Lao People's Democratic Republic

FY2024 Ex-Post Evaluation Report of Japanese Grant Aid Project

"Project for the Improvement of Setthathirath Hospital and Champasak Provincial Hospital"

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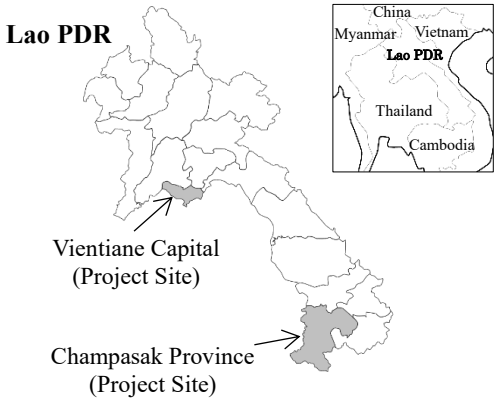
0. Summary

This project was implemented with the objective of improving the healthcare service delivery system and enhancing undergraduate and postgraduate clinical training for healthcare workers through the development of facilities and the provision of equipment at Setthathirath Hospital and the provision of equipment at Champasak Provincial Hospital, thereby contributing to the achievement of universal health coverage (UHC)[1] through the provision of higher-quality healthcare services. The project's objective was consistent with the health sector reform strategies and development plans of Lao PDR, the needs of the hospitals as top-referral and regional core hospitals, their roles as training institutions for healthcare professionals, and Japan's ODA policy. Although internal and external coherence were not confirmed, the project's relevance and coherence are high. All planned outputs were achieved, and the project cost remained within the plan; however, the project period significantly exceeded the plan. Therefore, efficiency of the project is moderately low. As a result of the project, the number of outpatients, diagnostic imaging examinations, and surgeries at Setthathirath Hospital mostly reached the target values, whereas the number of diagnostic imaging examinations at Champasak Provincial Hospital did not. On the other hand, improvements in the clinical training environment for healthcare workers were observed at both hospitals, and user satisfaction with the healthcare service delivery system was high. Strengthened infection prevention and control (IPC) measures through the provision of isolation rooms and synergistic effects with other projects were also confirmed. Accordingly, the project's effectiveness and impact are high. There are some issues in the institutional/ organizational, technical, and financial aspects including the status of operation and maintenance, and the prospects for improvement and resolution are low. Consequently, sustainability of the effects generated by the project is moderately low.

In light of the above, this project is evaluated to be satisfactory.

[1] A state that ensures all people have access to adequate quality services for health promotion, disease prevention, treatment, and rehabilitation without financial hardship.

1. Project Description



Project Locations
(Source: prepared by the external evaluator)

New Building of Setthathirath Hospital Constructed by the Project
(Photo taken by the external evaluator)[2]

1.1 Background

At the time of project planning, Lao PDR ranked 138th out of 188 countries in the Human Development Index[3] and was among the Southeast Asian countries where the development of the health sector lagged the most. Healthcare facilities faced serious problems, such as the deterioration of medical equipment and a shortage of human resources, leaving the overall health system in a vulnerable state.

Public healthcare facilities in Lao PDR are classified into four tiers: central hospitals, provincial hospitals, district hospitals, and health centers. Setthathirath Hospital, one of the targets of this project, is classified as a central hospital and has 250 beds. Another target, Champasak Provincial Hospital, has 380 beds and plays an important role as a hub hospital in the southern region (Champasak, Attapeu, Salavan, and Sekong provinces), which is distant from Vientiane Capital.

Setthathirath Hospital was developed through a grant aid project, "The Project for Construction of New Setthathirath Hospital," in 1999, but its facilities and equipment have deteriorated over time. Champasak Provincial Hospital was developed in 2002 with support from the World Bank, but it too faces problems with deteriorating equipment. Furthermore, although both hospitals serve as core educational healthcare institutions, they lacked the facilities and equipment necessary to fully fulfill that role.

1.2 Project Outline

The objective of this project is to improve the healthcare service delivery system and enhance undergraduate and postgraduate training for healthcare workers by developing facilities and providing equipment at Setthathirath Hospital and providing equipment at Champasak Provincial

[2] Other photos inserted in this report were also taken by the external evaluator during the field survey.
[3] United Nations Development Programme, *Human Development Report 2016*

Hospital, thereby contributing to the achievement of UHC through the provision of higher-quality healthcare services.

Grant Limit / Actual Grant Amount	1,940 million yen / 1,707 million yen
Exchange of Notes Date / Grant Agreement Date	February 2018 / February 2018
Executing Agency	Ministry of Health
Project Completion	December 2021
Target Area	Vientiane Capital and Champasak Province
Main Contractors	Construction: Wakachiku Construction Co., Ltd. Equipment: Toyota Tsusho Corporation
Main Consultants	Koei Research & Consulting Inc. and Nippon Koei Co., Ltd.
Preparatory Survey	January 2017 - January 2018
Related Projects	[Technical Cooperation] ・"Project for Medical Education and Research for the Setthathirath Hospital" (2007-2010) ・"Project for Sustainable Development of Human Resource for Health to Improve Maternal, Neonatal and Child Health Services" (2012-2016) ・"Project for Improving Quality of Health Care Services" (2016-2021) ・"Project for Sustainable Development and Quality Assurance of Health Care Professionals" (2018-2023) ・"The Project for Improving Quality of Healthcare Services and Financial Management of the Hospitals" (2022-2025) ・"Project for Developing Continuing Professional Development System for Nurses and Midwives" (2024-2027) ・Dispatch of Japan Overseas Cooperation Volunteers (JOCV) to Setthathirath Hospital (1999-2025, total of more than 10 healthcare professionals) ・Dispatch of JOCV to Champasak Provincial Hospital (2000-2025, total of 10 healthcare professionals) [Grant Aid] ・"The Project for Construction of New Setthathirath Hospital" (E/N date: April 1999) ・"The Project for Strengthening Health Service Network in Southern Provinces" (G/A date: March 2013) [Other International Organizations, Development Partners, etc.] ・Ministry of Health, Labour and Welfare, Japan: FY2023 Project to Promote International Expansion of Medical Technologies "Technical Training for Building up a Core Competence in Radiologic Technology and Safety Practices in Laos" (Implemented by the Japan Society of Radiological Technology) ・Korea Foundation for International Healthcare (KOFIH): "Strengthening Management System of Medical Equipment in Lao PDR Project"

2. Outline of the Evaluation Study

2.1 External Evaluator

Meguru Yamamoto, Foundation for Advanced Studies on International Development

2.2 Duration of Evaluation Study

This ex-post evaluation study was conducted with the following schedule.

Duration of the Study: October 2024 - February 2026

Duration of the Field Study: February 2 - February 14, 2025, and June 15 - June 20, 2025

3. Results of the Evaluation (Overall Rating: B[4])

3.1 Relevance/Coherence (Rating: ③[5])

3.1.1 Relevance (Rating: ③)

3.1.1.1 Consistency with the Development Plan of Lao PDR

At the time of project planning, the Government of Lao PDR prioritized improving healthcare services in the *8th Five-Year Health Sector Development Plan (2016-2020)*, which was formulated based on the *Health Sector Reform Strategy and Framework till 2025* (2013-2025). The plan also set a goal of enhancing the quality and quantity of human resources for health.

At the time of the ex-post evaluation, the *9th Five-Year Health Sector Development Plan (2021-2025)*, formulated based on the *Health Sector Reform Strategy 2021-2030*, included measures to strengthen the provision of quality healthcare services. These measures involved improving healthcare facilities, supplying medical equipment, and enhancing training programs for the development of human resources for health.

Therefore, this project has remained consistent with Lao PDR's health sector development policy from the time of the ex-ante evaluation to the time of the ex-post evaluation.

3.1.1.2 Consistency with the Development Needs of Lao PDR

At the time of project planning, although the number of outpatients at Setthathirath Hospital had increased significantly, the expansion of facilities to accommodate this growth was insufficient, and the deterioration of medical equipment had become a serious concern. Consequently, the hospital faced difficulties in providing adequate medical examinations, testing, and treatment services. In addition, the hospital served as a training site for students from the University of Health Sciences and for staff from provincial and district hospitals; however, due to a shortage of facilities and equipment, it was unable to maintain an appropriate environment for clinical training. Meanwhile, Champasak Provincial Hospital, as a core hospital in the southern region, where health indicators were relatively low, was experiencing

[4] A: Highly Satisfactory, B: Satisfactory, C: Partially Satisfactory, D: Unsatisfactory

[5] ④: Very High, ③: High, ②: Moderately Low, ①: Low

changing medical needs, including an increase in emergency transport cases, a rise in the number of surgeries, and greater complexity in surgical procedures. Due to the deterioration of its medical equipment, the hospital was unable to adequately respond to these demands. Furthermore, the hospital served as a training site for students from Champasak College of Health Science and for staff from district hospitals and health centers within the province; however, it too was unable to maintain a proper clinical training environment due to a shortage of medical equipment.[6]

At the time of the ex-post evaluation, Setthathirath Hospital had maintained its position in the top tier of the national referral system.[7] Moreover, because there were no significant changes in the proportion of patients by department among total outpatients between 2016 and 2024, it was considered that the hospital users' medical needs had not substantially changed.[8] The hospital also continued to serve as a core institution for medical education and training. Similarly, Champasak Provincial Hospital continued to play the role of a core hospital and a key educational institution for the southern region.[9]

Therefore, at the time of both the ex-ante evaluation and the ex-post evaluation, this project was consistent with the development needs of Lao PDR.

3.1.1.3 Appropriateness of the Project Plan and Approach

The project was planned and implemented based on the fundamental policy of securing local procurement routes, drawing on lessons learned from the ex-post evaluations of similar past projects. These evaluations highlighted the importance of ensuring that local procurement channels are secured not only for equipment itself but also for spare parts. Specifically, connections with the manufacturers' local agents were established, and it was confirmed that orders could be placed directly with the manufacturers online from within Lao PDR.[10] Thus, lessons learned from past similar projects were appropriately reflected in this project's planning and implementation.

3.1.2 Coherence (Rating: ②)

3.1.2.1 Consistency with Japan's ODA Policy

In the *Country Assistance Policy for the Lao People's Democratic Republic* (2012), the basic policy of Japan's assistance was to support the achievement of the Millennium Development Goals and the graduation of Lao PDR from the Least Developed Country status. Among the four priority areas identified, improvement of healthcare services was one. The policy

[6] Preparatory Survey Report
[7] Interview with the MoH
[8] Documents provided by Setthathirath Hospital
[9] Interview with the Champasak Province Health Office; Questionnaire responses from Champasak Provincial Hospital
[10] Interview with the project's main consultants

emphasized strengthening the health system, focusing on maternal and child health, through support for the development of human resources in the health sector and the improvement of access to healthcare services via the development of healthcare facilities.

Improvement of healthcare services was also identified as a key development issue in the *JICA Country Analysis Paper for Laos* (2015). The paper noted that to contribute to the achievement of UHC, it was necessary to provide integrated support that combines hardware and software interventions, linking the central and southern regions.

Therefore, this project was consistent with Japan's ODA policy toward Lao PDR at the time of the ex-ante evaluation.

3.1.2.2 Internal Coherence

At the time of the ex-ante evaluation, no specific coordination or collaboration with other JICA projects was planned, nor was such coordination or collaboration implemented during the project period.

3.1.2.3 External Coherence

In this project, no specific coordination or collaboration was planned or implemented with projects conducted by other Japanese organizations or concerning assistance provided by international organizations and other development partners.

Based on the above, the project was consistent with the development policies and needs of Lao PDR, and its design and approach were appropriate. It was also consistent with Japan's ODA policy. No particular elements were identified regarding internal and external coherence. Therefore, its relevance and coherence are high.

3.2 Efficiency (Rating: ②)

3.2.1 Project Outputs

(1) Facility and Equipment

The construction of facilities and procurement of equipment were carried out mostly as planned (Table 1). At Setthathirath Hospital, certain alterations to the outline design were made at the hospital's request during the detailed design phase. Likewise, at Champasak Provincial Hospital, partial modifications were implemented in response to damage caused by the flooding in the southern region in September 2019. All of these changes represented necessary and appropriate responses to local needs and conditions. The details of these changes are shown in Table 2.

Table 1. Outputs of the Japanese Side: Plan and Actual

Item	Plan	Actual
Setthathirath Hospital		
Facility	[New Building (ER/OPD Building)] 1st Floor: Emergency Department (ER); Radiology (Imaging Diagnosis) Department; Outpatient Departments (OPDs) for Pediatrics, Internal Medicine, Neurology, Cardiology, etc.; Administration Department 2nd Floor: OPDs for Dentistry, Ophthalmology, Otolaryngology (ENT), Pulmonology (Respiratory Infectious Diseases), Gastro-intestinal Medicine, Hematology and Oncology, Surgery Re-consultation, Allergy, etc.; Administration Department (Total floor area of the 1st and 2nd floors: 3,589 m²)	Mostly as planned (Total floor area of the 1st and 2nd floors: 3,579 m²)
	[Existing Building] Expansion of the Operating Room and associated wall renovations (Additional floor area: 34 m²)	As planned (Additional floor area: 34 m²)
Equip-ment	[New Building] CT scanner, ultrasound units, X-ray units, mammography unit, endoscopes, ventilators, defibrillator, etc. (Total: 51 items, 184 units)	Mostly as planned (Total: 54 items, 188 units)
	[Existing Building] Infusion pumps, autoclaves, operating tables, anesthesia unit, stretchers, etc. (Total: 54 items, 159 units)	Mostly as planned (Total: 53 items, 159 units)
Champasak Provincial Hospital		
Equip-ment	CT scanner, X-ray units, defibrillator, etc. (Total: 12 items, 22 units)	Mostly as planned (Total: 12 items, 22 units)

Source: Ex-ante Evaluation Paper; Preparatory Survey Report; Documents provided by JICA

Table 2. Changes from the Outline Design and the Reasons

Item	Changes	Reasons
Setthathirath Hospital		
Facility	Layout changes to the ER Entrance: (1) Installation of an ER reception; (2) Installation of a wall and door for the stretcher transport staff waiting area; (3) Relocation of the emergency triage counter	(1) To facilitate the registration process for patients and their families, to help ensure their privacy, and to secure storage of documents such as medical records. (2) Due to the 24-hour operation, a waiting room for stretcher transport staff was required. (3) To provide space for the ER reception.
Equip-ment	Addition of equipment for the ER treatment room in the new building (such as suction units, operating tables, operation lamps, and cabinets)	The initial plan was to transfer the equipment from the existing building's minor surgery room to the new building's ER treatment room. However, to meet the increased demand for surgical procedures, the equipment was retained in the existing building.
	Change of the probe specification for the obstetrics and gynecology ultrasound unit in the existing building	It was determined that a transvaginal probe would be more suitable for the intended purpose than the general probe originally planned.
	Change from one to two autoclaves, and from one to zero ethylene oxide gas sterilizer	Because the hospital was not sufficiently capable of managing an ethylene oxide gas sterilizer, its installation was omitted, and the number of autoclaves was increased instead.
Champasak Provincial Hospital		
Equip-ment	Addition of waterproofing work for the CT scan room	To prevent flood damage to the CT scanner.

Source: Documents provided by JICA; Interview with the project's main consultants

Photo 1. X-ray Fluoroscopy Unit Installed at Setthathirath Hospital

Photo 2. Ultrasound Unit Installed at Setthathirath Hospital

Photo 3. CT Scanner Installed at Champasak Provincial Hospital

(2) Technical Training and Consulting Services

Technical training sessions were held twice for staff of both hospitals on the operation of facilities and equipment, the maintenance and management of medical equipment based on daily inspection checklists, and planning for the procurement of consumables and replacement parts using equipment inventory ledgers. During the second session, following the installation of the CT scanner, guidance was also provided on the installation and operation of the Picture Archiving and Communication System (PACS), in addition to the above topics. In response to the outbreak of coronavirus disease (COVID-19), direct training sessions for healthcare staff, except those in the Radiology Department, were suspended.[11] The restrictions on the number of participants in in-person training and the exclusion of healthcare staff at high risk of infection were unavoidable measures during the COVID-19 situation, and the changes to the plan were deemed appropriate.

The consulting services for the detailed design and supervision of construction and procurement were implemented as planned.[12]

(3) Outputs of the Lao Side

The outputs implemented under the responsibility of the Lao side are shown in Table 3. Although the renovation work on the first floor of the north wing of the existing main hospital building had not been carried out due to budget constraints at Setthathirath Hospital, all other activities were implemented as planned. At the time of the ex-post evaluation, Setthathirath Hospital had applied to the Ministry of Health (MoH) for the budget to undertake the renovation work; however, the timing of implementation remained uncertain.[13]

Table 3. Outputs of the Lao side: Plan and Actual

	Plan	Actual
Before construction	Securing of the construction site and temporary work site	As planned
	Site preparation for construction, demolition of existing buildings, and removal of trees and other obstacles	As planned

[11] Documents provided by JICA
[12] Documents provided by JICA; Interview with the project's main consultants
[13] Interview with Setthathirath Hospital

	Plan	Actual
During construction	Installation of infrastructure (electricity, water supply, telephone lines, etc.) to the construction site	As planned
	Exterior works such as gates and landscaping	As planned
	Exemption and reimbursement of customs duties and domestic taxes related to the procurement of materials, equipment, and services, and the procedures related thereto	As planned
	Facilitation of prompt customs clearance and inland transportation procedures for materials and equipment	As planned
	Provision of necessary assistance for the entry and stay of Japanese nationals	As planned
	Procedures for obtaining various permits and approvals necessary for the implementation of the project	As planned
	Bearing all necessary expenses other than those borne by the Japanese side	As planned
After completion	Renovation work on the first floor of the north wing of the existing main hospital building	Not yet implemented
	Removal of deteriorated equipment	As planned

Source: Preparatory Survey Report; Interview with the project's main consultants; Questionnaire responses from MoH, Setthathirath Hospital, and Champasak Provincial Hospital

3.2.2 Project Inputs

3.2.2.1 Project Cost

The total planned project cost was 1,962 million yen (Japanese contribution: 1,940 million yen; Lao contribution: 22 million yen). The actual cost on the Japanese side amounted to 1,707 million yen, which was within the plan (ratio against the plan: 88%; Table 4). The main reason for this was that the successful bid price was approximately 75% of the estimated cost.[14] During project implementation, additional expenses were incurred due to the flooding in 2019 and the COVID-19 pandemic; however, these costs were covered within the remaining balance.[15] On the other hand, the actual cost on the Lao side could not be verified in detail. Therefore, the total actual project cost cannot be determined.

Table 4. Cost Borne by the Japanese Side: Plan and Actual

(Unit: million yen)

Item	Plan	Actual
Facility construction	1,059	903
Equipment procurement	612	506
Technical training (soft component)	6	6
Consulting services	200	229
Contingency	63	63
Total	1,940	1,707

Source: Documents provided by JICA; Documents provided by the project's main consultants

[14] Documents provided by JICA
[15] Interview with the project's main consultants

3.2.2.2 Project Period

The planned period from the signing of the Grant Agreement to the start of facility operation was 24 months (January 2018 - December 2019). In actuality, it took 47 months (February 2018 - December 2021). During the COVID-19 pandemic, the Lao government implemented a lockdown starting in March 2020 and imposed a curfew order in April 2020. Consequently, construction was suspended for seven months, from April 1 to October 31, 2020. When this suspension period is excluded, the recalculated project period was 40 months (ratio against the plan: 167%), which significantly exceeded the plan.

As shown in Table 5, the primary reason for the overall project delay was the substantial extension of the construction period. At the time of bidding, the completion deadline was set for March 2020,[16] but it was extended three times thereafter. The first extension was due to several issues at the early stage of construction: frequent pile-driving failures, delays in obtaining the authorization for payment and the permit for reinforcing bar importation, frequent turnover of facility engineers, and the absence of effective catch-up measures. These factors caused significant delays, and the deadline was extended from March to July 2020. The second extension was made because construction was temporarily suspended due to the COVID-19 pandemic, extending the deadline from July to October 2020. The third extension was based on the estimated period required to complete the remaining work after the resumption of construction, extending the deadline from October 2020 to October 2021. Construction resumed in November 2020. It took five months (November 2020 - March 2021) to restore the construction system, including the return of workers, repairs to existing and temporary structures, and reorganization of material procurement. Additionally, rework on defective sections took another four months (July 2021 - October 2021). Regarding equipment procurement, delivery of equipment to the new Setthathirath Hospital building had to wait until construction progress allowed access, meaning the extension of the period was also linked to construction delays.[17]

Although the impact of the COVID-19 pandemic was a major factor in the delay, another contributing factor may have been that the contractor submitted a significantly low bid to win the tender. Because the contractor had to subcontract to local companies within the bid amount, it became difficult to control site operations, which led to construction delays and quality issues.[18]

Technical training was conducted twice: The first session took place over a period of 0.6 months in December 2019, and the second over 0.6 months from November to December 2021, resulting in a total actual implementation period of 1.2 months.[19]

[16] Documents provided by JICA
[17] Documents provided by JICA; Questionnaire responses from the project's main consultants
[18] Documents provided by JICA
[19] Documents provided by JICA

Table 5. Project Period: Plan and Actual

Phase	Plan	Actual
G/A signing	January 2018	February 2018
Detailed design	January 2018 - June 2018 (6 months)	April 2018 - August 2018 (5 months)
Bidding	August 2018 (1 month)	October 2018 (1 month)
Facility construction	September 2018 - December 2019 (16 months)	January 2019 - October 2021 (34 months)
Equipment procurement	September 2018 - December 2019 (16 months)	January 2019 - October 2021 (34 months)
Technical training	1 month (After installation of equipment)	December 2019, November 2021 - December 2021 (3 months)

Source: Ex-ante Evaluation Paper; Preparatory Survey Report; Documents provided by JICA; Questionnaire responses from the project's main consultants

Based on the above, the project outputs were produced as planned. Although the project costs remained within the plan, the project period significantly exceeded the plan. Therefore, efficiency of the project is moderately low.

3.3 Effectiveness and Impacts[20] (Rating: ③)

3.3.1 Effectiveness

3.3.1.1 Quantitative Effects (Operation and Effect Indicators)

As quantitative effect indicators, "number of outpatients," "number of diagnostic imaging examinations," and "number of surgeries" were set for Setthathirath Hospital, whereas "number of diagnostic imaging examinations" was set for Champasak Provincial Hospital. For both hospitals, the "number of diagnostic imaging examinations" represents the three types of diagnostic imaging: CT, X-ray, and ultrasound. The baseline values, target values, and actual values of these quantitative effect indicators are shown in Table 6, and the breakdowns of diagnostic imaging examinations are shown in Table 7.

[20] When providing the sub-rating, Effectiveness and Impacts are to be considered together.

Table 6. Number of Outpatients, Diagnostic Imaging Examinations, and Surgeries at the Project Target Hospitals

Indicator	Baseline value 2016 (Value at the time of the ex-ante evaluation)	Target value 2024 3 years after completion (Value at the time of the ex-ante evaluation)	Actual value			
			2021 completion year	2022 1 year after completion	2023 2 years after completion	2024 3 years after completion (Ratio to the target value)
Setthathirath Hospital						
Number of outpatient (persons/year)	83,286 (93,455)	105,504 (111,590)	108,750	97,731	106,017	110,987 (105.2%)
Number of diagnostic imaging examinations (cases/year)	20,258 (25,733)	28,552 (33,465)	9,317	18,002	25,431	25,903 (90.7%)
Number of surgeries (cases/year)	1,773 (1,699)	2,246 (2,029)	1,458	1,856	2,106	2,021 (90.0%)
Champasak Provincial Hospital						
Number of diagnostic imaging examinations (cases/year)	34,007 (28,166)	40,361 (31,463)	25,500	29,028	27,626	27,104 (67.2%)

Source: (Baseline and actual values) Documents provided by each hospital; (Target values) Calculated by the external evaluator based on data provided by each hospital

Note 1: Some of the 2016 baseline values provided by each hospital at the time of the ex-post evaluation differed from the 2016 baseline values provided at the time of the ex-ante evaluation. The external evaluator confirmed with each hospital the reasons for these differences and the definitions of each dataset; however, no clear explanations were obtained. On the other hand, it was confirmed that the definitions of the 2016 baseline values provided at the time of the ex-post evaluation and those of the post-project actual data were the same. Therefore, the target values were recalculated based on the 2016 actual values (baseline values) provided at the time of the ex-post evaluation. The recalculated target values were derived using the calculation methods described in the Preparatory Survey Report. The specific methods are as follows:

- Setthathirath Hospital – Outpatient target value: The baseline value was increased annually by 3% (population growth rate of Vientiane Capital) up to three years after project completion.
- Setthathirath Hospital – Diagnostic imaging examination target value: The total of the target values for CT, X-ray, and ultrasound examinations.
  - CT examination target value: Based on the 2010 actual value of 290 cases (the year prior to when the CT scanner broke down before project implementation), increased annually by 16.6% (average growth rate estimated from the five years preceding 2010) up to three years after project completion.
  - X-ray examination target value: Outpatient target value × (X-ray examination baseline value ÷ Outpatient baseline value)
  - Ultrasound examination target value: Outpatient target value × (Ultrasound examination baseline value ÷ Outpatient baseline value)
- Setthathirath Hospital – Surgery target value: The baseline value was increased annually by 3% (the average annual growth rate of surgical cases from 2014 to 2016) up to three years after project completion.
- Champasak Provincial Hospital – Diagnostic imaging examination target value: The total of the target values for CT, X-ray, and ultrasound examinations.
  - CT examination target value: Estimated number of outpatients three years after project completion (76,984 persons) × (2015 actual CT examinations [1,036 cases] ÷ 2015 outpatients [52,466 persons]) *2015 was the year

prior to when the CT scanner broke down before project implementation.
- X-ray examination target value: Estimated number of outpatients three years after project completion (76,984 persons) × (X-ray examination baseline value ÷ Number of outpatients in 2016 [67,272 persons])
- Ultrasound examination target value: Estimated number of outpatients three years after project completion (76,984 persons) × (Ultrasound examination baseline value ÷ Number of outpatients in 2016 [67,272 persons])
- Regarding the estimated number of outpatients three years after project completion (76,984 persons) used in calculating the diagnostic imaging examination target value, this figure was obtained by increasing the number of outpatients in 2016 (67,272 persons) by 1.7% annually (the national population growth rate of Lao PDR) up to three years after project completion.

Note 2: In the ex-ante evaluation, the target year was set as 2022 (three years after project completion). However, since the project was completed in 2021, the target year was revised to 2024.

Table 7. Breakdowns of Diagnostic Imaging Examinations at the Project Target Hospitals

Indicator	Baseline value 2016 (Value at the time of the ex-ante evaluation)	Target value 2024 3 years after completion (Value at the time of the ex-ante evaluation)	Actual value			
			2021 completion year	2022 1 year after completion	2023 2 years after completion	2024 3 years after completion (Ratio to the target value)
Setthathirath Hospital						
Number of CT examinations (cases/year)	0 (0)	2,890 (2,127)	51	347	0	189 (6.5%)
Number of X-ray examinations (cases/year)	12,073 (12,037)	15,294 (14,935)	5,540	10,882	16,743	15,420 (100.8%)
Number of ultrasound examinations (cases/year)	8,185 (13,696)	10,369 (16,403)	3,726	6,773	8,688	10,294 (99.3%)
Champasak Provincial Hospital						
Number of CT examinations (cases/year)	66 (66)	1,520 (1,379)	1,127	1,566	1,158	1,392 (91.6%)
Number of X-ray examinations (cases/year)	15,695 (9,105)	17,961 (10,081)	10,600	10,709	11,165	10,233 (57.0%)
Number of ultrasound examinations (cases/year)	18,246 (18,995)	20,880 (20,003)	13,773	16,753	15,303	15,479 (74.1%)

Source: (Baseline and actual values) Documents provided by each hospital; (Target values) Calculated by the external evaluator based on data provided by each hospital

Note: Same as Table 6.

(1) Number of Outpatients at Setthathirath Hospital

The number of outpatients at Setthathirath Hospital reached the target value. Although the number of outpatients increased steadily from the baseline year of 2016 through 2019, it declined between 2020 and 2022. This was because the hospital had a limited number of

isolation rooms for admitting COVID-19 patients and restricted patient admissions during the pandemic period, as examinations and surgeries involving physical contact were minimized as part of IPC measures.[21] Although the number of outpatients has not yet returned to the pre-pandemic level, it has been showing an upward trend since 2023.

(2) Number of Diagnostic Imaging Examinations at Setthathirath Hospital

The number of diagnostic imaging examinations at Setthathirath Hospital reached 90.7% of the target value. By type of examination, the number of X-ray examinations reached the target, and the number of ultrasound examinations almost reached it. The low figures for both examinations in 2021 were due to restrictions on examinations involving physical contact as part of the hospital's COVID-19 control measures.[22] The number of CT examinations, on the other hand, fell far below the target, mainly because the CT scanner broke down in June 2022 and was not operational until September 2024, as it took considerable time to coordinate the repair responsibilities with the manufacturer.[23] Furthermore, although the hospital conducted a public promotion campaign soon after the CT scanner was introduced in 2022, no such campaign was implemented after the scanner was restored. As a result, many patients who had used other hospitals during the breakdown period did not return, and the number of CT examinations after resumption did not increase significantly.[24]

(3) Number of Surgeries at Setthathirath Hospital

The number of surgeries at Setthathirath Hospital also reached 90.0% of the target value. The reason for the decline in the number of surgeries in 2021 compared to before the project was the hospital's decision to limit the number of surgical patients to the minimum necessary due to the COVID-19 outbreak. The modest increase in the number of surgeries in 2024 was attributed in part to malfunctions in some surgical equipment. As the manufacturer had discontinued the production of spare parts, the equipment remained unrepaired (details on the maintenance status of the equipment provided under this project are described later). In addition, Mahosot Hospital and Mittaphab Hospital, both of which are central hospitals[25] like Setthathirath Hospital, have introduced new surgical equipment, and it is possible that an increasing number of patients prefer to undergo surgery at these hospitals.[26] All three hospitals

[21] Interview with Setthathirath Hospital
[22] Interview with Setthathirath Hospital
[23] The breakdown of the CT scanner was not caused by a mechanical defect but by the intrusion of rats; therefore, it was initially determined to be outside the scope of the manufacturer's warranty. However, after lengthy negotiations, the repair was conducted under the maintenance contract and was completed in July 2024. The costs for the maintenance contracts for the second and third years after the expiration of the manufacturer's warranty were covered by this project, and that month marked the final month of the contract period.
[24] Interview with Setthathirath Hospital
[25] The central hospitals serve as top-referral and tertiary healthcare facilities within the public healthcare system of Lao PDR. There are five central hospitals in the country, all located in Vientiane Capital.
[26] Interview with Setthathirath Hospital

are located in Vientiane Capital, with Mahosot Hospital approximately 20 minutes by car from Setthathirath Hospital and Mittaphab Hospital about 30 minutes away.

(4) Number of Diagnostic Imaging Examinations at Champasak Provincial Hospital

The number of diagnostic imaging examinations at Champasak Provincial Hospital reached only 67.2% of the target value. By type of examination, the numbers of CT, X-ray, and ultrasound examinations all fell short of their respective targets. The number of outpatients at the hospital has shown a declining trend since 2022, which is considered to have contributed to the stagnation in the number of diagnostic imaging examinations. One factor behind the decrease in outpatients is believed to be the outflow of patients to nearby healthcare facilities.

Three healthcare facilities in the vicinity of Champasak Provincial Hospital are equipped with CT scanners. The Provincial Military Hospital introduced CT examinations in 2019, and the New Life Pakse Hospital and the Pakse Thanghoa International Hospital, both private institutions, introduced CT examinations in 2018 and 2017, respectively. All of these facilities were developed during the time of project planning and implementation. Although the Provincial Military Hospital is not covered by public health insurance, it is open to the general public and not limited to military personnel.[27] The fees for diagnostic imaging examinations, except for CT examinations, are roughly the same as those at Champasak Provincial Hospital (Table 8). The two private hospitals are not covered by public health insurance, either, and their diagnostic imaging fees are higher than those of Champasak Provincial Hospital (Table 8). However, their prices are still considered affordable even for patients who are not in the high-income group.[28] Therefore, there appears to be no significant difference in diagnostic imaging examination fees between Champasak Provincial Hospital and the three surrounding healthcare facilities, and it is reasonably possible that some patients have been diverted to these nearby facilities.

Table 8. Patient Costs for Diagnostic Imaging Examinations at Healthcare Facilities in Champasak Province

(Unit: Laotian kip)

	CT examination	X-ray examination	Ultrasound examination
Champasak Provincial Hospital	(1) 500,000 (2) 1,000,000	80,000	50,000
Provincial Military Hospital	1,000,000	80,000	50,000
New Life Pakse Hospital	850,000	120,000	120,000
Pakse Thanghoa International Hospital	Head 1,000,000 Abdomen 1,500,000	90,000	90,000

Source: Documents provided by each hospital

Note: At Champasak Provincial Hospital, there are two types of fee settings for CT examinations: (1) When a CT

[27] Interview with Provincial Military Hospital
[28] Interview with New Life Pakse Hospital

examination is conducted in addition to an X-ray examination for the same injury or illness, the CT examination fee is 500,000 kip, which is charged on top of the X-ray examination fee; (2) When a patient undergoes only a CT examination, the fee is 1,000,000 kip. It should be noted that the application of the fee (1) requires verification of identity, such as presentation of an ID card. If the patient fails to present identification at the time of examination, the fee (2) is applied.

Whereas the number of outpatients at the Provincial Military Hospital and the New Life Pakse Hospital has shown an upward trend, the number of outpatients at Champasak Provincial Hospital remains significantly higher than at these two facilities (Table 9).[29] Therefore, there is sufficient justification for equipping the public Champasak Provincial Hospital, which receives a large number of patients from southern regions and is expected to provide advanced healthcare services, with diagnostic imaging equipment, including a CT scanner.

Table 9. Number of Outpatients at Healthcare Facilities Equipped with CT Scanners in Champasak Province

(Unit: persons/year)

	2020	2021	2022	2023	2024
Champasak Provincial Hospital	84,772	72,383	79,224	62,173	46,345
Provincial Military Hospital	18,782	19,080	19,406	19,800	20,519
New Life Pakse Hospital	4,966	5,460	5,974	6,205	6,693

Source: Documents provided by each hospital

Note: The number of outpatients at Champasak Provincial Hospital and the Provincial Military Hospital includes both regular outpatient consultations (including internal medicine, surgery, pediatrics, etc.) and ER. In contrast, the New Life Pakse Hospital does not provide ER services; therefore, the figures represent only regular outpatient consultations.

Box 1: Needs for Cancer Prevention and Early Detection through Mammography and X-ray Fluoroscopy

Through this project, mammography and X-ray fluoroscopy units were newly introduced at Setthathirath Hospital. However, the utilization of these devices has been lower than initially anticipated.[30] One of the underlying reasons is the low public awareness of preventive health examinations, such as medical checkups and cancer screening.[31] In Lao PDR, the most common cancer is liver cancer, followed by breast cancer, lung cancer, colorectal cancer, and stomach cancer.[32] The number of deaths from all cancers was 6,215 in 2022, and this number is projected to nearly double to about 11,800 by 2040.[33] Given this trend, the need for cancer prevention and early detection is expected to increase in the coming years.

[29] Data on the number of outpatients at Pakse Thanghoa International Hospital could not be obtained.
[30] Documents provided by Setthathirath Hospital
[31] Interview with the project's main consultants
[32] International Agency for Research on Cancer, *Global Cancer Observatory: Cancer Today*, https://gco.iarc.who.int/today (Accessed on July 17, 2025)
[33] International Atomic Energy Agency, *Prioritizing Cancer Care: IAEA, IARC and WHO Support Lao PDR*, https://www.iaea.org/newscenter/news/prioritizing-cancer-care-iaea-iarc-and-who-support-lao-pdr#:~:text=The%20occurrence%20of%20cancer%20cases,a%20priority%20in%20the%20country (Accessed on July 17, 2025)

3.3.1.2 Qualitative Effects (Other Effects)

At the time of project planning, qualitative effects such as the improvement of clinical training environments at the project target hospitals were expected. At Setthathirath Hospital, one of the main challenges was the limited space available for clinical training. For example, because there was no dedicated observation space in the clinical areas, trainees were unable to closely observe medical procedures such as blood collection or monitor operation. In addition, when trainees gathered around patients' bedsides, their presence sometimes hindered the work of healthcare staff in the surrounding area. Furthermore, a common issue shared by both Setthathirath Hospital and Champasak Provincial Hospital was the aging and shortage of medical equipment; these hospitals had limited opportunities to provide high-quality clinical education through practical training. The ex-post evaluation examined the extent to which these issues had been addressed.

Table 10. Aspects of the Clinical Training Environment at Project Target Hospitals that Satisfied Trainees and Instructors

Item	Aspects of the clinical training environment that respondents are satisfied with (Respondent information in parentheses: trainee/instructor; profession, affiliation)
Setthathirath Hospital	
Space	At times, it is somewhat difficult to observe the procedures performed by the staff, but in most cases, observation can be carried out without difficulty. (Trainee; radiological technology student, Radiology Department)
	Endoscopic observations are conducted in groups of two to three trainees, so they are generally able to observe without difficulty. When performing endoscopic procedures, I do so under the supervision of senior doctors. (Trainee; junior doctor, Endoscopy Department)
	I think there is sufficient space for clinical training in this department. (Trainee; nurse, ER)
	The clinical training environment is good. It is more spacious than when training was conducted in the existing building. Although it becomes crowded with about 20 trainees, there is sufficient space when there are around 10. (Instructor; radiological technologist, Radiology Department)
	Clinical training has continued to be conducted in the existing building. Following the construction of the new building, the space constraints in the existing building have also been alleviated. (Instructor; nurse, Nursing Department)
Ventilation, air conditioning, and lighting	(All respondents answered "Good" or "No problem" regarding ventilation, air conditioning, and lighting in the new building.)
	During the daytime, the outpatient consultation rooms are sufficiently bright with natural light from the windows. (Instructor; doctor, Internal Medicine OPD)
Medical equipment	Being able to use medical equipment during training is effective for improving my technical skills. (Trainee; junior doctor, Endoscopy Department)
	Equipment such as CT scanners and X-ray units has been beneficial for students' learning. (Instructor; radiological technologist, Radiology Department)
	Participating in patient care using real medical equipment offers valuable practical experience for students. (Instructor; doctor, ER)
Champasak Provincial Hospital	
Medical equipment	What I learned through the training at Champasak Provincial Hospital has been useful for my work at the district hospital where I am assigned. (Trainee; assistant doctor at a district hospital, Radiology Department)

Item	Aspects of the clinical training environment that respondents are satisfied with (Respondent information in parentheses: trainee/instructor; profession, affiliation)
	Compared with district hospitals and other facilities, this hospital is well equipped with modern medical devices, and I feel that it provides a privileged environment. (Trainee; junior doctor, ICU)
	I have learned a great deal about handling X-ray equipment and reading X-ray images. (Trainee; junior doctor, Radiology Department)
	Since this hospital is well equipped with medical devices, it provides a good environment for clinical training. (Instructor; anesthesiologist, Operating Room)
	It is effective because I can provide instruction while actually using the equipment. (Instructor; doctor, Radiology Department)
	These medical devices such as bedside monitors, ventilators, infusion pumps, and defibrillators* are essential for training in the ICU. (Instructor; doctor, ICU) *Among these, bedside monitors and ventilators were provided under this project.

Source: Interviews with trainees and instructors at Setthathirath Hospital and Champasak Provincial Hospital
Note: Unless otherwise specified as referring to the "existing building," comments on the clinical training space at Setthathirath Hospital refer to the new building. Interviews were also conducted at the Coronary Care Unit (CCU) of Champasak Provincial Hospital; however, since the medical equipment provided under this project was not used for clinical training in the CCU, the interview results from that unit are not included in this table.

At Setthathirath Hospital, interviews were conducted with six trainees (including students and healthcare staff) and six instructors in the Radiology Department, Endoscopy Department, Emergency Department (ER), Internal Medicine Outpatient Department (OPD), and the Nursing Department. At Champasak Provincial Hospital, interviews were conducted with eleven trainees (including students and healthcare staff) and five instructors in the four departments in which medical equipment was provided under this project: the Radiology Department, Operating Room, Intensive Care Unit (ICU), and Coronary Care Unit (CCU). As shown in Table 10, following the completion of the project, improvements in the clinical training spaces and the ventilation, air conditioning, and lighting in the new building at Setthathirath Hospital contributed to greater satisfaction with the clinical training environment. In addition, at both hospitals, the medical equipment provided through the project was recognized as contributing to more effective learning.

Photo 4. Clinical Training at the Radiology Department of Setthathirath Hospital

During the field survey for the ex-post evaluation, clinical training for radiological technology students from the University of Health Sciences was conducted at Setthathirath Hospital. Under the guidance and supervision of an instructor from the hospital staff, a group of two to three students performed examinations using an X-ray fluoroscopy unit while another group of two to three students observed the procedure. Several other staff members were also working on different tasks in the same room without any interference. In this way, the medical equipment was effectively utilized for clinical training, and both the training and routine operations were carried out in the same space without hindering each other.

Based on the above, it can be concluded that the qualitative effects of improving the clinical training environment at both hospitals have been realized.

3.3.2 Impacts

3.3.2.1 Intended Impacts

In line with the project's objective of contributing to the achievement of UHC through the provision of higher-quality healthcare services, interviews were conducted with hospital users of the project target hospitals regarding the easing of congestion within the hospital, the resolution of interruptions and delays in healthcare services caused by equipment deficiencies, and satisfaction with the advanced imaging examinations and surgical procedures that had become available.

At Setthathirath Hospital, interviews were conducted with 21 hospital users; many respondents expressed general satisfaction with the easing of congestion within the hospital. Specific points of satisfaction included the following:

- The new building provides spacious, open areas for patients.
- The installation of an information desk at the building entrance, along with clear signage throughout the hospital, has improved patient flow.
- Waiting time before consultations have shortened.
- Patients felt that doctors were spending more time on each consultation.[34]

On the other hand, some respondents expressed dissatisfaction with long waiting time at the hospital pharmacy.

Respondents did not provide specific comments regarding the resolution of service interruptions and delays caused by equipment deficiencies or satisfaction with the newly available advanced imaging examinations and surgical procedures. However, the hospital reported that the ability to once again provide CT examinations, which had not been available since 2010, along with the introduction of mammography and fluoroscopic X-ray examinations, has contributed to improved patient satisfaction.

[34] Before the construction of the new building, there was a shortage of outpatient consultation rooms, and multiple departments had to coordinate their consultation schedules and share the rooms. As a result, consultation hours for certain departments were limited, patients tended to concentrate at specific times, waiting times before consultation became longer, and the time doctors could spend with each patient was shortened. Through this project, the number of outpatient consultation rooms increased, allowing each department to secure sufficient consultation days. Consequently, patient visits became more evenly distributed, congestion was eased, and doctors were able to spend more time with each patient.

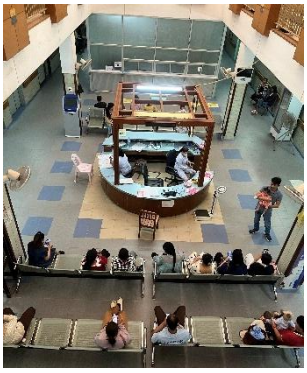


Photo 5. Patient Waiting Area in the Existing Building of Setthathirath Hospital

Photo 6. Patient Waiting Area in the New Building of Setthathirath Hospital

Photo 7. Entrance Area of the New Building at Setthathirath Hospital (with the information desk on the right and the reception on the left)

At Champasak Provincial Hospital, interviews were conducted with 20 hospital users in four departments in which medical equipment was installed under the project (Radiology, Operating Room, ICU, and CCU) to assess satisfaction regarding the resolution of service interruptions and delays caused by equipment deficiencies as well as the availability of advanced imaging examinations and surgical procedures enabled by the new equipment. Because no facility development was implemented at this hospital, the easing of congestion within the hospital was not assessed.

The interviews revealed that most hospital users were mostly satisfied with the services provided. The main reasons cited for their satisfaction included the appropriate and attentive attitudes of healthcare staff, as represented by statements such as “healthcare staff give sufficient explanations” and “doctors provide thorough examinations.” In addition, the presence of specialist doctors and the availability of well-equipped medical devices, compared with other provincial hospitals, were also mentioned as factors contributing to higher satisfaction. Some users made more specific statements—for example, “Sekong Provincial Hospital told me that surgery for cholecystitis could not be performed there, and I was referred here,” and “Another hospital recommended that I come here for treatment.”

In summary, it was confirmed that this project contributed to easing congestion within the hospital and improving user satisfaction by enabling advanced imaging examinations and surgical procedures that had been difficult to perform in other hospitals. These improvements have enabled the provision of higher-quality healthcare services, indicating that the project’s intended impacts have been realized.

3.3.2.2 Other Positive and Negative Impacts

(1) Impacts on the Environment

This project was classified as Category C based on the *JICA Guidelines for Environmental and Social Considerations* (April 2010) for sensitive sectors, as it was determined that the

project would have minimal adverse impact on the environment.

During project implementation, dust from the construction site dispersed toward the nursing college adjacent to Setthathirath Hospital. However, no damage occurred because countermeasures were taken, such as the installation of protective covers. Apart from this, no negative environmental impacts were observed.

(2) Resettlement and Land Acquisition

No land acquisition or resettlement was involved in this project.

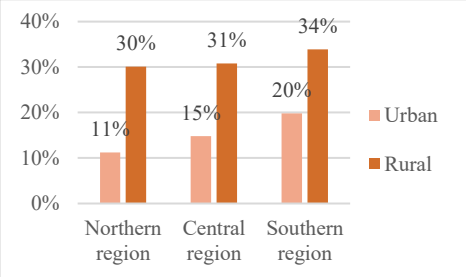
(3) Gender Equality

Interviews were conducted with 12 staff members (including eight women) and 21 hospital users (including 12 women) at Setthathirath Hospital. No concerns or complaints were raised regarding the adequacy of privacy and safety in hospital facilities, such as waiting areas, consultation rooms, examination rooms, inpatient wards, toilets, changing rooms, shower rooms, staff lounges, or indoor and outdoor lighting. Regarding the nighttime environment, respondents stated that they felt "safe" and "not afraid." The main reasons cited included "the presence of ample lighting both inside and outside the building," "staff being on duty at all times within the hospital, particularly in the ER," and "the deployment of security guards." Accordingly, it was confirmed that the facilities at Setthathirath Hospital appropriately ensure the privacy and safety of both staff and hospital users and that no negative gender-related impacts were observed.

In addition, regarding the medical equipment installed at Champasak Provincial Hospital, neither positive nor negative gender-related impacts were identified.

(4) Marginalized People

At the time of project planning, the poverty rate in the southern region, where Champasak Provincial Hospital is located, was higher than in the northern and central regions (Figure 1). The improvement of Champasak Provincial Hospital was therefore expected to enhance health services benefiting the poor population in the southern region. During the ex-post evaluation, the number of patients at Champasak Provincial Hospital who were exempted from out-of-pocket payments due to poverty was



Source: Prepared based on *Lao PDR 2015 Census-Based Poverty Map* (World Bank and other organizations)

Figure 1. Regional Poverty Rates in Lao PDR (2015)

confirmed; only three such exemption cases[35] occurred between 2015 and 2024.[36] A similar confirmation was made at Setthathirath Hospital, where, in 2024, exemption cases due to poverty accounted for only 0.05% of all patients and showed a declining trend (Table 11).

On the other hand, since the introduction of the National Health Insurance (NHI) scheme in 2016, Lao PDR has been undergoing a transitional phase in its health insurance system. In addition to the conventional exemption from out-of-pocket payments, other support and relief measures have been developed.[37] Therefore, the status of out-of-pocket payment exemptions at the project target hospitals mentioned above alone did not allow for an accurate understanding of changes in access to health services among the poor.

Accordingly, no positive or negative impacts on marginalized people were identified connected to this project.

Table 11. Number and Total Amount of Out-of-Pocket Payment Exemptions Due to Poverty at Setthathirath Hospital

	2016	2022	2023	2024
Number of payment exemption cases (cases)	318	136	55	61
Ratio to total number of patients (%)	0.3	0.1	0.04	0.05
Total amount of payment exemptions (Laotian kip)	30,000,000	33,000,000	8,000,000	22,000,000

Source: Documents provided by Setthathirath Hospital

Note: The total number of patients used to calculate the ratio includes both outpatients and inpatients.

(5) Social Systems and Norms, People's Well-being and Human Rights, and Other Unintended Positive / Negative Impacts

Interviews were conducted with 21 hospital users at Setthathirath Hospital, during which respondents were asked about aspects of the hospital with which they were satisfied. Three respondents stated that "doctors now spend more time and provide more attentive examinations than before (the project)," and seven respondents said that "staff at the information desk and reception nurses are kind and provide helpful explanations." These responses can be attributed to the easing of outpatient congestion following the construction of the new building. The reduction in congestion has allowed doctors to spend more time with each patient and given staff at the information desk and nurses more time to provide courteous assistance. In addition, the establishment of the information desk made guidance services, already available before the project, more accessible to users, which may also have contributed to these improvements.

[35] The system for exemption from out-of-pocket payments due to poverty is based on a registration process. Individuals apply to the local government in their place of residence, and once registered, a certificate is issued. By presenting this certificate when visiting a hospital, patients can receive an exemption from out-of-pocket payments.

[36] Questionnaire responses from Champasak Provincial Hospital

[37] Questionnaire responses from the National Health Insurance Bureau

Another impact observed was the enhancement of IPC at Setthathirath Hospital. The installation of isolation rooms in the ER enabled the hospital to safely receive infectious disease patients.[38]

At Champasak Provincial Hospital, no similar impacts were identified, as no facility construction was implemented under this project.

Furthermore, as the facilities and equipment provided under this project have been utilized in other projects, the following effects have been confirmed. Under the JICA technical cooperation "Project for Sustainable Development and Quality Assurance of Health Care Professionals" (2018-2023), which supported the establishment of a professional licensing and registration system for healthcare professionals, the professional internship program for nurses was developed and introduced. The new building and medical equipment at Setthathirath Hospital were utilized in this training program, contributing to the achievement of training effects.[39] The Radiology Department of Setthathirath Hospital participated in the "Technical Training for Building up a Core Competence in Radiologic Technology and Safety Practices in Laos" (implemented by the Japan Society of Radiological Technology) under the "FY2023 Project to Promote International Expansion of Medical Technologies" of the Ministry of Health, Labour and Welfare, Japan. The radiology facilities and equipment of the new building were effectively utilized in this training, contributing to the improvement of quality and safety management of radiological equipment.[40] At Champasak Provincial Hospital, support and reinforcement of routine inspection and cleaning of medical equipment by ICU nurses were carried out as part of the activities of a Japan Overseas Cooperation Volunteer (JOCV) assigned to the hospital in February 2019.[41] Among the medical devices involved were bedside monitors and ventilators provided under this project, and it was confirmed that these devices were being utilized in the course of these activities.

As a result of the project, the number of outpatients, diagnostic imaging examinations, and surgeries at Setthathirath Hospital mostly achieved the target levels, whereas the number of diagnostic imaging examinations at Champasak Provincial Hospital did not reach its target. On the other hand, improvements were observed in the clinical training environment for undergraduate and postgraduate training of healthcare workers at both hospitals. Hospital users evaluated both hospitals' healthcare service delivery systems favorably. The installation of isolation rooms at Setthathirath Hospital strengthened IPC measures. The facilities and equipment provided under this project were also effectively utilized in other related projects, producing

[38] Interview with Setthathirath Hospital
[39] Interview with Setthathirath Hospital
[40] Ministry of Health, Labour and Welfare, Japan, *Report on FY2023 Project to Promote International Expansion of Medical Technologies*
[41] Interview with the JOCV

synergistic effects. No negative impacts were observed in relation to the environment, society, gender, or marginalized people.

Accordingly, this project has mostly achieved its objective. Therefore, effectiveness and impacts of the project are high.

Box 2: Management Framework for Medical Equipment in the ICU and Support Activities by the JOCV

In Champasak Provincial Hospital's ICU, a structured practice of routine inspection and cleaning of medical equipment has been introduced through a responsibility-based approach. Doctors and nurses in the ICU are assigned specific equipment for which they are responsible, and each person in charge conducts inspection and cleaning of the assigned equipment. After each inspection, the results are recorded in the equipment maintenance logbook distributed by the MoH. Although this initiative had already been implemented prior to the assignment of a JOCV nurse in February 2019, it was further strengthened through her activities. As part of the hospital's Patient Safety Committee activities, the JOCV worked with nurses in all departments to identify and address issues related to patient safety. In the ICU, the cleaning of patient rooms and storage shelves was promoted, during which the existing inspection and cleaning of medical equipment were recognized as valuable practices. By being positioned as an activity under the committee, the implementation of this practice became more systematic and consistent. Even at the time of the ex-post evaluation, four years after the JOCV's departure, it was confirmed that this practice has been sustained and firmly established.

This initiative was supported by collaboration with the JICA technical cooperation "Project for Improving Quality of Health Care Services" (2016-2021), which was implemented during the same period. The project aimed to enhance the quality of healthcare services in provincial, district, and health center levels across four southern provinces. As part of this initiative, the Quality Improvement Committee, Infection Prevention and Control Committee, and Patient Safety Committee were established at Champasak Provincial Hospital. The JOCV participated in the establishment of the Patient Safety Committee and subsequently implemented the activities described above through this framework.

Photo 8. Ventilator in the ICU (with the name of the assigned staff member attached on the side)

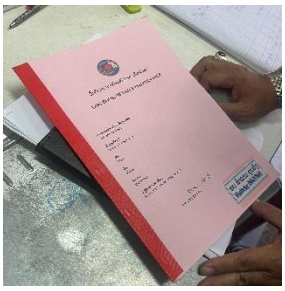


Photo 9. Equipment Maintenance Logbook Distributed by the MoH

3.4 Sustainability (Rating: ②)

3.4.1 Policy and System

At the time of the ex-post evaluation, the Lao government, under the *9th Five-Year Health Sector Development Plan (2021-2025)*, identified the enhancement of healthcare facility development, provision of medical equipment, and strengthening of human resources for health as national health policy in order to improve the delivery of quality healthcare services. These policy directions are expected to be continued under the next five-year plan (2026-2030).[42]

With the revision of the NHI scheme in August 2024, patients' co-payments at public hospitals have increased.[43] In addition, patient charges have been introduced for maternal and child health services that were previously provided free of charge.[44] Furthermore, around 2023, a pilot project to promote autonomous hospital management was launched at central hospitals and some provincial hospitals (including the project target hospitals).[45] Under this pilot initiative, hospitals are encouraged to take the lead in decision-making and resource allocation related to their operations.[46] Although these policies may temporarily lead to a decline in the number of patients using public hospitals, they are all aimed at strengthening the financial foundation of public hospitals and improving the healthcare service delivery system, which aligns with the objective of this project.

Based on the above, the relevance of the effects generated by this project is expected to be maintained, and the sustainability in terms of policy and system is ensured.

3.4.2 Institutional/Organizational Aspect

(1) Facility Operational Management

At the time of the ex-post evaluation, the operational structure and staffing arrangements of Setthathirath Hospital had not been implemented as initially planned. Among the 13 OPDs that were scheduled to relocate from the existing building to the new one, the Hematology and Oncology OPD continued to use consultation rooms in the existing building, and the Pulmonology (Respiratory Infectious Diseases) OPD moved instead to a separate building dedicated to infectious diseases. The consultation rooms in the new building that had originally been designated for these departments were instead utilized as the Pain Clinic consultation room and the endoscopy examination room for liver diseases. In addition, the Allergy OPD consultation room was used concurrently as an electroencephalography (EEG) examination room. This arrangement was partly due to the fact that there was only one allergy specialist,

[42] Interview with the MoH
[43] Questionnaire responses from the National Health Insurance Bureau
[44] Interview with JICA Laos Office
[45] Vientiane Times, *Hospital bosses take first steps towards improved management*, https://www.vientianetimes.org.la/freeContent/FreeConten2023_Hospital22.php (Accessed on July 12, 2025)
[46] Vientiane Times, *Provincial hospitals begin rollout of autonomy through improved management*, https://www.vientianetimes.org.la/freefreenews/freecontent_029_Provincial_y25.php (Accessed on July 12, 2025)

making it difficult to conduct daily consultations.[47] Although the actual operation did not proceed exactly as planned, all consultation rooms in the new building were utilized for the provision of outpatient services or examinations by repurposing or sharing them for other uses.

Table 12. Number of Staff at Setthathirath Hospital

(Unit: persons)

	2016	2021	2022	2023	2024
Doctors	144	129	148	170	152
Nurses	33	118	115	120	140
Midwives	25	20	20	13	8
Dentists	13	20	17	14	12
Pharmacists	23	29	28	27	24
Others	204	140	118	87	88
Total	442	456	446	431	424

Source: Documents provided by Setthathirath Hospital

Note: The category "Others" includes healthcare professionals such as laboratory technicians and radiological technologists, administrative staff, and maintenance staff. Contract nurses were categorized under "Others" in 2016 but have been included under "Nurses" since 2021.

The total number of hospital staff has decreased since the time of project planning (Table 12), and as a result, staff assignments for the new building have not been carried out as planned. The small laboratory and blood sampling room in the new building have not been in use because of the shortage of staff assigned there, and all blood tests have been performed in the existing building. However, staffing for the small laboratory and blood sampling room in the new building is planned for the future.[48]

(2) Facility and Equipment Maintenance

At the time of the ex-post evaluation, facility and equipment maintenance at Setthathirath Hospital was handled by the Maintenance Department. Routine cleaning of the facilities and maintenance of air conditioning systems were carried out by external contractors under the supervision of this department. The department was staffed with two electricians and two mechanical technicians who worked on a rotating 24-hour shift basis. However, because none of these technicians had specialized knowledge of medical equipment, it was difficult for them to respond appropriately to equipment failures or malfunctions. As a result, safety management and preventive measures against such problems were not sufficiently implemented. This maintenance system has remained unchanged since before the implementation of the project.[49]

At Champasak Provincial Hospital as well, the staffing for facility and equipment maintenance

[47] Interview with Setthathirath Hospital. In Lao PDR, doctors who wish to become specialists are required to study abroad. However, scholarship opportunities for this purpose are limited, and the training of medical specialists has not kept pace with demand, resulting in a chronic shortage.

[48] Interview with Setthathirath Hospital

[49] Interview with Setthathirath Hospital

has remained unchanged since before the project, with two equipment technicians and two electricians assigned to these duties. They do not have specialized knowledge of medical equipment, either. Since 2018, the Korea Foundation for International Healthcare (KOFIH) has been providing support for medical equipment management. In addition to technical cooperation, this support included the construction of an office building for the Maintenance Department, which was equipped with an office room, a workshop, storage space for equipment, and cabinets for equipment manuals and related documents.[50]

In summary, regarding the facility operational management of Setthathirath Hospital, efforts to sustain the effects of the project have been observed. For the equipment maintenance of Champasak Provincial Hospital, external support has been confirmed. However, challenges remain, such as a reduction in staff number and the deployment of maintenance staff who are few in number and lack specialized expertise. Because no concrete prospects for improvement of these issues have been identified, institutional/organizational sustainability is considered moderately low.

3.4.3 Technical Aspect

At the time of the ex-post evaluation, the users of medical equipment at both hospitals, including doctors, nurses, radiological technologists, and laboratory technicians, generally operated the equipment without technical problems. However, some cases were observed in which the equipment was not being used appropriately. For example, at both hospitals, ventilators continued to be used even when error messages were displayed on their monitor screens.[51] Such situations suggest that sufficient efforts were not made to resolve problems when they occurred, such as checking the manuals or consulting the local agents. In addition, the fact that many manuals are written in English poses a barrier to their routine use by hospital staff.[52]

The technicians responsible for maintaining medical equipment at both hospitals managed the equipment using equipment inventory ledgers but were unable to conduct routine inspections. Although daily inspection checklists translated into Lao were provided to both hospitals as part of the project's technical training (soft component), they were not utilized at the time of the ex-post evaluation.[53] As mentioned earlier, the technicians in charge of medical equipment maintenance did not have specialized knowledge in clinical engineering or related fields. Consequently, it was difficult for them to respond appropriately to equipment failures or

[50] Interview with Champasak Provincial Hospital
[51] The error message displayed on the ventilator indicated that the oxygen sensor, which measures the concentration of oxygen delivered to the patient, needed to be replaced or calibrated. However, even when this error message appears, the device itself remains operational.
[52] Direct observations and interviews at Setthathirath Hospital and Champasak Provincial Hospital
[53] Interviews with Setthathirath Hospital and Champasak Provincial Hospital

malfunctions and to implement adequate safety management or preventive measures. Furthermore, opportunities for training to acquire technical skills and knowledge related to medical equipment management have been extremely limited, making it difficult to enhance their professional expertise.[54]

In conclusion, although both hospitals have generally not encountered technical problems in the use of medical equipment, maintenance skills and capacity among both healthcare and maintenance staff remain inadequate. The Lao-language daily inspection checklists provided through the project's soft component have not been utilized, and opportunities to improve maintenance skills and capacity have remained limited. Therefore, the prospects for improvement are low, and the technical sustainability is considered moderately low.

3.4.4 Financial Aspect

(1) Financial Status of the Hospitals

From 2020 to 2024, revenues slightly exceeded expenditures each year for Setthathirath Hospital, except for 2021 (Table 13). In contrast, Champasak Provincial Hospital experienced a relatively unstable financial condition during the same period, alternating between surplus and deficit years (Table 14).

Both hospitals' revenues and expenditures have shown an upward trend. However, this appears to be due more to changes in Lao PDR's economic conditions than to the direct effects of the facilities and equipment provided under this project. The country experienced rapid inflation in 2022 due to the depreciation of its local currency stemming from external debt issues and the impact of rising global prices. High inflation rates continued through 2023 and 2024 (Table 15). These nationwide economic conditions increased the cost of providing public healthcare services. In particular, in March 2023, the depreciation of the Laotian kip led to a sharp rise in the import prices of medical equipment, supplies, and pharmaceuticals. Consequently, the average prices of healthcare services and medicines across the country surged by 41.8% compared to the same month of the previous year.[55] Both project target hospitals also faced higher expenditures due to the rising costs of pharmaceutical procurement; in response, they raised the prices of medicines in line with purchase costs, which in turn increased their revenues.[56]

Under such difficult economic conditions, the financial situation of public hospitals in general deteriorated. As mentioned earlier, the MoH has been working to improve the financial performance of public hospitals through revisions to the NHI scheme and the promotion of autonomous management at central hospitals and selected provincial hospitals.

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[54] Interviews with Setthathirath Hospital and Champasak Provincial Hospital

[55] World Bank, *Lao Economic Monitor Addressing economic uncertainty - Thematic Section: Impacts of macroeconomic instability on Lao households*, http://documents.worldbank.org/curated/en/099060923122518058 (Accessed on July 17, 2025)

[56] Interviews with Setthathirath Hospital and Champasak Provincial Hospital

Table 13. Revenues and Expenditures of Setthathirath Hospital

(Unit: million Laotian kip)

	2020	2021	2022	2023	2024
Revenue (total)	48,550	55,059	64,945	71,531	82,856
Government subsidy	28,115	32,663	34,011	33,271	32,095
Service revenue	20,435	22,396	30,934	38,260	50,761
Expenditure (total)	48,401	56,753	64,037	62,501	81,544
Expenditure from government subsidy	28,001	32,449	33,980	33,082	32,095
Expenditure from service revenue	20,400	24,304	30,057	29,419	49,449

Source: Documents provided by Setthathirath Hospital

Table 14. Revenues and Expenditures of Champasak Provincial Hospital

(Unit: million Laotian kip)

	2020	2021	2022	2023	2024
Revenue (total)	51,171	59,842	53,299	68,287	78,128
Government subsidy	20,963	19,837	21,238	22,634	23,909
Service revenue	30,208	40,005	32,061	45,653	54,219
Expenditure (total)	50,624	59,857	50,975	66,250	82,415
Expenditure from government subsidy	20,963	19,837	21,238	22,634	23,909
Expenditure from service revenue	29,661	40,020	29,738	43,616	58,506

Source: Documents provided by Champasak Provincial Hospital

Table 15. Inflation Rate and Exchange Rate against the US Dollar in Lao PDR (Annual Average)

	2020	2021	2022	2023	2024
Inflation rate (%)	5	4	23	31	23
Exchange rate (Laotian kip per US dollar)	9,046	9,698	14,035	17,689	NA

Source: (Inflation rate) Bank of the Lao PDR; (Exchange rate) Asian Development Bank, *Key Indicators Database*

(2) Medical Equipment Maintenance Costs

The budget for medical equipment maintenance at Setthathirath Hospital was set at approximately 4% of the previous year's service revenue, and as shown in Table 16, the budget has been secured for 2023 and onward. However, the execution rate has not been confirmed. At Champasak Provincial Hospital as well, a budget for medical equipment maintenance has been secured,[57] but detailed information on the specific budget amount was not obtained and has not been confirmed. When expenditures exceed the hospital's allocated budget, the hospital can apply for financial assistance from the MoH, which covers the expenses upon approval. Therefore, although both hospitals have allocated budgets for medical equipment maintenance and are supported by the MoH's supplementary funding scheme, the available budgets are insufficient to address all equipment failures and malfunctions. In practice, some equipment with

[57] Interviews with Champasak Provincial Hospital

defects or malfunctions has continued to be used without repair or has remained out of service for extended periods. The MoH's supplementary support is also limited. During the ex-post evaluation period, the CT scanner at Champasak Provincial Hospital broke down, and the hospital consulted the MoH regarding funding for replacement parts, which were expensive and not covered under the maintenance contract.

Table 16. Budget for Medical Equipment Maintenance at Setthathirath Hospital

(Unit: million Laotian kip)

	2023	2024	2025
Budget for medical equipment maintenance	1,629	1,680	2,020

Source: Documents provided by Setthathirath Hospital

In this way, both hospitals are facing serious financial difficulties and are making efforts to improve their financial conditions in line with the policies promoted by the MoH. Although a certain budget has been secured for the maintenance of medical equipment, the amount is not sufficient to adequately address the existing equipment failures and malfunctions. Furthermore, the MoH has not been able to fully compensate for this shortfall, and prospects for improvement remain low. Therefore, financial sustainability cannot be considered ensured.

3.4.5 Environmental and Social Aspect

No negative environmental or social impacts or risks have been reported to the MoH or the Champasak Province Health Office, nor were any confirmed through interviews with the project target hospitals. The likelihood of such impacts occurring in the future is also considered low.

3.4.6 Preventative Measures to Risks

The impact of the country's difficult economic situation on the health sector may continue to affect the sustainability of the project's outcomes in the future. As mentioned earlier, the MoH has been working to improve the financial conditions of public hospitals through revisions to the NHI scheme and initiatives to promote autonomous hospital management.

3.4.7 Status of Operation and Maintenance

Several issues were identified regarding the operation and maintenance of facilities at Setthathirath Hospital. Some facilities, such as the entrance to the ER and water faucets, were found to be damaged and left unrepaired for extended periods. In addition, because light bulbs need to be imported from abroad, their delivery takes time, resulting in some lighting remaining nonfunctional for long periods. On the other hand, daily cleaning services are outsourced to an external contractor, and the overall cleanliness of the hospital is maintained.

During the ex-post evaluation, the maintenance status of 146 units (56 items) out of the 347

units (74 items) of equipment procured through the project was checked at Setthathirath Hospital.[58] At Champasak Provincial Hospital, the maintenance status of all 22 units (14 items) of equipment provided under the project was also checked. The maintenance status of the equipment with unit prices exceeding one million yen are shown in Tables 17 and 18.

Table 17. Maintenance Status of Equipment with a Unit Price of One Million Yen or More at Setthathirath Hospital

Maintenance status	Units (%)	Applicable equipment (units)
Not in use due to malfunction or defect	6 (15%)	Portable ultrasound unit (1), anesthesia unit (2), automatic endoscope washer (1)*, ENT treatment unit (1), dental X-ray unit (1)
In use but with malfunction	3 (7%)	Ultrasound unit for obstetrics and gynecology (1), CT scanner (malfunction in attached PACS, not the main unit) (1), dental chair (1)
Not in use despite being functional	3 (7%)	Electroencephalograph (EEG) (1), electromyograph (EMG) (1), transcranial doppler (TCD) (1)
In use without problems	27 (66%)	Portable ultrasound unit (1), incubator (5), autoclave (2), operating table (2), ultrasound unit for cardiology (1), upper endoscope (1), infant warmer (1)*, ultrasound unit for antenatal care (1), mammography unit (1), mobile X-ray unit (1), general X-ray unit (1), X-ray fluoroscopy unit (1), industrial washing machine (2), industrial dryer (1), audiometer (1), ophthalmic operation microscope (1), slit-lamp microscope (1), dental chair (2), body refrigerator (1)
Not confirmed	2 (5%)	Fiber-optic bronchoscope (1), operating table (1)
Total	41 (100%)	

Source: Prepared by the external evaluator based on direct observation and interview results at Setthathirath Hospital
* The maintenance status of the automatic endoscope washer and infant warmer were confirmed by the JICA Laos Office in October 2025.

Table 18. Maintenance Status of Equipment with a Unit Price of One Million Yen or More at Champasak Provincial Hospital

Maintenance status	Units (%)	Applicable equipment (units)
Not in use due to malfunction or defect	2 (40%)	CT scanner (1), operating table (1)
In use but with malfunction	2 (40%)	Mobile X-ray unit (1), general X-ray unit (1)
In use without problems	1 (20%)	Ultrasound unit (1)
Total	5 (100%)	

Source: Prepared by the external evaluator based on direct observation and interview results at Champasak Provincial Hospital

[58] A large amount of equipment was installed at Setthathirath Hospital through this project. For the ex-post evaluation, key equipment was identified, and its utilization and maintenance status were checked. The key equipment was defined as items meeting one or more of the following four criteria: (1) Equipment for which it was considered desirable at the time of project planning to conclude a maintenance contract with the local agent of the manufacturer; (2) Equipment listed in the Ex-ante Evaluation Paper; (3) Equipment that was modified from the outline design; or (4) Equipment for which issues were identified in the defect inspection report.

At the time of the ex-post evaluation, 16% of the equipment checked at Setthathirath Hospital was either not in use or partially restricted in use due to shortages of consumable supplies. For example, although the pulse oximeters themselves were functioning properly, they were not being used because of a shortage of probes, which are consumable parts. Similarly, among the 22 infusion pumps provided, usage was limited because the dedicated infusion sets were more expensive than standard ones and their stock had not been replenished. In addition, 7% of the confirmed equipment was not in use due to malfunctions or defects.[59] At Champasak Provincial Hospital, 36% of the equipment provided under the project was not in use due to malfunctions or defects, and 27% continued to be used despite existing problems. For instance, electrocardiographs (ECGs) were frequently used during the COVID-19 pandemic but became unusable after repeated cleaning with alcohol caused damage.[60] The ventilators continued to be used even though error messages were displayed on their monitor screens. Although the blood gas analyzer itself was functioning properly, it was not in use due to a lack of sensor cards. The hospital attempted to place an order; however, because small-lot purchases were not possible and bulk procurement would result in the items expiring before use, the purchase was abandoned.[61]

Photo 10. ER Entrance of Setthathirath Hospital (damaged by a hospital user's vehicle and left unrepaired)

Photo 11. Ventilator in the ICU, Champasak Provincial Hospital (in use despite an error message displayed on the monitor)

Photo 12. Blood Gas Analyzer in the ICU, Champasak Provincial Hospital (out of use due to a lack of sensor cards and kept in storage)

As described above, both hospitals face numerous challenges related to the operation and maintenance of their facilities and equipment. Although each hospital has secured a budget for maintenance expenses, the amount is not sufficient to address all failures and malfunctions. As a result, repairs and responses are prioritized, and decisions are made based on the perceived urgency and importance of each issue. This decision-making process can take time, and when an issue is considered low priority, necessary actions may be postponed or remain unaddressed. Furthermore, despite the increased equipment supplies through this project, the staffing structure

[59] Direct observations and interviews at Setthathirath Hospital
[60] Generally, the electrodes of an ECG, which come into direct contact with the patient's body, are disinfected by wiping with alcohol. In contrast, the main unit is a precision device and cleaning it with alcohol may result in equipment failure.
[61] Direct observations and interviews at Champasak Provincial Hospital

of the Maintenance Department has remained unchanged since before the project, and no technicians with specialized knowledge of medical equipment have been assigned. To compensate for this situation, the project's main consultants strongly recommended that both hospitals pursue maintenance contracts with local agents of equipment manufacturers, particularly for medical devices that are difficult to maintain or repair internally. However, neither hospital was able to secure sufficient budget to cover maintenance contracts for all recommended equipment, and except for the most expensive equipment, the CT scanner, no maintenance contracts have been established for the equipment procured under the project.[62]

In conclusion, some issues have been observed in the institutional/organizational, technical, and financial aspects, including the current status of operation and maintenance. The prospects for improvement and resolution are low. Therefore, sustainability of the project effects is moderately low.

4. Conclusion, Lessons Learned, and Recommendations

4.1 Conclusion

This project was implemented with the objective of improving the healthcare service delivery system and enhancing undergraduate and postgraduate clinical training for healthcare workers through the development of facilities and the provision of equipment at Setthathirath Hospital, and the provision of equipment at Champasak Provincial Hospital, thereby contributing to the achievement of UHC through the provision of higher-quality healthcare services. The project's objective was consistent with the health sector reform strategies and development plans of Lao PDR, the needs of the hospitals as top-referral and regional core hospitals, their roles as training institutions for healthcare professionals, and Japan's ODA policy. Although internal and external coherence were not confirmed, the project's relevance and coherence are high. All planned outputs were achieved, and the project cost remained within the plan; however, the project period significantly exceeded the plan. Therefore, efficiency of the project is moderately low. As a result of the project, the number of outpatients, diagnostic imaging examinations, and surgeries at Setthathirath Hospital mostly reached the target values, whereas the number of diagnostic imaging examinations at Champasak Provincial Hospital did not. On the other hand, improvements in the clinical training environment for healthcare workers were observed at both hospitals, and user satisfaction with the healthcare service delivery system was high. Strengthened IPC measures through the provision of isolation rooms and synergistic effects with other projects were also confirmed. Accordingly, the project's effectiveness and impact are high. There are some issues in

[62] Interviews with Setthathirath Hospital and Champasak Provincial Hospital. The medical equipment for which it was considered desirable to conclude maintenance contracts with the local agents of the manufacturers included CT scanners; X-ray units (including mammography units and X-ray fluoroscopy units); ultrasound units; syringe pumps; infusion pumps; bedside monitors; ventilators; incubators; defibrillators; electric scalpels; anesthesia units; and ECGs.

the institutional/organizational, technical, and financial aspects, including the status of operation and maintenance, and the prospects for improvement and resolution are low. Consequently, sustainability of the effects generated by the project is moderately low.

In light of the above, this project is evaluated to be satisfactory.

4.2 Recommendations

4.2.1 Recommendations to the Executing Agency

Routine Inspection of Medical Equipment in Each Department

At Champasak Provincial Hospital, a structured practice had already been established in the ICU for doctors and nurses to routinely inspect and clean medical equipment. Although this practice existed prior to the project, its firm establishment was supported by the efforts of the JOCV nurse who was active at the hospital during the same period as the project (see Box 2). The medical equipment provided in connection with this project was also subject to routine inspection and cleaning by doctors and nurses under this system. Establishing and operating a system in which healthcare staff, who are the direct users of equipment in each department, carry out routine inspections of their own equipment, including preparing and using inspection checklists, recording inspection results, and clarifying inspection frequency and responsible staff, can contribute to improving the overall quality of medical equipment maintenance within the hospital. Given that both project target hospitals have very limited maintenance staff, it is more realistic and efficient for equipment users themselves to conduct routine inspections of the devices assigned to their departments, rather than having the Maintenance Department handle all such tasks. Therefore, it is expected that the system already established in the ICU of Champasak Provincial Hospital will be extended to other departments and that Setthathirath Hospital will also promptly establish and implement a similar routine inspection system for medical equipment in each department.

Maintenance Contracts with Local Agents of Manufacturers

To ensure a system that allows prompt responses in the event of equipment malfunctions, it is desirable to establish a framework in which maintenance contracts are established with local agents of equipment manufacturers for medical devices that are difficult to maintain or repair internally. Through such contracts, hospitals can receive regular inspection services and technical support for repairs as needed. For CT scanners, both project target hospitals have established maintenance contracts, enabling them to consult with the local agent or the manufacturer through the agent and receive appropriate support when problems occur. This situation is considered desirable. In the future, it is recommended that maintenance contracts also be concluded for other items of medical equipment that require specialized technical knowledge for maintenance and repair, to ensure stable operation and proper management of

medical devices.

The reason neither hospital has established maintenance contracts for medical equipment other than CT scanners is insufficient budget allocation. To improve this situation, it is also desirable that the MoH plan to allocate budgetary resources to the hospitals for maintenance contracts related to medical equipment.

Planned Procurement of Consumables and Spare Parts

To avoid situations in which shortages or stockouts of consumables and spare parts disrupt facility operations or restrict or prevent the use of equipment, it is essential to establish a planned procurement system. In particular, for parts that require long delivery times, hospitals should place orders at appropriate times based on consumption rates and lead times to prevent stockouts. For items that cannot be ordered in small quantities, an efficient procurement system should be developed through coordination between the MoH and public hospitals, such as bulk procurement covering multiple hospitals. To achieve planned procurement, it is also necessary to ensure proper inventory management of consumables and spare parts, including maintaining inventory records and conducting regular stocktaking.

Increasing Awareness on Health Checkups and Cancer Screenings

At Setthathirath Hospital, mammography and X-ray fluoroscopy units were not being fully utilized, and there appears to be room for more effective use of other diagnostic imaging equipment, such as CT scanners, X-ray units, and ultrasound units. The utilization of these diagnostic imaging devices can be promoted through improved public knowledge and awareness of disease prevention, leading to increased participation in health checkups and cancer screenings. As noted in Box 1, the demand for cancer prevention and early detection in Lao PDR is expected to increase in the coming years. Therefore, it is important for both hospitals to raise public awareness of the importance of health checkups and cancer screenings. Specifically, it is recommended that they actively conduct awareness-raising activities, such as distributing informational leaflets in hospitals and organizing community seminars.

4.2.2 Recommendations to JICA

None.

4.3 Lessons Learned

Collaborative Efforts for the Continuous Operation and Maintenance of Facilities and Equipment

At Champasak Provincial Hospital, routine inspection and cleaning of medical equipment, including those provided under this project, were continuously conducted in the ICU through the activities of the JOCV dispatched during the same period as the project. This collaboration was

realized through information sharing and cooperation between the “Project for Improving Quality of Health Care Services” (2016-2021) and the JOCV. Furthermore, this coordination was facilitated by the JICA Laos Office, which played a mediating role among the projects and shared information related to this grant aid project.

When technical cooperation, such as through technical cooperation projects, grassroots technical cooperation projects, or JOCV activities, is implemented for the same institutions or regions as a grant aid project, it is desirable to actively coordinate among field-level stakeholders, including implementation consultants for the grant aid project, experts of technical cooperation projects, and JOCVs. Such coordination should aim to integrate activities related to the operation and maintenance of facilities and equipment provided through grant aid into related technical cooperation projects or their successor initiatives. A key factor in achieving such collaboration is direct consultation among field-level stakeholders, led by the JICA country office, which is responsible for coordination between projects.

In countries such as Lao PDR, where multiple JICA projects, including grant aid, are implemented programmatically, it is expected that the country office will take proactive measures to facilitate coordination among related projects, thereby ensuring the continuous operation and maintenance of facilities and equipment provided through the grant aid. Furthermore, when specific collaboration is anticipated, it is recommended that the consultants of grant aid projects explicitly describe in the Preparatory Survey Report or the Soft Component Plan how the facilities and equipment provided under the project are expected to be utilized or linked with technical cooperation, and that such information be shared among relevant stakeholders.

Ensuring Construction Quality through Appropriate Bid Pricing

Even excluding the suspension period caused by the COVID-19 pandemic, the actual implementation period of this project significantly exceeded the plan. The main reasons were construction delays and the need for rework due to defects in construction quality. One possible underlying factor was that the contractor may have submitted a substantially low bid price to secure the contract. Because the contractor had to subcontract within the limited awarded amount, this likely increased the difficulty of on-site management and resulted in delays and quality issues in construction work. To prevent a decline in construction quality in projects of this nature, it is recommended that JICA consider measures such as setting a minimum bid price to secure fair and reasonable bidding prices.

5. Non-Score Criteria

5.1 Performance

5.1.1 Objective Perspective

Throughout the project period, the JICA Laos Office coordinated collaboration among

stakeholders involved in the project, including the main consultants, main contractors for construction and equipment procurement, and the project target hospitals. The office also provided necessary support for document preparation and administrative procedures to facilitate smooth project implementation.[63] For example, when the MoH requested the Ministry of Planning and Investment and the Ministry of Finance to issue the payment authorization letter, the JICA Laos Office assisted in preparing explanatory documents and supporting the related administrative procedures.

JICA has long supported the health sector in Lao PDR through various schemes, particularly focusing on improving the quality of healthcare services and developing human resources for health, under a programmatic approach. This project was positioned as part of that comprehensive support. Although specific collaboration with other JICA projects was not anticipated during the time of project planning and implementation, the project was expected to complement the effects of other initiatives and generate synergistic effects within the overall programmatic framework. As discussed earlier, this project indeed contributed to the realization of such effects.

5.2 Additionality

None.

(End)

[63] Interview with the MoH and Champasak Province Health Office