

## Appendix 1: Schedule of the Evaluation

No.	Date		Time	Schedule	Stay
1	1-Nov	Thu		Flight Narita - Bangkok (Mr. Hirakawa) Flight Bangkok - Vientiane (Mr. Hirakawa)	VTE
2	2-Nov	Fri	9:00	Meeting among Japanese Evaluation team	VTE
			14:00	Interview with the Long-term expert	
			16:00	Meeting with the Director of MPSC	
3	3-Nov	Sat		Collecting Information	VTE
4	4-Nov	Sun		Collecting Information	VTE
5	5-Nov	Mon	9:00	Visit Logistics Center	VTE
			13:00	Visit MES	
			15:00	Meeting with MOH	
6	6-Nov	Tue	8:30	Visit Friendship Hospital	VTE
			14:00	Visit Setthathirath Hospital	
			16:30	Interview with the Director of MPSC	
7	7-Nov	Wed	6:30   7:45	Flight Vientiane - Pakse (QV512)	PKS
			8:30	Visit Champasak Provincial Health Office	
			9:30	Visit Champasak Provincial Hospital	
			13:30	Visit Champasak Provincial Warehouse	
8	8-Nov	Thu	9:00   13:00	Pakse - Savannakhet (Project&JICA official car)	SVK
			14:00	Visit Savannakhet Provincial Health Office	
9	9-Nov	Fri	8:30	Visit Savannakhet Provincial Warehouse	SVK
			13:30	Visit Savannakhet Provincial Hospital	
10	10-Nov	Sat	8:00   15:00	Savannakhet - Vientiane (Project&JICA official car)	
11	11-Nov	Sun		Collecting Information	VTE
12	12-Nov	Mon	09:40   10:20	Flight Vientiane - Luangprabang (QV109)	LPB
			11:00	Visit Luangprabang Provincial Health Office	
			11:30	Visit WHO	VTE
			13:30	Visit Luangprabang Provincial Hospital	LPB
13	13-Nov	Tue	8:30	Visit Luangprabang Provincial Warehouse	SYB
			13:00   17:00	Luangprabang - Sayaboury (Project&JICA official car)	

No.	Date		Time	Schedule	Stay
14	14-Nov	Wed	8:30	Visit Sayaboury Provincial Hospital	LPB
			13:00   17:00	Sayaboury - Luangprabang (Project&JICA official car)	
15	15-Nov	Thu	9:00   13:00	Luangprabang - Oudomxay (Project&JICA official car)	ODX
			13:30	Visit Oudomxay Provincial Health Office	
			14:30	Visit Oudomxay Provincial Warehouse	
16	16-Nov	Fri	8:30	Visit Oudomxay Provincial Hospital	LPB
			13:00   17:00	Oudomxay - Luangprabang (Project&JICA official car)	
17	17-Nov	Sat	12:20   13:00	Flight Luangprabang - Vientiane (QV102)	VTE
18	18-Nov	Sun		Drafting Grid and Evaluation report	VTE
19	19-Nov	Mon		Drafting Grid and Evaluation report	VTE
20	20-Nov	Tue		Drafting Grid and Evaluation report	VTE
21	21-Nov	Wed	9:00	Confirming Grid and Evaluation report among Japanese Evaluation team	VTE
22	22-Nov	Thu	9:00	Confirming Grid and Evaluation report with C/P	VTE
			14:00	Confirming Grid and Evaluation report with Lao Evaluation team	
23	23-Nov	Fri		Confirming MM draft among Japanese Evaluation team	VTE
24	24-Nov	Sat		Collecting infomariton	VTE
25	25-Nov	Sun		Collecting infomariton	VTE
26	26-Nov	Mon		Collecting Information	VTE
27	27-Nov	Tue	9:00	Confirming MM with Lao Evaluation team and C/P	VTE
			15:30	Confirming MM draft with the director of the department of curative	
28	28-Nov	Wed		Collecting information	VTE
29	29-Nov	Thu	9:00	JCC meeting, Sign on MM	VTE
				Report to EOJ, JICA	
				Vientiane - Bangkok (Mr. Hirakawa)	
30	30-Nov	Fri		Bangkok - Narita (Mr. Hirakawa)	NRT



## Appendix 2: Persons interviewed by the Japanese team

PERSONS INTERVIEWED BY THE TEAM			
No	Name	Position	Organization
<b>Vientiane city</b>			
1	Dr. Thanom Insal	Director	MPSC
2	Mr. Kitsada Senthap	Chief	Logistics Center
3	Mr. Khamphay Xayavong	Deputy Chief	Logistics Center
4	Mr. Bounkhob Chamthaviengxay	Staff	Logistics Center
5	Mr. Khamsing Phaivong	Staff	Logistics Center
6	Mr. Sengdao Inthapatha	Chief	MES
7	Mr. Saysamone Keomanikhot	Staff	MES
8	Mr. Souksavang Xaysavangvong	Staff	MES
9	Mr. Khamtick Phanthalamixay	Staff	MES
10	Mr. Khamkhoun Bopha	Staff	MES
11	Dr. Phouthone Muongpak	Deputy Director	Mitthaphab Hospital
12	Dr. Phath Keungsaneth	Deputy Director	Mitthaphab Hospital
13	Mr. Keopasaxay Samountry	Chief of Technical Division	Mitthaphab Hospital
14	Mr. Khamphone Simmasay	Technical Staff	Mitthaphab Hospital
15	Mr. Sonephet Syliyasonsa	Technical Staff	Mitthaphab Hospital
16	Dr. Khampe Phongsavath	Deputy Director	Sethathirath Hospital
17	Dr. Mimala Pathoumxad	Chief of Foreign relationship	Sethathirath Hospital
18	Dr. Khampet Thammavong	Chief of Maintenance	Sethathirath Hospital
19	Dr. Sykhem Souliphon	Technical Staff	Sethathirath Hospital
20	Mr. Thongphet Kimmaly	Technical Staff	Sethathirath Hospital
21	Mr. Sakvorin Phankhamla	Technical Staff	Sethathirath Hospital
22	Mr. Somsack Vongnakhone	Technical Staff	Sethathirath Hospital
23	Mr. Soukanh Khanthavong	Technical Staff	Sethathirath Hospital
24	Mr. Hideshi Maruta	Coordinator	JICA Project
25	Ms. Reiko Tsuyuoka	Staff	WHO
<b>Champasack Province</b>			
26	Dr. Khampho Chaleunvong	Director	Provincial Health Office
27	Dr. Thongsa Saly	Deputy Director	Provincial Health Office
28	Dr. Sivixay Xayasane	Chief	Food and Drug Section
29	Dr. Bouala Phommachack	Deputy Chief	Food and Drug Section
30	Mr. Viengthong Thepvongsa	Chief	Provincial Warehouse
31	Mr. BouneKhiene Teuamouansy	Deputy Chief	Provincial Warehouse
32	Dr. Pradith Souvanlasy	Deputy Director	Provincial Hospital
33	Dr. Khampheune Sangsomsack	Chief of Technical Division	Provincial Hospital
34	Mr. Ketphixay Vongsuvan	Technical Staff	Provincial Hospital
<b>Savannakhet Province</b>			
35	Mr. Houmphane Simmvong	Deputy Chief	Food and Drug Section
36	Dr. Pathoumvanh Lathsavong	Chief	Provincial Warehouse
37	Mr. Khonesavanh	Chief Assistant	Provincial Warehouse
38	Ms. Souvanhthong Bounlieng	Staff	Provincial Warehouse
39	Ms. Kimely Phaphilome	Staff	Provincial Warehouse
40	Dr. Outhone Anothay	Deputy Director	Provincial Hospital
41	Mr. Soulideth Phengphinit	Chief of Technical Division	Provincial Hospital
42	Mr. Veokham Phanthavong	Technical Staff	Provincial Hospital
43	Mr. Somchith Vongsouthi	Technical Staff	Provincial Hospital

<b>Luang-Prabang Province</b>			
44	Mr. Thongdy Siengsounthone	Chief	Food and Drug Section
45	Mr. Ousavay Mythavong	Staff	Provincial Warehouse
46	Dr. Sichanh Hinpaphanh	Director	Provincial Hospital
47	Mr. Khamkeo Uaybountheung	Cheif of Technical division	Provincial Hospital
48	Mr. Malaphay Siviengsay	Technical Staff	Provincial Hospital
49	Mr. Vilakone Sayyana	Technical Staff	Provincial Hospital
50	Mr. Phanthavong Chanthaphone	Technical Staff	Provincial Hospital
51	Mr. Soneviuay Phaiboon	Technical Staff	Provincial Hospital
<b>Sayabouly Province</b>			
52	Dr. Khamphiou Phouthonesy	Director	Provincial Hospital
53	Dr. Khounsavath Senaphanh	Deputy Director	Provincial Hospital
54	Mr. Khampheuy Philavanh	Technical Staff	Provincial Hospital
<b>Oudomxay Province</b>			
55	Dr. Syphanh Oulayseng	Chief	Provincial Warehouse
56	Mr. Kaikham Phommachanh	Staff	Provincial Warehouse
57	Dr. Kingphet Xayalath	Director	Provincial Hospital
58	Dr. Douang Kethuangsy	Deputy Director	Provincial Hospital
59	Ms. Phou Viengsurkkaseum	Staff in charge Organization	Provincial Hospital
60	Ms. Chansamone Kouladeth	Head of Nurse	Provincial Hospital

### Appendix 3: Project Design Matrix (PDM<sub>1</sub>)

Project Name : The Project for Strengthening Medical Logistics in Lao P.D.R.

Target Groups : Managers in the central (4)\* and provincial (16) hospitals, and technical staff for maintenance of medical equipment in MES and the central and provincial hospitals (Medical Equipment Maintenance) \*Central hospitals: Mahosot, Friendship, Sethathirath, and Mother & Child hospitals

Staff in charge of inventory control of medical products at the Logistics Center and warehouses in 4 target provinces (Luang Prabang, Oudomxai, Savannakhet, Champasak) (Stock Inventory Control)

Project Period : 3 years (May 1, 2005 – April 30, 2008)

Version : No. 1  
Amendment Date : March 23, 2006

Narrative Summary	Objectively Verifiable Indicators	Means of Verification	Important Assumptions
<p><b>Overall Goal</b></p> <p>Medicines, medical products and equipment come to be managed and utilized efficiently and properly.</p>	<ol style="list-style-type: none"> <li>Working ratio of medical equipment in central and provincial hospitals increases.</li> <li>The ratio of dead stock declines at the Logistics Center and warehouses in 4 target provinces.</li> </ol>	<ol style="list-style-type: none"> <li>Medical equipment management database</li> <li>Inventory control database</li> </ol>	<p>The policy of the Ministry of Health regarding medicines, medical products and equipment is not changed largely.</p>
<p><b>Project Purpose</b></p> <p>The mechanism is established at the central and provincial levels for managing and utilizing medicines, medical products and equipment efficiently and properly.</p>	<ol style="list-style-type: none"> <li>The number of repair of medical equipment increases at the central and provincial hospitals.</li> <li>The number of dead stock declines at the Logistics Center and warehouses in 4 target provinces.</li> <li>The stock period declines at the Logistics Center and warehouses in 4 target provinces.</li> <li>The number of days exceeding the maximum standard temperature becomes less than 30 days per year at the Logistics Center and warehouses in 4 target provinces.</li> <li>The picking time is shortened at the Logistics Center and warehouses in 4 target provinces.</li> </ol>	<ol style="list-style-type: none"> <li>Medical equipment management database</li> <li>Inventory control database</li> <li>Inventory control database</li> <li>Record of automatic thermometer</li> <li>Inventory control database</li> <li>Report of outreach activities</li> </ol>	<ol style="list-style-type: none"> <li>The Ministry of Health continues to assign personnel and secure the budget.</li> <li>The Medical Equipment Management Policy (MEM Policy) is continuously implemented by the Ministry of Health.</li> </ol>
<p><b>Outputs</b></p> <ol style="list-style-type: none"> <li>The system is established for supporting central and provincial levels through MES and Logistics Center.</li> </ol> <p>&lt;Medical Equipment Maintenance&gt;</p> <ol style="list-style-type: none"> <li>The capacity of management, maintenance, and repair for technical staff is improved at MES, central and provincial hospitals.</li> <li>The management capacity for central and provincial hospital managers is improved.</li> </ol> <p>&lt;Stock Inventory Control&gt;</p> <ol style="list-style-type: none"> <li>The capacity of storage, handling, and inventory control for staff in charge of inventory control of medicines and medical products is enhanced at the Logistics Center and warehouses in 4 target provinces.</li> </ol>	<ol style="list-style-type: none"> <li>1-1. Outreach activities are carried out once a year at the central and provincial levels.</li> <li>1-2. A regular meeting is held once a year.</li> <li>1-3. The number of references from the central and provincial hospitals to MES increases.</li> <li>2-1. The number of participants (technical staff) increases in the technical training courses.</li> <li>2-2. Trainers take the technical training courses once a year.</li> <li>2-3. More than 5 types of training materials are utilized in the training courses.</li> <li>3-1. The number of participants (managers) increases in the management training courses.</li> <li>3-2. The expenditures for maintenance of medical equipment increase at the central (4) and provincial (16) hospitals.</li> <li>4-1. The number of participants increases in the inventory training courses.</li> <li>4-2. The Logistics Center and warehouses in 4 target provinces prepare the quarterly report of inventory control.</li> </ol>	<ol style="list-style-type: none"> <li>1-1. Report of outreach activities</li> <li>1-2. Minutes of regular meeting</li> <li>1-3. Monthly report of MES</li> <li>2-1. Report of technical staff training</li> <li>2-2. Report of trainers training</li> <li>2-3. Materials for training courses</li> <li>3-1. Report of managers training</li> <li>3-2. Annual balance sheet of each hospital</li> <li>4-1. Report of inventory control staff training</li> <li>4-2. Quarterly report of inventory control</li> </ol>	<ol style="list-style-type: none"> <li>Trained trainers continue working for the MES and central hospitals.</li> <li>Technical staff for maintenance of medical equipment and staff in charge of inventory control continue working.</li> </ol>

Activities	Inputs	Technical staff for maintenance of medical equipment and staff in charge of inventory control are appropriately allocated.
<p>1-1 Establish the facilities of the Logistics Center.</p> <p>1-2 Establish the database for managing the medicines, medical products and equipment.</p> <p>1-3 Confirm working conditions of the medical equipment across the country and input the results into the database by MES.</p> <p>1-4 Grasp the inventory conditions of warehouses in 4 target provinces through the database by the Logistics Center.</p> <p>1-5 Share the information among each department of MOH, Logistics Center, MES, central and provincial hospitals, and warehouses in 4 target provinces through the regular meetings.</p> <p>1-6 Conduct instruction and check through outreach activities at the central and provincial hospitals by MES.</p> <p>1-7 Conduct instruction through outreach activities at the warehouses in 4 target provinces by the Logistics Center.</p> <p>1-8 Introduce the request and report form from hospitals to MES.</p> <p>1-9 Evaluate medical equipment for decommission.</p> <p>2-1 Prepare the check and inspection manual.</p> <p>2-2 Introduce the daily and monthly working report.</p> <p>2-3 Introduce the check on electrical safety management of medical equipment.</p> <p>2-4 Introduce the reporting procedure inside the hospitals.</p> <p>2-5 Introduce the report form of working condition regarding medical equipment.</p> <p>2-6 Foster the trainers of the training courses (Japan, Thailand, or Laos).</p> <p>2-7 Prepare the training curriculum and program.</p> <p>2-8 Prepare the textbooks for the training courses.</p> <p>2-9 Conduct technical training courses.</p> <p>2-10 Evaluate the training courses.</p> <p>3-1 Prepare the training curriculum and program (including preventive maintenance, budgetary and personnel management, etc.).</p> <p>3-2 Prepare the textbooks for the training courses.</p> <p>3-3 Conduct the training courses for managers of central and provincial hospitals (Thailand or Laos).</p> <p>3-4 Evaluate the training courses.</p> <p>4-1 Introduce both the inventory control and working manuals.</p> <p>4-2 Introduce the database for inventory control at the warehouses in 4 target provinces.</p> <p>4-3 Prepare the manuals for delivery standard of medicines and medical products.</p> <p>4-4 Prepare the training programs for staff in charge of inventory control at the Logistics Center and warehouses in 4 target provinces.</p> <p>4-5 Conduct the training courses regarding storage, handling, and inventory control for the above personnel.</p>	<p><b>Japanese side</b></p> <p>1. Personnel</p> <p>Long-term expert 1 person × 3 years</p> <p>Short-term experts 4~6 persons / year</p> <p>Short-term experts from third countries (Thailand)</p> <p>2. Training courses</p> <p>In Japan</p> <p>In Lao P.D.R.</p> <p>In third country (Thailand)</p> <p>3. Facility construction</p> <p>Logistics Center</p> <p>4. Equipment provision</p> <p>Equipment for maintenance</p> <p>Material for inventory control</p> <p>Spare parts for maintenance and repair of medical equipment during training courses</p> <p>Forklift × 2</p> <p>Computers for database</p> <p>Materials for technology</p> <p>Others</p> <p>5. Operational expenses</p>	<p>Lao side</p> <p>1. Personnel</p> <p>Project Director</p> <p>Project Manager</p> <p>Staff of MES</p> <p>Staff of Logistics Center</p> <p>Trainers from central hospitals</p> <p>2. Provision of the project office and facilities</p> <p>3. Others</p> <p>Local Cost</p> <p>Site of the Logistics Center</p> <p>Running costs for electricity, water, etc.</p>
		<p><b>Pre-condition</b></p> <p>The construction site of the Logistics Center is leveled and utilities are prepared.</p>









## Appendix 5-a: Achievements

Narrative Summary	Objectively Verifiable Indicators	Achievements																																															
<p><b>Overall Goal</b> Medicines, medical products and equipment come to be managed and utilized efficiently and properly.</p>	<p>1. Working ratio of medical equipment in central and provincial hospitals increases.</p>	<p>1. The working ratio of medical equipment in central hospitals</p> <table border="1" data-bbox="427 573 730 1458"> <thead> <tr> <th rowspan="2"></th> <th colspan="2">Average yearly working ratio of medical equipment 2007 (as of 29th November)</th> </tr> <tr> <th>Before the commencement of the Project (%)</th> <th>2007 (as of 29th November) (%)</th> </tr> </thead> <tbody> <tr> <td>Mahosot hospital</td> <td>68.9</td> <td>97.7</td> </tr> <tr> <td>Friendship hospital</td> <td>70.0</td> <td>73.0</td> </tr> <tr> <td>Setthathirath hospital</td> <td>70.0</td> <td>95.5</td> </tr> <tr> <td>Mother and Child hospital</td> <td>60.0</td> <td>75.0</td> </tr> </tbody> </table> <p>Source: Project database, interview survey by the Project</p> <p>The working ratio of medical equipment in provincial hospitals</p> <table border="1" data-bbox="831 573 1311 1458"> <thead> <tr> <th rowspan="2"></th> <th colspan="2">Average yearly working ratio of medical equipment 2007 (as of 29th November)</th> </tr> <tr> <th>Before the commencement of the Project (%)</th> <th>2007 (as of 29th November) (%)</th> </tr> </thead> <tbody> <tr> <td>Phongsaly provincial hospital</td> <td>65.4</td> <td>94.4</td> </tr> <tr> <td>Luang Namtha provincial hospital</td> <td>54.8</td> <td>88.1</td> </tr> <tr> <td>Oudomxai provincial hospital</td> <td>66.7</td> <td>88.0</td> </tr> <tr> <td>Bokeo provincial hospital</td> <td>80.0</td> <td>84.8</td> </tr> <tr> <td>Luang Prabang provincial hospital</td> <td>-</td> <td>88.2</td> </tr> <tr> <td>Houaphan provincial hospital</td> <td>67.1</td> <td>75.7</td> </tr> <tr> <td>Sayaboury provincial hospital</td> <td>80.4</td> <td>98.5</td> </tr> <tr> <td>Xiengkhouang provincial hospital</td> <td>59.2</td> <td>80.0</td> </tr> </tbody> </table>			Average yearly working ratio of medical equipment 2007 (as of 29th November)		Before the commencement of the Project (%)	2007 (as of 29th November) (%)	Mahosot hospital	68.9	97.7	Friendship hospital	70.0	73.0	Setthathirath hospital	70.0	95.5	Mother and Child hospital	60.0	75.0		Average yearly working ratio of medical equipment 2007 (as of 29th November)		Before the commencement of the Project (%)	2007 (as of 29th November) (%)	Phongsaly provincial hospital	65.4	94.4	Luang Namtha provincial hospital	54.8	88.1	Oudomxai provincial hospital	66.7	88.0	Bokeo provincial hospital	80.0	84.8	Luang Prabang provincial hospital	-	88.2	Houaphan provincial hospital	67.1	75.7	Sayaboury provincial hospital	80.4	98.5	Xiengkhouang provincial hospital	59.2	80.0
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<sup>1</sup> The data is extracted from the survey report by the senior volunteer (June, 2002)

<sup>2</sup> The same as above

Vientiane provincial hospital	-	77.8
Borikhamxai provincial hospital	73.1	96.7
Khammouane provincial hospital	73.3	100.0
Savannakhet provincial hospital	-	96.6
Saravan provincial hospital	73.0	86.9
Sekong provincial hospital	84.4	80.4
Champasak provincial hospital	-	85.5
Aittapu provincial hospital	69.7	83.8

Source: Project database, interview survey by the Project

2. The ratio of dead stock declines at the Logistics Center and warehouses in 4 target provinces.

2. The ratio of dead stock at the Logistics Center and warehouses in four target provinces

	Average yearly ratio of dead stock at the Logistics Center and warehouses in four target provinces	
	2006 (%)	2007 (%: as of 29th November)
Logistics Center	34.0	0.0
Warehouse in Luang Prabang	0.0	0.0
Warehouse in Oudomxai	0.0	0.0
Warehouse in Savannakhet	12.0	0.0
Warehouse in Champasak	2.7	2.2

Source: The data is extracted from the interview survey by the Project, the reports from warehouses, and outreach activities by the Project.

**Project Purpose**  
The mechanism is established at the central and provincial levels for managing and utilizing medicines, medical products and equipment efficiently and properly.

1. The number of repair of medical equipment increases at the central and provincial hospitals.

1. The number of repair of medical equipment in central hospitals

	Total number of repair of medical equipment per year	
	2006	2007 (as of 29th November)
Mahosot hospital	277	200
Friendship hospital	316	116
Serthairath hospital	221	276
Mother and Child hospital	17	18
Total	831	610

Source: Project database, interview survey by the Project

The number of repair of medical equipment in provincial hospitals

	Total number of repair of medical equipment per year	
	2006	2007 (as of 29th November)
Phongsavay provincial hospital	151	41
Luang Namtha provincial hospital	16	9
Oudomxai provincial hospital	8	14
Bokeo provincial hospital	6	9
Luang Prabang provincial hospital	50	49
Houaphan provincial hospital	27	13
Sayaboury provincial hospital	98	76
Xiengkhouang provincial hospital	6	32
Vientiane provincial hospital	189	102
Borikhamxai provincial hospital	300	252
Khammouane provincial hospital	42	16
Savannakhet provincial hospital	-	82
Saravan provincial hospital	10	11
Sekong provincial hospital	5	12
Champasak provincial hospital	10	17
Attapu provincial hospital	78	47
Total	996	782

Source: Project database, interview survey by the Project

2. The number of dead stock declines at the Logistics Center and warehouses in 4 target

2. The number of dead stock at the Logistics Center and warehouses in four target provinces

	Total number of dead stock per year	
	2006	2007 (as of 29th November)
Logistics Center	342 pallets	0
Warehouse in Luang Prabang	0	0
Warehouse in Oudomxai	0	0

provinces.

Warehouse in Savannakhet	12 pallets	0
Warehouse in Champasak	5 pallets	2 pallets

Source: The data is extracted from the interview survey by the Project, the reports from warehouses, and outreach activities by the Project.

3. The stock period declines at the Logistics Center and warehouses in 4 target provinces.

3. The stock period at the Logistics Center and warehouses in four target provinces

	Total stock period per year (Average)	
	2006	2007 (as of 29th November)
Logistics Center	12 months	6 months
Warehouse in Luang Prabang	1 month	1 month
Warehouse in Oudomxai	6 months	6 months
Warehouse in Savannakhet	2 months	2 months
Warehouse in Champasak	6 months	2 months

Source: The data is extracted from the interview survey by the Project, the reports from warehouses, and outreach activities by the Project.

4. The number of days exceeding the maximum standard temperature becomes less than 30 days per year at the Logistics Center and warehouses in 4 target provinces.

4. The number of days exceeding the maximum standard temperature (25°C) per year at the Logistics Center and warehouses in four target provinces

	Total number of days exceeding the maximum standard temperature (25°C) per year	
	2006	2007 (as of 29th November)
Logistics Center	No air-conditioner room	0
Warehouse in Luang Prabang	No air-conditioner room	0
Warehouse in Oudomxai	No air-conditioner room	0
Warehouse in Savannakhet	No record	75 days
Warehouse in Champasak	No air-conditioner room	0

Source: The data is extracted from the interview survey by the Project, the reports from warehouses, and outreach activities by the Project.

5. The picking time is shortened at the Logistics Center and warehouses in 4 target provinces.

5. The picking time at the Logistics Center and warehouses in four target provinces. In terms of the picking time, the problem was that it took for an hour or several hours (unable to find in some case) to find the target medicines or medical products inside the warehouses. At present, however, the staff working for the Logistics Center and four warehouses became able to find the target objects immediately because the layouts inside the Logistics Center and four warehouses was well-organized with the reference numbers of all medicines and medical products corresponding to the information in the database.

**Outputs**

1. The system is established for supporting central and provincial levels through MES and Logistics Center.

1-1. Outreach activities are carried out once a year at the central and provincial levels.

1-1. Outreach activities at the central and provincial levels  
<Medical Equipment Maintenance>

Outreach activities conducted by the MES once a year at the central hospitals	Outreach activities conducted by the MES once a year	
	2006	2007 (as of 29th November)
Mahosot hospital	○	○
Friendship hospital	○	○
Sethatirath hospital	○	○
Mother and Child hospital	○	◎

Note) ○ : Conducted by Lao and Project sides; ◎ : Conducted by Lao side only  
Source: Reports from the MES staff

Outreach activities conducted by the MES once a year at the provincial hospitals

	Outreach activities conducted by the MES once a year	
	2006	2007 (as of 29th November)
Phongsaly provincial hospital	○	◎
Luang Namtha provincial hospital	◎	○
Oudomxai provincial hospital	○	○
Bokeo provincial hospital	◎	◎
Luang Prabang provincial hospital	○	○
Houaphan provincial hospital	◎	◎
Sayaboury provincial hospital	◎	○
Xiengkhouang provincial hospital	◎	◎
Vientiane provincial hospital	○	◎
Borikhamxai provincial hospital	○	○
Khammouane provincial hospital	○	◎
Savannakhet provincial hospital	○	○
Saravan provincial hospital	○	○

Sekong provincial hospital	○	○
Champasak provincial hospital	○	○
Attapu provincial hospital	○	◎

Note) ○ : Conducted by Lao and Project sides; ◎ : Conducted by Lao side only  
Source: Reports from the MES staff

<Stock Inventory Control>

Outreach activities conducted by the Logistics Center once a year at the warehouses in four target provinces

	Outreach activities conducted by the Logistics Center once a year	
	2006	2007 (as of 29th November)
Warehouse in Luang Prabang	○	○
Warehouse in Oudomxai	○	○
Warehouse in Savannakhet	○	○
Warehouse in Champasak	○	○

Note) ○ : Conducted by the Project as planned

Source: Reports from short-term experts

1-2. A regular meeting is held once a year.

1-2. Regular meetings Regular meetings were held with the representatives of each department of the MOH once a year.

<Medical Equipment Maintenance>

(1) 23 March 2006 (JCC Member, Central Hospitals)

(2) 07 September 2006 (Central Hospitals)

20 September 2006 (Provincial Hospitals in Northern region)

27 September 2006 (Provincial Hospitals in Southern region)

(3) 06 December 2007 (Related Departments of the MOH, Central & Provincial Hospitals) [plan]

<Inventory Control>

(1) 02 February 2006 (JICA office, Related Departments of MOH, Logistics Center, Warehouses in 4 target Provinces, Related Donor Projects)

(2) 24 January 2007 (Related Departments of MOH, Logistics Center, Warehouses in 4 target Provinces, Related Donor Projects)

(3) 17 October 2007 (Related Departments of MOH, Logistics Center, Warehouses in 4 target Provinces, Related Donor Projects)

1-3. The number of references from the central and provincial hospitals to MES increases.

1-3. The number of references from the central hospitals to the MES

	The number of references from the central hospitals to the MES	
	2006	2007 (as of 29th November)
Mahosot hospital	0	7
Friendship hospital	0	4
Seithairath hospital	0	11
Mother and Child hospital	0	3
<b>Total</b>	<b>0</b>	<b>25</b>

Source: Report from the MES, request form from hospitals

The number of references from the provincial hospitals to the MES

	The number of references from the provincial hospitals to the MES	
	2006	2007 (as of 29th November)
Phongsaly provincial hospital	2	0
Luang Namtha provincial hospital	8	13
Oudomxai provincial hospital	5	9
Bokeo provincial hospital	4	7
Luang Prabang provincial hospital	11	8
Houaphan provincial hospital	4	0
Sayaboury provincial hospital	15	14
Xiengkhouang provincial hospital	0	6
Vientiane provincial hospital	5	8
Borikhamxai provincial hospital	3	1
Khammouane provincial hospital	1	2
Savannakhet provincial hospital	10	15
Saravan provincial hospital	0	4
Sekong provincial hospital	10	15
Champasak provincial hospital	8	12



Atapu provincial hospital	0	0
<b>Total</b>	86	114

Note) Atapu provincial hospital consults with the specific technical person other than the MES.  
Source: Report from the MES, request form from hospitals

<Medical Equipment Maintenance>

2. The capacity of management, and maintenance, and repair for technical staff is improved at MES, central and provincial hospitals.

2-1. The number of participants (technical staff) increases in the technical training courses.

2-1. The number of participants (technical staff) in the technical training courses at the central and provincial levels

	The number of participants in the technical training courses		
	2005	2006	2007
MES	1	3	2 (plan)
Central hospitals	0	0	6 (plan)
Provincial hospitals	17	21	30 (plan)
<b>Total</b>	18	24	38 (plan)

Source: Reports of training courses, Evaluation Reports

2-2. Trainers take the technical training courses once a year.

2-2. The number of trainers participating in the technical training courses

Period	2005		2006		2007	
	September 11 – October 24	Japan	October 09 – 13	Thailand	October 07 – 12	Thailand
Number of participants	<ul style="list-style-type: none"> <li>• Three (3) participants from MES.</li> <li>• Three (3) participants from Friendship Hospital, 103 Hospital and Mahosot Hospital.</li> </ul>		<ul style="list-style-type: none"> <li>• Four (4) participants from MES.</li> <li>• Two (2) participants from Friendship Hospital and 103 Hospital.</li> <li>• Four (4) participants from regional hospitals</li> </ul>		<ul style="list-style-type: none"> <li>• Four (4) participants from MES.</li> <li>• Two (2) participants from Friendship Hospital and 103 Hospital.</li> </ul>	

Source: Reports of training courses, Evaluation Reports

2-3. More than 5 types of training materials are utilized in the training courses.

2-3. Training materials

More than five (5) types of training materials were prepared by the Project and utilized in the training courses. The titles are shown below:

- Basic Condition of Maintenance;
- “5S” for Effective Maintenance;
- Information System for Medical Equipment;
- Electrical Safety Matter;
- System for Human Body; and
- Basic Knowledge of Medical Equipment for Beginners (44 types of equipment).

3. The management capacity for central and provincial hospital managers is improved.

3-1. The number of participants (managers) increases in the management training courses.

3-2. The expenditures for maintenance of medical equipment increase at the central (4) and provincial (16) hospitals.

3-1. The number of participants (managers) in the management training courses at the central and provincial levels

	The number of participants in the management training courses			
	2005	2006	2007	
Central hospitals	4	8	8 (plan)	
Provincial hospitals	17	16	16 (plan)	
<b>Total</b>	21	24	24 (plan)	

Source: Reports of training courses, Evaluation Reports

3-2. The budget of the central hospitals

Name of Hospitals	Items	The budget of the central hospitals			Unit: Kips
		2004 - 2005	2005 - 2006	2006 - 2007	
Mahosot hospital	Governmental Fund	219,111,172	937,072,867	1,358,202,508	
	User Fees	-	-	-	
	<b>Total</b>	219,111,172	937,072,867	1,358,202,508	
Friendship hospital	Governmental Fund	-	-	-	
	User Fees	329,290,096	339,409,934	404,069,422	
	<b>Total</b>	329,290,096	339,409,934	404,069,422	
Sethathirath hospital	Governmental Fund	-	-	-	
	User Fees	9,466,785	167,009,000	335,099,737	
	<b>Total</b>	9,466,785	167,009,000	335,099,737	
Mother and Child hospital	Governmental Fund	-	-	-	
	User Fees	23,500,000	35,500,000	42,350,000	
	<b>Total</b>	23,500,000	35,500,000	42,350,000	

Note 1) Although the Project conducted the questionnaire and hearing surveys to the hospitals in terms of the specific budget for the medical equipment maintenance, some hospitals provided the Project with the entire budget of the hospitals. Therefore, the specific amounts of the budget at each hospital are not clarified at this moment even if parts of the hospital budget are allocated for the medical equipment maintenance.

Note 2) The Fiscal Year starts from 1st October to 30th September.

Source: Questionnaire survey to hospitals and hearing survey by phone.

The budget of the provincial hospitals

Name of Hospitals	Items	The budget of the provincial hospitals		Unit: Kips
		2004 - 2005	2005 - 2006	
Phongsaly Provincial Hospital	Governmental Fund	850,000	1,200,000	2,500,000
	User Fees	-	-	-
	<b>Total</b>	850,000	1,200,000	2,500,000
Luang Namtha Provincial Hospital	Governmental Fund	18,000,000	25,000,000	26,000,000
	User Fees	143,320,000	152,427,500	164,548,500
	<b>Total</b>	161,320,000	177,427,500	190,548,500
Bokeo Provincial Hospital	Governmental Fund	810,000	-	-
	User Fees	2,391,000	4,444,000	3,664,000
	<b>Total</b>	3,201,000	4,444,000	3,664,000

Oudomxai Provincial Hospital	Governmental Fund	4,800,000	7,500,000	11,300,000
	User Fees	-	-	-
	Total	4,800,000	7,500,000	11,300,000
Houaphan Provincial Hospital	Governmental Fund	-	-	16,500,000
	User Fees	-	-	-
	Total	-	-	16,500,000
Xayaboury Provincial Hospital	Governmental Fund	-	-	20,000,000
	User Fees	2,812,000	4,962,000	7,327,000
	Total	2,812,000	4,962,000	27,327,000
Luangprabang Provincial Hospital	Governmental Fund	38,135,000	52,170,000	35,939,000
	User Fees	-	-	-
	Total	38,135,000	52,170,000	35,939,000
Xieng khouang Provincial Hospital	Governmental Fund	1,667,000	9,944,000	3,225,000
	User Fees	-	-	-
	Total	1,667,000	9,944,000	3,225,000
Vientiane Provincial Hospital	Governmental Fund	229,138,000	1,386,000	8,706,000
	User Fees	-	-	-
	Total	229,138,000	1,386,000	8,706,000
Bolikhambxai Provincial Hospital	Governmental Fund	-	-	-
	User Fees	5,000,000	8,000,000	16,000,000
	Total	5,000,000	8,000,000	16,000,000
Khammouane Provincial Hospital	Governmental Fund	-	-	-
	User Fees	25,000,000	25,000,000	25,000,000
	Total	25,000,000	25,000,000	25,000,000
Salavan Provincial Hospital	Governmental Fund	-	-	-
	User Fees	5,427,000	680,000	-
	Total	5,427,000	680,000	-
Champasack Provincial Hospital	Governmental Fund	-	-	-
	User Fees	68,802,400	66,586,560	73,448,400
	Total	68,802,400	66,586,560	73,448,400
Sekong Provincial Hospital	Governmental Fund	-	-	-
	User Fees	4,526,440	574,000	1,988,000
	Total	4,526,440	574,000	1,988,000
Attapeu Provincial Hospital	Governmental Fund	-	-	-
	User Fees	7,360,000	6,350,000	5,720,000
	Total	7,360,000	6,350,000	5,720,000
Savaanakheth Provincial Hospital	Governmental Fund	-	-	-
	User Fees	80,159,000	152,202,500	476,048,488
	Total	80,159,000	152,202,500	476,048,488

Note 1) Although the Project conducted the questionnaire and hearing surveys to the hospitals in terms of the specific budget for the medical equipment maintenance, some hospitals provided the Project with the entire budget of the hospitals. Therefore, the specific amounts of the budget at each hospital are not clarified at this moment

even if parts of the hospital budget are allocated for the medical equipment maintenance.  
 Note 2) The Fiscal Year starts from 1st October to 30th September.  
 Source: Questionnaire survey to hospitals and hearing survey by phone.

<Stock Inventory Control>

4. The capacity of storage, handling, and inventory control for staff in charge of inventory control of medicines and medical products is enhanced at the Logistics Center and warehouses in 4 target provinces.

4-1. The number of participants increases in the inventory training courses.

4-1. The number of participants in the inventory training courses at the central and provincial levels

	The number of participants in the inventory training courses					
	2005		2006		2007	
Logistics Center	6 (Thailand)		2 (Japan) 2 (Thailand)		3 (Thailand)	
Warehouse in Luang Prabang	-		2 (Thailand)		2 (Laos)	
Warehouse in Oudomxai	-		2 (Thailand)		2 (Laos)	
Warehouse in Savannakhet	-		2 (Thailand)		2 (Laos)	
Warehouse in Champasak	-		2 (Thailand)		2 (Laos)	
Total	6		12		11	

Note) One of two participants from the Logistics Center in 2006 is the director of the MPSC.  
 Source: Reports of training courses, Evaluation Reports

4-2. The Logistics Center and warehouses in 4 target provinces prepare the quarterly report of inventory control.

4-2. The quarterly report of inventory control prepared by the Logistics Center and warehouses in four target provinces

	The quarterly reports of inventory control											
	2005				2006				2007 (as of 29th November)			
	2nd Qtr	3rd Qtr	4th Qtr	1st Qtr	2nd Qtr	3rd Qtr	4th Qtr	1st Qtr	2nd Qtr	3rd Qtr	4th Qtr	
Logistics Center	○	○	○	○	○	○	○	○	○	○	○	○
Warehouse in Luang Prabang	○	○	○	○	○	○	○	○	○	○	○	○
Warehouse in Oudomxai	○	○	○	○	○	○	○	○	○	○	○	○
Warehouse in Savannakhet	○	○	○	○	○	○	○	○	○	○	○	○
Warehouse in Champasak	○	○	○	○	○	○	○	○	○	○	○	○

Note 1) ○: The reports from the Logistics Center to the MPSC, the reports from the four provincial warehouses to the Provincial Health Offices (PHOs); ◎: In addition to the above reports, the reports from the four provincial warehouses to the Logistics Center

Note 2) After the adoption of the database at the four provincial warehouses (Savannakhet: October 2006; Other three provinces: June-July 2007), the monthly reports are prepared through the database.

Source: The quarterly reports of the inventory control, the monthly reports of the inventory control prepared by the Logistics Center and warehouses in four target provinces through the database

## Appendix 5-b: Result of Inputs

Inputs (as planned)	Results
<p><b>Japanese Side:</b></p> <ol style="list-style-type: none"> <li>1. Personnel           <ul style="list-style-type: none"> <li>• Long-term expert (Project coordinator / project management: 1 person × 3 years)</li> <li>• Short-term experts 4~6 persons / year</li> <li>• Short-term experts from third countries (Thailand)</li> </ul> </li> </ol>	<ul style="list-style-type: none"> <li>• Long-term expert (Project coordinator / Project management: 1 person × 3 years)</li> <li>• Short-term experts           <ul style="list-style-type: none"> <li>2005: Inventory Control System (2.3 months)</li> <li>Information Management System (1.8 months)</li> <li>Establishment of Logistics Center (1 month)</li> <li>Training Programming for Medical Equipment Maintenance (5 months)</li> </ul> </li> <li>2006: Medical Equipment Maintenance (6.4 months)</li> <li>Inventory Control System (3 months)</li> <li>Training Programming for Medical Equipment Maintenance (5.6 months)</li> <li>2007: Training Programming for Inventory Control &amp; Logistics (5.8 months)</li> <li>Training Programming for Medical Equipment Maintenance (5.3 months)</li> </ul> <ul style="list-style-type: none"> <li>• Short-term experts from third countries (Thailand)           <ul style="list-style-type: none"> <li>2005: Medical Equipment Management (5 days: Ministry of Public Health (MoPH))</li> <li>2006: Inventory Control &amp; Logistics (2 days: Government Pharmaceutical Organization (GPO))</li> </ul> </li> </ul>
<ol style="list-style-type: none"> <li>2. Training courses           <ul style="list-style-type: none"> <li>• In Japan</li> <li>• In Lao PDR</li> <li>• In third country (Thailand)</li> </ul> </li> </ol>	<ul style="list-style-type: none"> <li>• In Japan           <ul style="list-style-type: none"> <li>2005: Medical Equipment Maintenance (1.5 months: 6 persons)</li> <li>2006: Inventory Control &amp; Logistics (2 weeks: 2 persons)</li> </ul> </li> <li>• In Lao PDR           <ul style="list-style-type: none"> <li>2005: Medical Equipment Maintenance (2 weeks × 2 times: 20 persons)</li> <li>2006: Hospital Manager (2 days × 3 times: 24 persons)</li> <li>Medical Equipment Maintenance (1 week × 4 times: 82 persons)               <ul style="list-style-type: none"> <li>* Technician: 21 persons</li> <li>* Nurse &amp; doctor of provincial hospitals 51 persons</li> <li>* Nurse &amp; doctor of district hospitals 10 persons</li> </ul> </li> </ul> </li> <li>2007: Hospital Manager (2 days: 24 persons <u>plan</u>)           <ul style="list-style-type: none"> <li>Medical Equipment Maintenance (1 week × 2 times: 34 persons <u>plan</u>)</li> </ul> </li> <li>• In third country (Thailand)           <ul style="list-style-type: none"> <li>2005: Hospital Manager (5 days: 22 persons)               <ul style="list-style-type: none"> <li>*Hospital Manager 21 persons</li> <li>*MPSC 1 person</li> </ul> </li> <li>Inventory Control &amp; Logistics (3 days: 8 persons)</li> <li>2006: Medical Equipment Maintenance (5 days: 10 persons)</li> </ul> </li> </ul>

<p>Inventory Control &amp; Logistics (3 days: 8 persons) 2007: Study Tour on Inventory Control &amp; Logistics (3 days: 3 persons) Medical Equipment Calibration (6 days: 6 persons)</p>	
<ul style="list-style-type: none"> <li>• Logistics Center (2,480 m<sup>2</sup>) US\$398,500</li> </ul> <p>In 2005 (US\$68,618)</p> <ul style="list-style-type: none"> <li>• Copy Machine</li> <li>• Computer set</li> <li>• Forklift</li> </ul> <p>In 2006 (US\$12,260)</p> <ul style="list-style-type: none"> <li>• LCD Projector</li> <li>• Data Logger</li> <li>• Tool kits</li> </ul> <p>In 2007 (US\$45,525)</p> <ul style="list-style-type: none"> <li>• Hand Palette Truck</li> <li>• Tool kits</li> <li>• Battery Powered Lift Stacker</li> <li>• Calibration Tools</li> </ul>	<p>3. Facility construction</p> <ul style="list-style-type: none"> <li>• Logistics Center</li> </ul> <p>4. Provision of equipment</p> <ul style="list-style-type: none"> <li>• Equipment for maintenance</li> <li>• Material for inventory control</li> <li>• Spare parts for maintenance and repair of medical equipment during training courses</li> <li>• Forklift × 2</li> <li>• Computers for database</li> <li>• Materials for technology</li> <li>• Others</li> </ul>
<p>5. Operational expenses</p> <ul style="list-style-type: none"> <li>• Project Activities (official trip, In-country &amp; the 3rd country training, etc.) 2005: US\$43,600 2006: US\$59,288 2007: US\$73,317 (plan)</li> </ul>	
<p><b>Lao Side:</b></p> <p>1. Personnel</p> <ul style="list-style-type: none"> <li>• Project Director</li> <li>• Project Manager</li> <li>• Staff of MES</li> <li>• Staff of Logistics Center</li> <li>• Trainers from central hospitals</li> </ul> <p>2. Provision of the project office and facilities</p> <ul style="list-style-type: none"> <li>• The office spaces for Japanese experts are supposed to be provided at MES and the Logistics Center of the MPSC.</li> </ul> <p>3. Others</p> <ul style="list-style-type: none"> <li>• Local Cost</li> <li>• Construction site of the Logistics Center</li> <li>• Running costs for electricity, water, etc.</li> </ul>	<p>• Project Director</p> <p>• Project Manager</p> <p>• Staff of MES</p> <p>• Staff of Logistics Center</p> <p>• Trainers from central hospitals</p> <p>• The office spaces for Japanese experts were provided at MES and the Logistics Center of the MPSC.</p> <p>• Local Cost</p> <p>• Construction site of the Logistics Center</p> <p>• Running costs for electricity, water, etc.</p>

## Appendix 5-c: Implementation Process

Implementation Process		Evaluation Questions		Results
	Main Questions	Sub-questions		
	<p>What were the changes in the awareness of the managers, technical staff, and users?</p>			<ul style="list-style-type: none"> <li>• New concepts were introduced into the routine works of the staff at the MES and the Logistics Center, the managers and technical staff at the hospitals, and the staff in charge of inventory control in four target provinces, such as adoption of the database, daily maintenance of medical equipment, etc. Thus, it was very crucial to promote changes in the consciousness of their routine activities.</li> <li>• As a problem in the area of the medical equipment maintenance, the users, such as medical doctors and nurses, considered the medical equipment maintenance as additional works at the beginning of the Project. After taking the trainings for the users by the MES staff, however, they were able to recognize the importance of the preventive maintenance of the medical equipment. As it is now, the users feel the necessity for continuing the daily maintenance of medical equipment so as to keep the equipment in a good condition and a longer period.</li> <li>• It is quite difficult to keep the maximum standard temperature (25°C) with a single air-conditioner all the day from the perspective of the maintenance and the life duration of the air-conditioner. Ideally, two air-conditioners should be utilized interchangeably.</li> </ul>
	<p>Were there no problems in the project management system?</p>	<p>Is the monitoring mechanism appropriate?</p>		<ul style="list-style-type: none"> <li>• The MPSC director takes a leading role of the monitoring activities in cooperation with the MES chief in the field of the medical equipment maintenance, the chief of the Logistics Center in the field of the inventory control, and the project coordinator every six months according to the format of the Monitoring Report.</li> </ul> <p>&lt;Medical Equipment Maintenance&gt;</p> <ul style="list-style-type: none"> <li>• Although several provincial hospitals do not update the database, it became easier for the MES to grasp the working ratio of the medical equipment at the hospitals through the database of the medical equipment. Also, each hospital is supposed to report to the MES every six months.</li> <li>• The hospital launched the daily maintenance of the medical equipment. As a result, it became easier to find where they have to adjust and fix along with the monitoring sheet which has several check points, such as (1) Cleanmess (before use), (2) General inspection, (3) Accessory check, (4) Functional check, (5) Operational check, (6) Cleanmess (after use), and (7) Temperature check.</li> </ul> <p>&lt;Inventory Control&gt;</p> <ul style="list-style-type: none"> <li>• The staff at the Logistics Center is easily able to monitor medicines and medical products through the database. For instance, they can check that how many days medical products are stocked, when medical products were distributed, etc.</li> <li>• The database has various types of information, such as the name of stocks, the temperature record, the date of receiving and distributing, etc. Thus, it is easier for the staff at the warehouse to compile all the data and information into the monthly report submitted to the Logistics Center.</li> <li>• The provincial warehouses are supposed to submit the report of inventory control to the Logistics Center every month. In the report, provincial warehouses report to the Center what kinds of medical products they received and distributed as well as request necessary equipment for their activities for the inventory control.</li> <li>• The Logistics Center gets information from the warehouses in four target provinces through the monthly reports, regular meetings, outreach activities, and telephone &amp; fax. For instance, when the provincial warehouse had problems of the database and stock management on the code number, the staff working for the warehouse consults with the Logistics Center about the steps to be taken by phone.</li> </ul>

	<p>Is the collaboration with other donors proceeding favorably?</p>	<p>How did this project collaborate with other donor agencies, in order to achieve the same goal?</p>	<p>&lt;Medical Equipment Maintenance&gt;</p> <ul style="list-style-type: none"> <li>In the field of medical equipment maintenance, LUX was responsible for the policy formulation with implementing the pilot projects along with the policy concept. Also, the Project regularly had meetings with the members of the LUX project in order to discuss the establishment of the database and the unification of the prescribed form on the database.</li> <li>LUX formulated the policy on the medical equipment maintenance and showed the Lao side how to implement the policy at the hospitals. This is a top-down approach rather than the bottom-up approach as done by JICA.</li> </ul> <p>&lt;Inventory Control&gt;</p> <ul style="list-style-type: none"> <li>In the field of the inventory control, the Project has exchanged opinions on warehouse management and utilization of database with the UNFPA and the WHO which are users of the Logistics Center. In particular, when the WHO provided the personal protective equipment, such as gloves, mask and face protection, gown, etc., for SARS and avian flu for the MOH in the past, they stored the protective equipment at the old central warehouse in Vientiane (Logistics Center at present).</li> </ul>
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### Appendix 5-d: Five Evaluation Criteria

Relevance	Evaluation Questions		Results
	Main Questions	Sub-questions	
	Is the Overall Goal consistent with the National Development Plan in Lao PDR?	Is the direction of the Project consistent with the content of the Health Strategy 2020 in the Lao PDR?	<ul style="list-style-type: none"> <li>The "Health Strategy up to the Year 2020" by the Ministry of Health (MOH) puts emphasis on six priority programs up to the year 2020. In particular, the following four priority programs are consistent with the directions of the Project: (1) Curative and Rehabilitation Strategies; (2) Consumer Protection Strategies; (3) Human Resource Development for Health Strategies; and (4) Health Administration Strategies.</li> </ul>
		Does the direction of the Project correspond with the Medical Equipment Management (MEM) Policy?	<ul style="list-style-type: none"> <li>The National Policy on Medical Equipment Management (MEM) aims to make the best use of medical equipment and, thus, generate the most impact in the delivery of quality healthcare services in hospitals and other health facilities throughout the Lao PDR. Also, the development of a comprehensive equipment management system is required to pursue the objectives of maximizing the use and impact of medical equipment based on needs, capacities, and resources. The goal of the MEM Policy is set up "to improve the utilization and management of medical equipment in all health facilities throughout the country."</li> </ul>
		Is the direction of the Project consistent with the Revised National Medicine Policy in the area of the inventory control?	<ul style="list-style-type: none"> <li>With reference to the strategic directions of the inventory control by the Ministry of Health (MOH), the "Revised National Medicine Policy" published by the Food and Drug Department, MOH, is related to parts of the inventory control. One of chapters in the National Medicine Policy is the "Medicine Supply: Procurement, Distribution, and Storage" described as follows: For the public sector, the government will endeavor to provide adequate storage facilities, basic equipment and sufficient number of staff for medicine supply management at all levels of the healthcare system. Also, the MOH will provide training of staff working for medicine supply management (staff working for the warehouses) at all levels and sectors to improve the services provided by them.</li> </ul>
	Is the Project in line with Japan's foreign aid policy?	Is the Project consistent with Japan's Country Assistance Program for Lao PDR?	<ul style="list-style-type: none"> <li>"Japan's Country Assistance Program for Lao PDR" by the Ministry of Foreign Affairs of Japan places "improving healthcare services" as one of six priority areas, and human resources development related to the health and medical care field (assistance for better maintenance and management of medical equipment) is described in the assistance policy by the priority areas. In addition to cooperation to provide assistance for better maintenance and management of medical equipment, Japan will hereafter provide cooperation with a view to raising the management capacity of the health and medical care system.</li> </ul>
		Is the Project consistent with JICA's plan for country-specific program implementation?	<ul style="list-style-type: none"> <li>There are two healthcare-related programs in the JICA's country implementation plan of the Lao PDR along with the priority area, "improving healthcare services", as mentioned above, and this Project is positioned in the Program on Capacity Development for Human Resources in the Health Sector.</li> </ul>

<p>Was the Project in line with the needs of the target group?</p>	<p>Were the needs of the target group fulfilled?</p>	<p>&lt;Medical Equipment Maintenance&gt;</p> <ul style="list-style-type: none"> <li>• There were a lot of medical equipment provided by donor agencies, but the hospitals did not know how to maintain and repair medical equipment well. Also, medical doctors used the equipment without conducting medical equipment maintenance because they did not know how to maintain the medical equipment.</li> <li>• Spare parts for repairing medical equipment are not sufficient in the Lao PDR.</li> <li>• It is highly necessary for technical staff working for the hospitals to upgrade their skills and knowledge through the trainings because their skills and knowledge are still not sufficient, especially repairing medical equipment.</li> <li>• Technical staff trains users of the medical equipment how to use and maintain the equipment correctly. In addition, even if a new user comes to a ward, the chief became able to show how to maintain the equipment right now.</li> <li>• The deputy director of the hospital could recognize the importance of medical equipment maintenance through the training.</li> <li>• The users of medical equipment at the hospital became able to conduct daily maintenance by themselves.</li> <li>• The users (medical doctors and nurses) of medical equipment at the hospital became to conduct daily maintenance by themselves after receiving the trainings for users.</li> <li>• Regarding the spare parts of the equipment, the hospitals became able to consult with the MES on procurement and types of the spare parts.</li> <li>• There is still a few technical staff at the hospitals in the Lao PDR, and their skills and knowledge on the maintenance and repair of the medical equipment are not sufficient.</li> <li>• The hospital overloads medical equipment all days.</li> <li>• The skills of technical staff were improved by the Project, but they are still at the basic level. The deputy director of the hospital expected the technical staff to attain at the higher level.</li> <li>• It was useful and necessary for the technical staff to have trainings because they were able to give the instructions on the medical equipment maintenance to the hospital staff using the medical equipment.</li> <li>• Before launching the Project, the technical staff and the users of the medical equipment were not able to utilize and maintain medical equipment properly. However, they were able to obtain skills and knowledge on how to take care of the equipment through the trainings by the Project.</li> <li>• Before launching the Project, the technical staff had difficulties of the medical equipment maintenance because of a lack of skills and knowledge on medical equipment. After the technical staff participated in the training courses, they were able to enhance their skills and knowledge on medical equipment maintenance and repair. Also, the technical staff was able to learn the way of repairing medical equipment through the OJT by the director of the MES. They became able to repair medical equipment by themselves if the problem of the medical equipment was a simple case.</li> <li>• Before starting the Project, there were problems on medical equipment utilization and maintenance. The technical staff was not able to repair broken medical equipment at the time even if it was a minor trouble. Also, they did not have the knowledge on the replacement of the spare parts for reusing the equipment. However, the technical staff became able to repair the broken equipment by themselves if it was a minor trouble.</li> </ul>
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<p>&lt;Inventory Control&gt;</p> <ul style="list-style-type: none"> <li>• Before the commencement of the Project, medicines and medical products were messy inside the warehouses, so it was difficult for the staff at the warehouse to find medicines and medical products. During the cooperation period of the Project, however, the trainings for the inventory control were conducted so as to be able to use the database and arrange the stocks with the reference numbers inside the warehouse.</li> <li>• Medicines and medical products were piled up in the limited space before. Also, it was difficult to receive many medicines and medical products.</li> <li>• After the construction (or renovation) of new warehouses, the arrangement inside the warehouses was significantly improved by utilizing spaces effectively.</li> <li>• The warehouses became able to receive and store large amounts of stocks inside the warehouses.</li> <li>• Although the staff had a limited capacity at the beginning of the Project, they were able to improve their skills and knowledge on the warehouse management through the training courses.</li> <li>• The staff working for the warehouse became able to find the stocks within a few minutes through the database.</li> </ul>		
<p>&lt;Medical Equipment Maintenance&gt;</p> <ul style="list-style-type: none"> <li>• As the LUX supported to draw up the policy of medical equipment, the Project was able to promote the training courses for technical staff and managers working for the hospitals effectively and practically along with the policy.</li> </ul> <p>&lt;Inventory Control&gt;</p> <ul style="list-style-type: none"> <li>• The stock management and utilization of the database were gradually improved at the Logistics Center through the exchange of opinions with the users, such as WHO and UNTPA.</li> <li>• WHO considers to transfer Tamiflu stored at the WHO's own storage to the Logistics Center.</li> <li>• The UNFPA and UNICEF have also stored medical products as users of the Logistics Center and warehouses.</li> <li>• ASEAN stores the personal protective equipment, such as gloves, mask, face protection, gown, etc., for the measures of Global Infection at their warehouses in Singapore and Thailand. They have a plan to transfer them to each country. In that case, the Logistics Center established by the Project would be able to be utilized for storing and controlling the equipment effectively.</li> </ul>		<p>What kind of the synergy effects took place through the donor coordination?</p>

is the Project Purpose achieved within the cooperation period?

Was the mechanism established for managing and utilizing medicines, medical products and equipment (at the central and provincial levels)?

<Medical Equipment Maintenance>

- See the indicator of the Project Purpose in the Achievement Grid for more detail.
- Technical staff gave the instructions to users on how to use and maintain medical equipment properly. As a result, the number of problems on medical equipment is recently reducing.
- The evaluation study team conducted the questionnaire survey with the assistance of the local consultant. The data on the medical equipment maintenance is shown in Table 1.

Table 1. The improvement of the medical equipment maintenance

	Mangers		Technical staff	
	Central hospital (4)	Provincial hospital (15)	Central hospital (4)	Provincial hospital (15)
(1) Operating environment of medical equipment is improved	3.50 (70.0%)	3.87 (77.4%)	4.25 (85.0%)	3.93 (78.6%)
(2) Daily maintenance is conducted by users	3.50 (70.0%)	3.80 (76.0%)	3.75 (75.0%)	4.13 (82.6%)
(3) Operating errors by users are reduced compared to before.	3.75 (75.0%)	4.00 (80.0%)	4.25 (85.0%)	4.07 (81.4%)
(4) Repair skills of technical staff are improved.	3.00 (60.0%)	3.67 (73.4%)	4.50 (90.0%)	4.13 (82.6%)

Note 1): On a scale from "1" to "5" with "5" representing the highest possible rating, the average of the ratings is fulfilled in each item.  
 Note 2): The number of the respondents is in parentheses.

<Inventory Control>

- See the indicators of the Project Purpose in the Achievement Grid for more detail.
- Through the adoption of the database, it became much better for the staff at the Logistics Center to manage the stocks inside the Center. Specifically, they became able to find a medical product more easily when it was necessary because of the establishment of the database and the proper arrangement inside the Logistics Center. Before establishing the Center, it took several hours to find necessary a medical product at the old central warehouse. However, it takes for five to ten minutes to find the medical product at this moment.
- The temperature was not controlled well inside the old warehouse in Oudornai province. However, the staff pays attention to the temperature control inside the room with an air-conditioner in the new warehouse. Specifically, the staff separates medicines into two categories: (1) Medicines necessary for the cool temperature; and (2) Medicines storable at the room temperature. The staff puts only medicines necessary for the cool temperature in the air-conditioner room in consideration of the temperature control.
- The evaluation study team conducted the questionnaire survey with the assistance of the local consultant. The data on the warehouse management is shown in Table 2.

Table 2. The improvement of the warehouse management

	Staff		Chiefs	
	Logistics Center (3)	Provincial warehouse (10)	Logistics Center (1)	Provincial warehouse (4)
(1) The picking time is reduced.	5.00 (100%)	4.90 (98.0%)	4.00 (80.0%)	4.50 (90.0%)
(2) The number of the dead stock is reduced.	5.00 (100%)	4.80 (96.0%)	3.00 (60.0%)	4.25 (85.0%)
(3) The maximum standard temperature is well-controlled	5.00 (100%)	4.40 (88.0%)	4.00 (80.0%)	4.50 (90.0%)
(4) The expiration date is checked on a regular basis.	5.00 (100%)	4.50 (90.0%)	4.00 (80.0%)	4.50 (90.0%)

Note) Chief of the Logistics Center: Director of the MPSC; Chiefs of the provincial warehouses: Chiefs of Food and Drug Department in the PHO

<p>Were the Outputs sufficient to achieve the Project Purpose?</p>	<p>Was the system established for supporting central and provincial levels through the MES and the Logistics Center? (Output 1)</p> <ul style="list-style-type: none"> <li>In order to maintain medical equipment in a good condition and utilize the equipment longer than its life at the hospitals, managers (deputy directors), technical staff, and users working for the hospitals had training courses for the preventive maintenance of medical equipment. As the MES repeatedly explained the importance of the preventive maintenance to the managers, technical staff, and users working for the hospitals, they were to recognize the importance of the preventive maintenance of medical equipment. In the field of the inventory control, on the other hand, the Logistics Center tries to establish the network with the warehouses in four target provinces because they are much closer to the people living in rural and remote areas to get medicines and medical products in comparison with the distance to the Logistics Center in Vicentiane. The challenge of the warehouses is to keep medicines and medical products in a good condition before providing them to the patients. By establishing the supporting mechanism through the MES and the Logistics Center, therefore, the healthcare services with medical equipment, medicines, and medical products will be provided for the patients even in rural and remote areas in the future.</li> </ul> <p>&lt;Medical Equipment Maintenance&gt;</p> <ul style="list-style-type: none"> <li>During the training for the technical staff, the Project requested them to utilize and send the "request and report form" to MES. By phone only, the MES staff might not be able to respond the requests because they go out for the field trips or forget the requests. By sending the form to MES, the staff are able to discuss the problems together and decide the procedures to be taken for the senders.</li> <li>If medical equipment is unrepairable, then the technical staff reports to the deputy director of the hospital and the MES. When the technical staff gets in contact with the MES, they mainly use the phone rather than the request and report form because of the convenience of the phone in comparison with the form. However, the request and report form is very important for the MES from the following perspectives: (1) Evidence of broken medical equipment; (2) Data addition into the database; (3) Sharing of the information within the MES staff; and (4) Forgetting in case of the absence of the person in charge at the MES office. Also, the MES staff cannot support the hospitals without receiving the request and report form.</li> <li>If medical equipment is broken, the hospital reports to the MES by phone at first and by the request and report form in the next step. After sending the report, the MES responds to the hospital quickly with the appropriate supports and helps. The MES gives the comments in the form to the hospital through the FAX.</li> <li>Even if equipment was not be able to be repaired, the technical staff did not report it to the MES by using the request and report form because they just forgot the existence of the form. However, the MES explained to them that the MES staff was not able to come here to check and repair the equipment if the form from the provincial hospital was not submitted to the MES. In this way, the provincial hospital has tried to solve the problems on medical equipment by themselves at the provincial level.</li> </ul> <p>&lt;Inventory Control&gt;</p> <ul style="list-style-type: none"> <li>When warehouses in four target provinces want to get supports from the Logistics Center, they get in contact with the Center by phone or fax. Also, the provincial warehouses are supposed to submit the report of inventory control to the Center every month. In the report, provincial warehouses report to the Center what kinds of medical products they received and distributed as well as request necessary equipment for their activities for the inventory control.</li> <li>When the warehouse has problems on the database, the staff gets in contact with the Logistics Center by phone. The problems will mostly be solved in consultation with the Logistics Center.</li> <li>The Logistics Center provided the staff at the warehouse with the trainings for the database management, registration of each items, arrangement of stock articles according to the types of articles, etc. Also, the staff of the Logistics Center came to this warehouse to give instructions on the database management, how to monitor the temperature, etc.</li> <li>The staff working for the Logistics Center had given the instructions of the database and stock management to the staff in charge of the inventory control in the four target provinces. For instance, if some problems and difficulties arise at the warehouses, then the staff gets in contact with the Logistics Center by phone in order to consult on the solutions.</li> <li>The communication between the Logistics Center and the warehouses is mainly promoted through the monthly report submitted by the warehouse. In case of the problems on the database operation, the warehouse gets in contact with the Logistics Center by phone. Most of time, the problems are solved by the Logistics Center.</li> <li>The warehouse has to report the performances and activities to the Logistics Center every month.</li> </ul>
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Was the capacity of maintenance and repair for technical staff improved at the MES, central and provincial hospitals?  
(Output 2)

- The MES staff became capable enough to be assigned as trainers to teach the technical staff working for provincial hospitals.
- Japanese experts taught the MES staff how to maintain and repair medical equipment, so they were able to learn various new skills and knowledge from the experts.
- Although the technical staff obtained the skills on medical equipment maintenance, they still need to upgrade the skills on repair of medical equipment, especially technologically-sophisticated medical equipment.
- In terms of the overall evaluation of the textbooks, the evaluation study team conducted the questionnaire survey in the same way as mentioned above. The following data on the textbooks for the technical staff was extracted from the results of the questionnaire survey as shown in Table 3.

Table 3 Evaluation of the textbooks for the technical staff

	Technical staff	
	Central hospital (4)	Provincial hospital (15)
(1) Level of explanation	4.00 (80.0%)	4.20 (84.0%)
(2) Volume of explanation	4.00 (80.0%)	4.07 (81.4%)
(3) Degree of interests	4.50 (90.0%)	4.53 (90.6%)
(4) Overall evaluation of the textbooks	4.50 (90.0%)	4.33 (86.6%)

Note 1): On a scale from "1" to "5" with "5" representing the highest possible rating, the average of the ratings is fulfilled in each item.  
Note 2): The number of the respondents is in parentheses.

Was the management capacity for central and provincial hospital managers improved?  
(Output 3)

- With reference to the overall evaluation of the textbooks for the managers, the following data on the textbooks was extracted from the results of the questionnaire survey as shown in Table 4.

Table 4 Evaluation of the textbooks for the managers

	Managers	
	Central hospital (3)	Provincial hospital (15)
(1) Level of explanation	3.33 (66.7%)	4.40 (88.0%)
(2) Volume of explanation	4.00 (80.0%)	4.40 (88.0%)
(3) Degree of interests	4.00 (80.0%)	4.53 (90.6%)
(4) Overall evaluation of the textbooks	4.00 (80.0%)	4.27 (85.4%)

Note 1): On a scale from "1" to "5" with "5" representing the highest possible rating, the average of the ratings is fulfilled in each item.  
Note 2): The number of the respondents is in parentheses.

		<p>Was the capacity for the staff in charge of inventory control enhanced at the Logistics Center and warehouses in four target provinces? (Output 4)</p>	<ul style="list-style-type: none"> <li>The staff of warehouses was able to improve their routine activities along with the code of conduct set up by the Project, i.e., "5S: Seiri (Distinguishing), Seiton (Sorting), Seisou (Cleaning), Seiketsu (Maintaining), and Shitsuke (Disciplining)."</li> <li>The knowledge on warehouse management has gradually been enhanced through the project activities as follows: (1) To monitor the expiration date of medicines and medical products through the database; (2) To access to the medicines and medical products with their reference numbers inside the warehouse; (3) To check the number of medicines and medical products inside the warehouse; and (4) To grasp the number of medicines and medical products for the receiving and distribution in each month.</li> <li>Although it took a longer time to find medicines and medical products in the old warehouse, it has become much easier to find them by checking the reference number of the medicines and medical products under the inventory control system, i.e., the introduction of the database and the proper arrangement of the medicines and medical products in the warehouse. Every stock locates at easy place to find by the staff in charge of the inventory control right now.</li> <li>The staff working for the Logistics Center trained the staff at the warehouse. They were able to learn the working style how to conduct the stock management. Thus, it could be said that the skills of the staff at the warehouse are improved. They are able to promote their activities at the warehouse based on the instructions and regulations established by the Project. Also, they became able to receive and distribute medicines and medical products with the reference numbers more systematically through the database. Moreover, they disseminate the skills and knowledge obtained by the Project within the warehouse in the form of the OJT. Specifically, they showed the routine works and working procedures at the warehouse to their colleagues.</li> <li>As records of receiving and distributing medicines and medical products were prepared in the form of the papers, the records were put somewhere. In this way, it was sometimes difficult to find the records. However, since the warehouse introduced the database established by the Project, the warehouse was quite well-organized with the reference numbers of all medicines and medical products corresponding to the information in the database.</li> <li>Stocks were not classified according to the types of medicines and medical products, but the arrangements of the stocks inside the warehouse have become very user-friendly for the staff working for the warehouse right now. In addition, the inside of the warehouse is very clean.</li> </ul>
	<p>Were the Important Assumptions from the Outputs to the Project Purpose appropriate?</p>	<p>Does the staff involved in the Project continue working?</p>	<ul style="list-style-type: none"> <li>The trained trainers have continued working for the MES and the central hospitals since the beginning of the Project, except one trainer working for Mahosot hospital.</li> <li>The technical staff for the medical equipment maintenance has continued working for the MES as well as the central and provincial hospitals since the beginning of the Project.</li> <li>The staff in charge of the inventory control has continued working for the Logistics Center and the warehouses in four target provinces since the beginning of the Project.</li> </ul>
<p>Efficiency</p>	<p>Was the Input of an adequate quantity and quality performed at the right time to conduct the project activities?</p>	<p>Were the number of Japanese experts dispatched and the timing of the dispatch appropriate?</p>	<ul style="list-style-type: none"> <li>Only one long-term expert has managed and coordinated the entire project activities in charge of the "Project Management/Coordinator." From the perspective of the personnel expense, the adoption of the one long-term expert was quite remarkable and characteristic of this Project.</li> <li>All the short-term experts were repeatedly dispatched in each field along with the plan drawn up at the beginning of the Project. Speaking of the dispatch of the same experts in a short period, the way of the assignment was significantly efficient because they have already grasped the contents, situations, and counterparts of the Project since their first visits.</li> <li>In general, the equipment is appropriately maintained and utilized by the Project.</li> </ul>

<p>Were the training contents appropriate in Japan and Thailand?</p>	<p>Training courses in Japan and Thailand were very useful for the participants because they were able to learn the concepts and advanced skills of the medical equipment maintenance and the inventory control.</p>
<p></p>	<p>&lt;Medical Equipment Maintenance&gt;</p> <ul style="list-style-type: none"> <li>The significance of the training courses in Japan was that the participants obtained advanced knowledge and skills through the study tours to several actual manufacturers whose medical equipment was also utilized in the country. The participants were directly able to observe and learn how to conduct the preventive maintenance through the X-ray machine, autoclave, aspirator, etc.</li> <li>The participants were able to make good relationships with the Japanese manufacturers in order to get the information on medical equipment and the spare parts through the study tours.</li> <li>The participants were able to improve how to teach the technical staff working for the hospitals in the country by learning advanced knowledge and skills on the medical equipment maintenance in Japan.</li> <li>The director of the provincial hospital in Luang Prabang highly evaluated the training course in Thailand. The participants of the training were able to learn the different style of the medical equipment management in Thailand. Also, there are various types of medical equipment manuals in Thai language which the Lao people are able to understand.</li> <li>After coming back to Vientiane from the training course in Thailand, participants discussed how they were able to apply what they had learned in Thailand to their actual operations at their hospitals. If it is replicable to their hospitals with some minor adjustments, they intend to apply the experiences and lessons learned in Thailand to their hospitals.</li> <li>The director of the hospital was able to learn the advanced system of the medical equipment maintenance in Thailand. However, the director is partially able to apply what he has learned in Thailand to the medical equipment management of the hospital because highly advanced medical equipment, skillful staff, and advanced management system are adopted in Thailand compared with the situations in the Lao PDR.</li> </ul> <p>&lt;Inventory Control&gt;</p> <ul style="list-style-type: none"> <li>During the training course in Japan, participants were able to learn the concepts of the logistics system in the advanced country. They were impressed how medicines were arranged in a good quality at the warehouse and distributed to the destinations in a good condition. Thanks to the training course, they gained the image of the logistics system, i.e., taking in and out the stocks quite rapidly. Although they were not completely able to replicate the logistics system in Japan to the one in the Lao PDR, the participants intended to utilize the concepts of the logistics system in Japan.</li> <li>When the director of the MPSC, one of the participants, gives the presentation of the logistics system to the MOH and PHO through the workshop, what they have learned in Japan is efficiently fed back to not only the staff in charge of the inventory control but also the people concerned.</li> <li>The warehouse management in Thailand is quite systematic. For instance, the job descriptions of the staff at the warehouses clarify their obligations with a focus on specific commitments. Also, the inside of the warehouse is very clean, and the temperature is well controlled. In addition, old medicines are put at the fore and new ones are put at the rear on the shelf. In this way, the chief of the warehouse was able to learn various matters to apply to this warehouse.</li> <li>The staff working for the Logistics Center had good opportunities to learn the inventory control through the training courses in Thailand. After the training courses, they became trainers to give instructions and trainings to the staff working for the warehouses in four target provinces.</li> <li>The participant of the training course in Thailand was impressed by the stock management system and the layout in the warehouses. In terms of the stock management system, a warehouse is accessible to the data and information of inventory stocks at other warehouses, including some private pharmacies in Thailand.</li> </ul>



	<p>Are there any problems in terms of the quality, scale, and convenience of the Logistics Center?</p>	<ul style="list-style-type: none"> <li>• The Logistics Center becomes more convenient than before. This is because the layout of the Center is well-organized. For instance, the stock cards are attached to the racks and shelves with the reference number corresponding to the number registered in the database.</li> <li>• The Logistics Center became able to take in and out the stocks rapidly and control the temperature in specific areas properly.</li> <li>• As a positive effect of the Logistics Center, since the MOH recognizes the importance of the Logistics Center in the country, the MOH tries to allocate the budget for the operations of the Logistics Center.</li> <li>• With reference to the negative point of the construction of the Logistics Center, it was not planned to assign a short-term expert in charge of the establishment of the Logistics Center, the preparation of the tender documents, and the construction management at the beginning of the Project. Although the dispatch of the expert in charge was decided after the commencement of the Project, the sufficient period was not secured for the construction of the Logistics Center because of the unplanned budget of the Project.</li> <li>• Since the preparation survey on the construction of the Logistics Center was not sufficient, only a half of the actual budget was estimated for the construction. According to the insufficient budget, the scale of the Logistics Center was downscaled, and the construction standard was changed from the Japanese standard to the local standard.</li> <li>• The Lao side was not able to prepare the budget for the relocation to the Logistics Center from the old central warehouse after the completion of the Logistics Center. The delay in securing the budget prolonged the process of the relocation (Completion of the Logistics Center in October 2006; Relocation to the Logistics Center in February 2007).</li> </ul>
<p>Were the technical staff for the medical equipment maintenance and the staff in charge of the inventory control appropriately allocated? (Important Assumption)</p> <p>Are there prospects that the Overall Goal will be produced as an effect of the Project?</p>		<ul style="list-style-type: none"> <li>• The personnel assignment has been promoted favorably. The Lao side intends to continuously assign the technical staff and the staff in charge of the inventory control, specifically the assignment of the permanent staff in these areas.</li> </ul> <p>Are there prospects that medicines, medical products and equipment will be managed and utilized efficiently and properly?</p> <ul style="list-style-type: none"> <li>• See the indicators of the Overall Goal in the Achievement Grid for more detail.</li> <li>• Policy as follows: (a) Request for decommissioning of medical equipment, the decommissioning procedure is presented in the policy guideline of the MEM evaluation by the maintenance unit of the hospital attached to the request; (c) Submission to the Medical Equipment Management Committee (MEM Committee) for the evaluation of the request; (d) Recommendations on the action to be taken prepared by the MEM Committee; (e) Decommissioning of the medical equipment and verification of its usable spare parts and accessories by the maintenance (technical) staff of the hospital with the approval of the hospital director; and (f) Maintenance of the record of the decommissioned equipment with the report explaining how the equipment was disposed.</li> <li>• Regarding decommissioning of medical equipment, the MES gives advice on the repair or decommission to the hospitals from the perspectives of the followings: (1) How many times the equipment has been repaired; (2) How many years the equipment has been utilized; and (3) How much it costs for the repair of the equipment. In reality, it is difficult to repair the equipment because the spare parts are not easily obtained in the Lao PDR.</li> <li>• The decommissioning of 100 pieces of medical equipment was carried out at Mahosot hospital on a trial basis. If the approach is appropriate, the MPSC tries to decommission the medical equipment at other hospitals.</li> <li>• The MPSC has studied how to decommission the medical equipment in cooperation with Ministry of Finance.</li> </ul>
<p>Were there any positive impacts beside the Overall Goal?</p>	<p>When expired medicines and medical products are discarded, are any efforts proceeding in consideration of the environmental aspects?</p>	<ul style="list-style-type: none"> <li>• Before launching the Project, even if the expiration date of medicines and medical products exceeded, the staff working for the central warehouse was not able to do anything. However, they can easily check the expiration date of the medicines and medical products through the database right now. In case medical products stored by donors, users of the Logistics Center, exceed the expiration date, the Center became able to request the donors to cope with the medical products by showing the evidence prepared by the database to them.</li> <li>• Before disposing the medical products and chemicals, the Logistics Center has to get permission from the MOH and donors. If the Center gets the approval from them, then the Center requests the waste disposal company to discard the medical products and chemicals because the staff working at the Center cannot throw them away around the Center. Also, the waste disposal company discards them along with the regulations on how to discard medical products and chemicals.</li> <li>• Although the disposal process has not been established clearly yet, the Food and Drug Department and the warehouse make efforts for paying attentions to the environmental aspects in Savannakhet province.</li> </ul>

Impact

	Were there any other positive impacts?	<ul style="list-style-type: none"> <li>• Previously, it was difficult to make the reports to submit to the Provincial Health Office (PHO) because the stocks and the records of the warehouse were not well-organized. It took a longer time to summarize the reports. However, the introduction of the database and the arrangement of the stocks inside the warehouse improved the reporting system. The warehouse became able to prepare the reports to the PHO more easily and efficiently through the database.</li> <li>• In order to prepare the guide of medical equipment (the procedure of how to utilize the medical equipment) in Lao language at the provincial hospital in Savannakhet, the technical staff discussed with the responsible users of the medical equipment who had the knowledge on how to use the equipment. The hospital staff became able to share the directions for use of each medical equipment in Lao language.</li> <li>• The staff of the warehouse in Oudomxai province has the enthusiasm to provide trainings for the staff working for other provincial and district warehouses as the center of the regional warehouse.</li> <li>• The staff working for the warehouse in Champasak province would like to continue managing medicines and medical products at the warehouse appropriately. In addition, they are willing to disseminate the knowledge and skills obtained through the Project to the staff working for the warehouses at the district level. The staff from the districts had instructions on the inventory control at this warehouse, and there are prospects that they will be able to conduct what they have learned at the warehouse.</li> </ul>
Are there any other factors inhibiting the achievement of the Overall Goal?		<ul style="list-style-type: none"> <li>• In case of the hospital in Oudomxai province, although the users are supposed to report the problems on medical equipment to the technical staff through the formal channel, the users directly report the problems to the director/deputy director at the hospital because it is often difficult to communicate with the technical staff assigned for the PHO who has a lot of maintenance and repair works within the province.</li> <li>• Only one temporary staff is assigned as a technical staff for the medical equipment maintenance at the PHO (Provincial Health Office). The technical staff is also in charge of the maintenance of other electronics device in the province. Although he attended the training courses provided by the Project in Thailand and Vientiane, his involvement of the medical equipment maintenance at the provincial hospital is quite limited because he has a lot of maintenance and repair works under the PHO. Even though the hospital requests to the PHO for the repair and maintenance of the medical equipment, the technical staff might not come to the hospital immediately when he has another repair work in a district. Thus, if the technical staff under the PHO is transferred to the provincial hospital, this problem will be solved.</li> <li>• Medicines and medical products provided by the donor agencies are transported from the Logistics Center to the provincial warehouses in four target provinces, and the transportation costs are funded by the donors with the provision of medicines and medical products. In the next process, although the provincial government is supposed to transport the stocks to the district level, it is sometimes unable to allocate the sufficient budget for the transportation to the district level.</li> </ul>
Will the project activities align with the Policy in the Lao PDR?		<ul style="list-style-type: none"> <li>• According to the MEM Policy and the Revised National Medicine Policy, the project activities on the medical equipment maintenance and the inventory control will be supported by those governmental policies in the Lao PDR even after the termination of the Project.</li> </ul>

Sustainability

Does the organization have the capacity to continue the project activities even after the cooperation has terminated?

Is it possible to continue the project activities in sustainable way even after the termination of the Project?

Although the Project has two components, i.e., the medical equipment maintenance and the inventory control, the improvement of both components greatly contributes toward providing high-quality healthcare services for the people through the medicines, medical products and equipment in cooperation with both components toward the same objective.

<Medical Equipment Maintenance>

- The technical staff would also like to continue the maintenance activities because they recognize that it is necessary to maintain medical equipment properly for the sake of the patients.
- There are prospects that the supporting system and the communication channel with the MES established by the Project will be continued because the hospitals are able to obtain useful assistance from the MES as mentioned above. In addition, the technical staff considers that medical equipment maintenance is crucial for the treatment of patients. Also, the medical equipment greatly contributes toward saving the patient's life as well as supporting the medical services provided by the medical doctors and nurses.
- Technical staff would like to enhance their knowledge and technology for their future. Also, the technical staff considered that the needs of the hospital equipment are significantly high for the patients. They intended to extend the life of the medical equipment much longer for the patients.
- Users have the confidence to provide high-quality services for the patients by using medical equipment appropriately right now. Thus, the project activities will be sustained.
- Users consider that the daily maintenance is extremely crucial for extending the life of medical equipment. Also, they do not regard the daily maintenance as additional works because the daily maintenance is one of routine works for them so as to be able to treat patients precisely.
- Technical staff did not know the process of the repair of medical equipment before the initiation of the Project. However, the process was clarified through the project activities as follows: (1) To collect the comments of users on the problems of medical equipment; (2) To check the equipment by technical staff; (3) To discuss with the director of the hospital if it is not able to be repaired by the technical staff; and (4) To report to the MES about the broken equipment by using the request and report form prepared by the Project.
- Before the Project, users did not take care of the medical equipment. However, as users recognized the importance of medical equipment maintenance through the instructions of the preventive maintenance repeatedly conducted by the MES and technical staff, their attitudes towards the maintenance have gradually been changed so as to be able to maintain medical equipment by their own hands according to the checklist of the daily maintenance.
- In the beginning of the Project, users of medical equipment considered that the medical equipment maintenance was the duty of the technical staff. After the training for the users, however, they came to maintain the medical equipment spontaneously in cooperation with the technical staff. This is because they recognized the importance of the medical equipment maintenance as well as high costs of medical equipment and its repair.
- Trainings for the manager and technical staff were quite useful for the hospital because the manager was able to recognize the importance of medical equipment maintenance and the technical staff was able to improve their skills and knowledge on medical equipment.
- Because the users became able to maintain the medical equipment in a proper way, the number of the contracts from the users was recently reduced in comparison with the previous situation.
- Before starting the Project, even if medical equipment was broken, the equipment was left without repair. Also, the hospital did not grasp the number of the equipment which was broken. After the initiation of the Project, however, technical staff of medical equipment was assigned at this provincial hospital, and they were responsible for each section, such as the laboratory, ICU, X-ray examination, etc., respectively. In addition, technical staff became able to repair medical equipment by themselves except highly advanced medical equipment. If it is difficult for the technical staff to repair the medical equipment, then the hospital gets in contact with the MES and the private companies/technicians outside the hospital.
- As the maintenance procedures have been established by the Project, the hospital will be able to continue the project activities on the track of the procedures.
- If the MEM committee composed of high-ranking officers of the MOH and directors of the central hospitals is in charge of medical equipment maintenance with the ownership towards the Project, then the preventive maintenance will be continued even after the termination of the Project because the MEM committee is able to convince other concerned parties regarding the overall management of medical equipment.
- Before launching the Project, nobody was in charge of medical equipment management, but the technical staff became to be assigned at the hospital during the cooperation period of the Project.

<ul style="list-style-type: none"> <li>As the system of the medical equipment maintenance was not established before the Project, medical equipment was subject to the environment in which it was not properly utilized and operated. Thus, the procedures of the medical equipment maintenance were systemized through the project activities. In the first place, the daily maintenance became to be conducted with several checking items everyday as their routine works. Secondly, the hospital became able to get supports through the communication channel with the MES if it is necessary to repair medical equipment and change spare parts of medical equipment. Thirdly, the relationship among managers, technicians, and users is well-organized through the project activities. In particular, the role of users was emphasized so as to conduct the daily maintenance according to their new job description. Fourthly, each medical equipment was registered with the registration number at the hospital in order to enter the information and condition of the equipment into the database. Fifthly, the chiefs of each section and the chief nurses became to have the responsibilities for the equipment operated at the section.</li> </ul> <p>&lt;Inventory Control&gt;</p> <ul style="list-style-type: none"> <li>The staff working for the warehouse intends to improve the conditions of the warehouses more appropriately according to the code of conduct set up by the Project, i.e., "5S".</li> <li>The staff of the warehouse considers that they would like to make efforts in order to improve the warehouse management. This is because the improvement contributes toward providing high-quality healthcare services and medicines for the patients.</li> <li>The staff has the enthusiasm to provide healthcare services for the people. They try to make efforts to continue activities at the warehouse from now on. Also, the project activities are incorporated into the routine works at the warehouse, so they might be able to control and keep medicines and medical products in a good condition as their routine works.</li> <li>The warehouse has the obligations to keep medicines and medical products provided by various concerned parties in a good condition. Thus, the staff working for the warehouse feels the responsibility for the management of the medicines and medical products.</li> <li>The staff of the warehouse feels obligations to continue the project activities because the investment in the warehouse is considerably high.</li> </ul>		
<ul style="list-style-type: none"> <li>There are prospects that the technical staff for the medical equipment maintenance and the staff in charge of the inventory control will be assigned from now on. The Lao side continuously intends to assign the permanent staff for these areas.</li> </ul>	<p>Are there prospects that human resources will continuously be assigned from now on?</p>	

Items	2005		2006		2007		2008	
	Plan	Realization	Plan	Realization	Plan	Realization	Plan	Realization
<b>Revenues</b>								
Government	282,300,000	282,300,000	1,106,314,000	1,106,314,000	470,937,000	470,937,000	283,176,000	283,176,000
<b>Expenditures</b>								
Operating expenses								
Salary	130,000,000	130,000,000	141,590,000	141,590,000	130,737,000	130,737,000	187,900,000	187,900,000
Water	3,000,000	3,000,000	3,000,000	3,000,000	3,000,000	3,000,000	3,500,000	3,500,000
Electricity	15,000,000	15,000,000	15,000,000	15,000,000	15,000,000	15,000,000	20,000,000	20,000,000
Telephone	6,000,000	6,000,000	6,000,000	6,000,000	6,000,000	6,000,000	8,000,000	8,000,000
Facility maintenance	14,000,000	14,000,000	15,000,000	15,000,000	15,000,000	15,000,000	12,000,000	12,000,000
Equipment maintenance	2,000,000	2,000,000	4,000,000	4,000,000	4,000,000	4,000,000	10,000,000	10,000,000
Others	37,300,000	37,300,000	40,724,000	40,724,000	37,200,000	37,200,000	41,776,000	41,776,000
Sub Total (Operating expenses)	207,300,000	207,300,000	225,314,000	225,314,000	210,937,000	210,937,000	283,176,000	283,176,000
Capital expenses								
Construction	75,000,000	75,000,000	881,000,000	881,000,000	260,000,000	260,000,000	-	-
<b>Total</b>	282,300,000	282,300,000	1,106,314,000	1,106,314,000	470,937,000	470,937,000	283,176,000	283,176,000

• The MPSC makes efforts to secure the budget for their routine activities. The total revenues have been decreased since the fiscal year of 2006. However, most revenues were disbursed for the construction expenses to prepare fences, electricity, water supply, etc. for the Logistics Center. In consideration of the operating expenses without the construction expenses, the specific budget tends to be increased as shown in the Table 5.

Table 5 Budget of the MPSC from FY 2005 to FY 2008

Unit: Kip

Source: Budgetary Sheet prepared by the MPSC  
 Note: The Fiscal Year for the Lao government has started from 1st October to 30th September.  
 (FY 2005: October 2004 – September 2005)

	<p>Are any efforts for securing financial resources proceeding smoothly?</p>	<p>&lt;Medical Equipment Maintenance&gt;</p> <ul style="list-style-type: none"> <li>• Through the Project, hospital managers recognized that it is important for the hospitals to maintain medical equipment in order to extend the life of medical equipment. Also, they were able to understand the importance of the preventive maintenance because of the limitation of the budget in comparison with the procurement of new medical equipment and the repair of existing equipment. As a result of their changes in awareness, the budgetary allocation for the medical equipment maintenance came to be secured even if it is small amounts of the budget.</li> <li>• The hospitals charge patients for the medical services provided by the hospitals, such as hospital fees, bed fees, X-ray examination, drugs, etc. Parts of those user fees came to be allocated for the medical equipment maintenance by the discretion of the hospitals. However, the amounts of revenues from the MOH are still not sufficient for the medical equipment maintenance. Since the budget for the medical equipment maintenance was not allocated at the hospitals until recently, it was the enormous progress to be able to secure the budget for the medical equipment maintenance at this moment.</li> <li>• As the provincial hospital in Sayaboury did not recognize the importance of the medical equipment maintenance, the budget for the maintenance was not allocated at the beginning of the Project. However, their awareness of the preventive maintenance has been changed through the project activities, so that they tried to allocate the budget for the maintenance. As a positive impact of the Project, technical staff was temporarily contracted at the beginning of the Project, but the technical staff became the permanent staff during the cooperation period of the Project. In this way, the hospital was to consider that it was necessary to allocate the budget for the maintenance and repair of the medical equipment although the hospital is only able to secure small amounts of the budget for the medical equipment maintenance.</li> <li>• Although the budget for the medical equipment maintenance was not secured at Setthathirath hospital before the initiation of the Project, small amounts of the budget have recently become to be allocated. It is a great progress for the hospitals to secure the budget for the medical equipment maintenance.</li> <li>• The provincial hospital in Champasak collects user fees from the patients who can pay for the services through the medical examination, such as X-ray films, CT Scanner, drugs, etc., and it tries to allocate the budget for the medical equipment maintenance.</li> <li>• User fees from the patients, such as laboratory checks, X-ray examinations, bed fees, etc., are one of financial resources for the medical equipment maintenance at the provincial hospital in Savannakhet. According to the deputy director of the hospital, the hospital intends to increase the budget for the preventive maintenance year by year because it is very important for the hospital.</li> <li>• As the director of the provincial hospital in Luang Prabang agrees the concept of the Project, there are prospects that the project activities will be continued even after the termination of the Project. Furthermore, the budget was allocated for the medical equipment maintenance this year around five percent of the total budget of the hospital. The hospital tries to increase the budget for the medical equipment maintenance every year.</li> <li>• The revenues of the provincial hospital in Oudomxai have two components, i.e., governmental revenue and user fees from patients. Although the hospital did not have the budgetary plan for the medical equipment maintenance at the beginning of the Project, the hospital became to consider the budget for the medical equipment maintenance right now. The hospital tries to secure the budget for the preventive maintenance gradually.</li> </ul> <p>&lt;Inventory Control&gt;</p> <ul style="list-style-type: none"> <li>• The staff working for the Logistics Center had the opportunities to train the people of the private companies on how to keep the temperature and manage the stocks inside the warehouse. In addition, since the stock management at the Logistics Center was highly appreciated, a private company requested to keep the containers and materials inside the Logistics Center.</li> <li>• According to the chief of the Food and Drug Department of the PHO in Luang Prabang, the Department intends to secure the equivalent amount of budget for the warehouse management with the last year.</li> </ul>
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## Appendix 6-a: List of Experts Dispatched from Japan

### 1. Long-term Expert

No.	Name	Field	Period	2005	2006	2007	2008
1	Hideshi Maruta	Project Management/Coordinator	2005.05.01 ~2008.04.30				

### 2. Short-term Expert

No.	Name	Field	Period	2005	2006	2007	2008
1	Mitsuru Koizumi	Inventory Control System	03 July 2005 ~11 Sep.2005				
2	Nobuyuki Ishii	Information Management System	31 JULY 2005 ~24 SEP.2005				
3	Ryuji Tsuyuki	Establishment of Logistics Center	10 Aug.2005 ~11 Sep.2005				
4	Takashi Yoza	Training Programming for Medical Equipment Maintenance	31 July 2005 ~24 Aug.2005 30 Oct.2005 ~2005.12.07 26 Jan.2006 ~05 March 2006				
5	Akio Kaneko	Medical Equipment Maintenance	07 May 2006 ~13 July 2006 29 Aug.2006 ~17 Oct.2006 04 Dec.2006 ~22 Feb.2007				
6	Nobuyuki Ishii	Inventory Control System	09 July 2006 ~06 Oct.2006				
7	Mitsuru Koizumi	Training Programming for Medical Equipment Maintenance	16 Jult 2006 ~02 Oct.2006 04 Dec.2006 ~04 March 2007				
8	Hirofumi Tsuruta	Training Programming for Inventory Control & Logistics	25 June 2007 ~31 Aug.2007 02 Oct.2007 ~28 Nov.2007 13 Jan.2008 ~23 Feb.2008				
9	Takashi Yoza	Training Programming for Medical Equipment Maintenance	22 July 2007 ~12 Sep.2007 04 Nov.2007 ~15 Dec.2007 13 Jan.2008 ~09 March 2008				

## Appendix 6-b: List of Counterpart Personnel Trained in Japan and Thailand

### 1. In Japan

No.	Field	Period	Number of trainees	Contents
1	Medical Equipment Maintenance	10 Sep. 2005   24 Oct. 2005	6  • Technician of MES (3) • Technician of central hospitals (3)	<ul style="list-style-type: none"> <li>• Outline of maintenance, lecture, acquisition method of training</li> <li>• Preventive maintenance &amp; method of lesson, training</li> <li>• Basic management for engineer, method of lesson</li> <li>• Maintenance training on several equipment</li> </ul>
2	Inventory Control	20 May 2006   04 Jun. 2006	2  • Director of MPSC • Chief of Logistics Center	<ul style="list-style-type: none"> <li>• Product custody and warehouse management</li> <li>• Medicine logistics function and management</li> <li>• Courier service function and management</li> <li>• Medicine local supply function and management</li> <li>• Management and administration method of planning, finance, quality, person, environment, security or information</li> </ul>

### 2. In Thailand

No.	Field	Period	Number of trainees	Contents
1	Inventory Control & Logistics	09 Oct. 2005   15 Oct. 2005	8  • Staff of Logistics Center (6) • Staff of MPSC (2)	<ul style="list-style-type: none"> <li>• Supply Chain Management</li> <li>• Inventory control</li> <li>• Distribution</li> <li>• Vendor managed Inventory</li> <li>• IT system</li> <li>• Site visit in GPO</li> <li>• Study visit at Inter Express Logistics in Bangkok</li> </ul>
2	Hospital Management	30 Oct. 2005   05 Nov. 2005	22  • Manager of central & provincial hospitals (21) • Director of MPSC	<ul style="list-style-type: none"> <li>• Scope of medical equipment management</li> <li>• Terminology related to medical devices / equipment</li> <li>• Organizations and roles</li> <li>• Medical devices Agency or equivalent Agency</li> <li>• Best practice</li> <li>• Role of medical equipment management plan in hospital accreditation and quality</li> </ul>
3	Medical Equipment Maintenance	08 Oct. 2006   14 Oct. 2006	10  • Technician of MES (4) • Technician of central hospitals (2) • Technician of regional hospitals (4)	<p>Maintenance and practice on</p> <ul style="list-style-type: none"> <li>• Group 1: X-ray equipment</li> <li>• Group 2: Electro surgery and Monitor</li> <li>• Group 3: Ultrasound equipment</li> <li>• Group 4: Ventilator</li> <li>• Group 5: Spectrophotometer</li> </ul>
4	Inventory Control & Logistics	20 Nov. 2006   24 Nov. 2006	10  • Staff of Logistics Center (2) • Staff of provincial warehouses (8)	<ul style="list-style-type: none"> <li>• Supply Chain Management: Concept of SCM</li> <li>• Order Processing : Lecture on order processing</li> <li>• Vendor Managed Inventory : Concept of VMI</li> <li>• Warehouse Management : Lecture on warehouse management and IT used in the process of receiving, storage and delivery.</li> </ul>
5	Inventory Control & Logistics	17 Sep. 2007   21 Sep. 2007	3  • Staff of Logistics Center	<p>&lt;Study Tour&gt; Warehouse Management (Lecture on Warehouse Management as GSP including system of storage and delivery, Learning Good Practice in storage and delivery Pharmaceutical products. Trainees have chance to practice in the workplace.)</p>
6	Medical Equipment Calibration	06 Oct. 2007   13 Oct. 2007	6  • Technician of MES (4) • Technician of central hospitals (2)	<ul style="list-style-type: none"> <li>• Introduction / Overview / Concepts</li> <li>• Calibration Method</li> <li>• Uncertainty Evaluation and Estimation</li> <li>• Calibration Certificates / Reports</li> </ul>



**Appendix 6-c: List of Machinery and Equipment Provided by Japanese side**

No.	Name of Equipment	Manufacturer	Model Number	Unit Price	Place of installation	Usage Frequency	Maintenance Condition	Delivery Date	Supplied	Quantity Disposed	Quantity Existing	Reason for disposal	Remarks
1	Copy Machine	Canon	Canon ImageRUNNER iR2000	US\$3,550	Project Office	everyday	excellent	07.July.'05	1	0	1	NIL	app. Document feeder, Internal finisher
2	Desktop computer	Hewlett Packard	HP dx6120	US\$2,575	MES Project Office Logistics Center	everyday	excellent	07.July.'05	3	0	1	NIL	app. Laser Printer, UPS
3	Forklift	Mitsubishi	Mitsubishi FB15	US\$22,539	Logistics Center	everyday	excellent	27.Feb.'06	2	0	2	NIL	app. Battery charger, Tools
4	LCD Projector	Toshiba	Toshiba TDP-T91A	US\$2,813	Project Office	2-3 times a month	excellent	28.Mar.'06	1	0	1	NIL	
5	Desktop computer	Hewlett Packard	HP Pavilion a1387L	US\$2,213	Savannah WH (Champasak WH) (Luang Prabang WH) (Oudomxai WH)	everyday	excellent	28.Mar.'06	4	0	4	NIL	app. Laser Printer, UPS
6	Data Logger	Dickson	Dikson TM320	US\$900	Logistics Center Savannah WH Champasak WH Luang Prabang WH Oudomxai WH	everyday	excellent	16.Nov.'06	5	0	5	NIL	app. Software
7	Tool Kit	GOLDTOOL	GTK-700B	US\$300	MES Friendship Hospital 103 Hospital 4 regional Hospitals	when necessary	excellent	27.Dec.'06	10	0	10	NIL	
8	Spare Fork (for SML-3)	Mitsubishi	Mitsubishi	US\$685	Logistics Center	everyday	excellent	12.Jan.'07	1	0	1	NIL	
9	Hand Pallet Truck	WARRIOR	TM2500	US\$815	Logistics Center Savannah WH Champasak WH Luang Prabang WH Oudomxai WH	everyday	excellent	15.Mar.'07	5	0	5	NIL	
10	Tool Kit	GOLDTOOL	GTK-305B	US\$200	Central and Provincial Hospitals	when necessary	excellent	11.Jun.'07	16	0	16	NIL	using for training course
11	Battery Powered Lift Stacker	JUMBO	WSB-1025	US\$4,975	Savannah WH Champasak WH Luang Prabang WH Oudomxai WH	everyday	excellent	01.Aug.'07	4	0	4	NIL	app. Battery charger, Tools
12	Infusion Device Analyzer	DALE	DALE 4100	US\$5,120	MES	when necessary	excellent	14.Sep.'07	1	0	1	NIL	

No.	Name of Equipment	Manufacturer	Model Number	Unit Price	Place of installation	Usage Frequency	Maintenance Condition	Delivery Date	Quantity		Reason for disposal	Remarks	
									Supplied	Existing			
13	Electrical Safety Analyzer	DALE	DALE 601E	US\$1,549	MES Savannahet hospital Changpasak hospital Luang Prabang hosp Oudomxai hospital	when necessary	excellent	14.Sep.'07	5	0	5	NIL	
14	ECG Simulator	DALE	DALE EHS 12	US\$570	MES Savannahet hospital Changpasak hospital Luang Prabang hosp Oudomxai hospital	when necessary	excellent	14.Sep.'07	5	0	5	NIL	
15	Defibr/Pacer Analyzer	NETECH	Delta 3000	US\$3,510	MES	when necessary	excellent	14.Sep.'07	1	0	1	NIL	
16	Tool Kit	GOLDTOOL	GTK-305B	US\$200	Central and Provincial Hospitals	when necessary	excellent	14.Sep.'07	16	0	16	NIL	

## Appendix 6-d: List of Personnel Assigned

Table A The number of trainers of the training courses

	The number of trainers of the training courses	
	2005 (at the beginning of the Project)	2007 (as of 29th November)
MES	3	4
Mahosot hospital	1	0
Friendship hospital	1	1
Setthathirath hospital	0	0
Mother and Child hospital	0	0
Total	5	5

Note: One technical staff of 103 Hospital joined the trainers' trainings in 2005-2007.  
Source: Questionnaire and hearing survey to the chief of the MES

Table B The number of technical staff for medical equipment maintenance (MES and central hospitals)

	The number of technical staff for medical equipment maintenance	
	2005 (at the beginning of the Project)	2007 (as of 29th November)
MES	4	6
Mahosot hospital	2	3
Friendship hospital	3	3
Setthathirath hospital	1	2
Mother and Child hospital	0	(1) Temporary transfer from MES
Total	10	14

Source: Questionnaire and hearing survey to the chief of the MES

Table C The number of technical staff for medical equipment maintenance (Provincial hospitals)

	The number of technical staff for medical equipment maintenance	
	2005 (at the beginning of the Project: August 2005)	2007 (as of 29th November)
Phongsaly provincial hospital	1	1
Luang Namtha provincial hospital	1	1
Oudomxai provincial hospital	1	2
Bokeo provincial hospital	1	1
Luang Prabang provincial hospital	2	4
Houaphan provincial hospital	1	1
Sayaboury	1	2

provincial hospital		
Xiengkhouang provincial hospital	2	2
Vientiane provincial hospital	3	3
Borikhamxai provincial hospital	1	4
Khammouane provincial hospital	1	1
Savannakhet provincial hospital	1	2
Saravan provincial hospital	1	2
Sekong provincial hospital	1	1
Champasak provincial hospital	1	3
Attapu provincial hospital	1	1
<b>Total</b>	<b>20</b>	<b>30</b>

Source: Questionnaire and hearing survey to the chief of the MES

Table D The number of staff in charge of the inventory control

	The number of staff in charge of inventory control of medical products	
	2005 (at the beginning of the Project)	2007 (as of 29th November)
Logistics Center	6	7
Warehouse in Luang Prabang	1	5
Warehouse in Oudomxai	1	3
Warehouse in Savannakhet	6	5
Warehouse in Champasak	2	3
<b>Total</b>	<b>16</b>	<b>23</b>

Source: Questionnaire and hearing survey to the chiefs of the Food and Drug Departments and the warehouses in four target provinces and the Logistics Center