.1/3.3 days average length of stay39,288/28,638 total outpatients133/97 average daily outpatients	<ul style="list-style-type: none">Facilities in good working conditionRM1 annual turnover at Tampin StoreProvide 60-70% of medical supplies to hospitals and surrounding health centers	<ul style="list-style-type: none">In working condition	<ul style="list-style-type: none">In working conditionProcessing all requests from hospitalsUndertaking minor repairs, but sending biomedical equipment to private repair shopsSupervision of installation of equipment done only if assistance is requested by the user department
Institutional Development	<ul style="list-style-type: none">Only physical facilities provided	<ul style="list-style-type: none">Only physical facilities provided	<ul style="list-style-type: none">Only physical facilities provided	<ul style="list-style-type: none">Only physical facilities provided	<ul style="list-style-type: none">Only physical facilities provided	<ul style="list-style-type: none">Only physical facilities provided	<ul style="list-style-type: none">Only physical facilities provided
Financial Performance	<ul style="list-style-type: none">Fully funded by Government	<ul style="list-style-type: none">Dependent on Government fundingRM1 charges for outpatient treatment	<ul style="list-style-type: none">Dependent on Government fundingCost recovery at about 5 percent	<ul style="list-style-type: none">Dependent on Government funding	<ul style="list-style-type: none">Dependent on Government funding	<ul style="list-style-type: none">Dependent on Government funding	<ul style="list-style-type: none">Privatization contract is fixed on lump-sum basis, to be renegotiated annually after the first 3 years
Gender Issues	<ul style="list-style-type: none">None	<ul style="list-style-type: none">Maternal and child care and family health care services benefit women	<ul style="list-style-type: none">Maternal and child care, and family health care services benefit women	<ul style="list-style-type: none">Maternal and child care and family health care services benefit women	<ul style="list-style-type: none">None	<ul style="list-style-type: none">Accommodation for female nurses	<ul style="list-style-type: none">None

Source: ADB Records and MOH.

	Subsectors						
	A.1. Training	A.2. Rural Health	A.3. Existing Hospitals	A.4. New Hospitals	A.5. Pharmacies	A.6. Hostels/ Quarters	A.7. Engineering Workshops
Environment Issues	<ul style="list-style-type: none">• None	<ul style="list-style-type: none">• Some of the services provided by the health facilities include environmental sanitation	<ul style="list-style-type: none">• Some hospitals benefited from sewerage systems, otherwise no environmental impact	<ul style="list-style-type: none">• None	<ul style="list-style-type: none">• None	<ul style="list-style-type: none">• None	<ul style="list-style-type: none">• None
Gestation and Sustainability	<ul style="list-style-type: none">• Remains dependent on Government funding	<ul style="list-style-type: none">• Remains dependent on Government funding	<ul style="list-style-type: none">• Remains dependent on Government funding	<ul style="list-style-type: none">• Remains dependent on Government funding	<ul style="list-style-type: none">• Remains dependent on Government funding	<ul style="list-style-type: none">• Remains dependent on Government funding	<ul style="list-style-type: none">• Depends on performance of private consortia

Source: ADB Records and MOH.

DESCRIPTION OF SUBPROJECTS VISITED BY THE POSTEVALUATION MISSION

1. The Postevaluation Mission (PEM) visited a number of subprojects financed by the sector loan. The total cost of these aggregated to about \$24.39 million (RM60.98 million), or approximately 48 percent of the entire Bank sector loan of \$50.73 million. Given the multiplicity of subprojects, it was not possible to visit all components and it was necessary to visit at least one from each subcomponent involving civil works to provide a good cross-section of the 90 subprojects included under the loan.

A. Health Education and Communication Center (HECC) of the Ministry of Health, Kuala Lumpur

2. HECC is located centrally in Kuala Lumpur. It was created as part of the Health Education Programme under the Fifth Malaysia Plan to influence attitudinal and behavioral changes for the betterment of health at the individual, family, and community levels through organized efforts at education and awareness campaigns. The Center produces health education materials and uses audiovisual equipment and actual material production to strengthen the Health Education Unit of the Ministry of Health. The functions of HECC include (i) developing and pretesting health education materials, (ii) designing and reproducing printed materials, (iii) establishing a print and nonprint media library and equipment servicing center, (iv) planning and evaluating health education needs, and (v) providing training in the use and care of health education materials and equipment.

3. HECC subproject, originally approved under World Bank Loan II in 1978, was finally designed by a team of private consultants in 1982. By the time the designs were completed in 1984, it became ineligible for financing under World Bank Loan II, which had already expired. The subproject was included under Bank Loan 815 with an estimated cost of \$3.07 million. Actual costs of RM3.67 million (\$1.47 million or 2.90 percent of the Bank loan) were incurred during implementation. The building was completed in October 1990 and since 1991 is the headquarters of the Health Education Unit.

4. The PEM visited HECC and witnessed the development of the Center into a focal point for health education services. HECC successfully launches annual educational campaigns such as on acquired immunodeficiency syndrome, food hygiene, healthy heart and diabetes. The PEM also noted the diversity of media used to promote health education, such as printed materials (leaflets, posters, stickers, booklets, flip charts); mass media activities (radio talks, television talks); nonprint media (films, slides, audiotapes, videotapes, overhead transparencies); computers (interactive quizzes); and research activities (surveys). The building complex, which the Bank funded, was adequately maintained although the PEM noted some seepage on the ground floor, which may indicate some weaknesses in technical design. The equipment that the Bank financed was also in good condition although some printing press equipment, on account of technological advances, are now only used as standby equipment in case of heavy work load and for simple reproduction activities. While the choice of themes for health campaigns were alleged to have been the product of an elaborate participative process, the PEM noted the need to strengthen linkages between HECC and the Medical Services Division, which monitors incidences of diseases, and the Information Technology Center, which handles the health management information system, in deciding on themes for its health education campaigns.

B. Pediatric Institute at the General Hospital Kuala Lumpur (GHKL)

5. The Pediatric Institute was envisioned to cater to the special health needs of the patients belonging to the 0 to less than 12-year age group, which is roughly one third of the population. The Pediatric Institute would deliver a comprehensive range of medical and surgical care, and would (i) serve as a National Referral Center on pediatric care for the whole country, (ii) conduct clinical research for pediatric diseases, and (iii) provide training for doctors in the field of pediatrics. The facility was built within the premises of the GHKL at an actual cost of RM32.24 million (\$12.90 million) compared with the appraisal estimate of RM30.5 million (\$12.20 million). This is roughly 25.40 percent of the total Bank loan.

6. The Pediatric Institute is the first and only pediatric institute in the country. The scope of its operations has been widened to include orthopedic surgery, considering that 60-70 percent of patients requiring plastic and reconstructive surgery were children. Prior to the creation of the Institute, mortality rates of children undergoing surgery were as high as 70 percent but have since declined to less than 10 percent after the Institute was created. The Institute has a capacity of only 450 beds and is unable to accommodate many child patients, who are then referred to the General Hospital. The operating budget of the Institute is shared with the General Hospital. Donations for some equipment and upgrading of facilities, such as a playground, came from private companies. At the time of the PEM visit, the physical condition of the facility seemed to have deteriorated compared to the Biomedical Engineering building. Leakage problems through the ceilings were evident, and are, according to the director of the Institute, attributed to poor architectural design (e.g., in a country receiving a large amount of rainfall, a pitched roof rather than a flat roof, which the Institute has, is ideal). It was noted that the architectural design of the Institute was prepared by a team of private consultants as early as the late 1970s, while the facility was commissioned in 1988. Other engineering problems relate to clogging of toilets and the central air-conditioning system. In addition to overcapacity, the Institute is currently faced with problems of personnel shortage and absence of a cost accounting system that will enable it to justify increases in budgetary allocations.

C. Biomedical Engineering Unit of GHKL

7. The workshops at the Engineering Department of the GHKL were built at a cost of RM1.35 million (\$0.54 million or 1.10 percent of the Bank loan). The primary role of the Engineering Department is to conduct maintenance of equipment and operation of hospital facilities. The main benefit derived from this subproject is that housing operations and maintenance staff in one central location can expeditiously respond to 15,000 to 20,000 complaints received annually. The workshops were divided in terms of function—mechanical or carpentry (relating to repairs of furniture); electrical (relating to repairs of air conditioning units and electrical appliances); and biomedical (relating to repairs of medical equipment). At the time of the PEM visit, the Engineering Department was preparing for its transfer to the private sector effective 1 January 1997. Seventy-six percent of the 100 repairers and seven engineers opted to join the private consortium, which will rent the facility from the General Hospital. As to whether the Engineering Workshop building will be the one rented out seemed questionable at the time of the PEM, as the director of the General Hospital would like to use the new building for other purposes and rent out an older facility.

D. Integrated Pharmacy Store at Hospital Tampin, Negeri Sembilan

8. The integrated district medical store in Hospital Tampin was one of the facilities established to implement the integrated concept of supplying pharmaceutical and health supply needs to health centers located within the same district and smaller neighboring districts. The subproject included the construction of a main storage building and a separate building for storage of inflammables, using standard plans and utilizing a suitable location within a hospital compound. Costing RM0.20 million (\$0.08 million), the integrated pharmacy store at Tampin was completed in 1989. It is run by the pharmacist of the District Hospital Tampin who reports to the state pharmacist. At the time of postevaluation, pharmaceutical services in Malaysia have already been turned over to the private sector—Remedi Pharmaceutical, a monopoly supplier of pharmaceutical supplies. Since the creation of the integrated facility, the turnover rate for medical supplies is now 4.70 or roughly equivalent to a holding stock of six months. Experience with Remedi shows supply delivery within 60 days although the pharmacist at Hospital Tampin is seeking improvements in frontloading orders for supplies to minimize the frequency of indenting and to cushion against inflation. Negotiations are ongoing with Remedi to increase the minimum lot required for ordering supplies. The integrated stores and adjacent facility for inflammables were in excellent condition when visited by the PEM. However, the location of the storage for inflammables was too close to adjacent wards, and had no fire prevention system.

E. Multipurpose School at Hospital Seremban

9. The Multipurpose School in Seremban is the offshoot of the Training and Manpower Development Division's program for conducting basic and postbasic education for professional, paramedical, and auxiliary medical personnel in accordance with its mandates for personnel planning (projecting health personnel needs); personnel production (emphasizing task-oriented or competency-based skills for paramedics); and personnel management (improving management expertise among managerial and supervisory staff within the health system). Located within the General Hospital Seremban complex, the facility was situated on vacant land adjacent to the existing Training School for Medical Assistants to take advantage of scale economies of the latter's kitchen and dining facilities. The Training School was built at a cost of RM2.12 million (about \$0.85 million or 1.70 percent of the total Bank loan) and became operational in 1993. The Training School, at the time of postevaluation, had 402 students enrolled in the various basic courses (mainly health inspection, and accident and emergency) and postbasic courses (mainly in orthopedic, pediatrics, and surgery). The courses, fees, allowances, and board and lodging are fully paid by the Ministry of Health, except for students/trainees from the private sector. The facility is fully utilized and kept in good shape as noted during the PEM visit to the classrooms, library, and hostel facilities.

F. Out-patient Department at General Hospital Kuching

10. The extension of the outpatient department (OPD) at the General Hospital Kuching was built as a separate block for RM12.57 million (\$5.03 million or about 10 percent of the entire Bank loan). OPD became operational in 1993, and has since received an average of about 660 outpatients a year. There are about 17 medical specialist services available in this three-story facility that houses specialist clinics. The PEM noticed the moldy conditions of damp walls caused by the air-conditioning system. Apparently, the operational budget of the OPD, which comes from the General Hospital in Kuching needs to allocate budget for repainting and adjusting the air-conditioning system.

G. District Hospital, Bau

11. The objective of this subproject was to provide an inpatient service in the form of a district health center (DHC) in Bau along with an appropriate complement of health staff and support services to meet the health needs of the population. DHC is comprised of the following blocks: (i) outpatient department/maternal and child health clinic and health office; (ii) operation theater, X-ray, laboratory, sterile supply; (iii) 3 wards with 68 beds (20 for the male ward, 26 for the female ward, and 22 for the maternity/children's ward); (iv) kitchen and laundry; (v) mortuary; (vi) standby generator, oxidation pond, and incinerator; and (vii) staff quarters. Built at a cost of RM7.91 million (\$3.16 million or 6.20 percent of the total Bank loan), DHC was completed in 1993. The PEM noted that the DHC was underutilized judging from its nearly empty wards. Most cases of hospitalization are for pregnancies and deliveries. The director of the DHC lamented the lack of medical specialist services and staff, attributing a strong tendency of patients to bypass it in favor of the General Hospital in Kuching. The PEM noted that at appraisal justification for the subproject may have been poor roads, heavy traffic, and a lack of bus services between Bau and Kuching. Yet, with economic growth, road infrastructure has since greatly improved and given the short distance of Bau and Kuching (32 km), patients would have no difficulty reaching the General Hospital in Kuching.

H. Rural Health Center Semarahan, Serian

12. The Rural Health Center Semarahan in Serian was completed in 1990 at a cost of RM0.38 million (\$0.15 million or 0.30 percent of the total Bank loan). The rural health clinic provides ambulatory curative care and a wide range of promotive and preventive services including maternal and child health, public health, nursing, and health education. It does not have facilities for inpatient services. Design of the rural health clinic is standardized with a minimum number of staff (usually from three to four nurses and paramedical staff). The Center had quite a number of patients at the time of the PEM visit although its facilities are not as well maintained as the other rural health center visited (not financed by the Bank loan) on the way to Serian. Again, staffing problems plague the rural health centers along with the lack of facilities, particularly ambulances for transporting patients.

**NUMBER AND PERCENTAGE OF HEALTH FACILITIES
UPGRADED UNDER THE PROJECT**

State	Rural Health Facilities				
	Total		Upgraded	Percentage	
	1985	1994		1985	1994
Perlis	7	7	1	14.30	14.30
Kedah	40	44	3	7.50	6.80
Penang	26	16	2	7.70	12.50
Perak	54	61	3	5.60	4.90
Selangor	38	42	1	2.60	2.40
Federal Territory					
Negeri Sembilan	25	30		0.00	0.00
Melaka	19	20	1	5.30	5.00
Johor	61	70	2	3.30	2.90
Pahang	40	52		0.00	0.00
Trengganu	25	33	2	8.00	6.10
Kelantan	38	49	2	5.30	4.10
Sabah	31	89	5	16.10	5.60
Sarawak	18	98	3	16.70	3.10
Total	422	611	25	5.90	4.10

State	General and District Hospitals				
	Total		Upgraded	Percentage	
	1985	1994		1985	1994
Perlis	1	1	1	100.00	100.00
Kedah	5	9	2	40.00	22.20
Penang	5	5	2	40.00	40.00
Perak	12	13	3	25.00	23.10
Selangor	5	5		0.00	0.00
Federal Territory	1	1	1	100.00	100.00
Negeri Sembilan	5	5	2	40.00	40.00
Melaka	2	2	1	50.00	50.00
Johor	9	9	2	22.20	22.20
Pahang	8	9	3	37.50	33.30
Trengganu	4	4	1	25.00	25.00
Kelantan	3	8	1	33.30	12.50
Sabah	15	16		0.00	0.00
Sarawak	15	18	6	40.00	33.30
Total	90	105	25	27.80	23.80

Source: ADB Records and MOH.

PART B: STATUS OF PROJECT COMPONENTS

Project Component	Condition at Project Start	Intended Improved Situation after the Project	Project Activities		Status at Postevaluation Mission
			Experts, Training, and Equipment	Counterpart Activities	
B.1. Personnel Planning	<ul style="list-style-type: none"> Limited to medical and paramedical care. Not related to future resources of Ministry of Health (MOH). Limited planning horizons. 	<ul style="list-style-type: none"> Personnel Planning Professionally undertaken so that supply meets demand in any given year. 	<ul style="list-style-type: none"> Consultant to assist in developing a human resource planning strategy and methodology. 	<ul style="list-style-type: none"> Select and assign staff to the existing post for human resource planning in the Manpower and Training Division. 	<ul style="list-style-type: none"> Consultancy implemented. MOH introduce new (1996) personnel planning methods that approximate those recommended by the consultant, however, without using the report.
B.2. Nursing Education	<ul style="list-style-type: none"> Curriculum under review by MOH, which should be used to introduce changes in evaluation system. High natural attrition level of trainers: 28 of 35 trained trainers did or due to retire. Teaching methodologies are inadequate. 	<ul style="list-style-type: none"> Pool of tutors and matrons for nursing education replenished. Improved teaching methodology training. Improved evaluation of nursing education. Revised four-year training program. 	<ul style="list-style-type: none"> Consultant in nursing education evaluation to assist in revising the overall training curriculum and to incorporate evaluation procedures. Send four senior nurses on diploma fellowships. 	<ul style="list-style-type: none"> Continue with curriculum revision process. Change basic tutor training program by using training of trainers materials being developed by Public Health Institute. 	<ul style="list-style-type: none"> Consultant deleted as a suitable consultant could not be found. Senior nurses sent on training retired within a few years after training or left to the private sector. So-called "echo" training is not structured. Its organization depends on the senior nurse concerned and the working environment. As a result, training of fellows does not necessarily have the desired "trickle-down" effect. Nurse training, as other courses undertaken by MOH, undergoes regular review every five years.
B.3 Health Service Management	<ul style="list-style-type: none"> Need to improve the managerial capability of rural/ community health supervisors 	<ul style="list-style-type: none"> Improved management skills of supervisory staff at rural and community hospitals Trained staff ready to contribute to organizing a course similar to what they attended and serve as trainers for other supervisors Expertise to develop and continually improve high quality, job-oriented management training 	<ul style="list-style-type: none"> Nine senior staff to be sent (three per year over three years) to 3-4 weeks course in management training with a focus on training methodology in health sector management 		<ul style="list-style-type: none"> Staff trained, however, changes in training methodologies as a result of fellowships provided by the Project cannot be traced.

Project Component	Condition at Project Start	Intended Improved Situation after the Project	Project Activities		Status at Postevaluation Mission
			Experts, Training, and Equipment	Counterpart Activities	
B.4.(a) Degree Training	<ul style="list-style-type: none"> Limited number of trained professionals in this field (only 14 Malaysians). No in-country training opportunity on this subject. 	<ul style="list-style-type: none"> Complement current Master in Public Health by a course focusing on hospital management. Increase current 20 hours of training to more than 20 hours. Train 10-12 students p.a. (anticipated demand for trained staff over next five years is 150). Four modules of 2-3 weeks training courses in: human resources, finance, planning cycles, and implementation, and an orientation course for medical superintendents and medical officers-in-charge. All medical superintendents and officers-in-charge will attend modules during their first two years of assignment. Modules will complement the administration manual. 	<ul style="list-style-type: none"> Continue international training of three persons per year in hospital management, preferably those doctors who are likely to become medical officer-in-charge of district hospitals. 	<ul style="list-style-type: none"> MOH continues to send medical personnel for international training. The Management Training Institute is being established under Loan No. 980-MAL:Third Health (Sector) Project. With assistance of the World Bank, training courses for basic managerial skills, process analysis (for efficiency improvements), and financial management are being provided. 	
B.4.(b) In-Service Training	<ul style="list-style-type: none"> Management training is currently placed in the Hospital Division, which is overburdened with this task. Courses would be more appropriately placed with Public Health Institute. Public Health Institute is understaffed. 	<ul style="list-style-type: none"> Consultant needed to develop and teach the first course to ensure relevance of content and teaching methodology. 	<ul style="list-style-type: none"> Courses are being given. 		
B.5. Quality Assurance	<ul style="list-style-type: none"> Quality Assurance (QA) program is just in the starting phase. More detailed design of the QA program is needed. Human resources may not be sufficient, might limit implementation, and require a phased approach. 	<ul style="list-style-type: none"> Detailed checklists for each functional area of hospitals, emphasizing those facilities, services, and organizational processes that affect quality of medical care. 	<ul style="list-style-type: none"> Consultant to assist in developing checklists and to advise on organizational and staff requirements for a basic QA program. 	<ul style="list-style-type: none"> The QA program is widely established with all hospitals and health services reporting using indicators set nationwide and at a state level. In addition, total quality management and quality circles have been introduced. The usefulness of QA indicators varies: a number of indicators are needed to compile annual statistics, rather than provide management with requisite information. In recognition of this weakness, MOH is moving to introduce indicators needed for decision-making. 	

Project Component	Condition at Project Start	Intended Improved Situation after the Project	Project Activities		Status at Postevaluation Mission
			Experts, Training, and Equipment	Counterpart Activities	
B.6. Health Management Information System (HMIS)	<ul style="list-style-type: none"> Data collected does not provide all the information needed for hospital management and decision making. Information is not presented in a usable format. HMIS development closely linked to development of management skills; once the latter improve, the earlier will require revision and become more sophisticated. Health system research system is and should continue to be integrated with HMIS and its development. 	<ul style="list-style-type: none"> Serve as a hospital management tool. Increased responsiveness of HMIS to managers' needs. 	<ul style="list-style-type: none"> Microcomputers for phase II and III of the automation program. Staff training in computer operations. Software modifications will be done centrally to ensure uniformity of data collections and compilation formats. Consultant to assist in hardware and software system design and specification. Consultant to improve operations research (health systems' research) that will feed into HMIS. Fellowships for short-term courses on operations research and HMIS operation. 	<ul style="list-style-type: none"> MOH is organizing a workshop during which HMIS will be reviewed and revised to increase its usefulness to managers. This activity should be repeated every 18 months until the end of Fifth Malaysia Plan. This activity should include an analysis of mechanisms for collecting, processing, and reporting information, and how this relates to service functions; decision-making responsibilities (now and in future); and information already available. Close linkage with the QA program will be ensured in the analysis. Priorities will be established for computerizing parts of HMIS. 	<ul style="list-style-type: none"> Computers were procured under the Project, however, are now obsolete. MOH is upgrading computer systems from its own resources. The consultant's short-term assignment was not long enough for task completion. MOH felt that no external assistance of this nature was needed. While HMIS has been developed to cover most divisions of MOH, users of the system still feel that their information requirements are not fully met. As a result, HMIS has not yet reached as full a potential as it could.
	<ul style="list-style-type: none"> Specific training course not available. Medical records personnel not familiar with medical terminology, diagnostic and disease classification, reports, and data and collection systems. 	<ul style="list-style-type: none"> Training course established including curriculum and training of trainers. As a result, qualification standards of medical records personnel improved. 	<ul style="list-style-type: none"> Consultant (4 person-months) to assist in developing the training course. Three international fellowships (12 person-months) for staff of Public Health Institute and HMIS to train them as trainers. 		<ul style="list-style-type: none"> Maintaining records is part of general nurse education. Now with computerization, computer training and records maintenance are combined. However, capacities to provide computer training are limited.
B.7. Medical Records Training					

Project Component	Condition at Project Start	Intended Improved Situation after the Project	Project Activities		Status at Postevaluation Mission
			Experts, Training, and Equipment	Counterpart Activities	
B.8. Biomedical Equipment Maintenance and Repair (M&R)	<ul style="list-style-type: none"> • MOH relying on private sector for maintenance and repair. • Repair time too long. • Cost-effectiveness to be improved if repairs done by MOH in-house capacity. • Supervision and monitoring of private contractors is poor and not uniform within MOH. • Weak in identifying and specifying M&R needs, supervise and better follow-up services, ensure better completion, reinstallation, calibration, and operation of serviced equipment. • Engineering Division's (MOH/ED) doing only 10-15 % of necessary repairs. • No uniform standards for repair works. • Understaffing and problems to recruit, train (have trained) and retain qualified technicians (50 % vacancy factor). 	<ul style="list-style-type: none"> • Improve supervision of contractors. • Improve actual M&R functions. • Shared service strategy: one service center will service several health facilities in a specified area (five such shared facilities will be developed under the Project). 	<ul style="list-style-type: none"> • Five shared service centers (see also part A.7.). • Consultants to assist in developing local training programs for technical assistants and technical level staff. • Fellowships for training of trainers. • Long- and short-term fellowships for biomedical equipment M&R. 		<ul style="list-style-type: none"> • Shortage of personnel remains an issue. The workshop in Kuala Lumpur operates with a 30 % vacancy favor. • With privatization as of 1 January 1997, staff is sent on training for upgrading, new computer systems will be introduced, and equipment in the facilities will be upgraded.

BENEFITS DERIVED FROM PART A SUBPROJECTS

	Subsectors						
	A.1. Training	A.2. Rural Health	A.3. Existing Hospitals	A.4. New Hospitals	A.5. Pharmacies	A.6. Hostels/Quarters	A.7. Engineering Workshops
Purpose	<ul style="list-style-type: none">• Increase output.• Improve training quality.• Meet needs for hostels created by rapid expansion of training.	<ul style="list-style-type: none">• Meet expanded demand.• Improve service coverage.	<ul style="list-style-type: none">• Increase efficiency.• Increase safety.• Facilitate higher standard of care and different kind of care.• Increase quantity of care.	<ul style="list-style-type: none">• Provide inpatient and outpatient services in an area where such services are not available.	<ul style="list-style-type: none">• Increase efficiency of medical store system.• Cut transportation costs for distribution of drugs and medical supplies.• Improve reliability of supply , and quality of storage; and reduce loss due to spoilage.	<ul style="list-style-type: none">• Meet demand for accommodation in remote areas.	<ul style="list-style-type: none">• Increase MOH's capacity to supervise maintenance and repairs done by private sector contractors.
Planned Benefits (described in Appraisal Report)	<ul style="list-style-type: none">• Improve training quality "somewhat."• Increase availability of selected paramedical cadres.• Facilitate exposure of junior doctors to practical experience.	<ul style="list-style-type: none">• Rural health services: underserved areas in East Malaysia or newly settled areas in Peninsular Malaysia, or where services are overburdened	<ul style="list-style-type: none">• Improve safety.• Upgrade technology.• Ease overcrowding.• Increase services to poorer areas.• Strengthen referral system.	<ul style="list-style-type: none">• Sibul hospital: specialist services to 700,000; outpatient load of 60,000 p.a.; over 18,000 inpatients p.a.• 2 new facilities: rural population of 120,000 in total who otherwise have no easy access to other than basic health care	<ul style="list-style-type: none">• Lower distribution costs.• Reduce losses due to wastage and spoilage.• Improve reliability of supply system.• Improve efficiency.• Lower costs.	<ul style="list-style-type: none">• Ease problems of posting staff to remote areas, in particular female staff.• Improve service quality, especially for maternal and child care.	<ul style="list-style-type: none">• Reduce the frequency and duration of breakdowns.• Decrease repair costs.• Increase equipment productivity.• Increase quality of service.
Actual Benefits (observed by Postevaluation Mission)	<ul style="list-style-type: none">• Increased number of trainees• Adequate teaching environment	<ul style="list-style-type: none">• Health services available to rural areas• Limited impact - only 5.9% of rural health services (1985) upgraded• Improvements in referral system not attained	<ul style="list-style-type: none">• Convenience improvements for staff and patients• Some technical improvements as a result of equipment delivered• Availability of special care through pediatrics institute• Audiovisual center is an important part of the Government's preventive health care program	<ul style="list-style-type: none">• Total population living within service area of the two hospitals is about 30% below appraisal estimate.• Access road to Kuching diverts patients from smaller hospitals in Bau and Belong which has a negative impact on their performance and the referral system.	<ul style="list-style-type: none">• Cost savings are not quantified and do not seem of any concern.• Central physical facilities for medical and nonmedical supplies allow professional storage and stock-keeping• Data to assess spoilage and wastage is not kept.	<ul style="list-style-type: none">• Improved living conditions attained.• Staffing problems are not overcome by this measure as they are outweighed by private sector forces.	<ul style="list-style-type: none">• Data to measure benefits is not kept so that changes cannot be assessed.• Privatization was in part justified on grounds that further efficiency improvements are needed.

HEALTH SERVICES PROVIDED BY SELECTED HEALTH CENTERS

Indicators	Health Centers						Total
	Lubok Merbau, Kedah	Kg. Chodai, Selangor	Macap Baru, Malacca	Cukai, Trengganu	Kedai Lalat, Kelantan	Kaingaran, Sabah	
Outpatient Attendance	14,074	8,639	7,066	3,151	23,566	29,433	85,929
New	8,438	5,913	4,610	2,371	17,150	19,317	57,799
Repeat	5,636	2,726	2,456	780	6,416	10,116	28,130
New outpatients as % of Total Population	86.86	69.70	65.88	40.78	55.79	482.93	130.70
Family Health Services	12,833	14,822	13,247	6,530	20,256	7,009	74,697
Antenatal	1,443	2,222	1,560	1,441	4,765	936	12,367
Postnatal	262	280	225	151	983	137	2,038
Infant	1,550	2,369	1,660	1,095	5,325	1,590	13,589
Toddler	981	2,902	2,190	940	2,306	1,772	11,091
Preschool Children	142	425	249	124	123	165	1,228
Deliveries	61	5	18	52	264	58	458
Home Visits	3,643	4,744	4,852	2,115	6,259	770	22,383
Family Planning	2,382	1,439	1,834	520	184	1,434	7,793
Family Planning Acceptors	2,322	323	598	87	37	98	3,465
PAP Smears	47	113	61	5	10	49	285
School Health Services							
Primary School (%)	100.00	100.00	100.00	100.00	100.00	100.00	
Secondary School (%)	100.00	100.00			100.00	100.00	
Standards I Pupils							
Examined by doctor (%)	96.00	91.70	89.20	96.30	97.50		
Examined by nurse (%)	100.00	93.10	95.50	98.00	99.90	81.00	
Standards VI Pupils							
Examined by doctor (%)	94.00	94.90	86.80				
Examined by nurse (%)	10.00	95.80	95.40	10.00	98.10	77.90	
Immunization Coverage Infants							
Total Live Births	173	282	200	142	808	137	1,742
Polio Coverage (%)	100.00	100.00	100.00	80.30	98.70	100.00	
Triple/double Antigen (%)	100.00	100.00	100.00	80.30	98.70	10.22	
Measles	193	287	244	304	646	161	
Tetanus Toxoid Immunization							
Estimated Pregnant Mothers	215	378	220	189	1,044	182	2,228
No. Given 2nd or Booster Dose	181	275	162	143	771	149	1,681
Coverage	84.00	72.80	73.60	75.70	73.90	81.57	
Dental Services	1,398	1,781	144	161	7,114		10,598
All Health Centers	1,075	209	144	161	3,834		5,423
School Dental Clinics	323	240					563
Mobile Clinic		1,332			3,280		4,612

Source: MOH Records.

Indicators	Health Centers						Total
	Lubok Merbau, Kedah	Kg. Chodai, Selangor	Macap Baru, Malacca	Cukai, Trengganu	Kedai Lalat, Kelantan	Kaingaran, Sabah	
Family Health Education	1,699	5,383	2,752	468	6,214	2,798	19,314
Health Talks							
Sessions	215	114	142	45	364	162	1,042
Attendees	1,284	2,500	2,190	353	4,543	2,516	13,386
Health Dialogue							
Sessions		105	4		8		117
Attendees		2,100	100		160		2,360
Demonstrations							
Sessions	32	42	16	10	105	12	217
Attendees	168	522	300	60	1,034	108	2,192
Environmental Sanitation							
Total Population	9,714	8,483	6,997	5,814	30,737	4,000	65,745
Houses Covered							
Safe water	552	1,557	1,155	n/a	2,881	n/a	6,145
Sanitary latrines	1,749	1,597	1,205	n/a	5,970	n/a	10,521
Sanitary sullage drainage		810	561	n/a	n/a	n/a	1,371
Refuse disposal	n/a	1,072	814	n/a	n/a	n/a	1,886
Population Covered							
Safe water (%)	25.38	97.10	95.00	n/a	47.00	n/a	
Sanitary latrines (%)	89.60	94.10	99.80	n/a	97.00	n/a	
Sanitary sullage drainage (%)		47.80	40.10	n/a	n/a	n/a	
Refuse disposal (%)		63.20	58.40	n/a	n/a	n/a	

Source: MOH Records.