Republic of the Philippines

Ex-Post Evaluation of Japanese ODA Grant Aid Project

"The Project for Improvement of Aurora Memorial Hospital"

External Evaluator: Yumi Ito, Japan Economic Research Institute Inc.

0. Summary

In this project, a hospital facility such as an outpatient department building was constructed and medical equipment was furnished to improve the medical services of Aurora Memorial Hospital (hereinafter referred to as AMH). The relevance of this project is high, as it was consistent with the development policy and needs of the Philippines as well as the ODA policy of Japan. The efficiency is also high, as the contents of the project were implemented mostly as planned and the project cost and period were within the scope of the plan. With regard to the effectiveness of the project, it is considered that the effects have been realized in terms of the increase in the number of inpatients, deliveries, bed days[1] and major operations including caesarian sections, improvement of medical services provided by AMH and the reduction of the patients' physical and economic burden. In addition, it was inferred that this project contributed to reinforcement of medical service provision capacity in Aurora province, securement of quality health workers and reinforcement of medical service systems of the entire province through strengthening Aurora province's capacity to train health workers. Therefore the effectiveness and impact of this project are high. The sustainability of the effects of this project is fair. Although there is less concern with the financial aspects, there are some minor problems observed in terms of organisational and technical aspects, as well as the current status of operation and maintenance, such as the need to strengthen personnel organization and difficulties in the repair of equipment and procurement of spare parts.

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

[1] A bed-day is a day during which a person is confined to a bed and in which the patient stays overnight in a hospital (OECD Glossary of Statistical Terms)

1. Project Description

Project Location

Aurora Memorial Hospital

1.1 Background

AMH, the target of this project, is a provincial general hospital located in Baler, the capital of Aurora province. Although it is officially positioned as the top referral hospital of the province, AMH had hardly been able to perform its expected role due to factors such as the absence of specialist doctors, deterioration of hospital facilities and medical equipment. AMH's hospital license was downgraded from Level 2 to Level 1, as it became unable to perform proper surgical procedures since the Department of Health (hereinafter referred to as DOH) put restrictions on operations conducted at a hospital without a surgeon and an anesthesiologist. Patients needed to be transferred to the national hospital in the neighboring Nueva Ecija province in order to have surgery or receive intensive care, but it takes about four hours to travel to that hospital, and there were cases where the road leading to the neighboring province was blocked during the typhoon seasons.

Furthermore, development and placement of community-rooted health workers were also problems in Aurora province, in addition to development of infrastructure such as buildings and equipment. Having experience in fostering community-based health workers, the School of Health Sciences of University of the Philippines Manila (hereinafter referred to as UPM-SHS) established its extension campus in Baler, Aurora, in 2008, and it was necessary to satisfy the UPM-SHS's needs to secure a training hospital where its students could have practical working experience.

Under these circumstances, the provincial government of Aurora decided to relocate the existing AMH and upgrade it to a Level 4 hospital with 100 beds[2] and requested Japan's Grant Aid Assistance for establishment of a new AMH. This project was implemented, based on the result of the preparatory survey conducted in response to this assistance request, which

[2] According to the information provided by JICA. At the time of the project planning, it was planned to upgrade AMH to a Level 3 hospital in "Province-wide Investment Plan for Health (2009-2013)."

concluded that upgrading to a Level 2 hospital with 50 beds would be more appropriate in terms of function and size.

1.2 Project Outline

The objective of the project was to improve the medical services of the Aurora Memorial Hospital in Aurora province by constructing a new facility for the AMH and furnishing it with medical equipment.

Grant Limit / Actual Grant Amount	1,089 million yen / 1,028 million yen
Exchange of Notes Date / Grant Agreement Date	March, 2010 / March, 2010
Implementing Agency	Provincial Government of Aurora, the Philippines
Project Completion Date	December, 2011
Main Contractors	Construction: Toyo Construction Co., Ltd. Procurement: Nissei Trading Co., Ltd.
Main Consultants	The Consortium of Azusa Sekkei Co., Ltd and Intem Consulting, Inc.
Basic Design	February, 2010

2. Outline of the Evaluation Study

2.1 External Evaluator

Yumi Ito (Japan Economic Research Institute Inc.)

2.2 Duration of Evaluation Study

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

Duration of the Study: October, 2014 – September, 2015

Duration of the Field Study: January 11 – February 4, 2015 and April 5 – 18, 2015

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

3.1 Relevance (Rating: ③[4])

3.1.1 Relevance to the Development Plan of Republic of the Philippines

At the time of project planning, health was included as one of the essential services to be provided in the "Medium-term Philippine Development Plan (2001-2010)", and six health priorities were to be pursued, especially to reach the poor. These were: (1) Reducing the cost of medicines commonly bought by the poor, (2) Expanding health insurance particularly for

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

[4] ③: High, ②: Fair, ①: Low

indigents through premium subsidy, (3) Strengthening national and local health systems through the implementation of the Health Sector Reform Agenda, (4) Improving the Health Care Management System, (5) Improving health and productivity through R&D, and (6) Establishing/expanding drug treatment and rehabilitation centers.

As a policy of the health sector, "FOURmula One (F1) for Health" launched by the DOH stated that important reforms were supposed to be carried out in Health Service Delivery, Good Governance in Health, Health Financing and Health Regulation, and Aurora Province was included as one of the target provinces. In Aurora Province, the health sector was considered as one of the priority sectors and its "Province-wide Investment Plan for Health (2009-2013)" included improvement of health facilities as one of its strategies and planned to apply for re-classification for the hospital license of AMH and another provincial hospital and to upgrade AMH from Level 1 to Level 3.

At the time of ex-post project evaluation, the "Philippine Development Plan (2011-2016) (Midterm Update)" aims at inclusive growth and lists "Human capabilities improved" as one of the sector outcomes of social development sector and "Health and nutrition status improved" as one of the subsector outcomes, and states "Provide health care to all" as the main strategy for improving the health status of the people. The "Aquino Health Agenda", the Philippines' health sector policy, aims at achievement of a responsive health care system, etc. by ensuring that all Filipinos have equitable access to affordable health care through implementation of Universal Health Care. It lists improved access to quality hospitals and health care facilities by doing things such as upgrading government–owned/operated hospitals and health facilities. The "Province-wide Investment Plan for Health (2014-2016)" of Aurora Province aims at ensuring that every resident of Aurora province receives quality health care services as the overall goal and lists access to quality health facilities as one of its major programs. In order to achieve this, it includes items such as improvement of health facilities, provision of necessary equipment and establishment of a functional service delivery system.

In this way, this project is consistent with the Philippines development plan, its national health sector policy and Aurora province's health sector policy, both at the time of project planning and ex-post evaluation, in improving a health facility in order to strengthen the capacity of local health service provision.

3.1.2 Relevance to the Development Needs of the Republic of the Philippines

AMH was officially positioned as the top referral hospital of the province, but it had hardly been able to perform its expected role due to factors such as the absence of specialist doctors, deterioration of hospital facilities and medical equipment. Patients needed to be transferred to a hospital outside the province in order to receive intensive care or have

surgery, but it took about four hours to travel and there were cases where the road leading to the neighboring province was blocked during the typhoon seasons. At the time of the project planning, development of health workers and facilities in Aurora province was behind; its population per doctor was 11,800 (as compared to 1,100 for the whole country) and its population per hospital bed was 2,800 (1,000 for the whole country). In addition, in order to address the problems of the outflow of health professionals to foreign countries as well as their concentration in urban districts within the country, the University of the Philippines established the School of Health Sciences (hereinafter referred to as UPM-SHS) to foster community-based health workers. UPM-SHS established its first extension campus in Baler, Aurora in July, 2008, and needed to secure a training hospital which could serve that purpose on a permanent basis[5].

At the time of ex-post evaluation, AMH is positioned as the top referral hospital of Aurora province. Being the only provincial hospital with surgery functions in the province, AMH is expected to provide medical services which could not be provided by other public health facilities within the province, such as surgery and caesarian operations, especially for populations such as the indigent. According to the provincial health office, Aurora province's population per doctor was 8,216 and its population per hospital bed was 1,643 (as of 2014). Although these indicators have improved, they have not yet reached the national level as of the time of project planning. Regarding the needs of securing health workers in Aurora province, according to an interview with UPS-SHS's extension campus in Baler, AMH has been serving as training hospital for UPM-SHS and nurses and midwives to work at Rural Health Units (hereinafter referred to as RHU) etc. have been fostered and supplied enough by the UPS-SHS; however, it is still difficult to secure doctors in Aurora province.

Based on the above, this project can be considered as consistent with the development needs of the Philippines, as medical service provision by AMH is still highly important in the province because AMH is positioned as the top referral hospital also at the time of the ex-post evaluation, and this project is contributing to securing health workers within the province.

3.1.3 Relevance to Japan's ODA Policy

At the time of project planning, the Country Assistance Program for the Republic of the Philippines prepared by the Japanese government (2008) listed "expansion of basic social services (improving the living conditions of the poor)" such as health care services as one of the guidelines to address one of the priority development issues set in the program, which is "empowerment of the poor and improvement of the living conditions of the poor." Therefore, this project is highly consistent with Japan's assistance policy, as it corresponds to Japan's

[5] Information provided by JICA

priority cooperation areas set in the country assistance program at the time of project planning.

3.1.4 Appropriateness of Project Planning and Approach

This project was planned to construct a new facility for AMH as a Level 2 hospital with 50 beds. The Bed Occupancy rate of AMH (Table 1) dropped to 66% in 2012, right after the project completion, but has been gradually increasing and reached more than 100% in 2014, three years after the project completion. Furthermore, at the time of ex-post evaluation, it was reported that the provincial government of Aurora/AMH had a plan to construct another ward (with 25 beds) within 2015 in order to accommodate the increasing number of patients. Therefore it is considered that the project planning to construct a hospital with 50 beds was appropriate, as it took into consideration AMH's capacity before project implementation and estimation of hospitalization needs.

Table 1 Bed Occupancy Rate of AMH

	2009	2010	2011	2012	2013	2014
Authorized bed capacity	25	25	25	49	49	49
Actual implementing bed capacity	58	58	58	61	68	73
Bed Occupancy Rate (%)	101.8	129.39	123.44	66.14	89	105

Source: Answer to the questionnaire

Note: Bed Occupancy Rate = (total inpatient service days for the period/(total number of authorized beds x total days in the period)) x 100

As described above, this project was and is consistent with the Philippines' development plan and development needs as well as Japan's ODA policy, both at the time of project planning and at the ex-post evaluation. The project planning and approach were also considered to be appropriate. Therefore the relevance of this project is high.

3.2 Efficiency (Rating: ③)

3.2.1 Project Outputs

The planned project components are as shown in Table 2.

Original

Table 2: Planned Components of This Project

	Facilities (Floor Area)	Details
Facility ($3,969.6m^2$)	Administration, ER & OPD Building ($1,503.0m^2$)	Administration Dept., ER, OPD, Laboratory, X-ray Room, Pharmacy, etc.
	Operation & Delivery Building ($765.0m^2$)	Operation Theater, Delivery Room, Central Sterilizing & Supply Room, etc.

	Ward Buildings (2 blocks) (Per block 432.0m^{2,} Total 864.0m^2)	4 beds room, 2 beds room, 1 bed room, HCU, Shower Room, etc.
	Service Building (432.0m^2)	Kitchen, Laundry, Maintenance Room, Pump Room, Water Tank Storage, etc.
	Ancillary Buildings (405.6m^2)	, Guardhouse, Driver's Waiting Room, Elevated Water Tank, Septic Tank, etc.
Medical Equipment	Equipment for Dental, Physical Therapy, Radiology, ER/Operation Theater, Obstetrics/Gynecology, EENT (Eye, Ear, Nose and Throat), etc.	

Source: prepared based on the information provided by JICA

Actual output

The hospital facilities (3,969.6 m^2) and equipment were implemented mostly as planned, with 18 changes with the facilities and 2 changes with the equipment. Major changes among these are shown in Table 3.

Table 3: Major Changes from the Original Plan

(Major changes after the detailed design survey)

1) Change in the location and size of the door and cancellation of a pass box between the Laboratory and Blood Collection Room
2) Addition of a sink in the Pharmacy
3) Change in the size and location of the door to the Generator Room and addition of a louver
4) Change of windows, from three sliding windows to two-connected windows and from double sliding windows to single windows, as well as a change in the width of a single window from 840mm to 1,000mm
5) Change of the frame of the interior doors from wooden to one made of steel

Source: Information provided by JICA

According to the AMH, no inconveniences were reported as a result of these changes. Instead it was reported that improvements were brought about by these changes, such as the provision of better air circulation and convenience for users.

Regarding the major equipment procured, it was confirmed that most of the major equipment was being used. However, the hematology analyzer was not used due to the unavailability of reagents to be used for the equipment locally[6]. Also, among other pieces of equipment that were not listed as major ones, there was certain equipment that was not being used due to the difficulty in procuring parts or consumables domestically.

6 Among the major pieces of equipment, the autopsy table was not being used because situations that require an autopsy had not occurred after implementation of this project.

OPD Reception

OPD Waiting Area

In addition to the above, at the time of the project planning, clearing of existing facilities etc. and leveling and reclaiming the land at the construction site, installing a surrounding fence, bringing electricity to the site, relocating existing furniture and procuring furniture, tree planting, securing a budget for VAT refunds and bank commission payments were planned to be implemented by the Philippine side. All of these items were implemented, although a part of the surrounding fence remained as a temporary construction.

3.2.2 Project Inputs

3.2.2.1 Project Cost

The cost of this project to be borne by Japan was planned to be 1,089 million yen, while the cost to be borne by the Philippine side was planned to be 167 million yen. The actual project cost of the Japanese side was 1,028 million yen. This was because the bidding price was lower than the estimated price. The cost borne by the Philippine side was 171 million yen, influenced by the exchange rate fluctuation. Thus, compared to the planned cost of 1,256 million yen, the total project cost was 1,199 million yen, which was lower than the planned amount (95.5 % of the plan).

3.2.2.2 Project Period

At the time of project planning, the period of this project was expected to be 21 months including implementation of detailed design and bidding. This project was implemented as planned, as the actual project period was also 21 months from March 2010 (Signing date of the Exchange of Notes) until December 2011.

As described above, the outputs of this project were mostly as planned, the project cost was within the plan (95.5% of the plan) and the project period was as planned (100% of the plan). Therefore, the efficiency of the project is high.

3.3 Effectiveness[7] (Rating: ③)

3.3.1 Quantitative Effects (Operation Indicators)

As quantitative effects to be achieved by implementing this project, the targets for the number of inpatients at AMH, major operations including caesarian sections[8], deliveries, bed days at AMH and the number of patients that could receive medical care at AMH without being transferred to other hospitals outside the province were set respectively as shown in the table below.

Table 4: Operation Indicators of This Project

	Baseline	Target	Actual	Actual	Actual	Actual
	2008	2014	2011	2012	2013	2014
	Baseline Year	3 Years After Completion	Completion Year	1 Year After Completion	2 Years After Completion	3 Years After Completion
Number of AMH inpatients	3,960	increase	4,612	4,764	5,599	6,005
Major operations including caesarian sections	16	270	124	155	240	251
Deliveries	371	780	620	703	886	1,245
Bed days of AMH	7,700	14,600	11,922	11,958	15,497	18,738
Number of patients who could receive medical care at AMH without being transferred to other hospitals outside the province (per year)	0	800	No data			

Source: Information provided by JICA and AMH

Notes: As to the indicator "Bed days of AMH," "Cumulative number of inpatients acceptable at AMH" was listed in the ex-ante evaluation table of this project, but during ex-post evaluation, it was confirmed that "bed days of AMH" was the indicator that had originally been intended. Thus "bed days of AMH" was used as a basis for ex-post evaluation. In addition, the target of this indicator was set as "13,000 persons/day" in the ex-ante evaluation table. It was confirmed that "14,600 persons/day" was the target intended in the Preparatory Survey Report of this project, according to the project consultant. Therefore the evaluator amended the target figure as originally intended one and conducted an evaluation based on it.

The number of inpatients at AMH, deliveries and bed days achieved their respective target figures as of 2013. Major operations including caesarian sections achieved 93% of the targeted figure as of 2014 with an increasing trend. Expansion of the facility capacity (increase in number of beds) and increase in numbers of operations and deliveries by securement of specialized doctors (obstetrician and gynecologist, anesthetist and surgeon) are considered as factors that help to explain that the above mentioned indicators have

[7] Sub-rating for Effectiveness is to be put with consideration of Impact.

[8] "Major operation" means surgical procedures requiring anesthesia/spinal anesthesia to be performed in the operating theater.

achieved their respective target figures. However, as to the number of deliveries, prohibition of non-facility deliveries issued by the DOH is also considered as a factor to explain its increase.

There is no aggregated data on the number of patients who could receive medical care at AMH without being transferred to other hospitals outside the province. However, it could be considered that major effects expected at the time of project planning have been achieved as the number of major operations including caesarian sections, which had to be transferred to other province at the time of project planning, has been increasing since completion of the project. Besides, the number of inpatient referrals from AMH to other health facilities (Table 5) decreased right after the project completion, but increased sharply in 2014. According to the implementing agency, it was inferred that there were many patients who hoped to be transferred to other health facilities in 2014.

Table 5 Number of Inpatient Referrals from AMH to Other Health Facilities

2010	2011	2012	2013	2014
230	195	145	138	242

Source: AMH Hospital Statistical Report for the respective years

Table 6 shows the number of patients from Aurora province who were admitted in the Paulino J. Garcia Memorial Research & Medical Center (hereinafter referred to as PJG Memorial Research & Medical Center). This Center is considered to have accepted the largest number of patients from Aurora province among public hospitals in other provinces. The numbers of referrals in obstetrics and gynecology, internal medicine and ear, nose and throat departments are slightly decreasing, but a trend of drastic decrease was not observed.

Table 6 Number of Patients from Aurora Province
Admitted in PJG Memorial Research & Medical Center

	2008	2009	2010	2011	2012	2013	2014
Obstetrics and Gynecology	208	238	183	185	178	148	178
Pediatrics	109	115	87	91	88	62	109
Internal medicine	216	252	209	189	191	180	167
Surgery	146	138	137	150	174	141	171
Appendectomy	49	38	27	24	24	25	42
Orthopedics	23	25	10	41	35	48	39
Ear, nose and throat	24	5	8	4	5	4	1
Ophthalmology	13	3	6	3	14	12	8

Source: Information provided by Paulino J. Garcia Memorial Research & Medical Center

According to the interview with RHUs, a lack of specialist doctors at AMH is being considered as a problem. An interviewee at RHU commented that they refer their patients to PJG Memorial Research & Medical Center because there were many patients who had been referred to AMH and were later transferred to PJG Memorial Research & Medical Center. An interviewee at a RHU also explained an example case where a patient had to be transferred to PJG Memorial Research & Medical Center because there was no available surgeon at AMH at that time. Therefore, it was inferred that AMH's capacity is limited due to personnel organization where there was only one doctor per specialization, in addition to the lack of specialized doctors.

In addition, the beneficiary survey result[9] shows that there were many respondents who expressed their expectation for AMH to strengthen their personnel organization structure, such as an increase in the number of doctors, as their comments on further improvement to be expected to AMH. More concretely, the comments included not only an increase in the number of doctors, but also comments for having specialized doctors in a certain specialization area or in various specialization areas. Therefore, it is inferred that their desire to have a hospital like PJG Memorial Research & Medical Center in Aurora province might be partly reflected in their expectations. This is because PJG Memorial Research & Medical Center is a national general hospital with a Level 3 hospital license that accepted many patients from Aurora province.

In addition, in interviews with RHUs, there was such comment that the RHUs do not have a good understanding of medical services available at AMH as well as equipment used there. It is considered as important to make medical services provided by AMH, etc. known to health units within the province.

3.3.2 Qualitative Effects

At the time of project planning, the following qualitative effects were expected by implementing this project.

(1) Improvement in the quality of medical services provided by AMH

(2) Reduction of the physical and economic burden of patients who could receive medical care at AMH without being transferred to other hospitals outside the province by the long drive

With regard to (1), hospitals are categorized according to medical services provided etc., by

[9] A questionnaire survey with 322 interviewees, a total of 126 healthcare professionals working in Arora Province and 196 outpatients/inpatients of AMH was conducted. The survey concerned the improvement of medical facilities and equipment, improvement of medical services as a result of this project, satisfaction with medical services provided by AMH, reduction of the physical and economic burden of patients, hygienic conditions of AMH, maintenance conditions etc.

the hospital licensing system in the Philippines. AMH could obtain and continue renewing its hospital license by the category that was intended at the time of project planning[10]. Therefore, AMH, also furnished with new equipment, is capable of providing medical services that were not available at the old AMH, such as major operations including caesarian sections, that needed to be referred to other hospitals in other provinces at the time of the project planning.

The result of the beneficiary survey also shows that about 80% of the healthcare professionals and patients considered that medical services at AMH had improved as a result of this project, as 30% responded "Improved a lot" and 49% responded "Improved" to the question "Do you think that the quality of medical services provided by AMH has improved as a result of the Project?" Furthermore, regarding satisfaction with medical services provided by AMH, about 80% of the patients showed their satisfaction, with 14% responding "Highly satisfied" and 65% responding "Satisfied."

Regarding (2), the reduction of the physical and economic burden of patients, the beneficiary survey result shows that 47% responded "the physical burden of patients and his/her family members was/has been reduced", while 46% responded as "the economic burden of patients and his/her family members was/has been reduced." In both questions, about half of the participants responded that the burden was/has been reduced[11], so it is inferred that this project contributed to the reduction of the physical and economic burden of patients.

3.4 Impacts

3.4.1 Intended Impacts

At the time of project planning, the following two impacts were expected by the implementation of this project.

(1) The capacity of medical service provision in Aurora province will be reinforced

(2) Aurora province's capacity to train health workers will be strengthened, leading to securement of quality health workers and reinforcement of medical service systems of the entire province.

Regarding (1), number of inpatient referrals from other health facilities to AMH

[10] At the time of the project planning, the hospital licensing system in the Philippines classified general hospitals into 4 levels. At the time of the project planning, AMH was classified as Level 1, an emergency hospital to provide initial clinical care and primary care, due to the absence of a surgeon and an anesthesiologist, according to the DOH's rules. It was assumed to construct a Level 2 hospital with the function of conducting major surgery, including caesarian sections, by implementation of this project. In 2012, DOH introduced a new classification for hospital license system, by which general hospitals are to be classified into 3 levels. Hospitals that were classified as Level 1 under the old licensing system are to be classified as "infirmary" under the new system, and not positioned as a general hospital. AMH is classified as a Level 1 hospital under the new licensing system, but this is a category for a general hospital with surgery functions, and thus there is no change in its position from what was expected at the time of the project planning.

[11] Among the remaining half of the respondents, 30% and 35% did not provide any response regarding the reduction of physical and economic burdens, respectively.

increased largely in 2014, compared to that in 2009, as the table 7 shows.

Table 7 Number of Referrals from Other Health Facilities to AMH (inpatients)

	2009	2014
From RHUs	18	200
From other hospitals	169	228

Source: AMH Hospital Statistical Report for the Year CY 2009 and answer to the questionnaire

According to interview with other provincial hospital in Aurora province, the interviewee answered that they could refer their patients to AMH with more confidence compared to before because a surgeon is stationed and caesarian sections could be implemented at AMH. In addition, the interviewee noted that more patients prefer to be transferred to AMH for financial reasons and improvement in the quality of the hospital's medical service. As written above, there have been cases where patients were transferred from RHU to a hospital in other province due to reasons like the absence of doctors. However, it is considered that this project is contributing to strengthening the capacity of medical service provision within Aurora province, because it is inferred that the reliability of AMH as the top referral hospital in the province has increased in part compared to the time of the project planning.

Regarding (2), AMH has been receiving trainees every year from UPS-SHS (midwifery, nursing) as well as other schools within the province (caregivers, etc.), as the table below shows.

Table 8 Practical Trainees Accepted at AMH

	2009	2010	2011	2012	2013	2014
UPM-SHS (midwifery)	58	70	59	47	47	95
UPM-SHS (Nursing)			12	10	10	11
Other school in the province	15	7	11	7		
Other school in the province		18	14	10	12	20

Source: Answer to the questionnaire

It was reported that the old AMH had received trainees before this project was implemented. However, at the new AMH, students can use new pieces of equipment and have more practical training opportunities with an increase in the number of beds. According to an interview with UPM-SHS, many graduates have been employed at RHUs, etc. within Aurora province. Therefore, it is considered that this project is contributing to strengthening the capacity to train health workers with the introduction of new equipment and an increase in practical training opportunities at AMH, which accepts students from schools like UPM-SHS. Furthermore, it is also considered that this project is contributing to

reinforcement of the medical service system of the entire province through contributing to securing health workers, as many graduates from UPM-SHS are employed within the province.

3.4.2 Other Impacts

3.4.2.1 Impacts on the Natural Environment

At the time of the project planning, as a consideration to the natural environment, it was planned to decrease the BOD by discharged water treatment through installing a septic tank according to the effluent standard in the Philippines.

At the time of ex-post evaluation, it was reported that there was no BOD data of discharged water, however, the pollution control officer had been recently appointed and AMH was just conducting examination of items such as discharged water in order to report on their compliance to the environmental standard to the Department of Environment and Natural Resources (hereinafter referred to as DENR) for the first time since completion of this project. According to the result of examination on the quality of the discharged water, two items including BOD exceeded the standards. However, according to AMH, they took measures for improvement such as cleaning the septic tank right after they had the test results, and they are planning to conduct the next examination in the next quarter. From now on, AMH has to report quarterly to DENR, so it is considered that adequate measures will be taken.

As for medical waste, AMH secured a disposal area within its premises where medical waste was separately disposed, with the assistance of the Japan Overseas Cooperation Volunteer (hereinafter referred to as JOCV) that was dispatched to AMH, because incineration of waste is prohibited by law in the Philippines. According to the implementing agency, there were no environmental impacts observed, except for water discharge, by construction of the project facility and medical waste disposal.

3.4.2.2 Land Acquisition and Resettlement

There was no land acquisition and resettlement for this project, as it was implemented on the land owned by the provincial government.

With regard to the effectiveness of the project, it is considered that the intended effects have been realized because the number of inpatients, major operations including caesarian sections, deliveries and bed days at AMH have almost reached their respective targets set at the time of project planning. Although there was no data available on the number of patients who could receive medical care at AMH without being transferred to other hospitals outside the province, it is considered that major effects have been realized because the number of major operations,

including caesarian sections, that were transferred to other provinces at the time of project planning, has been increasing together with an increase in the number of inpatients and deliveries. As to the qualitative effects, improvement in the quality of medical services provided by AMH and the reduction of the physical and economic burden of patients, are considered as being realized.

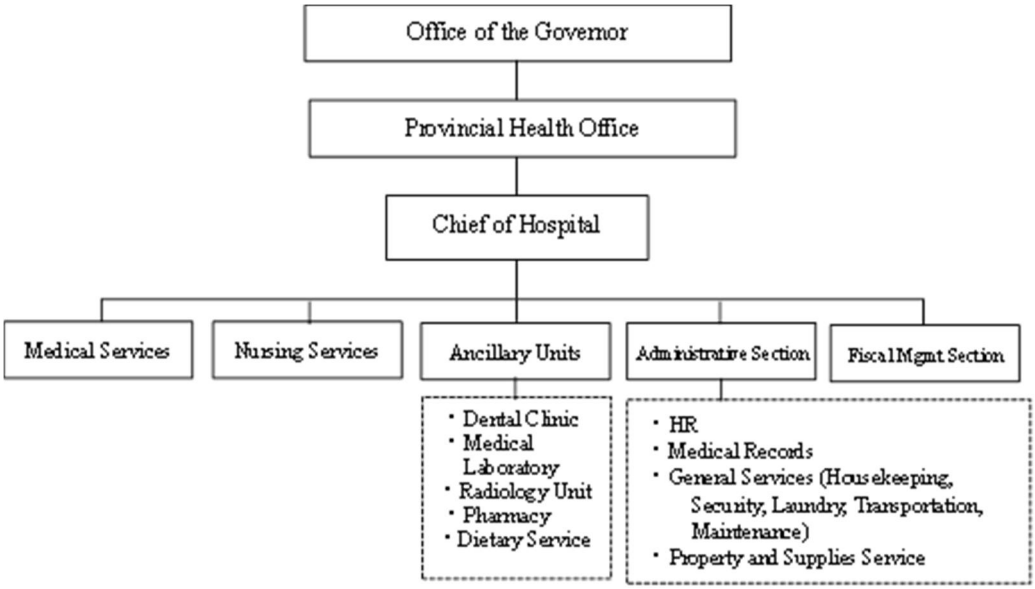
Regarding impacts, it was inferred that this project has been contributing to reinforcement of the capacity of medical service provision in Aurora province because it was inferred that the reliability of AMH by other health facilities in the province has increased in part compared to the time of the project planning. It was also inferred that this project has also contributed to securement of quality health workers and reinforcement of medical service systems of the entire province through strengthening Aurora province's capacity to train health workers. There was no land acquisition and resettlement for this project, but it is necessary to take adequate measures for discharged water as it exceeded the standard. Overall, however, it is considered that the sufficient impact of the project has been realized.

In light of the above, this project has largely achieved its objectives. Therefore, the effectiveness and impact of the project are high.

3.5 Sustainability (Rating: ②)

3.5.1 Institutional Aspects of Operation and Maintenance

The implementing agency of this project is the Provincial Health Office of the provincial government of Aurora. AMH is a provincial hospital with 164 staff working under the chief of the hospital, and the hospital is operated with the organizational structure shown below. Also, as of the time of the ex-post evaluation, the head of the administration section has been already assigned, although this person was not yet assigned at the time of the project planning.



Source: Prepared from information provided by AMH

Figure 1 AMH Organizational Structure

Table 9 Number of Staff at AMH (2014)

Section	Permanent	Contractual	Casual	Job order
Administrative & Financial	22		8	25
Medical	6	8	1	
Nursing	5		8	46
Ancillary	13		8	14
Total	46	8	25	85

Source: Prepared from the Hospital Statistical Report for 2014

According to the Provincial Health Office/AMH, AMH has to secure a certain number of staff number, which is required to renew its hospital license. It is considered that AMH could maintain the organizational structure necessary to operate as a Level 1 hospital because it could renew its hospital license and that the level of service provided has been checked as the DOH conducts on-site investigation for license renewal every year. However, the staff composition of AMH shows that short-term contracted workers, called "casual" or "job order"[12], constitute a majority in terms of the number of employees. Although this is due to a limitation on budgets set by a law[13], there is a concern about sustainability due to a composition of staff with a majority of short-term contracted workers whose contract renewal is not guaranteed. In addition, according to AMH, there are not enough cleaning workers due to a limitation on the number of short-term contracted workers.

[12] Contract periods are 6 months for "casual" workers and less than 3 months for "job order" workers.
[13] In the Philippines, there is a law on the upper limit to the percentage of the personnel budget of the provincial budget.

Table 10 Doctors at AMH (as of the end of December 2014)

		Permanent	Affiliate	MOA
Specialization	Internal Medicine		1	
	Surgeon			1
	Obstetrician		1	
	Pediatrician			1
	Anaesthesiologist			1
	Radiologist			1
	Pathologist			1
	ENTT specialist			1
	Psychiatrist*			
	Neurologist*			
General Physicians		5		
Dentist		1		
Ophthalmologist				1

Source: Answer to the questionnaire
*Psychiatrist and neurologist visit AMH every two months.

Table 10 shows the number of doctors at AMH. According to AMH, most of the doctors are renewing their contracts with AMH after implementation of this project.

Maintenance personnel under AMH's general service unit are in charge of maintenance of AMH's facility, and engineering office or general service office of the provincial government provides support with work such as repairs when necessary. As for equipment, each section is in charge of daily maintenance. In addition, technicians dispatched from the Hospital Service Management attached to the DOH conduct checks and repairs of the equipment at the time of the hospital license renewal every year. Although the provincial government had a plan to establish a section in charge of the equipment maintenance of all provincial hospitals (Health Facilities Development and Maintenance Unit), this was not realized due to the upper limit on personnel budget allocation described above.

3.5.2 Technical Aspects of Operation and Maintenance

Regarding the medical technical level of AMH, it is considered that AMH has staff equipped with the technical level necessary to renew its Level 1 hospital license, as it has been able to renew its hospital license every year according to the DOH hospital licensing system.

As for technical aspects of maintenance of the hospital facility and equipment, AMH depends on external resources; for example, the provincial government in case of facility maintenance and suppliers or engineers of the DOH in case of equipment. AMH could receive support from the provincial government for maintenance of the hospital facility, but it is expected that AMH would establish and strengthen its own system or capacity to be able to conduct repairs of the equipment in a more stable way.

AMH sends its personnel to training programs, seminars and workshops conducted by the DOH or private organizations as an effort to improve the capacity of their employees. However, there has been no particular training conducted for maintenance staff since they received maintenance training at the time of the hand-over of this project. More efforts for personnel capacity building are expected in the future, as AMH's expenditure on capacity building has not reached 1% of its total expenditure, the level recommended at the time of project planning.

3.5.3 Financial Aspects of Operation and Maintenance

According to the Provincial Health Office/AMH, AMH's budget is a part of the provincial government's budget, and in case AMH incurs more expense than its originally-planned budget, the provincial government allocates supplementary budget. As Table 11 shows, the budget of the Aurora provincial government has been on an increasing trend. Budgets of the Provincial Health Office and AMH have also been on an increasing trend due to an increase in the provincial governments' awareness of the importance of the health sector.

Table11 Budgets of Aurora Province and the Provincial Health Office

(unit: thousand pesos)

Fiscal Year	Provincial Government (a)	Provincial Health Office (b)	b/a (%)	Budget for AMH
2009	397,616	63,382	15.9	24,499
2010	501,154	77,497	15.5	32,271
2011	513,579	78,244	15.2	32,969
2012	476,588	79,672	16.7	31,470
2013	636,883	87,492	13.7	32,786
2014	684,161	97,823	14.3	41,436
2015	665,480	108,787	16.3	45,184

Source: Answer to the questionnaire

Table 12 shows the income and expenditure of AMH. The income of AMH has been increasing, especially by the contribution of an increase in Philhealth reimbursement. With the exception of 2013, its expenditure is also increasing, but the cost recovery ratio (Table 13) has been at the same level or increasing, compared to that at the time of project planning[14]. Looking at the income level of AMH from its income-maintenance & other operation expenses (hereinafter referred to as MOOEs) ratio (Table 14), the income has been at the same level as before or at a higher level than before to cover the MOOEs

[14] However, it is necessary to take notice of the inappropriateness of comparing AMH's cost recovery ratios between 2014 and previous years, because the personnel expense of 2014 was smaller than previous years due to the exclusion of the personnel expenses of casual workers from AMH's expenditures starting from 2014.

except for personnel expenses, although this has been increasing with the exception of 2013. With regards to 2013, the cost recovery ratio is very high in that year compared to those of other years, because the income in that year was more than that of its previous year while its expenditure was smaller. Regarding 2014, although the rate of the MOOEs increase was large, exceeding that of the income increase, the year's cost recovery ratio shows that the income is still at a level covering more than 70% of the MOOEs.

Therefore, it is considered that there are less concerns for the financial aspects of operation and maintenance of this project. This is because the AMH's budget is a part of the provincial government's budget, the expenditure exceeding the budget was made in 2012, and that AMH's budget and own revenue increased in 2014.

Table12 Income and Expenditure of AMH

(unit: million pesos)

	2009	2010	2011	2012	2013	2014
Service Income	5.5	7.4	6.3	8.6	13.3	15.8
Philhealth portion	0.1	0.3	2.7	n/a	6.9	9.5

Source: Answer to the questionnaire

(unit: million pesos)

		2009	2010	2011	2012	2013	2014
Hospital Expenditure	Budget	30.4	37.3	33.0	31.5	32.8	41.4
	Actual	30.1	31.5	32.8	36.6	29.9	40.8
Personnel expense portion	Budget	20.0	24.2	25.2	22.3	25.0	19.0*
	Actual	21.0	22.3	25.0	27.4	24.8	19.0*
Maintenance & other operation expenses (MOOEs) portion	Budget	10.4	13.1	7.8	9.2	7.8	21.9
	Actual	9.2	9.2	7.8	9.1	5.1	21.4
Electricity Charges	Actual	0.6	0.9	1.0	0.7	0.8	0.6

Source: Answer to the questionnaire

* Personnel expense of "casual" workers is not included in AMH's 2014 expenditure

Table 13 Cost Recovery Ratio of AMH (Income/ (hospital expenditure + electricity charges)

2009	2010	2011	2012	2013	2014
18%	23%	19%	23%	43%	38%*

Source: Calculated by the evaluator based on answer to the questionnaire

*It is necessary to take notice of the inappropriateness of comparing AMH's cost recovery ratios between 2014 and previous years, due to exclusion of the personnel expenses of casual workers from AMH's 2014 expenditure.

Notes: Electricity charges are borne by the provincial government, and therefore not included in the operation expense. However, the evaluator included electricity charges in AMH's operation expense for calculation of this ratio.

Table 14 AMH Income-MOOEs Ratio

2009	2010	2011	2012	2013	2014
56%	73%	72%	88%	225%	72%

Source: Calculated by the evaluator based on answer to the questionnaire
Notes: MOOEs includes electricity charges for this calculation.

3.5.4 Current Status of Operation and Maintenance

At the time of the ex-post evaluation, no written maintenance plan has been formulated and maintenance activities are basically conducted by the respective section where equipment is placed.

Maintenance of the hospital facility is conducted with support of the provincial government. However, the timing of maintenance depends on prioritization by the provincial government. For example, there are cases where a certain maintenance activity is set as lower priority due to budget limitations.

As for maintenance of equipment, in many cases the technicians dispatched by the DOH have difficulty with repairs, and in such cases AMH looks for and contacts a supplier by itself. However, according to AMH, it is difficult to find local suppliers/agents to order repairs or spare parts, and some equipment was not being used because of this reason. For this project, it was confirmed that equipment was procured after confirming the availability of local agents and a list of contacts of such agents were handed over to AMH. However, the list has not been effectively utilized because the list was missing as a result of events like the change of personnel. It is considered to be necessary for AMH to establish a system to easily make orders for repairs or spare parts[15]. In addition, AMH's procurement of consumables or spare parts might take a long time or could be conducted only when the necessity arises, in cases where the provincial government's procurement rule applies. Therefore, it is necessary to think out some measures for appropriate stock management.

With regards to cleaning of the facility, AMH considers that an insufficient number of cleaning staff is a concern in terms of maintaining cleanliness in the hospital, although there were no problems observed in particular during the site survey of this ex-post evaluation study. Although it is difficult for AMH to increase the number of cleaning staff due to the upper limitation of the number of its staff, it is considered necessary to strengthen its personnel organization, taking into consideration its plan of ward expansion during 2015.

5S activities have been conducted at AMH, with support by a JOCV that was dispatched to AMH and the Aurora provincial government. More concretely, it is reported that a 5S committee was created within AMH, and that they hold bi-monthly meetings to monitor

[15] It is reported that AMH took the initiative to seek assistance from the Hospital Services Management Luzon for preventive maintenance, repair and calibration of the equipment.

and evaluate 5S activities conducted in the hospital. In addition, AMH is making efforts to improve the quality of its service, by putting suggestion boxes in the hospital to carry out tasks like to gather patients' complaints and take measures to solve complaints.

With regard to the organizational structure for operation and maintenance, AMH has been able to renew DOH's hospital licence, but there is a concern partly regarding the stability of the personnel organization because the majority of AMH staff are short-term contract workers. In addition, it is considered necessary to strengthen personnel organization, including cleaning staff, in anticipation of future facility expansion. While there are no particular issues regarding technical aspects to maintain the facilities as support is provided by the provincial government, equipment maintenance is unstable because AMH has to rely on external resources when technicians dispatched by the DOH have difficulty with repairs. There is less concern for financial aspects, because the income and budget of AMH have been increasing and the AMH budget is a part of the provincial government's budget, and according to the provincial government this is planned to continue. The maintenance status needs improvement because repair orders or procurement of consumables and spare parts were not conducted at the appropriate timing.

In light of the above, some minor problems have been observed in terms of organisational and technical aspects as well as the current status of operation and maintenance. Therefore, the sustainability of the project effects is fair.

4. Conclusion, Recommendations and Lessons Learned

4.1 Conclusion

In this project, a hospital facility such as an outpatient department building was constructed and medical equipment was furnished to improve the medical services of AMH. The relevance of this project is high, as it was consistent with the development policy and needs of the Philippines as well as the ODA policy of Japan. The efficiency is also high, as the contents of the project were implemented mostly as planned and the project cost and period were within the scope of the plan. With regard to the effectiveness of the project, it is considered that the effects have been realized in terms of the increase in the number of inpatients, deliveries, bed days and major operations including caesarian sections, improvement of medical services provided by AMH and the reduction of the patients' physical and economic burden. In addition, it was inferred that this project contributed to reinforcement of medical service provision capacity in Aurora province, securement of quality health workers and reinforcement of medical service systems of the entire province through strengthening Aurora province's capacity to train health workers. Therefore the effectiveness and impact of this project are high. The sustainability of

the effects of this project is fair. Although there is less concern with the financial aspects, there are some minor problems observed in terms of organisational and technical aspects, as well as the current status of operation and maintenance, such as the need to strengthen personnel organization and difficulties in the repair of equipment and procurement of spare parts.

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

4.2 Recommendations

4.2.1 Recommendations to the Implementing Agency

Reinforcement of Personnel Organization for Maintenance

With regard to personnel organization, it is not easy for AMH to increase its number of staff because of the upper limitation set for budget allocation to personnel expenses. Therefore it needs to rely on many short-term contract workers. In addition, there is a concern about the insufficient number of cleaning staff. In view of planned ward expansion during 2015, it is desirable to reinforce personnel organization for operation and maintenance, for example, through consignment of cleaning work to an external service provider.

Smooth Implementation of Repairs and Spare Parts Procurement

It is necessary for AMH to establish a system which enables AMH to do repairs or procure spare parts easily. For example, it is reported that the AMH supply officer became able to directly contact the supply officer at Benguet General Hospital and to obtain supplier information. This was made possible through implementation of a study trip to the Benguet General Hospital which was also supported by the Japanese government for the improvement of facilities and equipment. It is desirable to conduct repairs and to do parts procurement promptly through active collection and utilization of information on domestic suppliers, etc., through doing things such as utilizing this network effectively.

4.2.2 Recommendations to JICA

Continuation of Support for Repairs and Parts Ordering

It was observed that AMH did not have information on domestic suppliers and agents and some equipment could not be repaired or parts could not be procured at an appropriate timing. It is reported that the JICA Philippine office has been supporting AMH so far in this respect. This is considered to contribute to effective utilization of the equipment if such support in obtaining contact information of domestic agents, etc. could be continued when necessary, until the time when AMH accumulates and puts in order such contact information[16].

16 A list of local agents was re-sent by the JICA Philippine Office to AMH in June 2015.

4.3 Lessons Learned

Introduction of a System for Stable Equipment Repair and Parts Procurement

In this project, the procurement of equipment was conducted based on confirmation of the availability of domestic agents. However, at the time of the ex-post evaluation, it was difficult for AMH to find a local supplier or agents and there were pieces of equipment that could not be repaired or parts that could not be procured at an appropriate timing. It was confirmed that a list of local agents for all equipment had been provided to AMH at the time of hand-over of the equipment, but the information was not used effectively as the list was missing due to issues such as personnel changes. As such personnel changes could be expected to happen after the project completion because a staff member might quit or be replaced, it is considered important to have measures that enable anyone to access contact information easily. For example, a sticker with contact information for a repair order was put on equipment procured at AMH, but it contained only a telephone number and an e-mail address in Japan. There might be a possibility that it is not easy to make an international call to Japan for smooth parts procurement, that an e-mail communication system is not well established, and communication in English is not easily conducted. Therefore, it is considered that introduction of a system which enables anyone to contact domestic agents, etc. easily by measures such as putting a sticker with the contact information of local agents on equipment would contribute to continuous and effective utilization of the equipment.

(End)