Kingdom of Cambodia

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Data Collection Survey on Human Resources for Health and Health Facility
Final Report

July 2017

Japan International Cooperation Agency (JICA)

Japan Anti-Tuberculosis Association
Azusa Sekkei Co., Ltd.
Estrella Inc.

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Data Collection Survey
on Human Resources for Health and Health Facility

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Abbreviation

CPA	Complementary Package of Activities
DHS	Department of Hospital Services
DHRD	Department of Human Resource Development
DIC	Department of International Cooperation
DP	Department of Personnel
DPHI	Department of Planning and Health Information
FDH	Former District Hospital
HC	Health Center
HP	Health Post
HEF	Health Equity Fund
HRH	Human Resources for Health
JICA	Japan International Cooperation Agency
MCH	Maternal and Child Health
MDGs	Millennium Development Goals
MOH	Ministry of Health
MPA	Minimum Package of Activities
NGO	Non-Governmental Organization
OD	Operational Health District
ODA	Official Development Assistance
PHD	Provincial Health Department
PRH	Provincial Referral Hospital
RH	Referral Hospital
RTC	Regional Training Center
SOP	Standard Operational Procedure
TSMC	Technical School for Medical Care
TWG	Technical Working Group
UHC	Universal Health Coverage
UHS	University of Health Sciences
USAID	United States Agency for International Development
WHO	World Health Organization

Photos

Training to data collectors

Interview during field survey

Interview used by CASI (Computer Assisted Survey Instrument)

Exit Examination at RTC (midwife)

Interview during field survey

Medical skill assessment of doctors

Workshop

Workshop

Chapter 1 Survey Overview

1-1 Background

In 2010 WHO defined Universal Health Coverage (UHC) as ensuring that all people have access to needed promotive, preventive, curative and rehabilitative health services, of sufficient quality to be effective, while also ensuring that people do not suffer financial hardship when paying for these services and in 2012 WHO set UHC as global agenda as issues of public health. The government of Japan streamlined UHC in Japan's Strategy on Global Health Diplomacy 2013 and committed to the realization of UHC by mobilizing its knowledge and expertise such as national health insurance scheme. JICA has supported maternal and child health and infectious disease control to achieve MDGs and focused on strengthening health service delivery including expansion of health facilities and capacity building of healthcare providers. In these days, JICA focus on strengthening health finance and social protection as well as strengthening health service delivery system based on UHC concept.

In Cambodia, JICA has provided technical assistance on maternal and child health since 1995 and more pregnant women take prenatal care and childbirth delivery at facility due to nationwide promotion of antenatal care, neonatal care and delivery with skilled birth attendant. However, since delivery of neonatal care still remains a challenge, the Project for Improving Continuum of Care with focus on Intrapartum and Neonatal Care started in Kampong Cham province and Svay Rieng province in 2016. JICA also implemented the Project for Development of Social Health Insurance for Informal Sector in Cambodia after conducting data collection survey on social health insurance. Moreover, private sector is active in healthcare market due to economic development and more private hospitals and private health insurance companies start their business especially in urban areas. Under such circumstances, it is needed to make strategically the assistance plan on development of human resources for health and infrastructures in order to contribute to the realization of UHC as well as to complement past and current JICA's technical assistance to maternal and child health and social health insurance.

1-2 Survey objectives

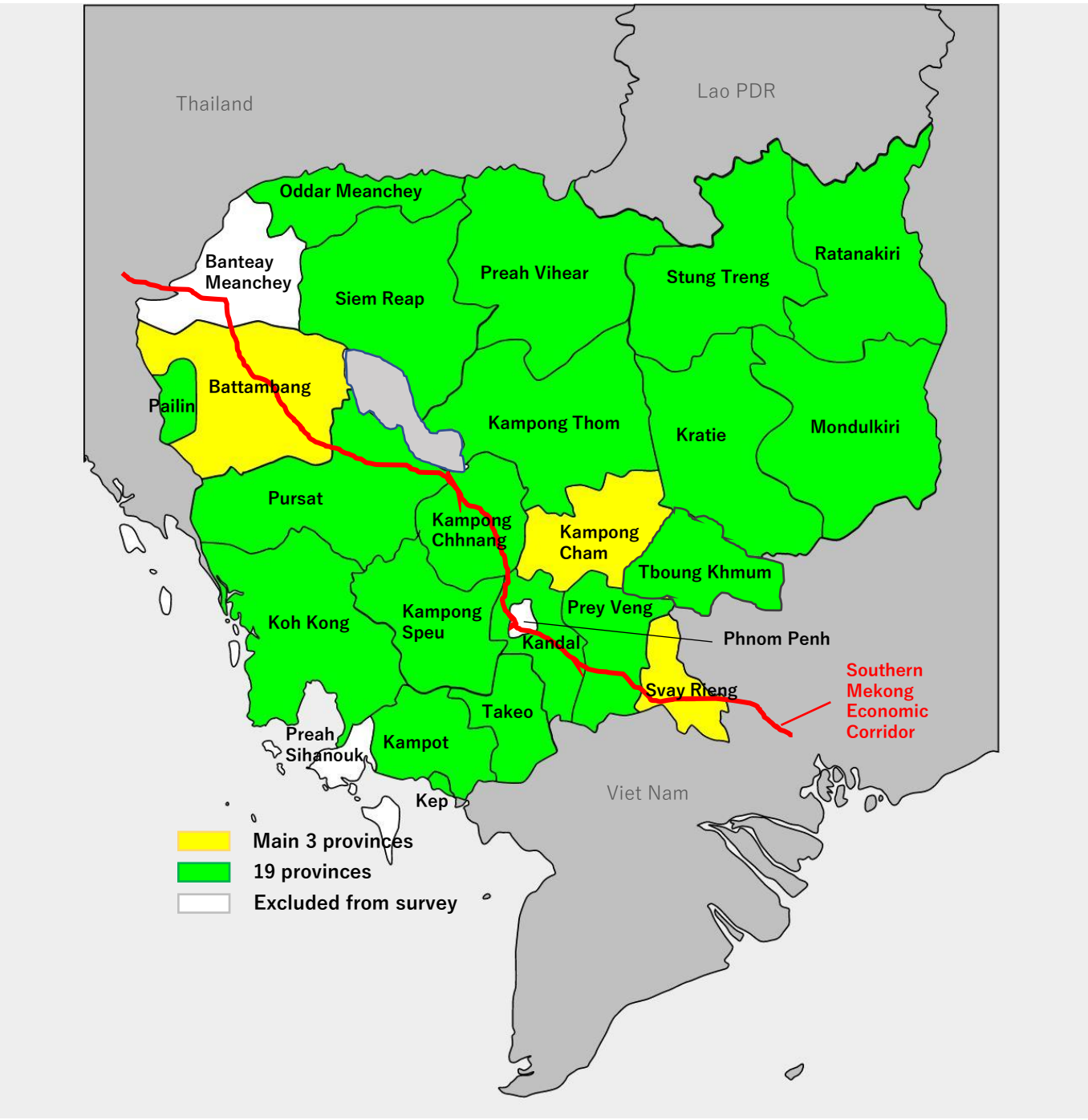
The survey has following objectives;

1) To identify challenges and needs in achieving UHC in line with Cambodia's policy and strategies in terms of human resources for health (HRH), health facility and equipment
2) To propose future JICA's assistance in the area of HRH, health facility and equipment, taking the policy of Cambodia, achievements and experiences of JICA, and Japanese aid policy into account.

1-3 Survey area

This survey targets 22 provinces; Battambang, Kampong Cham and Svay Rieng as three main provinces (colored in yellow in Fig. 1- 1) that have been supported by JICA under technical cooperation project and grant aid project, and other 19 provinces (colored in green in Fig. 1- 1),

excluding three provinces where JICA provided grant in the past (Banteay Meanchey, Preah Sihanouk, and Phnom Penh).



Source: Survey Team

Fig. 1- 1 Target provinces

1-4 Target facilities and agencies

The survey covers related departments (DP, DHRD, DPHI, DHS, and DIC) of MOH, all the health facilities (PHD, PRH: Provincial Referral Hospital, RH: Referral Hospital, HC: Health Center, and HP: Health Post) in the three main provinces, and PHD and PRH in 19 provinces. In addition, UHS, RTC and Health Professional Councils, in charge of HRH development and registration, and international agencies and other development partners (WHO, WB, USAID, etc.) were included.

1-5 Survey method

This survey consists of (1) Preparation in Japan, (2) 1st Field survey in Cambodia (data collection and workshop), (3) Data analysis in Japan, (4) 2nd Field survey in Cambodia (explanation of Draft Final Report in Cambodia), and (5) 3rd Field survey in Cambodia. Workflow is shown in Fig. 1- 2, and the work schedule is attached in Annex 1.

The Survey process is as follows;

(1) Preparation (Late January 2017-Early February)

As a preparation of this survey, the team collected Cambodia's national health policy and plan, and other documents related to human resources for health, health facility and medical equipment for smooth and efficient implementation of the survey. Based on these documents, the team developed three types of questionnaire for the field survey through discussions with JICA; (1) PHD, (2) PRH and RH, and (3) HC/HP (Annex 2). The contents of the questionnaires for hospitals and HC are shown in Table 1-1.

Table 1- 1 Contents of questionnaires for RH and HC

#	Contents
1	General information (management system, number of beds, inpatients and outpatients, referral system etc.)
2	Hospital service (BOR, inpatients, outpatients, surgery, laboratory tests)
3	Health indicators
4	Budget and finance
5	Number of health worker, deployment, training and level of skills
6	Facility conditions (year of establishment, construction space, history of renovation etc.)
7	Conditions and usage of medical equipment
8	Assistance of development partners

(2) 1st Field survey in Cambodia (January 29, 2017-March 5, 2017)

The survey team explained the outline of this survey based on the inception report to the Secretary State of MOH and requested the support to the survey from the concerned departments and PHD. For the data collection at the central level, the team interviewed concerned departments on policy and

system related to this survey while the data collection for provincial level was divided by Japanese team and local consultant team (KHANA) as shown in Table 1- 2.

The questionnaires were translated into Khmer and English and CASI (Computer Assisted Survey Instrument) was used for data collection. The training to data collectors of KHANA was conducted before the field survey. While both Japanese survey team and KHANA team visited main three provinces for data collection, KHANA team was mainly in charge of data collection in 19 provinces.

Table 1- 2 Target facilities and role of survey team

Target Facilities		Japanese team	KHANA team (local consultant)
Main 3 provinces	PHD	●	●
	Provincial Referral Hospital (PRH)	●	●
	Referral Hospital (RH)	some (with KHANA team)	●
	Health Center/Health Post	some (with KHANA team)	●
19 provinces	PRH/PHD	4 PRH (3rd field survey) (Siem Reap, Kampong Chhnang, Takeo, Prey Veng)	●
MOH (DHRD, DP, DPHI, DIC)		●	—
University of Health Sciences (UHS), RTC		●	—
Other (Development partners, Health Professional Councils)		●	—

1) Policy and system

The survey team visited DHRD, DP, DPHI and DIC of MOH and interviewed on (1) HRH information system and HRH development plan, (2) employment and deployment, (3) workplace environment, (4) pre-service training and in-service training, (5) health workforce regulation in terms of HRH. The team also interviewed officials of DHS in charge of health facility and medical equipment to collect the information on Health Strategic Plan 2016-2020, plan of activities, future assistance from other development partners.

2) Field survey in 3 main provinces and 19 provinces

The survey team visited target facilities in 3 main provinces and 19 provinces shown in Table 1-2 and collected data to know the gaps between policy/plans and current situations by using questionnaires.

3) Interview to UHS and RTC

The team interviewed the rector of UHS, the director of TSMC, and directors of RTC in Battambang and Kampong Cham to collect the information on number of graduates and the level of

school in Cambodia as HRH training institutions. The team also interviewed the rector of UHS on their basic plan of university hospital and loan assistance of Korean government to this project.

4) Assistance of development partners

The team interviewed development partners (WHO, WB and USAID) that has provided assistance in the area of HRH and Health Professional Councils in order to collect information on current and future assistance.

5) 1st Workshop

The survey team held the Workshop on HRH in Cambodia and brainstorming on challenges and possible solutions to debrief tentative survey results and discuss possible solutions against challenges, inviting related departments of MOH and development partners.

(3) Data analysis and discussion of proposed future assistance (Early March 2017-Middle April)

The results of the field survey were analyzed to identify challenges and needs and to propose future assistance. The team developed interim report of the survey.

(4) 2nd Field survey in Cambodia (April 17-27, 2017)

The survey team held the Workshop on proposed JICA's assistance, inviting MOH officials and related agencies, to summarize the survey results and discuss proposed future assistance. Some options of proposed future assistance were selected considering the feasibility and interests of MOH.

(5) 3rd Field survey in Cambodia (May 16-27, 2017)

In response to the request of MOH, additional survey was conducted in Siem Reap province, Kampong Chhnang province, Takeo province and Prey Veng province regarding the development of provincial referral hospital under grant aid.

(6) Preparation of Final Report (End April 2017- Late June)

Based on the explanation of draft report and discussion with Cambodian side, the survey team prepared the final report of the survey.

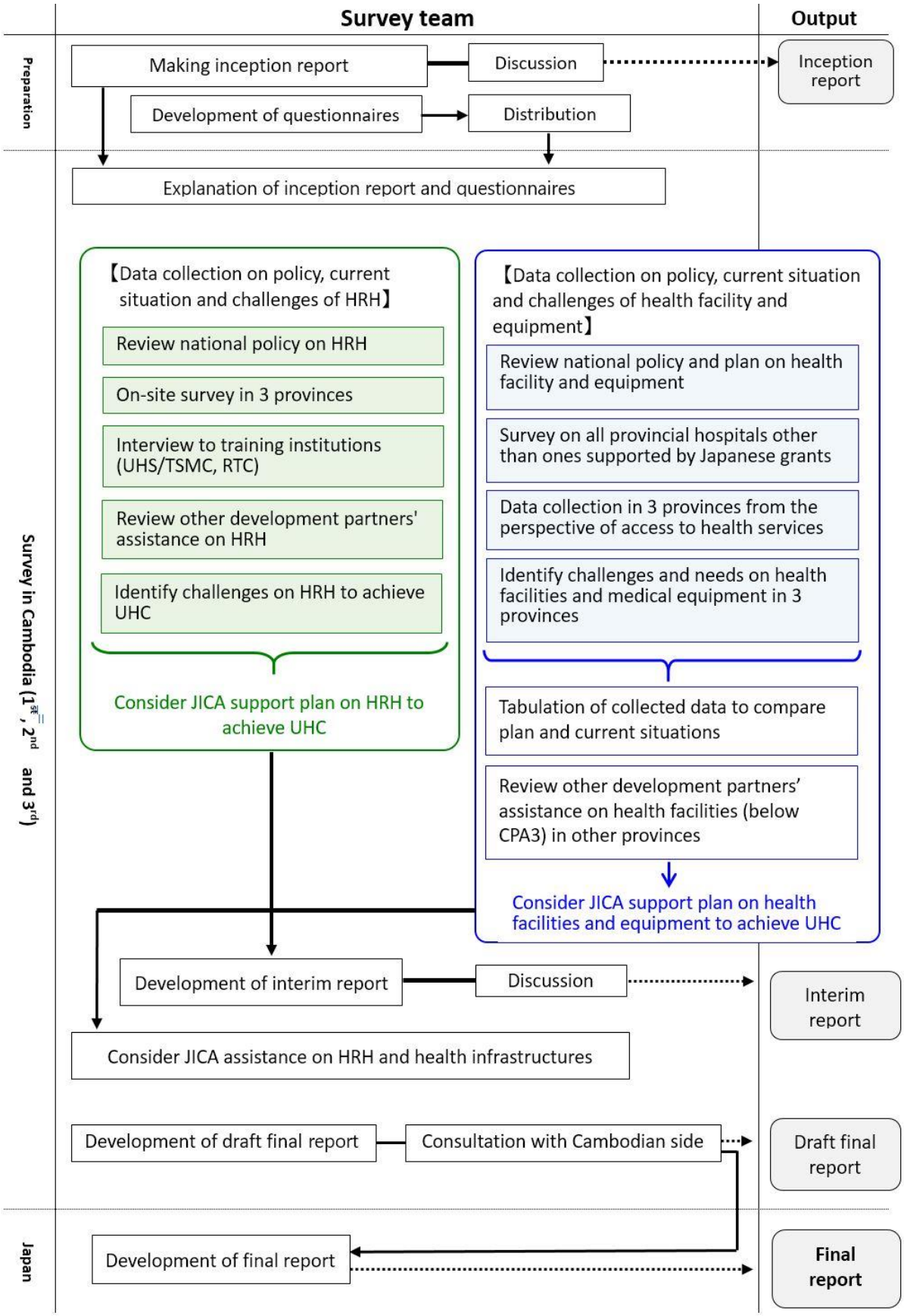


Fig. 1- 2 Workflow

1-6 Survey team

Japanese survey team consists as follows;

Name	In charge	Company
Kosuke OKADA	Leader/HRH	Japan Anti-Tuberculosis Association (JATA)
Tetsuhiro SUGAMOTO	Sub-leader/HRH/Coordinator	Japan Anti-Tuberculosis Association (JATA)
Hozumi OGAWA	Health Facility	Azusa Sekkei Co., Ltd.
Kazushiro SUZUKI	Medical Equipment	Estrella Inc.
Mami KON	Coordinator/Assistant	Japan Anti-Tuberculosis Association (JATA)

Chapter 2 Health Overview in Cambodia

2-1 Health indicators

Table 2-1 shows demographic indicators.

Table 2- 1 Demographic indicators (projection for 2016)

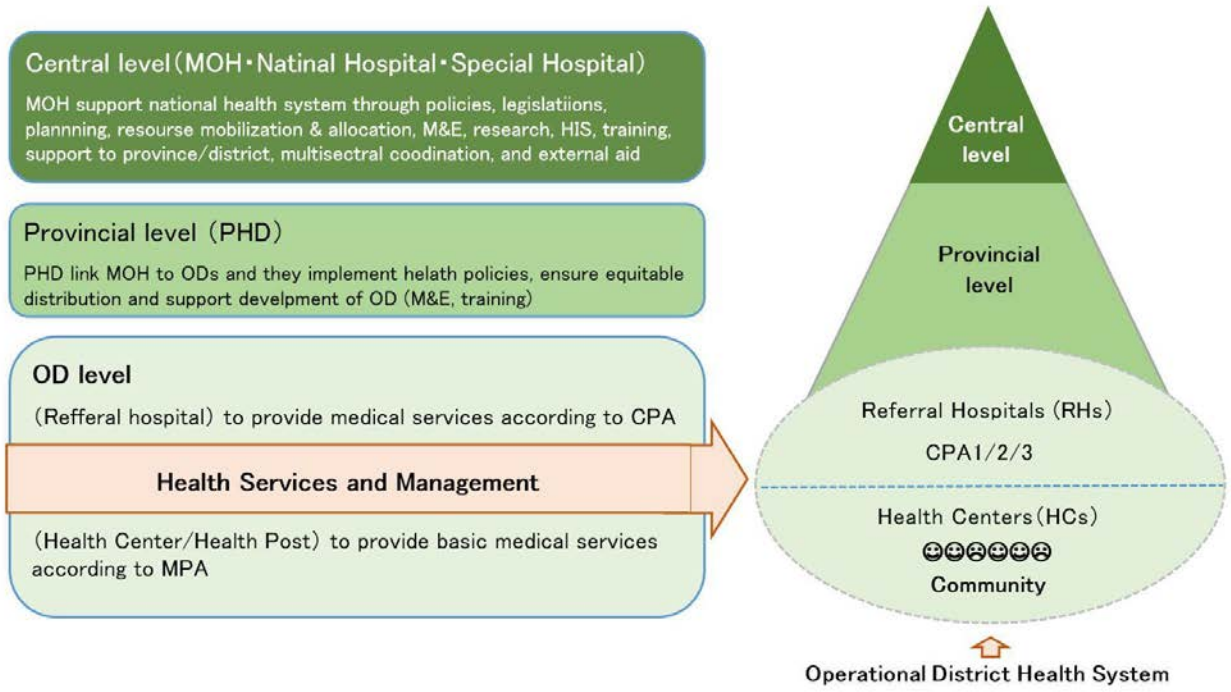
	Province	Population	Birth	Death
Target province	Battambang	1,178,318	27,510	6,991
	Kampong Cham	1,088,170	27,808	8,382
	Svay Rieng	606,199	13,991	4,561
	Kampong Chhnang	545,744	12,077	4,325
	Kampong Speu	796,589	18,315	4,271
	Kampong Thom	727,537	17,560	4,977
	Kampot	643,049	15,015	4,351
	Kandal	1,168,490	26,316	8,461
	Kep	40,578	911	271
	Koh Kong	128,416	2,746	612
	Kratie	363,622	9,896	3,316
	Mondul Kiri	76,548	1,808	522
	Otdar Meanchey	246,570	6,360	1,148
	Pailin	70,050	1,767	305
	Preah Vihear	251,468	7,584	1,905
	Prey Veng	1,213,645	29,268	9,845
	Pursat	466,865	13,192	2,614
	Rattanak kiri	194,337	4,974	1,433
	Shem Reap	975,994	22,782	5,241
	Stung Treng	130,648	3,738	1,015
	Takeo	968,028	21,321	6,307
	Tbong Khmum	833,522	22,580	5,932
Excluded from Survey	Banteay Meanchey	771,377	19,018	5,038
	Phnom Penh	1,779,552	38,621	8,539
	Preah Sihanouk	265,363	6,751	1,549
	Cambodia	**15,453,922**	**367,905**	**105,723**

Source : Population Projection of Cambodia 2013-2023

2-2 Health service delivery system

2-2-1 Public health service delivery system

Fig. 2-1 shows the public health service delivery system in Cambodia. MOH and national hospitals, special hospital for TB and Maternal and Child Health are located in the capital city of Phnom Penh while Provincial Health Department (PHD) is established in each province. Each PHD covers Operational Districts (OD) where Referral Hospitals (RH), Health Centers, and Health Posts deliver health services. In addition, MOH defines the service to be delivered by health facility as Complementary Package of Service (CPA) for referral hospitals and Minimum Package of Activities (MPA) for HCs. The Complementary Package of Activities (CPA) are graded 1-3, CPA1 (lowest) to CPA3 (highest) according to the level of RHs. Under this system, 102 RHs (covering 100,000-200,000 population per hospital) and 1,164 HCs (covering 10,000-20,000 population per HC) deliver health services as public health facility[1].



Source : Health Strategic Plan 2008-2015

Fig. 2- 1 Public health service delivery system in Cambodia

2-2-2 Public human resources for health development system

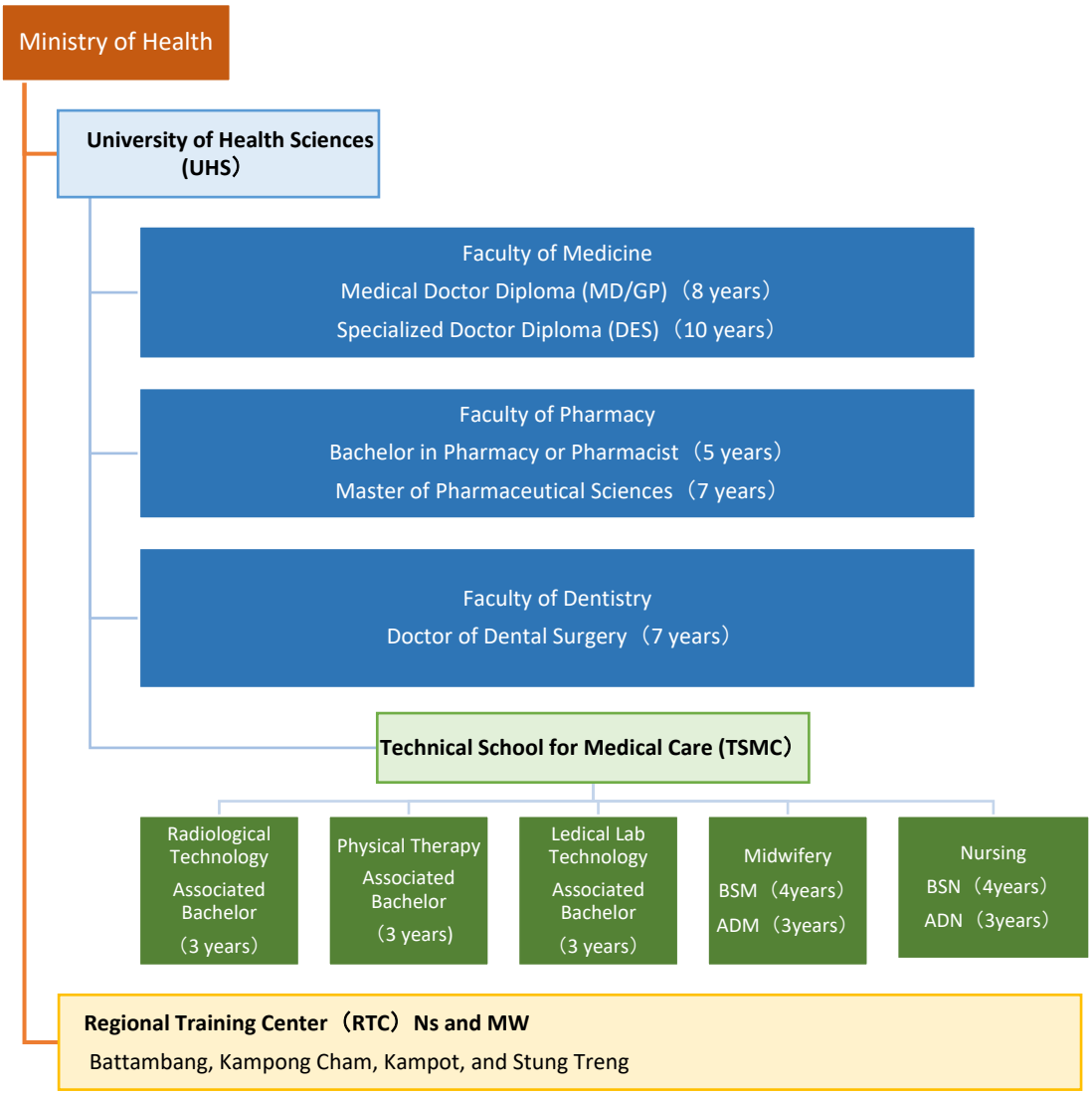
Fig. 2-2 shows the structure of public HRH development. As affiliated institution of MOH, University of Health Sciences (UHS) has Faculty of Medicines, Pharmacy, and Dentistry and Technical School of Mesial Care where disciplines of nursing, midwifery, laboratory technology, radiological technology, and physiotherapy are provided. Regional Training Centers, under MOH, provide nursing and midwifery

[1] Health Sector Progress in 2016, MOH

courses in four regions, Kampong Cham, Battambang, Kampot, and Stung Treng. And private training institutions also deliver curricula for medical doctor, pharmacist, nurse, midwife and other medical professions.

UHS, since its foundation of 1946, has contributed significantly to the development of human resources for health. In the field of health sciences (medicine, pharmacy, odontostomatology, nursing and midwifery), it is the only public university under MOH though other public and private universities started to offer health sciences-related training in 2001. UHS has graduates of 364 doctors, 115 dentists, 172 pharmacists, 192 nurses, and 207 midwives in 2016, and its number of doctors accounts for 62% (591/364) of national graduates of medical school[2]. 64% of UHS graduated doctors work for public health facilities. According to UHS alumni survey among graduate from 1999 to 2012, 76.2% of nurses and 57.7% of midwives work in public sector. Thus, UHS plays an important role in the development of health workforce in Cambodia, and it significantly contributes to the level of medical standard. It has 219 faculty members including 22 professors while it has 1,296 adjuncts (including 131 professors). It faces several challenges; teaching capacity development, teaching facility, limited opportunities of anatomy practice, clinical training depending on other hospitals because UHS doesn't have its own university hospital. It has a plan to build its university hospital in near future, which is described in 3-7.

[2] Health Sector Progress in 2016, MOH



Coverage of Battambang RTC	Battambang, Pailin, Otdar Meanchey, Banteay Meanchey, Siem Reap, Pursat
Coverage of Kampong Cham RTC	Kampong Cham, Prey Veng, Kratie, Kampong Thom
Coverage of Kampot RTC	Kampot, Koh Kong, Takeo, Preah Sihanouk
Coverage of Stung Treng RTC	Stung Treng, Preah Vihear, Rattanak Kiri, Mondul Kiri

Source: MOH, UHS

Fig. 2- 2 Public HRH development system

2-3 Health policy

The Government of Cambodia set capacity development of HRH as one of the priority issues in National Strategic Development Plan 2014-2018. The Cambodia Health Strategic Plan 2016-2020 set the policy goal of improving health outcome and increasing financial risk protection across the population and following health development framework is indicated.

Policy goal: Improve health outcome and increase financial risk protection across the population

Four Health Development Goals

① **Improve reproductive health and reduce maternal, new-born and child mortality and malnutrition**
② **Reduce morbidity and mortality due to main communicable diseases**
③ **Reduce morbidity and mortality due to non-communicable diseases and other public health problems**
④ **Make the health system accountable and responsive**

These four goals are supported by following seven strategic objectives.

Seven Strategic Objectives

1. The population will have access to comprehensive, safe and effective quality health services at public and private health facilities
2. There will be stable and sustained financing of healthcare services with increased financial risk protection when accessing healthcare services
3. The health system will have adequate number of well-trained, competent staff with appropriate skill mix who are well-motivated and display professional ethics
4. Public health facilities are adequately supplied with medicines, health commodities, equipment and amenities, with effective essential supportive services
5. Public health facilities have basic infrastructure, appropriate advanced medical equipment and technology and IT
6. Health and health –related information are reliable, accurate, timely and of high quality and used together with medical and health system research
7. Strong health institutional capacity at all levels, including leadership and management competency, together with enforced regulation and local accountability in health

Chapter 3 Field Survey Results

At the central level, information on health care in Cambodia was obtained through data collection and through interviews at related departments of the Ministry of Health.

In addition, a field survey targeted all public health facilities from Health Post (HP) to provincial referral hospital (PRH) in three main provinces (Battambang, Kampong Cham, and Svay Rieng), and PRHs in 19 provinces. A breakdown of targeted facilities is shown in Table 3-1. The survey team visited the facilities and gathered various types of information using questionnaires.

The results shown below are based on interview and questionnaires.

Table 3- 1 Visited facilities in target 22 provinces

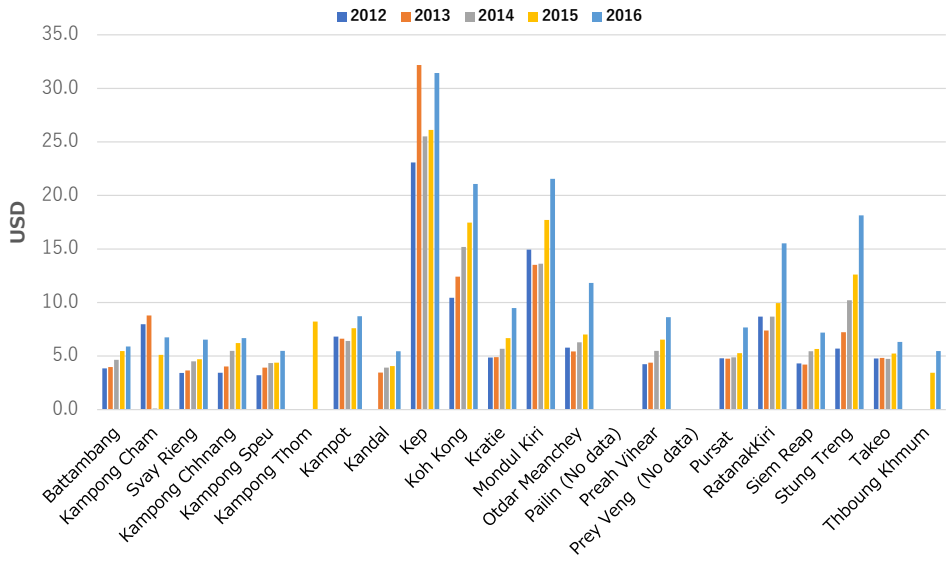
	Battambang (census)	Kampong Cham (census)	Svay Rieng (census)	19 provinces (PRH only)	**Total**
PHD	1	1	1	19	**22**
RH (CPA3)	1	1	1	12	**15**
RH (CPA2)	2	2	1	5	**10**
RH (CPA1)	1	4	3	2	**10**
HC (including FDH)	80	87	43	Excluded from Survey	**210**
HP	5	0	2		**7**

3-1 Health care outline, etc.

3-1-1 Outline of health care at the provincial level

(1) Government budget in each province

The per-capita health care-related government budget for each province is shown in Fig. 3-1. Over the past 5 years, between 2012 and 2016, there has been a trend toward increase.

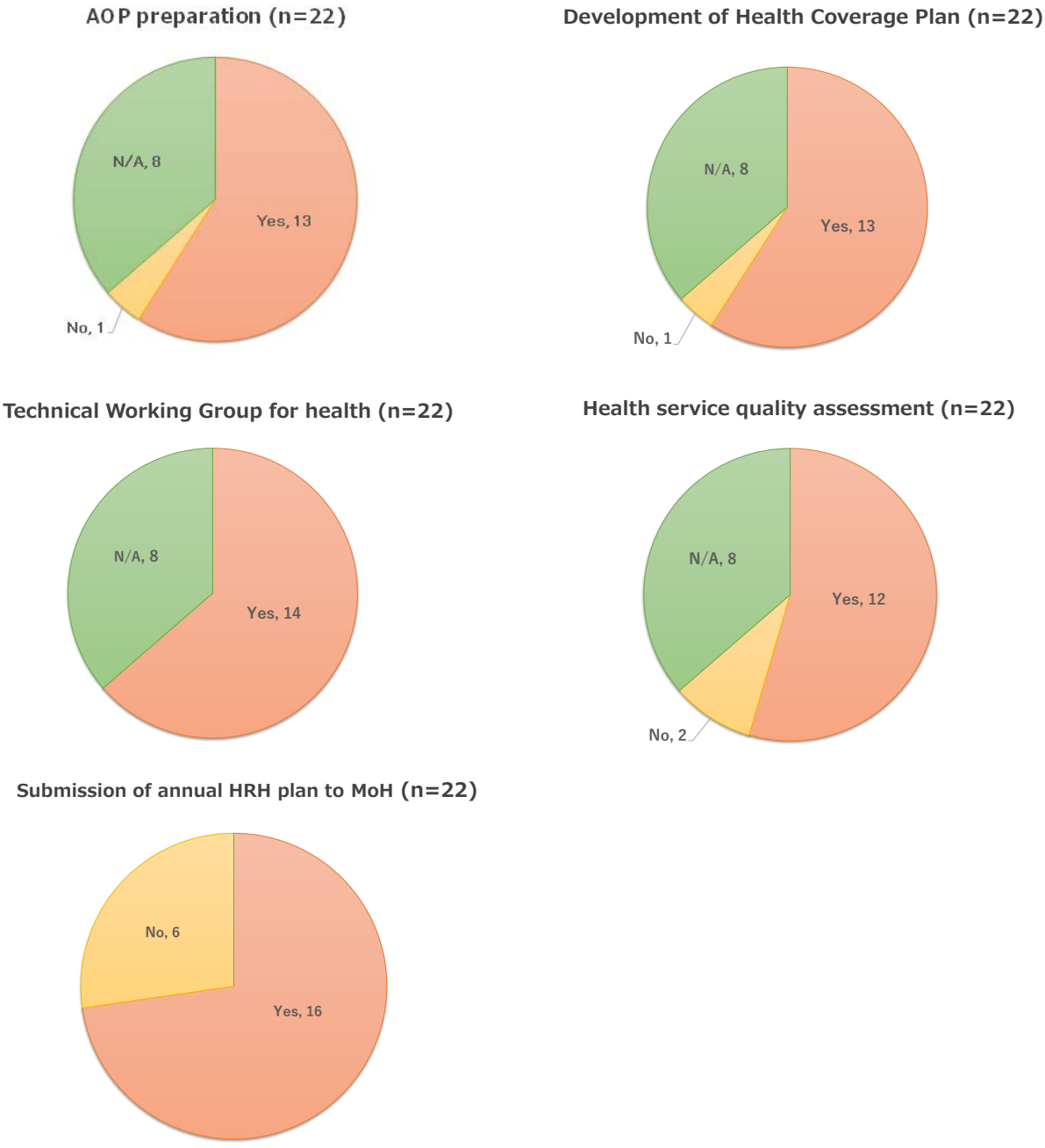


Source： answers of questionnaires

Fig. 3- 1 Trends in per-capita health budget from government (2012-2016)

(2) Health planning and management

Fig. 3-2 shows the situation of health planning and management in target 22 provinces. Fourteen provinces responded the questions on Annual Operation Plan, Health Coverage Plan, monthly meeting of health working group and health service assessment. Battambang province, Kampong Cham province and Svay Rieng province conducted all the above activities. Regarding the submission of annual HRH development plan, 16 provinces including Battambang province submitted the plan to MOH out of 22 provinces. Kampong Cham province and Svay Rieng province didn't submit the plan to MOH. According to Kampong Cham PHD, they didn't submit the plan because their request has not been responded by MOH although they submitted until 2009.



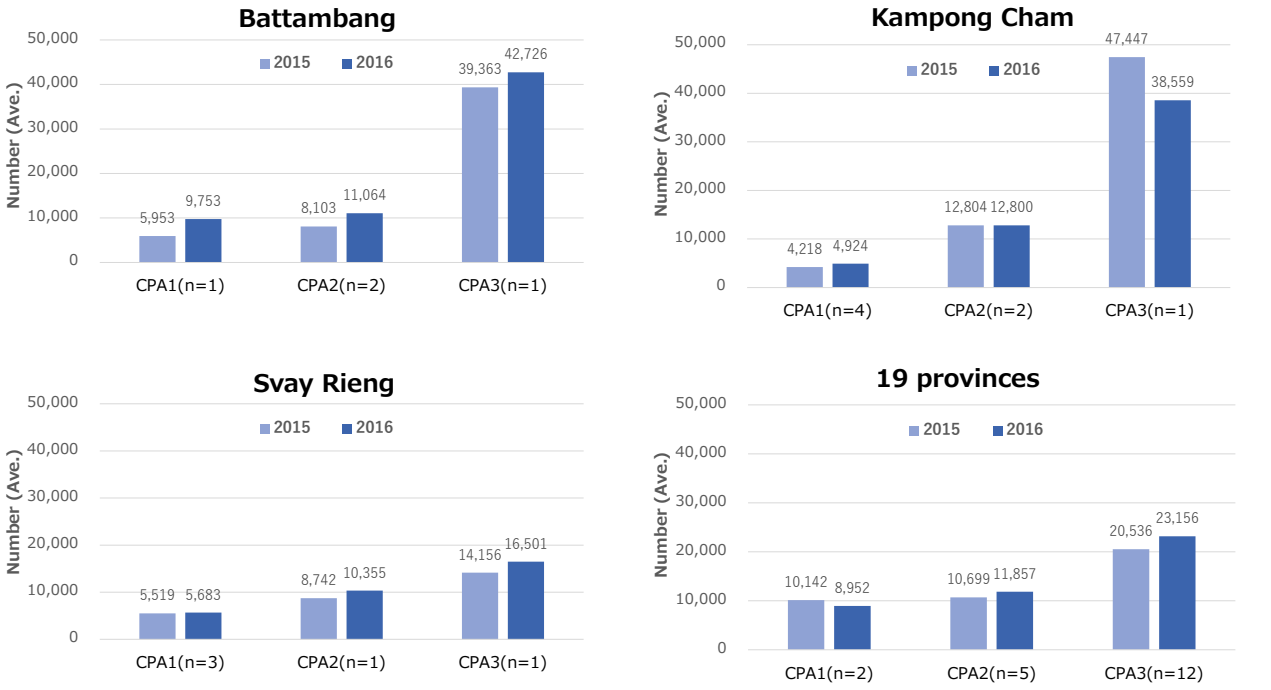
Source : answers of questionnaires

Fig. 3- 2 Status of activities of PHD

3-1-2　Status of use of provincial referral hospitals and referral hospitals

(1) Number of new outpatients

Trends in the number of new outpatients at RHs and at the 19 PRHs, including the PRHs of the 3 main provinces, are shown in Fig. 3-3. Target hospitals were analyzed by CPA classification breakdown. Overall trends show an increasing number of patients. In particular, PRHs (CPA3) in populous urban areas in Battambang province and Kampong Cham province examine about 40-50 thousand new patients per year. On the other hand, Svay Rieng PRH (CPA3) goes through about 15 thousand patients per year. Even compared to the other 19 PRHs, the numbers for Battambang PRH and Kampong Cham PRH are drastically larger, suggesting that these hospitals examine the most patients. Furthermore, the number of outpatients increases as CPA1, 2 and 3 hospital function standards rise.

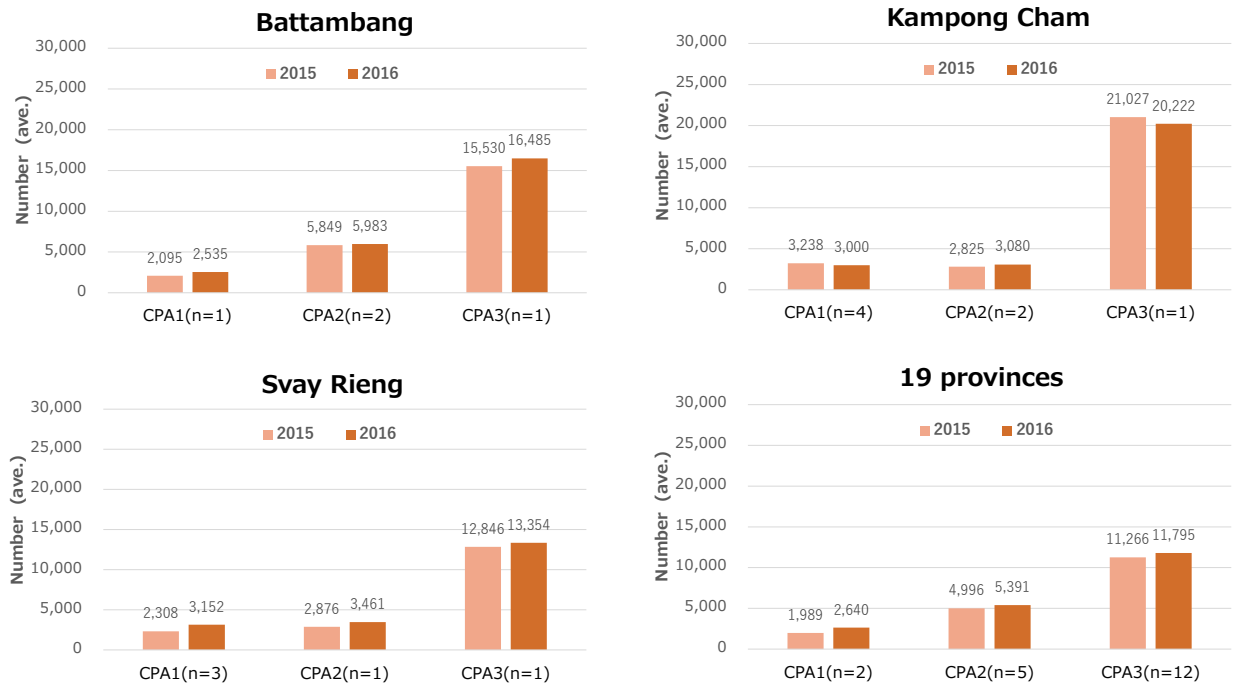


Source： answers of questionnaires

Fig. 3- 3 Trends in the number of new outpatients

(2) Number of inpatients

Fig. 3-4 shows trends in inpatients. In Battambang province and Kampong Cham province, the yearly number exceeds 15,000 persons. Svay Rieng province mirrors the other 19 PRHs, at 10,000-15,000 persons. As with the number of outpatients, the number of inpatients increases with rising CPA function. In Battambang province and Kampong Cham province in particular, there is a great gap between CPA1 and 2 hospitals, and CPA3 hospitals.

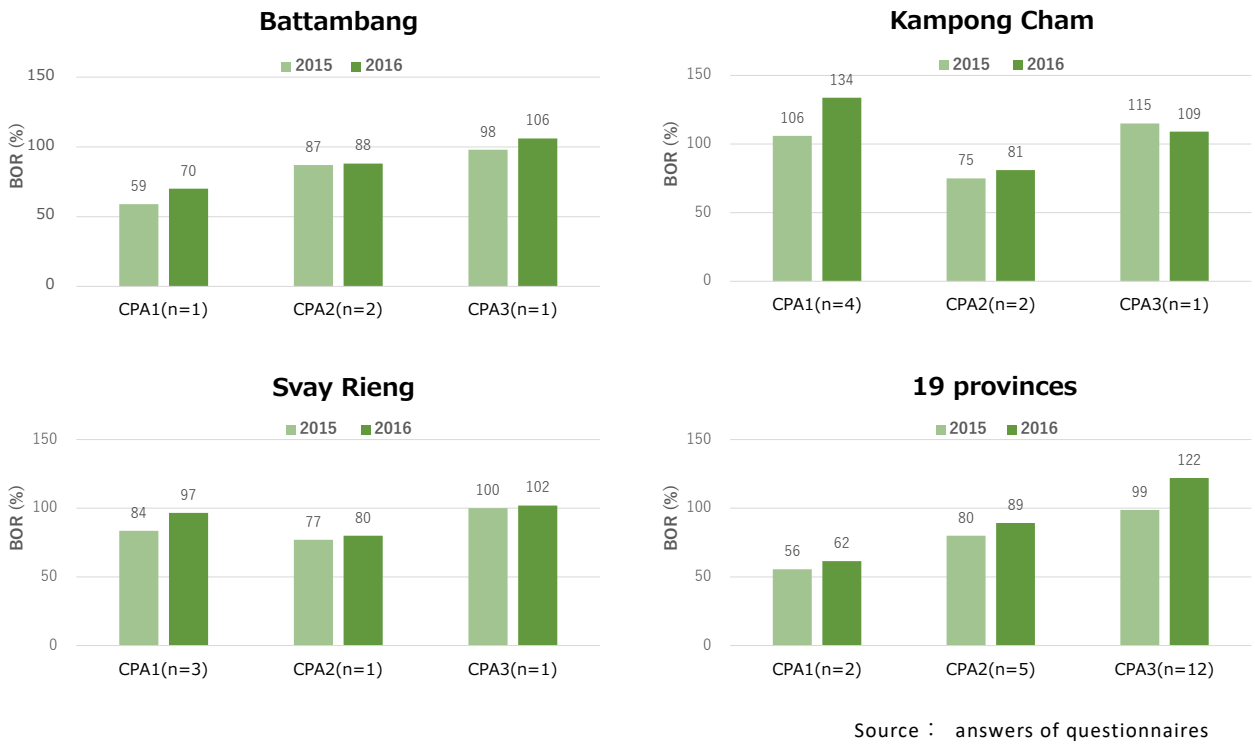


Source： answers of questionnaires

Fig. 3- 4 Trends in inpatients

(3) Bed occupancy rate (BOR)

Fig. 3-5 shows indices for bed use status for bed occupancy rates. There is an overall trend toward increasing bed occupancy rate, regardless of CPA level. For CPA3 hospitals, the rate nears 100%, or even exceeds it, demonstrating that in all regions of the country, most patients are using these hospitals. Furthermore, in Battambang province and the other 19 provinces, the rates increase in tandem with rising CPA, but in Kampong Cham province and Svay Rieng province, the rates for CPA2 hospitals remain at around 70%, a comparatively lower rate than for CPA1 or 3. There are two CPA2 hospitals in Kampong Cham province. Though one of these was upgraded from CPA1 extremely recently, it can be assumed that they can't respond to the needs of patients due to understaffing and limited medical skills. In addition, there are only two doctors deployed at the other CPA2 hospital. Both of these are thought to be reasons for the low use rates. Also, the only CPA2 hospital in Svay Rieng province lacks a surgeon, meaning that in reality, this hospital only fulfills CPA1 functions.

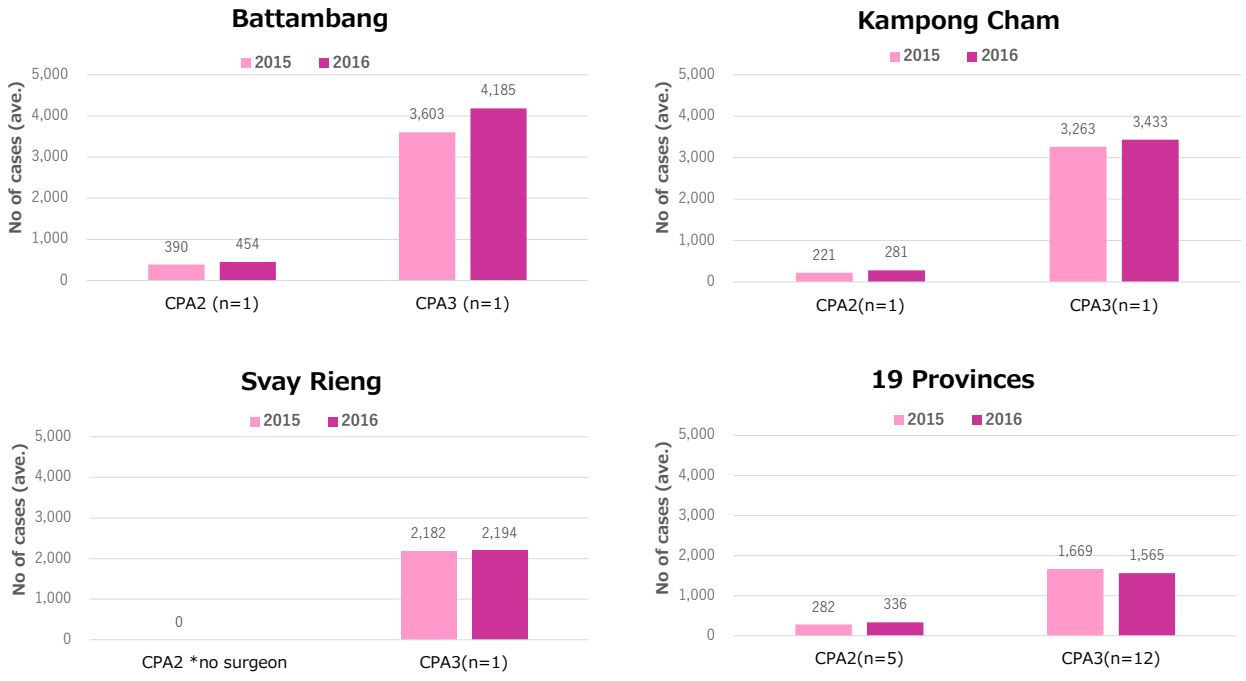


Source： answers of questionnaires

Fig. 3- 5 Trends in bed occupancy rate

(4) Number of surgeries, and their location

Trends in the average number of surgeries are shown in Fig. 3-6. The number of surgeries is a useful index for evaluating hospital function, showing whether it is possible to surgically address conditions which could not be treated using internal medicine. According to CPA guidelines, hospitals of CPA2 or above must have an operating room, a minimum of three surgeons, and be able to perform surgery. However, at Romeas Haek RH (CPA2) in Svay Rieng province, there is no surgeon deployed who can perform surgery, despite the fact that the hospital owns the necessary equipment for abdominal surgery. Similar situations were observed in two CPA2 hospitals in Siem Reap province. In addition, there is a large gap between the number of surgeries performed at CPA3 hospitals and CPA2 hospitals. There is no such gap seen between the number of outpatients at CPA3 and CPA2 hospitals, so the reasons for the surgery gap are thought to be that patients in need of surgery choose CPA3 hospitals, or alternatively, that CPA2 hospitals do their best to refer surgery patients to CPA3 hospitals.



Source： answers of questionnaires

Fig. 3- 6 Trends in average number of surgeries

Contents of the surgeries performed at the 22 PRHs, including those of the 3 main provinces, are shown in Table 3-2. Responses were received from 8 PRHs, including those in the 3 main provinces. Though information is limited, out of all surgeries performed, most (about 70%) were performed on limbs, or were abdominal surgeries such as appendectomies or Caesarian sections (about 20%), with head, neck, chest and heart surgery comprising less than 5% of the total. Battambang PRH (CPA3) finally became able to perform craniotomy for hematoma removal at the end of 2016.

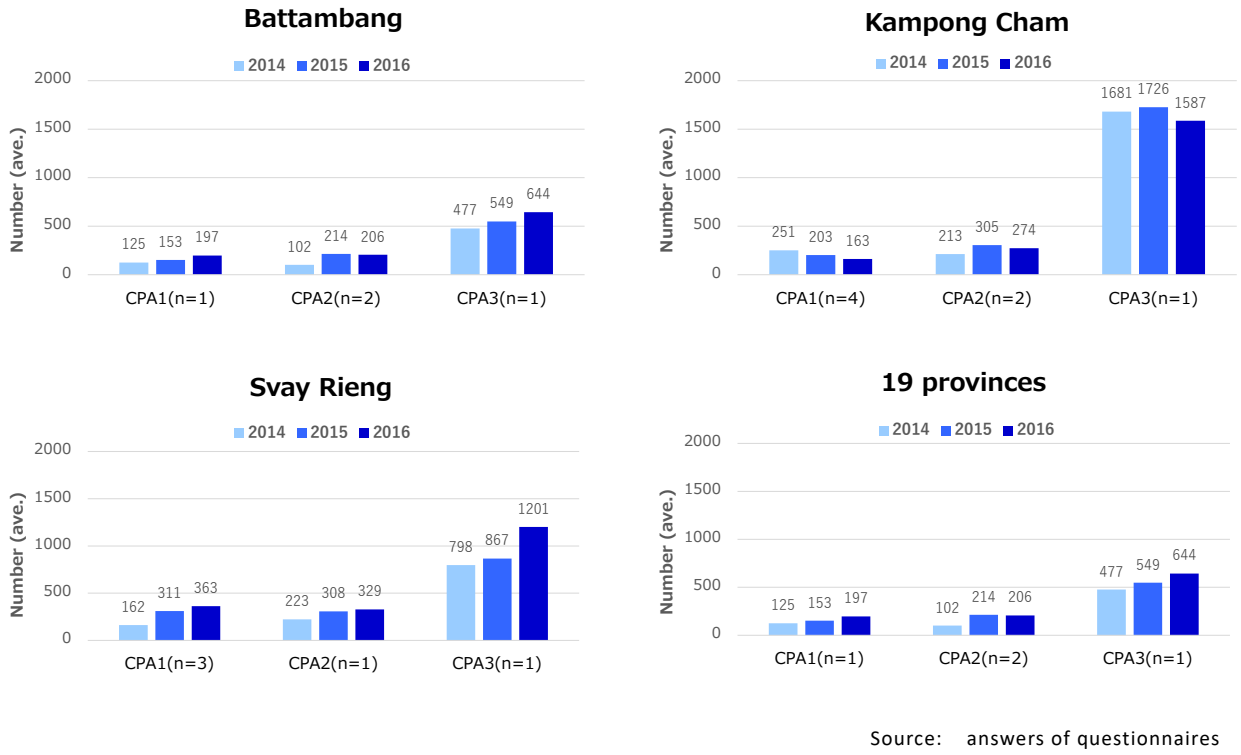
Table 3- 2 Contents of surgeries in provincial referral hospitals (n=8)

Head and Neck	Chest and Heart	Abdomen	limbs
0.8%	1.6%	23.8%	73.8%

Source： answers of questionnaires

(5) Traffic injury patients

Traffic accidents accompanying traffic infrastructure improvements are a huge problem. Fig. 3-7 shows the number of hospital examinations due to traffic accidents, broken down by province and by CPA function. It can be seen that the number of such examinations is increasing year on year in every province. In addition, when broken down by CPA function, the number of examinations at CPA3 hospitals is higher than at CPA1 and 2 hospitals. In particular, examinations at CPA3 hospitals in Kampong Cham province is 5-6 times higher than the number of examinations at CPA1 and 2 hospitals, so it is assumed that patients injured in traffic accidents nearby are usually taken to a PRH.



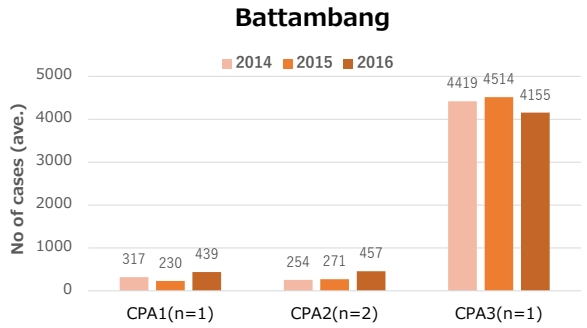
Source: answers of questionnaires

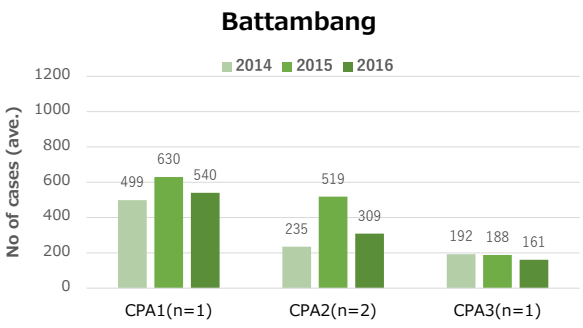
Fig. 3- 7 Trends in traffic injury patients

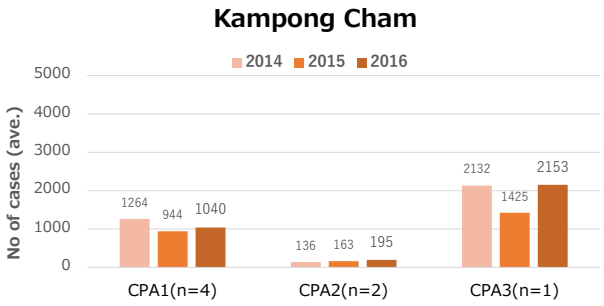
(6) Admittance of referral patients, and referral of patients to other hospitals

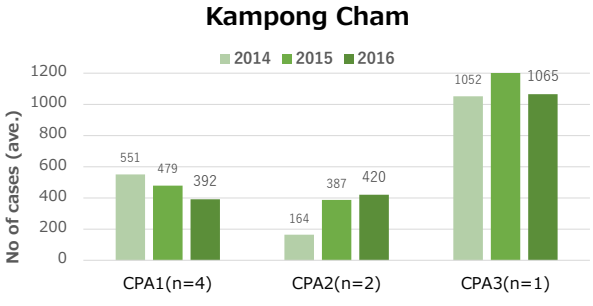
The number of referral patients (refer-in and refer-out) for each CPA level is shown in Fig. 3-8. The number of referral patients reported depends upon the accuracy of records, so it may be difficult to compare absolute numbers. In Battambang province, a total of 1,100 persons were referred to CPA3 hospitals from a single CPA1 hospital and two CPA2 hospitals (1 x 500 persons + 2 x 300 persons). The Battambang PRH admits more than 4,000 referral patients per year, so the gap in referrals is accounted for by the approximately 3,000 persons who are referred from health centers. There are four CPA 1 hospitals and two CPA2 hospitals in Kampong Cham province, and in total they refer about 2,400 persons (4×400 persons + 2×400 persons) to CPA3 hospital. It is possible that the estimate for number of refer-in patients at CPA3 hospital in Kampong Cham province is too low. However, there is a possibility that in Kampong Cham province, a large number of patients are referred to national hospitals or private hospitals in Phnom Penh regardless of CPA level because the number of refer-out patients from CPA3 hospital is markedly higher than in Battambang province. The main reasons of referring to Phnom Penh are heart failure, stroke, polytraumatism, and cancer, which are not treated in the current hospital conditions.

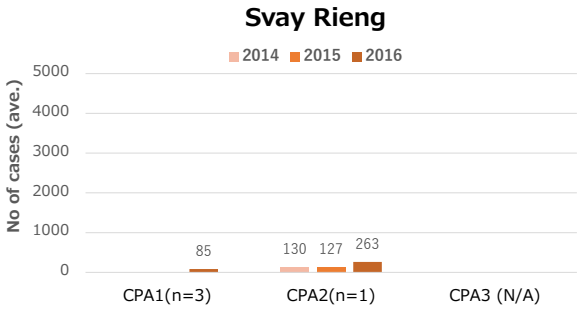
Refer-in	Refer-out

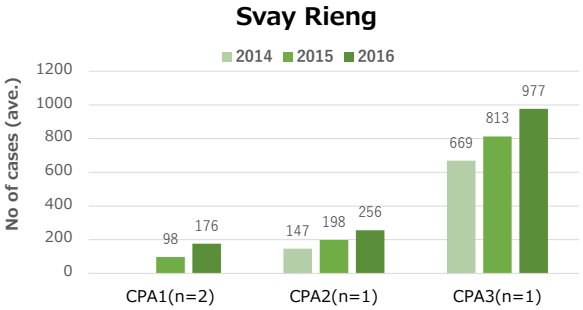


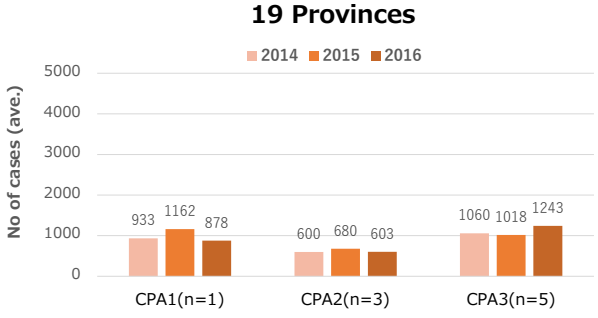


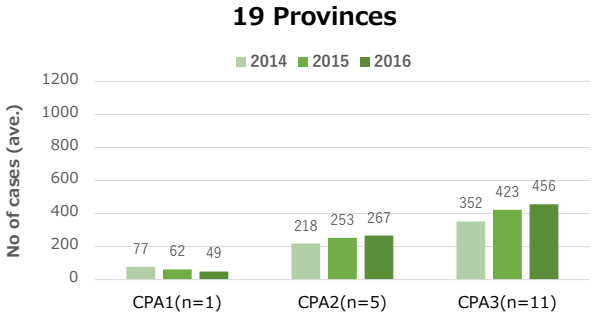










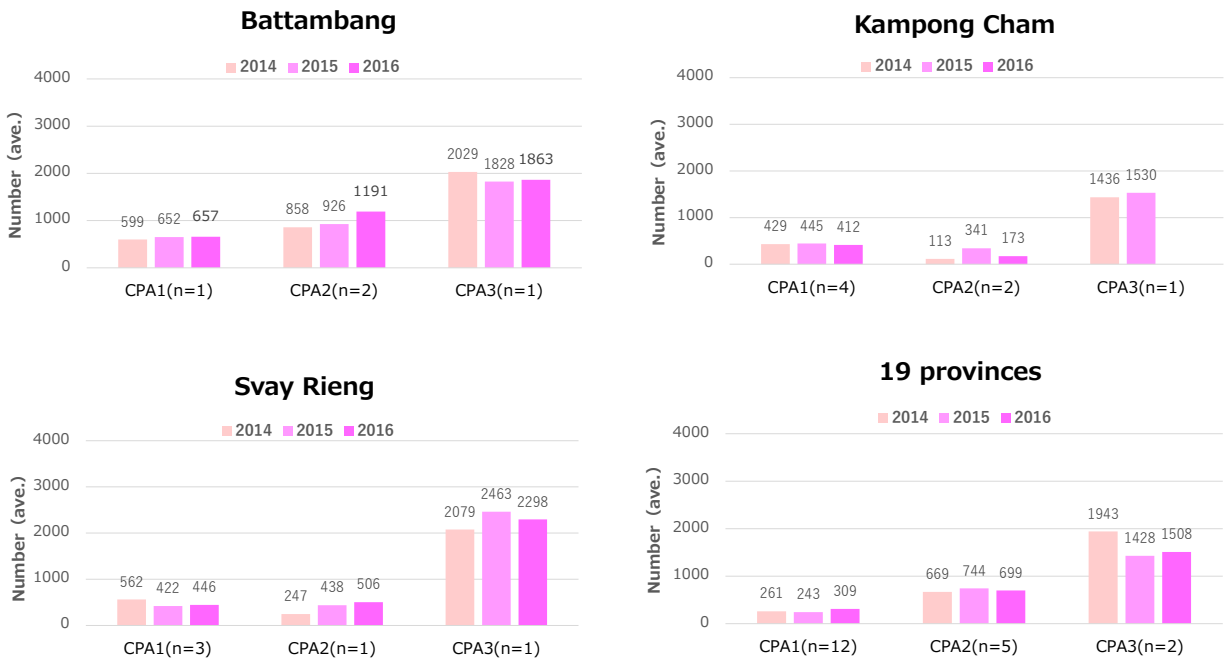


Source: answers of questionnaires

Fig. 3- 8 Number of refer-in and refer-out patients

(7) Number of normal delivery

Fig. 3-9 shows trends in the (average) number of normal deliveries per year in each hospital. In all provinces, a year-on-year increasing trend can be seen. In addition, when broken down by CPA function, CPA1 hospitals account for about 500, CPA2 hospitals for about 500-1,000, and CPA3 hospitals for about 1,500-2,000, meaning that the number of deliveries increases with rising CPA function. However, Kampong Cham province breaks the trend with fewer deliveries in CPA2 hospitals, and this may reflect overall trends in CPA2 hospital usage status.

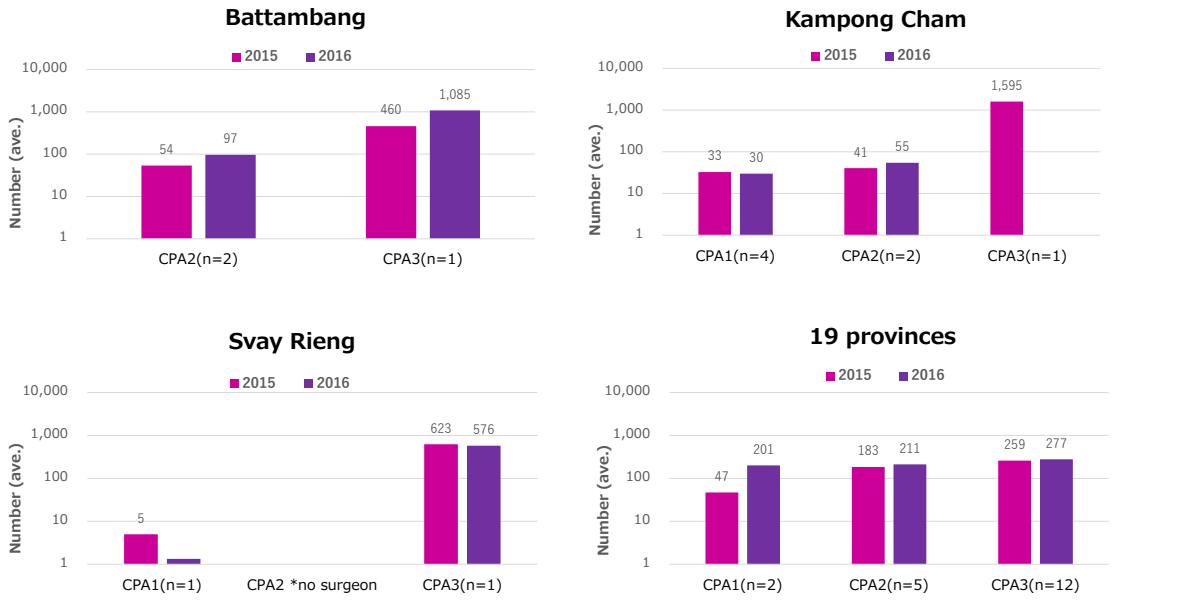


Source: answers of questionnaires

Fig. 3- 9 Trends in normal deliveries

(8) Number of abnormal delivery

The (average) yearly number of abnormal deliveries is shown in Fig. 3-10. It can be seen that in the 3 main provinces, as with Caesarian sections, most abnormal deliveries are dealt with by CPA3 hospitals. In the other 19 provinces, there is no CPA-based gap such as exists in the 3 main provinces, and it can be seen that the number of abnormal deliveries at CPA1 and 2 hospitals is higher.

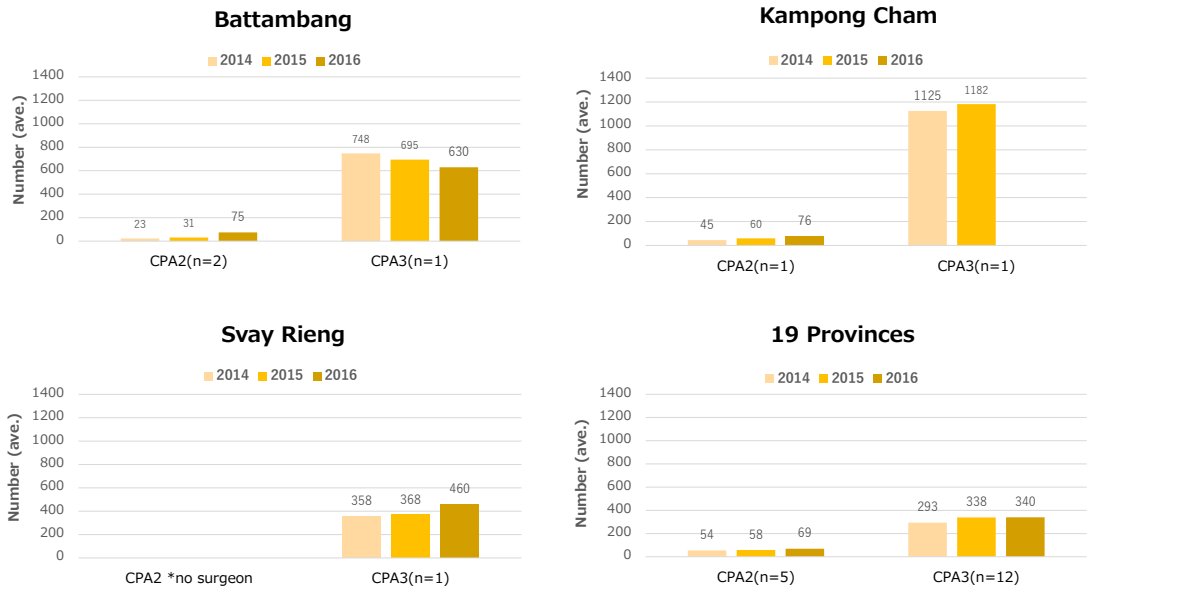


Source： answers of questionnaires

Fig. 3- 10 Trends in abnormal deliveries

(9) Number of Caesarian sections

The average number of Caesarian sections performed yearly at each hospital is shown in Fig. 3-11. Most Caesarian sections are performed at CPA3 hospitals, while CPA2 hospitals perform about 70 per year, for an average of about 6 per month. Because a surgeon is not deployed at the CPA2 hospital in Svay Rieng province (Romeas Haek RH), Caesarian sections are not performed. Also, the number of Caesarian sections in Kampong Cham PRH is very high, and numbers of over 1,000 are noteworthy. It is possible that as hospitals are renovated, more Caesarian sections are performed.

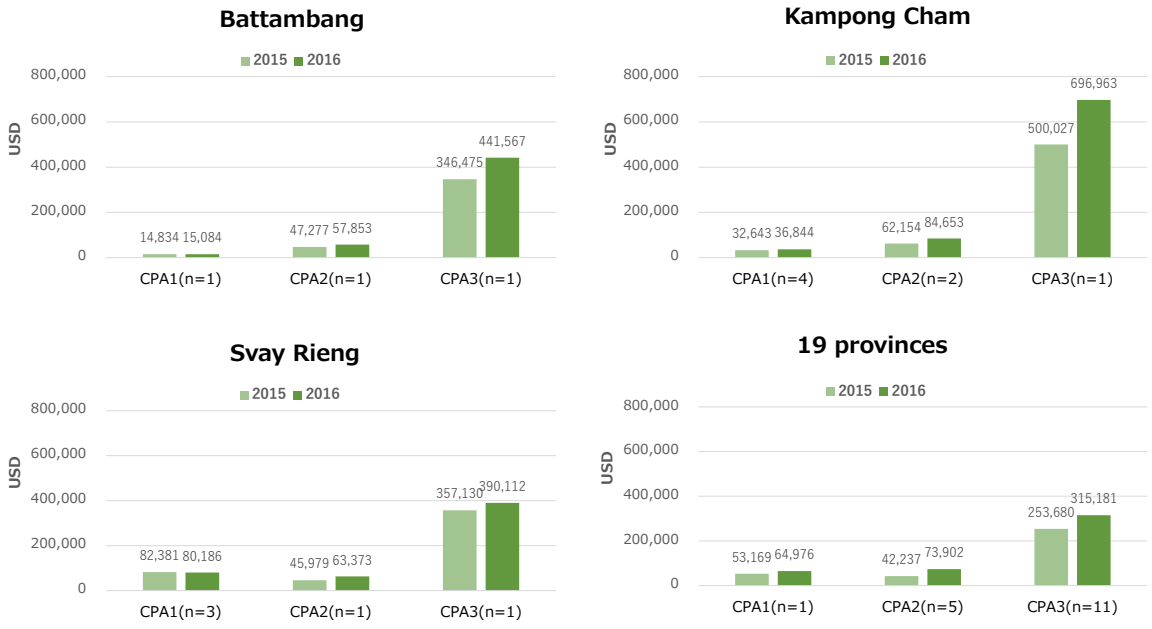


Source： answers of questionnaires

Fig. 3- 11 Trends in Caesarian sections

(10) User Fee and Health Equity Fund (HEF)

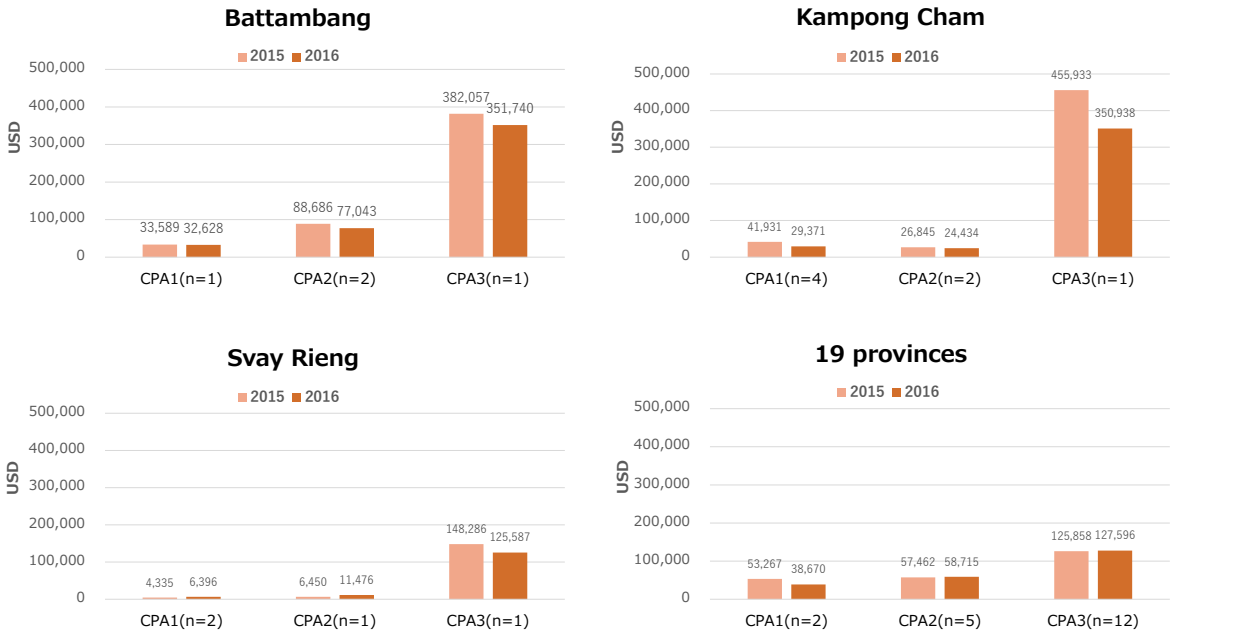
Fig. 3-12 shows trends in user fees over a 3 year period for 22 PRHs, including those of the 3 main provinces. There is a trend toward increasing income each year, accompanying an increase in patients. The CPA3 hospitals in the 3 main provinces bring in about 400,000-600,000 USD of revenue yearly.



Source： answers of questionnaires

Fig. 3- 12 Trends in User Fee

Fig. 3-13 shows trends in Health Equity Fund (HEF) over a 3 year period. In 2015, the CPA3 hospitals in the 3 main provinces brought in about 140,000-450,000 USD of income.



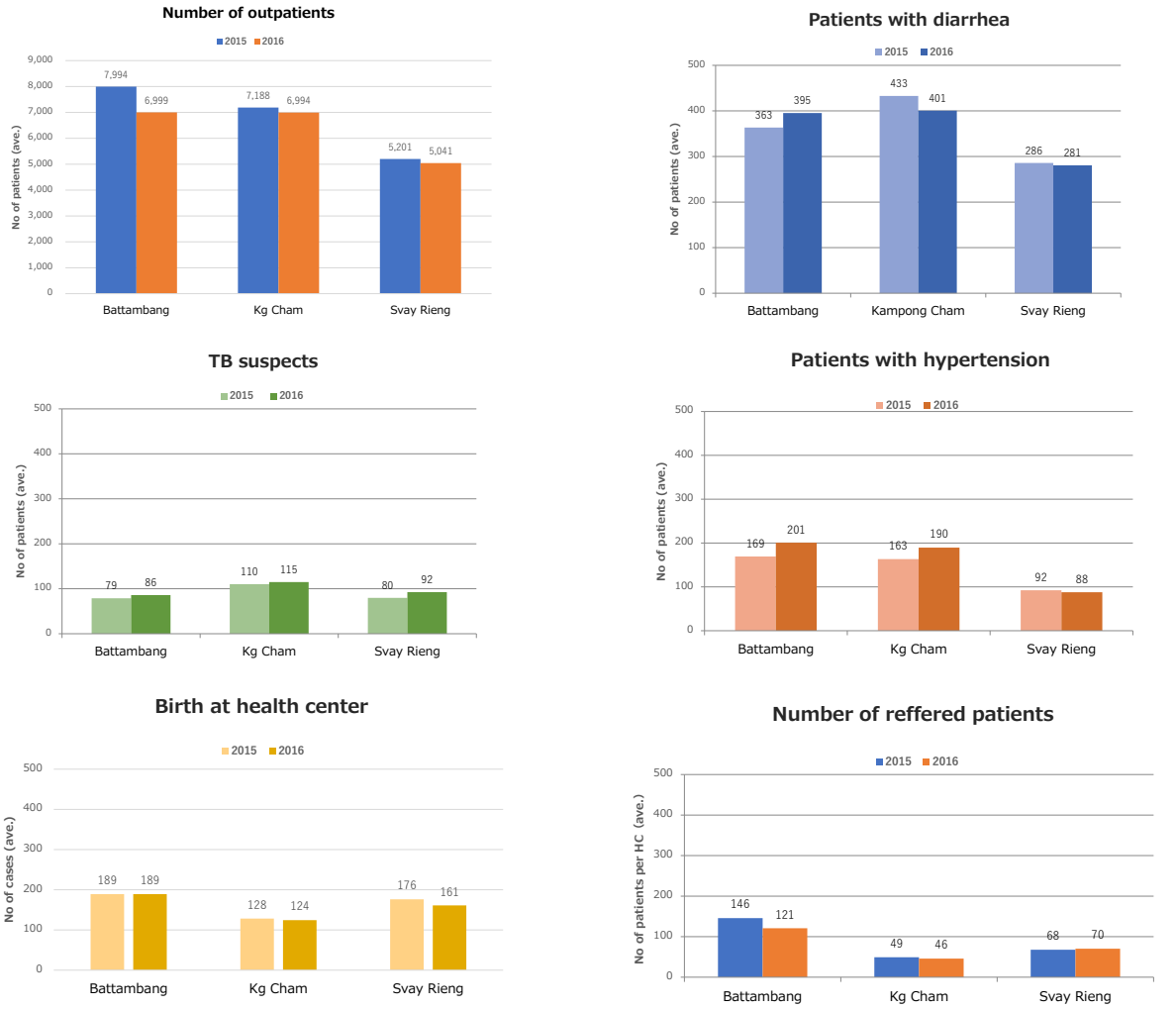
Source： answers of questionnaires

Fig. 3- 13 Trends in Health Equity Fund (HEF)

3-1-3　Health Center usage status, etc.

(1) Number of outpatients and delivery

Fig. 3-14 shows the number of patients by conditions and province: diarrheal disease, suspected TB (coughing more than 2 weeks) as chronic infectious disease, high blood pressure as non-communicable diseases, and number of deliveries as a MCH index (number of patients per HC per year). It cannot be determined whether the differences in these numbers are due to differences in the morbidity status of the disease, or by differences in the HC usage status and/or patients' health seeking behavior. Diarrheal disease accounts for about 300-400 patients in each province, and is the most common disease overall. Because most patients with high blood pressure have few subjective symptoms, the diagnosis rate is thought to differ based on the frequency of blood pressure testing. In Battambang province and Svay Rieng province, there are about 160-180 deliveries per HC per year, while in Kampong Cham province the number is about 120, which is comparatively low. Though delivery at HC is major in Cambodia, it is possible that in Kampong Cham province, patients voluntarily choose CPA3 PRH, or are referred there from HCs for delivery. Battambang province had the highest number of referred patients, but this may be influenced by the accuracy of records.

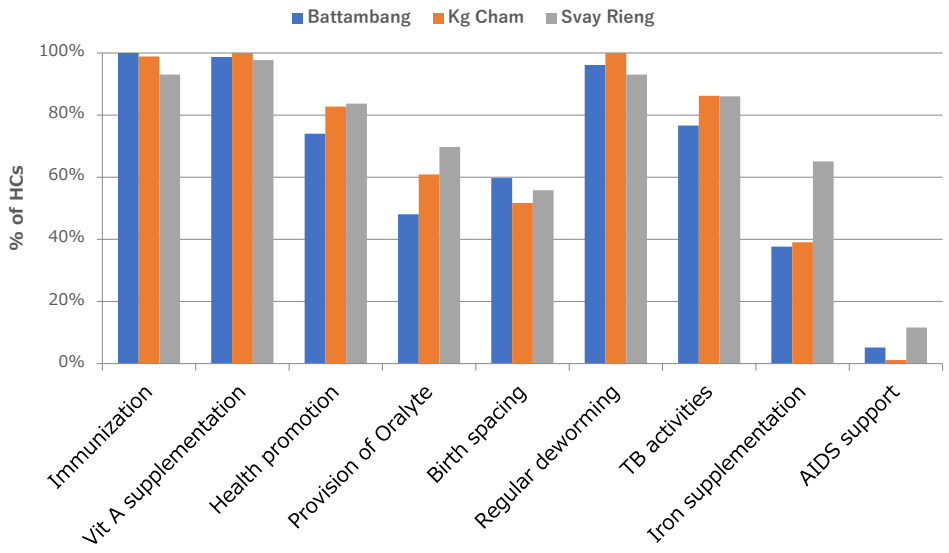


Source：　answers of questionnaires

Fig. 3- 14 HC usage status

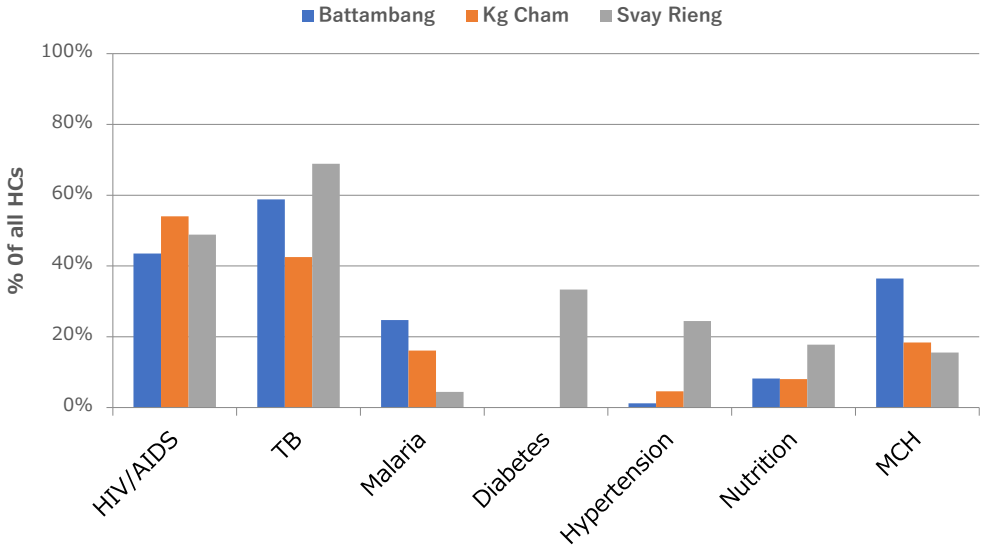
(2) Outreach activities by volunteers and cooperation with NGO

Fig. 3-15 shows the status of HC outreach activities supported by volunteer (VHSG). Overall, there is no big difference among the 3 main provinces. Fig. 3-16 shows HC activities supported by NGOs, but in contrast to the above, Svay Rieng province showed slightly more activity than other provinces.



Source : answers of questionnaires

Fig. 3- 15 Activities supported by VHSG

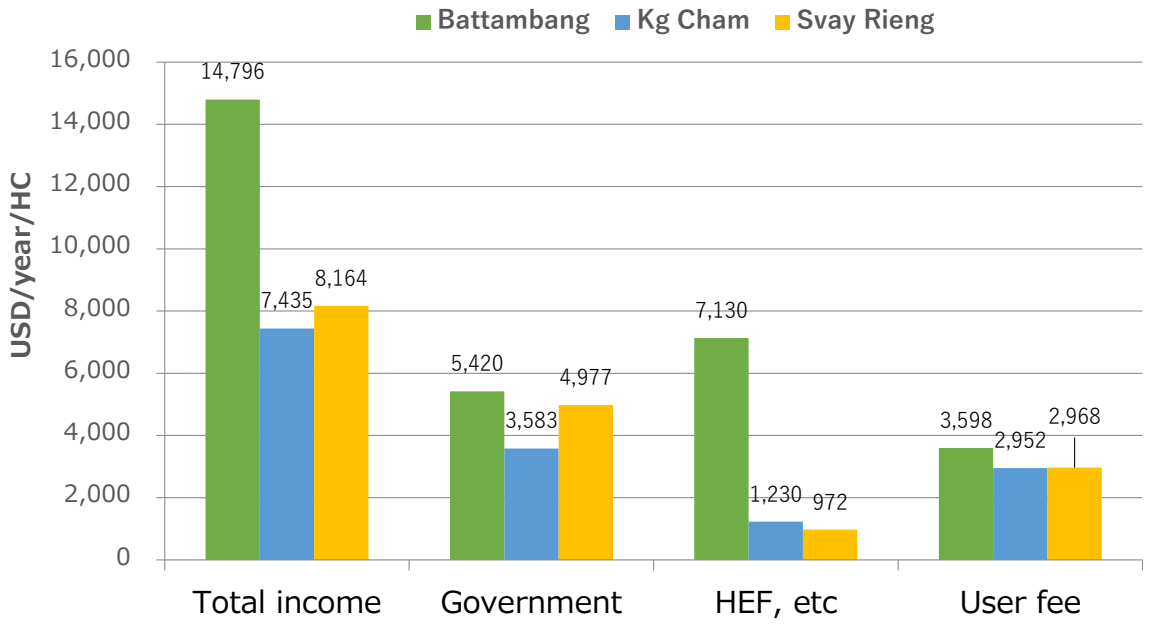


Source : answers of questionnaires

Fig. 3- 16 Activities supported by NGO

(3) Annual income of HC

Fig. 3-17 shows the average annual income per facility, including total income, government budget, HEF and user fees. Battambang province had the highest income from HEF, and total income is higher due to this.



Source： answers of questionnaires

Fig. 3- 17 Annual income of HC

3-2 Human resources for health

3-2-1 Status of human resources for health at the central level

In this section, the current status of HRH at central level is described by applying House Model[3], a comprehensive framework for HRH system development, to analyze HRH development system comprehensively.

(1) Available human resources for health

Table 3-3 shows the numbers of each health profession (absolute number and number per 1,000 population) in the public sector. Public HRH is registered in the database of Department of Personnel and its number is 25,294 in 2016. Among these, 3,995 medical doctors, 11,211 nurses, and 6,475 midwives are registered. WHO recommends the density of health workers (doctors, nurses, and midwives) of two per 1,000 population by 2020[4]. Currently, the number is 1.17 (Doctor 0.21/1,000, Nurse 0.60/1,000, Midwives 0.36/1,000). Though the number of HRH has been increasing compared with 2013 level of 20,524, the number per 1,000 is still far below the target. The law on regulation on medical practitioners obliged medical doctors, dentists, pharmacists, nurses, and midwives to register to each professional council, which paved the way for grasping the number of whole HRH including the private sector. It is, however, difficult to know the total number of health workers in the country because the registered number of each council is limited since the law was enforced just recently.

Table 3- 3 Number of health workers (2016)

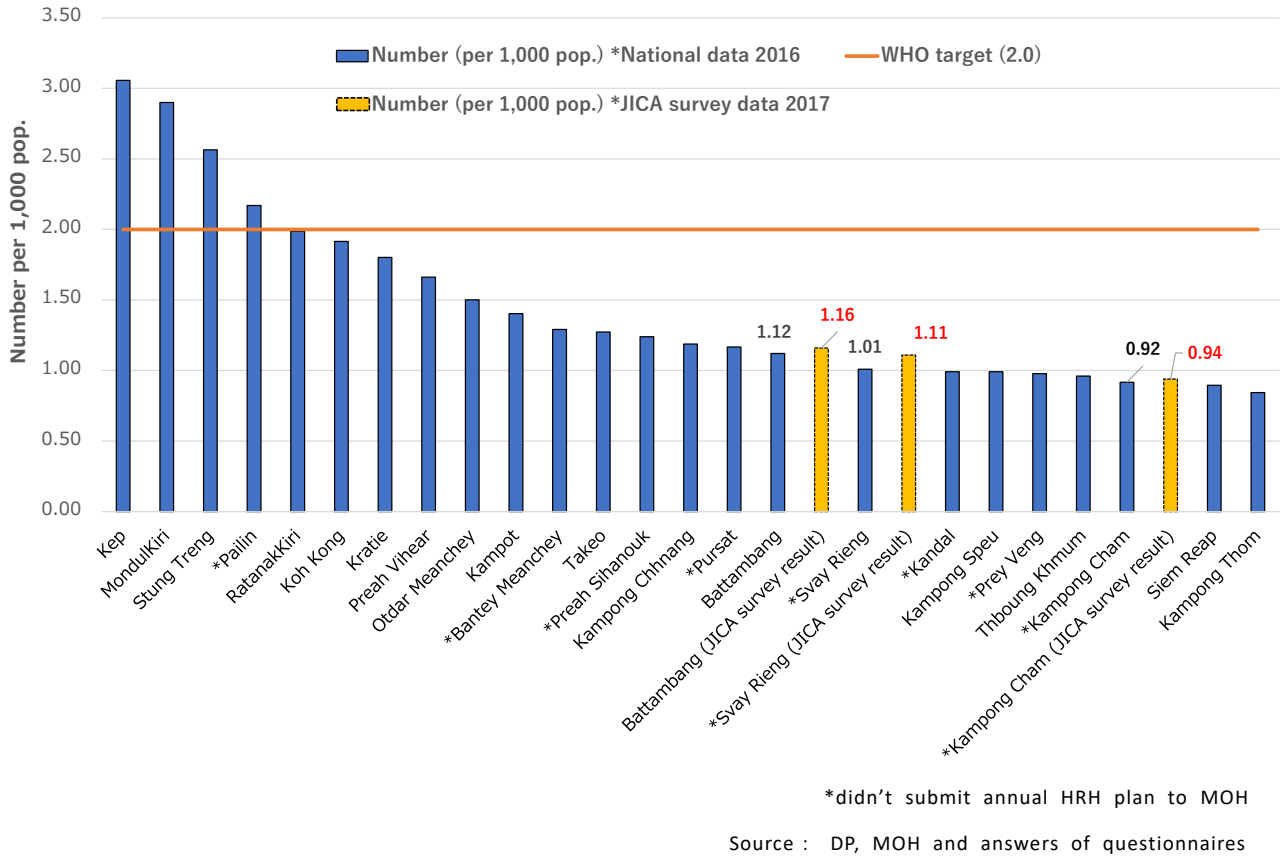
Qualification	Central		Province		Total number	Number of HRH (per 1,000 pop)
	Number	Percentage	Number	Percentage		
Specialist Doctor	566	82%	124	18%	3,995	0.21
Medical Doctor	836	31%	1,819	69%		
Medical Assistant	217	33%	433	67%		
Bachelor Nurse	18	16%	98	84%	11,211	0.60
Secondary Nurse	2,548	32%	5,349	68%		
Primary Nurse	70	2%	3,128	98%		
Bachelor Midwife	18	20%	71	80%	6,475	0.36
Secondary Midwife	380	9%	3,642	91%		
Primary Midwife	6	0.2%	2,358	99.8%		

Source : DP, MOH

[3] Fujita N, Zwi AB, Nagai M, Akashi H (2011) A Comprehensive Framework for Human Resources for Health System Development in Fragile and Post-Conflict States. PLoS Med 8(12): e1001146. doi:10.1371/journal.pmed.1001146

[4] CAMBODIA-WHO Country Cooperation Strategy 2016-2020

Regarding the number of HRH per thousand population at the province level (2016), five provinces have already achieved their goals: Kep, Mondul Kiri, Stung Treng, Pailin and Ratanak Kiri. The 3 main provinces of Battambang province (1.12), Svay Rieng province (1.01), and Kampong Cham province (0.92) have only achieved their goals halfway (Fig. 3-18). In addition, the results obtained from the questionnaire used by this survey show slightly high values than the national data: Battambang province (1.16), Svay Rieng province (1.11), and Kampong Cham province (0.94). One reason for this is thought to be that the questionnaire responses included the number of independent employees who were hired using user fees in order to ameliorate the personnel shortage.

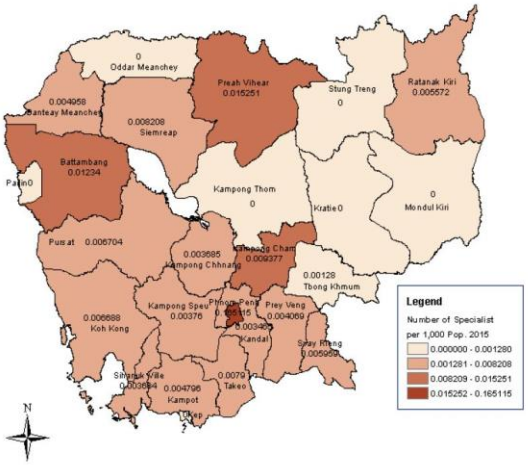


*didn't submit annual HRH plan to MOH

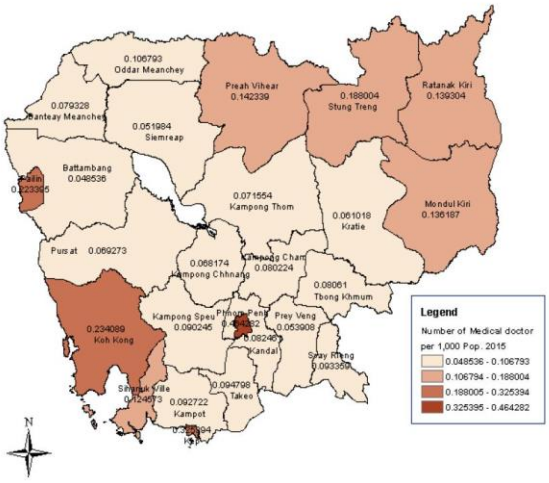
Source : DP, MOH and answers of questionnaires

Fig. 3- 18 Number of health workers per thousand population (Doctor, Nurse, Midwife)

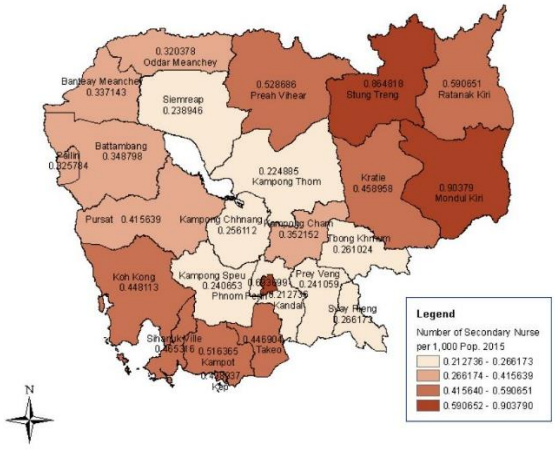
Fig. 3-19 shows the number of health workers (doctors, nurses, midwives) per thousand population for each province. Darker colors indicate higher values, while lighter colors indicate lower values. It is clear the specialist doctors and general practitioner are concentrated in urban areas. On the other hand, the number of nurses and midwives per population unit does not show the same imbalance as the number of doctors. This comes as a result of the fact that the MOH thoroughly train nurses and midwives at RTC (Regional Training Centers) in province and promotes their local employment.



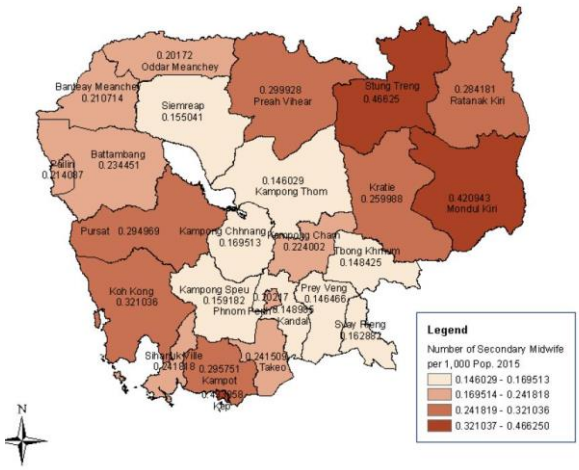
Number of specialist doctor
（per 1,000 pop 2015）



Number of medical doctor
（per 1,000 pop 2015）



Number of Secondary Nurse
（per 1,000 pop 2015）



Number of Secondary Midwife
（per 1,000 pop 2015）

Source：MOH Annual Health Workforce Report 2015

Fig. 3- 19 Geographical distribution of health workers

(2) Health policy, HRH policy and HRH development plan

The National Strategic Development Plan 2014-1018 includes expansion of authorities formerly reserved for the national level to the sub-national level, in order to achieve uniform development throughout the country. This policy is called D&D (De-centralization and De-concentration). In addition, when taken in context for the health care field, this D&D clearly indicates plans for strengthening the monitoring capabilities of the Ministry of Health, and strengthening of organizational structure and provision of health services. Health policy is summarized in the National Health Strategic Plan 2016-2020, and priority is placed on strengthening the health system, including maternal and child health, infectious diseases, non-infectious diseases, and health workforce resources development.

Health care human resources development policy is laid out in the Health Workforce Development Plan 2016-2020, and includes the following 5 strategic goals.

1. Adopt a unified approach to health workforce planning, to ensure health workforce development is responsive to population and service needs
2. Enable effective delivery of health services by promoting equitable distribution, ensuring retention and skill mix of health workers
3. Address workforce needs, including workplace environment, to ensure optimal staff productivity, motivation and participation
4. Improve the quality of education and training to meet the skill and development needs of the workforce in a challenging demographic and epidemiological environment
5. Strengthen health workforce regulation and management to ensure quality of service delivery

(3) Legal and regulatory framework

1) Regulations on training institutions for health professions

Regulations on educational institutions related to health professions are set out in Sub Decree 21 on Health Education (13 Mar. 2007), Sub Decree on Amendment of Art. 6 of Sub Decree 21 on Training in Health Sector (25 Feb. 2009), and Sub Decree 22 (Feb. 2017: Sub Decree 21 partial revision). Contents related to student admission qualifications and school certification systems fall under to Sub Decree 22. This Sub Decree states that technical quality management all educational institutions, which was hitherto undertaken by both the Ministry of Health and the Ministry of Education Youth & Sports, shall now be undertaken solely by the Ministry of Health. In addition, it states that the head of the National Examination Committee, which oversees the National Entry Exam and National Exit Exam, shall be employed by the Department of Human Resource Development of MOH. Also, it sets a minimum standard for the instructor to student ratio at training institutions which train health care workers, places a temporary hold on the opening of new (private) educational institutions for health professions, and establishes regulation on the use of public hospitals for practical training.

2) License registration and renewal

Law on Regulation of Health Practitioners (14th Dec 2016) obliged all medical practitioners to register to each professional Council. The Councils are in charge of registration, issuance of health practitioner license, regulation of health professional practice. Now, doctors, dentists, pharmacists, nurses and midwives have to register and renew their license every specified year. The estimated registration rate (Medical Council as of September 2016) shows 76% for doctors, 82% for dentists, 96% for pharmacists, 24% for nurses, and 84% for midwives. Each council disseminated the information on mandatory registration just recently and the registration of medical professions in private sector is one of the challenges.

(4) Finance

Total health expenditure was 1 billion USD in 2014, or 70 USD per capita. Out of this, government budget accounted for 16 USD (19%), donor funding accounted for 10 USD (18%), and the remaining 44 USD (63%) was paid for out of pocket, meaning that the out of pocket rate was highest. User fees have been introduced at public facilities, and are used to employ contract workers, offer financial incentives for workers, and purchase the devices and equipment. In addition, over the past few years, salaries paid to public servants have increased, and the minimum wage as functional allowance increased to 160 USD (April 2015). However, because public servant salaries are insufficient, many open individual practices or private clinics in addition to public work.

(5) MOH capability

Each department and committee in the MOH fulfills the main roles of planning, coordination, and implementation of health services, and addressing health issues.

1) Department of Human Resource Development

This department is made up of three offices: the Pre-Service Office (10 persons), the In-Service Office (5 persons) and the HR Database Office (5 persons). Its purpose is to set up national-level laws and schema to ensure and improve the quality of health care workers prior to and during service. The Pre-Service Office mainly ensures the quality of health workers, and in order to do so, it supervises national entry and exit exams, and monitors training institutions. Regarding in-service training, since each disease program (MCH, TB, HIV/AIDS etc.) develops curricula based on related content in the CPA and MPA guidelines, the department coordinates with each province when conducting trainings. In addition, the department is involved in establishing a training curriculum to be newly implemented. The HR Database is now online, and the training records for MOH workers are updated. Every 3 months, they are updated based on training implemented by each province, and records are kept of who participated in which training programs. This database enables assessment of training needs, but because many training programs with similar content are registered under different names, and registered training programs are too numerous to analyze, revision and update of the database has been requested.

2) Department of Personnel

This department manages registration of MOH workers, and manages their remuneration, job changes, etc. by using HR database. It is made up of three offices: (1) Appointment, (2) Categorization, and (3) Salary, with 25 employees working under the director. The appointment office deals with employment, deployment, stationing, and job transfers, the categorization office assesses staffing gaps, deals with employment plans, manages the monitoring of each worker during the initial probation period (12 months) and unpaid leave, etc. The salary office manages basic salary, salary increase, contract worker salary, and severance pay.

3) Department of Hospital Services

This department proposes policy relating to hospital and clinic license registration, hospital facilities management (infection control, medical waste management, etc.), and maintenance checks on medical equipment at public hospitals. It also conducts HR development (training) and monitoring evaluation (including regional supervision). However, it is chronically understaffed and underfunded (it has a yearly activities budget of about 25,000 USD). Most of the budget is eaten by regional supervision, putting limits on the scope of the department's work.

Regarding medical equipment, the regional worker training implemented under JICA's Project for Strengthening of Medical Equipment Management has been suspended, and training of instructors and new workers to fill vacancies has not been implemented, meaning that quality is going down. However, a project of limited scope for a management and reporting system for medical equipment is now ongoing at 19 PRHs (CPA 3) and 26 RHs (CPA 2), and information is being reported to the MOH through the PHD. Also, an electronic equipment registry is being updated yearly.

Beyond this, the Department of Budget and Finance (DBF) makes judgments on requests from PHDs for the purchase of new equipment, and equipment repair fees are included in the budget package sent to each province by the DBF, so the Department of Hospital Services is not involved in issues relating to budgets for purchase and repair of equipment.

4) Department of International Cooperation

This department was established in 2006 as an internal office of MOH, and is made up of 5 offices which coordinates all assistance in the health sector: (1) Bilateral International Cooperation, (2) Multilateral Cooperation (ADB, World Bank, GF, UN agencies, etc.), (3) ASEAN 10 Nations, (4) NGOs, (5) Public relations, information and administration (with the Ministry of Foreign Affairs, Ministry of Economy and Finance). Though assistance from various countries is welcomed in light of Cambodia's economic situation, the department endeavors to conduct effective coordination so as to avoid overlap.

5) HRH-Oversight Committee

The HRH-Oversight Committee was established in June 2012, for the purpose of monitoring implementation of health workforce development plans. The Secretary of State of MOH acts as

director of the committee and members include officials from various departments related to human resources for health. The committee supervises implementation and progress of the plan and coordinate with related departments and other stakeholders.

Table 3- 4 Member of HRH-Oversight Committee

HRH-Oversight Committee	
Director	Secretary of State of the Ministry of Health
Deputy Director	Director of Administration and Finance
Deputy Director	General Director of Health Technical
Member	Rector of University of Health Sciences
Member	Director of Department of Human Resource Development
Member	Director of Department of Planning and Health Information
Member	Director of Department of Personnel
Member	Director of Department of Hospital Services
Member	WHO Representative
Member	JICA Representative

6) Coordination Committee of Health Professional Council

Under the Law on Regulation of Health Practitioners, 14 Dec 2016, each Health Professional Council is responsible for registration, issuing health practitioner license and regulating the health professional practice. The Coordination Committee of Health Professional Council was established to help Health Professional Councils fulfill their roles and tasks to effectively enforce the Law on Regulation of Health Practitioners. It is made up of relevant offices in the Ministry of Health and each Health Professional Council (Table 3-5).

Table 3- 5 Member of Coordination Committee of Health Professional Council

Coordination Committee of Health Professional Council	
President	Secretary of State of the Ministry of Health
Vice President	Under Secretary of State of the Ministry of Health
Member	Rector, University of Health Sciences
Member	Director, Department of Personnel
Member	Director, Department of Hospital Services
Member	Director of Department of Human Resource Development
Member	Vice-President, National Medical Council
Member	President, National Dental Council of Cambodia
Member	President, National Pharmacy Council of Cambodia
Member	President, National Council of Nurses
Member	President, National Council of Midwives
Secretary	Official, Pharmacy Department

(6) Production

1) Training institutions for health professions

There are 17 training institutions for health professions, including both public and private institutions, which have been certified by the Accreditation Committee of Cambodia. A total of 14 disciplines are offered, including medicine, pharmacy, nursing, and midwifery. Every year, about 700 students enter in medicine, 300 in dentistry, 400 in pharmacy, 3,400 in nursing, and 2,800 in midwifery. The number of students admitted to each school is shown in Table 3-6. In addition, students wishing to take the specialist medicine course (only at UHS) may take the selective exam after completing their 6-year course in medicine. There are 20 different types of specialist medicine courses.

Table 3- 6 Number of intake (Academic Year 2014-2015)

	Training Institution	MD	DD	Pharm	BSN	ADN	BMW	ADW
Public	University of Health Sciences	300	120	155	110	300	65	200
	Health Science Institute for Royal Cambodia Arm Force	90	40	40		300		170
	RTC (Battambang)	-	-	-	-	200	-	200
	RTC (Kampong Cham)	-	-	-	-	200	-	200
	RTC (Kampot)	-	-	-	-	200	-	200
	RTC (Stung Treng)	-	-	-	-	200	-	150
Private	International University	180	90	110	80	200	40	150
	Polino University	-	-	-	-	150	-	100
	Puthisastra University	58	-	69	0	113	182	127
	Norton University	80	50	50	50	100	0	100
	Phnom Penh Chenla University	-	-	-	40	200	40	150
	Battambang Chenla University	-	-	-	-	100	-	100
	Life University	-	-	-	40	100	40	50
	Phnom Penh University for Nursing and Paramedical	-	-	-	-	200	-	150
	Asia Science Institute	-	-	-	-	200	-	150
	Kampong Cham University	-	-	-	40	150	40	100
	Meanchey University	-	-	-	-	100	-	100
		708	**300**	**424**	**360**	**3,013**	**407**	**2,397**

MD:Medical Doctor, DD:Dentist, Pharm: Pharmacist, BSN: Bachelor Nurse (4years)

ADN: Associate Degree Nurse (3years), BSW: Bachelor Midwife (4years), ADW: Associate Degree Midwife (3years)

Source : Annual Health Workforce report 2015

2) National Exit Examination

The National Exit Examination was introduced in 2013, and is implemented for courses in pharmacy, dentistry, nursing (bachelor degree), medicine, midwifery (bachelor degree), and medical technology (bachelor degree). From 2017, it is also scheduled to be implemented for nursing (associate degree) and midwifery (associate degree), among others, for a total of 14 disciplines. The exam is implemented under the supervision by the National Examination Committee, and is made up of a theory exam (multiple choices) and a practical exam, the OSCE (Objective Structured Clinical Examination). However, because the National Exit Examination will apply to an expanded group of students from 2017, preliminary calculations suggested that the National Examination Committee would require a period of 2 months to administer the examination, including the OSCE, to all target students. Due to time limitations, it has been decided that each school will administer the OSCE. After students pass the OSCE, they may take the theory exam. Due to this policy, the examination fee has been reduced from 150 USD per person to 25 USD per person.

Students may take the National Exit Exam 4 times within a 3-year period, but if they do not pass within this period, they must take a 1 year refresher training course. Pass rates for the National Exit Exam administered in 2015 are shown below (Table 3-7).

Table 3- 7 Results of National Exit Exam (2015)

Course	Examinee	Pass	Pass rate
Medical Doctor	690	526	76%
Dentist	160	141	88%
Nurse (Bachelor)	375	322	86%
Midwife (Bachelor)	185	132	71%
Pharmacist	234	234	100%

Source : presentation slide by UHS

(7) Deployment

Excluding 2015, The MOH has hired about 1,000 new employees per year since 2012. Furthermore, in 2016, the status of 3,790 contract employees (health workers) was changed to full employee status, and 769 new employees were hired. These measures were taken to replace a large number of retirees, and many more will retire in the coming years. Therefore, 2016 marked a special expansion in the usual hiring cycle.

Also, the shortage of midwives led the policy of having at least one midwife in every HC. In 2016, 88% of HCs have a secondary midwife stationed, and 89% have a secondary nurse. This is below the MOH target of achieving 100% of coverage, and has been the result of increases in the numbers of HCs (DP, MOH).

Hiring is conducted by job type, in the provinces where the new hires will be working. Following hiring, the PHD deploys the new hires to health facilities within the province. Even if a newly

graduated doctor is stationed in a remote area, there is no pre-deployment training system. Applications for job transfers can be made if there is an opening in the area to which the employee wishes to transfer. However, new hires may not transfer for the first five years, and mandatory transfer has not been adopted. Also, there is currently no policy in place to lure workers to remote areas, so there are gaps among job types in terms of lack of staffing for rural posts. Though nurses and midwives take jobs in provinces near RTC, there are fewer doctors in rural areas.

The number of staff members needed at each health facility is determined based on the size of the population under HC jurisdiction, and decided by RH with a certain amount of leeway in line with the needs of the area. For example, the number of staff members in HC increases for a population of 8,000-10,000, 10,000 to 12,000, and over 12,000, based on MPA guidelines. Hospitals refer to CPA guidelines to determine the appropriate number of staff members, and the final decision is made by the hospital director.

(8) Retention

Every year, about 800-1300 public servants (1.6-6.5%) quit, retire, or go on leave. In addition, there is a tendency for young doctors stationed in rural areas to seek employment in Phnom Penh after several years of work. The MOH has introduced a functional salary (for example specialists receive higher salaries than general practitioners), and does not offer allowances for deployment in rural or remote areas, or other location-based allowances. However, the MOH has an HR evaluation system, and in 2016, 15,400 employees received a salary increase.

Table 3- 8 Staff transitions 2013-2016

Description	2013	2014	2015	2016
Total Health Staff	20,668	20,974	20,954	25,382
Newly Recruited Staff	1,442	1,014	433	768
Titulairized	498	1,296	1,035	1,004
Retirees	271	454	470	411
Remove from payroll	118	219	128	168
Leave without salary	452	612	281	188
Promotion	115	68	57	166
Reward/medals	100	401	246	45

Source : Annual Health workforce report 2015 and DP for 2016 data

CPA guidelines stipulate that for post-graduate training as continuing education, CPA3 hospitals must have a training unit which conducts training for health workers. Also, under the Law on Regulation of Health Practitioners, 14 Dec 2016, each health professional council seems to request health practitioners to obtain CPD (Continuing Profession Development) credit through training and

seminars in order to renew their licenses. However, standards for CPD acquisition are still in the drafting stage.

(9) Human resource systems responding to health needs

Basic health care needs such as maternal and child health, infectious disease, and minor surgery are addressed through the existing health system. However, even at top-referral CPA3 hospitals, head and abdominal surgery is not performed, and some CPA2 hospitals cannot even perform Caesarian sections, etc. Therefore, not all health services stipulated in the CPA guidelines are provided.

Also, to address new health issues such as lifestyle diseases, mental health, etc., the MPA guidelines are being revised, and are scheduled to be released in 2017. The number of staff deployed at each HC will be revised based on the new guidelines.

(10) Monitoring

The HRH-Oversight Committee was established in June 2012, for the purpose of monitoring implementation of health workforce development plans. The Secretary of State of MOH acts as director of the committee and members include officials from various departments related to human resources for health. The committee supervises implementation and progress of the plan and coordinate with related departments and other stakeholders.

(11) Coordination

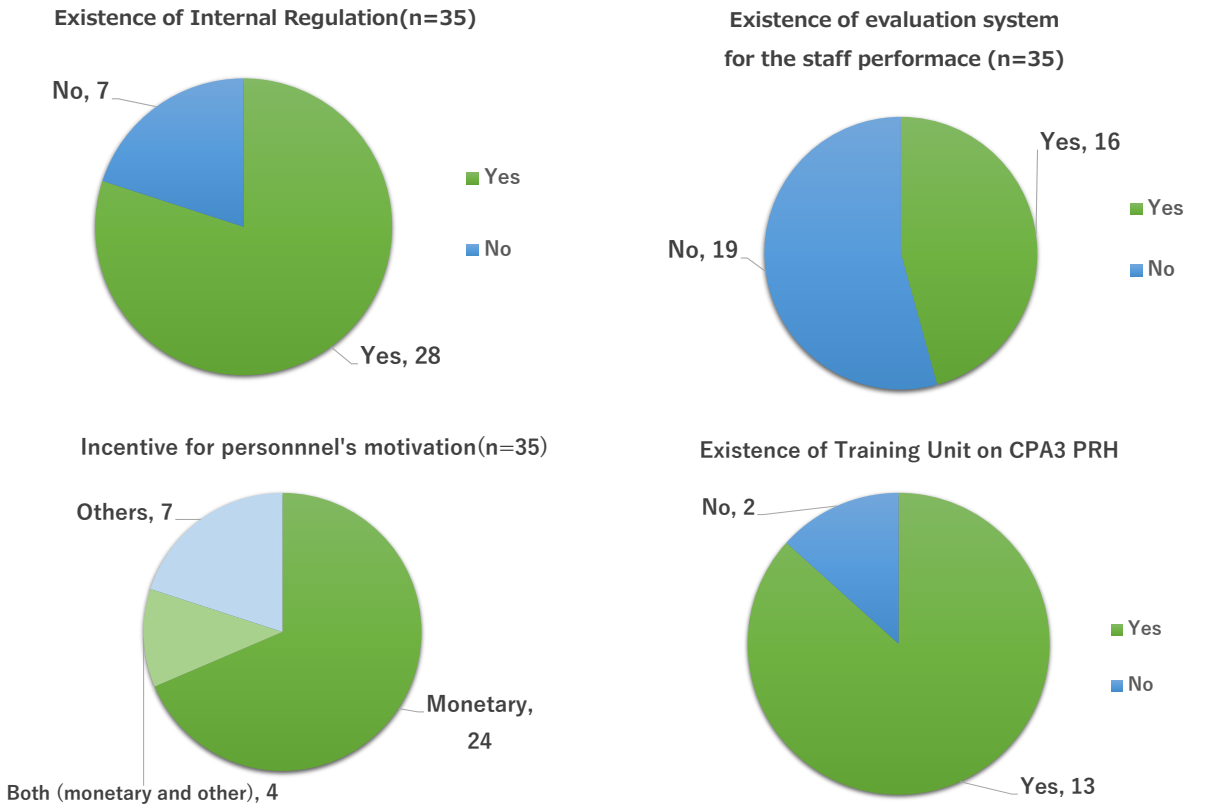
The Department of International Cooperation coordinates all assistance in the health sector, and as stated above, the HRH-Oversight Committee and the Coordination Committee of Health Professional Council have been established as coordination mechanisms to address health workforce issues.

3-2-2　Status of HR management/development and dual practice at 35 hospitals in 22 provinces

(1) HR management/development status

Fig. 3-20 shows information related to HR management and development at 35 hospitals in 22 provinces, including the 3 main provinces. Among the 35 hospitals, 28 hospitals (80%) have internal regulations for health workers, while 7 hospitals (20%) do not. 16 facilities (49%) have HR evaluation systems. When asked what types of personal incentives are offered, 24 hospitals (69%) replied that they provide monetary incentives, and 7 hospitals (20%) replied that they provide other types of incentives. 4 hospitals (11%) replied that they provide both monetary and other types of incentives.

The CPA guidelines (2014) state that CPA3 hospital must organize training unit to plan and implement pre-service training and in-service training. Among the 22 PRHs, 15 facilities meet CPA3 standards. Of these, 13 facilities (80%) currently have their training unit in place.



Source：　answers of questionnaires

Fig. 3- 20 Status of HR management/development

(2) Dual practice status

Table 3-9 shows the rates of health workers engaging in side work.

Because basic salaries for Cambodian public servants are low, it is said that many health workers work for private health care institutions or open their own practices to gain side income outside of their usual work hours. In order to ascertain the true status of side work in the health sector, in this survey, health workers at hospitals were asked whether they engaged in dual practice. About 60% of doctors, assistant doctors, dentists, and pharmacists engage in some form of secondary work, while about 30-40% of nurses, midwives, and laboratory technologists engage in side business.

Table 3- 9 Dual practice rate among health workers

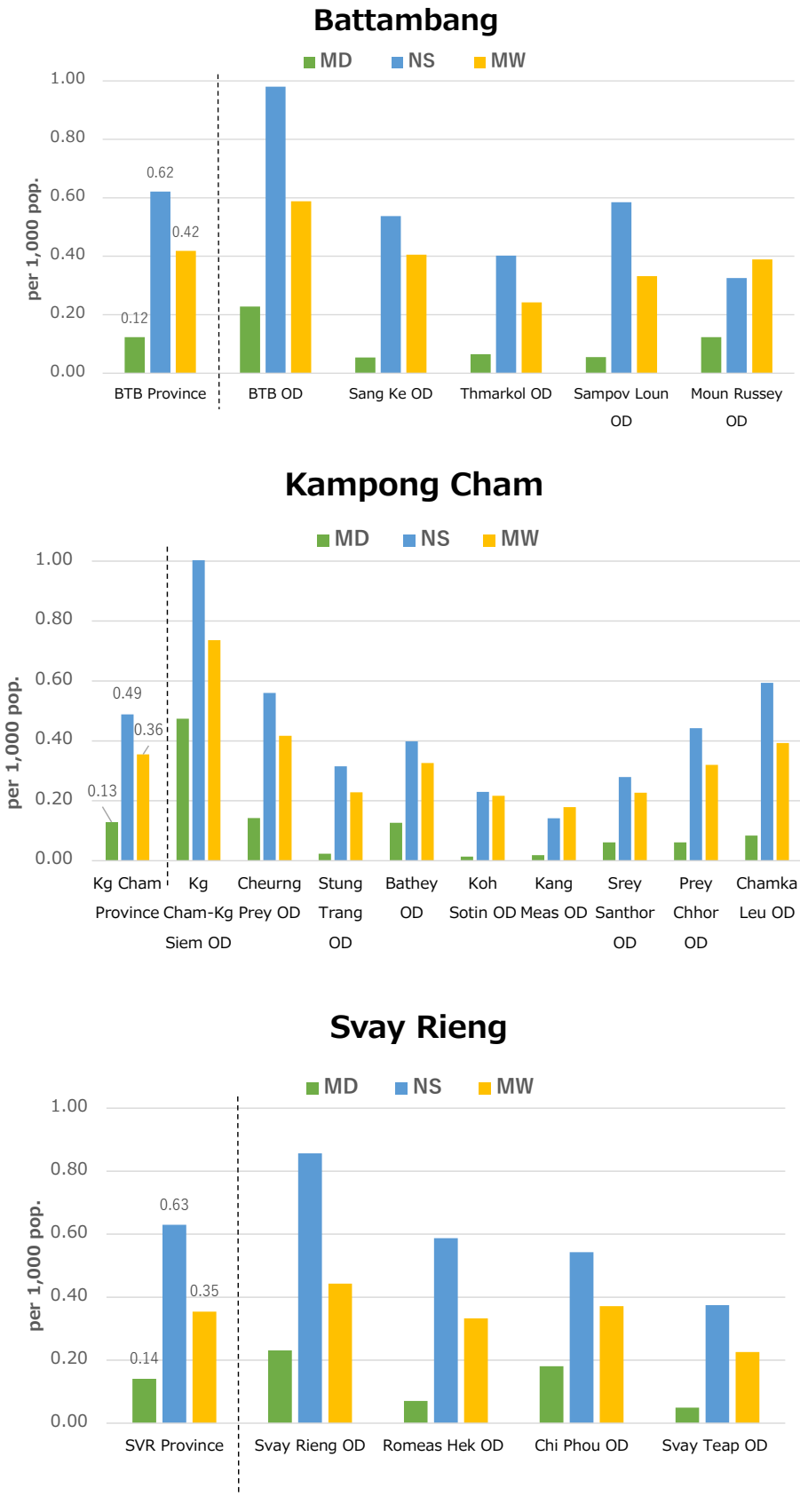
	Doctor	Medical Assistant	Dentist	Pharmacist	Nurse	Midwife	Lab Tech
n	447	81	47	55	1,101	500	140
Dual practice rate	66.2%	59.3%	68.1%	61.8%	38.5%	32.8%	40.7%

Source： answers of questionnaires

3-2-3 Comparison among 3 main provinces

(1) Number of health workers per thousand population by OD

The deployment status of health workers in each operational district (OD) in the 3 main provinces is shown in Fig. 3-21. For each province, the far left bar graph shows the province average, and the next graph shows the status of the operational district (OD) containing the provincial capital. The bar graphs show the number of health workers per thousand population for three job types: doctor, nurse, and midwife. In the 3 provinces, no particular gap can be seen between regions, but since CPA3 hospitals are located in the provincial capitals, the OD alone is larger when shown by population. Outside of the provincial capital OD, the numbers fall below the national average for doctors (0.21/1,000). Even for nurses, outside of the provincial hospital OD, numbers are below the national average (0.6/1,000). In some ODs, the number of midwives exceeds the national average (0.36/1,000).

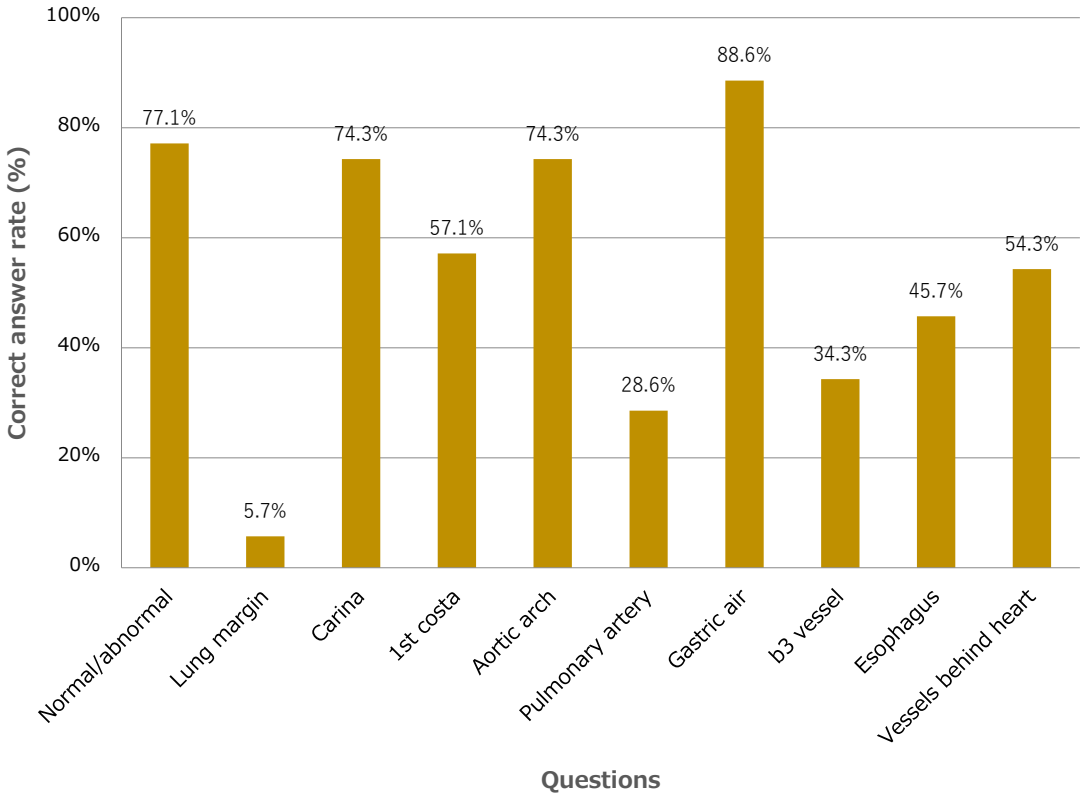


Source： answers of questionnaires

Fig. 3- 21 Number of health workers per thousand population

(2) Skill level of young doctors

In this survey, to measure the general skill level of young doctors, doctors were interviewed with simple questions using a chest X-ray film. The questions related to knowledge of anatomy shown in the X-ray film, basic content which should be known by doctors regardless of hospital department or specialty. Fig. 3-22 shows the correct answer rates. The items third from the left (Carina) and fourth from the left (1st Costa) are basic elements of knowledge that every doctor should know, but the correct answer rates did not even reach 80%. Overall, the rate of correct answers was low for the lung margin (second from left), and the pulmonary artery (sixth from left), but there is a high possibility that this was due to differences in medical terminology between languages (French and English), since the interviews were conducted through an interpreter. However, because many doctors could not correctly identify the vessels behind the heart and b3 vessels (first and third from the right), it can be surmised that there is an issue with basic medical skill level.



Source： interview by survey team

Fig. 3- 22 Rate of correct answers on questions on chest X-ray film

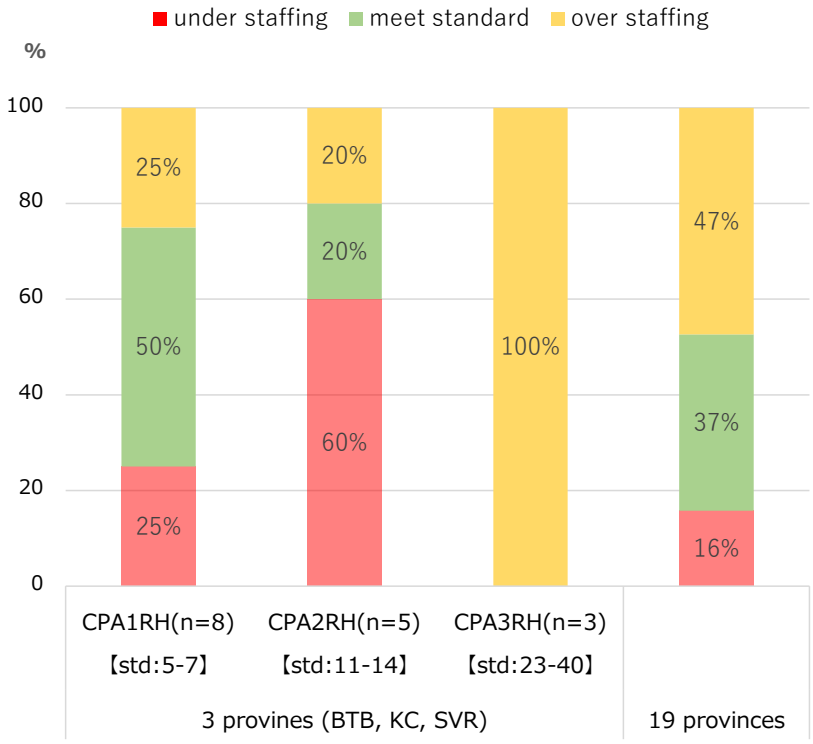
3-2-4　Status of HRH deployment by CPA classification

Fig. 3-23, Fig. 3-24, and Fig. 3-25 show the deployment status of health workers (doctors, nurses, midwives) in the 3 main provinces, broken down by CPA classification.

All 3 PRHs (CPA3) met standards for the number of doctors (23-40 personnel). However, 60% of CPA2 hospitals did not meet the standards for number of doctors (11-14 personnel), and standards were not met at 25% of CPA1 hospitals. In the other 19 provinces, it can be seen that 16% of hospitals did not meet the stipulated number of doctors.

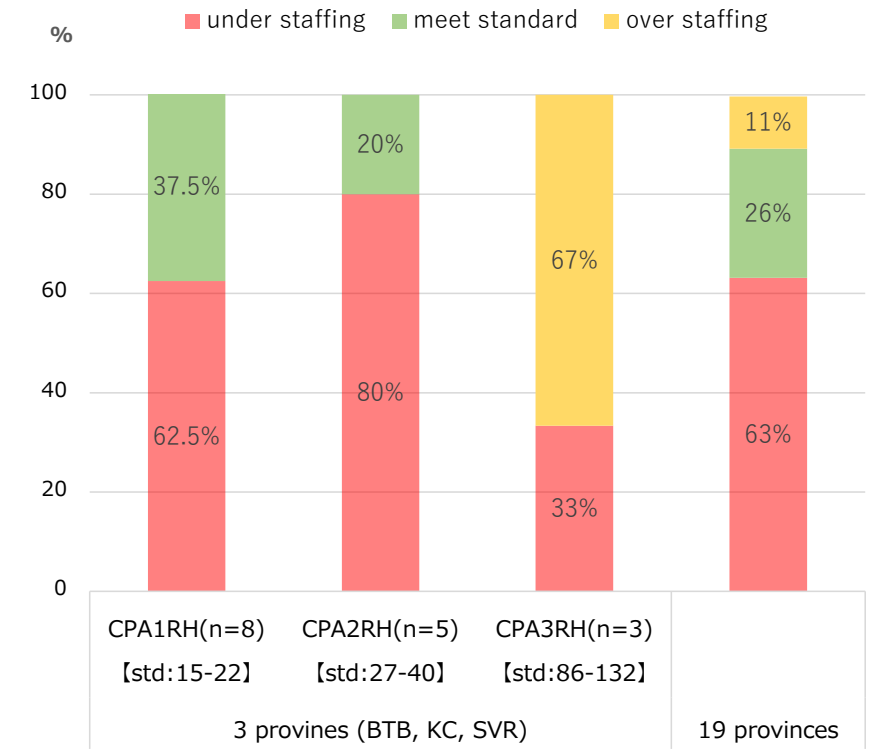
For nurses, in the 3 main provinces, 33% of CPA3 PRHs did not meet the standards, and for CPA 1 and 2 the percentages of hospitals not meeting the standards were 63% and 80% respectively. In the other 19 provinces, the number of nurses does not meet standards in 63% of PRHs.

For midwives, PRHs (CPA3) in the 3 main provinces all meet standards. In addition, 75% of CPA1 and 80% of CPA2 hospitals meet standards, meaning the staffing needs for midwives are less dire than for doctors or nurses. In the other 19 provinces, standards were met in 95% of cases.



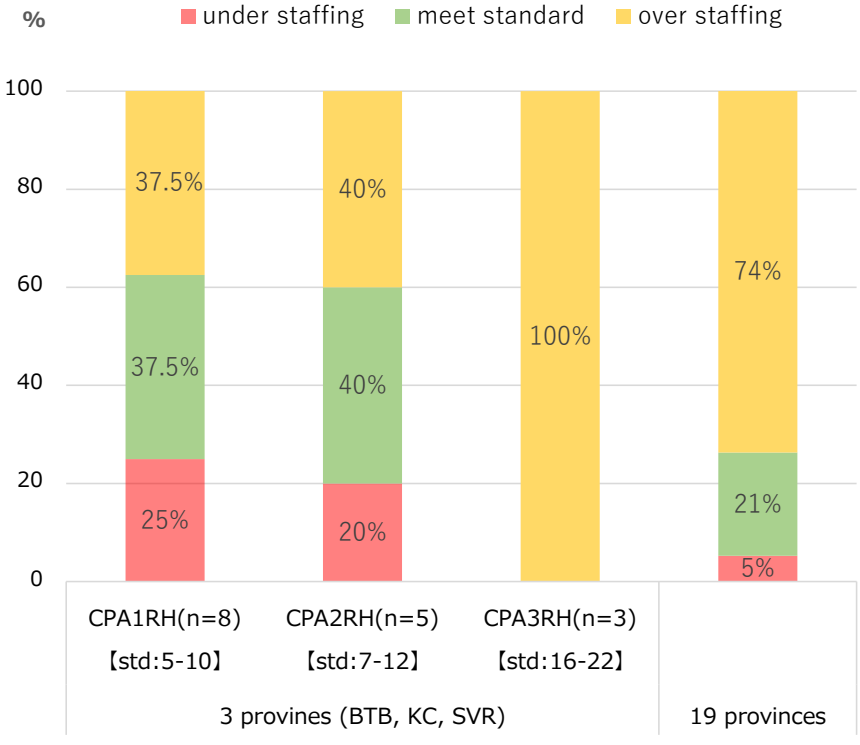
Source：　answers of questionnaires

Fig. 3- 23 Deployment status of Medical Doctor at hospital



Source： answers of questionnaires

Fig. 3- 24 Deployment status of Nurse at hospital

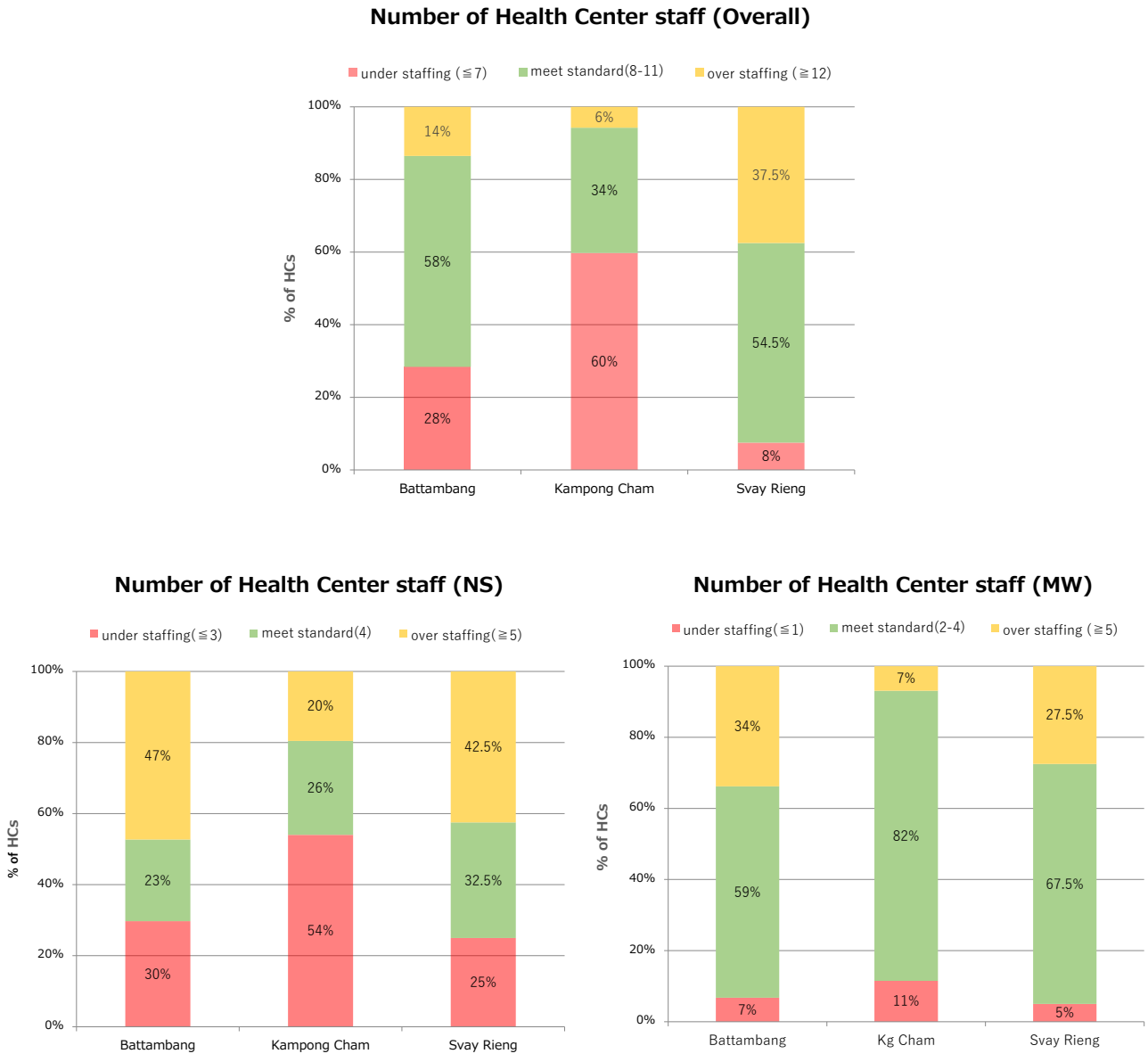


Source： answers of questionnaires

Fig. 3- 25 Deployment status of Midwife at hospital

3-2-5 Health Center comparison among 3 main provinces

The percentage of health centers meeting MPA guidelines for numbers of health workers (all employees, all nurses, all midwives) are shown in Fig. 3-26. Those within standards are shown in green, and those exceeding standards are shown in yellow. Overall trends show that HCs were less likely to meet standards in populous Kampong Cham province, and only 40-50% of HCs meet standards for all staff and nurses. For midwives, 90% of HCs meet the standard in all 3 provinces.



Source： answers of questionnaires

Fig. 3- 26 Deployment status of health workers at HC

3-2-6 Result of interview

In the field survey in the 3 main provinces, the survey team interviewed PHD heads, hospital directors, and HC heads about HR management, development, and evaluation. Table 3-10 shows a summary of the information obtained through interviews.

Table 3- 10 Summary of interview

	Employment/Deployment /Retention	Training	HR Evaluation	Budget	Other
PHD	・Number of employment(hired for provincial posts) doesn't meet needs. ・High attrition rate of young doctors deployed in hospital in rural area. They leave within 5 years.	・Regular medical seminar for doctors (Kampong Cham/Battambang)	・Conducted in each hospital	・Development of Annual Operation Plan (3 provinces) ・Budget management per facility and OD by Excel sheet (Battambang) ・Not enough budget for maintenance of facility and ME	・Regular meeting with OD (monthly)
RH	・Employment of additional staff by User Fee (UF) ・High attrition rate of young doctors deployed in hospital in rural area. They seek for employment in Phnom Penh and leave within 5 years. ・Surgeon is not deployed though operating room is equipped (Svay Rieng) ・No staff in charge for maintenance of facility and medical equipment	・Attend program based training ・Few in-service training ・Clinical review (doctors) ・Share of learning among staff (Kampong Cham) ・Monthly training for Nurses (Kampong Cham PRH) ・Training by donors (mainly for Midwives)	・Evaluation based on attendance (once or several times a day) ・UF allocation among staff based on their own evaluation system ・Evaluation by department based on number of patients, infection control, 5S activities etc. (Kg Cham PRH and Battambang PRH)	・Increasing income due to increasing number of patients ・Employment, maintenance of facility and equipment, and purchase of drugs and other consumables by user fee ・Not enough budget for maintenance of facility and ME	・Regular meeting on patients and hospital management (daily/monthly/quarterly)
HC	・Employment of additional staff by User Fee (UF)	・Attend training per disease program ・Few training opportunities other than midwives (Pong Tek HC, Svay Rieng)	・Even allocation of UF among staff	・Increasing income due to increasing number of patients ・Employment and maintenance by user fee ・Not enough budget for maintenance of facility and ME	・Improvement of service on their own effort, leading to increase of patients (award by PHD)

Source: Survey team

3-2-7 Issues of human resources for health per level (national and province)

Table 3-11 shows information obtained by this survey relating to human resources for health, split into a comparison among national level, the 3 main provinces, and the other 19 provinces.

Table 3- 11 Comparison of national level and province in HRH

		National Level	Battambang	Kampong Cham	Svay Rieng	19 provinces
1	HRH system and plan ・Health Workforce Development Plan 2016-2020 (HRH database, HRH development plan in PHD)	・3 types of database (DP, DHR, Health Professional Councils) ・Monitoring by HRH Oversight Committee ・Difficult to enumerate all health workers including private sector (only by database of health profession Council)	・Submission of HRH development plan to MOH ・Records of number of staff is available at PHD, but staff hired directly by health facility is not reflected	・HRH development plan not submitted ・Records of number of staff is available at PHD, but staff hired directly by health facility is not reflected	・HRH development plan not submitted ・Records of number of staff is available at PHD, but staff hired directly by health facility is not reflected	・15 PHDs submitted HRH development plan, and 4 didn't submit ・Records of number of staff is available at PHD, but staff hired directly by health facility is not reflected
2	Employment/Deployment Retention ・Over 80% HC with secondary MW ・Deployment based on needs in sub-national level ・Staffing based on CPA,MPA guidelines ・WHO 2020 goal of density of health workers (2/1,000)	・Promotion of staffing at HC (secondary MW 88%HC、secondary Ns 89%HC) ・4,900 new hiring in 2016, and 2-6% of staff retire annually ・Health workers 1.2/1,000	・Meet staffing standards of CPA guidelines MD:3/4 RHs Ns:3/4 RHs MW:4/4 RHs ・Meet staffing standards of MPA guidelines All staff:72% Ns:70% MW:90% ・Difficult to recruit MD in rural area ・Health workers 1.1/1,000	・Meet staffing standards of CPA guidelines MD:2/7 RHs Ns:3/7 RHs MW:4/7 RHs ・Meet staffing standards of MPA guidelines All staff:40% Ns:49% MW:76% ・Difficult to recruit MD in rural area ・Health workers 0.9/1,000	・Meet staffing standards of CPA guidelines MD:4/5 RHs Ns:0/5 RHs MW:3/5 RHs ・Meet staffing standards of MPA guidelines All staff:93% Ns:83% MW:88% ・Difficult to recruit MD in rural area ・Health workers 1.0/1,000	・Meet staffing standards of CPA guidelines MD:16/19 RHs Ns:7/19 RHs MW:18/19 RHs ・Difficult to recruit MD in rural area
3	Workplace environment (evaluation) ・Review existing HR evaluation system ・Regular HR evaluation ・Incentives for rural posts	・HR evaluation system available ・No special allowances for rural posts	・Evaluation done in one hospital out of 4	・Evaluation done in 3 hospitals out of 7	・Evaluation done in one hospital out of 5	・Evaluation done in 12 hospitals out of 19
4	Pre-service/In-service training ・National Exit Exam ・Introduction of Competency-based curricula ・Credit as CME (continuing medical education)	・National Exit Exam in all disciplines (2017) ・MOH authority to control quality of training institutions (revision of sub decree 21)	・Training unit organized in CPA3 hospital	・Training Unit organized	・No Training unit (but accept students for practice as pre-service training)	・Training unit is organized in 10 PRHs out of 12 PRHs (CPA3) (Siem Reap, Takeo, Kratie, Kg Speu, Kampot, Prey Veng, Kg Thom, Kandal, Kg Chhnang, Pursat)
5	Health workforce regulation (Council) ・Mandatory registration for medical practitioners from 2016 (5 professions, license renewal and training)	・Support Councils ・Estimated registration rate -MD 76% -Dentist 82% -Pharmacist 96% -Ns 24% -MW 84%	・Council in Province ・Provincial registration rate is not available	・Council in Province ・Provincial registration rate is not available	・Council in Province ・Provincial registration rate is not available	・Council in Province ・Provincial registration rate is not available

Source: Survey Team

3-3 Health facilities

3-3-1 Facility improvement plans

(1) PHD hearing results

Table 3-12 shows the recent improvement of health facilities including plan and request in 22 provinces, excluding the Phnom Penh municipality, Banteay Meanchey province, and Preah Sihanouk province, given at hearings by local consultants at the PHD of each province.

Table 3- 12 Outlines of improvement plan (hearing from PHD)

Province	Name of Health Facility	Name of OD	Construction/ Renovation	Details
Battambang	Maung russei RH	Maung russei	Renovation	Government budget
	Battambang PRH	PHD	Renovation	Government budget
	Sampov loun RH	Sampov loun	Renovation	Government budget
	Continuing education center	PHD	Renovation	No budget
	Health promotion unit	PHD	Renovation	No budget
	Maung russei RH	Maung russei	Construction	No budget
Kampong Cham				
Kampong Chhnang	Prey Moul RH	OD Kampong Chhnang	Construction	2014
	Tberng Kpos RH	OD Kampong Tralach	Construction	2015
	Chhouk Sar RH	OD Kampong Tralach	Construction	2016
Kampong Speu	Kampong Speu	Chbar Morn	Construction	2 delivery room and 5 waiting delivery room
	Kampong Speu	Chbar Morn	Renovation	2 drug storage renovations
Kampong Thom				
Kampot				
Kandal	Bekchan RH	Angsnuol OD	Construction	2016
	Morn Nga Ong RH	Loveam OD	Construction	2016
	Sor	Lovea Em (OD)	Construction	2016
	Svay 2Kiek HC	Ksach Kandal OD	Construction	2016
	Siem Reap HC	Ta Khmao OD	Construction	2016
	Peam Raing HC	Leu Dek OD	Construction	2016
Kep	Kep RH	Kep	Renovation	OPD and Pediatric departments (2 floors, 455m2) renovation in 2016 by Gt. Budget
	PreyThom HC	Kep	Renovation	Parking place with roof in 2016, 80m2
Koh Kong	Tanuon HC	Sre Ambil	Construction	PIN 2016 Construction with land 500m2
	Kon Kok RH	Smach Meanchey	Construction	Constructed Standard HC in 2017 funded by China
	Sre Ambil RH	Sre Ambil	Construction	Constructed gates in 2016-2017 by Gt. Budget
Kratie				
Mondul Kiri	Krang Tes HC	SenMonorum	Construction	Construct new gate 1200m in 2016 by Gt. Budget
Otdar Meanchey	Waiting area for pre and post neonatal (Bansay Rak and Chhouk HC)	Samrong	Construction	Construct 2017 size 5.5x20m

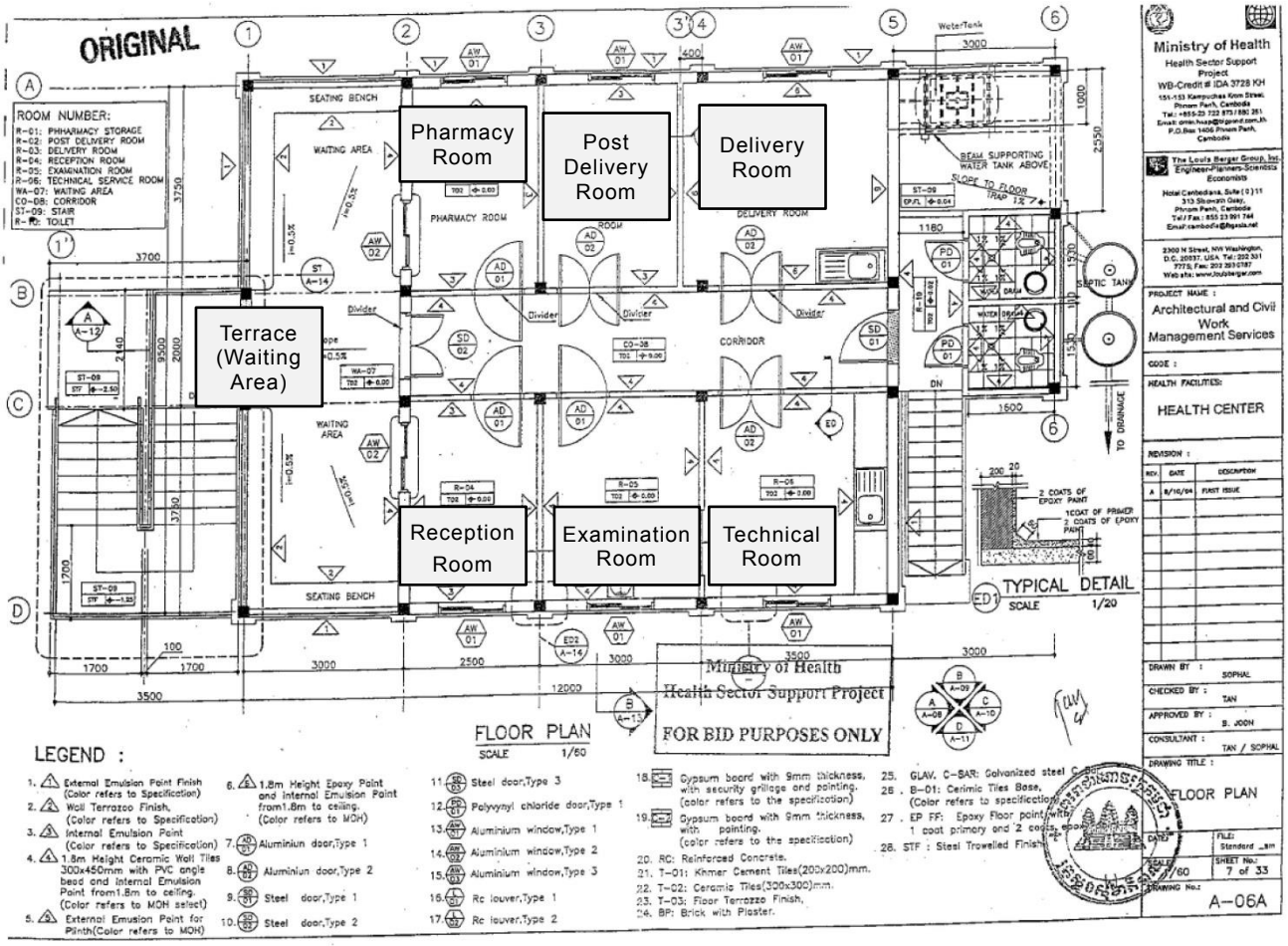
Province	Name of Health Facility	Name of OD	Construction/ Renovation	Details
	Ang Kabsok (Trapaing Prasat HC)	Anglong Veng	Construction	Constructed in2017 size 5x10x3 m3
	Drugs store (Anlong Veng OD)	Anlong Veng	Construction	Constructed in 2017 size 10x15m
Pailin	Pailin RH	Pailin	Construction	New construction
	Daun Sok HC	Pailin	Renovation	Too old
Preah	Chorm Ksan RH	Thbeng	Construction	NA
Vihear	TaSeng HC	Thbeng	Construction	NA
Prey Veng				
Pursat				
Ratanak Kiri	Bor Keo RH	BorKeo	Construction	Construct in 2015-2016 size 2466m2 3floors building by Gt. Budget.
Siem Reap	Surgery department	Siem Reap	Renovation	One floor building renovation by Gt. Budget
	Daun Sok HC	Kror Lagn	Construction	Constructed in 2016 by Plan NGO
	Kror Lanh HC	Kror Lanh	Construction	Constructed in 2016 by private fund
Stung Treng	Steung Treng PRH	Steung Treng	Renovation	Using Gt. Budget
	Kbal Meas HC	Steung Treng	Construction	Constructed new HC building in 2016, next to the land of Sesan Electro Comapany
	Sre Pork HC	Steung Treng	Construction	Constructed new HC building in 2016, next to the land of Sesan Electro Company
	Koh Sralay HC	Steung Treng	Construction	Constructed apartment for health staff in 2016 by Gt. Budget
Svay Rieng	Chek HC	Svay Rieng	Renovation	Need to renovate, but no budget from MOH yet.
	Svay Yea HC	Svay Rieng	Renovation	Constructed in2017 size 5x10x3 m3
	Chamlang HC	Svay Rieng	Renovation	Need to renovate, but no budget from MOH yet.
	OB building in PRH	Svay Rieng	Renovation	Got budget from MOH and will do in 2017
	TB building in Svay Teap RH	Svay Teap	Renovation	Got budget from MOH and will do
	Tnaot HC	Chiphou	Renovation	Need to renovate, but no budget
Takeo	PHD	PHD	Renovation	Constructed the meeting room in 2017 at the ground floor size 250m2
	PHD	PHD	Renovation	Old buildings size 312m2 renovated by Gt. Budget in 2017
Tbong Khmum	TaBer RH	DamBer	Renovation	In 2016 by Gt. Budget
	Suong OD	Suong	Renovation	Government (Gt.) budget
	Kroch Chhmar RH	Kroch Chhmar	Renovation	Gt. Budget
	ChiRor1 HC	Tbong Khmum	Construction	Constructed 2017-18 funded by Germany Peace Organization
	Boeung Pruol HC	Tbong Khmum	Construction	Constructed 2017-18 funded by Germany Peace Organization
	Chup HC	Tbong Khmum	Construction	Constructed 2017-18 funded by Germany Peace Organization

Source : answers of questionnaires

(2) MPA standard design

The MPA guidelines (Guidelines on Minimum Package of Activities for Health Center Development, 2008-2015), which set out the role of a health center (HC), include specification and standard designs related to facilities and infrastructure, and it is desirable that HCs which were constructed many years ago and which have fallen into noticeable disrepair should be renovated to meet MPA guidelines. However, currently many HCs lack enough beds, and some HCs have separate maternity wards. The MOH is currently considering of an additional standard design of HC with additional two rooms to increase the scale set out by the MPA guidelines.

Fig. 3-27 shows the standard design set out in the MPA guidelines.



Source : MOH Guidelines on Minimum Package of Activities for Health Center Development, 2008-2015

Fig. 3- 27 Drawing of standard Health Center

3-3-2 Battambang province

(1) Referral hospitals

Battambang province has one CPA3 hospital (the provincial referral hospital: PRH), two CPA2 hospitals, and one CPA1 hospital. Currently, there is no referral hospital in the Sang Ker OD, but two HCs are scheduled to be upgraded to CPA1. Table 3-13 below shows an outline of three hospitals visited by Japanese survey team. Furthermore, facilities outlines of all the referral hospitals in the province (based on the results of the hearings by local consultants) are shown in Table 3-14.

Table 3- 13 Referral Hospitals in Battambang province (site survey)

	Battambang PRH	Maung Russei RH	Sampov Loun RH
CPA Level	CPA3	CPA2	CPA2
Name of OD	Battambang OD	Maung Russei OD	Sampov Loun OD
Year established	1940	1988	1998
Distance to PRH	---	41 Km to Battambang PRH	115Km to Battambang PRH, Near to Thai border
Site Area	54,620 m^2	10,848 m^2	23,489 m^2
Site Fig.	Square (530m x 530m)	Rectangle (100m x 110m)	Square (150m x 150m)
Entrance			
Construction Space	Site is large, so there is space for construction.	There are many buildings on the site. Since new TB ward has constructed, construction space could be made on the footprints of old TB ward. In 2013, South Korea built a new Ob-Gyn ward (RC construction, 2 stories).	The center of the site is slightly higher than surrounding areas, and the whole site is on a gentle slope. Buildings are joined by access roads. The site is large, so there is space for construction.
Necessity of Reconstruction or Renovation	New OT and surgical ward building will be built under Japan's Grant Aid. Existing buildings which will be empty after moving to new building need to be renovated.	Because the pediatric ward is old and deteriorated, it is scheduled for renovation.	The OT building was built in 2014 under HSSP2, but the division between clean and dirty sections is unclear.
Infrastructure Condition	No problems with electricity, water supply (municipal and well water), sewage, waste disposal, etc.	No problems with electricity, water supply (municipal and well water), sewage, waste disposal, etc.	No problems with electricity, water supply (well and rain water), sewage, waste disposal, etc.

Source: Survey Team

Table 3- 14 Result of hearing from Referral Hospitals in Battambang province

Province	Name of RH	CPA Level	No. of Beds	BOR	Departments	Traning Unit	Site Area (m2)	Space for New Bldg.	Bldg Function	Story	Floor Area (m2)	Year Const-ructed	Year Reno-vated	Needs of Reconst-ruction/ Renovation	Total Floor Area (m2)	Floor Area which needs Reconstruction/ Renovation	Requested area for renovation (%)
Battambang	Battambang Provincial Hospital	CPA3	270	105.8%	OPD ER LAB PHM BLB ANE SG GM OB GY PD NCU ENT EYE DEN NEU CAR ORT URO TB HAN PSY DIA OTH	Yes	54,620	Yes	Psychiatry	–	–	1954	2014	–	0	0	–
									OPD, Triage	1	–	2010	–	–			
									ENT	1	–	1954	2015	–			
									Unknown	2	–	2014	–	–			
									Unknown	2	–	1954	1954	–			
Battambang	Moung ruessi referral hospital	CPA2	84	104.5%	OPD ER LAB PHM BLB ANE SG GM OB GY PD NCU ENT EYE DEN NEU CAR ORT URO TB HAN PSY DIA OTH	–	10,846	No	Unknown	–	112	1994	2001	Yes	1,350	454	33.6%
									Administration	1	255	1994	2002	No			
									Storage	1	113	1997	2002	No			
									OPD, Triage	1	96	2008	2008	No			
									Surgery	1	342	2000	2002	Yes			
									Operation Theater	1	126	2000	2000	No			
									HIV/AIDS	1	306	2004	2004	No			
Battambang	Sampov Loun	CPA2	65	88.0%	OPD ER LAB PHM BLB ANE SG GM OB GY PD NCU ENT EYE DEN NEU CAR ORT URO TB HAN PSY DIA OTH	–	23,489	Yes	Pediatrics	1	100	1998	2016	Yes	1,639	444	27.1%
									Surgery	1	67	2014	2015	No			
									Obstetrics	1	190	1998	2016	No			
									Lab, ER	1	465	2014	2014	No			
									TB	1	156	1998	2016	Yes			
									Psychiatry	1	102	1998	2016	Yes			
									Mortuary	1	16	1998	1998	No			
									HIV/AIDS	1	86	1998	1998	Yes			
									New Lab	1	144	2012	2012	No			
									HIV impatients	1	213	2012	2012	No			
									OPD	1	100	1998	2016	No			
Battambang	Thma koul referral hospital	CPA1	71	–	OPD ER LAB PHM BLB ANE SG GM OB GY PD NCU ENT EYE DEN NEU CAR ORT URO TB HAN PSY DIA OTH	–	20,780	Yes	TB	1	210	1998	2005	Yes	1,732	1,266	73.1%
									OPD	1	528	1990	2015	Yes			
									Dental	1	120	1998	1998	Yes			
									Garage	1	48	1994	1994	Yes			
									Laboratory	1	58	1992	2012	No			
									General Medicine	1	308	2013	2013	Yes			
									Obstetrics	1	408	2015	2015	No			
									Staff Dormitory	1	52	1994	2015	Yes			

Source： answers of questionnaires

※Departments…OPD: Outpatient, ER: Emergency, LAB: Laboratory, PHM: Pharmacy, BLB: Blood Bank, ANE: Anesthesia
SG: Surgery, GM: General Medicine, OB: Obstetrics, GY: Gynecology, PD: Pediatrics, NCU: NICU
ENT: Ear, Nose & Throat, EYE: Eye, DEN: Dental, NEU: Neurology, CAR: Cardiology, ORT: Orthopedics
URO: Urology, TB: Tuberculosis, HAN: Hansen, PSY: Psychology, DIA: Diabetes, OTH: Others (HIV/AIDS, etc.)
※Hospital has shaded departments.

(2) Lower referral health facilities

There are 80 HCs (including 6 FDH), and 5 health posts in Battambang province. Table 3-15 shows an outline of the HCs which were visited by the Japanese survey team. In addition, an outline of all the CPA hospitals in the province based on the results of hearings is shown in Table 3-16, Table 3-17, and Table 3-18.

Table 3- 15 Health Center in Battambang province (site survey)

	Kas Kralor HC	Roka HC	Prek Norin HC	Seirei Mean Chesy HC
Name of OD	Maung Russei OD	Sang Ker OD	Sang Ker OD	Sampov Loun OD
Year Established	2006 (2014 obstetrics ward building constructed)	1995	1988 District Hospital 1997 Health Center	1998
Distance to RH	45Km to Maung Russei RH	15Km to Battambang PRH	15Km to Battambang PRH	5 Km to Sampov Loun RH
Building shape following MPA Standard Layout or not	MPA standard, two-story piloti construction, with a slope.	Not MPA standard, with separate maternity ward (donated by an Australian Catholic group), and two-story RC structure ward funded by South Korea. Soon scheduled to be upgraded to CPA1.	Established as a former district hospital, so not MPA standard. Built with US aid, soon scheduled to be upgraded to CPA1.	Not MPA standard, single-story, L-shaped level hallway.
Site Area	4,200 m^2	1,750 m^2	10,000 m^2	2,590 m^2
Site Fig.	Rectangle (40m x 105m)	L shaped (51m x 60m)	Rectangle (100m x 100m)	Rectangle (25m x 70m)
Entrance				
Construction Space	Space in front	Little space in front	Large site with lots of space for construction	Site opens up in back
Floor Area	150 m^2	204 m^2+ 540 m^2 (ward)	602 m^2 (5 buildings)	120 m^2
Necessity of Reconstruction or Renovation	A request was lodged for rebuilding/ renovation, but the HC building is new so does not need to be rebuilt/ renovated. There is a one-story maternity ward with delivery room.	No need to rebuild or renovate.	Separately from US aid, a storeroom and maternity ward were built with aid from an independent US benefactor. No need for rebuilding/ renovation.	No need to rebuild or renovate.
Infrastructure Condition	No problems with electricity, water supply (tube well), sewage, waste disposal, etc.	No problems with electricity, water supply (tube well), sewage, waste disposal, etc.	No problems with electricity, water supply (municipal and tube well), sewage, waste disposal, etc. Medical waste is carried away to OD and incinerated.	No problems with electricity, water supply (tube well), sewage, waste disposal, etc.

Source: Survey Team

Table 3- 16 Result of hearing from Health Center in Battambang province (1/3)

Name of Facility	Type of Facility	Site Area (m2)	No. of Delivery	No. of Beds	No. of Bldg.	Story	Floor Area (m2)	Year Const-ructed	Year Reno-vated	Needs of Reconst-ruction/ Renovation
1. O Ta Ki	HC	390	112	7	2	1	131	1993	2016	Yes
						1	72	2016	2016	No
2. Ta Poung	HC	844	136	3	2	1	125	1997	2006	No
						1	44	2008	2008	No
3. Ta Meun	HC	1,259	55	6	1	1	-	2013	2013	Yes
4. Chrouy Sdau	HC	1,440	96	3	1	1	108	2011	2011	Yes
5. Boeng Pring	HC	1,500	201	2	3	1	72	2014	2014	No
						1	150	1997	2005	Yes
						1	72	2007	2007	Yes
6. Kok Khmum	HC	1,000	135	5	2	1	108	2000	2017	Yes
						1	72	2016	2016	No
7. Bansay Traeng	HC	2,474	122	7	2	1	144	1991	2006	No
						1	72	2015	2015	No
8. Rung Chrey	HC	1,580	103	5	3	1	60	2008	2017	Yes
						1	130	1997	2003	Yes
						1	150	2012	2017	No
9. Anlong Run	HC	2,000	61	3	1	1	-	1991	1991	Yes
10. Khnach Romeas	HC	1,103	202	4	1	1	225	1991	2014	Yes
11. Ampil Pram Daeum	HC	7,540	138	8	2	1	99	1999	2014	No
						1	45	2010	2011	No
12. Boeng Pram	HC	6,000	19	4	1	1	66	2013	2014	Yes
13. Bavel I	FDH		367	23	4	1	170	2000	2000	No
						1	-	2013	2013	No
						1	288	2013	2013	No
						1	336	1991	1991	Yes
14. Bavel II	HC	2,456	202	4	3	1	112	2000	2017	No
						1	36	2005	2005	Yes
						1	73	2015	2015	No
15. Lvea	HC	809	322	6	1	1	108	1999	2013	Yes
16. Prey Khpos	HC	4,800	133	5	1	1	145	1999	2016	Yes
17. Kdol Tahen	HC	2,763	220	3	2	1	84	1999	2016	No
						1	24	2012	2016	No
18. Khleang Meas	HC	1,886	146	4	2	1	72	2016	2016	No
						1	-	2017	2017	Yes
19. Prey Svay	HC	4,875	194	4	2	1	160	1995	2014	Yes
						1	78	2015	2015	No
20. Russey Krang	HC	900	147	6	2	1	240	1994	2012	Yes
						11	240	1994	2012	No
21. Chrey	HC	957	141	5	1	1	108	1999	2016	Yes
22. Ta la	HC	893	109	6	1	1	144	1994	2012	Yes
23. Kakaoh	HC	2,100	317	10	1	1	174	1994	2012	Yes
24. Robas Mongkol	HC	1,820	179	7	2	1	110	1997	2008	Yes
						1	70	2011	2015	Yes
25. Moung	HC	0		0	1	1	160	1951	2013	Yes
26. Kear	HC	1,350	86	3	1	1	108	2000	2000	Yes
27. Prey Touch	HC	36,000	58	12	1	1	182	1997	2016	Yes
28. Prey Tralach	HC	2,400	487	8	2	1	160	2000	2012	Yes
						2	108	2011	2011	Yes
29. Prek Jeac	HC	1,750	459	10	2	1	180	2002	2014	Yes
						1	45	2011	2011	Yes
30. Tebtey	HC	1,781	153	5	1	1	190	1994	2012	Yes
31. Kas Krolor	HC	4,200	366	28	1	1	150	2006	2014	Yes
32. Roung	HC	2,800		4	1	1	60	2013	2013	Yes

※Type of facility FDH:Former District Hospital, HC:Health Center, HP:Health Post Source : answers of questionnaires

Table 3- 17 Result of hearing from Health Center in Battambang province (2/3)

Name of Facility	Type of Facility	Site Area (m2)	No. of Delivery	No. of Beds	No. of Bldg.	Story	Floor Area (m2)	Year Const-ructed	Year Reno-vated	Needs of Reconst-ruction/ Renovation
33. Serei Mean Cheay	HC	2,590	175	4	1	1	120	1998	1998	Yes
34. Sampov Loun	HC	1,000	107	4	2	2	144	2014	2014	No
						1	70	2011	2011	Yes
35. Trav Chu	HC	1,000	243	6	1	1	1	2012	2016	Yes
36. Bour	HC	2,160	534	3	1	1	108	2006	2016	Yes
37. Barang Tleak	HC	3,060	92	5	1	1	110	1998	2016	Yes
38. Pech Chanda	HC	3,000	0	8	2	1	108	2000	2016	Yes
						1	63	2014	2018	Yes
39. Raksmey Samki	HC	2,125	100	6	1	1	142	2012	2017	Yes
40. Trang	HC	10,000	699	15	4	1	360	1998	2016	Yes
						1	86	2014	2016	Yes
						1	96	1998	2016	Yes
						1	60	2005	2017	Yes
41. Ta Krey	HC	4,500	351	4	2	1	-	2000	2000	Yes
						1	-	2000	2000	No
42. Kamrea	HC	2,667	110	3	2	1	120	1999	2013	Yes
						1	315	2002	2016	Yes
43. Tuol Ta Aek	HC	709	164	10	2	1	140	1993	2013	Yes
						1	72	2014	2014	No
44. O Romal	HC	3,000	119	10	2	1	108	2000	2000	Yes
						1	153	2013	2013	Yes
45. Chamkar Samraong	HC	3,143	158	11	4	1	105	1994	2016	No
						1	240	1994	2008	Yes
						1	-	1994	2008	Yes
						1	135	2016	2017	No
46. Wat Ko	HC	2,265	135	5	1	1	140	1993	2014	Yes
47. Svay Pao	HC	18,000	219	3	1	2	168	1953	2016	Yes
48. Sla Kaet	HC	675	18	8	1	1	150	1993	1993	Yes
49. Kdol	HC	14	35	4	1	1	104	1973	2012	Yes
50. Ratanak	HC	228	87	3	1	2	108	1960	2006	Yes
51. Kanti 2	FDH	18,528	249	6	1	1	119	1992	2012	Yes
52. Ta Kream	HC	3,520	396	5	2	1	72	1996	2012	Yes
						1	40	2011	2011	Yes
53. Phnom Sampov	HC	1,920	170	4	2	1	144	1994	2016	Yes
						1	48	2016	2016	No
54. Steong	HC	1,840	219	9	2	1	167	1997	2009	Yes
						1	70	2017	2017	No
55. Chher Teal	HC	1,577	235	9	1	1	138	1993	2015	No
56. Chaeng Mean Chey	HC	1,104	146	7	1	1	108	2004	2014	Yes
57. Plov Meas	HC	3,500	171	3	2	1	48	2015	2015	No
						1	108	1999	2016	Yes
58. Treng	HC	5,546	207	4	3	1	60	2000	2013	Yes
						1	-	2013	2013	Yes
						1	-	2015	2015	No
59. Sdov	FDH	19,800	412	18	6	1	364	1964	1995	Yes
						1	45	1964	2012	Yes
						1	72	2008	2008	Yes
						1	72	2008	2008	Yes
						1	160	1997	2012	Yes
						1	72	2015	2015	No
60. Chrey	HC	584	327	10	3	1	140	1994	2008	Yes
						1	72	2012	2012	No
						1	30	2011	2011	No
61. Ta Sign	FDH	15,000		20	4	1	251	2000	2009	Yes
						1	165	2001	2010	Yes
						1		2006	2012	Yes
						1	171	2013	2013	No

※Type of facility FDH:Former District Hospital, HC:Health Center, HP:Health Post Source : answers of questionnaires

Table 3- 18 Result of hearing from Health Center in Battambang province (3/3)

Name of Facility	Type of Facility	Site Area (m2)	No. of Delivery	No. of Beds	No. of Bldg.	Story	Floor Area (m2)	Year Const-ructed	Year Reno-vated	Needs of Reconst-ruction/ Renovation
62. Kampung Lpov	HC	4,000	143	7	2	1	125	2002	2013	Yes
						1	30	2007	2011	Yes
63. Chork Roka	HC	8,742	85	5	3	1	108	2012	2013	Yes
						1	72	2000	2000	Yes
						1	240	1985	2001	Yes
64. Chamlong Kouy	HC	4,307	170	5	2	1	110	2000	2014	Yes
						1	72	2013	2013	Yes
65. Beong Run	HC	3,600	149	8	2	1	26	2014	2017	Yes
						2	208	2009	2017	Yes
66. Badak	HP	10,000	113	15	2	1	72	2015	2015	Yes
						1	108	2004	2010	Yes
67. Kampong Touk	HP	10,152	10	1	2	1	108	2007	2014	Yes
						1	80	2007	2012	Yes
68. Kantueu I	HP	3,096		6	3	1	28	2008	2008	Yes
						1	48	2013	2013	No
						1	163	2016	2016	No
69. Sorkheng Kampinhpuoy	HP	3,940	49	3	1	1	108	2013	2013	Yes
70. Tatoak	HP	2,808	4	7	1	1	162	2016	2016	No
71. Anlong Vil	FDH	9,652	163	20	3	1	390	1993	2013	Yes
						1	176	1972	2013	Yes
						1	168	2010	2015	Yes
72. Wat Tameom	HC	1,272	137	8	2	1	132	1993	2011	Yes
						1	72	2014	2014	No
73. Kampung Preang	HC	727	122	7	2	1	105	1993	2010	Yes
						1	70	2010	2010	No
74. Kampung Preah	HC	2,256	126	5	2	1	128	1993	2014	Yes
						1	70	2011	2011	No
75. O Dambang 2	HC	1,660	125	4	2	1	189	2012	2012	No
						1	78	1997	2015	Yes
76. Roka	HC	1,750	112	5	2	1	120	1995	2013	Yes
						1	84	2013	2013	No
77. O Dambang 1	HC	250	375	5	2	1	104	2011	2011	No
						1	108	2006	2016	Yes
78. Rang Kesey	HC	1,962	189	6	2	1	189	2012	2012	No
						1	150	1993	2013	Yes
79. Tapon	HC	2,660	361	9	3	1	189	2012	2012	No
						1	94	1993	2014	Yes
						1	72	2011	2011	No
80. Prek Norin	FDH	10,000	362	20	5	1	120	1993	2014	Yes
						1	72	2010	2013	Yes
						1	72	2013	2014	No
						2	242	2013	2013	Yes
						1	96	2009	2009	No
81. Samrong Tong	HC	600		8	2	1	115	1997	1997	Yes
						1	56	2011	2011	Yes
82. Prek Loung	HC	950	235	6	2	1	105	1993	2014	Yes
						1	48	2014	2014	No
83. Peam Aek	HC	1,080	212	4	2	1	98	1993	2015	Yes
						1	98	2015	2015	Yes
84. Prey Chas	HC	1,425	93	4	2	1	150	2012	2012	No
						1	120	1988	2016	Yes
85. Koah Jirang	HC	1,800	127	5	2	1	108	2000	2000	Yes
						1	115	1991	2013	Yes

※Type of facility FDH:Former District Hospital, HC:Health Center, HP:Health Post

Source : answers of questionnaires

3-3-3 Kampong Cham province

(1) Referral hospitals

In Kampong Cham province, there are one CPA3 hospital, two CPA2 hospitals, and four CPA1 hospitals. Among the CPA1 hospitals, one is scheduled to be upgraded to CPA2. Table 3-19 below shows an outline of hospitals visited by Japanese survey team. Furthermore, facilities outlines of all the referral hospitals in the province (based on the results of the hearings by local consultants) are shown in Table 3-20.

Table 3- 19 Referral Hospitals in Kampong Cham province (site survey)

	Kampong Cham PRH	Srey Santhor RH	Cheung Prey RH	Batheay RH	Chamkar Leu RH
CPA Level	CPA3	CPA2	CPA1 In near future upgrade CPA2	CPA2 Upgraded to CPA2 in Jan 2017	CPA1
Name of OD	Kampong Cham OD	Srey Santhor OD	Cheung Prey OD	Batheay OD	Chamkar Keu OD
Year Established	1927	1996	1965	2015 Donated by Korea	1995
Distance to PRH	---	55km to Kampong Cham PRH on ferry boat on the way, 45km to Phnom Penh	48Km (Along National Road 6), 74Km to Phnom Penh	70Km (Along National Road 6), 52Km to Phnom Penh	48Km to Kampong Cham PRH
Site Area	38,000 m^2	40,000 m^2	5,590 m^2	8,653 m^2	10,213 m^2
Site Fig.	Rectangle	Rectangle (220m x 180m)	Rectangle (65m x 86m)	Rectangle (65m x 133m)	Rectangle (72m x 140m)
Entrance					
Construction Space	Buildings were constructed with aid from Japan, the US, and South Korea, etc. Currently, the building housing the CT is being renovated, and there is little space for new construction.	Each department has its own building on the large site. There is ample space for new facilities. In 2014, a new Ob-Gyn ward with a delivery room was constructed under HSSP2.	There is an open area in front, but little space for construction.	Almost no space for construction.	A monastic ward (3-story RC structure) is under construction. Various buildings are scattered around the site, and new construction will be difficult.
Necessity of Reconstruction or Renovation	No buildings are in marked disrepair, but a portion of buildings need renovation.	The general medicine ward is undergoing renovation, but no buildings are in serious disrepair.	The emergency department was built in 2015 with Japanese grassroots grant aid, but the buildings housing the administrative, surgery, and examination departments are old and falling apartment and in need of rebuilding.	Because the hospital was CPA1, the OT was not used, but needs renovation due to gaps in the walls and ceiling, roughness of wall and rubbish build-up. The kitchen is not in use because propane gas cannot be procured.	The building has been spotlessly maintained under the 5S keyword principle.
Infrastructure Condition	No problems with electricity, water supply (municipal and well water), sewage, waste disposal, etc.	No problems with electricity, water supply (municipal and well water), sewage, waste disposal, etc.	No problems with electricity, water supply (municipal and well water), sewage, waste disposal, etc.	No problems with electricity, water supply (well water), sewage, etc., but waste disposal methods must be improved.	No problems with electricity, water supply (well water), sewage, waste disposal, etc.

Source: Survey Team

Table 3- 20 Result of hearing from Referral Hospitals in Kampong Cham province

Province	Name of RH	CPA Level	No. of Beds	BOR	Departments						Traning Unit	Site Area (m2)	Space for New Bldg.	Bldg Function	Story	Floor Area (m2)	Year Const-ructed	Year Reno-vated	Needs of Reconst-ruction/ Renovation	Total Floor Area (m2)	Floor Area which needs Reconstruction/ Renovation	Requested area for renovation (%)
Kampong Cham	Kompongcham Provincial Hospital	CPA3	260	109.1%	OPD	ER	LAB	PHM	BLB	ANE	Yes	38,000	No	–	–	–	–	–	–	–	–	–
					SG	GM	OB	GY	PD	NCU				–	–	–	–	–	–			
					ENT	EYE	DEN	NEU	CAR	ORT				–	–	–	–	–	–			
					URO	TB	HAN	PSY	DIA	OTH				–	–	–	–	–	–			
Kampong Cham	Batheay referral hospital	CPA2	60	95.0%	OPD	ER	LAB	PHM	BLB	ANE	–	8,653	No	Consultation	3	2920	2012	2012	No	3,190	270	8.5%
					SG	GM	OB	GY	PD	NCU				Administration	1	270	1997	1997	Yes			
					ENT	EYE	DEN	NEU	CAR	ORT				–	–	–	–	–	–			
					URO	TB	HAN	PSY	DIA	OTH				–	–	–	–	–	–			
Kampong Cham	Srey Santhor referral hospital	CPA2	70	67.0%	OPD	ER	LAB	PHM	BLB	ANE	–	40,000	Yes	Surg, Pediatrics	1	310	1994	2007	Yes	2,095	1,230	58.7%
					SG	GM	OB	GY	PD	NCU				ICU, GM	1	340	1998	2016	No			
					ENT	EYE	DEN	NEU	CAR	ORT				Administration	1	340	1994	2013	Yes			
					URO	TB	HAN	PSY	DIA	OTH				OB/GY	1	525	2015	2015	No			
														TB	1	420	1997	1997	Yes			
														Meeting	1	160	1997	1997	Yes			
Kampong Cham	Chamka leu referral hospital	CPA1	70	85.7%	OPD	ER	LAB	PHM	BLB	ANE	–	10,213	No	GM, OB/GY, PSY, DIA	1	600	1995	2006	No	1,670	0	0.0%
					SG	GM	OB	GY	PD	NCU				ER, LAB, Imagery	1	600	1995	2006	No			
					ENT	EYE	DEN	NEU	CAR	ORT				Minor OT, PD	1	220	1995	2006	No			
					URO	TB	HAN	PSY	DIA	OTH				HIV/AIDS	1	250	2006	2006	No			
Kampong Cham	Cheung Prey referral hospital	CPA1	70	95.0%	OPD	ER	LAB	PHM	BLB	ANE	–	5,590	No	TB	1	198	2012	2014	No	1,767	1,027	58.1%
					SG	GM	OB	GY	PD	NCU				OB/GY, PD	1	607	1965	2011	Yes			
					ENT	EYE	DEN	NEU	CAR	ORT				General Medicine	1	344	2000	2000	Yes			
					URO	TB	HAN	PSY	DIA	OTH				Kitchen	1	76	1993	1993	Yes			
														HIV/AIDS	1	242	2013	2013	No			
														General Medicine	1	300	2013	2013	No			
Kampong Cham	Prey Chhor referral hospital	CPA1	70	–	OPD	ER	LAB	PHM	BLB	ANE	–	13,310	No	ICU, OPD	1	78	1996	2016	Yes	998	998	100.0%
					SG	GM	OB	GY	PD	NCU				OB, PD	1	420	1995	2015	Yes			
					ENT	EYE	DEN	NEU	CAR	ORT				LAB, Imagery	1	160	1995	2013	Yes			
					URO	TB	HAN	PSY	DIA	OTH				TB, GM	1	340	1995	2011	Yes			
Kampong Cham	Steung Trang referral hospital	CPA1	38	295.5%	OPD	ER	LAB	PHM	BLB	ANE	–	10,890	Yes	All Functions	1	700	1996	2011	Yes	700	700	100.0%
					SG	GM	OB	GY	PD	NCU				–	–	–	–	–	–			
					ENT	EYE	DEN	NEU	CAR	ORT				–	–	–	–	–	–			
					URO	TB	HAN	PSY	DIA	OTH				–	–	–	–	–	–			

Source： answers of questionnaires

※Departments…OPD: Outpatient, ER: Emergency, LAB: Laboratory, PHM: Pharmacy, BLB: Blood Bank, ANE: Anesthesia
SG: Surgery, GM: General Medicine, OB: Obstetrics, GY: Gynecology, PD: Pediatrics, NCU: NICU
ENT: Ear, Nose & Throat, EYE: Eye, DEN: Dental, NEU: Neurology, CAR: Cardiology, ORT: Orthopedics
URO: Urology, TB: Tuberculosis, HAN: Hansen, PSY: Psychology, DIA: Diabetes, OTH: Others (HIV/AIDS, etc.)

※Hospital has shaded departments.

(2) Lower referral health facilities

There are 87 HCs in Kampong Cham province. There are no health posts. Table 3-21 below shows an outline of HCs visited by Japanese survey team. Furthermore, facilities outlines of all the lower referral health facilities in the province (based on the results of the hearings by local consultants) are shown in Tables 3-22 and 3-23.

Table 3- 21 Health Center in Kampong Cham province (site survey)

	Bos Knorl HC	Koh Met HC	Koh Sotin HC	Prek Dambok HC
Name of OD	Chamkar Leu OD	Kampong Cham OD	Koh Sotin OD	Srey Santhor OD
Year Established	1968	2010 Renovation in 2016	1995	2012
Distance to RH	About 15km to Chamkar Leu RH	Though only 5km from Kampong Cham PRH, it is on an island in the Mekong River, and there is a toll for crossing the bamboo bridge. Roads on the island are unpaved.	On the same island as Koh Met HC, 5Km away from Kampong Cham PRH.	About 15km to Srey Santhor RH. Road is unpaved. 15km to ferry.
Building shape following MPA Standard Layout or not	Former Health Post before Peace Accords. Not MPA standard.	MPA standard two-story piloti construction.	Residences have been renovated. Not MPA standard.	MPA standard two-story piloti construction, with slope.
Site Area	1,716 m^2	1,100 m^2	450 m^2	392 m^2
Site Fig.	Rectangle (35m x 49m)	Rectangle (22m x 50m)	Rectangle (20m x 22m)	Rectangle (14m x 28m)
Entrance				
Construction Space	Space in front.	Little space in front.	Small site with no space for construction.	Small site with no space for construction.
Floor Area	180 m^2	133 m^2	84 m^2	155 m^2
Necessity of Reconstruction or Renovation	Constructed about 50 years ago, the building has been renovated, but has continued to fall into disrepair, and should be rebuilt due to rain leaks.	New building not in need of renovation. Sometimes floods occur, and in 2015 the water rose to a depth of 1 meter.	The building is old and should be rebuilt.	New building not in need of renovation.
Infrastructure Condition	No problems with electricity, water supply (municipal and well water), sewage, waste disposal, etc.	No problems with electricity, water supply (municipal and well water), sewage, waste disposal, etc. Medical waste is carried away to the OD and incinerated.	No problems with electricity, water supply (municipal and well water), sewage, waste disposal, etc. Medical waste is carried away to the OD and incinerated.	No problems with electricity, water supply (well water), sewage, waste disposal, etc.

Source: Survey Team

Table 3- 22 Result of hearing from Health Center in Kampong Cham province (1/2)

Name of Facility	Type of Facility	Site Area (m2)	No. of Delivery	No. of Beds	No. of Bldg.	Story	Floor Area (m2)	Year Const-ructed	Year Reno-vated	Needs of Reconst-ruction/ Renovation
86. Doun Thy	HC	2,313	141	2	1	1	-	2000	2000	Yes
87. Bos Knol	HC	1,776	225	3	1	1	180	1968	1968	Yes
88. Ta Oung	HC	2,500	110	2	1	1	96	2000	2015	Yes
89. Tang Krong	HC	1,500	93	3	1	1	150	2008	2017	Yes
90. Svay Teab	HC	-	-	3	1	1	-	1998	1998	Yes
91. Spue	HC	1,785	223	5	1	1	144	1990	2000	Yes
92. Cho Yo	HC	3,837	108	3	1	2	96	2008	2013	Yes
93. Chamka Andong	HC	1,866	123	3	1	1	189	2008	2008	No
94. Tabrok	HC	1,344	146	3	1	1	216	2008	2016	No
95. Lvea Lue	HC	1,824	94	6	1	1	-	2008	2016	Yes
96. Chamka Kaosu Andong	HC	4,000	170	3	1	1	108	2013	2013	No
97. Svay Meas	HC	2,000	112	5	1	1	120	2013	2013	Yes
98. Sampong Chey	HC	1,980	211	4	1	1	108	2000	2000	No
99. Pring Chrum	HC	1,202	63	2	1	1	132	2000	2000	Yes
100. Sdaeung Chey	HC	801	212	3	1	1	108	1997	2016	Yes
101. Saang	HC	1,454	58	5	1	1	108	1997	2016	Yes
102. Skun	HC	-	-	3	1	1	108	2001	2001	No
103. Doun Dom	HC	6,400	138	5	1	1	480	1997	2016	Yes
104. Knol Dambang	HC	996	140	3	1	1	120	2000	2016	Yes
105. Boeng Kok	HC	-	-	3	1	1	-	2017	2017	Yes
106. Sambuor Meas	HC	653	105	5	1	1	108	1997	2017	Yes
107. Veal Vong	HC	-	0	2	1	1	-	2017	2017	Yes
108. Han Chey	HC	1,155	73	5	1	1	108	2000	2015	Yes
109. Krean Chrey	HC	957	62	3	1	1	108	1997	2016	Yes
110. Koh Samrong	HC	3,600	42	4	1	1	125	1999	1999	No
111. Koh Met	HC	1,100	45	5	1	1	133	2010	2016	No
112. Koh Roka	HC	1,500	188	4	1	1	120	1999	2016	Yes
113. Ampel	HC	8,000	28	6	1	1	162	1997	2001	Yes
114. Vihea Thom	HC	900	22	3	1	1	96	1998	2016	Yes
115. Krala	HC	672	28	3	1	1	101	1997	1997	Yes
116. Trean	HC	700	123	5	1	1	108	2000	2014	Yes
117. Koko	HC	1,200	54	5	1	1	108	2013	2016	Yes
118. Srok	HC	1,867	25	1	1	1	108	2014	2016	Yes
119. Trapang Preh	HC	3,000	167	7	1	1	138	2000	2012	Yes
120. Mean	HC	709	114	6	1	1	132	2000	2014	Yes
121. Sra Ngae	HC	2,500	125	4	1	1	184	1996	2014	Yes
122. So Sen	HC	1,719	153	3	1	1	132	2002	2017	Yes
123. Chey Rean	HC	1,266	137	2	2	1	306	1996	1996	Yes
						1	64	2008	2008	No
124. Kor	HC	1,200	195	6	1	1	328	1996	1996	Yes
125. Baray	HC	1,200	2		1	1	132	1997	2017	Yes
126. Kroch	HC	1,086	238	2	2	1	102	1997	2016	Yes
						1	66	2015	2015	Yes
127. Tmor Poun	HC	1,208	83	7	1	1	-	1996	1996	Yes
128. Lvea	HC	2,778	118	5	1	1	120	1997	2012	Yes
129. Tong Rong	HC	2,160	161	6	1	1	-	1997	2013	Yes
130. Prek Rumdeng	HC	3,584	232	2	2	1	324	1960	2011	Yes
						1	64	2014	2014	No
131. Svay Sachphnom	HC	512	64	5	1	1	108	2012	2016	Yes

Source : answers of questionnaires

Table 3- 23 Result of hearing from Health Center in Kampong Cham province (2/2)

Name of Facility	Type of Facility	Site Area (m2)	No. of Delivery	No. of Beds	No. of Bldg.	Story	Floor Area (m2)	Year Const-ructed	Year Reno-vated	Needs of Reconst-ruction/ Renovation
132. Phrek Dambok	HC	392	130	6	1	1	155	2012	2012	No
133. Toung Tralach	HC	625	63	4	1	1	120	2012	2012	No
134. Prek Po	HC	800	-	3	1	1	99	1999	2016	No
135. Baray	HC	1,042	65	5	1	1	108	2007	2007	Yes
136. Mean Chey	HC	1,408	35	4	1	1	108	2000	2000	Yes
137. Svay Po	HC	931	106	6	1	1	108	2000	2012	Yes
138. Bram Yeam	HC	4,096	49	6	1	1	80	2012	2016	Yes
139. Meas Chrey	HC	2,333	324	17	2	1	108	2000	2017	No
						1	72	2014	2014	No
140. Dong Kdar	HC	2,261	148	4	1	1	108	2005	2016	Yes
141. So Pheas	HC	3,715	58	4	1	1	156	2000	2016	Yes
142. Prek Kok	HC	8,100	-	3	2	1	80	1996	2016	Yes
						1	15	2014	2014	No
143. Prek Bak	HC	605	89	3	1	1	150	2014	2015	Yes
144. Ktob ta ngoun	HC	1,166	135	4	1	1	108	2012	2012	Yes
145. Peam Koh Sna	HC	1,271	59	4	1	1	108	2004	2016	Yes
146. Arak Tnout	HC	1,397	69	3	1	1	104	2006	2015	Yes
147. Toul Sambo	HC	4,168	-	2	1	1	108	2008	2008	Yes
148. Toul Preah Khlaing	HC	2,200	120	4	2	1	99	2004	2014	Yes
						1	142	2014	2014	Yes
149. O mlue	HC	1,500	166	4	1	1	108	2014	2016	Yes
150. Meak 3	HC	2,009	34	2	1	1	108	2014	2016	Yes
151. Batheay	HC	121	-	2	1	1	85	1996	2016	No
152. Tum nub	HC	1,200	127	7	1	1	108	2000	2016	Yes
153. Cherng Prey	HC	1,233	113	4	1	1	108	2000	2016	Yes
154. Pha av	HC	2,400	437	6	1	1	208	2000	2015	Yes
155. Cheung Chhnok	HC	2,930	201	5	2	1	248	1968	1993	Yes
						1	188	1968	1993	Yes
156. Son dek	HC	5,483	420	5	3	1	180	1998	2016	Yes
						1	32	2004	2004	Yes
						1	270	1960	1993	Yes
157. Som Bo	HC	273	216	5	1	1	160	2007	2012	Yes
158. Prek Tanub	HC	1,000	24	2	1	1	108	1998	2013	Yes
159. Mohakhoung	HC	816	120	5	1	1	110	1997	2003	Yes
160. Koh Sotin	HC	450	49	6	1	1	84	1992	2005	Yes
161. Peam Brotnos	HC	1,336	45	10	1	1	-	1995	2014	Yes
162. Lve	HC	894	46	3	1	1	122	1998	2016	Yes
163. Kompung reab	HC	150	88	3	1	1	108	1997	1997	Yes
164. Mohaleap	HC	196	128	5	1	1	196	1998	2012	Yes
165. Peam Jikang	HC	2,426	93	4	1	1	416	1962	2006	Yes
166. Prek Krobao	HC	750	76	5	1	1	144	2000	2006	Yes
167. Angkor Ban	HC	1,289	195	4	1	1	138	1997	2016	Yes
168. So Kong	HC	800	237	4	1	1	132	1999	2016	No
169. Roka Khchau	HC	625	-	2	1	1	130	2012	2012	Yes
170. Roka ar	HC	140	101	8	1	1	98	2012	2016	No
171. Sdau	HC	2,500	196	4	1	1	108	2000	2016	Yes
172. Reay Pai	HC	1,155	187	7	1	1	117	2008	2016	Yes

Source : answers of questionnaires

3-3-4 Svay Rieng province

(1) Referral hospitals

In Svay Rieng province, there are one CPA3 hospital, one CPA2 hospital, and three CPA1 hospitals. Table 3-24 below shows an outline of hospitals visited by Japanese survey team. Furthermore, facilities outlines of all the referral hospitals in the province (based on the results of the hearings by local consultants) are shown in Table 3-25.

Table 3- 24 Referral Hospitals in Svay Rieng province (site survey)

	Svay Rieng PRH	Romeas Heak RH	Svay Chrum RH
CPA Level	CPA3	CPA2 Substantially CPA1 Level, because of without surgeon.	CPA1
Name of OD	Svay Rieng OD	Romeas Heak OD	Svay Rieng OD
Year Established	1959	1992	2015
Distance to PRH	---	42Km (national highway 13 is being rebuilt by the ADB)	8Km (along national highway 1)
Site Area	14,823 m^2	18,149 m^2	10,200 m^2
Site Fig.	Isosceles triangle shape (on a side140m)	Trapezoidal shape (200m x 60m～80m)	Rectangle (50m x 200m)
Entrance			
Construction Space	An ophthalmology ward was built with Australian aid, and the construction OT & Ob/Gyn ward building was completed by Japanese grant aid, so there is no space for construction on the site.	The various departments are located in separate buildings throughout the large site. There is ample space for new facilities. A new Ob-Gyn ward with delivery room and pediatric ward were built in 2015 with German aid.	One three-story building was built on the large site in 2015, and there is ample space for new facilities.
Necessity of Reconstruction or Renovation	After completion of the new OT & Ob-Gyn ward building, the existing OT and surgery ward, Ob-Gyn ward, etc. will need to be renovated.	No buildings fall into disrepair in particular, but some buildings need renovation.	
Infrastructure Condition	No problems with electricity, water supply (municipal and well water), sewage, waste disposal, etc.	No problems with electricity, water supply (municipal and well water), sewage, waste disposal, etc.	No problems with electricity, water supply (well water), etc., but wastewater facilities, an incinerator, medical waste tank, etc. are needed.

Source: Survey Team

Table 3- 25 Result of hearing from Referral Hospitals in Svay Rieng province

Province	Name of RH	CPA Level	No. of Beds	BOR	Departments	Traning Unit	Site Area (m2)	Space for New Bldg.	Bldg Function	Story	Floor Area (m2)	Year Const-ructed	Year Reno-vated	Needs of Reconst-ruction/ Renovation	Total Floor Area (m2)	Floor Area which needs Reconstruction / Renovation	Requested area for renovation (%)
SvayRieng	Svay rieng provincial hospital	CPA3	168	102.0%	OPD ER LAB PHM BLB ANE SG GM OB GY PD NCU ENT EYE DEN NEU CAR ORT URO TB HAN PSY DIA OTH	Yes	14,823	No	–	2	1242	1996	2014	Yes	6,188	6,188	100.0%
									–	2	1899	1959	2014	Yes			
									–	3	1440	2009	2014	Yes			
									–	2	697	1968	2005	Yes			
									Eye	2	300	2015	2015	Yes			
									OD Pharmacy	1	250	1999	2015	Yes			
									Mortuary	1	70	1959	2012	Yes			
									Generator	1	41	1990	2012	Yes			
									Kitchen	1	51	1959	2012	Yes			
									Kitchen	1	39	1998	2012	Yes			
									Garage	1	159	2000	2012	Yes			
SvayRieng	Romeas Haek Referral hospital	CPA2	70	79.6%	OPD ER LAB PHM BLB ANE SG GM OB GY PD NCU ENT EYE DEN NEU CAR ORT URO TB HAN PSY DIA OTH	–	18,149	Yes	Surgery	1	–	2002	2014	Yes	0	0	
									Laboratory	1	–	1996	2002	Yes			
									General Medicine	1	–	1992	2002	No			
									TB	1	–	1996	2002	Yes			
									Surgery	1	–	2004	2004	Yes			
									HIV	1	–	2007	2007	Yes			
SvayRieng	Chi pu referral hospital	CPA1	60	124.4%	OPD ER LAB PHM BLB ANE SG GM OB GY PD NCU ENT EYE DEN NEU CAR ORT URO TB HAN PSY DIA OTH	–	1,021	No	Emergency	1	330	2000	2016	No	708	0	0.0%
									General Medicine	1	330	2000	2016	No			
									TB	1	48	2016	2016	No			
									–	–	–	–	–	–			
SvayRieng	Svay chrum referral hospital	CPA1	44	76.0%	OPD ER LAB PHM BLB ANE SG GM OB GY PD NCU ENT EYE DEN NEU CAR ORT URO TB HAN PSY DIA OTH	–	10,200	Yes	Triage	1	32	2014	2014	No	248	0	0.0%
									Surgery	1	32	2014	2014	No			
									General Medicine	3	40	2015	2015	No			
									Pediatrics	2	40	2015	2015	No			
									GM, OB	2	52	2015	2015	No			
									General Medicine	3	52	2015	2015	No			
SvayRieng	Svayteab Referral Hospital	CPA1	38	90.0%	OPD ER LAB PHM BLB ANE SG GM OB GY PD NCU ENT EYE DEN NEU CAR ORT URO TB HAN PSY DIA OTH	–	6,619	–	GM, OB, TB, PH, LAB	1	450	1990	2014	Yes	450	450	100.0%
									–	–	–	–	–	–			
									–	–	–	–	–	–			
									–	–	–	–	–	–			

Source： answers of questionnaires

※Departments…OPD: Outpatient, ER: Emergency, LAB: Laboratory, PHM: Pharmacy, BLB: Blood Bank, ANE: Anesthesia
SG: Surgery, GM: General Medicine, OB: Obstetrics, GY: Gynecology, PD: Pediatrics, NCU: NICU
ENT: Ear, Nose & Throat, EYE: Eye, DEN: Dental, NEU: Neurology, CAR: Cardiology, ORT: Orthopedics
URO: Urology, TB: Tuberculosis, HAN: Hansen, PSY: Psychology, DIA: Diabetes, OTH: Others (HIV/AIDS, etc.)

※Hospital has shaded departments.

(2) Lower referral health facilities

In Svay Rieng province, there are 43 HCs, and two health posts. Three of the HCs are old facilities called FDH (Former District Hospital). Table 3-26 below shows an outline of HCs visited by the Japanese survey team. Furthermore, facilities outlines of all the lower referral health facilities in the province (based on the results of the hearings) are shown in Table 3-27.

Table 3- 26 Health Center in Svay Rieng province (site survey)

	Angk Prasrae HC	Ta Suos HC	Svay Thum HC
Name of OD	Romeas Hek OD	Svay Rieng OD	Svay Rieng OD
Year Established	1997	1999	1997
Distance to RH	10Km to Romeas Hek RH	10Km to Svay Chrum RH	15Km to Svay Chrum RH
Building shape following MPA Standard Layout or not	Standard	Standard	Standard + Maternity Bldg.
Site Area	1,250 m^2	2,070 m^2	3,514 m^2
Site Fig.	Rectangle (19m x 66m)	Rectangle (25m x 82m)	Rectangle (40m x 87m)
Entrance			
Construction Space	A post-delivery room is under construction, but construction has been suspended due to lack of budget from donor.	Space available in front of and behind the HC	The maternity ward was constructed in 2006 with aid from the UK and France, so there is little space.
Floor Area	115 m^2	108 m^2	117 m^2
Necessity of Reconstruction or Renovation	Eligible for renovation	Eligible for renovation	Renovated in 2016
Infrastructure Condition	No electricity from EDC, so solar panels are used. No municipal water, so well water and rainwater are used. Incinerator, medical waste tank, and septic tank all present.	No electricity from EDC, so solar panels are used. No municipal water, so well water and rainwater are used. Incinerator, medical waste tank, and septic tank all present.	No electricity from EDC, so solar panels and storage batteries are used. No municipal water, so well water and rainwater are used. Incinerator, medical waste tank, and septic tank all present. Overall infrastructure renovation needed.

Source: Survey Team

Table 3- 27 Result of hearing from Health Center in Svay Rieng province

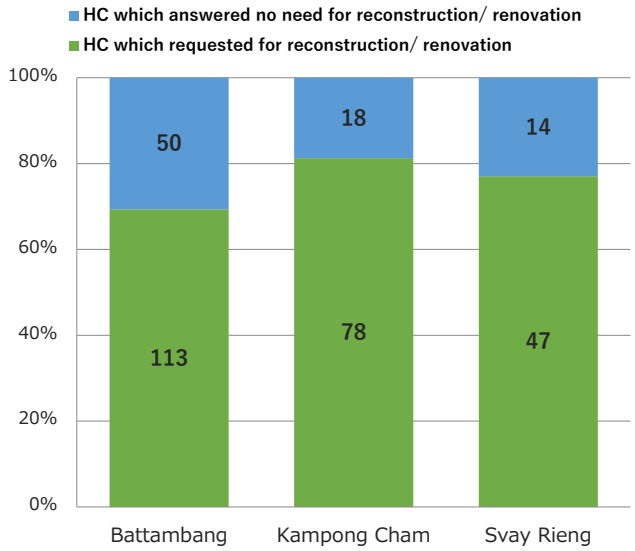
Name of Facility	Type of Facility	Site Area (m2)	No. of Delivery	No. of Beds	No. of Bldg.	Story	Floor Area (m2)	Year Const-ructed	Year Reno-vated	Needs of Reconst-ruction/ Renovation
173. Prey Angkunh	HC	-	-	5	1	1	96	1997	1997	Yes
174. Bavet	HC	3,375	227	5	2	1	160	2012	2012	Yes
						1	48	2007	2007	Yes
175. Prey Koki	HC	1,220	141	5	1	1	150	1998	2016	No
176. Me Sa Thngak	FDH	5,453	492	19	4	1	138	1970	1982	No
						1	72	2014	2014	No
						1	30	2010	2010	Yes
						1	96	1985	2017	No
177. Samley	HC	2,160	68	6	1	1	2,160	2000	2016	Yes
178. Tnaot	HC	2,113	109	3	1	1	84	2000	2016	Yes
179. Ksetr	HC	108	89	5	1	1	108	2000	2014	Yes
180. Toul Sdey	HC	8,215	123	4	1	1	-	2012	2016	Yes
181. Chres (new)	HC	6,594	123	5	1	1	-	2014	2015	No
182. Kampong Trach	HC	-	-	3	1	1	108	1997	2016	Yes
183. Angk Prasrae	HC	1,250	185	5	1	1	115	1997	2016	Yes
184. Daung	HC	2,952	175	2	1	-	-	1998	2016	Yes
185. Ampil	HC	1,099	181	4	2	1	195	1996	2016	Yes
						1	54	2016	2016	No
186. Krasang	HC	1,800	255	5	2	1	60	1997	1997	Yes
						1	20	2014	2014	No
187. Chrey Thum	HC	200	230	4	1	1	108	1999	2015	Yes
188. Mukh Da	HC	1,144	172	4	1	1	1,035	1997	2016	Yes
189. Mream	HC	1,650	115	2	1	1	108	1999	2013	Yes
190. Chantrei	HC	608	128	6	2	1	113	1996	2016	Yes
						1	74	2014	2014	No
191. Chik dei	HC	5,000	112	7	1	1	60	2013	2013	No
192. Trapeang Sdav	HC	3,800	82	6	1	1	108	2013	2016	Yes
193. Svay Rieng	HC	-	-	-	1	-	-	1998	2016	Yes
194. Basak	HC	2,520	51	3	1	1	150	2012	2017	Yes
195. Chamlang	HC	2,836	215	6	1	1	306	1998	2014	Yes
196. Chek	HC	10,100	179	6	1	1	168	1986	1995	Yes
197. Svay Chrum	HC	11,250	0	4	2	1	108	2000	2016	Yes
						1	30	2009	2009	No
198. Ta Suos	HC	2,070	49	4	1	1	108	1999	2003	Yes
199. Kruos	HC	3,600	339	4	2	1	108	1997	2017	Yes
						1	28	2011	2017	Yes
200. Kraol Kou	HC	618	-	9	2	1	32	2015	2015	No
						1	153	1995	2016	Yes
201. Svay Yea	HC	-	298	4	1	1	84	1997	1997	Yes
202. Daun Sar	HC	920	367	7	1	1	920	1997	2009	No
203. Svay Thum	HC	3,514	223	8	1	1	117	1997	2016	Yes
204. Angk Ta Sou	HC	1,175	83	6	2	1	108	1997	2002	Yes
						1	80	2010	2017	No
205. Sangkhoar	HC	1,330	255	5	1	1	120	1998	2003	Yes
206. Prison(Pun Tanea Kea khet)	HP	86	-	1	1	1	84	2014	2014	Yes
207. Kandieng Reay	FDH	-	0	4	1	1	96	1997	1997	Yes
208. Svay Rumpea	HC	1,500	122	5	2	1	229	1998	2016	Yes
						1	108	2016	2016	Yes
209. Nhor	HC	6,048	223	25	5	1	109	1993	1993	Yes
						1	38	1997	2010	Yes
						1	96	1979	1993	Yes
						1	108	1999	2016	Yes
						1	15	1993	1993	Yes
210. Samyaong	HC	606	93	5	1	1	150	1999	2016	Yes
211. Preah Ponlea	HC	15,079	39	4	1	1	108	1999	2016	Yes
212. Thna Thnong	HC	2,800	179	4	1	1	86	2000	2000	Yes
213. Chark	FDH	-	0	14	1	1	105	2001	2001	Yes
214. Boss Mon	HC	650	89	9	1	1	108	2009	2016	Yes
215. Pong Tek	HC	800	182	10	1	1	194	2012	2012	No
216. Popet	HC	2,397	133	5	1	1	108	1999	2017	Yes
217. Tuol Sala	HP	1,156	-	1	1	1	108	2015	2015	Yes

FDH : Former District Hospital、HC : Health Center、HP : Health Post　　Source : answers of questionnaires

3-3-5 Comparison of lower referral heath facilities among 3 main provinces

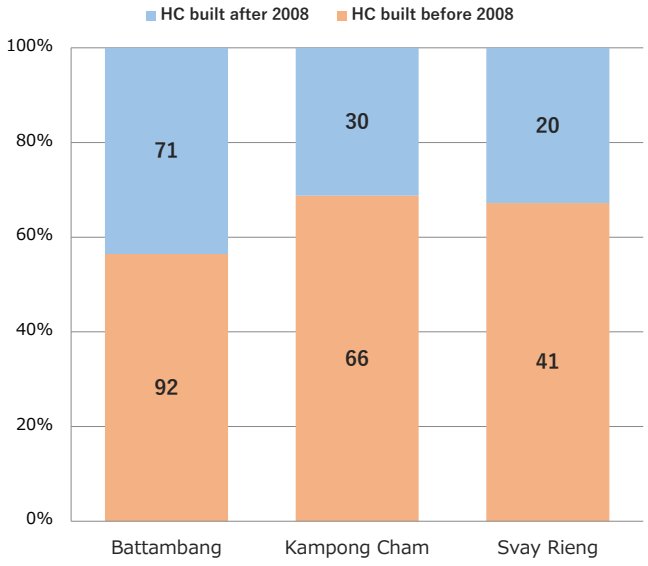
(1) Demand for rebuilding/renovation of Health Centers and Health Posts

Demand for rebuilding/renovation of lower referral health facilities (HCs and HPs) in Battambang province, Kampong Cham province, and Svay Rieng province is shown in Fig. 3-28. 70-80% of lower referral health facilities replied that they are in need of rebuilding/renovation. Fig. 3-29 shows a comparison between lower referral health facilities which were built before and after 2008, when MPA standards were uniformly applied. 60-70% of facilities were built before 2008, so it is assumed that these facilities are in need of rebuilding/renovation.



Source： answers of questionnaires

Fig. 3- 28 Demand of reconstruction and renovation from Health Center



Source： answers of questionnaires

Fig. 3- 29 Construction year of Health Center

(2) Lower referral health facilities by population in the 3 provinces

The establishment standards for HC and RH stated in Health Strategic Plan 2016-2020 are shown below.

Table 3- 28 Criteria for establishment of health facilities

Facility	Population	Accessibility
Health Center	Optimal size：10,000 Range：8,000～12,000	Within 10km or 2 hours walk maximum for the catchment area population
Referral Hospital	Optimal size：100,000 Range：80,000～200,000	In populated area; within 2 hours drive or boat journey and in rural areas; not more than 3-hour drive or boat journey
Health Post	Range：2,000～4,000	Distance from a commune or village to the nearest HC is more than 20km, with a geographical barrier (river, mountain, of poor roads)

Source：HSP3 2016-2020

The numbers of facilities that would need to be added to the current facilities in each OD in Battambang province, Kampong Cham province and Svay Rieng province to bring them up to standard are shown in Table 3-29. Among the 3 provinces, Battambang province has the largest population, and its comparative number of HC and RH is extremely low, which means the necessity of building additional HC and RC is considered high.

Table 3- 29 Additional facilities necessary to meet MOH standard

Province	OD (※ describes provincial capital, urban area)	Population	No. of HC	No. of RH	Population per HC MOH Standard 8,000～12,000 (urban area 25,000)	Population per RH MOH Standard 80,000～200,000 (urban 300,000)	Additional Facilities necessary to meet MOH Standard	
							HC	RH
Battambang	Thmor Kol	231,169	18	1	12,843	231,169	2	1
	Maung Russey	202,790	14	1	14,485	202,790	3	1
	Sampov Loun	162,471	10	1	16,247	162,471	4	0
	Battambang	372,440	23	1	16,193	372,440	0	1
	Sang Ker	204,544	15	0	13,636	NA	3	2
	Province Total	1,173,414	80	4	14,668	293,354	12	5
Kampong Cham	Chamkar Leu	119,546	12	1	9,962	119,546	0	0
	Cheung Prey	91,123	7	1	13,018	91,123	1	0
	Kampong Cham	160,332	14	1	11,452	160,332	0	0
	Prey Chhor	146,948	11	1	13,359	146,948	2	0
	Srey Santhor	114,644	9	1	12,738	114,644	1	0
	Steung Trang	126,861	12	1	10,572	126,861	0	0
	Batheay	110,415	7	1	15,774	110,415	3	0
	Koh Sotin	73,934	7	0	10,562	NA	0	1
	Kong Meas	106,052	8	0	13,257	NA	1	1
	Province Total	1,049,855	87	7	12,067	149,979	8	2
Svay Rieng	Chiphou	104,984	9	1	11,665	104,984	0	0
	Romeas Hek	141,271	11	1	12,843	141,271	1	0
	Svay Rieng	207,731	13	2	15,979	103,866	0	0
	Svay Teap	141,503	10	1	14,150	141,503	2	0
	Province Total	595,489	43	5	13,849	119,098	3	0

exceeds MOH Standard (over 100%)

far exceeds MOH Standard (over 130%)

Source：Survey Team arranged based on answer of questionnaire

3-3-6 Provincial referral hospitals in 19 provinces

The results of the survey and analysis on PRHs in 19 provinces are shown below. The hospitals surveyed exclude five PRHs, that were improved under Japanese grant aid: Mongkul Borey Hospital in Banteay Meanchey province (completed 2007), Kampong Cham Provincial Referral Hospital (completed 2010), Sihanoukville Provincial Referral Hospital (completed 2015), Svay Rieng Provincial Referral Hospital (completed in 2017), and Battambang Provincial Referral Hospital (scheduled for completion in 2019) and the Phnom Penh municipality.

(1) Gap between facilities improvement needs at PRH in each province, and the MOH facilities improvement plan

A comparative investigation was made into PRH facilities improvement plans in 19 provinces, including hearings at the PRHs in 19 provinces about departments they request be rebuilt or renovated (Tables 3-34~38), hearings at PHD in the 19 provinces about facilities plan requests (Table 3-12), and the "Civil Work Plan 2016-2020" drafted by the Ministry of Health.

Table 3- 30 Request and plan of reconstruction/renovation of PRHs in 19 provinces

	PRH Name	CPA	Departments which Hospital Requests for Reconstruction/ Renovation	Request by PHD	Reconstruction/ Renovation Plan by MOH Civil Work Plan 2016-2020
1	Kampong Chhnang	3	Treatment, Consultation, Surgery, Pediatrics, Gynecology, Tuberculosis	No request	No plan
2	Kampong Speu	3	Surgery, General Medicine, Tuberculosis, Training Unit	Delivery, Labor Room	Delivery, NICU, OT, Pediatrics Ward
3	Kampong Thom	3	General Medicine, Surgery, OB/GYN, Eye, Psychiatry, OT, Kitchen, Motorcycle Parking, Garage, Workshop	No request	No plan
4	Kampot	3	Triage, General Medicine, Pediatrics, Surgery	No request	Delivery, NICU
5	Kandal	3	Surgery, General Medicine, Pediatrics, Gynecology, Emergency, Administration	No request	Delivery, NICU, Laboratory
6	Kep	1	General Medicine, Pediatrics, Obstetrics, Laboratory, Administration	OPD and Pediatrics Building (2 stories, 455m^2) renovated by Govt. budget.	Delivery, NICU
7	Koh Kong	2	Unknown	No request	No plan
8	Kratie	3	General Medicine, Obstetrics, Tuberculosis, OT	No request	No plan
9	Mondul Kiri	2	OPD, Surgery, General Medicine, Gynecology, ICU, Laboratory, Administration	No request	No plan
10	Oddar Meanchey	2	General Medicine, OD Pharmacy	No request	General Medicine, Planned to be upgraded to CPA3
11	Pailin	2	OPD, Surgery, General Medicine, Pediatrics, Emergency, Laboratory, Administration	No request	Planned to be upgraded to CPA3
12	Preah Vihear	3	Pediatrics, Obstetrics, Emergency, Minor OT, Patient Waiting, HEF, VCCT, OD Pharmacy	No request	No plan
13	Prey Veng	3	OPD, OB/GYN, Pediatrics, ICU, Laboratory	No request	Delivery, NICU, OT
14	Pursat	3	Surgery, Orthopedics, ICU	No request	Delivery, NICU, OT
15	Rattanak Kiri	2	OPD, Surgery, General Medicine, Gynecology, Pediatrics, Tuberculosis	No request	No plan
16	Siem Reap	3	General Medicine, Abdomen Surgery, Orthopedics, Urology, Dialysis, ICU, Administration	Surgery building renovated by HSSP2 Budget	Operation Theater
17	Stung Treng	3	OPD, General Medicine, Pediatrics, OB/GYN, Emergency, ICU, HIV/AIDS	Renovated by Govt. budget	No plan
18	Takeo	3	Surgery, Imagery, Administration	No request	No plan
19	Tbong Khmum	1	No request	No request	No plan

Source： answers of questionnaires

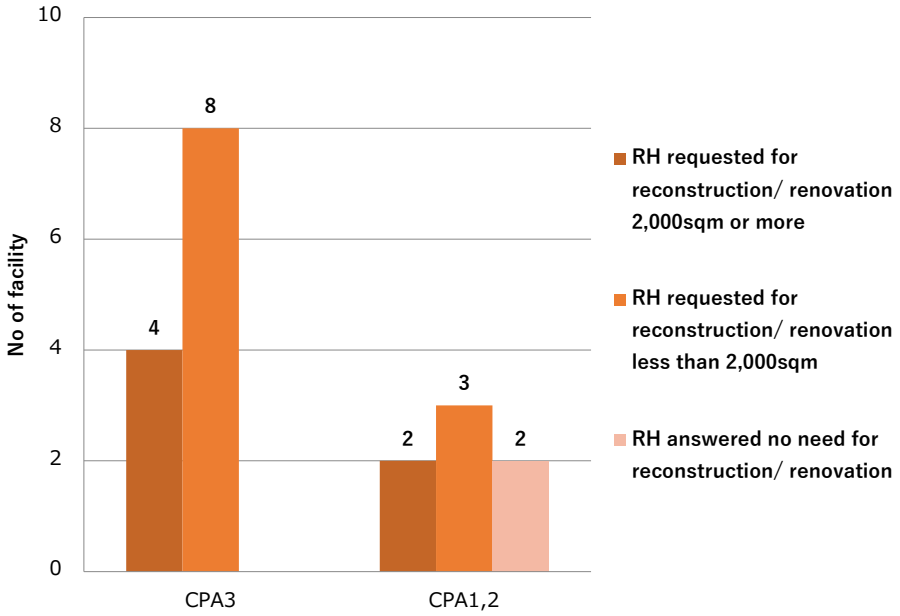
The results of the above comparative investigation show that the facilities improvement wishes of hospitals are not reflected in the plans and requests of the PHDs, and furthermore, it can be seen that in some cases, they are not linked with the MOH facilities improvement schedule for the next 5 years (Table 3-31). First, a system must be created to accurately convey requests to the PHDs and MOH, and it is thought that a facilities improvement plan and request sheet should be submitted to the MOH which takes into account the urgency and necessity of rebuilding/renovating each facility. In addition, based on the plans and requests from the PHDs, MOH should decide on a facilities improvement plan of each province and allocate an appropriate budget.

Table 3- 31 Gap between hospital improvement request and PHD/MOH plan

Case 1	The hospital has submitted a request for a facilities improvement plan, but it is not reflected in the PHD facilities improvement plan/request list, and is not included in the MOH facilities improvement plan schedule. ex. Kampong Chhnang, Kampong Thom, Kratie, Mondul Kiri, Preah Vihear, Ratanak Kiri, Stung Treng, Takeo
Case 2	The hospital's facilities improvement plan request is not reflected in the PHD facilities improvement plan request, but it is included in the MOH facilities improvement plan schedule. ex. Kep (OB facilities), Otdar Meanchey (general medicine facilities), Prey Veng (OB/GYN facilities)
Case 3	The hospital's facilities improvement plan request is not reflected in the PHD facilities improvement plan request, but a facilities plan is included in the MOH facilities improvement plan schedule which differs from the request of the hospital. ex. Kampot, Kandal, Pursat, Siem Reap
Case 4	The hospital has lodged no facilities improvement plan request, but a request is nonetheless included in the PHD facilities improvement plan, and in the MOH facilities improvement plan schedule. ex. Kampong Speu (delivery room)
Case 5	Cases where CPA 2 hospitals are scheduled to be upgraded to CPA 3. It is unclear whether requests for rebuilding/renovation are reflected or not. ex. Otdar Meanchey, Pailin
Case 6	There is no request from the hospital or the PHD facilities improvement plan, and is not included in the MOH facilities improvement plan schedule. ex. Tbong Khmum

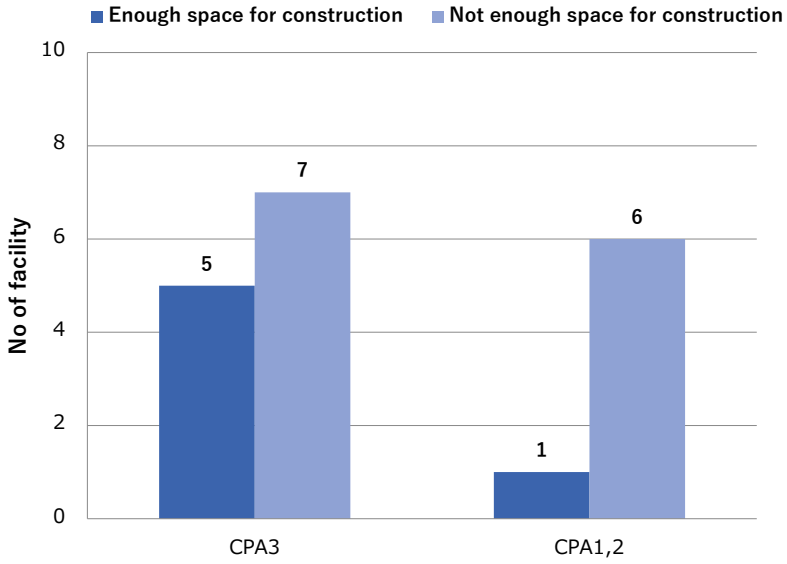
(2) Investigation into the necessity of facilities improvement

Based on the information gathered in this field survey (refer to comparison charts of facilities outlines of 19 PRHs in Table 3-34 to 3-38) and a 2015 survey of PRHs (CPA3) in 17 provinces nationwide, facilities improvement priority level was investigated based on the following evaluation criteria. Both surveys gathered information on the use of space on the hospital site, the years of construction, whether or not requests were lodged for rebuilding/renovation, etc.



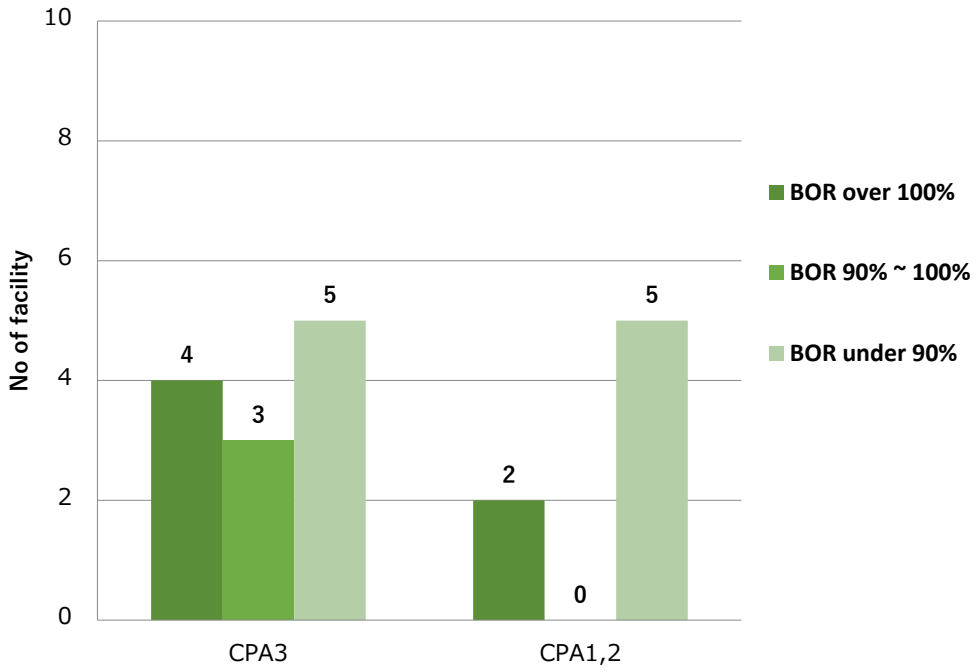
Source： answers of questionnaires

Fig. 3- 30 Needs of reconstruction/renovation



Source： answers of questionnaires

Fig. 3- 31 Construction space



Source： answers of questionnaires

Fig. 3- 32 Bed occupancy rate (BOR)

① Demand for rebuilding/renovation (Fig. 3-30)

Originally, it was difficult to judge whether rebuilding was necessary without having an architectural engineer physically survey the site. For this survey, local consultants visited each PRH, and collected responses to the same questionnaire. The 2015 survey mailed out questionnaires to CPA3 hospitals in 17 provinces nationwide, and summarized the responses. Based on these responses, the demand for rebuilding/renovation in buildings was predicted based on total floor area with rebuilding/renovation requests. An area of the buildings with a rebuilding request exceeding 2,000 m^2 were marked “a”, an area of the buildings with a rebuilding request less than 2,000 m^2 were marked “b”, and buildings with no rebuilding request were marked “c”. The building scale of 2,000 m^2 was forecast based on effectiveness of funding and implementation.

② Presence/absence of space for the construction of new buildings (Fig. 3-31)

In most cases, hospital construction plans require construction on the site of an existing operating hospital. Without ample space for construction on the site, the existing building must be demolished, which creates difficulty in securing continuing hospital function. Though it is better for an architectural engineer to judge through an on-site survey whether there is enough space is present for construction, for this survey, site plans and satellite photos of each hospital were checked, and cases where there appeared to be ample space for construction were marked “a”, while cases in which there was not enough

space were marked “c”. Cases where space could not be determined based on satellite photos and an on-site survey will be necessary were marked “b”.

③ Number of beds and bed occupancy rate (Fig. 3-32)

The number of beds and bed occupancy rate at hospitals in 19 provinces were compared in order to compare the level of crowdedness. Hospitals whose bed occupancy rate exceeded 100% dealt with the situation by stationing beds in areas other than ward rooms, meaning a shortage of hospital rooms. Hospitals with a bed occupancy rate of 90%-100% are usually full to capacity, and hospitals with a rate of less than 90% have room to spare. Hospitals whose bed occupancy rate exceeds 100% were marked “a”, hospitals between 90% and 100 % were marked “b”, and those with less than 90% were marked ”c”.

The judgement criteria based on the results of ①, ② and ③ above is shown in Table 3-32. Results of the investigation into each PRH are shown in Table 3-33.

Hospitals whose overall need for rebuilding was judged A, B, C or D are expected facility improvement with Japanese grant aid, but it is thought that hospitals marked A or B for high appropriateness and effectiveness should receive priority. However, these results are based on hearing survey results, and hospitals targeted for cooperation should be selected after on-site visits by architectural engineers to judge the necessity of rebuilding and the sufficiency of construction space, as well as review of site accessibility (road status, etc.) and the details of procurement circumstances.

Table 3- 32 Judgement criteria for necessity of rebuilding or renovation

①Needs of Reconstruction/ Renovation	②Availability of Construction Space within the Site	③Bed Occupancy Rate (BOR)		
		a (over 100%)	b (90%～100%)	c (under 90%)
a (2,000 m^2 or more)	a（enough space）	A	A	B
	b（need site visit and check）	A	B	C
	c（not enough space）	B	C	C
b (less than 2,000 m^2)	a（enough space）	A	B	C
	b（need site visit and check）	B	C	C
	c（not enough space）	C	C	D
c （No need）	a（enough space）	B	C	C
	b（need site visit and check）	C	C	D
	c（not enough space）	C	D	D

Overall Score: Possibility of receiving cooperation from Japanese grant aid
A: Grant aid highly relevant/effective
B: Grant aid fairly relevant/effective
C: Grant aid not very relevant/effective
D: Grant aid not relevant/effective

Source: Survey Team

Table 3- 33 Possibility of grant aid in 19 PRHs

	PRH Name	CPA Level	Outline of Facilities	Needs of Reconst-ruction / Renovation	Construction Space Availability	BOR	Overall Judgement
1	Kampong Chhnang*	3	OT, wards, radiation, pharmaceutical storage, outpatient, dentistry and blood bank buildings date from 1950, and there is a request for rebuilding. Emergency ward, general medicine ward were built with South Korean aid (2009). Rebuilding crowded OB-GYN ward and pediatrics ward is awaiting approval of Ministry of Finance. Rebuilding outpatient ward is necessary, but relocation of each department while construction should be considered.	A	a	b	A
2	Kampong Speu	3	Building in the center of the site (accounting, pharmacy, ENT, dentistry) were built in 1956, and there is a request for rebuilding. General medicine, tuberculosis, ophthalmology, mental health, and examination buildings were rebuilt by the ADB (2000). Others are under request for renovation.	b	a	c	C
3	Kampong Thom	3	Satellite-type buildings stand adjacent to one another within the site, and there is little open space. Each building was renovated in 2002, but there is a request to rebuild a portion of the buildings.	a	b	b	B
4	Kampot	3	Request to rebuild a facility constructed in 1979.	b	a	c	C
5	Kandal	3	Request to renovate/rebuild all buildings, including surgery, OB/GYN and ophthalmology wards renovated in 2013.	b	a	c	C
6	Kep	1	Small scale CPA1, no construction space.	b	c	c	D
7	Koh Khong	2	Medium scale CPA2 hospital. No request.	c	b	c	D
8	Kratie	3	Request to renovate general medicine ward (1996), OB/GYN ward, pediatrics ward (1996), tuberculosis ward (1998), surgery ward (2000), ICU ward (1996), ophthalmology ward (2002), emergency ward (2009), etc.	b	c	c	D
9	Mondul Kiri	2	CPA2, and each ward was built in 1979, so facilities continue to age, and rebuilding is necessary.	b	c	a	C
10	Oddar Meanchey	2	Medium scale CPA2 hospital. Request to rebuild a portion of the facilities.	b	c	a	C
11	Pailin	2	Medium scale CPA2 hospital. Request to rebuild facilities, including those constructed in 1979.	a	c	c	C
12	Preah Vihear	3	Medium scale CPA3 hospital. Facilities are relatively new, but there is a request to rebuild/renovate.	a	a	a	A
13	Prey Veng*	3	Many facilities were built under French colony and are aging. There is a request for rebuilding, but the site is small and no space for rebuilding.	b	c	b	C
14	Pursat	3	The construction date of the satellite type buildings is unclear, but there are requests for rebuilding or renovation.	b	c	c	D
15	Rattanak Kiri	2	Medium scale CPA2 hospital. Facilities are relatively new, but there is a request to rebuild/renovate.	a	a	c	B
16	Siem Reap*	3	Requests to rebuild/renovate OT, emergency, radiation, outpatient, chronic disease, administrative, and mortuary buildings. Master plan of rebuilding/renovation is developed. Construction space is small but the space is considered.	a	b	a	A
17	Stung Treng	3	Request to rebuild administrative building (1986), pharmacy, and tuberculosis wards, and renovate all the others. Site is small.	a	b	a	A
18	Takeo*	3	Request to rebuild the laboratory (1936) and request to rebuild OB/GYN, surgery ward, general medicine ward and outpatient buildings, and Master plan of rebuilding is developed. The site is small and it takes years to rebuild.	a	c	a	B
19	Tbong Khmum	1	The hospital buildings were built in 2006, and there is no request for renovation or rebuilding.	c	c	c	D

* visited during the 3rd field survey

Source: Survey Team

An overview of facilities outlines based on hearing results at PRHs in 19 provinces are shown below. (Table 3-34 to 38)

Table 3- 34 Result of hearing from Provincial Referral Hospitals in 19 provinces (1/5)

Province	Name of RH	CPA Level	No. of Beds	BOR	Departments	Traning Unit	Site Area (m2)	Space for New Bldg.	Bldg Function	Story	Floor Area (m2)	Year Const-ructed	Year Reno-vated	Needs of Reconst-ruction/ Renovation	Total Floor Area (m2)	Floor Area which needs Reconstruction / Renovation	Requested area for renovation (%)
Kampong Chhnang	Kg. Chhnang provincial referral hospital	CPA3	162	93.5%	OPD ER LAB PHM BLB ANE SG GM OB GY PD NCU ENT EYE DEN NEU CAR ORT URO TB HAN PSY DIA OTH	Yes	17,000	Yes	Treatment	2	2100	1964	1995	Yes	5,126	5,126	100.0%
									Surgery	2	2150	1964	1995	Yes			
									Consultation	1	120	1964	1998	Yes			
									TB	1	300	1967	1995	Yes			
									Pediatrics	1	360	1984	1999	Yes			
									Gynecology	1	96	1998	2005	Yes			
Kampong Speu	Kg. Speu provincial referral hospital	CPA3	130	75.8%	OPD ER LAB PHM BLB ANE SG GM OB GY PD NCU ENT EYE DEN NEU CAR ORT URO TB HAN PSY DIA OTH	Yes	8,482,768 ※※	Yes	OPD	1	284	2000	2011	No	1,867	1,256	67.3%
									Surgery	1	284	2000	2011	Yes			
									Training Unit	1	240	2000	2014	Yes			
									OB/GY	1	132	2000	2015	No			
									General Medicine	1	432	2000	2014	Yes			
									TB	1	300	2000	2014	Yes			
									Laboratory	1	195	2000	2013	No			
Kampong Thom	Kg. Thom provincial hospital	CPA3	120	96.5%	OPD ER LAB PHM BLB ANE SG GM OB GY PD NCU ENT EYE DEN NEU CAR ORT URO TB HAN PSY DIA OTH	Yes		No	Psychiatry	1	180	1979	2012	Yes	4,580	2,541	55.5%
									Pharmacy	1	230	2011	2012	No			
									Emergency	1	236	2002	–	No			
									Pediatrics	2	380	1997	–	No			
									Eye	1	376	2000	–	Yes			
									Surgery	1	446	2001	–	Yes			
									Operation Theater	1	248	2000	–	Yes			
									Former Surgery	1	224	2001	–	No			
									OB/GY	1	338	2002	–	Yes			
									Laboratory	1	112	2008	–	No			
									Lung Treatment	1	644	1995	–	No			
									Kitchen	1	40	–	–	Yes			
									Parking	1	56	–	–	Yes			
									Garage	1	90	2001	–	No			
									Workshop	1	48	2000	–	No			
									Unknown	1	356	–	–	Yes			
									General Medicine	1	317	2011	–	Yes			
									Unknown	1	60	–	–	Yes			
									Garage	1	52	–	–	Yes			
									Generator	1	75	2012	–	No			
									Workshop	1	72	–	–	Yes			
Kampot	Kampot provincial referral hospital	CPA3	155	85.1%	OPD ER LAB PHM BLB ANE SG GM OB GY PD NCU ENT EYE DEN NEU CAR ORT URO TB HAN PSY DIA OTH	Yes	43,518	Yes	General Medicine	1	210	1979	1900	Yes	2,105	338	16.1%
									Abortion	1	48	2014	2014	No			
									Triage	1	128	1900	1900	Yes			
									Pediatrics	1	–	1900	1900	Yes			
									Emergency	1	1719	2011	2011	No			
									Surgery	1	–	1979	1900	Yes			

Source : answers of questionnaires

Table 3- 35 Result of hearing from Provincial Referral Hospitals in 19 provinces (2/5)

Province	Name of RH	CPA Level	No. of Beds	BOR	Departments	Traning Unit	Site Area (m2)	Space for New Bldg.	Bldg Function	Story	Floor Area (m2)	Year Const-ructed	Year Reno-vated	Needs of Reconst-ruction/ Renovation	Total Floor Area (m2)	Floor Area which needs Reconstruction / Renovation	Requested area for renovation (%)
Kandal	Chey Chumneas Referral Hospital	CPA3	120	86.4%	OPD ER LAB PHM BLB ANE SG GM OB GY PD NCU ENT EYE DEN NEU CAR ORT URO TB HAN PSY DIA OTH	Yes	98,627	Yes	Surgery	1	307	1979	2005	Yes	1,818	1,818	100.0%
									Administration	1	125	1979	2005	Yes			
									General Medicine	1	423	1979	2002	Yes			
									Pediatrics	1	447	1979	2002	Yes			
									Emergency	1	266	1979	2005	Yes			
									Gynecology	1	250	1979	2005	Yes			
Kep	Kep provincial referral hospital	CPA1	18	76.0%	OPD ER LAB PHM BLB ANE SG GM OB GY PD NCU ENT EYE DEN NEU CAR ORT URO TB HAN PSY DIA OTH	-	5,822	No	Laboratory	1	218	1999	1999	Yes	882	882	100.0%
									Obstetrics	1	229	1999	1999	Yes			
									GM, Pediatrics	1	291	1999	1999	Yes			
									Administration	1	144	1999	1999	Yes			
KohKong	Koh Kong provincial hospital	CPA2	66	73.2%	OPD ER LAB PHM BLB ANE SG GM OB GY PD NCU ENT EYE DEN NEU CAR ORT URO TB HAN PSY DIA OTH	-	24,000	No	Surgery	1	242	2009	2009	-	1,772	0	0.0%
									Pediatrics	1	446	2009	2009	-			
									Gynecology	1	361	2009	2009	-			
									Obstetrics	1	282	2009	2009	-			
									Laboratory	1	362	2009	2009	-			
									Blood Bank	1	79	2000	2000	-			
Kracheh	Kratie referral hospital	CPA3	150	81.7%	OPD ER LAB PHM BLB ANE SG GM OB GY PD NCU ENT EYE DEN NEU CAR ORT URO TB HAN PSY DIA OTH	Yes	20,676	No	Pediatrics	3	330	1975	2017	No	4,100	1,570	38.3%
									Surgery	1	600	2000	2016	No			
									Obstetrics	1	300	1998	2016	Yes			
									Obstetrics	1	400	2015	-	No			
									Emergency	1	300	2005	2016	No			
									Laboratory	2	600	2000	2016	No			
									TB	1	270	1997	2016	Yes			
									General Medicine	1	500	1997	2016	Yes			
									Operation Theater	1	500	1997	2016	Yes			
									Eye	1	300	2000	2017	No			
MondulKiri	Mondulkiry provincial referral hospital	CPA2	43	138.8%	OPD ER LAB PHM BLB ANE SG GM OB GY PD NCU ENT EYE DEN NEU CAR ORT URO TB HAN PSY DIA OTH	-	810,865 ※※	No	Surgery	1	307	1979	2002	Yes	1,697	1,697	100.0%
									OPD	1	117	1979	2002	Yes			
									ICU	1	250	1979	2002	Yes			
									Gynecology	1	363	1979	2002	Yes			
									Administration	1	131	1979	2002	Yes			
									General Medicine	1	423	1979	2002	Yes			
									Laboratory	1	106	1979	2002	Yes			

Source : answers of questionnaires

Table 3- 36 Result of hearing from Provincial Referral Hospitals in 19 provinces (3/5)

Province	Name of RH	CPA Level	No. of Beds	BOR	Departments	Traning Unit	Site Area (m2)	Space for New Bldg.	Bldg Function	Story	Floor Area (m2)	Year Const-ructed	Year Reno-vated	Needs of Reconst-ruction/ Renovation	Total Floor Area (m2)	Floor Area which needs Reconstruction / Renovation	Requested area for renovation (%)
Otdar Meanchey	Banteay Meanchey provincial referral hospital	CPA2	84	139.6%	OPD ER LAB PHM BLB ANE SG GM OB GY PD NCU ENT EYE DEN NEU CAR ORT URO TB HAN PSY DIA OTH	-	19,704	No	Infectious	1	330	2000	-	No	3,362	668	19.9%
									Pediatrics	1	250	2000	-	No			
									Laboratory	1	92	2000	-	No			
										1	230	2000	-	No			
									OB/GY	1	238	2013	-	No			
									OB/GY	1	232	2015	-	No			
									OD Pharmacy	1	195	2005	-	Yes			
									Consultation	1	562	1963	2003	No			
									Diabetes	1	116	2012	-	No			
									OPD	1	220	-	-	No			
									General Medicine	1	473	2000	-	Yes			
									Storage	1	252	-	-	No			
									Generator	1	80	-	-	No			
									Kitchen	1	64	-	-	No			
									Mortuary	1	28	-	-	No			
Pailin	Pailin provincial referral hospital	CPA2	60	82.3%	OPD ER LAB PHM BLB ANE SG GM OB GY PD NCU ENT EYE DEN NEU CAR ORT URO TB HAN PSY DIA OTH	-	11,688	No	Surgery	2	1144	2008	-	Yes	4,040	4,040	100.0%
									Administration	1	752	1997	-	Yes			
									Laboratory	1	162	2010	-	Yes			
									Emergency	1	282	1979	-	Yes			
									OPD	1	1172	2001	-	Yes			
									Pediatrics	1	400	1993	-	Yes			
									General Medicine	1	128	2001	-	Yes			
Preah Vihear	16 Makara referral hospital	CPA3	94	146.9%	OPD ER LAB PHM BLB ANE SG GM OB GY PD NCU ENT EYE DEN NEU CAR ORT URO TB HAN PSY DIA OTH	No	60,468	Yes	Pediatrics	1	160	2010	2010	Yes	6,459	6,459	100.0%
									Patient Waiting	1	135	2008	2008	Yes			
									Emergency	1	240	2010	2010	Yes			
									Unknown	1	4922	2010	2010	Yes			
									HEF	1	42	1998	1998	Yes			
									Obstetrics	1	228	2001	2001	Yes			
									Minor Operation	1	490	2002	2002	Yes			
									VCCT	1	198	2002	2002	Yes			
									OD Pharmacy	1	44	2002	2002	Yes			
PreyVeng	Prey Veng provincial hospital	CPA3	104	99.0%	OPD ER LAB PHM BLB ANE SG GM OB GY PD NCU ENT EYE DEN NEU CAR ORT URO TB HAN PSY DIA OTH	Yes	13,316	No	OPD	1	300	1979	2000	Yes	1,400	1,400	100.0%
									ICU	1	250	1979	2000	Yes			
									OB/GY	1	300	1979	2000	Yes			
									Laboratory	1	250	1979	2001	Yes			
									Pediatrics	1	300	1979	2002	Yes			
Pursat	Pothisath provincial referral hospital	CPA3	202	63.0%	OPD ER LAB PHM BLB ANE SG GM OB GY PD NCU ENT EYE DEN NEU CAR ORT URO TB HAN PSY DIA OTH	Yes	34,382	No	General Medicine	2	220	2012	2012	No	1,513	1,293	85.5%
									Surgery	1	770	2011	2013	Yes			
									ICU	1	105	2007	2016	Yes			
									Orthopedics	1	418	1979	2001	Yes			

Source : answers of questionnaires

Table 3- 37 Result of hearing from Provincial Referral Hospitals in 19 provinces (4/5)

Province	Name of RH	CPA Level	No. of Beds	BOR	Departments	Traning Unit	Site Area (m2)	Space for New Bldg.	Bldg Function	Story	Floor Area (m2)	Year Const-ructed	Year Reno-vated	Needs of Reconst-ruction/ Renovation	Total Floor Area (m2)	Floor Area which needs Reconstruction / Renovation	Requested area for renovation (%)
RatanakKiri	Rattanakiry provincial referral hospital	CPA2	88	63.0%	OPD ER LAB PHM BLB ANE SG GM OB GY PD NCU ENT EYE DEN NEU CAR ORT URO TB HAN PSY DIA OTH	-	46,304	Yes	TB	1	301	1987	2000	Yes	2,010	2,010	100.0%
									Gynecology	1	265	1987	2001	Yes			
									Pediatrics	1	306	1987	2001	Yes			
									General Medicine	1	344	1987	2001	Yes			
									Surgery	1	344	1987	2001	Yes			
									OPD	2	450	1987	2001	Yes			
SiemReap	Siem Reap provincial referral hospital	CPA3	300	111.9%	OPD ER LAB PHM BLB ANE SG GM OB GY PD NCU ENT EYE DEN NEU CAR ORT URO TB HAN PSY DIA OTH	Yes	38,623	No	General Medicine	1	-	-	2013	Yes	6,679	1,896	28.4%
									General Medicine	1	-	2007	-	Yes			
									General Medicine	1	-	-	-	Yes			
									ICU	1	-	-	2013	Yes			
									Abdomen	1	291	-		Yes			
									Orthopedics	2	354	-	2014	Yes			
									Urology	1	389	-	-	Yes			
									Eye	3	477	2011	-	No			
									Dental	1	-	-	-	No			
									Administration	1	300	-	2016	Yes			
									ENT	1	270	-	2010	No			
									OB/GY	3	3520	2012	-	No			
									Dialysis	1	562	-	2013	Yes			
									Blood Bank	1	375	2014	-	No			
									Laboratory	2	141	2013	-	No			
StungTreng	Steung Treng provincial referral hospital	CPA3	90	124.5%	OPD ER LAB PHM BLB ANE SG GM OB GY PD NCU ENT EYE DEN NEU CAR ORT URO TB HAN PSY DIA OTH	No	13,602	No	OPD	2	126	1979	2009	Yes	2,619	2,619	100.0%
									ER, OB/GY, ICU	1	1595	1979	2008	Yes			
									HIV	1	228	1979	2007	Yes			
									General Medicine	1	552	1979	2007	Yes			
									Pediatrics	1	118	1979	2007	Yes			
Takeo	Takeo provincial referral hospital	CPA3	250	104.7%	OPD ER LAB PHM BLB ANE SG GM OB GY PD NCU ENT EYE DEN NEU CAR ORT URO TB HAN PSY DIA OTH	Yes	13,414	No	HIV	2	268	2008	2008	No	2,407	696	28.9%
									OB/GY	2	814	2008	2008	No			
									Surgery	1	425	1900	2015	Yes			
									Chronic Disease	2	166	2004	2004	No			
									Administration	2	147	1936	1936	Yes			
									Imagery	2	124	1979	1979	Yes			
									Pediatrics	2	463	2007	2007	No			

Source : answers of questionnaires

Table 3- 38 Result of hearing from Provincial Referral Hospitals in 19 provinces (5/5)

Province	Name of RH	CPA Level	No. of Beds	BOR	Departments	Traning Unit	Site Area (m2)	Space for New Bldg.	Bldg Function	Story	Floor Area (m2)	Year Const-ructed	Year Reno-vated	Needs of Reconst-ruction/ Renovation	Total Floor Area (m2)	Floor Area which needs Reconstruction / Renovation	Requested area for renovation (%)
Thboung Khmum	PonNhea Krek referral hospital	CPA1	80	47.2%	OPD ER LAB PHM BLB ANE SG GM OB GY PD NCU ENT EYE DEN NEU CAR ORT URO TB HAN PSY DIA OTH	No	15,600	No	OB/GY	1	271	2006	2017	No	3,073	0	0.0%
									Imagery, Lab	1	294	2006	2017	No			
									Pediatrics	1	432	2006	2017	No			
									General Medicine	1	408	2006	2017	No			
									Gynecology	1	350	2006	2017	No			
									Administration	1	312	2006	2017	No			
									Mortuary	1	29	2006	2017	No			
									Kitchen	1	72	2006	2017	No			
									OD Pharmacy	1	119	2006	2017	No			
									OPD	1	114	2006	2017	No			
									Garage, Generator	1	96	2006	2017	No			
									Administration	1	224	2006	2017	No			
									TB	1	165	2006	2017	No			
									Laundry	1	187	2006	2017	No			
									Administration	2	-	2006	2017	No			

Source： answers of questionnaires

※Departments…OPD: Outpatient, ER: Emergency, LAB: Laboratory, PHM: Pharmacy, BLB: Blood Bank, ANE: Anesthesia
SG: Surgery, GM: General Medicine, OB: Obstetrics, GY: Gynecology, PD: Pediatrics, NCU: NICU
ENT: Ear, Nose & Throat, EYE: Eye, DEN: Dental, NEU: Neurology, CAR: Cardiology, ORT: Orthopedics
URO: Urology, TB: Tuberculosis, HAN: Hansen, PSY: Psychology, DIA: Diabetes, OTH: Others (HIV/AIDS, etc.)
※Hospital has shaded departments.

※※Site Area…Site area obtained by questionnaire in Kampong Speu and Mondulkiri is too big compared to the satellite picture, therefore, the answer is deemed to be wrong.

3-4 Medical equipment

3-4-1 MOH's policies on medical equipment

The Health Strategic Plan 2008-2015 (HSP2), a national policy that guides the MOH concerning medical equipment, aimed to "increase investment in high-tech medical equipment and health care facilities." Accordingly, the MOH has been expanding/upgrading public health facilities throughout the country and providing medical equipment to one facility after another. The HSP2016-2020 envisions further development and improvement of health infrastructure and plans to continue expanding and renovating underdeveloped referral hospitals and health centers. These activities will be implemented basically in accordance with MPA and CPA Guidelines. The Department of Hospital Services (DHS) is directly in charge of this sector, undertaking a range of supervisory and guiding responsibilities from the establishment of strategies and rules for the management of medical equipment to the administration of health facilities in Cambodia and the monitoring of their operational statuses.

3-4-2 MOH's current status concerning medical equipment maintenance

Prior to the establishment of the strategies and policy direction for HSP2008-2015, the MOH had begun making focused efforts to enhance management and maintenance of medical equipment, and made an official request for technical cooperation to the Government of Japan. In response to the request, JICA implemented the Project on Promotion of Medical Equipment Management System from 2006 to 2008, under which, a system for managing medical equipment (hereinafter, "ME Management System") was established in 18 PRHs (CPA3) and 4 national hospitals. In each of these hospitals, capacity development of and collaboration between the engineering department and the administrative department were carried out, and a medical equipment management working group (hereinafter, "ME Working Group") comprised of engineers in charge of on-site equipment maintenance and administrative staff responsible for checking/compiling maintenance records and procurement of spare parts and expendables, etc. was organized. The project succeeded in building a structure to enable DHS to constantly monitor the operational and use statuses of medical equipment in the above-mentioned 22 hospitals through the activities of the ME Working Groups and, when necessary, arrange equipment repair or renewal systematically. Based on this outcome, the MOH announced its intention to continue upgrading and entrenching the system to further improve the equipment condition and utilization rate, ensure the provision of reliable medical services, and expand the project scope to include CPA2 hospitals, and requested additional assistance from Japan. In response to the request, JICA implemented the Project for Strengthening of Medical Equipment Management in Referral Hospitals (hereinafter, "MEDEM Project") over a five-year period from 2009 to 2014. As a result of this project, the target has been expended to 50 facilities, each of which adopted the ME Management System and has since been managing their respective equipment under the system. However, the DHS continues to face the same personnel shortage issue that has been plaguing the

department. During the MEDEM Project, a National Workshop Team (in charge of planning and providing OJT and other training programs for ME department engineers of National Maternal and Child Health Center) was formed and began conducting monitoring and follow-up activities of the target hospitals periodically at least twice a year. However, these activities are now being carried out in a minimal scale by two staff members of the DHS instead of the National Workshop Team due to budgetary constraint. The two persons are continuing to manage the "ME management reports," which are required to be submitted once every half year, but their questionable accuracy and quality are causes for concern.

3-4-3 Battambang province

(1) Battambang Provincial Referral Hospital (CPA3)

Battambang province is experiencing rapid economic growth in recent years and has the third largest population (approx. 1.17 million) in Cambodia following Phnom Penh and Prey Veng. As the center of health care and medical services for these people, Battambang PRH equipped with 270 beds has recently begun increasing investment in infrastructure development and medical equipment upgrade. The Outpatient Building was newly constructed, in which the ophthalmology, otolaryngology, and dentistry departments, as well as ultrasound, ECG and CT scan rooms, were established in addition to such general clinical departments as general medical care, surgery, pediatrics, and Ob-Gyn.

Photo 3- 1

OPD building which was constructed recently at the Battambang PRH

Photo 3- 2

CT Scanner (GE) which was installed in 2015

In addition, following the preliminary study for a grant aid project, which was conducted from March 2016 to this year, a renovation project is scheduled for commencement in around December 2017, through which new medical equipment will also be procured.

As this hospital was a part of the MEDEM Project, its medical equipment has been continually managed by the ME Working Group under the ME Management System. During the implementation period of the JICA project, this hospital received an extremely low rating for the capacity of the ME Working Group especially for the members in charge of maintaining the actual medical equipment (hereinafter, "ME technicians"), as they were not maintaining the equipment properly. However, the ME technicians, who were working during that period, retired in 2016 and were replaced by three young technicians. It has been reported that the quality of their maintenance work and the accuracy of the ME inventory list have improved since then.

In addition, a non-profit organization named Engineering World Health (EWH) started a Biomedical Engineer Technician (BMET) training program in partnership with the GE Foundation, a philanthropic organization of the US medical equipment manufacturer. Since around April 2014, Cambodia has been receiving assistance from EWH for capacity development and conducting training for technicians and engineers in charge of maintaining medical equipment. The above-mentioned young ME technicians have received the BMET training by EWH and are said to have acquired basic knowledge of medical equipment.

Biannual medical equipment inspections and record keeping have been performed continuously and ME management reports prepared as required under the ME Management System adopted through the MEDEM Project. The most recent report for the second half of 2016 was submitted to the MOH in December 2016. From the database of the ME inventory list comprising the ME management report, we extracted data concerning the conditions and usage statuses of all the medical equipment units installed in the hospital and summarized the results in Table 3- 39 below. According to the data, 145 of the 256 units, or 56% of total, are working properly at Battambang PRH.

Table 3- 39 Equipment and utilizing conditions of ME in Battambang PRH

Equipment condition					Utilizing condition				
Good (A)	Fair (B)	Bad (C)	Unknown (D)	Total	Frequently(a)	Occasionally(b)	Not used (c)	Unknown (d)	Total
145	91	10	256	256	188	42	16	10	256
56%	36%	4%	100%	100%	73%	17%	6%	4%	100%

Source：The ME Management Report submitted in December 2016 to MOH

Under the ME Management System, medical equipment conditions are classified and defined as follows;

1) Equipment condition

Medical equipment is checked if it operates properly and performs its intended function and evaluated according to the following classifications:

A) Good (operates normally)
B) Fair (good for general use although there are some defect or other problems)
C) Bad (out of service)
D) Unknown

2) Utilizing condition

How often each equipment unit is used is rated according to the following classifications.

a) Frequently (used daily)
b) Occasionally (used on an as-needed basis)
c) Not used
d) Unknown (equipment in question is not found)

Note: Conditions and usage statuses of medical equipment units hereinafter are evaluated according to the above classifications.

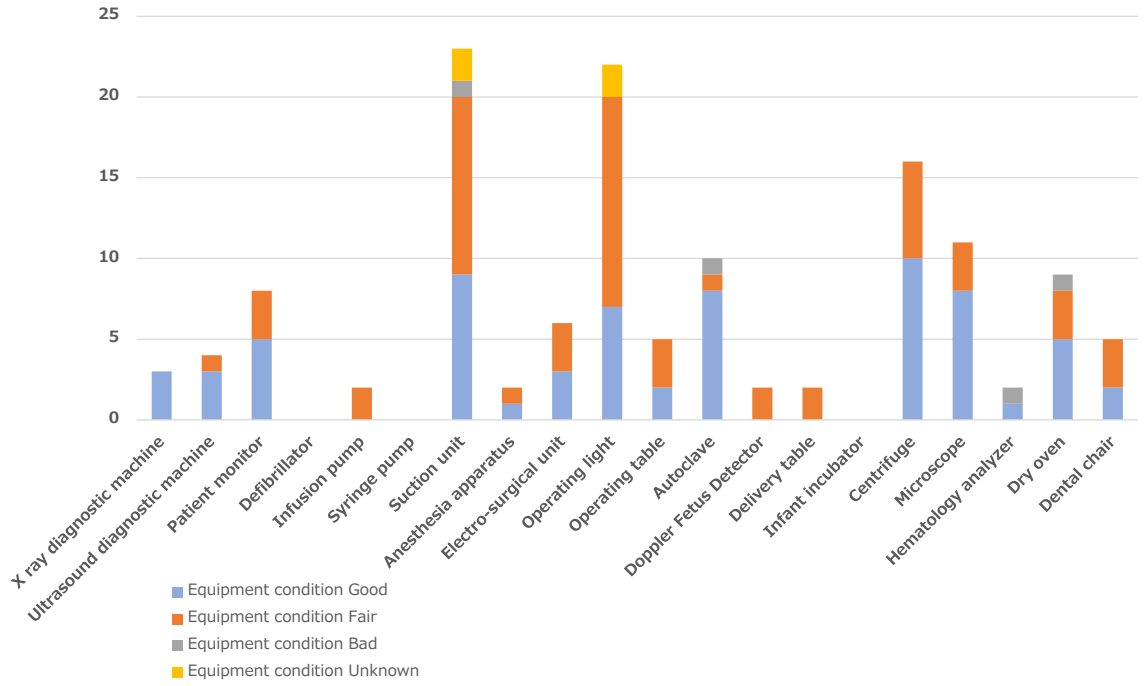
Conditions and usage statuses of 20 main medical equipment items

Under the ME Management System, 10 items are designated as critical items that especially require preventative and periodic inspections. Based on the CPA Guidelines, we selected additional 10 items that are essential for hospitals in providing medical services and are susceptible to breakage without proper handling and periodic maintenance, and made a list of 20 key items (Table 3- 40). In this survey, we also surveyed lower-level CPA2 and CPA1 hospitals, which have yet to adopt the ME Management System.

Table 3- 40 20 main medical equipment selected for the survey (Hospital)

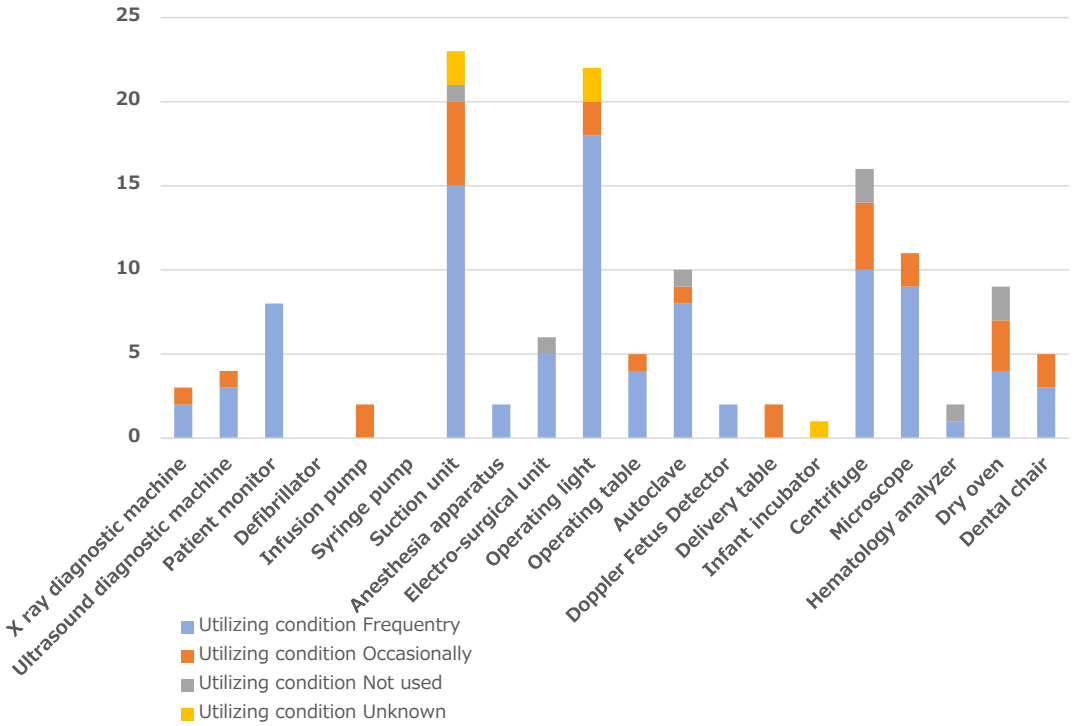
No.	Equipment Name
1	X ray diagnostic machine
2	Ultrasound diagnostic machine
3	Patient monitor
4	Defibrillator
5	Infusion pump
6	Syringe pump
7	Suction unit
8	Anesthesia apparatus
9	Electro-surgical unit
10	Operating light
11	Operating table
12	Autoclave
13	Doppler fetus detector
14	Delivery table
15	Infant incubator
16	Centrifuge
17	Microscope
18	Hematology analyzer
19	Dry oven
20	Dental chair

Source : survey team



Source : answers of questionnaires

Fig. 3- 33 Equipment condition of 20 main ME in Battambang PRH



Source : answers of questionnaires

Fig. 3- 34 Utilizing condition of 20 main ME in Battambang PRH

Figs. 3- 33 and 3- 34 point out the absence of defibrillator, which is a serious problem for a provincial referral hospital. Defibrillator should be procured as soon as possible, as it is an essential item for the operating room, ICU, and emergency room in treating heart-attack patients and removing fibrillation. Infusion pumps and syringe pumps that are needed for medical fluid management of patients are also lacking.

(2) Referral hospitals in Battambang province (CPA1・CPA2)

Table 3- 41 is a list of referral hospitals in Battambang province covered by this survey.

Table 3- 41 Referral Hospitals (CPA1・CPA2) in Battambang province

No.	OD	Name of Hospital	CPA level
1	Moung Russei	Moung Russei RH	CPA2
2	Sampov Loun	Sampov Loun RH	CPA2
3	Thma Koul	Thma Koul RH	CPA1

Source : survey team

Of the hospitals listed in Table 3- 41, Moung Russei RH and Sampov Loun RH have been preparing ME management reports, as they are part of the ME Management System. Described below are problems and challenges in equipment operation in these hospitals, which were directly confirmed by the survey team during the site visit.

① Moung Russei RH

This hospital handles large numbers of outpatients and inpatients coming from Battambang province and Pursat province, as it is located halfway between the two provinces. The hospital currently has 64 beds, which are chronically insufficient with the bed occupancy rate constantly exceeding 100%. The Director of PHD is desiring to upgrade the hospital from the current CPA2 to CPA3 because of its location and importance.

Equipment-related problems currently faced by this hospital are as follows.

The X-ray machine is of a portable type attached with a separate Bucky table. Films are developed manually, as the existing automatic film processor is broken. There are two autoclaves in the sterilization room; one is made in Taiwan and the other in China. The Chinese autoclave consumes a lot of electricity, often exceeding the present capacity of the indoor wiring, causing frequent circuit breaker tripping. The power cables are too thin and need to be replaced. One of the two ultrasound diagnostic machine is an old portable model made by Fukuda Denshi. It is severely deteriorated due to aging, and the control panel is very hard to use because of the curled up (peeled off) plastic cover. The refrigerator for storing blood

samples in the clinical laboratory breaks frequently due to overuse, and the lab staff are requesting new refrigerators.

Photo 3- 3

The portable type ultrasound diagnostic machine (FUKUDA) has been utilized for more than 15 years.

Photo 3- 4

The autoclave (China made) cannot be used in this room because the capacity of the power consumption is not enough.

The ME Management System has been adopted by this hospital, and equipment maintenance is handled by two members of the ME Working Group (Deputy Director assigned to the administrative department and a technician performing equipment repair and inspection). Based on the above, we were able to confirm that each equipment item is attached with an ID code and inventory control is carried out properly in accordance with the requirements of the ME Management System.

② Sampov Loun RH

As the X-ray machine has been out of service since three years ago, patients requiring X-ray examination are referred to the Military Hospital or Battambang PRH.

Surgeries using the anesthesia apparatus are being performed in the operating room staffed by three surgeons and four anesthesiologists. However, the medical ventilator is broken and unusable. We were told that light sterilizers for disinfecting and sterilizing the entire operating room, as well as the X-ray imaging system for orthopedic surgeries (so-called C-arm), are also lacking and need to be procured as soon as possible.

Despite these problems, we also confirmed some good practices, including the adoption of the water filtration system for softening hard water. This system, which was reportedly donated by a local NGO, is connected to the hospital's main clinical departments and examination rooms, contributing to the accuracy of clinical examinations and proper utilization of the autoclaves. Fulltime staff are assigned to the maintenance of this system, as well as the power generators, medical gases and other items, indicating that these items are properly maintained and inspected on a daily basis.

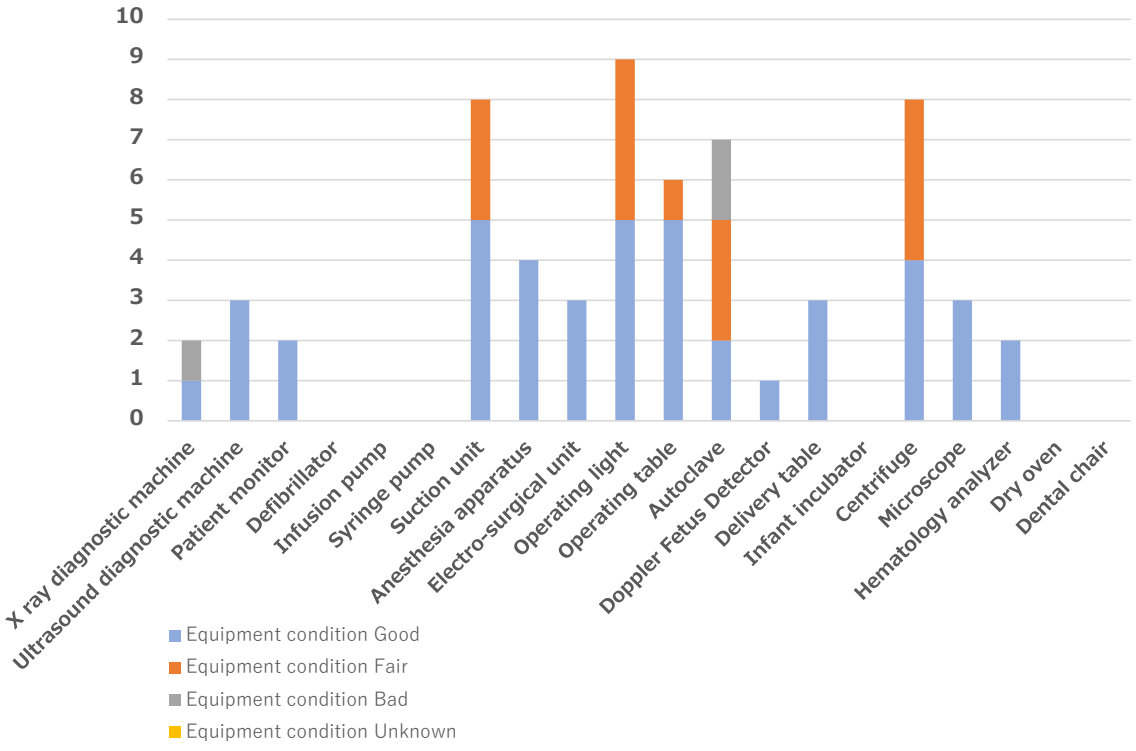
Photo 3- 5

Mobile X-ray machine (French, SAXO) which has been out of order since 3 years ago

Photo 3- 6

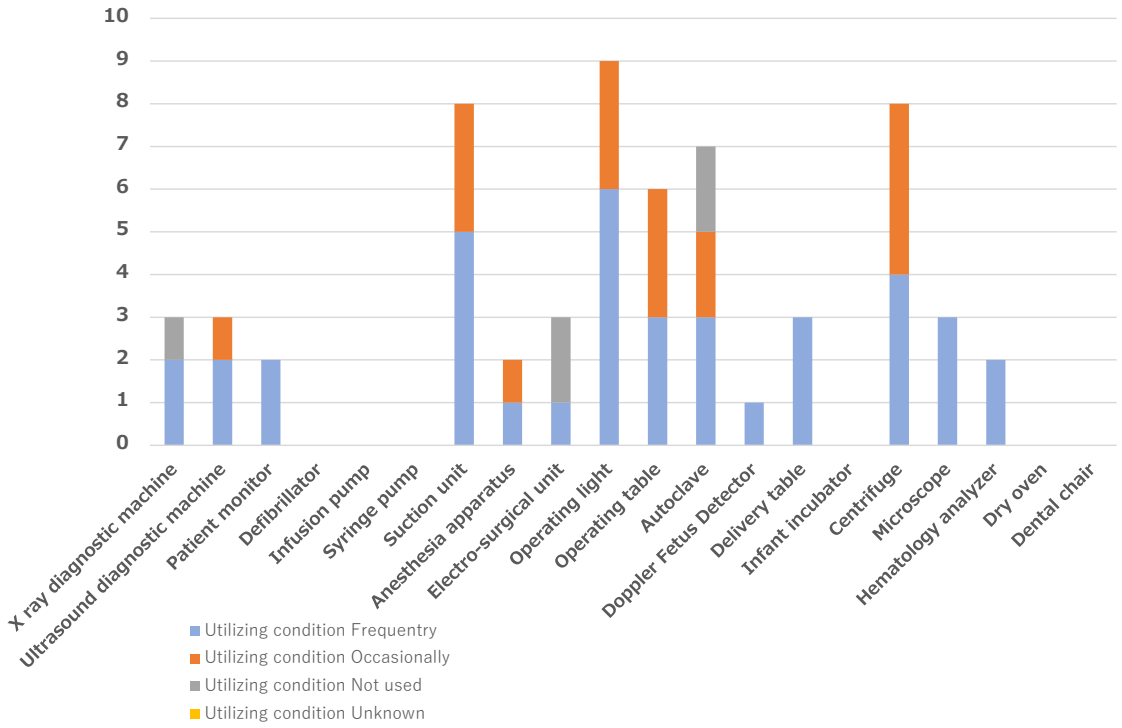
Water softening system (GE) was installed in 2015 by the local NGO.

This hospital has also adopted the ME Management System, and equipment is managed by the ME Working Group comprised of the Deputy Director assigned to the administrative department and one technician in charge of inspection and repair of actual equipment.



Source : answers of questionnaires

Fig. 3- 35 Equipment condition of 20 main ME in 3 RHs in Battambang province



Source : answers of questionnaires

Fig. 3- 36 Utilizing condition of 20 main ME in 3 RHs in Battambang province

Battambang province does not have a sufficient number of hospitals to serve its large population. Compared to Kampong Cham province with six RHs, there are only three RHs in Battambang province. The Director of the Battambang PHD recognizes this as a serious problem and already has a plan to construct a new CPA2 hospital. However, it is still in the process of negotiation with the provincial and state governments, and whether or not the budget will be appropriated for the plan is unknown. Under these circumstances and as indicated by Figs. 3-35 and 3-36, RHs in Battambang province are suffering from a major problem of equipment shortages at present. The absence or lack of defibrillators and infusion/syringe pumps is especially serious, as they are essential for treating emergency and critical cases and proper first aid procedures. The situation calls for an immediate action because without these items, the most important services required of CPA2 cannot be provided.

(3) Health Center

The MPA Guidelines provide a list of medical instruments and devices, with which each HC should be equipped. The list consists of 88 items in total for different clinical departments, from which we selected 14 items (Table 3-42) that can be repaired in case of breakage or damage and require periodic preventative maintenance.

Table 3- 42 14 medical equipment selected for the survey (HC)

No.	Equipment name
1	Otoscope set
2	Weighing scale
3	Sphygmomanometer
4	Height scale
5	Refrigerator
6	Operation light
7	Delivery table
8	Aspirator
9	Infant scale
10	Stretcher
11	Autoclave
12	Gas stove
13	Gas regulator
14	Water filter

Source : survey team

We have compiled the equipment and utilization conditions of the 14 items in 80 HCs of Battambang province according to the classifications of the ME Management System and summarized the results in Figs. 3-37 and 3-38.

Of the 80 target HCs in Battambang province, the Japanese survey team visited 4 HCs to directly observe the actual conditions of the medical facilities and equipment. Overall, all HCs share the common problem of lack or absence of certain medical instruments required under the MPA Guidelines. As for 14 items selected in this survey, as shown in Fig. 3- 37, most HCs are not equipped with any gas stove, gas regulator, or water filter. Many HCs are not properly controlling the temperature of gas refrigerators for storing vaccines and pharmaceuticals. Temperatures indicated by most of the thermometers built in these refrigerators were not within the proper range.

Most HCs are using pressure-cooker-type autoclaves heated by propane gas. Some HCs are installed with electric autoclaves, all of which, however, were broken.

Delivery tables in the delivery room are made of metal without mattress or cushion but covered only by a thin cloth sheet, which seemed extremely uncomfortable and painful for the patients.

Places without commercial power supply are installed with small solar panels, many of which cannot be used for long hours due to limited generation/storage capacities. In addition, many of them are not operating due to deteriorated batteries and/or panels.

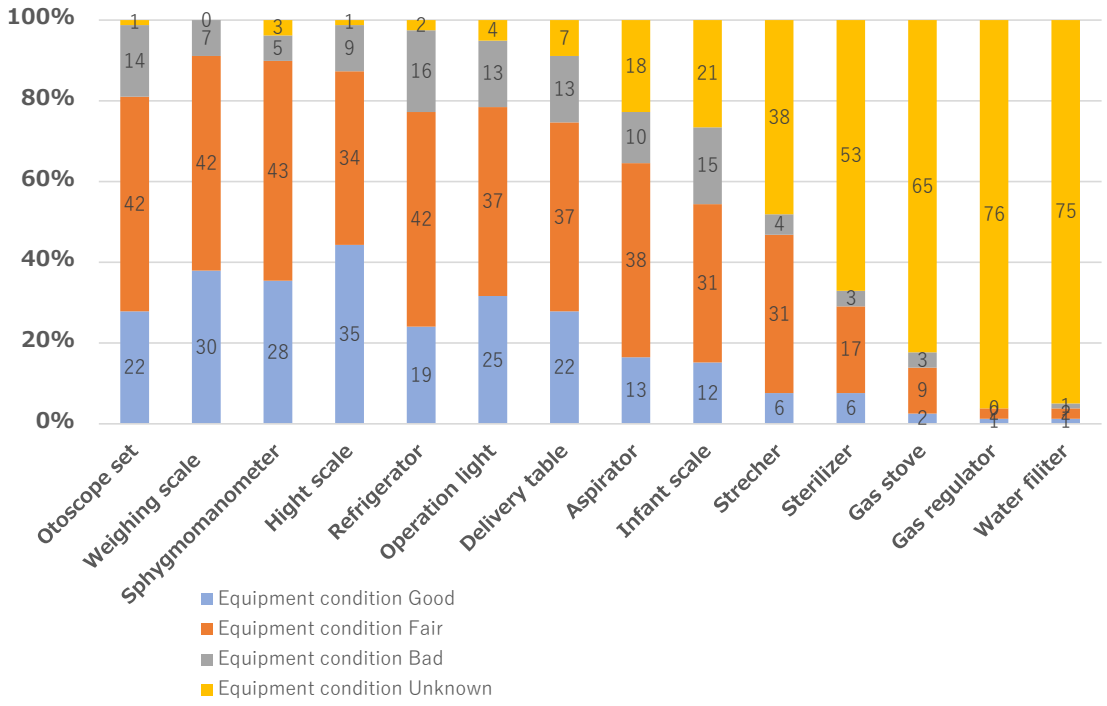
Photo 3- 7

Infant scale installed at the OPD room of Srey Meanchey HC.

Photo 3- 8

The delivery table is not friendly for patient because a part of the bed is made of metal.

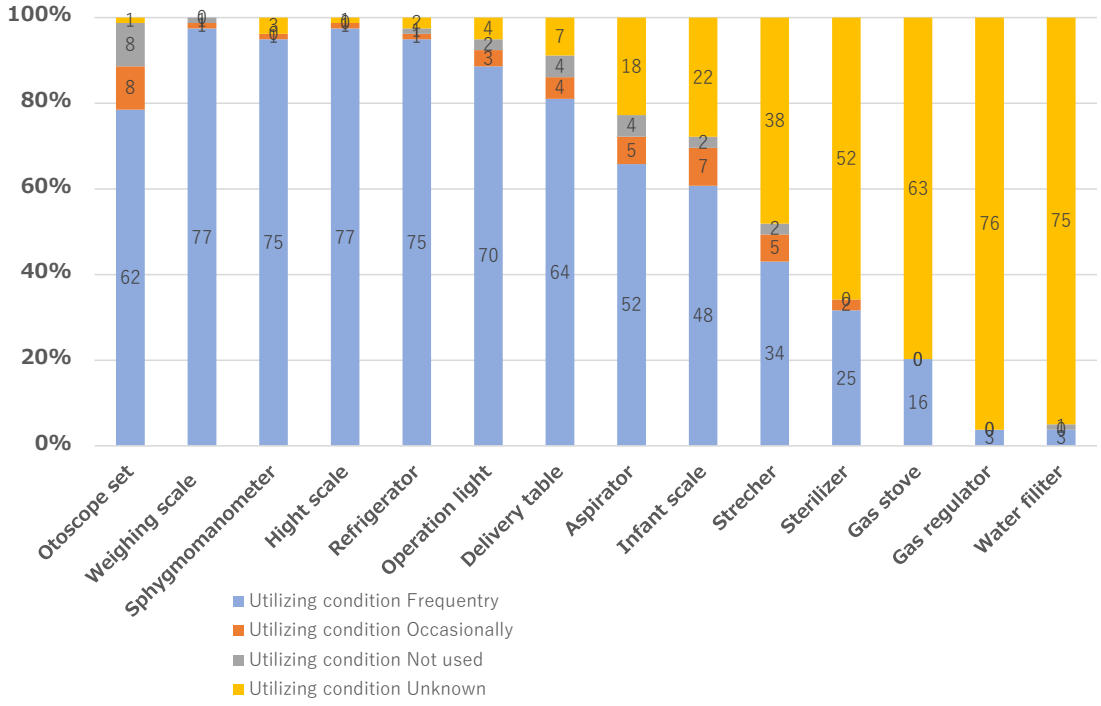
Since equipment control is not properly done, the ratio of equipment in good condition in the HCs is less than 40% (Fig. 3-37), which is quite low. However, since the HCs do not have the kind of budget to renew their equipment, nor are ODs or PHDs actively seeking to overcome the problems and hurdles in procuring equipment and supplies, the HCs have no choice but to continue using their existing equipment regardless of the conditions.



* Number in bar graph shows the number of HCs

Source : answers of questionnaires

Fig. 3- 37 Equipment condition of 14 main ME in 80 HCs in Battambang province



* Number in bar graph shows the number of HCs

Source : answers of questionnaires

Fig. 3- 38 Utilizing condition of 14 main ME in 80 HCs in Battambang province

3-4-4 Kampong Cham province

(1) Kampong Cham Provincial Referral Hospital (CPA3)

This hospital is situated in the central district of Kampong Cham City about 120km northeast of Phnom Penh. Since its opening in 1927, the hospital has been renovated and expanded with assistance from many aid organizations. The Ob-Gyn Ward, including the delivery rooms, Surgical Ward, Surgery Department, Radiology Department, Emergency Department, etc. were constructed and medical equipment was donated by Japan through a two-phase grant aid projects in 2009 and 2010.

The hospital has 260 beds, which are not enough as indicated by the bed occupancy rate exceeding 100%, due to an increasing number of patients, who began coming to the hospital as a result of Japan's assistance.

The hospital is installed with a total of 267 medical equipment units, which is second only to Siem Reap of all the PRHs in Cambodia. Having been a part of the MEDEM Project, this hospital continues to manage its medical equipment under the ME Management System. Its ME Working Group also remains fully functional, conducting periodic inspections, keeping records thereof, and submitting ME management reports in accordance with the provisions of the said system. The hospital is also equipped with a workshop that can provide professional maintenance/inspection/repair services, to which three Australian engineers from EWH, an American NPO, are assigned to provide technical guidance for the ME technicians of the ME Working Group as of the date of survey.

Table 3- 43 Equipment and utilizing conditions of ME in Kampong Cham PRH

Equipment condition					Utilizing condition				
Good (A)	Fair (B)	Bad (C)	Unknown (D)	Total	Frequently(a)	Occasionally(b)	Not used (c)	Unknown (d)	Total
229	27	11	0	267	255	1	11	0	267
86%	10%	4%	0%	100%	95%	1%	4%	0%	100%

Source : answers of questionnaires

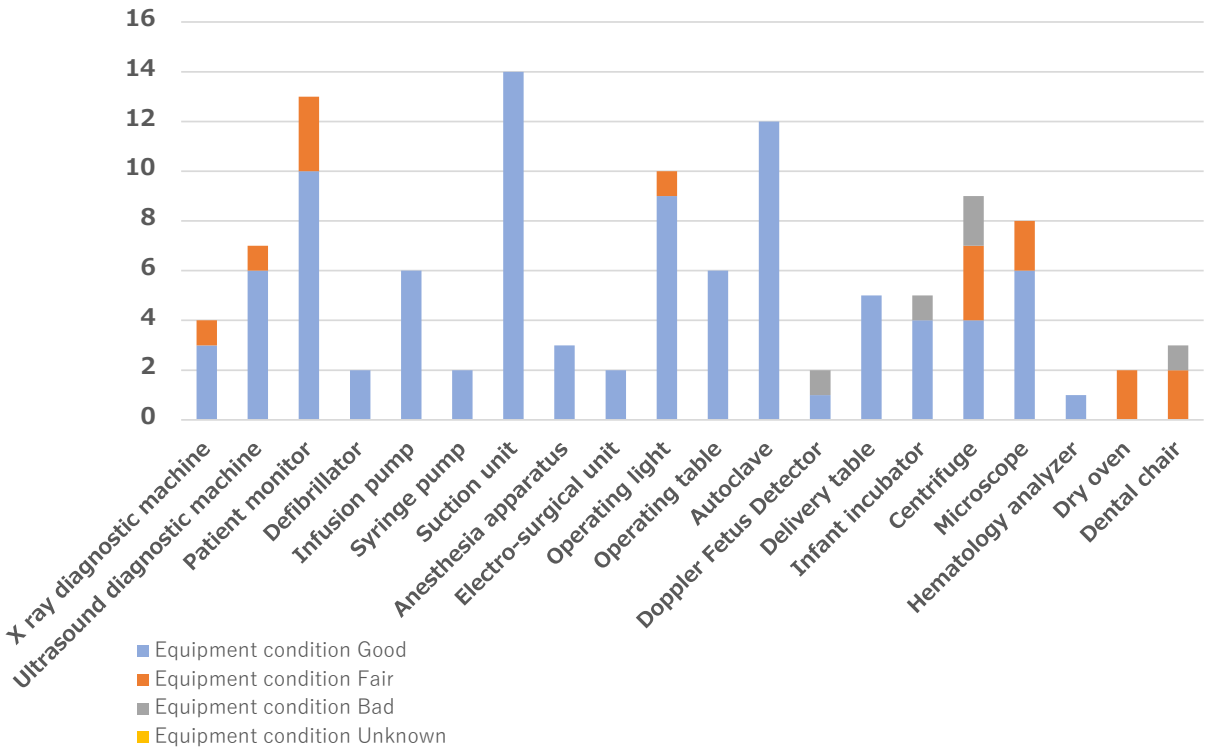
A large percent of the equipment of this hospital is in good condition and the utilization rate is also high, both exceeding 85%. Equipment is properly managed and maintained due likely to the high knowledge/skill levels and the strong leadership of the ME Working Group's ME technicians, who are engineers. Another reason may be the JOCVs, who were assigned to the radiology, clinical laboratory, and nursing departments in the past to impart know-how on proper operation, handling, daily inspections, etc. for the hospital's medical staff actually handling the equipment.

Photo 3- 9

The clinical laboratory was established in Sep 2015 supported by USA navy

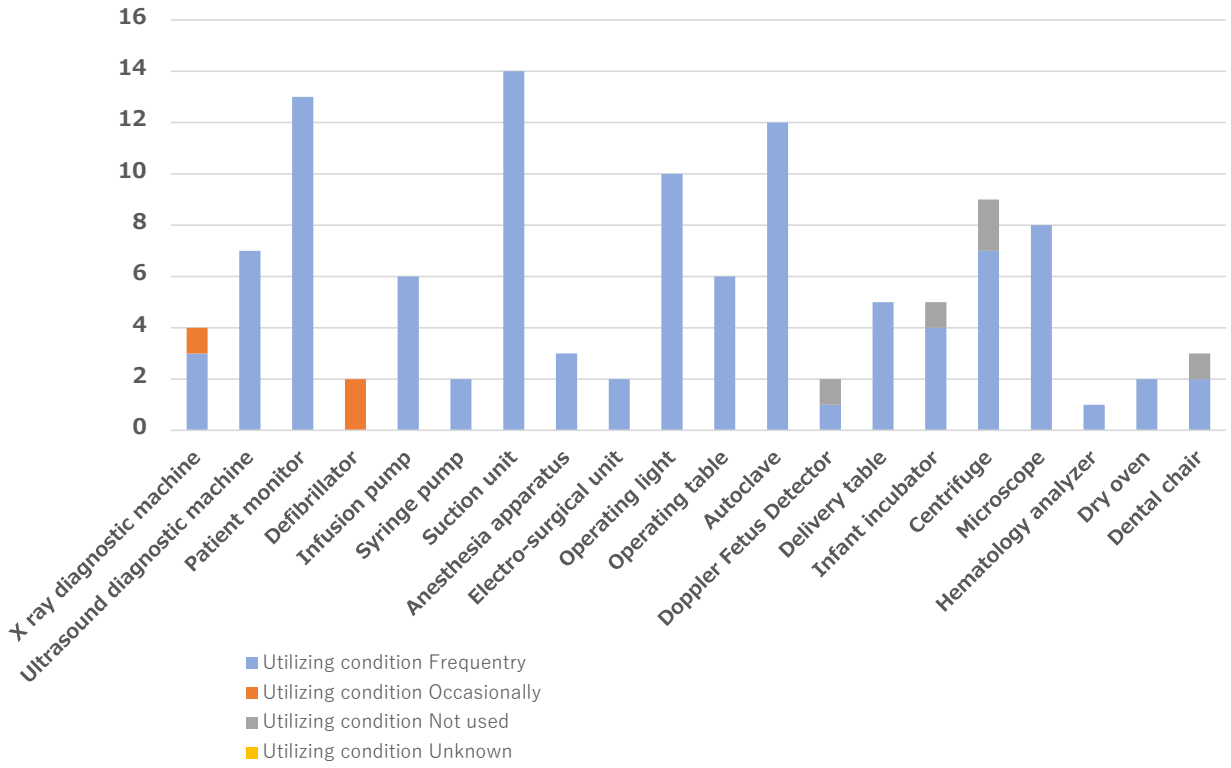
Photo 3- 10

ME technician of the ME Working group at the ME maintenance workshop



Source： answers of questionnaires

Fig. 3- 39 Equipment condition of 20 main ME in Kampong Cham PRH



Source : answers of questionnaires

Fig. 3- 40 Utilizing condition of 20 main ME in Kampong Cham PRH

As discussed earlier, most of the equipment units of this hospital are in good condition and utilized frequently (Figs. 3-39 and 3-40). However, there is small room for improvement. For instance, about 30% of the centrifuges have some kind of defects probably in the rotors, which possibly are not rotating at the specified RPM, thus resulting in insufficient separation of blood samples. To measure the RPM accurately, an RPM tester is needed, which, however, is not used in Cambodia except by the National Maternal and Child Health Center in Phnom Penh.

Another minor problem is the poor conditions of the dry ovens and dental chairs. Without proper maintenance and periodic inspections of the pluming and mechanical (including air compressor) systems, dental chairs are prone to breakage, as they use pressurized water for oral cleaning. The high equipment breakage rate is resulting from lack of knowledge of Cambodian ME technicians in these arenas.

(2) Referral hospitals (CPA1・CPA2)

Table 3-44 is a list of referral hospitals (RHs) of the target Operational Districts (ODs) in Kampong Cham province.

Table 3- 44 Referral Hospitals (CPA1・CPA2) in Kampong Cham province

No.	OD	Name of Hospital	CPA level
1	Srey Santhor	Srey Santhor RH	CPA2
2	Batheay	Batheay RH	CPA2
3	Prey Chhor	Prey Chhor RH	CPA1
4	Steung Trang	Steung Trang RH	CPA1
5	Cheung Prey	Cheung Prey RH	CPA1
6	Chamkar Leu	Chamkar Leu RH	CPA1

Source : survey team

Described below are four of the above six RHs, which were visited and surveyed by the Japanese survey team.

① Srey Santhor RH

It will take at least one hour to get to this RH from Kampong Cham PRH by crossing the Mekong River by ferry from the ferry terminal about 25km south of the central district of Kampong Cham and travelling the unpaved road along the river for some 30km by car. It could take longer than one hour if the ferry does not depart at the right timing. Access to this RH is too difficult to become a functional part of the referral system among ODs in Kampong Cham province. In fact, we were told by the hospital staff that seriously ill or injured patients, who cannot be treated by the RH, are sent to Phnom Penh 45km away. The ODs under the current referral system need to be reorganized.

This RH has also adopted the ME Management System, and its equipment is managed by two members of the ME Working Group, who has submitted the ME management report for the second half of 2016. However, their skill levels and performance quality in equipment maintenance are not up to par and in need of technical guidance. The RH has two operating rooms, each equipped with one anesthesia apparatus. However, one of them broke a few months ago and was sent for repair to the local service agent in Phnom Penh at the discretion of the RH. There has been no report of the completion of the repair work as yet. The Chinese-made autoclave has been broken and unused in this RH since the day of installation until it was repaired independently by the above-mentioned ME technicians of the ME Working Group. This type of

autoclave is widely used among public hospitals in Cambodia. However, most of them are broken, suggesting a major flaw in the equipment selection process.

Photo 3- 11

To access to Srey Santhor RH from the Kampong Cham city, Mekong river has to be crossed by ferry

Photo 3- 12

The operation theater at Srey Santhor RH

Photo 3- 13

Chinese-made autoclave broken in many facilities

② Batheay RH

This RH had been a HC until 2009, when it was upgraded to CPA1. Hospital buildings and medical equipment costing about 350 million yen were donated through a grant aid project by South Korea in April 2015. It was then upgraded again to CPA2 in January 2017. The hospital has 60 beds at 80% bed occupancy rate and sees about 50 outpatients per day. As a CPA2 hospital, it has an operating room equipped with necessary items (anesthesia apparatus, operating table, operating light, patient monitor, etc.), which, however, has not been used since the hospital's opening due to the absence of a surgeon who can perform surgeries. Although Cambodian surgeons have been dispatched to South Korea to receive training and education, no technical cooperation or the like is being implemented at the local site. It is possible that KOICA will enter the scene in the future.

Photo 3- 14

The infant incubator is not used because a Neonatal Care Unit does not exist in this hospital.

Photo 3- 15

The operation theater never used after completion of building construction

③ Cheung Prey RH

This CPA1 hospital is scheduled for upgrade to CPA2 in near future to cope with the recent increase in the number of patients and provide appropriate initial response and treatment especially for those injured by traffic accidents due to its location along the national route. This RH has about 70 beds and sees about 30 outpatients per day. As for the status of its medical equipment, the X-ray machine, through severely aged, is being used to take X-ray films of around 10 patients per day. The operating room staffed by three surgeons is used only for performing appendectomy and other minor dissections due to the absence of anesthesia apparatus. The central supply room is installed with three medium-sized autoclaves, one of which (made in China) is broken. The dental chair in the dental treatment room is also broken. The ME Management System has not been adopted by this hospital because of its current CPA1 status, but should be established soon in order to properly manage additional equipment, which will likely be introduced when the hospital is upgraded to CPA2.

Photo 3- 16

The X ray machine is remarkably deteriorated however the machine is barely working.

Photo 3- 17

The dental chair unit has not been working for more than 5 years.

④ Chamkar Leu RH

This RH is located about 45km from Kampong Cham City. This RH is also receiving external assistance from several different sources including Japan's grassroots grant aid program, the Belgium government, and the Cambodian American Association. The number of outpatients is 20 per day, and the bed occupancy rate is 85%. With the assistance from University Research Co., LLC (URC), the RH has adopted the Patient Management Registration System (PMRS), in which each patient's health information kept in the barcode is read by a scanner and stored in the hard disc. Print-out copies of the information are kept in the storage shelves in an orderly manner. The staff working in this section have received training from URC. In addition, the hospital staff are effectively educated on proper garbage disposal and hand washing through the use of posters, etc., suggesting that the hospital director's commitment to providing high-quality medical services are being shared by the staff. Stand clamps for medical treatment, autoclaves, and other items are broken. As this RH was CPA1 until very recently, its equipment is maintained poorly in the absence of the ME Management System.

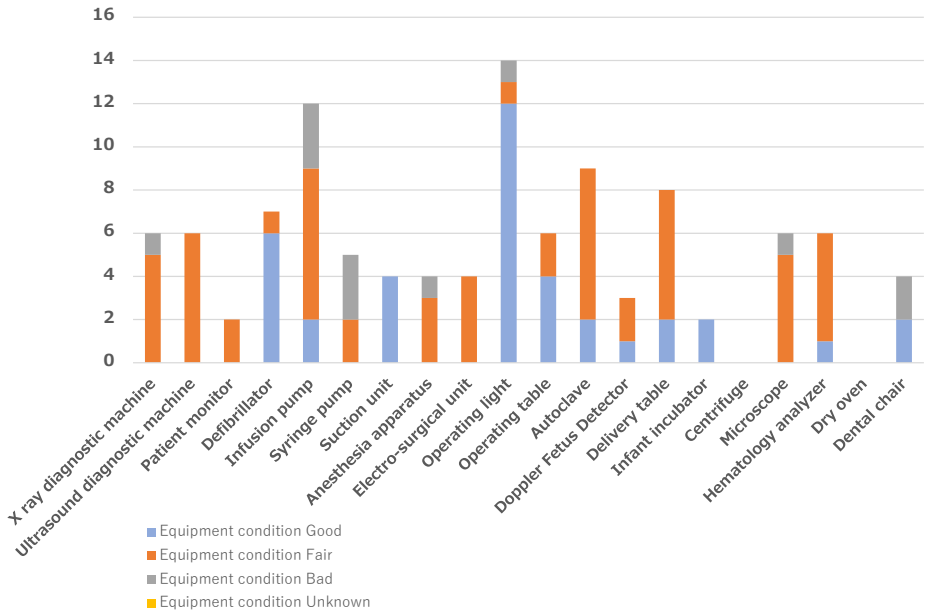
Photo 3- 18

The Patient Management Registration System (PMRS) is introduced by URC support.

Photo 3- 19

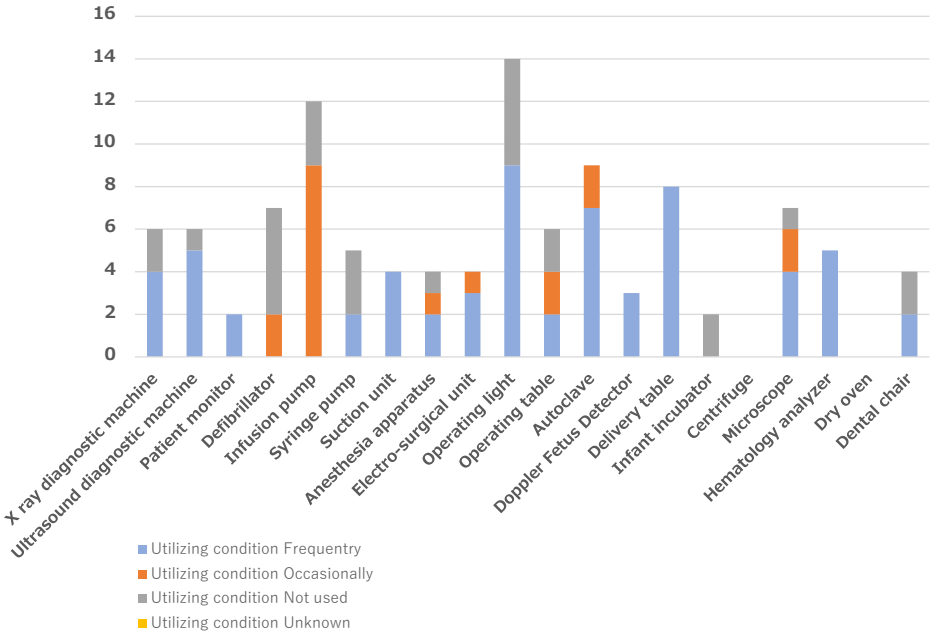
Inside of the ambulance car owned by the hospital. It is remarkably deteriorated and no medical equipment for emergency is equipped.

Data on the equipment and usage conditions of the main 20 items used at the above six RHs are compiled in Figs. 3- 41 and 3- 42 according to the classifications of the ME Management System.



Source : answers of questionnaires

Fig. 3- 41 Equipment condition of 20 main ME in 6 RHs in Kampong Cham province



Source : answers of questionnaires

Fig. 3- 42 Utilizing condition of 20 main ME in 6 RHs in Kampong Cham province

The graphs of previous page indicate that the most of equipment units at the RHs in Kampong Cham province are not kept in good condition or used frequently. Of the six RHs, Srey Santhor RH is the only one that has adopted the ME Management System, while the remaining five lacks basic knowledge and skills in equipment maintenance in the absence of the system and thus cannot handle equipment failure. It also validates the assumption that medical equipment is prone to breakage without proper maintenance.

(3) Health Center

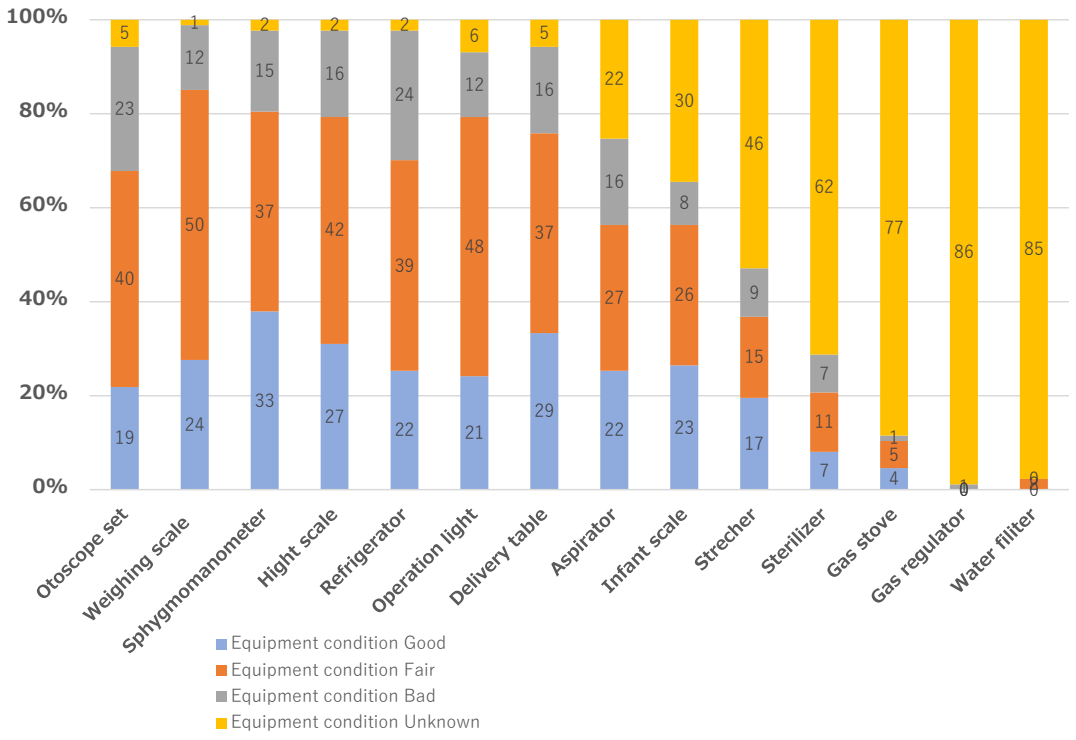
The number of target HCs of this survey in Kampong Cham province was 87, the largest number among the three main provinces. As shown in Figs. 3- 43 and 3- 44, Kampong Cham province also lacks autoclaves, gas stoves, gas regulators, and water filters. The rate of equipment in good condition is low in all of the 14 key items, indicating that the HCs also need to adopt a simple management system to manage their equipment by properly conducting periodic inspections, record keeping, etc.

Photo 3- 20

Gas type refrigerator installed at Bosknor HC is out of order.

Photo 3- 21

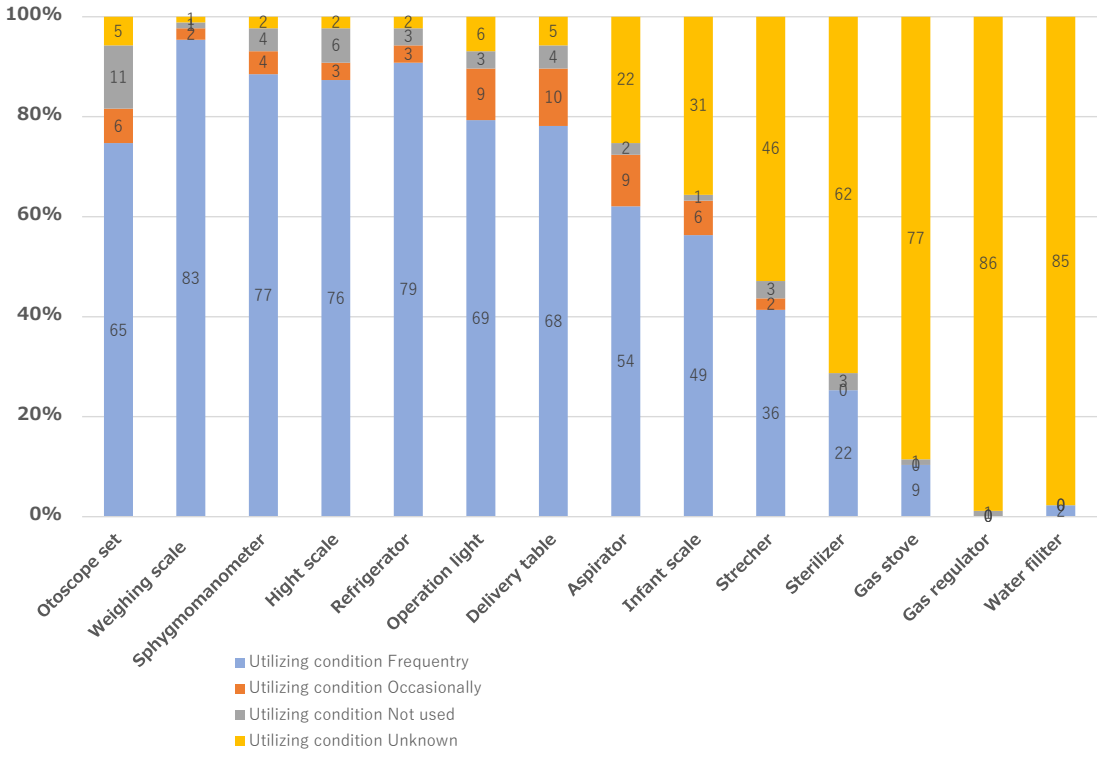
The thermometer of freezing chamber does not indicates in the proper range.



* Number in bar graph shows the number of HCs

Source : answers of questionnaires

Fig. 3- 43 Equipment condition of 14 main ME in 87 HCs in Kampong Cham province



* Number in bar graph shows the number of HCs

Source : answers of questionnaires

Fig. 3- 44 Utilizing condition of 14 main ME in 87 HCs in Kampong Cham province

3-4-5 Svay Rieng province

(1) Svay Rieng Provincial Referral Hospital (CPA3)

Svay Rieng province is located approximately 120km east of Phnom Penh bordered by Vietnam. Opened in 1959, Svay Rieng PRH now has 168 beds, covering a service population of about 590,000. Although classified as CPA3, the hospital's facilities and equipment are inadequate in comparison to those of Battambang and Kampong Cham PRHs. In 2017, the partial renovation under Japan's grant aid project was completed.

The hospital has been installed with a CT scanner by a joint business with GE. CT scans are conducted for 100 or so outpatients per month. The cost of each scan is about 120 USD, from which poor patients are exempted by HEF.

Since this hospital was also part of the MEDEM Project, its medical equipment is maintained under the ME Management System, and the ME Working Group remains functional, conducting periodic inspections, keeping records of inspections, and preparing ME management reports according to the said system's requirements. Although there is a workshop for equipment maintenance and repair, the building is shabby and not adequately equipped compared to those of the other two PRHs. In addition, inside the workshop is not kept in an orderly manner. As shown in Table 3- 45, 128 of the 164 units, or 78% of total, are working properly at Svay Rieng PRH.

Photo 3- 22

Diagnostic service was started by the CT Scan collaborated with GE company as well as Battambang PRH.

Photo 3- 23

The condition of ME maintenance workshop is not kept in an orderly manner for effective work

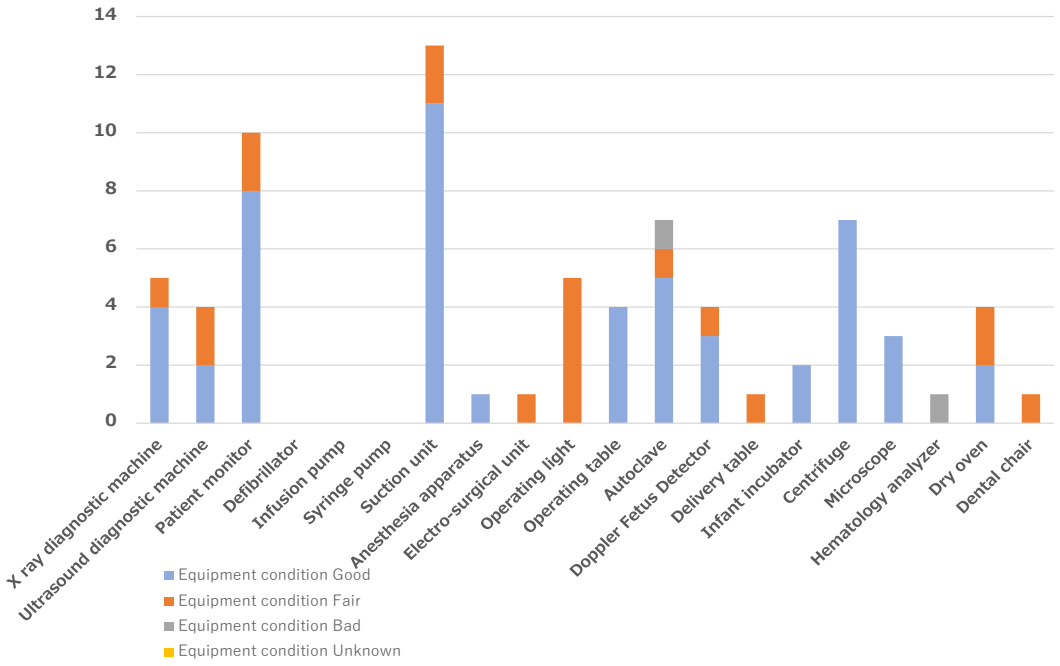
Table 3- 45 Equipment and utilizing conditions of ME in Svay Rieng PRH

Equipment condition					Utilizing condition				
Good (A)	Fair (B)	Bad (C)	Unknown (D)	Total	Frequently(a)	Occasionally(b)	Not used (c)	Unknown (d)	Total
128	30	6	0	164	140	14	10	0	164
78%	19%	3%	0%	100%	85%	9%	6%	0%	100%

Source : answers of questionnaires

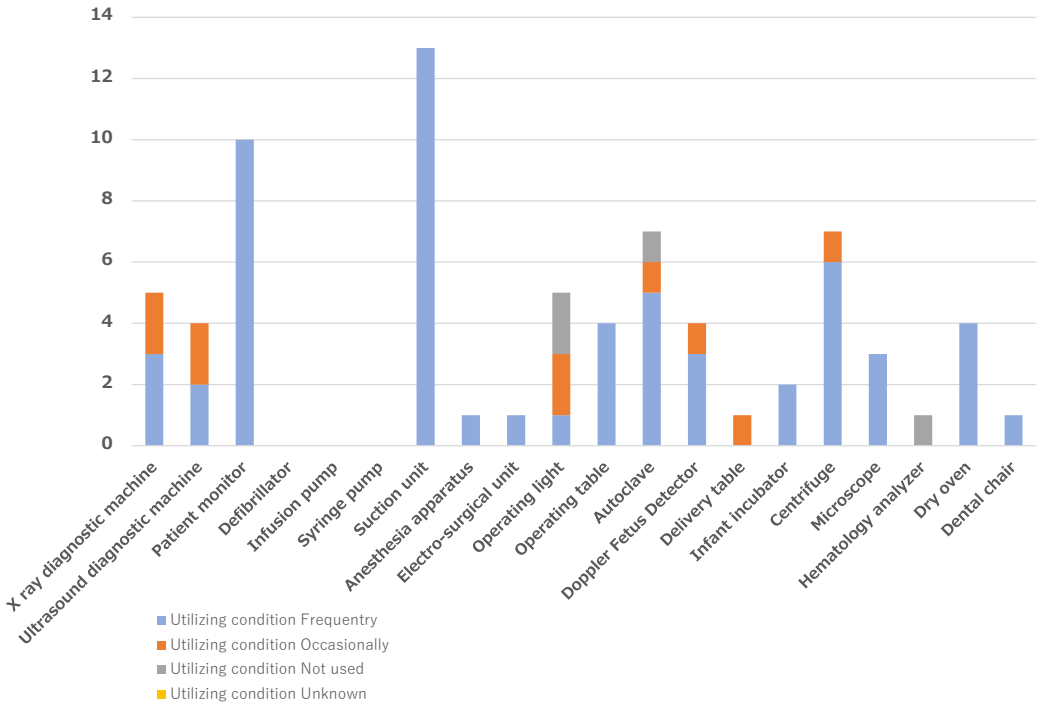
Equipment and Utilizing Conditions of the 20 Main Items

As shown in Figs. 3-45 and 3-46, this hospital, despite its CPA3 status, is not equipped with infusion pump or syringe pump, nor does it have any defibrillator which is essential for treating heart attack and ventricular fibrillation during surgery or in ICU. Infusion and syringe pumps are also indispensable for controlling medical fluid in the operation room and ICU. Thus, these items should be procured as soon as possible. In addition, the utilizing condition of operating lights is fair, which means necessary number of halogen lamps is not lit. In such conditions, the lighting intensity of the operative field is not appropriate for the safety of patients. Blown halogen bulbs need to be replaced immediately.



Source : answers of questionnaires

Fig. 3- 45 Equipment condition of 20 main ME in Svay Rieng PRH



Source : answers of questionnaires

Fig. 3- 46 Utilizing condition of 20 main ME in Svay Rieng PRH

(2) Referral hospitals in Svay Rieng province (CPA1・CPA2)

Table 3-46 lists the referral hospitals in Svay Rieng province, covered by this survey.

Table 3- 46 Referral Hospitals (CPA1・CPA2) in Svay Rieng province

No.	OD	Name of Hospital	CPA level
1	Svay Teap	Svay Teap RH	CPA1
2	Bavet	Chi pu RH	CPA1
3	Romeas Haek	Romeas Haek RH	CPA2
4	Svay Chrum	Svay Chrum RH	CPA1

Source : survey team

Of the above RHs, only Romeas Haek RH has adopted the ME Management System. Described below are two RHs, which Japanese survey team visited to check the actual site.

① Romeas Haek RH

This CPA2 hospital with 70 beds is located in a remote area about 42km away from Svay Rieng City. Despite the adoption of the ME Management System and ME Working Group, the RH's equipment conditions are poor compared to other RHs.

The ultrasound room is installed with two ultrasound diagnostic machine, one of which, however, is broken. There are two delivery rooms, and the metal delivery table is not covered with mat or cushion where it touches the patient but should be, as this condition is causing a lot of discomfort to them. In the clinical lab, only one of four centrifuges remains operational. There are two refrigerators, one of which is broken and used as a storage box.

The central supply room is equipped with two Chinese autoclaves, both of which are broken and unusable. The X-ray examination room is equipped with two X-ray machines, one made in India and the other in China. The Chinese X-ray machine is broken. The X-ray room is not implemented with radiation shielding, but should be as soon as possible. The operating room is equipped with operating lights, operating tables, anesthesia apparatus, electric scalpels, and other items necessary for performing surgeries. Unfortunately, however, the operating room is not used due to absence of surgeons.

Photo 3- 24

The operation theater is not used because the surgeon is not deployed in this hospital.

Photo 3- 25

The delivery table is not friendly for patients because a part of the bed is made of metal.

② Svay Chrum RH

Originally established as a HC, it was upgraded to a CPA1 referral hospital in 2015. The new 3-story building was completed in 2016. This RH has 32 beds but lacks many of the essential items for providing CPA1 medical services. Its main equipment includes ultrasound diagnostic machinery and delivery tables, as well as centrifuges, microscopes, autoclaves, and refrigerators for the clinical laboratory, all of which, except microscopes, are broken. The hospital has requested an X-ray machine and dental chair, but has yet to hear from the OD or PHD, to which it belongs.

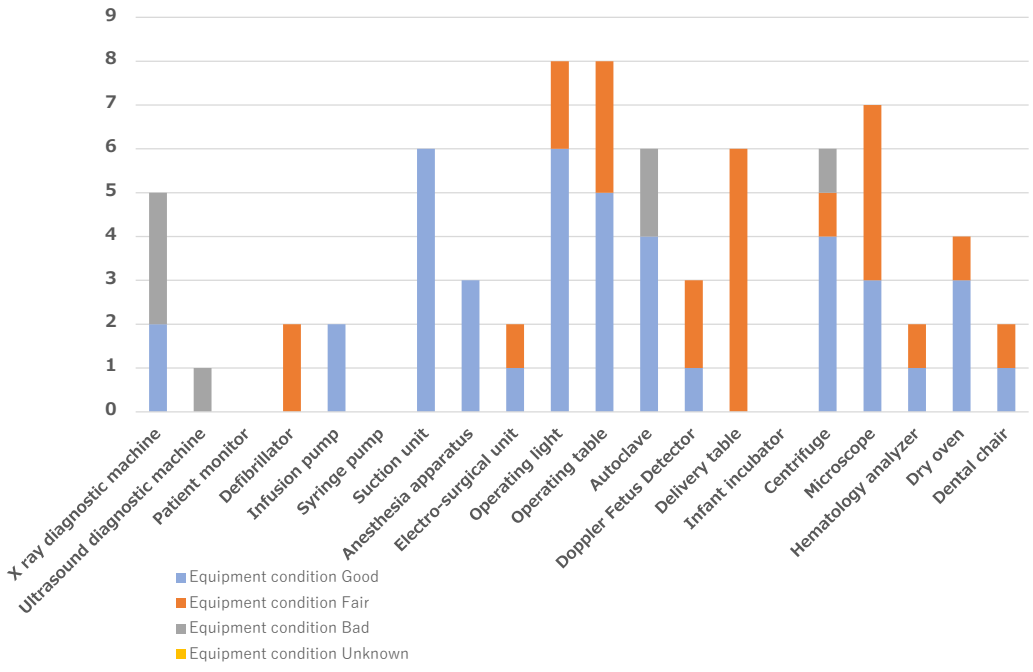
Photo 3- 26

The centrifuge is left alone for long time because it cannot be repaired.

Photo 3- 27

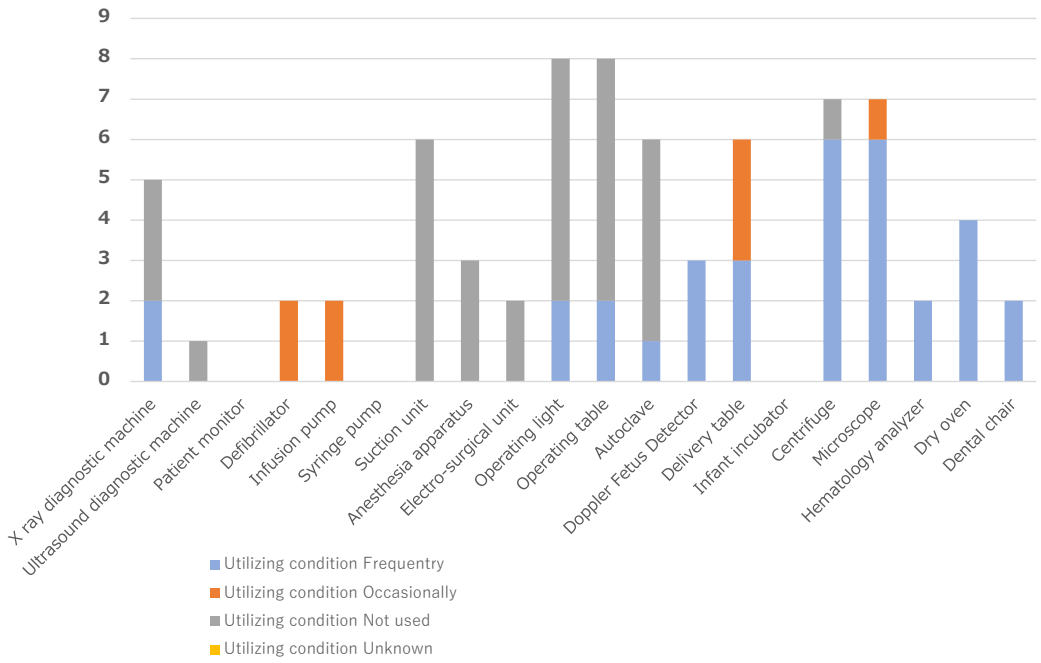
The room is planned for the X ray diagnostic examination, however the equipment is not installed yet.

Figs. 3- 47 and 3- 48 show the conditions and usage frequency of the 20 main items at the above four RHs in Svay Rieng province. The data were compiled in accordance with the classifications under the ME Management System.



Source : answers of questionnaires

Fig. 3- 47 Equipment condition of 20 main ME in 4 RHs in Svay Rieng province

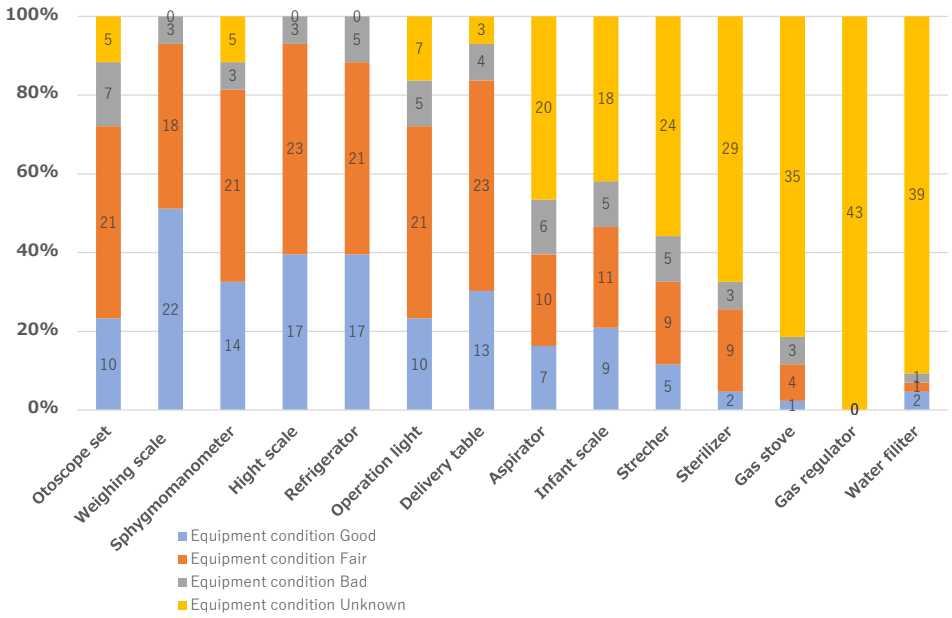


Source：answers of questionnaires

Fig. 3- 48 Utilizing condition of 20 main ME in 4 RHs in Svay Rieng province

(3) Health Center

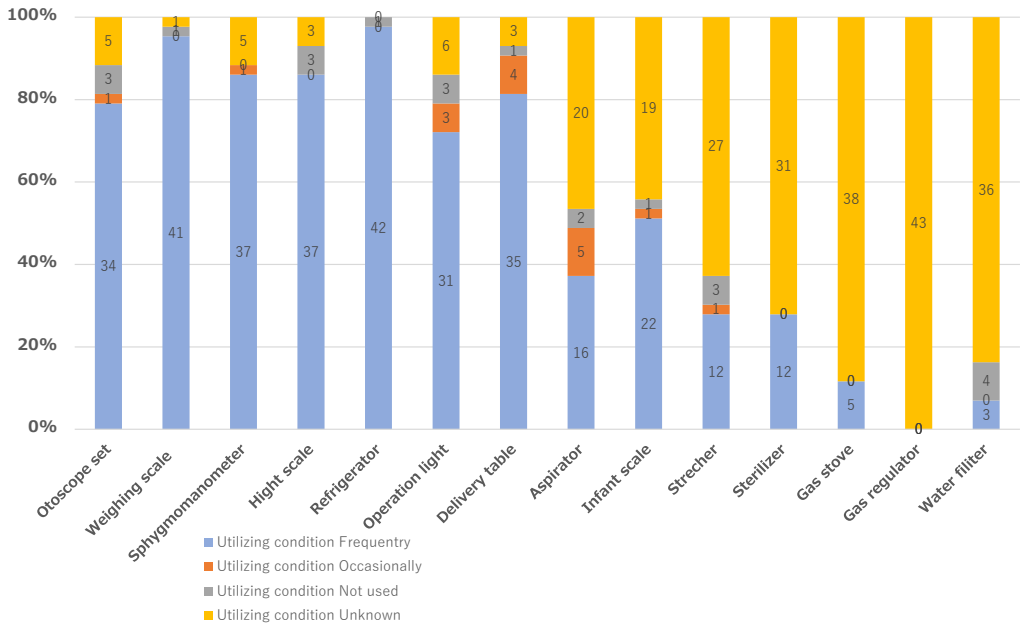
A total of 43 HCs in Svay Rieng province were surveyed. As is the case with the HCs in Battambang province and Kampong Cham province, HCs in Svay Rieng province are not equipped with any autoclave, gas stove, gas regulator, or water filter. Their equipment conditions tend to be poor compared to other hospitals that have adopted the ME Management System. (Figs. 3- 49 and 3- 50)



* Number in bar graph shows the number of HCs

Source：answers of questionnaire

Fig. 3- 49 Equipment condition of 14 main ME in 43 HCs in Svay Rieng province



* Number in bar graph shows the number of HCs

Source : answers of questionnaires

Fig. 3- 50 Utilizing condition of 14 main ME in 43 HCs in Svay Rieng province

Photo 3- 28

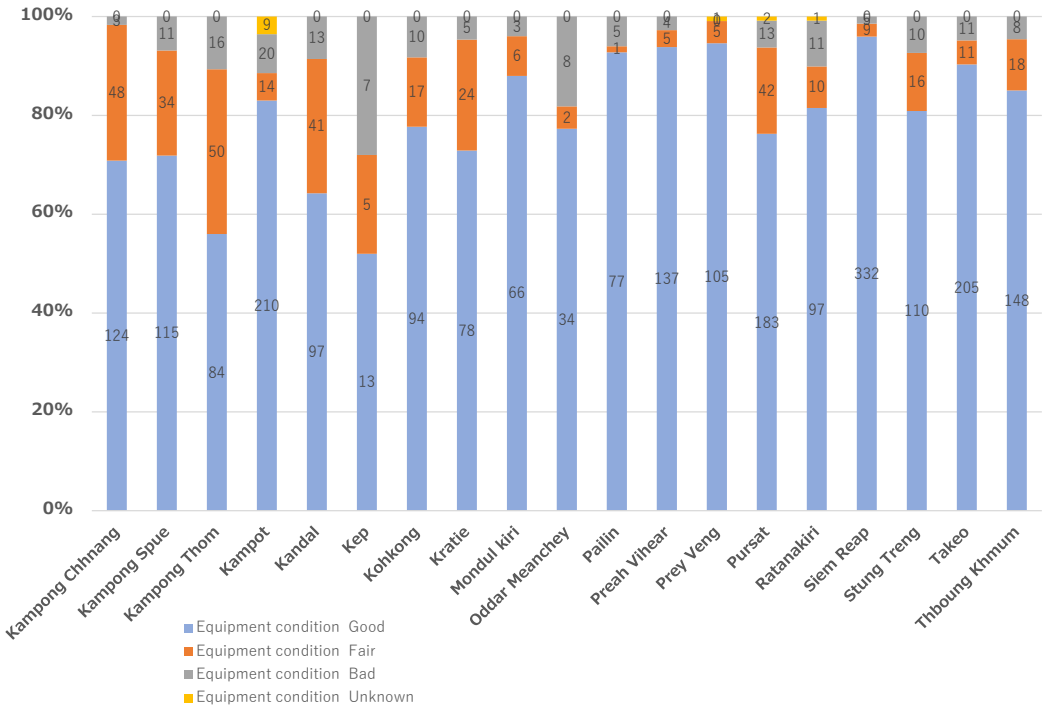
This HC uses the solar power system because commercial power supply is not available in the area.

Photo 3- 29

The doppler transducer cannot be used due to the broken transducer.

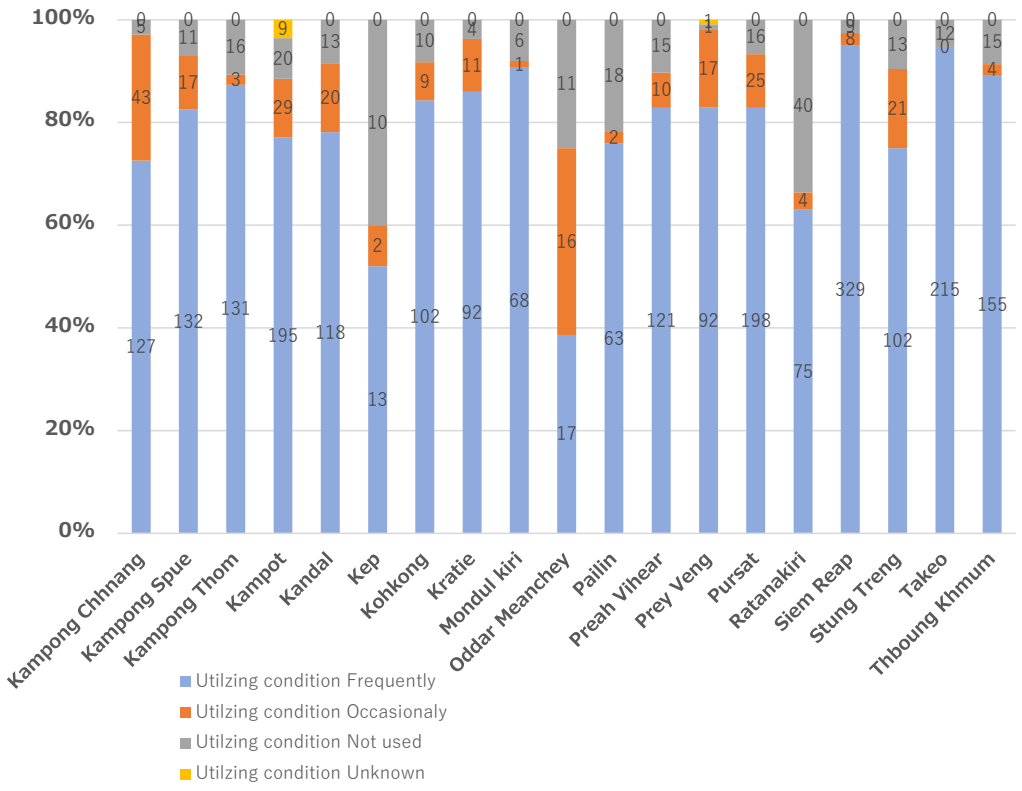
3-4-6 Provincial referral hospitals in 19 provinces

In this survey, equipment and utilization conditions were analyzed using the database of the ME inventory list of the ME management reports. For hospitals that have not submitted ME management reports, data were gathered via questionnaire.



Source : ME management report and answers of questionnaires

Fig. 3- 51 Equipment condition of ME in PRHs in 19 provinces



Source : ME management report and answers of questionnaires

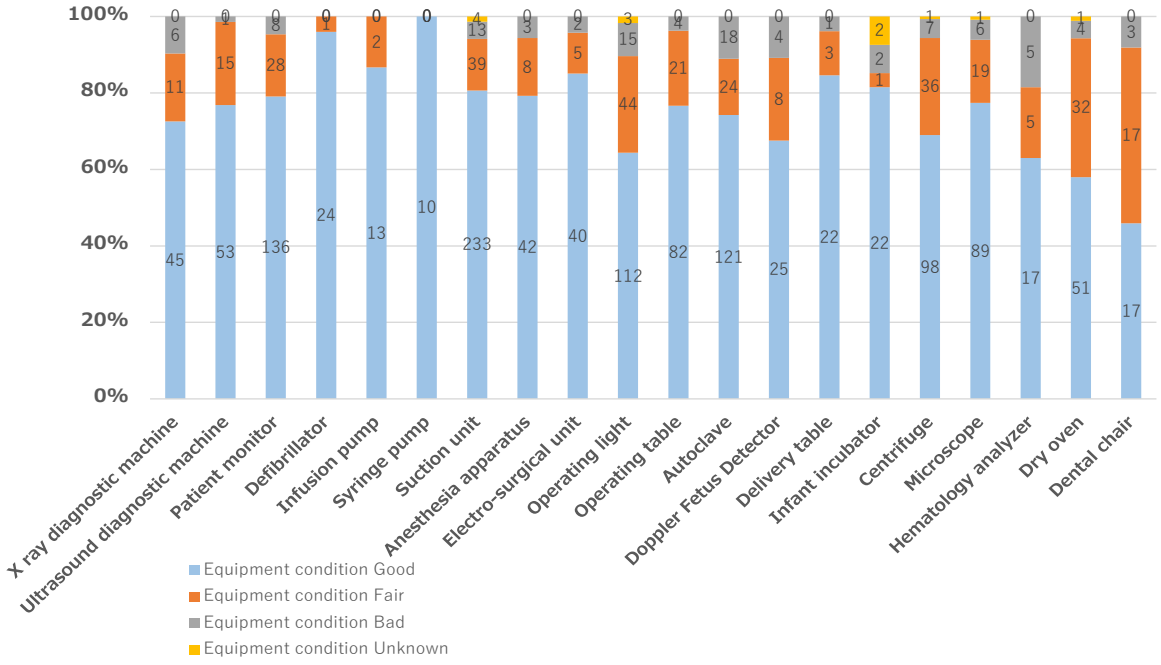
Fig. 3- 52 Utilizing condition of ME in PRHs in 19 provinces

Fig. 3- 51 indicates poor equipment conditions at Kampong Thom PRH, Kandal PRH, and Kep PRH with less than 70% of equipment condition of "Good" meaning medical equipment operates normally. Two of the three hospitals, excluding Kep, are CPA3 and received much assistance in the forms of training, seminars, OJT, etc. during the MEDEM Project. The likely causes of the present condition despite the past efforts include the following.

1) Hospital Director was replaced by a new person, who is not interested in ME management and ceased making efforts in this area.
2) ME Working Group members were replaced by new members.
3) Aged expired equipment units broke down one after the other.

Kep PRH is a CPA1 hospital and has only a small number of equipment units. Accordingly, even if only a few units broke down, it would significantly reduce the overall operating rate. For instance, if one of the two identical units went out of service, the operating rate would drop to 50%. As such, the equipment condition is largely dependent on the value of the parameter (i.e. the total number of units). Another reason may be that the hospital staff are not familiar with the ME Management System, as it has been introduced to the hospital only recently. At Otdar Meanchey PRH, its ME utilizing rate is low though the ME operating rate is high as shown in Figs. 3-51 and 3-52, suggesting that the equipment are not frequently utilized although they are in good conditions.

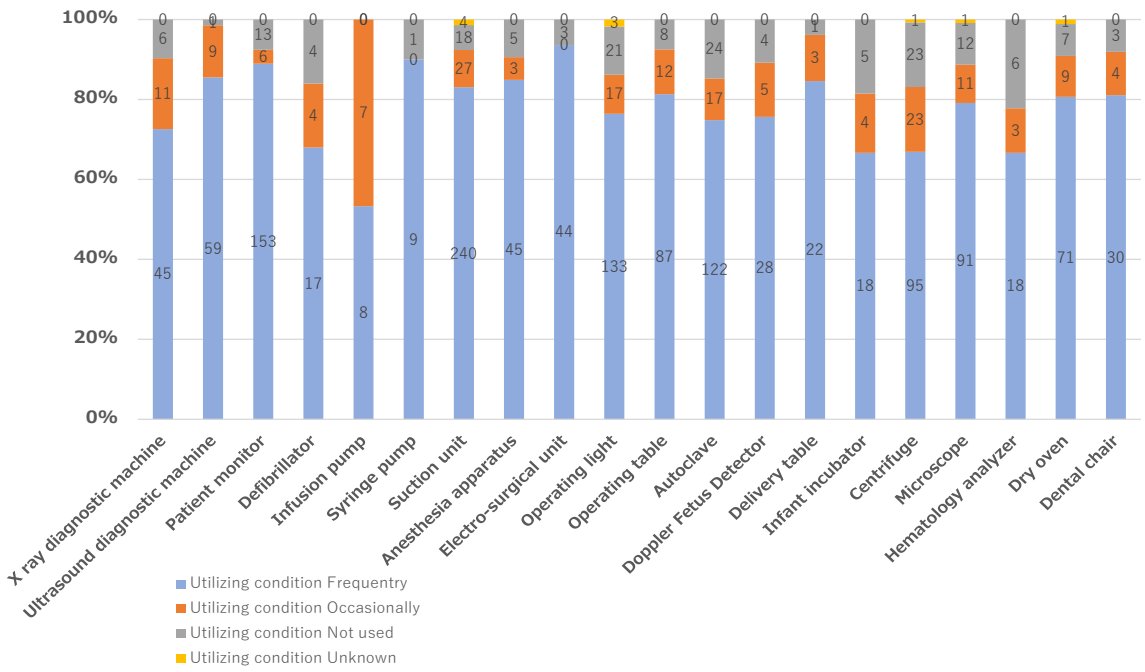
Shown below are the condition and use frequency of 20 main equipment items at the 19 PRHs.



* Number in bar graph shows the number of equipment

Source : ME management report and answers of questionnaires

Fig. 3- 53 Equipment condition of main 20 ME in PRHs in 19 provinces



* Number in bar graph shows the number of equipment　　Source：ME management report and answers of questionnaires

Fig. 3- 54 Utilizing condition of main 20 ME in PRHs in 19 provinces

Of the 20 items of the 19 PRHs, the conditions of X-ray and ultrasound diagnostic machine are slightly poorer than other items. Since these are precision instruments, they tend to break depending on the installation and use conditions, as well as how often and well they are inspected and maintained. The utilization rate of operating lights also tends to be low due mostly to blown halogen bulbs. Operating rooms with all lamps lit are seldom seen in Cambodian hospitals. Since halogen bulbs are consumable, 20 or so spare bulbs for each light fixture per year should be kept in stock.

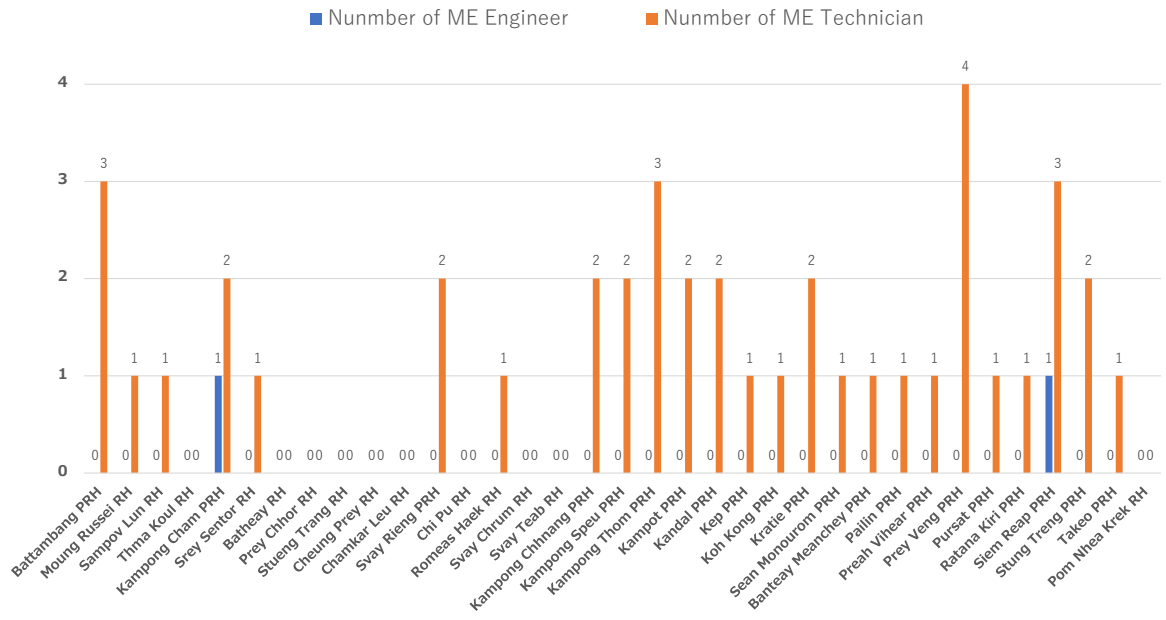
Many dental chairs are also in less than ideal conditions. As mentioned earlier, this apparatus uses pressurized water for oral cleaning and has many mechanical parts, such as the air compressor, and thus is prone to breakage if the plumbing and mechanical systems are not inspected and maintained regularly and properly. As Cambodian ME technicians generally do not possess knowledge and skills required for such work, many dental chairs end up breaking and left unrepaired.

Almost all defibrillators and infusion pumps are in good condition, but many are not used frequently. Defibrillators are for emergency cardiac care and thus are not used on a daily basis. For this reason, most if not all of them must be kept in good working condition at all times. In contrast, dental chairs, even if the plumbing system is not working, can be used for seating patients and other purposes not requiring water. As for dry ovens, it is possible that those, which have lost the heating function but are used for storing instruments, may be regarded as being “utilized.”

3-4-7　Shortage of ME maintenance personnel in target health facilities

When the ME Management System was introduced to certain Cambodian public health facilities, each facility established an ME Working Group and assigned at least one ME technician to the Group to perform preventive maintenance on medical equipment. However, most of the ME technicians in these hospitals are not engineers, but were previously clerical workers, drivers, nurses, plumbers, etc. appointed on the spot to fill the position without knowledge in mechanical or electrical engineering. The original intent was to set up the ME Management System first to build an organizational structure for preventive maintenance. To augment the system, fulltime ME maintenance personnel were later appointed and their capacities developed through technical training.

Fig. 3- 55 shows the present placement status of ME technicians at the 35 hospitals that have been surveyed as of today.



Source： answers of questionnaires

Fig. 3- 55 Deployment of ME technicians at the 35 hospitals

As clearly indicated by Fig. 3- 55, only two of the surveyed hospitals, namely, Siem Reap and Kampong Cham PRHs, have one engineer each while the rest are staffed by one to four (or zero in case of CPA1 hospitals) technicians without sufficient engineering knowledge. Apparently, Cambodia is facing an extreme shortage of human resources specialized in medical equipment maintenance. There are only a few other hospitals, which are not covered by this survey, staffed by engineers, namely, the Maternal and Child Health Center (1 engineer), Khmer-Soviet Friendship Hospital (3 engineers), and Kossamak National Hospital (2 engineers). Although these engineers have graduated from electrical or electronic engineering colleges and thus have basic knowledge in such fields but lack knowledge in medicine, which is also required for

handling medical equipment properly. In Japan and other developed countries, a field of study called biomedical engineering, which bridges the gap between engineering and medicine, has emerged and is being taught in many technical colleges and vocational schools. Japan has adopted a national qualification system for clinical engineers, under which only licensed clinical engineers can operate, inspect, and repair sophisticated precision medical equipment. Biomedical engineering is beginning to propagate in newly emerging countries as well (such as Thailand, Malaysia, and Singapore). In Cambodia, however, no engineers specialized in this field are being fostered due to absence of educational institutions with schools or departments of biomedical engineering.

Recently, private hospitals are emerging in Cambodia, some of which have adopted advanced precision medical equipment (such as CT, MRI, DR, CR, and ESWL (extracorporeal shock wave lithotripsy) apparatus). As discussed earlier, Battambang and Svay Rieng PRHs have also adopted and are using CT scanners for diagnosis. In order to keep these high-tech machines in good condition, specialized knowledge in biomedical engineering will be indispensable. Accordingly, the Cambodian MOH is urged to start developing human resources with pertinent knowledge and skills soon before introducing advanced medical equipment.

3-4-8 Status of medical equipment supply in Cambodia

Most of the medical equipment available in Cambodia is imported from other countries. There are currently 20 private contractors in Cambodia which deal with import/procurement of medical equipment. Most of the medical equipment installed at public health facilities was manufactured in other countries and imported by one of these contractors. The oldest companies with the longest performance record in Cambodia are Dynamic Pharma (corporation established 1996) and Europe Continents (corporation established 1992). Dynamic Pharma deals with import and sales of pharmaceuticals, sanitary materials and medical equipment. Among medical equipment, it focuses particularly on the import of diagnostic imaging devices such as CT and MRI machines, endoscopy-related devices, dialysis equipment and circulatory system-related equipment. It conducts transactions with many Japanese medical equipment manufacturers such as Toshiba, Olympus, NIPRO, and Terumo, as well as with European manufacturers. It is a large-scale company, and employs five service engineers who are on call 24 hours a day to conduct post-sales maintenance in the case of a medical equipment breakdown or malfunction. After 20 years of service in Cambodia, the company foundation is stable, and the company is highly trusted by customers. However, in conjunction with its high quality and reliability, the cost of its services is comparatively higher than those of other agencies. Many public health facilities lack ample budget for operation and maintenance, and cannot easily afford to hire an equipment maintenance service.

Europe Continents deals not only with medical equipment, but also handles electronic controller-related equipment for large-scale industrial plants and research facilities, and equipment for clinical examination

laboratories. The company has offices not only in Cambodia, but also in Indonesia, Laos, the Philippines, Thailand, Vietnam, and elsewhere, overseen by 200 service engineers who take turns throughout Southeast Asia. The company handles diagnostic imaging devices, devices for operating rooms and ICUs, OPD-related devices and radiation therapy devices. It deals with European manufacturers such as Aesculap, AGFA, Zeiss, Fresenius, and Philips, as well as Japanese manufacturers such as Topcon, Horiba, and Yokogawa. It has two engineers permanently stationed in Cambodia, and calls in others from neighboring countries for support as needed.

Furthermore, in recent years, several other companies are entering the medical equipment market in addition to the two discussed above. Companies which have shown distinguished delivery performance since around 2013 include MET Group, MEDICOM, and GE Healthcare. Among these, MET Group is the smallest, but it is an authorized distributor for Japanese medical equipment manufacturers such as Shimadzu (X-ray machine), and Nihon Kohden (patient monitors, electrocardiographs, defibrillators, etc.). It has a good performance record as a local procurement supplier for Japanese grant aid cooperation projects, and is evaluated highly. MEDICOM deals with Fukuda Denshi Co., which manufactures physiological function examination equipment, and Erma, Inc., which makes clinical examination devices. The company retains skilled engineers to conduct post-sales maintenance, and is rated highly by users.

GE Healthcare is developing an especially unique business model. It was established in Cambodia in 2007, and set up a foundation called the GE Foundation. Through this foundation, it has donated 1.3 billion yen worth of medical equipment, such as patient monitors and Ultrasound diagnostic machine, to 31 public hospitals in 24 Cambodian provinces free of charge since 2008.

CT scanners are GE Healthcare's signature item, and it has installed one in each provincial referral hospital free of charge. The company established its business to derive income from splitting patient fees with hospitals. Up to the present, it has installed equipment in the Takeo PRH and Prey Veng PRH in 2014, in the Kossamak National Hospital and the Khmer-Soviet Friendship Hospital in 2015, and in the PRHs in Battambang and Svay Rieng, where it conducts the medical service discussed above. The contract period is about 10 years. After 10 years have passed, the profitability will be verified, and if it clears GE's income goal, the contract will be ended at that point. In addition, under the contract scheme, GE bears responsibility for the maintenance of equipment during the contract period. As discussed above, there are import contractors in Cambodia who deal with trusted medical equipment manufacturers, but the Cambodian government's import regulations for medical equipment and specification standards/standardization for device introduction are lagging behind, meaning that many contractors have entered the Cambodian market, and some of them are contractors of poor quality.

Of particular concern are the contractors which sell devices from emerging countries at low prices, then fail to provide adequate post-sales maintenance. Medical equipment from such companies often do not accurately display the name of the manufacturer, model, or serial number, and often have not been certified

by international standard organizations (ISO, IEC, etc.), so care must be taken with products whose safety and reliability cannot be guaranteed. In the course of the current on-site survey, such medical equipment was seen to be installed in a number of facilities. Among them was a Chinese-made autoclave which broke down and became unusable three months after installation (the manufacturer and model were not labeled and so remain unknown). Though the seller of the device was contacted, it refused to offer help, creating a problem for the hospital.

Basic information on major agencies is shown in Table 3-47.

Table 3- 47 Basic information of medical equipment local supplier in Cambodia

ME Local supplier	Establish year	Dealing ME	Dealing Manufacture	Maintenance service
Dynamic Pharma	1996	Image Diagnostic machine Endoscopy system Hemodialysis system Laboratory equipment Cardiovascular equipment etc.	TOSHIBA, OLYMPUS, Nipro, Termo, Becton & Dickinson, Medtronic Abbotte, etc.	3-5 service engineers enrolled. Maintenance workshop exists.
Europe Continents	1992	Image Diagnostic machine Endoscopy system Hemodialysis system Laboratory equipment Cardiovascular equipment Operation Theater equipment Radiological equipment Medical furniture etc.	AGFA, Aesculap, Fresenius, Philips, Maquet, Karl Storz, Topcon, Medtronic	2 service engineers enrolled. Maintenance workshop exist
MET Group	2000	Cardiovascular equipment Operation Theater equipment Radiological equipment ICU equipment Ultrasound diagnostic machine	Shimadzu, Nihonkoden, Shin-Ei, Alpinion, Sturdy, Medrad, Top	1 service engineer enrolled. Maintenance workshop exists.
MEDICOM	2003	Endoscopy system Laboratory equipment Cardiovascular equipment Operation Theater equipment	Fukuda, Elma, Pentax, Air Liquide (France), Richard Wolf (Germany)	2 service engineers enrolled. Maintenance workshop exists.
GE Healthcare	2007	Image Diagnostic machine Cardiovascular equipment Operation Theater equipment	GE	5 service engineers enrolled. Maintenance workshop exists.
MEES	2006	Image Diagnostic machine Endoscopy system Operation Theater equipment Radiological equipment Medical furniture etc. Surgical treatment equipment Ophthalmology equipment	Hitachi Aroka, Inami, Acoma, Fujinon, Stryker, ERBE, Sturdy	2 service engineers enrolled. Maintenance workshop exists.
Kim Tech	2013	Ultrasound diagnostic machine Physiological equipment Surgical treatment equipment	Medison, Hyundai, Samil, Bionet (Korea)	2 service engineers enrolled. Maintenance workshop exists.
Envisioning	2002	Ultrasound diagnostic machine Physiological equipment Surgical treatment equipment Medical furniture, etc.	Mindray, Chison (China)	Unknown

Source: Survey Team

3-5 Current situations and challenges in the 4 provinces subject to the 3rd field survey

As an additional survey, the 3rd field survey for rebuilding/renovation of hospitals by grant aid was conducted in Siem Reap province, Kampong Chhnang province, Takeo province, and Prey Veng province. The results of the survey are shown below.

3-5-1 Referral hospitals in Siem Reap province

Siem Reap province has one CPA3 hospital (PRH), two CPA2 hospitals, and two CPA1 hospitals. Table 3-48 below shows an outline of five hospitals visited by Japanese survey team.

(1) Siem Reap PRH (CPA3)

The shape of the hospital grounds is more or less a triangle, with a total area of 3.86 hectares, with 24 wards on the premises. Many of the wards were built with assistance from various countries. The maternity ward (3 stories, 2013) and the training center (2 stories, 2010) were built with assistance from Korea, the ophthalmology ward (3 stories, 2008) was built with assistance from Australia, the examination ward (2 stories, 2013) was built with assistance from Belgium, and the blood center (single story, 2016) was built with assistance from the United States. On the other hand, the outpatient and emergency ward, the surgery and general medicine ward (1st floor: surgery, 2nd floor: internal medicine), the ICU ward, and the surgical ward, all located near the entrance to the premises and extending towards the center, were built between 1954 and 1979 and are showing signs of deterioration. The surgery and internal medicine ward is an especially striking example. The 1st floor surgery department was built as a single-story building in 1970, and the internal medicine ward was added on as a second story in 2010. As a result, even if reconstruction is required for the 1st floor surgery department in the future, its scope must be very limited. There is a ramp to the 2nd floor in one location, however, there are no other stairs, and two-directional evacuation is impossible. This will be a major problem in the event of a fire or other disaster. The hospital management is deciding an improvement plan for these buildings.

Regarding referral conditions, in addition to CPA1 and 2 hospitals, which the hospital serves directly, patients also come from provinces such as Ratanak Kiri, Stung Treng, Preah Vihear, Oddar Meanchey, Banteay Meanchey, and Kampong Thom. The total number of outpatient is extremely high, at approximately 300 per day. In addition, patients with external injuries or conditions such as cerebral hemorrhaging that require prompt CT scan imaging are transported to Royal Angkor International Hospital and private clinics for treatment.

Also, the ME working group is carrying out its functions reliably for equipment management. Although the operating rate of medical equipment is decreasing compared to the second half of 2016, the overall operating rate for all equipment is 93%. There are a total of three ME technicians, and one of these personnel is an engineer. In addition, two of the ME technicians have completed the BMET (Bio-Medical Engineering

Technician) training course at the Puthisastra University. The operation of medical equipment is favorable overall, but most of the expensive equipment such as X-ray machines and ultrasonic diagnostic machines has deteriorated, and the hospital management is seeking to update this equipment with new machines. However, the funding for this cannot be secured. Although, in the past, GE proposed a partnership project with the hospital for CT imaging devices, no contract was executed due to factors such as GE refusing to accept the sales ratio proposed by the hospital and the contract provision stating that the equipment would not become hospital property upon completion of the project.

(2) Sot Nikum RH (CPA2)

This hospital is configured in a typical arrangement in Cambodia where clinical departments are isolated in buildings on the premises. Though provided with a surgery room to serve as a CPA2 hospital, only minor surgery is operable, as a young surgeon is now being trained to make up for the predecessor resigned last year. As a consequence, patients requiring Caesarian sections or traffic injury treatments are all transferred to Siem Reap PRH. The surgery room is kept in a proper condition. Apart from this, the one-storied building accommodates a surgery ward, sterilization room, recovery room, night duty room, storage, and other functions. The number of outpatients consulting this hospital is second largest to Siem Reap PRH (41,819 patients, 2016). This is primarily because the hospital has provides Chronical Diseases Clinic for patients with chronic diseases such as hypertension and HIV. The outpatient ward is a one-storied structure comprising consultation rooms, doctors' rooms, and so on. The Pediatrics Department serves as a Satellite Clinic of Angkor Hospital for Children which financially supports the staff and operational costs incurred there. The building is a one-storied structure similar to Angkor Hospital for Children. According to the 2016 data obtained by the hospital, the number of patients transferred from HC was 1,659, chiefly having general diseases, tuberculosis, and external injuries. On the other hand, the number of patients the hospital was unable to treat was 663. They were transferred to Siem Reap PRH and Kantha Bopha Children's Hospital. The major conditions of these patients included general diseases, pneumonia, and external injuries.

In terms of medical equipment management, there is an ME management system in place, and although there is one staff member employed as an ME technician, there is no workshop space available for equipment maintenance and management uses. Regarding the operation conditions for the equipment, OT equipment is currently not used at all because no surgery is being performed. Because the electrical capacity of the wiring is insufficient, the main body of the sterilizer cannot currently be operated.

(3) Kralanh RH (CPA2)

This hospital is configured in a typical arrangement in Cambodia where clinical departments are isolated in buildings. The premises are extensive. Although provided with a surgery room to serve as a CPA2 hospital, a technical inadequacy of surgeon only allows to perform an appendectomy or equivalent operations (2 to

3 operations per month). All the other patients are transferred to Siem Reap PRH, as required. The only existing surgery room is allocated with an adjacent sterilization room. The Inpatient Ward accommodates the Surgery Department, while the General Medicine Department operates a ward serving both male and female inpatients that are small in number at present. According to the 2016 data obtained by the hospital, the number of patients transferred from HC was 438, chiefly having head injuries, gastritis, gastroenteritis, and so on. On the other hand, the number of patients the hospital was unable to treat was 308, transferred to Siem Reap PRH and Kantha Bopha Children's Hospital. The major conditions of these patients included serious head injuries, abdominal sections, and newborn care.

Regarding medical equipment, there are two X-ray machines, one of which is out of order. There are four sterilizers, but none of them can be used due to an insufficient electrical capacity of the internal wiring. A pressure-cooker style autoclave (electric heater type) unit is being used instead. Just as at the Pouk RH facility, the hospital has executed a maintenance and inspection contract with the MEDI Group for the testing equipment.

(4) Angkor Chum RH (CPA1)

The hospital premises are a rectangle, extending 3 hectares, where the buildings nearly surround the spacious area in the center. One of the buildings (an administration office) was funded by the U.S. Navy, two by UNDP, and others by a charitable person in Switzerland. An OD office is located in the hospital. To upgrade itself from CPA1 to CPA2, the hospital plans to renovate one of the existing wards to provide a surgery room. However, the building needs to be extended, as it is too small, to accommodate other functions than the surgery room, such as a sterilization room and recovery room. The hospital transfers referral patients requiring surgery to Siem Reap RRH, rather than to CPA2 hospitals. According to the 2016 data obtained by the hospital, the number of patients transferred from HC was 298, chiefly having vomiting, bleeding, coughs, stomachaches, and so on. On the other hand, the number of patients the hospital was unable to treat was 152, transferred to Siem Reap PRH, Kantha Bopha Children's Hospital, and Angkor Hospital for Children. The major conditions of these patients included serious head injuries, bleeding, and infectious diseases.

In terms of medical equipment management, there is no ME management system in place. There is also no technician on staff for the maintenance and management of equipment with the lab equipment being handled by making phone calls directly to the suppliers. The Chinese X-ray machine model is currently out of order, and a separate movable X-ray machine is being used. There are two patient monitors, one of which is out of order and although there is a defibrillator for emergency outpatient treatment, it has never been used.

(5) Pouk RH (CPA1)

The hospital premises are a rectangle of roughly 130 m by 80 m, with the long dimension bordering on National Highway 6. The area is roughly a hectare. The hospital plans to construct a surgery ward to upgrade itself from CPA1 to CPA2, preparing a design drawing. Although this project was proposed to MOH last year, the hospital has not yet obtained a response as of now. The buildings on the hospital premises are all one-storied structures that are located in a U-shape facing around a space in the center. The building in front accommodates an emergency service and the General Medicine and Surgery Ward. It also partly includes a ward covered only with a roof. The ward in the east accommodates functions divided in small sections, such as outpatient clinics (for adult and children), examination, pharmacy, treatment, triage, X-rays, ultrasound scanning, and dentistry. No space is available for extension or renovation. The Ob-Gyn Ward is located at the road side in the west, and the Administration Building at the end (an office, vaccines, and family planning). A kitchen is located at the far end of the said Ward. The hospital transfers referral patients requiring surgery to Siem Reap PRH, rather than to CPA2 hospitals. According to the 2016 data obtained by the hospital, the number of patients transferred from HC was 336, chiefly having hemoptysis, wounds, acute gastrointestinal disease, and wound accidents. On the other hand, the number of patients the hospital was unable to treat was 211, transferred to Siem Reap PRH. The major conditions of these patients included anemia, cardiac disease, and acute appendicitis.

In terms of medical equipment management, there is no ME management system in place. The operating conditions of the medical equipment are generally good, and there have been no reports received regarding equipment that is out of order and being ignored. For the maintenance and management of equipment, the hospital has executed a maintenance and inspection contract for the laboratory equipment only with a local agent of the MEDI Group. Spare parts and consumables require separate payment. As the MEDI Group has a branch office in Siem Reap, there are no physical effects. There are no policies in place for other equipment.

Table 3- 48 Referral Hospitals in Siem Reap province

	Siem Reap PRH	Sot Nikum RH	Kralanh RH	Angkor Chum RH	Pouk RH
CPA Level	CPA3	CPA2	CPA2	CPA1	CPA1
Year Estab.	1958	—	—	2009	1982
Distance to PRH	314 km from Phnom Penh via route 6, and located within the center Siem Reap	34 km (along route 6 toward Phnom Penh)	60 km (along route 6 toward Sisophon to the north, entering after 200 m)	55 km (along route 6 toward Sisophon for 30 km, then to the north for about 20 km)	25 km (along route 6 toward Sisophon)
Site Area	38,632 m^2	—	—	Approx. 3ha	Approx. 1ha
Site Fig.	Triangle	Rectangle	Rectangle	Rectangle	Rectangle (130m×80m)
Entrance					
Construction Space	There are 24 wards within the premises, and relocation sites for deteriorating departments are confirmed for use during reconstruction. Construction space can be secured.	All buildings are freestanding structures in a standard Cambodian style, and relocation sites for use during reconstruction are required. Angkor Hospital for Children is providing support for pediatrics.	All buildings are freestanding structures in a standard Cambodian style. The site is spacious, so construction space can be secured.	Each of the buildings is constructed surrounding a large central area, and many were constructed by Swiss volunteers, as well as US Navy and UNDP. The site is spacious, so construction space can be secured.	The buildings are set up in a square shape with one side open. The departments are divided up into small rooms, and space must be secured for additions and renovation work.
Necessity of Reconstruction or Renovation	Facilities for departments such as surgery, central equipment, radiation, emergency, and outpatient services have deteriorated.	No buildings are strikingly dilapidated, but renovations are required for some.	Both surgical medicine and general medicine are single wards for both men and women, so the hospital is hoping to divide them into independent wards.	Although there is a plan to upgrade to CPA2 with new operating room, securing a space for construction of related facilities is an issue.	Although the plan for building the operating room to upgrade to CPA2 was submitted to MOH, no response has been received.
Infrastructure Condition	No particular problems with utilities such as electricity, generators, water supplies (city water, well water), waste water, and garbage.	Power outages occur from time to time, and there is no generator. Water is supplied from city water and wells, but during drought periods the supply is insufficient. No problems with utilities such as waste water and garbage.	Power outages occur from time to time, and there is no generator. Water is supplied by wells, but during drought periods the supply is insufficient. No problems with utilities such as waste water and garbage.	Power outages occur from time to time, and there is no generator. Water is supplied by wells, but during drought periods the supply is insufficient. No problems with utilities such as waste water and garbage.	Power outages occur from time to time, and there is no generator. Water is supplied by wells, but during drought periods the supply is insufficient. No problems with utilities such as waste water and garbage.
Medical Equipment Condition	Equipment operating rate: 93%. ME management is being conducted favorably. X-ray machines, ultrasound diagnostic equipment, and other equipment shows signs of deterioration.	ME management is in place, but it is not being performed properly. OT equipment is not being used. Sterilizer is unused due to insufficient electrical capacity in the room where it is installed.	ME management is not in place. There are two X-ray machines, one of which is out of order. There are 4 sterilizers, but none of them are being used due to insufficient electrical capacity.	ME management is not in place. There are two X-ray machines, one of which is out of order, and two patient monitors, one of which is out of order. The sterilizers has never been used since installation.	ME management is not in place, but equipment operation is generally good. The X-ray machines are in extremely poor condition, and are likely to break down at any time.

Source: Survey Team

3-5-2 Referral hospitals in Kampong Chhnang province

Kampong Cham province has one CPA3 hospital (PRH), and two CPA1 hospitals. Table 3-49 below shows an outline of three hospitals visited by Japanese survey team.

Table 3- 49 Referral Hospitals in Kampong Chhnang province

	Kampong Chhnang PRH	Boribo RH	Kampong Tralach RH
CPA Level	CPA3	CPA1	CPA1
Year Estab.	1964	Upgraded from FDH in 2009	—
Distance to PRH	91 km from Phnom Penh via route 5, centrally located within Kg Chhnang.	35 km (along route 5 toward Battambang)	55 km (along route 5 toward Phnom Penh)
Site Area	1.7ha	—	—
Site Fig.	Rectangle	Rectangle	Rectangle
Entrance			
Construction Space	The emergency ward and general medicine ward are run with aid from Korea. Although permission has been received from MOH for building new maternity and pediatric wards, it is waiting for approval from the Minister of Finance. A plan has been proposed for construction to expand the laboratory through JOCV.	PHD and HC facilities are adjoining the premises. The hospital is made up mostly of wards built with donations from Americans, and the management and outpatient wards are lined up side by side. There is construction space available.	OD and HC are established within the facility. The central ward was established with assistance from Malaysia, and Japan provided assistance for establishing the surgery ward and the conference ward. There is land planned for the construction of a new surgery ward to upgrade to CPA2.
Necessity of Reconstructio n or Renovation	The central diagnostics ward, which includes OT, was built in 1962, and the building needs to be rebuilt due to striking deterioration such as exposed rebar and cracks, but finding a relocation site during the construction process is an issue.	Due to limited number of wards (14beds), the hospital requested to PHD for the establishment of new general medicine, pediatric, maternity, radiation, and management wards, but no response has been received yet.	A number of plans have been proposed such as surgical ward construction to meet the raised CPA2 requirements, renovations of the maternity ward, and a plan for the waste rainwater inside the hospital.
Infrastructure Condition	No problems with utilities such as electricity, generators, water supply (city water and wells), waste water (which passes through the city sewer system), and garbage	No problems with utilities such as electricity, water supply (wells), waste water, and garbage. Medical waste is delivered to Kg Chhnang PRH.	No problems with electricity, generators, water supply (city water and wells), waste water, and garbage. Medical waste is delivered to Kg Chhnang PRH.
Medical Equipment Condition	Although ME management is being carried out, there is just one ME technician, so preventive inspection operations are a major a burden. The automatic X-ray film developing machine is out of order, as are two of the six sterilizers. A maintenance and management contract for the clinical testing equipment has been executed with a local agent.	No ME management system. Because the Chinese X-ray machine is out of order, and X-ray testing is referred to other hospitals. Although the facility possesses ophthalmology equipment, there is no available diagnostic staff, so it is not used.	No ME management system. The X-ray machine is out of order, and so is the dental X-ray machine. Other medical equipment is operational but not in good condition.

Source: Survey Team

(1) Kampong Chhnang PRH (CPA3)

The site is rectangular, and the buildings are all located within a 1.7-hectare area. The emergency ward (one story) and general medicine ward (two stories) were built with aid from Korea. There is a plan to add more operating rooms behind the current surgery department, but the existing operating room is a confined space of just 4 x 6 meters, and the same ward also contains the ICU, central equipment department, surgery patient rooms (three), a nurses' station, and radiation room on the 1st floor, as well as a pharmacy and storage area on the 2nd floor. This general medicine ward was built in 1962, and although it is a two-story reinforced concrete structure, there are striking signs of deterioration such as exposed rebar and numerous cracks in the wall surface. The support pillar size is a 23 cm square, which is small for the structure. Although the hospital is considering building additional operating rooms in the back, the building is 55 years old, so rebuilding it is probably the right choice. Cleanliness and hygiene in the operating room is ambiguous and although Japan provided assistance related to the radiation equipment in 2011, the room in the prefab construction for protection against radiation built at the same time is so confined that future equipment exchange is impossible. Approximately half of the 2nd floor is being occupied by storage space for the pharmacy. In addition to the system issues describe above, there are also physical problems with the structure that are apparent. However, the question of where to relocate these departments during the construction process is a problem.

Regarding the referral structure, 6-7 patients per day come from CPA1 hospitals and HC within the administrative area, and there are many general medical treatment, Caesarean section, and traffic accident injury cases. Also, when patients that cannot be treated at the hospital are low-income individuals, they are sent to the Khmer-Soviet Friendship Hospital in Phnom Penh, and in the case of high-income individuals, they are sent to Calmette Hospital or Royal Phnom Penh Hospital (private).

Regarding medical equipment management, there is an established ME working group, and an ME management system in operation. In terms of equipment, there are six sterilization machines in the central sterilization room, but two of these are out of order. The automatic X-ray film developer is out of order, and therefore film must be developed by hand for about 30 patients per day, which puts a major burden on X-ray technicians. The hospital has executed a maintenance contract with a local agent for the clinical testing room equipment. Contractors include companies such as MEDICAM, Medi Group, and Human, and the cost for these maintenance contracts is approximately 5,000 USD per year. Also, although GE offered the hospital to install CT imaging machine, because the terms would put a major financial burden on the hospital for handling poor patients, the offer was turned down by the hospital. However, there are currently about 40 patients per month who require CT scan testing.

(2) Boribo RH (CPA1)

On the premises, three buildings and an OD office are located in line. The three main buildings

accommodate an administration building (office, staff room, and delivery room), a ward (two sickrooms and a treatment room), and the Outpatient Ward (examination, ultrasound scanning, dentistry, pharmacy, and Department of Ophthalmology (closed in the absence of doctor), and triage carried out in corridors). Behind them, a kitchen, toilets, and other functions are provided. Due to a shortage in beds, the hospital proposed a project to PHD four years ago to construct four buildings that include the General Medicine & Pediatrics Ward, Ob-Gyn Ward, Radiology Ward, and administration building. The response has not been made yet. It also has a plan to construct an examination building provided with new equipment. According to the 2016 data obtained by the hospital, the number of patients transferred from HC was 2011, chiefly having glycosuria, chronic diarrhea, and tumors. On the other hand, the number of patients the hospital was unable to treat was 319, transferred to Kampong Chhnang PRH and other hospitals in Phnom Penh and Battambang. The major conditions of these patients included appendicitis, chronic pneumonia, and injuries.

Regarding the management of medical equipment, there is no ME management system in place. Also, the Chinese X-ray machine has been out of order since 2016 and there is no X-ray machine at the facility. There is a diagnostics and testing room for ophthalmology, with installed equipment (fundus measuring device, tonometer, slit lamp, etc.), but as there is currently no staff available, services have been stopped.

(3) Kampong Tralach RH (CPA1)

The central building (partly including equipment) funded by Malaysia is located at the far front end on the hospital premises. It accommodates such functions as sickrooms for the Pediatrics and General Medicine Departments, pharmacy, emergency service, payment, triage, ultrasound scanning, examination, dentistry, and sickrooms for tuberculosis. Although the Radiology Ward was constructed with aid from Kuwait, an X-ray device is currently out of order. Also, the dental X-ray machine in the dental diagnostics office is out of order.

With Japanese grassroots aid, two facilities were provided, namely, the Surgery Ward and the Conference Building. Apart from these, the Ob-Gyn Ward (HSSP) and the Administration Building are located. The hospital has planned to construct a surgery room for upgrading itself from CPA1 to CPA2, while there has been no master planning targeting the entire hospital. The intended Surgery Ward, which is planned at the back of OD office, will accommodate a surgery room and a central supply room on the first floor, and a recovery room on the second floor, provided with necessary equipment. According to the 2016 data obtained by the hospital, the number of patients transferred from HC was 544, chiefly having general internal diseases, pediatric diseases, ob-gyn diseases. On the other hand, the number of patients the hospital was unable to treat was 762, transferred to Kampong Chhnang PRH, Calmette Hospital in Phnom Penh, Kantha Bopha Children's Hospital, and Khmer-Soviet Friendship Hospital. The major conditions of these patients included ob-gyn diseases, traffic injuries, and respiratory system diseases.

3-5-3 Takeo Provincial Referral Hospital

This site is a modified pentagonal shape, and 26 wards are located within a 1.3 hectare area. A blood center (two-story building, 1st floor: blood center, 2nd floor: laboratory) is being constructed with aid from the United States. The pediatric ward was built with aid from Italy, and it has its own operating room and sterilization room, allowing for operation independent from the rest of the hospital. Additions have been repeatedly built on existing buildings within the hospital premises, and the site has taken on a maze-like aspect. In June 2011, the hospital established a plan with the goal of a full remodel of the facility by 2015. The plan will progress in stages and require a tremendous expense. The general medicine ward will be rebuilt first, with OPD triage, an X-ray testing room, and an ultrasonic testing room in the same ward, and the outpatient ward in the same building, structuring these wards and equipment in a centralized location. In addition, the plan calls for a technician room that will be built with a surgery ward and delivery ward linked to it. As patient numbers have increased, the space within each ward has become increasingly confined, and although conditions need improvement, the progressive plan requires time, suggesting that it will further increase the expense of such a project.

In terms of the actual conditions, an average of 123 patients per month are treated by 5 ODs, and patients are received from the Kampot and the Kampong Speu provinces. Due to improved facility conditions at hospitals in other provinces, the ratio of referred patients, which was 30% in the past, has dropped to 10%. Also, the number of patients that are unable to be treated at this hospital is about 114 per month on average, and low-income patients are referred to the Khmer-Soviet Friendship Hospital in Phnom Penh, while high-income patients are sent to Calmette Hospital, Kossamak National Hospital, and National Maternal and Child Health Center. The conditions these patients require treatment for are mainly heart disease and traffic accident injuries.

Regarding the management of medical equipment, although there is an ME working group in place, it is not operating appropriately. The current ME technician is enrolled in an ME training course at the Puthisastra University, and currently not present at the hospital. Since there is only one ME technician employee, equipment maintenance and testing is not being conducted during his absence. The ME workshop is incredibly disorganized and dirty. In terms of medical equipment, there is a CT imaging machine made by GE installed, and the hospital has executed a contract with GE similar to those executed by other provincial referral hospitals. Other equipment includes one standard X-ray imaging machine which is in operation, and there are two mobile X-ray stations, one of which (made by GE) is out of order. There are five autoclave units, one of which is out of order. The equipment operating rate for the hospital's medical equipment as a whole is 90%.

3-5-4 Prey Veng Provincial Referral Hospital

The shape of the hospital site is made up of two adjoining rectangles, and the total area is about 1.3 hectares. There is roofed walkway passing through the center in straight lines, and this connects with the major buildings of the hospital. The building straight ahead of the entrance contains facilities such as outpatient and emergency treatment, management, medical history, ultrasonic echo, and a pharmacy, but it is an old building built more than 100 years ago when the area was under French colony rule. After exiting this building, the roofed walkway extends straight ahead, connecting to the main buildings of the hospital. The general medicine ward, maternity ward with delivery rooms (built in 1982 with aid from an individual donor), CT ward (previously the surgery ward), pediatric ward (which received aid from UNICEF until last year), surgical ward (X-rays, surgery patient rooms, operating rooms, and sterilization room), and other facilities are all set up adjoining this walkway. A comparatively new dental and ophthalmology ward has been established beside the building facing straight ahead. The diabetic ward, workshop, and employee cafeteria are on the opposite side. Although the hospital wants to rebuild in a style modeled on the Sihanoukville Provincial Referral Hospital, the site is a confined area, and there are no alternative locations available for the various departments, so this is not considered a suitable option.

Regarding referral conditions, the hospital accepts patients from other referral hospitals and HC, with an average of about 70-80 patients per month, mainly in need of treatment for conditions such as traffic accident injuries and brain hemorrhage. Patients are also accepted from provinces such as Svay Rieng, Kandal, and Kampong Cham. In addition, there are about 70-80 patients per month that the hospital cannot treat who are sent to the Khmer-Soviet Friendship Hospital (low-income), Calmette Hospital, Kossamak National Hospital, and Preah Ketomealea Army Hospital. These patients require treatment for conditions such as external injuries, heart disease, and brain hemorrhage.

Regarding medical equipment, the ME working group is operating appropriately. The improvement in ME technicians' work is particularly apparent. The technicians have an understanding of the conditions of the hospital as a whole, and the director and other hospital staff have a strong sense of trust in them. Many of the ME staff carry out maintenance on their own initiative. In the ME management report for the first half of the 2017 fiscal year, the inventory list was already updated, and has been submitted to PHD and MOH. In addition to the head ME technician, there are three younger staff deployed. Compared to the MEDEM project time period, the facility has improved so much that it appears like a different hospital. In terms of the operating conditions for medical equipment, there are two ultrasonic diagnostic machines, one of which is out of order and there are two dental chairs, one of which is also out of order. All other equipment is operating without any problems. There is an ophthalmology department set up, and all ophthalmology equipment is operating in good condition.

3-6 Improvement of referral hospitals to attain UHC

In order to prioritize the hospitals for renovation and upgrade under grant aid, comparisons among referral hospitals in the three main provinces and provincial referral hospitals in the other 19 provinces in the four fields of health workers, health facilities, medical equipment, and UHC are shown in Tables 3- 51, 3- 52, 3- 53, 3- 54, 3- 55 and 3- 56.

3-6-1 Human resources for health

At referral hospitals in the three main provinces, it can be seen that the extent to which quotas for nurses were filled is comparatively lower than for doctors and midwives. The reason for this is thought to be that CPA standards require five times as many nurses as they require doctors and midwives. Looking simply at the sufficiency rate of doctors, nurses, and midwives, the hospitals which were lacking sufficient numbers of all three job types were Srey Santhor RH in Kampong Cham province, and Stung Trang RH in the same province. Also, Romeas Hek RH in Svay Rieng province is lacking sufficient numbers of doctors and nurses. In 2016, 151 Caesarian sections were performed at Srey Santhor RH, and though the hospital lacks the standard number of doctors, it is thought to be fulfilling its function to a degree nonetheless. However, Romeas Hek RH, a CPA2 hospital, does not have a surgeon, and performed no Caesarian sections at all. Going forward, personnel supplementation must be considered for hospitals like this. (Table 3- 52)

In addition, at provincial referral hospitals in the 19 provinces, CPA standards for the number of nurses are set high, so the sufficiency rate of nurses is low compared to doctors and midwives. Though the sufficiency rate of doctors and nurses in Preah Vihear province, Kratie province, and Kampot province is low, the actual number of Caesarian sections performed was about 100-300 per year, so the hospitals are thought to be fulfilling their function to some extent. (Table 3- 52)

3-6-2 Health facility

(1) Referral hospitals in the 3 main provinces

Regarding health facilities in the three main provinces, RHs in Battambang province has the highest needs in terms of facilities construction and renovation as shown in Table 3- 29. Considering its population, its comparative number of RH is extremely low and the needs of construction and renovation of RHs is high.

(2) Provincial referral hospitals in 19 provinces

As shown in Table 3- 54, among PRHs in the 19 provinces, Preah Vihear PRH and Stung Treng PRH are deemed to be in greatest need of renovation and upgrade. Kampong Chhnang PRH, Prey Veng PRH, Siem Reap PRH, Takeo PRH and, targeted in the 3rd field survey, also can be prioritized for the renovation or rebuilding. Predictions for patient influx from surrounding provinces following upgrade were made based on geographical factors and past records, as shown below.

- **Preah Vihear PRH**: situated at the northernmost tip of Cambodia, it is surrounded by mountains, so patients are not expected to come in from surrounding provinces.
- **Stung Treng PRH**: situated in the center of Cambodia's northeastern region, it is expected to draw in patients from surrounding provinces. Many patients come in from Ratanak Kiri province in particular.
- **Kampong Chhnang PRH**: Kampong Chhnang province is bordered on the northwest by Pursat province, on the southwest by Kampong Speu province, on the southeast by Kandal province, and on the northeast by Kampong Cham province and Kampong Thom province. Pursat province borders on Battambang province, so patients from here tend to go to larger public and private hospitals in Battambang province, while patients from Kandal province tend to go to public and private hospitals in Phnom Penh, which is nearby. Patients from Kampong Speu province can be expected to go to Phnom Penh via national highways 4 and 5. Kampong Cham province and Kampong Thom province are cut off from Kampong Chhnang province by the Tonle Sap river, and since there are no bridges, patients will not be able to cross. Therefore, the influx of patients is expected to be very low.
- **Prey Veng PRH**: according to the 3rd field survey, it has patients from surrounding provinces, Kampong Cham province from North, Kandal province from West, and Svay Rieng province from East. The average number of outpatient is 54 a day.
- **Siem Reap PRH**: according to the 3rd field survey, it has patients from 6 surrounding provinces; Kampong Thom province, Stung Treng province, Preah Vihear province, Otdor Meanchey province, Banteay Meanchey province and Battambang province. It has as many as 300 outpatients a day. When comparing with other PRHs with similar population, the number of referred patients per bed at Siem Reap PRH (2016) is 0.8 times as many as that of Battambang PRH, 1.6 times of Kampong Cham PRH, 2.3 times of Prey Veng PRH, and 2.3 times of Takeo PRH. Main reasons of referral are fracture or head trauma caused by traffic accident, acute abdominal syndrome and pneumonia. On the other hand, main reasons of referring to Phnom Penh are heart failure, stroke, polytraumatism, and cancer, which are not treated in the current hospital conditions. Similar situations can be observed in the other provinces and there seems no regional characteristics of disease burden.

  There are famous hospitals in Siem Reap, such as Royal Angkor International Hospital, Kantha Bopha Children's Hospital (free of charge), Angkor Hospital for Children (free of charge) and Angkor-Japan Friendship International Hospital (open May 2017). Next to Phnom Penh, patients have many choices of hospitals.
- **Takeo PRH**: according to the 3rd field survey, it has patients from surrounding provinces, Kandal province from Northeast and Kampot province from Southwest. The average number of outpatient is 133 a day.

As shown in Table 3- 50, when forecasting inpatient numbers based on past records from between 2014 and 2016, and setting 2024 as a target year (3 years after completion of construction), in the event that construction on all six hospitals begins at the same time, there is expected to be a serious shortage of beds at Preah Vihear PRH, Siem Reap PRH, Stung Treng PRH and Takeo PRH by target year 2024. However, further site visits must be made in conjunction with practical planning, in order to gather detailed data.

Table 3- 50 Forecast for number of inpatients

Hospital Name	Hospital Beds	Inpatients *			Yearly Avg. Increase Rate	Population Influx **	Total Percentage	Inpatients *				Comparison with 2016
		2014 (persons)	2015 (persons)	2016 (persons)				2017 (persons)	2018 (persons)	~	2024 (persons)	
Preah Vihear PRH	94	8,219	8,521	9,481	7.68%	0%	7.68%	10,209	10,993		17,134	180.7%
Siem Reap PRH	300	15,520	17,857	19,354	12.35%	1.72%	14.07%	22,077	25,184		55,488	286.7%
Stung Treng PRH	90	6,053	7,072	7,380	10.96%	1.72%	12.68%	8,189	9,087		17,761	240.7%
Takeo PRH	250	8,479	9,630	9.825	7.94%	1.72%	9.66%	10,774	11,814		20,541	209.1%
Prey Veng PRH	150	---	6708	6,627	-0.60%	1.72%	1.12%	6,701	6,776		7,242	109.3%
Kampong Chhnang PRH	162	6,940	7,762	7,585	4.65%	0%	4.65%	7,937	8,306		10,909	143.8%

*Tuberculosis patients not included

**Patient influx percentage value was set at 1.72%, an actual past value for Kampong Cham PRH.

Source: survey group summary of questionnaire Reponses

3-6-3 Medical equipment

Information on medical equipment at the 35 hospitals covered by this survey is shown in Table 3- 52 and Table 3- 54. The information includes operation rate, usage rate, and personnel involved in equipment maintenance.

The method for calculating the operation rates and usage rates of medical equipment was applied to hospitals which have introduced the ME management system, and keep an up-to-date equipment maintenance registry (equipment inventory database). Therefore, the above operation rates and usage rates could not be calculated for the CPA1 hospitals in the three main provinces.

In Table 3- 52, a very low operation rate of 43.3% can be seen at Srey Santhor RH. This hospital is targeted by the ME management system, but since there is no technician to conduct equipment maintenance checks, preventive checks and equipment management have not been attentively conducted. Furthermore,

the hospital is in a bad location, (as previously stated, there is a problem with operational district), so it has been reported that repair of broken equipment, etc. is always delayed.

At hospitals in 19 provinces, those with the lowest operation rates were Kampong Thom PRH, Kandal PRH, and Kep PRH. Hospitals in all these provinces had rates under 70%. One reason is that the three technicians at Kampong Thom PRH perform other work on the side, and do not have time to perform preventive checks on equipment. Another reason is that the technicians have a low level of technical skill. On the other hand, the Siem Reap PRH had an operation rate of 96%, the highest among the hospitals targeted by the survey. Its usage rate was 97.4%, which was the second highest in the survey, so it appears to be doing well overall. One reason for this is thought to be that an engineer is stationed on site. Equipment operation at this hospital has been extremely good since era of the MEDEM Project implementation. Not only is an engineer stationed on site, but the hospital director is very concerned with the importance of equipment maintenance, which raises the motivation of the ME working group. In addition, the hospital director instructs the personnel who use equipment in each department in the appropriate use of the equipment. Prey Veng PHR improved ME management significantly compared with the period of MEDEM Project. Though ME engineer is not deployed yet, the number of ME technician increased to 4 and they conduct periodical preventive checks and minor repairs on their own.

Though already pointed out previously in "3-4-7 ME maintenance personnel shortages at health facilities targeted by the survey," the above data also makes clear the special importance of personnel in this field.

3-6-4 UHC

To achieve UHC, the following three components are required: (1) to be able to enjoy necessary health services (health service), (2) to be protected from financial hardship caused by out-of-pocket payment (health finance), and (3) to cover all people (population coverage).

Thus, the effect of improved health facility on UHC was evaluated by these three indicators by province and the results were summarized in Table 3-51.

(1) Utilization of health facility for delivery (Health service)

Delivery at health facility can be used as an indicator of general health service utilization. Because of the assistance to MCH by JICA and other development partners for many years, the delivery at health facility has increased dramatically and accounts for 80% of births although regional differences are observed. As shown in Table 3-51, the proportion of delivery at health facility exceeds 90% in Battambang province, Kampong Chhnang province, Takeo province, and Phnom Penh, suggesting that health services are provided further in those provinces.

(2) Health insurance coverage (Health finance)

The introduction and promotion of health insurance to alleviate the financial burden of health service utilization greatly affects the attainment of UHC. Although health insurance, such as HEF for the poor, NSSF for government employees, and privately purchased commercial insurance is available in Cambodia, only 20% of Cambodians are covered by health insurance. As a result, the medical expenditures are mostly paid by incomes, loan, savings, and gifts from relatives. Provinces with health insurance coverage rate of 20% are Battambang province, Kampong Chhnang province, Kratie province, Siem Reap province, Phnom Penh, Preah Sihanouk province and Koh Kong province (Table 3-51).

(3) Wealth quintile (Population coverage)

In the area where the poor population is large, quality health services cannot be accessed without any financial protection even when the services are available. Table 3-51 shows the distribution of the household population into five wealth quintiles based on the wealth index by province. The lowest wealth quintile can be understood as the poorest in the society. World Bank pays special attention to the poorest 40% of population in every developing county for the quality health services. Thus, UHS can be achieved effectively when the assistance benefitting the community is provided in the area with a high poverty rate.

Table 3- 51 Effect of facility improvement on UHC

#	Province	Health Service*		Health Finance**		Population Coverage***						UHC Evaluation****
		Delivery at health facility (%)	Evaluation	Health insurance coverage (%)	Evaluation	Wealth quintile (%)					Evaluation(based on Lowest)	
						Lowest	Second	Middle	Fourth	Highest		
1	Battambang/Pailin	90.2	a	24.3	a	9.1	13.6	20.8	29.4	27.1	c	B(7 points)
2	Kampong Cham	84.5	b	15.8	b	25.2	21.0	25.3	17.5	11.0	b	B(6 points)
3	Svay Rieng	82.4	b	12.7	b	23.4	30.0	24.7	14.9	6.9	b	B(6 points)
4	Kampong Chhnang	97.1	a	25.6	a	5.3	13.3	27.4	33.7	20.2	c	B(7 points)
5	Kampong Speu	84.1	b	5.9	c	20.4	21.3	25.6	24.4	8.2	b	C(5 points)
6	Kampong Thom	74.3	c	16.3	b	35.9	27.5	15.3	12.7	8.8	b	C(5 points)
7	Kampot/Kep	80.9	b	6.9	c	23.2	28.5	23.6	17.2	7.5	b	C(5 points)
8	Kandal	80.8	b	2.4	c	35.5	25.6	17.9	11.2	9.9	b	C(5 points)
9	Kratie	46.3	c	20.4	a	43.0	21.5	14.7	15.0	5.8	a	B(7 points)
10	Mondul Kiri/Ratanak Kiri	51.2	c	2.6	c	30.8	26.1	11.4	13.5	18.1	b	C(4 points)
11	Otdar Meanchey	88.4	b	17.5	b	23.5	27.3	19.8	17.2	7.5	b	B(6 points)
12	Preah Vihear/ Stung Treng	51.1	c	1.2	c	47.1	27.3	12.9	7.0	5.7	a	C(5 points)
13	Prey Veng	90.0	a	8.0	c	22.6	27.6	26.9	15.6	7.3	b	B(6 points)
14	Pursat	78.4	c	18.1	b	34.2	29.6	16.0	15.5	4.7	b	C(5 points)
15	Siem Reap	91.6	a	21.6	a	30.9	25.3	15.8	11.6	16.4	b	A(8 points)
16	Takeo	92.2	a	15.9	b	8.5	21.4	27.2	34.3	8.6	c	B(6 points)
17	Banteay Meanchey	87.9	b	14.0	b	6.0	1.8	4.1	14.9	78.0	c	C(5 points)
18	Phnom Penh	95.9	a	22.2	a	0.3	1.3	3.0	11.0	84.4	c	B(7 points)
19	Preah Sihanouk/Koh Kong	88.9	b	25.2	a	8.0	9.3	11.0	28.3	43.5	c	B(6 points)

Health Insurance（HEF, Maternal health voucher, CBHI, Employer based insurance, Private purchased commercial insurance, other）

* Health service: Percentage delivered in a health facility
a: 90% or more (3 points) , b: 80%～90% (2 points) , c: less than 80% (1 point)

** Health finance： Health Insurance Coverage
a: 20% and more (3 points) , b: 10%～20% (2 points) , c: less than 10% (1 point)

*** Population coverage： Percentage of Lowest in wealth quantile
a: 40% and more (3 points) , b: 10%～40% (2 points), c: less than 10% (1 point)

**** UHC evaluation criteria
A: Total points: 8-9 B: Total points: 6-7 C: Total points: 4-5 D: Total points: 3

Table 3- 52 Comparison of Referral Hospitals (3 main provinces)

No.	Province	Hospital	CPA	No. of Bed	No. of OPD (2016)	No. of Caesarean section (2016)	HRH				Health Facility				Medical Equipment				
							Staffing			Evaluation	Scale of building/renovation (province total)	Space for construction	BOR	Evaluation	ME operating rate(%)	ME utilizing rate(%)	ME management		Evaluation
							MD	NS	MW								No. of Engineer	No. of Technician	
1	Battambang	Battambang PRH	3	270	42,726	630	a	a	a	A	*				56.6	89.8	0	3	D
2	Battambang	Moung Russey RH	2	84	16,159	28	a	c	a	B	a (2,164m2)	c	a	B	83.3	98.5	0	1	C
3	Battambang	Sampov Laun RH	2	65	5,968	121	c	b	a	B		a	c	B	86.8	96.2	0	0	D
4	Battambang	Thmarkol RH	1	71	9,753	NA	a	b	b	A		a	c	B	NA	NA	0	0	NA
5	Kampong Cham	Kampong Cham PRH	3	260	38,559	1182 (2015)	a	a	a	A	*				85.7	95.8	1	1	B
6	Kampong Cham	Bathey RH	2	60	3,974	0	b	c	b	C	a (4,225m2)	a	b	A	NA	NA	0	0	NA
7	Kampong Cham	Srey Santhor RH	2	70	2,186	151	c	c	c	D		a	c	B	43.3	76.7	0	0	D
8	Kampong Cham	Chamkar Leu RH	1	70	4,004	NA	c	b	a	B		a	c	B	NA	NA	0	0	NA
9	Kampong Cham	Cheurng Prey RH	1	70	4,318	NA	a	b	a	A		c	b	C	NA	NA	0	0	NA
10	Kampong Cham	Prey Chhor RH	1	70	2,389	NA	b	c	a	B		b	c	C	NA	NA	0	0	NA
11	Kampong Cham	Stung Trang RH	1	38	1,289	NA	c	c	c	D		a	a	A	NA	NA	0	0	NA
12	Svay Rieng	Svay Rieng PRH	3	168	16,501	460	a	c	a	B	*				78.0	93.9	0	2	C
13	Svay Rieng	Romeas Hek RH	2	70	3,461	0	c	c	b	D	b (450m2)	a	c	C	84.8	31.8	0	1	D
14	Svay Rieng	Svay Chrun RH	1	44	1,541	NA	b	c	b	C		a	c	C	NA	NA	0	0	NA
15	Svay Rieng	Chi Phou RH	1	60	5,026	NA	b	c	b	C		c	a	C	NA	NA	0	0	NA
16	Svay Rieng	Svay Teap RH	1	38	2,890	NA	b	c	c	D		b	b	C	NA	NA	0	0	NA

HRH a: over staffing (3points), b: meet standard (2points), c: under staffing (0point) Evaluation criteria A: Excellent (7 points or more) B: Good (5-6 points) C: Poor (2 points or below)

Health Facility

Needs of Reconstruction/ Renovation a : 2,000 ㎡ or more b : less than 2,000 ㎡ c : No need

Availability of Construction Space within the Site a:enough space b : need site visit and check c : not enough space

BOR a : over 100% b : 90%～100% c:below 90%

Refer table 3-32 for evaluation criteria

* supported by Japanese grant aid

ME

ME operating rate (%): (Number of Good (operate normally))÷total number of ME in hospital (based on ME management report)

ME utilizing rate (%): (Number of Frequently (used daily) + Number of Occasionally (used on an as-needed basis)) ÷total number of ME in hospital (based on ME management report)

NA: ME management system is not introduced

Evaluation of ME is made based on below conditions;

① ME condition (operating) rate is 90% and over ② ME utilizing rate is 90% and over ③ Number of engineer is one or more ④ Number of technician is one and more

If meeting all out of four conditions: A, If meeting 3 conditions : B, If meeting 2 conditions : C, If meeting one : D

Table 3- 53 Overall evaluation and priority for facility improvement in RHs (3 main provinces)

#	Province	Hospital	Evaluation*				Narrative Summary	Priority
			HRH	Facility	ME	UHC		
1	Battambang	Battambang PRH	**A**	-	**D**	**B**	supported by grant aid	**–**
2	Battambang	Moung Russey RH	**B**	**B**	**C**		Total floor area of the buildings with a rebuilding request from 3RHs is 2,164㎡, which meet demand of expected area for construction. Space for new building is available except for one RH. In addition, as shown in Table 3-29, since the number of RHs is small considering the total population, the needs of building new RH is also high. Regarding HRH, while one RH meets the CPA staffing standard of MD, NS and MW, one RH doesn't meet in MD and one RH doesn't meet in NS. Each hospital needs to improve ME management. If these are improved, the possibility of building/renovation of RHs in Battambang will increase. Issues of each RH are as follows; Moung Russey RH: Pediatric ward is severly aging and it needs to be rebuit. Sampov Laun RH: Clean/Dirty area of OT is unclear. Due to breakdown of X-ray machine, patients are referred to provincial referral hospital or military hospital. Thmakol RH: The premise is flooded during rainy season.	**High**
3	Battambang	Sampov Laun RH	**B**	**B**	**D**			
4	Battambang	Thmarkol RH	**A**	**B**	NA			
5	Kampong Cham	Kampong Cham PRH	**A**	**–**	**B**	**B**	already constructed by grant aid	**–**
6	Kampong Cham	Bathey RH	**C**	**A**	NA		Total floor area of the buildings with a rebuilding request from 6RHs is 4,255㎡, which meet demand of expected area for construction. Space for new building is available except for one. The number of RHs is enough considering the population. Regarding HRH, while one RH meets the CPA staffing standard of MD, NS and MW, one RH doesn't meet in MD, two RHs don't meet in NS, one RH doesn't meet in MD and NS and one RH dones't meet MD, NS and MW. Each hospital needs to improve ME management. If these are improved, the possibility of building/renovation of RHs in Kampong Cham will increase. However, the needs becomes low when comparing with Battambang because new RH dones't need to be built. Issues of RH are as follows; Cheung Prey RH: the building housing the administrative, surgery, examination departments etc are old and is in need of rebuilding. Bathey RH: It is upgraded from CPA1 to CPA2, but OT needs to be renovated. Srey Santhor RH: Due to limited number of beds, TB beds and general beds are in the same room. Infection control should be considered.	**Middle**
7	Kampong Cham	Srey Santhor RH	**D**	**B**	**D**			
8	Kampong Cham	Chamkar Leu RH	**B**	**B**	NA			
9	Kampong Cham	Cheurng Prey RH	**A**	**C**	NA			
10	Kampong Cham	Prey Chhor RH	**B**	**C**	NA			
11	Kampong Cham	Stung Trang RH	**D**	**A**	NA			
12	Svay Rieng	Svay Rieng PRH	**B**	**–**	**C**	**B**	already constructed by grant aid	**–**
13	Svay Rieng	Romeas Hek RH	**D**	**C**	**D**		Total floor area of the buildings with a rebuilding request from 4RHs is 450㎡, which is far below demand of expected area for construction. The number of RHs is enough considering the population. Regarding HRH, all RHs don't meet CPA staffing standard in NS. In case of MD staffing standard, one RH is below standard, and in case of MW one RH is below standard. Each hospital needs to improve ME management. Even if these are improved, the possibility of building/renovation of RHs in Svay Rieng remains low due to small scale of renovation. Issues of RH are as follows; Romeas Hek RH: As CPA2 hospital, surgion needs to be deployed Svay Chrum: Wastewater facilities, an incinerator, medical waste tank, etc. are needed. Chi Phou RH: In regard to SEZ development, outbreak of food poisoning and faint among factory workers need to be responded	**Low**
14	Svay Rieng	Svay Chrun RH	**C**	**C**	NA			
15	Svay Rieng	Chi Phou RH	**C**	**C**	NA			
16	Svay Rieng	Svay Teap RH	**D**	**C**	NA			

*Evaluation criteria of HRH, facility and ME: Refer Table 3-52

**Priority of assistance: Given by survey team considering each criteria

Table 3- 54 Comparison of Provincial Referral Hospitals (19 provinces)

No.	Province	Provincial Referral Hospital (PRH)	CPA	No. of Bed	No. of OPD (2016)	No. of Caesarean section (2016)	HRH				Health Facility				Medical Equipment				
							Staffing			Evaluation	Scale of building/renovation (province)	space for construction	BOR	Evaluation	ME operating rate(%)	ME utilizing rate(%)	ME management		Evaluation
							MD	NS	MW								No. of Engineer	No. of Technician	
1	Kampong Chhnang	Kampong Chhnang PRH	3	162	30,325	457	b	b	a	**A**	a	a	b	**A**	70.9	97.1	0	2	**C**
2	Kampong Speu	Kampong Speu PRH	3	130	30,360	254	b	c	c	**D**	b	a	c	**C**	71.9	93.1	0	2	**C**
3	Kampong Thom	Kampong Thom PRH	3	120	8,250	157	b	c	a	**B**	a	b	b	**B**	56.0	89.3	0	3	**D**
4	Kampot	Kampot PRH	3	155	9,805	424	c	c	a	**C**	b	a	c	**C**	83.0	88.5	0	2	**D**
5	Kandal	Kandal PRH	3	120	20,917	1,173	a	c	a	**B**	b	a	c	**C**	64.2	91.4	0	2	**C**
6	Kep	Kep PRH	1	18	8,205	NA	a	c	b	**B**	b	c	c	**D**	52.0	60.0	0	1	**D**
7	Koh Kong	Koh Kong PRH	2	66	17,926	46	a	c	a	**B**	c	b	c	**D**	77.7	91.7	0	1	**C**
8	Kratie	Kratie PRH	3	150	4,969	300	c	c	b	**D**	b	c	c	**D**	72.9	96.3	0	2	**C**
9	Mondul Kiri	Mondul Kiri PRH	2	43	1,572	36	a	c	b	**B**	b	c	a	**C**	88.0	92.0	0	1	**C**
10	Oddar Meanchey	Oddar Meanchey PRH	2	84	25,623	92	a	b	a	**A**	b	c	a	**C**	77.3	75.0	0	1	**D**
11	Pailin	Pailin PRH	2	60	1,369	67	a	b	a	**A**	a	c	c	**C**	92.8	78.3	0	1	**C**
12	Preah Vihear	Preah Vihear PRH	3	94	27,629	117	c	c	a	**C**	a	a	a	**A**	93.8	89.7	0	1	**C**
13	Prey Veng	Prey Veng PRH	3	104	19,463	177	b	c	a	**B**	b	c	b	**C**	94.6	98.2	0	4	**B**
14	Pursat	Pursat PRH	3	202	12,346	330	b	c	a	**B**	b	c	c	**D**	76.3	92.9	0	1	**C**
15	Ratanakiri	Ratanakiri PRH	2	88	18,863	105	a	b	a	**A**	a	a	c	**B**	81.5	66.4	0	1	**D**
16	Siem Reap	Siem Reap PRH	3	300	63,479	295	a	a	a	**A**	a	b	a	**A**	96.0	97.4	1	3	**A**
17	Stung Treng	Stung Treng PRH	3	90	6,097	106	b	c	b	**C**	a	b	a	**A**	80.9	90.4	0	2	**C**
18	Takeo	Takeo PRH	3	250	44,236	286	b	b	a	**A**	a	c	a	**B**	90.3	94.7	0	1	**B**
19	Tboung Khmum	Ponhea Krek PRH	1	80	9,698	NA	a	a	a	**A**	c	c	c	**D**	85.1	91.4	0	0	**D**

*Evaluation criteria of HRH, facility and ME: Refer Table 3-52.

Table 3- 55 Overall evaluation and priority for facility improvement in PRHs (22 provinces) 1/2

#	Province	Hospital	Evaluation*				Narrative Summary	Priority**
			HRH	Facility	ME	UHC		
1	Battambang	Battambang PRH	A	*	D	B	Main building including departments of operation, emergency, surgery and ICU building are scheduled to be built in 2019 by Japanese grant aid. The number of MD, Ns and MW meets CPA standard. Though ME technicial is deployed, ME oparating rate is low. UHC is eveluated high.	—
2	Kampong Cham	Kampong Cham PRH	A	*	B	B	Surgial ward, Ob-Gyn ward, operation ward, emergency ward, and radiology ward were built in 2010 by Japanese grant aid. Number of MD, Ns and MW meets CPA standard. ME engineer and technician are deployed and ME operating rate is high.	—
3	Svay Rieng	Svay Rieng	B	*	C	B	Main building including departments of outpatient, emergency, radiology, operation and Ob-Gyn was built in 2017 by Japanese grant aid. Number of MD and MW meets CPA standard, but Ns needs to be increased. Though ME technician is deployed, ME operating rate is not very high.	—
4	Kampong Chhnang	Kampong Chhnang PRH	A	A	C	B	Rebuiding crowded Ob-Gyn ward and pediatrics ward is awaiting approval for constructon. Outpatient ward including old OT needs rebuiding, but relocation of each department while constructon should be considered. The number of HRH meets CPA standard. The ME management needs to be improved, but the possibility of rebuilding/renovation will increase considerably if the space for construction is reserved.	High
5	Kampong Speu	Kampong Speu PRH	D	C	C	C	There are spaces for construction, however, there is no urgent needs of rebuilding since the BOR is low (1,256㎡). The number of NS and MW are below CPA standard and ME management needs to be improved. Therefore, the possibility of rebuilding/renovation is slightly low.	Lower Middle
6	Kampong Thom	Kampong Thom PRH	B	B	D	C	Relevance and effectiveness for facility rebuilding is high (2,541㎡), but the number of NS is below CPA standard and needs to be increased. The ME management also needs to be improved. Therefore, the possibility of rebuilding/renovation is slightly low.	Lower Middle
7	Kampot	Kampot PRH	C	C	D	C	There are spaces for construction, however, there is no urgent needs of rebuilding since the BOR is low (328㎡). The number of MD and NS are below CPA standard and ME management needs to be improved. Therefore, the possibility of rebuilding/renovation is slightly low.	Lower Middle
8	Kandal	Kandal PRH	B	C	C	C	Relevance and effectiveness of facility rebuilding is rather high (1,818㎡) in spite of low BOR. However, the number of NS is below CPA standard and needs to be increased. The ME management also needs to be improved. If these are improved, the possibility of rebuilding/renovation will increase.	Upper Middle
9	Kep	Kep PRH	B	D	D	C	There are lots of buildings within the compound and no space for construction. There is no urgent needs of rebuilding since the BOR is low (882㎡). The number of NS is below CPA standard and ME management is not satisfactory. Beneficialies are small because the provincial population is around 40,000. Therefore, the possibility of rebuilding/renovation is considerably low.	Low
10	Koh Kong	Koh Kong PRH	B	D	C	B	Each building is new, built in 2009, and there is no request of rebuilding/renovation. Since BOR is low, there is no urgent needs of rebuilding. The number of NS is below CPA standard, and ME management needs to be improved. Therefore, the possibility of rebuilding/renovation is slightly low.	Lower Middle
11	Kratie	Kratie PRH	D	D	C	B	There are lots of buildings within the compound and no space for construction. There is no urgent needs of rebuilding since the BOR is low (1,570㎡). The number of MD and NS is below CPA standard and the ME management needs to be improved. Therefore, the possibility of rebuilding/renovation is low.	Low
12	Mondul Kiri	Mondul Kiri PRH	B	C	C	C	There are many buildings within the compound and no space for construction. Thus, the relevance and effectiveness for facility rebuilding is evaluated low (1,697㎡). The number of NS is below CPA standard and ME maintenance is not satisfactory. If these are improved and if the space for construction is reserved, the possibility of assiatance will become high. However, beneficialies are very small because the provincial posulation is around 70,000.	Upper Middle

Table 3- 56 Overall evaluation and priority for facility improvement in PRHs (22 provinces) 2/2

#	Province	Hospital	Evaluation*				Narrative Summary	Priority**
			HRH	Facility	ME	UHC		
13	Oddar Meanchey	Oddar Meanchey PRH	A	C	D	B	There are many buildings within the compound and no space for construction. Thus, the relevance and effectiveness for facility rebuilding is evaluated low (668㎡). But the sufficiency of HRH is high. Therefore, the possibility of assistance will increase if the space for construction is reserved and ME is well maintained. However, beneficialies are small because the provincial population is around 240,000. In addition, since the hospital is scheduledd to be built by H-EQIP, the priority of assistance is considerably low.	Low
14	Pailin	Pailin PRH	A	C	C	B	There are lots of buildings within the compound and no space for construction. There is no urgent needs for rebuilding because of low BOR, but the total floor area for rebuilding request is 4,040㎡. The staffing meets the CPA standard. The possibility of rebuilding/renovation will be high if the space for construction is reserved and ME management improves. Though UHC is evaluated high, the beneficiaries are small with the population of 70,000. In addition, since the hospital is scheduled to be rebult by H-EQIP, the priority of assistance is considerably low.	Low
15	Preah Vihear	Preah Vihear PRH	C	A	C	C	Relevance and effectiveness for facility rebuilding is high (6,459㎡) because of high BOR and availability of space for construction, but the number of MD and NS are below CPA standard and ME management is not satisfactory. If these are improved, the possibility of rebuilding/renovation of the hospital will increase. However, the beneficiaries are small because provincial population is around 250,000. In addition, since the hospital was renovated in 2014 by HSSP2, the priority of assistance is considerably low.	Low
16	Prey Veng	Prey Veng PRH	B	C	B	B	Many facilities were built under French colony and are aging. The compound is small and there is no space for construction. Therefore, the relevance and effectiveness for facility rebuilding is evaluated low (1,400㎡). The number of NS is below CPA standard and needs to be increased. ME is well maintained. Therefore, the possibility of building/renovation will increase if the space for construction is reserved.	Upper Middle
17	Pursat	Pursat PRH	B	D	C	C	There are lots of buildings within the compound and no space for construction. There is no urgent needs of rebuilding since the BOR is low (1,293㎡). The number of NS is below CPA standard, and the ME management needs to be improved. Therefore, the possibility of rebuilding/renovation is slightly low.	Lower Middle
18	Ratanakiri	Ratanakiri PRH	A	B	D	C	Relevance and effectiveness of facility rebuilding is high (2,010㎡) in spite of low BOR. The sufficiency of HRH is high. If the ME is well maintained, the possibility of rebuilding/renovation will increase. However, the beneficiaries are small because the provincial population is around 190,000. Therefore the possibility of rebuilding/renovation of hospital is slightly low as of now.	Lower Middle
19	Siem Reap	Siem Reap PRH	A	A	A	A	Master plan of hospital renovation focusing on outpatient department is developed and space for construction is reserved. The hospital has high BOR and HRH is sufficient. ME is also well maintained with enough staffing. The relevance and effectiveness for facility rebuilding is evaluated considerably high because beneficial population is very big due to receiving patients from surrouding 6 provinces in addition to the province population of 1million. UHC is also eveluated high.	High
20	Stung Treng	Stung Treng PRH	C	A	C	C	Relevance and effectiveness of facility rebuilding is high (2,619㎡) because of high BOR, but the number of NS is below CPA standard and needs to be increased. The ME management also needs to be improved. If these are improved, the possibility of rebuilding/renovation of the hospital will increase. However, the beneficiaries are small because the provincial population is 130,000 (400,000 when adding population of surrounding two provinces). In addition, since the hospital was renovated in 2014 by HSSP2, the priority of assistance is considerably low.	Low
21	Takeo	Takeo PRH	A	B	B	B	Master plan of hospital renovation is developed, but the renovation involves enormous cost because it takes many years. However, since the number of HRH is sufficient and ME is well maintenanced, the possibility of building/renovation will incerase if issues of budget and time are resolved.	Upper Middle
22	Tboung Khmum	Ponhea Krek PRH	A	D	D	B	Each building is newly built in 2006 and there is no request of rebuilding/renovation. Since BOR is low, there is no urgent needs of rebuilding. The number of HRH is sufficient, but ME management is not satisfactory. The possibility of rebuilding/renovation is considerably low.	Low

*Evaluation criteria of HRH, facility and ME: Refer Table 3-52 Evaluation criteria of UHC: Refer Table 3-51

**Priority of assistance

High: Number of A is two or more Upper Middle: Other than High and Low, and without D

Lower Middle: Other than High and Low and with D Low: Number of D is two or more, or assisted recently

3-7 University of Health Sciences (UHS) hospital basic concept

Before conducting a field survey, the survey team obtained the information that the fact-finding mission of the Export-Import Bank of Korea would visit Cambodia in regard to support for the establishment of the UHS University Hospital through an international loan from South Korea. The team interviewed the mission on February 24th, and the rector of UHS, Prof. Dr. Saphon Vonthanak, on March 3rd.

This time, the South Korean mission conferred with relevant parties in preparation for offering support to the UHS University Hospital project, and to prepare for the feasibility study in the next phase. The South Korean survey group confirmed three things: ① the status of the site where the university hospital is scheduled to be built (property ownership status, status of problems with relocation of residents, if any), ② the UHS University Hospital concept proposal, and ③ project management (the roles of UHS, the Ministry of Health, and the Ministry of Economy and Finance).

In early April 2017, after these results were reported to South Korea, the feasibility study began with visits to Cambodia by medical experts, engineers, and designers. The basic design of the university hospital will be completed through practical discussions about details of the university hospital concept (number of beds, content of services offered). The feasibility study implemented this year will take several months, after which time the South Korean mission will decide on the amount of the international loan. The detailed design for the university hospital will be finished by mid-2018, and construction will begin around the end of 2018, at the earliest.

The intention of the Cambodian government is to create a modern and functional teaching hospital, including medical equipment and a short-term training program, but the details must be discussed with the government. According to the rector of UHS, on top of the international loan for construction of the university hospital (including medical equipment), related to the clinical training there are plans for negotiations with South Korea about further support for clinical capacity development training to staff as a grant, and the university is also searching for a partner other than South Korea to offer hospital management capacity development to hospital workers (medical workers and administrative staff) as a grant. Going forward, it is thought that the Cambodian Ministry of Economy and Finance will continue to conduct tough negotiations with the South Korean government about the practical contents of the university hospital concept, and the necessary amount of funding.

3-8 The 1st Workshop

Since the international loan from South Korea for the UHS university hospital concept had already been discussed, JICA did not see the need to provide support which would overlap with support from the South Korean government. Therefore, the original plan for a “UHS University Hospital Basic Concept Workshop” was scrapped, and a suggestion was received that instead, the workshop cover content related to health care human resources. To this end, following discussions with JICA, the scheduled workshop on UHS University

Hospital Basic Concept was changed to an alternative workshop to debrief tentative survey results and discuss possible solutions against challenges.

Attendees at the workshop included personnel from relevant departments at the MOH (DP, DHRD, DPHI, and DHS), and UHS, the WHO, the World Bank, and JICA Cambodia office. The survey team reported the information they had gathered from field surveys and from interviews at relevant offices at the Ministry of Health on the current state of health care human resources and health care facilities and equipment, and issues to be faced. Looking toward issue solving, possible future assistance of JICA was suggested, and comments were solicited from participants.

3-9 The 2nd Workshop

The Workshop was conducted to summarize the survey results and identified challenges on human resources, health facility and medical equipment, and to discuss significance, feasibility and expected challenges of proposed future assistance. Attendees at the workshop included personnel from relevant departments at the MOH (DP, DHRD, DPHI, DHS and DIC), and UHS, the WHO, the Medical Council, Cambodia Council of Nurses, Cambodian Midwives Council, and JICA Cambodia office. Comments from participants on the proposed assistance are summarized in 5-4.

3-10 Assistance of development partners

3-10-1 Development partner pooled fund support project (H-EQIP)

As manager of the pooled fund, the World Bank has been implementing the Health Equity and Quality Improvement Project (H-EQIP) since July 2016. It is the third project in this series, continuing from HSSP1 (2003-2008) and HSSP2 (2009-2016). These projects endeavored to strengthen a broad swath of the health system, and attained results to a certain extent, but were considered too broad in their targets, so this project has been narrowed down to the improvement of health financing and quality of services. The major donors are the World Bank, DFAT (Department of Foreign Affairs and Trade), KfW (German government-owned development bank: Kreditanstalt für Wiederaufbau), and KOICA.

The main components of the project are listed below.

(1) Service Delivery Grant (74M USD)

In order to improve health services, performance-based financial aid is provided to HCs, RHs, and PHDs based on the amount and quality of services offered. Support is provided to each facility based on an activities evaluation of existing MPA and CPA services, maternal and child health, nutrition, etc. Facilities were also subject to Level 1 (infrastructure evaluation) and Level 2 (service evaluation).

(2) Health Equity Fund (70M USD)

This system shoulders the medical expenses of those in poverty, and is currently in use by about 3 million people. There are future plans to expand the system to cover people with physical disabilities and children under age of five. A third party conducted an evaluation of whether funds were being well spent in the best interests of users, using the method implemented by URC under HSSP. Visits were paid to poor households to question them about the medical services they had received, and conduct the evaluation. However, it is currently the transition period for switch-over to the Payment Certification Agency. The MOH covers 40% of the HEF budget, but further increase is expected.

(3) Health System Strengthening (30M USD)

There are many sub-components, but one of these is infrastructure upgrade based on the Civil Works Plan 2016-2020, which includes the construction of 45 HCs, 15 obstetrics and neonatal wards, and two provincial referral hospitals (Pailin PRH and Otdar Meanchey PRH). A second is a scheme whereby funding is returned to the government based on evaluation under existing indices. For example, pre-service training for nurses conducted by the UHS, and in-service training conducted in line with MPA are included in these indices. A third component aims to strengthen the recording and reporting system for various health indices at PHD and OD, through M&E strengthening by a Japanese trust fund. Emergency funding for infectious diseases and natural disasters is also included.

3-10-2 Assistance of major development partners

Current assistance of major development partners is listed in Table 3-57.

Table 3- 57 Assistance of development partners

Development partners	Overview of assistance
World Bank	H-EQIP is implemented. Refer 3-10-1 for the details of the project.
WHO	Based on Cambodia-WHO Country Cooperation Strategy 2016-2020, WHO support Cambodia 1) to achieve the minimum recommended density of health workers (doctors, nurses, and midwives) of two per 1,000 population by 2020 2) to strengthen health workforce competency 3) to strengthen regulatory mechanisms to promote patient safety and adequate oversight of health service delivery
USA (USAID)	They provide technical assistance on HRH strengthening, hospital evaluation, and regulation for medical practitioners. They conducted MCH trainings and hospital evaluation (facility level and health service delivery level) in 9 provinces including Battambang and Kampong Cham. In the regulations of medical practitioners, they provided technical assistance to Health Professional Councils to develop business strategy and plan. Future assistance (2018-2021) is not decided yet.
Germany (GIZ, KfW)	KfW (German government-owned development bank: Kreditanstalt für Wiederaufbau) provides financial assistance while GIZ provides technical assistance. It joins H-EQIP and supports voucher scheme for the poor and disabilities. They are interested in assisting CPD (Continuing Profession Development) and regulation on health facilities.
Australia (DFAT)	DFAT joins H-EQIP and support health sector in Cambodia. In addition to strengthening ID poor accreditation, it supports midwifery education of TSMC as assistance to MCH.
South Korea	South Korea joins H-EQIP and support health sector in Cambodia. One building of RTC in Battambang was constructed by the assistance of KOFHI (Korea Foundation for International Healthcare). Assistance to midwifery training including TOT training is provided. Furthermore, constructing hospital including medical equipment was supported by Korean grant. Training for neonatal care or for surgeons are also provided.

Source: Survey Team

Chapter 4 Issues with Health Care in Cambodia

Compared with 20 years ago, the public health care service system in Cambodia today has made improvements in both quality and quantity, and the system now provides treatment and support in nearly every part of the country for common medical issues, such as maternal and child health (including safe pregnancy and birth), a preventive vaccination program, infectious diseases such as tuberculosis and HIV, and diarrhea and fever. National expansion of referral hospitals and health centers under Health Strategic Plan have made this possible, and medical service contents in line with CPA guidelines (which set basic policy for hospital) and MPA guidelines (for health centers) have been applied nationwide. On the other hand, when focusing on service delivery systems for UHC achievement, health facilities which can provide medical services above the moderate level, such as abdominal, head, and neck surgery, are clustered in the limited Phnom Penh metropolitan area only, and even regional cities have not yet received such benefits. In addition, traumatic injury from traffic accidents has become a major societal problem in recent years, but in rural areas only limited medical services are provided overall, which is thought to contribute to needless loss of life. Furthermore, in some cases even hospitals touted as CPA2 may lack surgeons, ob-gyns, and anesthesiologists, and therefore be unable to perform a simple Caesarian section.

Here, issues relating to health care human resources, facilities and equipment are summarized, based on the results of this survey.

Challenge on HRH 1

Challenge 1 Chronic shortage and geographical imbalance of HRH

【Summary】

Though public and private training institutions train about 6,000 health care human resources per year (doctors, nurses, midwives, etc.), the Ministry of Health continues to worry about a chronic lack of human resources.

The number of doctors, nurses, and midwives per thousand population is 1.17 (MOH 2016), which is less than the 2020 WHO Cambodia's goal of 2.0 (this goal includes both public and private, but Cambodia does not collect statistics on private health care institutions, so an accurate comparison is difficult). Based on interviews, the reasons for this are that fragile public financing means that only a limited number of public servants can be hired, careers in public service are unattractive (low salary), and doctors are often sent to work in disadvantaged rural areas to maintain technical standard levels for doctors. The government is working to increase salary standards, and has raised public servant monthly salaries eightfold from the past value of 20 USD, but even so, current salary levels could not be called a living wage.

Also, as shown in Fig. 3- 18, geographical gaps in the distribution of doctors are another issue. There are RTC and other training institutions for nurses and midwives in regional cities (Battambang, Kampong Cham, Kampot, and Stung Treng provinces), which attract students from rural areas and thereby turn out about 1,600 nurses and midwives per year to cover the human resources supply needs of those rural areas. However, all five training institutions for doctors, including private ones, are clustered in Phnom Penh, and because working in the city is much more attractive, graduates of these institutions prefer to work in the city. Moreover, the MOH is currently conducting hiring to make up for the shortfall of human resources in rural areas. Young doctors especially are unlikely to remain in rural areas, so job posts often go vacant. In 2016, to supplement a large number of retirements in the coming years, about 4,000 new personnel were hired, including those who were converted from contract employees, which was an exceptional number. Securing enough doctors is an issue for most rural hospitals, and the situation is especially dire for specialists such as surgeons.

【Associated factor】

- MOH budget shortfall
- Few public servants hired
- Unbalance between production and employment
- Little coordination between DHRD and DP
- Limited data on HRH at private health care institutions
- Career in public service unattractive (salary, working conditions, work content, etc.)
- Work in the city attractive, life in rural areas unattractive
- Concern for maintaining technical standards in rural areas (few training opportunities, etc.)
- Lack of HR development system for rural health care
- HR development institutions clustered in urban areas (esp. for doctors)

【Countermeasures】

- Increase Ministry of Health budget, improve salaries
- Increase the number of public servants hired
- Supply according to health care human resources demand
- Get data on employment status at private health care institutions
- Create a system for guaranteeing training opportunities for health care human resources working in rural areas
- Set up training institutions in rural areas

Challenge on HRH 2

Challenge 2 Improvement of HRH quality

【Summary】

Regarding human resources for health, the Exit Examination already exists as a scheme to guarantee a certain level of quality for health professionals. The examination consists of a paper exam with knowledge questions, and a practical exam called the OSCE (Objective Structured Clinical Examination), and due to a revision of the law, jurisdiction in this field has been merged with the Department of Human Resource Development, MOH.

After graduating from a six-year university course, doctors do two years of hospital training (unpaid internship), and then take this Exit Examination. Following this, if they are hired as public servants, they are sent immediately to rural hospitals without sufficient clinical training beforehand.

This survey included simple interviews with doctors using a chest X-ray film. The results (Fig. 3-22) show that even for basic items any doctor should know, the accuracy rate did not reach 80%, and therefore, it is surmised that knowledge and technical standards for doctors are insufficient. Because these skills should have been acquired during the two-year internship period (equivalent to the two years of primary training doctors receive after acquiring their physician's license in Japan), it is surmised that there are issues with the effectiveness of training during that period. The university hospital being planned by UHS should be made an effective clinical education institution.

Since doctors fulfill the central role in the medical service system, basic training and structuring a training system aiming at a continuing education and training for rural health care are pressing issues.

To train rural doctors in order to raise the service standards of rural health care, the training institutions which are now clustered in the capital must be expanded to regional cities, and used as a base for ensuring a systematically organized training system for doctors and other health care professionals.

JICA has been extending assistance to human resource development since 1995. As a result, the maternal mortality rate dropped from 1,200/100,000 in the 1990s to 160 according to recent statistics. The infant mortality rates also improved from 95/1,000 in 2000 to 28 in 2014, and the neonatal mortality rate from 39/1,000 in 2000 to 18 in 2014, showing significant improvement of MCH indicators. In addition to social improvement in relation with economic development, strengthening development of HRH in MCH has contributed to the decline of maternal mortality rate.

However, compared with surrounding countries, these mortality rates are not satisfactory. In particular, the downward trend of neonatal mortality rate is relatively more gradual than other MCH indicators, and intensive care for sick, low-weight or preterm baby remains challenge. In order to further improve those indicators, some sorts of breakthrough would be necessary. The improvement of infant mortality, for example, could be brought by team-work medicines where doctors, nurse and midwives work collaboratively with modern medical technologies.

【Associated factor】

- Low proficiency from basic education/compulsory education
- Health care career unattractive (income, purpose, etc.)
- Lack of trainers in pre-service training and low technical levels, lack of educational materials, lack of opportunities for practical training
- Little collaboration between training institutions and practical training facilities
- Health care standards at training sites (hospitals)

- In-service training program not established systematically

【Countermeasures】
- Improve basic education/compulsory education (especially STEM)
- Improve wages and social status of doctors
- Improve health care standards and medical skills at training institutions
- Establish university hospitals (South Korea planning support), and attach teaching hospital functions
- Improve educational materials and practical training facilities at universities
- Improve in-service training program

Challenge on HRH 3

Challenge 3　Limited administrative control for private sector

【Summary】

There are three information systems for human resources for health: 1) Department of Personnel, MOH, 2) Department of Human Resource Development, MOH and 3) the Health Professional Councils. Among these, the former two deal with health care human resources who are public servants.

On the other hand, 3) registers information from each professional council (five job types: doctors, dentists, pharmacists, nurses, and midwives) regardless of whether employment is public or private, and legally covers both. However, registration of health care human resources at private institutions has not actually progressed (estimated overall registration rates are 76% for doctors, 82% for dentists, 96% for pharmacists, 24% for nurses, and 84% for midwives).

In addition, though a system has been designed which requires that a certain number of credits be acquired from training courses or seminars in order to renew license with the Professional Council, guidelines relating to acquisition of credits are still in the process of being drafted.

Due to this, grasping the state of health professionals at private institutions and supervising their quality both remain issues.

【Associated factor】

- MOH lacks the budget to supervise human resources for health
- System for registering health care human resources employed by private health care institutions is still not well known
- Insufficient laws covering private health care institutions (facilities, medical equipment, personnel deployment, etc.)
- Guidelines for credit acquisition toward license renewal have not yet been established

【Countermeasures】

- Create a system for license renewal through the Health Professional Council
- Create a HRH database including private institutions, and strengthen oversight capacities
- Put the registration system into general use (USAID is providing funding for this until September 2017)
- Establish laws for facility standards, medical equipment installation standards, and personnel deployment standards at health care institutions

Challenge on HRH 4

Challenge 4 Lack of Bio-Medical Engineer for ME management

【Summary】

For Cambodia to realize its high-level policy goal of "thorough investment in medical equipment and medical facilities incorporating the latest technology," maintenance for the equipment and facilities will be vital. However, out of 35 hospitals, 10 hospitals lacked an ME technician (Fig. 3-55). Furthermore, the only hospitals with an engineer on site are Siem Reap PRH and Kampong Cham PRH, which each have one engineer. There are only about 10 people nationwide who possess specialized knowledge and skills necessary for conducting maintenance on medical equipment.

Private companies have been starting businesses with individual provincial referral hospitals to introduce high-level medical devices (CT scanners, etc.). However, many of the medical equipment introduced were procured at low cost from poor-quality manufacturers. They break down soon after purchase and in some cases become a hindrance to daily examination work. Regarding medical equipment procurement, the MOH lacks personnel capable of checking medical equipment specifications with an expert eye, and establishment of laws covering this field has been delayed. Therefore, many companies are easily able to expand their business in this field, and some of them are predatory contractors which sell poor quality items while completely failing to provide a guarantee for post-sales maintenance.

Due to the above, the MOH must swiftly train technicians who possess the knowledge and skills needed to accurately evaluate products handled by medical equipment procurement contractors. Furthermore, structuring a system and organization for this field which ensures that predatory contractors and poor quality manufacturers are removed, while import and procurement of high-quality products proceeds. In the future, Cambodia must also consider training experts who can independently develop medical equipment suited to Cambodian standards.

【Associated factor】

- Lack of budget and personnel for medical equipment maintenance at the central and provincial levels
  At the central level, as shown in 3-4-2, there are only two persons in Department of Hospital Services, MOH, which administrates the ME management system. These two conduct M&E and follow-up activities on the system and for 50 hospitals nationwide. While the MEDEM project was ongoing, a national WS was formed and 12 persons were deployed, but for present activities there are only enough budgets to retain two persons. At the provincial level, as explained in 3-4-7, there is a lack of personnel with sufficient knowledge and skills in the medical engineering field.
- No training organization or certification system for medical equipment maintenance personnel
  As shown in 3-4-7, there are no institutions (universities or professional schools) which conduct education in the medical engineering field, and no certification system in that field.
- Lack of incentive to keep medical equipment well maintained
- As shown in 3-4-7, ME technicians at each health care facility were appointed on an impromptu basis, so their level of knowledge and ability relating to medical equipment is low, and they are not trusted by other personnel. Furthermore, their salaries are even lower than those of other personnel, so technicians' motivation to maintain medical equipment is low.

【Countermeasures】

- Increase budget and number of persons for medical equipment maintenance
- Training, development and employment for medical equipment maintenance personnel
- Create an organization for overseeing medical equipment maintenance (review equipment specifications in line with guidelines, management plan for equipment from procurement through to disposal and replacement, technical training for handling new equipment and maintenance checks, maintenance training planning and implementation, create a Cambodian set of standards based on ISO and IEC, etc.)
- Revise guidelines, etc. related to medical equipment maintenance
- Add incentives such as insurance eligibility to promote good maintenance of medical equipment

Challenge on HRH 5

Challenge 5 Deployment of maintenance personnel for health facilities

【Summary】

Through the interviews during the survey, it was found that there is so little organization for maintenance of health facilities (building, electricity, water/sewage etc.) as to be nonexistent. Facility, electrical, and water/sewage work are implemented by each hospital independently.

In order for building facilities to be kept in good condition over the long term, daily cleaning/inspection and swift repair problems such as wear, breakages, and aging is necessary. It will be vital to set up a maintenance plan like the one below and create a maintenance management organization/team.

①Establishment of a maintenance management system: form a maintenance team, decide on responsible parties and make sure they thoroughly conduct the assigned work. Also, establish a yearly maintenance activities plan, and conduct maintenance in a planned fashion by keeping maintenance records.
②Regular cleaning: create a cleaning schedule by time period (daily, weekly, quarterly), and have cleaning staff conduct cleaning work on schedule.
③Regular facility repairs: for repairs addressing wear, breakages and aging in facilities, checks and adjustment of building fixtures should be made about once a year, paint should be touched up about once every three years, and repainting should occur about once every 10-15 years.
④Architectural facility maintenance: for architectural facilities, daily preventive maintenance will be very important in anticipation of breakages, fixture replacements, etc. The lifespan of devices can be increased through correct operation and daily checks, oiling, adjustment, cleaning and repair, taking into account the hours of operation of the device.

In sum, maintenance should not be left up to the efforts of each individual hospital. Instead, the MOH should establish regulations for facilities maintenance, and allocate personnel and a budget to that end. Creating a scheme which ensures that facilities are maintained so as to always operate smoothly is an issue.

【Associated factor】

- Lack of personnel and budget for health facilities maintenance
- No system or organization established for health facilities maintenance
- No guidelines, etc. relating to health facilities maintenance

【Countermeasures】

- Increase budget and deploy personnel for health facilities maintenance
- Establish a system/structure for health facilities maintenance
- Set out guidelines relating to health facilities maintenance
- Establish a health facilities maintenance plan

Challenge on HRH 6

Challenge 6 Improvement of hospital management

【Summary】

Though this survey showed that many outstanding issues remain in the fields of HRH, health facilities and medical equipment, outpatients patronizing the services provided by public health care institutions are increasing (as seen in Fig. 3-3), and overall, the system is moving toward improvement. One reason for this is thought to be that the introduction of user fees made possible by healthy economic growth, as well as introduction of an insurance system from HEF and NSSF, has contributed to increasing the budget which hospitals can use in a discretionary manner based on independent judgment. Of this budget, 60% goes to supplementing employee salaries and securing contract workers, and 39% goes to purchasing pharmaceuticals and other consumables which are often in short supply. Thanks to this, a limited portion of health facilities are now able to provide comparatively better services to patients, and in some cases this can be seen to have led to an increase in patients and certificates from PHD.

Going forward, these efforts by facility heads and individual employees should be translated into a larger organization effort, and activities surrounding problem points must be expanded linearly or laterally. In this case, as the Cambodian government states in the D&D (De-centralization and De-concentration) concept in its National Strategic Development Plan 2014-2018, ceding jurisdiction over health care services from the national level to the provincial level will be very important.

That is to say, the idea that "intimate services such as health care services should be provided as close as possible to residents" is thought to be connected to detailed and specific improvements in service quality. To achieve this, local government bodies which supervise health care must be improved, and initiatives must be undertaken to improve the quality of the medical service providers themselves. To conduct these reforms at an organizational level will require not only improvement of PHD management abilities, but also simultaneous improvement of hospital operation management abilities at each hospital.

【Associated factor】

- Rising citizen needs for health care services in conjunction with economic growth
- Delayed response by local governments to the needs of citizens
- Mutual lack of budget at the Ministry of Health and provincial health administrations
- Service quality gap among health care facilities following introduction of user fees

【Countermeasures】

- Improve management abilities of health department administrators
- Improve operation management abilities at hospitals
- Introduce PDCA (Plan, Do, Check, Action) cycle for medical services at local health departments
- Create a system to offer financial incentives to provide high-quality service

Challenge on Health Facility and ME 1

Challenge 7 Shortage of health facilities

【Summary】

In comparison of the main three provinces surveyed (Battambang, Kampong Cham, and Svay Rieng), it turned out that Battambang had very few HCs and hospitals relative to its large population. According to calculations, the number of facilities required is 12 health centers and five hospitals in Battambang, eight health centers and two hospitals in Kampong Cham, and three health centers (and no hospital) in Svay Rieng.

Battambang will therefore need to respond to health care demand of local people with construction of new HCs and hospitals as well as renewal of the existing facilities and equipment. This will require allocation of enough health care human resources and supply of medical equipment that satisfy both the quality and quantity. Maintenance of the facilities and equipment will be also indispensable.

It should be noted that the above estimate is made on the basis of requirement described in CPA guidelines and MPA guidelines for which a given medical facility serves a given population. That does not give consideration to actual patient behaviors receiving treatment and local road traffic conditions.

As shown in Table 3-29, the comparative number of RH is small in Battambang province considering its population, and the needs of building additional RH as well as renovation of existing RHs are high. On the other hand, there is sufficient number of RHs in Kampong Cham province and Svay Rieng province considering their population. Issues of each RH are as follows;

- Moung Russey RH (Battambang): The pediatric ward needs to be rebuilt because it is so decrepit that it has rain leaks.
- Sampov Laun RH (Battambang): The OT building was built by HSSP2, but the division between clean and dirty sections is unclear and the patient flow needs to be improved.
- Cheung Prey RH (Kampong Cham): The two-story main building (housing administrative, surgery, examination, inpatient departments), in front of the entrance, are dark inside and the stairs are worn down. It needs to be rebuilt because it is remarkably aging
- Bathey RH (Kampong Cham): When it was built by Korean aid, the OT was not used because it was CPA1. Since it was upgraded to CPA2, the OT needs renovation (gaps in the walls and ceiling, roughness of wall and rubbish build-up).
- Romeas Hek RH (Svay Rieng): Surgeon needs to be deployed immediately as CPA2 hospital.
- Svay Chrum RH (Svay Rieng): Though the facility is new, the infrastructures such as wastewater facilities, incinerator, medical waste tank, are needed soon.

【Associated factor】

- Lack of human resources and budget at the central and provincial level
- Centralized health planning and budgetary decision making

【Countermeasures】

- Increase in human resources and budget at the central and provincial level necessary for facility construction
- Employment of health care human resources and standardization of training cycle
- Promotion of decentralized health planning, staffing, and budget allocation

Challenge on Health Facility and ME 2

Challenge 8 Provincial referral hospitals with unmet needs

【Summary】

As mentioned in 3-3-6, facility needs have been reviewed according to information gained by a local consultant and the 3rd field survey. It turned out that six provincial referral hospitals in Preah Vihear, Siem Reap, Stung Treng, Takeo, Prey Veng and Kampong Chhnang, had a higher priority of facility upgrade. In addition, considering HRH, health facility, medical equipment and UHC perspectives, Siem Reap PRH and Kampong Chhnang PRH have the highest priority for assistance. Situations of each hospital are as follows;

Siem Reap is 314km away from Phnom Penh by the national highway 6. While it is a tourist city, its poverty rate is high. Siem Reap PRH is located in the center of the city and have many outpatients and inpatients. It examines patients from surrounding six provinces, including 200-500 patients a year from Otdar Meanchey. As increasing the number of patients, it continues to expand its building. However its further expansion is difficult and the buildings constructed in from 1950s to 1970s are aging. The hospital developed its masterplan for renovation. Since the population of Siem Reap is close to 1 million, the beneficial population is large and the possibility of rebuilding/renovation is considerably high. Because surgeons deployed at two CPA2 hospitals don't have enough skills and experiences to perform operations, they refer many patients for operations to Siem Reap PRH currently, and CPA1 hospitals also refer patients directly to Siem Reap PRH not CPA2 hospitals, leading the increasing number of patients at Siem Reap PRH. Staffing surgeons is also an issue.

Kampong Chhnang PRH is located by the side of the national highway 5, 91 km from Phnom Penh. Situated in a roughly halfway point of the Southern Economic Corridor embracing the national highway 4 and 5 (linking Poipet bordering Thailand and Bavet bordering Viet Nam), the surrounding area of the hospital has a growing population where many Chinese-owned plants have been constructed. It is projected that local economy will be growing. Kampong Chhnang PRH is located at a key point in the Southern Economic Corridor, as much as Mongkul Borey Hospital in Banteay Meanchey, Svay Rieng PRH, and Battambang PRH, all of which have received Japanese aid so far. Rebuilding crowded Ob-Gyn ward and pediatrics ward is awaiting approval of Ministry of Finance. Rebuilding the outpatient ward including OT is necessary, but the relocation of each department while construction should be considered. If this issue is solved, the possibility of rebuilding/renovation will increase considerably.

Refer Table 3- 55 and Table 3- 56 for priority of assistance among provincial referral hospitals.

【Associated factor】

- Lack of government budget
- Poor facility checkup and equipment maintenance system

【Countermeasures】

- Renovation of facilities and update of medical equipment
- Strengthening of facility checkup and equipment maintenance system

Other Challenge 1

Challenge 9 Hospitals with unmet CPA standard

【Summary】

CPA2 hospitals visited by the survey team have well-equipped surgery rooms. However, surgeons are not assigned, and surgical operations are not performed, despite a prescribed medical care. In an interview with a CPA1 hospital director, it was noted that surgery would be impracticable, even if such facilities were provided, because available staff members would not be as competent as required. As shown in Table 3-2, furthermore, a surgery-performing CPA3 hospital only provides treatment of common extremity injury, Caesarian sections, and appendectomy, which account for 90% of surgery carried out there. Thoracic, head and neck surgery is less than 5% of the entire surgery cases. The hospital relies on national hospitals in Phnom Penh for more specialized surgery.

The priority is thus functional strengthening of CPA3 hospitals at provincial level, and then rehabilitating CPA2 hospitals to deliver their standard medical services.

【Associated factor】

- Lack of budget for upgrading and maintaining facilities and equipment
- Lack of specialist doctors/specialists, in particular surgeons, ob-gyns, and anesthesiologists
- Lack of co-medical staff members (pharmacists, nurses, laboratory technicians, and radiologists)
- Restricted medical services resulting from doctors' technical inadequacy
- Lack of financial and skill-upgrading incentives for specialist doctors/specialists employed in rural areas

【Countermeasures】

- Budget allocation for upgrading and maintaining facilities and equipment
- Creation of specialist training systems in rural areas
- Creation of systematic training program for health workers, including doctors working in rural areas, and granting training opportunities

Other Challenge 2

Challenge 10 Quality assessment of health facility

【Summary】

Currently, facility requirements and service quality are assessed with SOA and SDG (Service Delivery Grant) arrangements. With these schemes, health care facilities receive performance-based financial incentives, which is already a common practice.

It is now projected that insured treatment will be provided more broadly in the informal and formal sectors. Health insurance coverage will be instrumental to increased medical fees paid for health care institutions, leading to enhanced quality of their service delivery.

In other words, the quality of service delivery at health care institutions needs to be evaluated with indices that rate the medical infrastructure such as the number of medical workers and equipment maintenance practices as well as non-physical components including patient satisfaction related to how patients are served and informed of their diseases. Such evaluation must be incorporated in a rewarding mechanism for which the health care institutions receive insured medical fees on the basis of their performances.

In the long run, quality assessment of medical services delivered at health care institutions may be linked with an economic incentive using a scheme of insured treatment. Then, as in Japan, such mechanism will enhance the health care quality and encourage better medical treatment.

【Associated factor】

- Growing qualitative differentiation of medical services resulting from adaptation of a user-fee-based system
- Varied medical equipment specifications and medical technologies at different health facilities
- Growing medical service needs of local people
- Expectation of local people for a start of universal health insurance and quality enhancement of medical services
- Synergistic effect generated with the ongoing JICA social health insurance project (SHIP)

【Countermeasures】

- Objective indices set out and used to assess medical service quality (facilities, medical equipment, staff allocation and patient services) (assisted with H-EQIP)
- Economic incentive system linking a medical service assessment system with health insurance (assisted with H-EQIP)

Chapter 5 Proposed Future Assistance to Attain UHC

5-1 Selection of target areas considering the project impact

The survey targeted three major provinces, namely, Battambang, Kampong Cham, and Svay Rieng. Each has challenges on its human resources for health and facilities as well as medical equipment. Against this backdrop, input resources, albeit limited, should optimize medical services that benefit local people. It is then desirable that the assistance benefit local people in both the target and neighboring provinces in a direct and indirect manner. Furthermore, it is encouraged that good practices in a given site will be a guiding model duplicated in other provinces.

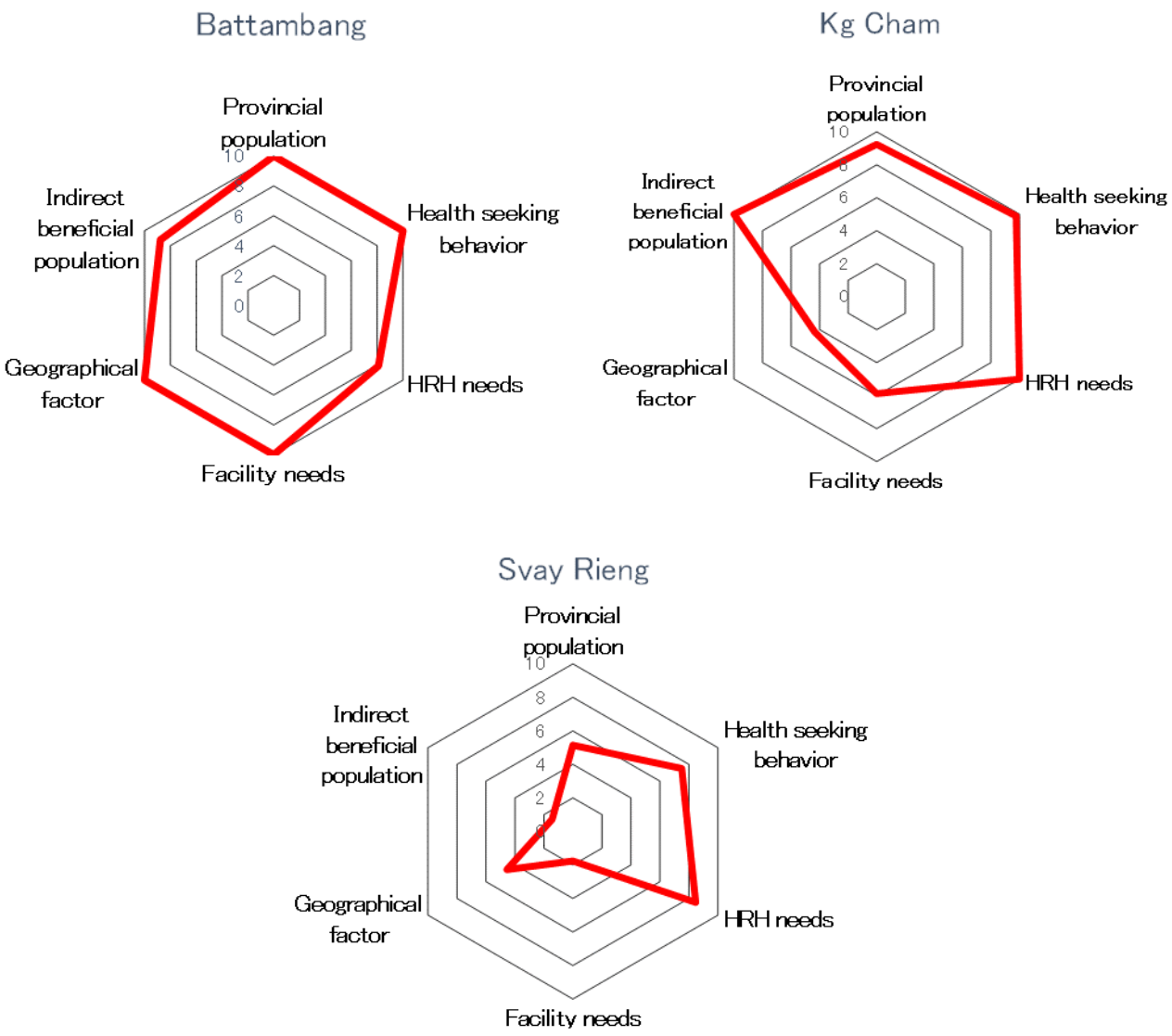
Accordingly, six indices are set to compare three provinces, which examines a direct beneficiary population (provincial population), patients health seeking behavior (the number of new outpatients per population), the needs level of medical service providers (the number of doctors, nurses, and midwives per 1,000 population), the needs level of health care facilities (the number of additional facilities to cover the local population), geographical factor (distance from Phnom Penh), and region-wide spillover effect (coverage of the population benefited from local human resource development at RTC) (Table 5-1 and Fig. 5-1). As a result, it is concluded that Battambang province has a larger beneficiary population, direct or indirect, and is a highly self-supporting province. The province has also relatively higher facility needs.

Considering all these factors, it is proposed that assistance be targeted for six northwestern provinces in Cambodia, including Battambang (Battambang, Pailin, Oddar Meanchey, Banteay Meanchy, Siem Reap, and Pursat: Fig. 5-2) to strategically achieve a region-wide spillover effect.

Table 5- 1 Selection of strategic area among 3 main provinces

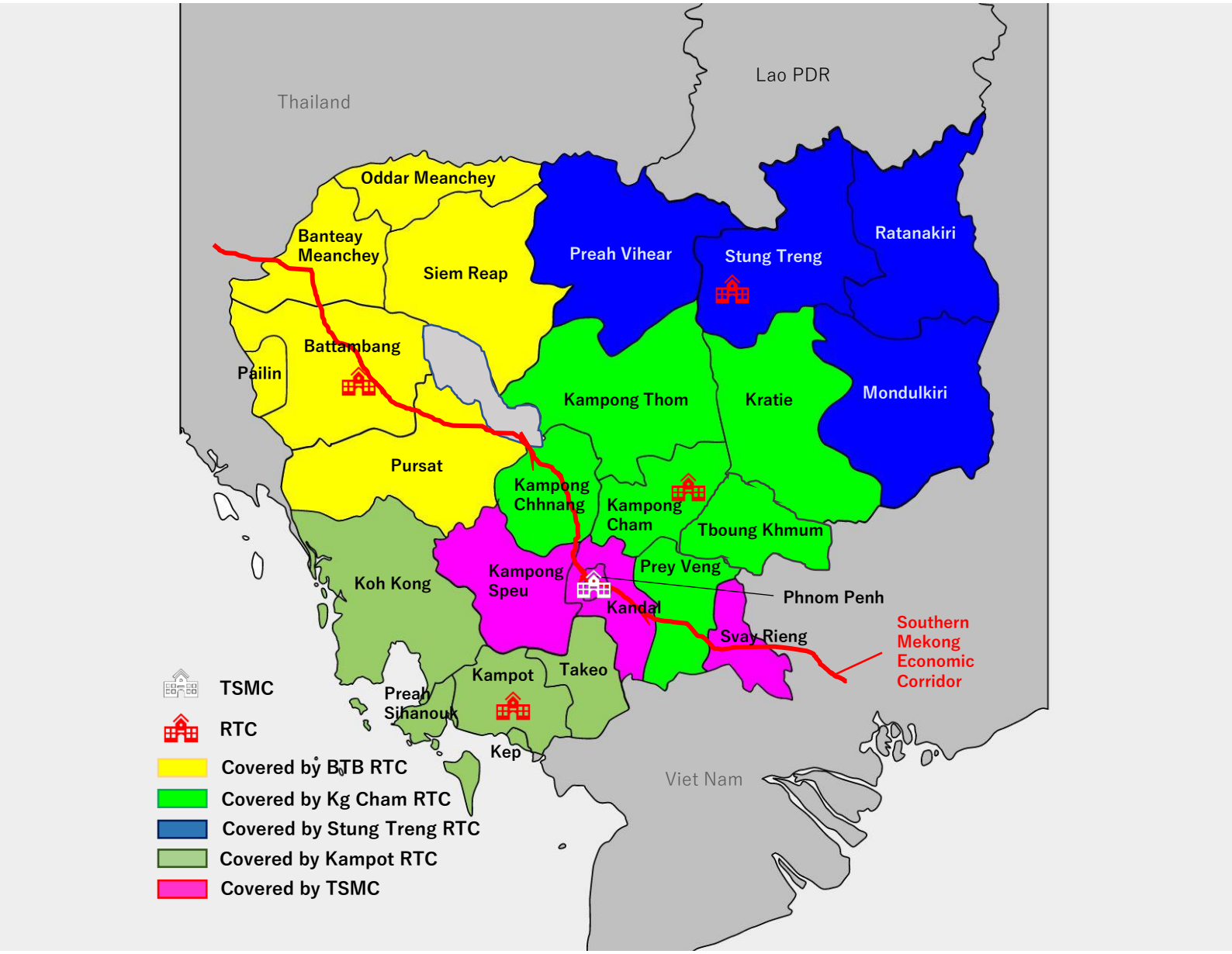
#	Indicators	Battambang	Kg Cham	Svay Rieng
1	**Beneficiary population** (per million)	1.2	1.1	0.6
2	**Health seeking behavior** （Number of OPD/pop.）	0.036	0.035	0.027
3	**HRH needs** (Number of HRH per 1,000 pop.: gap from WHO Cambodia target (2.0))	0.84	1.06	0.89
4	**Facility needs** (N of facility required)	17	10	3
5	**Geographical factor** (Distance from Phnom Penh, per 100 Km)	2.9	1.3	1.3
6	**Indirect beneficial population** (Cover pop. by RTC: BTB&KC, Provincial pop.:SVR)	3.7	4.2	0.6

Source: Survey Team



Source: Survey Team

Fig. 5- 1 Comparison of assistance needs among 3 main provinces



Source: Survey Team

Fig. 5- 2 RTC covering provinces

5-2 Identified challenges and proposed assistance strategies

As mentioned in Chapter 4, ten key challenges are identified in the survey, covering human resources for health, health facilities, and medical equipment. Seven assistance strategies are proposed to address them, as shown in Table 5- 2. The table indicates prospective responsible agencies and organizations and schemes of cooperation. Furthermore, Table 5- 3 and Table 5- 4 show how necessary countermeasures relate to the proposed assistance strategies.

Each strategy is further described in 5-4.

Table 5- 2 Seven options for assistance

#	Options	In charge	Scheme
①	Strengthening medical training system in northwestern region	MOH (DHRD, DHS, DPHI) Battambang PHD, PRH	Technical Project Provision of facility and equipment
②	Strengthening management capacity for health system and medical services in northwest region	MOH (DHRD, DHS, DPHI) PHDs in northwest region (6 provinces)	Technical Project
③	Region wide personnel system and strengthened training system for HRH	MOH (DP, DHRD)	Technical advisor
④	Enhanced RHs and HCs in Battambang province	MOH (DHS, DPHI) Battambang PHD, RHs	Technical Project Provision of facility and equipment
⑤	Renovation of PRHs and other RHs	MOH (DPHI)	Renovation of facility and provision of equipment
⑥	Quality assessment system for hospital and care provision	MOH (DHS, DPHI)	Technical advisor
⑦	Strengthening Health Professional Councils	MOH Health Professional Councils	Technical advisor

Source: Survey Team

Table 5- 3 Relations between countermeasures and options of assistance (1/2)

Options:

① Strengthening medical training system in northwestern region
②Strengthening management capacity for health system and care provision in northwest region
③Wider personnel system and strengthened training system for HRH
④Enhanced RHs and HCs in Battambang province
⑤ Renovation of PRHs and other RHs
⑥Quality assessment system for hospital and care provision
⑦Strengthening Health Professional Councils

Challenge		Countermeasures	Necessity of assistance	Options						
				①	②	③	④	⑤	⑥	⑦
1	Chronic shortage and geographical imbalance of HRH	Increase budget and salary/benefit								
		Increase recruitment in public sector								
		HRH production based on demand	○			✓				
		Make available the employment status in private sector	○							✓
		Training opportunities for HRH in province and strengthening training system	○	✓	✓	✓	✓			
		Establish training institution/Strengthen training function	○	✓						
2	Improvement of HRH quality	Improve basic education								
		Increase wages and social status of doctors								
		Improvement of medical level and skills at training institutions (hospital)	○	✓						
		Establish university hospital and attach teaching hospital functions	△							
		Improve educational materials and practical training facilities at universities	○							
		Improve in-service training program	○	✓		✓	✓			✓
3	Limited administrative control for private sector	Guidelines or system in renewal of license (council)	○							✓
		HRH database development incl. private sector and strengthening its management	○							✓
		Dissemination on law on registration（assistance of USAID）	○							✓
		Development of laws for medical facility (Standard for HRH, equipment and facility)	○						✓	
4	Lack of Bio-Medical Engineer for ME management	Increase budget and personnel for ME management & maintenance								
		Training, development and employment for ME management & maintenance	○	✓	✓		✓			
		Review and revise the existing guideline of ME management. And develop new legislation of Cambodian standard of ME	○	✓	✓					
		Provision of several incentives for ME management system and personnel	○		✓				✓	
5	Deployment of maintenance personnel for health facilities	Increase budget and human resources			✓					
		Development of system/structure for health facility maintenance	○	✓	✓		✓			
		Establishment of health facility maintenance guidelines	○	✓	✓					
		Development of facility maintenance plan	○		✓		✓			
6	Improvement of hospital management	Improve management abilities of health department administrators	○		✓					
		Improve operation management abilities at hospitals	○		✓		✓			
		Introduce PDCA cycle for medical services at local health departments	○		✓		✓			
		Create a system to offer financial incentives to provide high quality-medical service	○		✓				✓	
7	Shortage of health facilities	Increased budget and human resources at national and provincial levels for new health facilities establishment								
		Recruitment of new HRH and introduction of continuous training system for HRH	○	✓		✓	✓			
		Promote decentralization of health planning, staffing and budget allocation								

Source: Survey Team

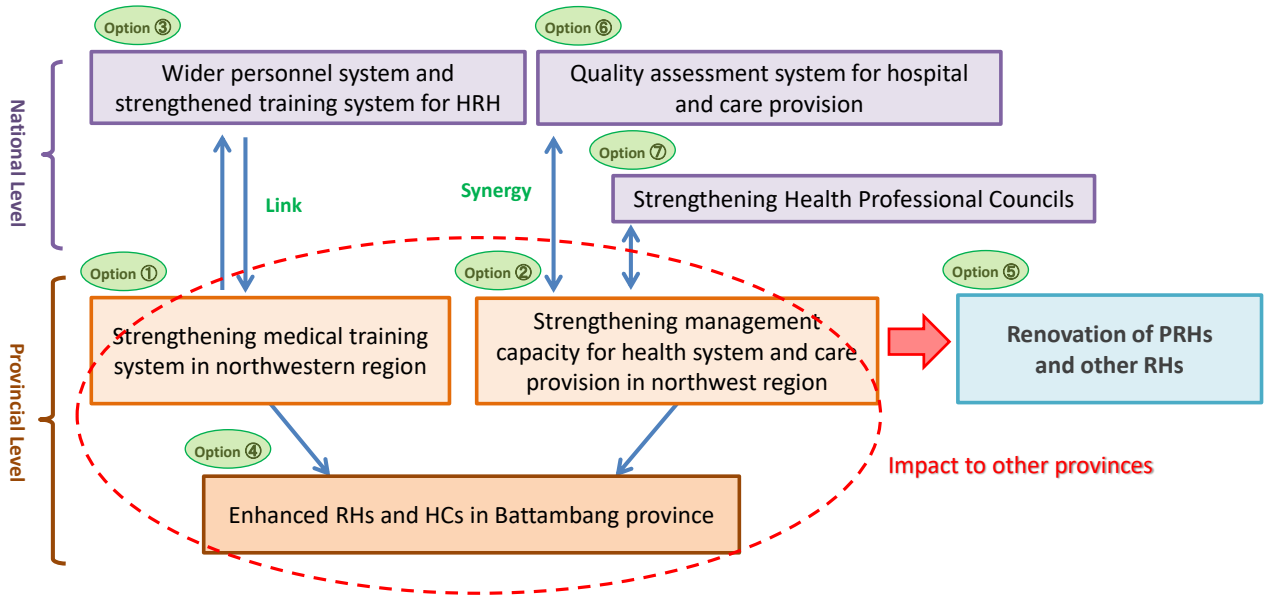
Table 5- 4 Relations between countermeasures and options of assistance (2/2)

Challenge		Countermeasures	Necessity of assistance	Options						
				①	②	③	④	⑤	⑥	⑦
8	Provincial referral hospitals with unmet needs	Reconstruction/ renovation of buildings and update of medical equipment	○					✓		
		Enhancement of maintenance system for health facilities and medical equipment	○					✓		
9	Hospitals with unmet CPA standard	Budget allocation for medical equipment and facility renovation/maintenance	△	✓	✓		✓			
		Establishment of Special/skilled MD production system in province	○	✓		✓				
		Creation of training system for health workers, including doctors working in rural areas, and granting training opportunities	○	✓	✓	✓	✓			
10	Quality assessment of health facility	Development of indicators for assessment of quality HRH, facility and equipment	○						✓	
		Introduce of monetary incentive linked to social health insurance system based on quality of medical service	○						✓	

Source: Survey Team

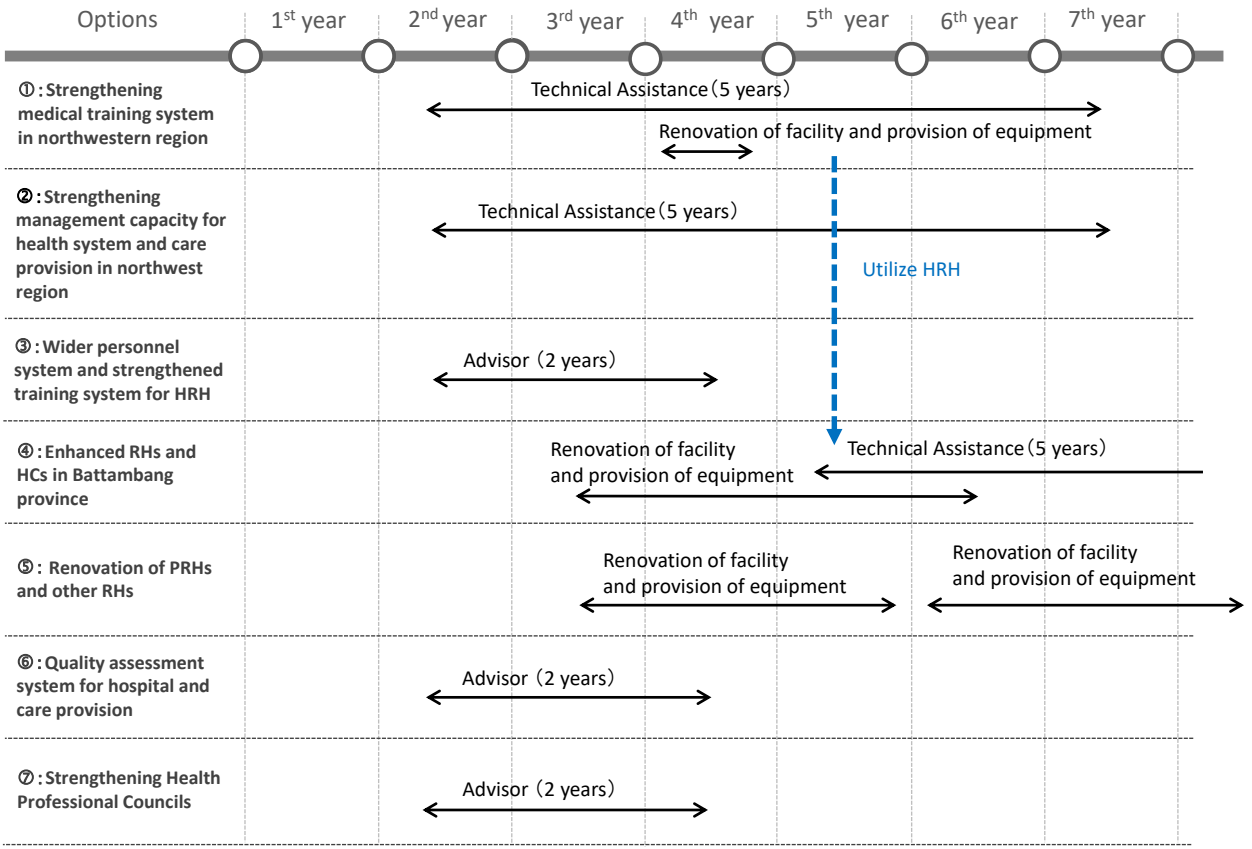
5-3 Interrelations of the proposed assistance strategies

Some of the proposed assistance strategies are more or less interrelated, except for **Option⑤: Renovation of PRHs and other RHs**. For instance, **Option①: Strengthening medical training system in northwestern region** may not be practicable under the current personnel system that allows personnel relocation only within a province. Unless there are exceptional circumstances, cross-province personnel relocation or long-term training will be constrained. The said strategy thus needs to be implemented together with **Option③: Region-wide personnel system and strengthened training system for HRH**. Implementation of **Option④**: **Enhanced RHs and HCs in Battambang province** will necessitate facility construction and workers assigned in new facilities. This should be desirably preceded by **Option①**. Such interrelations are shown in Fig. 5- 3. Furthermore, the effective implementation of the proposed assistance strategies will require planning of stepwise operations and timetable. Fig. 5- 4 shows such assistance implementation plan.



Source: Survey Team

Fig. 5- 3 Conceptual framework (interrelations of proposed assistance)



Source: Survey Team

Fig. 5- 4 Assistance implementation plan

5-4 Options for future assistance

Seven assistance strategies are described below to cope with identified challenges.

Option ① Strengthening medical training system in northwestern region

【Outline】

Currently concentrated in Phnom Penh, training function will be decentralized to Battambang, which is a core city in the northwestern region in Cambodia, by strengthening Battambang PRH to serve as a training institution for postgraduate doctors, nurses, and midwives working in Battambang and the neighboring provinces (Pailin, Oddar Meanchey, Banteay Meanchy, Siem Reap, and Pursat) and wishing to provide regional medical services.

A training scheme for doctors should not be on a one-time basis. For instance, they will initially receive a two-year training for general practitioners (GP) who provide regional medical services. Subsequently, another three-year specialty training in surgical practice may be provided, which constitutes an institutional and coherent training system.

Further efforts include functional strengthening of Battambang PRH to provide a training to practice more advanced treatment. In particular, new diagnostic and treatment technologies will be introduced in the domains of surgery and general medicine.

A local model hospital will serve for Battambang, hosting training programs for such clinical health care providers as nurses and midwives and for maintenance staff of medical facilities and equipment alike. In addition, a pilot tele-medicine system will help the hospital provide a backup function as required locally.

【Purpose】

To strengthen the capacity of HRH for clinical and other skills in Northwest region (Battambang, Pailin, Oddar Meanchey, Bantey Meanchey, Siem Reap, Pursat) as well as to improve the quality of medical services in Battambang PRH by regional medical training center

【Outcome】

- Upgraded tertiary medical function at Battambang PRH
- Improved quality of services at referral hospitals in Northwest region
- Strengthened medical skills of HRH (medical doctor, nurse, midwife, other medical staff including ME technician and personnel for facility maintenance)

【Activities】

1) Strengthening clinical skills in medicine, surgery, obstetrics, and pediatrics
2) Strengthening teaching & training function at Battambang PRH
3) Activities as model hospital to improve medical services at Battambang PRH

【Inputs】

1) Building for teaching & training
2) Providing audiovisual aids
3) Trial of tele-medicine
4) International training and experts in relevant fields

【Budget】

1) Building for teaching & training: 500 million yen
2) Providing audiovisual aids: 200 million yen
3) Technical Cooperation Project: 500 million yen

【Comments from Cambodia side】

- Establishing new training institution responsible for in-service training like RTC responsible for pre-service training, or attaching in-service training function to RTC requires complicated procedures because sub decree needs to be issued. Expanding/strengthening existing training unit of Battambang PRH is more feasible.
- In case where Battambang PRH conduct pre-service training, they can have MOU with PHD and PRH in each province to cover northwest region as a whole.
- This option should cover both per-service training and in-service training.
- The idea of strengthening in-service training is favorable because H-EQIP supports in-service training.
- Trainers/teachers can be dispatched from national hospitals etc.
- Training period is defined as 3 months for in-service training.

【Remarks】

The on-going personnel system does not generally allow a staff relocation across provinces. It should be thus noted that a region-wide staff relocation may pose a challenge for the proposed strategy. See the proposed assistance strategy **Option③: Region-wide personnel system and strengthened training system for HRH.**

Option ②	Strengthening management capacity for health system and care provision in northwest region

【Outline】

It is increasingly important that health care services and administration make committed efforts for people served locally. For instance, PHD allocates financial and medical resources, and a hospital director improves the professional morals of staff members and motivates them to serve better. It is then critical to develop management capacity of provincial- and OD-level health administrators and medical managers. To attain UHC, not only national-level administrators, but also locally serving health care providers will practice a PDCA (Plan, Do, Check, Action) cycle to plan, implement, evaluate, and improve their service delivery.

The target areas will be the same six northwest provinces selected for the proposed assistance strategy **Option①：Strengthening medical training system in northwestern region** so that a synergetic effect is achieved (Battambang, Pailin, Oddar Meanchey, Banteay Meanchy, Siem Reap, and Pursat).

【Purpose】

To improve the quality of medical services provision in northwest region by strengthening management capacity of PHD, OD and hospital for health system and medical services

【Outcome】

- For PHD to develop and monitor health strategic plan including health facility, HRH and medical equipment
- For OD and hospital to develop action plan for quality services, hospital management, performance evaluation and operate the PDCA cycle

【Activities】

1) Train managers of PHD, OD and hospitals for planning, M&E, and PDCA activities
2) Set up the task force for improving the quality of medical services (including maintenance of facility and medical equipment)
3) Develop, monitor, evaluate and revise action plan

【Inputs】

- Experts in relevant fields
- Train managers in developed countries

【 Comments from Cambodia side】

- Since training for capacity development of management should be practical, the training should consist of lectures and on-site training (practice what is leaned in each work station).
- Regarding the employment of maintenance personnel for facility and medical equipment, discussion with Ministry of Civil Service and Ministry of Economic and Finance is necessary after defining work details. If staffing standard of medical engineer is included in the revised CPA guidelines, the employment becomes possible, but the approval from MOH should be obtained after discussion among related departments.
- For the meantime, existing staff should be trained for the maintenance and Bio-Medical engineer is produced by training institution. Currently,

Puthisastra University conducts training for Bio-Medical engineer and in 2016 produced 10 graduates (half of them was employed by government).

- Assistance in strengthening ME management, such as MEDEM 3, is helpful.

【Remarks】

- Cooperation and coordination with the central government are essential, as it has authorities on budget and personnel allocation.
- Maintenance system for health facility is not in place and Asset management bureau of Budget and Finance Department, MOH manages inventory of asset equipped in health facility.

Option ③ Wider personnel system and strengthened training system for HRH

【Outline】

Rigid personnel allocation of doctors causes their chronical shortage in provinces with small population as well as their turnover in a short term. It also undermines lifetime learning opportunities, impeding their acquiring new knowledge and skills. Interaction and relocation of health care staff at the training center proposed in the assistance strategy "**Option①**" helps doctors, nurses, and midwives learn a rapidly advancing technology and skills.

Doctors, while working in rural areas, will go back and forth between their workplaces and the training center, and this will develop their medical skills.

【Purpose】

To strengthen continuing professional education (CPE) and ensure HRH for community medicine by regional training center and region-wide personnel system

【Outcome】

- An increased number of young medical doctors working for community medicine by strengthened CPE system
- Better medical services in rural areas by improving clinical skills of medical doctors working for community medicine

【Activities】

1) Introduction and implementation of region-wide personnel system
2) Improving a training system and a hosting hospital
3) Development of CPE programs, especially in early & middle-stage training for young medical doctors
4) Monitoring and Evaluation of the programs

【Inputs】

- Experts in relevant fields
- International training

【Comments from Cambodia side】

- Regarding D&D, since 2016, provincial governor has authority of promotion of OD director, HC head, and hospital director.
- Reform of personnel system needs strong political commitment. Currently minimum of 3-years in service in rural posts and 5-years in service in urban posts is required. If medical doctors work in urban area, their additional income from their cabinet (dual practice) is over 500 USD, meaning few doctors are motivated to work in rural area. Some incentives equivalent to expected income from dual practice would be considered.
- In relation to continuing professional education, Health Professional Councils request technical support.

【Remarks】

- Ensure that training functions in Battambang will be linked with relevant activities.
- It seems extremely difficult to change current personnel system while development and strengthening CPE programs seems more feasible.

Option ④ Enhanced RHs and HCs in Battambang province

【Outline】 General medicine, pediatrics, and obstetrics and gynecology provide essential diagnosis and treatment. However, problems are a shortage of health facilities and some hospitals that are not delivering medical services (in particular, surgery) in accordance with CPA guidelines. To address them, RHs, including provincial referral hospitals and HCs will be upgraded with physical (facilities and equipment) and non-physical (human resources for health) infrastructures, and thereby achieving better medical services.

【Purpose】 To provide quality medical services by improving the quality of health facility, medical equipment and HRH.

【Outcome】
- More patients can access to quality medical services by proper geographical distribution of RHs and HCs
- Customer satisfactions are improved by providing medical services to meet the CPA guidelines

【Activities】
1) Improved capacity of HRH for RH and HC staff by training linked to reginal training medical center
2) Setting up the task force committee for improving the quality of services
3) Introduction and implementation of maintenance systems for health facility and medical equipment

【Inputs】
1) Strengthening training functions at provincial referral hospital (Option①)
2) Newly building and renovating RHs and HCs, including medical equipment
3) Expert in relevant field and International training
4) Cambodian side: securing space for construction, HR deployment, tax exemption

【Budget】
1) Technical Cooperation Project: 500 million yen
2) Newly building and renovating RHs and HCs: 3.5 billion yen
(5 new RHs and renovation of 2 RHs, 12 new HCs and renovation of 60 HCs)
3) Provision of ME: 500 million yen

【Comments from Cambodia side】
- Development of referral hospitals should be considered because the increasing number of hospitals will improve the access to hospital and reduce unnecessary traveling for patients.
- While the bed occupancy rate (BOR) of PRHs mostly exceeds 100%, BOR of some of CPA2 and CPA1 hospitals is below 50% because referral system is not working well. Improving HRH, facility and medical equipment is necessary for well-functioning referral system.

【Remarks】 Unless training functions at Battambang PRH are strengthened, provision of facility and equipment components will not be effective by itself. Construction of RHs and HCs will entail a large number of health workers and their allocation. The number of sites and construction capacity are also large, and therefore requires deliberate planning of project implementation. On the other hand, HCs have a prescribed design, which will make Cambodia-funded construction relatively feasible.

Option ⑤	Renovation and upgrading provincial referral hospitals and other RHs

【Outline】 As in the previous grant aid projects, the target provincial referral hospitals, Siem Reap PRH and Kampong Chhnang PRH, will be upgraded with facilities and equipment based on the information obtained by the 1st and 3rd field survey.

【Purpose】 To contributes to health promotion of local people with better functioning health services in the target provinces by upgrading top-referral provincial referral hospitals.

【Outcome】
- The target provincial referral hospitals, with their improved health care services, provide treatment to those patients who may have been otherwise referred to Phnom Penh.
- Upgraded health care facilities and medical equipment in the target provincial hospitals allow more patients to be treated within the provinces.

【Activities】 Upgrading facilities and medical equipment in provincial referral hospitals

【Inputs】 Japan: Upgrading facilities and equipment
Cambodia: Acquisition of land site, allocation of health workers, tax exemption, etc.

【Budget】 (Hospital capacity and rough estimate)
- Planned facility capacity: 5,000 m^2 per site
- Rough estimate: 1.5 billion yen per site (estimated on the basis of preceding projects)

【Comments from Cambodia side】
- It was pointed that cost-effectiveness should be measured for assistance to PRH. The provinces with small population, Preah Vihear, Stung Treng, Otdar Meanchey, Rattanak Kiri, and Mondul Kiri, will be put lower priority.
- Hearing from related departments of MOH revealed that they have high priority on Siem Reap PRH because beneficial population is large due to populous province and tourists. Renovation of main building including operation and emergency departments is requested, as Battambang PRH is renovated.
- Other PRHs with priority include Kampong Chhnang PRH, Prey Veng PRH, and Takeo PRH. Stung Treng was also mentioned because it can benefit Rattanak Kiri, Mondul Kiri, and Preah Vihear as RTC is located in the province though Stung Treng has small population.

【Remarks】 As the similar grant aid projects were implemented in the past, this type of component is manageable for both Japan and Cambodia. RHs (CPA1 to 3), including provincial referral hospitals, do not have a prescribed design, and therefore this assistance will be meaningful in terms of helping appropriate planning of hospital improvement.

Necessary measures including assistance to RHs (not limited to PRH) should be taken, considering the overall referral system as a province.

Option ⑥ Quality assessment system for hospital and care provision

【Outline】

In the course that the informal sector develops socialized medical insurance in the future, assessment of hospital services will be important to maintain the quality of health care provided and to encourage health care institutions to improve the service quality.

In other words, the assessment system intends to create an incentive mechanism such as application of health insurance to health care institutions that maintain their service quality reviewed with objective indices. They include, for instance, the number of doctors and other specialists, types and pieces of operating medical equipment, availability of specialist doctors, cleanness in wards and consultation rooms. This will aim at keeping the good service quality and adopting policy-led health care delivery, as achieved in the Japanese medical-fee-based insurance system.

【Purpose】

To establish quality assessment system for hospital and care provision by objective indicators such as the number of MDs and other professions, the number and sorts of functioning medical equipment, and cleanness of hospital wards in order to ensure the quality of services.

【Outcome】

- Objective assessment system leads to improved quality of medical services and increased satisfaction of the patients.
- In the future, the evaluation system linked with financial incentives will be introduced for further quality improvement.

【Activities】

1) Evaluation of existing assessment systems
2) Introduction and implementation of new evaluation system
3) System design for the evaluation system linked with financial incentives

【Inputs】

- Experts in relevant fields
- International training

【Comments from Cambodia side】

- This assistance option should take a strategy to harmonize with existing assessment systems under H-EQIP and other project, instead of developing new assessment system.
- Priority is low because H-EQIP already conducts assessments.
- WHO will support regulation on health service provider with GIZ in order to tackle informal and illegal medical providers.

【Remarks】

If any project duplication is likely to occur, such as preceding activities including H-EQIP, ensure to make a relevant alignment.

Option ⑦ Strengthening Health Professional Councils

【Outline】 Health professional council (five professions of doctors, dentists, pharmacists, nurses, and midwives) is the only entity monitoring registered health practitioners in public and private institutions, while also ensuring a quality regulatory service.

However, for the council to work more effectively, challenges remain with respect to licensing of the health professions and their registration renewal with a prescribed training. Functional reform of the council, which in turn will maintain and improve competencies of health professions, will ultimately contribute to good health of local people receiving their medical services.

【Purpose】 To improve registration systems for HRH and develop the capacity of health professions by strengthening Health Professional Councils

【Outcome】
- Increased registration rates and renewal rates
- Maintaining and improving capacity of health professions through training courses for renewal of registration.

【Activities】
1) Identifying and improving basic platform and necessary systems common to five professions
2) Identifying and improving the systems specific to each of 5 professions
3) M & E of Health Professional Councils' activities

【Inputs】 Experts in relevant fields

【 Comments from Cambodia side】
- WHO will continue to support the enforcement of Law on Regulation of Health Practitioners
- Health Professional Councils request technical support project because they need budget for activities such as meetings.

【Remarks】 Progress of USAID's project starting in October 2017

Survey Schedule

1st Field Survey

Date		Time	Activity/Visited facility	Meeting with
1/30	Mon	AM	Team meeting and preparation for survey	
		13:30	JICA Cambodia Office	Ms Aya Mizusawa, Senior Program Officer
		14:15	KHANA (Reviewing questionnaires and administrative issues)	Dr. Siyan Yi, Director, KHANA Mr. Tout Sovannary, Research Manager Mr. Chhoun Pheak, Research Fellow
1/31	Tue		preparation for survey	
2/1	Wed	AM	Pilot test of revised questionnaires for field data collection (Kandal)	Dr. Kuoy Bunthoeurn, Director, Kandal PHD etc
		14:30	Revision of questionnaires at KHANA	Dr. Siyan Yi, Director, KHANA Mr. Tout Sovannary, Research Manager Mr. Chhoun Pheak, Research Fellow
2/2	Thu	-	preparation for survey	
2/3	Fri	8:30	Training for data collectors at KHANA	Mr. Tout Sovannary, Research Manager Mr. Chhoun Pheak, Research Fellow
		15:30	Department of Hospital Services, MoH	Dr. Sok Srun, Director Dr. Cheu Sivuthy, Chief of Hospital Services and Medical Engineering Bureau
2/4	Sat		preparation for survey	
2/5	Sun		preparation for survey	
2/6	Mon	8:00	JICA Cambodia Office	Mr. Takeharu Kojima, Senior Representative Ms. Nami Kishida, Representative Ms. Aya Mizusawa, Senior Program Officer
		10:00	Embassy of Japan	Mr. Yohei Nakajima
		14:30	Department of Human Resource Development, MoH	Dr. Touch Sokneang, Director
		16:00	Ministry of Health	Prof Eng Huot, Secretary of State for Heath
2/7	Tue	9:00	Department of Planning and Health Information,	Dr. Lo Veasnakiry, Director
		10:30	Department of Personnel, MoH	Dr. Mey Sambo, Director
		12:00	Business Lunch	Ms. Haruyo Nakamura, Team Leader, JICA SHIP Mr. Eijiro Murakoshi, Sub-Leader, JICA SHIP Dr. Azusa Iwamoto, Chief Advisor, IINeoC Project Ms. Asako Hayashi, Project Coordinator, IINeoC Project
		15:00	WHO	Dr. Peter Miller, WHO Consultant in Human Resources for Health Dr. Momoe Takeuchi, Health Syetems Development Advisor
		16:00	H-Eqip	Ms. Priya Agarwal-Harding Pooled Fund Coordinator Cambodia Health Equity and Quality Improvement Project (H-EQIP)
2/8	Wed		Phnom Penh to Svay Rieng Province	
		11:15	Svay Rieng PHD	Dr. Vorn Vinar, Vice Director Mr. Chin Sauphea, Drug Officer Ms. You Peach, Chief of Admin Mr. Chan Bunthol Mr. Oum Sambath
		14:00	Svay Rieng Provincial Hospital	Dr. Chan Dara, Director
2/9	Thu	8:30	Svay Rieng Provincial Hospital	Dr. Chan Dara, Director
		14:30	Chi Phou RH	Dr. Prak Sambath, Director Dr. Tum Bory, Deputy director Dr. Heng Varithon (Deputy director)
		9:00	Romeas Hek RH	Hem Sokhom
		14:00	Angk Prasrae HC	Pich Chandara, Chief
2/10	Fri	9:00	Svay Teap RH	Dr Sar Sokchamroeuw, Director
		14:50	Pong Tek HC	Mr Seau Ann, Chief, Secondary Nurse
		9:00	Ta Sous HC	Nhoem Sam Onn, Deputy Chief
		10:30	Svay Chrum RH	Pen Phat, Chief
		14:00	Svay Thum HC	Pov Sonn, Chief
		17:00	Saravoan Clinic (Private Clinic)	Dr. Saravoan
2/11	Sat	-	Svay Rieng Province to Phnom Penh	
2/12	Sun	-	Phnom Penh to Kg Cham Province	
2/13	Mon	8:30	Kg Cham PHD	Ms. Phom Vanya, Vice director of administrative department
		14:00	Kg Cham Provincial Referral Hospital	Dr. Mey Moniborin, Vice Director
		10:30	Bos Knorl HC	Eav Then, Chief
		14:00	Chamkar Leu RH	Dr.Tan kimcheng, Director

Date		Time	Activity/Visited facility	Meeting with
2/14	Tue	9:00	Regional Training Center in Kg Cham	Mr. Houng Sarin, Technical Officer Mr. Nhep Sochet, Admin Officer
		9:00	Kg Cham Provincial Referral Hospital	Dr. Mey Moniborin, Vice Director
		14:00	Koh Met HC	Chhay Sina, Chief
		15:30	Koh Sotin HC	Choem Tith, Chief
2/15	Wed	10:00	Steong Sonthor RH	Director, Dr Kieth Teng
		13:00	Ktob ta ngoun HC	Mr Lao Sipha, Chief
		10:00	Cheung Prey RH	Dr. Luy Sen, Director
		14:00	Srey Senthor RH	Dr. Mao Bunleang, Director
		15:30	Prek Dambok HC	Kei Chinboth, Chief
2/16	Thu	9:00	Keo Vannak Clinic	Dr. Keo Vannak, Director
		13:00	Batheay RH	Dr. Touch Huot, Director
2/17	Fri	-	Team meeting, data analysis, and preparation for WS	-
2/18	Sat	-	Team meeting, data analysis, and preparation for WS	-
2/19	Sun	-	Phnom Penh to Battambang Province	
2/20	Mon	8:30	Battambang PHD	Dr Voeurng Bunreth, Director Mr Siea Bunyoeui, Deputy Chief of Technical Office Mr. Has Assany, Chief of Drug Ms Pin Sophea, Chief of Human Resources Mr Duong Chantha, Chief of Admin Mr Aing Porang, Chief of Finance
		14:00	Mong Russey RH	Dr So Sok, Director
		15:30	Kas Kralor HC	Oeurng Srey Chorm, Deputy Chief
2/21	Tue	8:30	Battambang Provincial Referral Hospital	Dr Kak Seila, Director Dr Han Vdan, Deputy Director
		11:20	Battambang PHD	Dr Voeurng Bunreth, Director
		14:00	Regional Training Center in Battambang	Mr Douk Chhaveh, Head of RTC
		16:00	Battambang Provincial Referral Hospital	Ms Masayo Geshi, JICA Senior Volunteer
		14:00	Roka HC	Bi Bengsor, Chief
		15:30	Prek Norin HC	Soeurn Thy, Chief
2/22	Wed	10:00	Sampov Loun RH	Dr Chok, Director
		14:00	Boa HC	Mr Khuy Sammunang, Chief
		15:45	Thmor Kol RH	Dr Kong Pak, Director
		14:00	Seirei Mean Chesy HC	Seourn Sreymom, Midwife
2/23	Thu	8:30	Yi Kuok Clinic	Dr. Hour Sakko
		11:00	Vun Sovanna Clinic	Dr. Vun Sovanna
2/24	Fri	9:00	KHANA （updates on data collection）	Dr Siyan Yi, Director, KHANA Mr. Tout Sovannary, Research Manager Ms Dyla, Research Fellow
		14:00	The Export-Import Bank of Korea	Mr. Chang Younsoo, Chief Representative Ms. Yang Hye-young, Director, Asia Team2, EDCF Operations Department 1 Mr. Bae Seog, Senior Project Officer Dr. Hyeongsu Kim, Deputy Director, Korean Medical Association Research Institute of Healthcare Policy
		14:30	TV meeting with JICA	Ms. Aya Mizusawa, Senior Program Officer Ms. Yuko Takahashi Dr. Hirotsugu Aiga, Senior Advisor on Health&Nutrition
2/25	Sat	-	Data analysis, and preparation for WS	
2/26	Sun	-	Data analysis, and preparation for WS	
2/27	Mon	14:20	Department of International Cooperation	Dr. Sung Vinntak, Director
2/28	Tue	8:00	Workshop on HRH in Cambodia and brainstorming on the challenges to be addressed	
3/1	Wed	9:00	JICA IINeoC Project	Dr. Azusa Iwamoto, Chief Advisor Ms. Asako Hayashi, Project Coordinator
		14:00	Cambodian Council of Nurse (CCN)	Mr. Un San, President
		15:30	Cambodian Midwives Council	Ms. Tha Chanlhou, Vice Director Ms. Mean Nita
3/2	Thu	9:00	USAID Cambodia	Dr. Chantha Chak, Health System Strengthening Team Leader, Office of Public Health and Education
		11:00	TSMC	Prof Dr. Iem Sophal, Director
		14:00	International University	Dr. Kongkea Phan, Dean, Faculty of Science and Technology
3/3	Fri	9:30	UHS	Prof Saphonn Vonthanak, Rector
		14:00	JICA SHIP	Mr. Eijiro Murakoshi, Sub-Team Leader
		15:00	Department of Human Resource Development	Dr. Touch Sokneang, Director
3/4	Sat		Team meeting, report writing	

2nd Field Survey

Date		Time	Activity/Visited facility	Meeting with
4/18	Tue	10:00	JICA Cambodia Office	Ms. Aya Mizusawa, Senior Program Officer Ms. Yuko Takahashi
4/19	Wed	8:30	Workshop on proposed future assistance	
		15:30	Department of Personnel, MoH	Dr. Mey Sambo, Director
4/20	Thu	15:00	Department of Hospital Services, MoH	Dr. Srun Sok, Director
4/21	Fri	9:00	Ministry of Health	Prof Eng Huot, Secretary of State for Heath
		10:00	Department of Planning and Health Information,	Dr. Lo Veasnakiry, Director
		15:00	Department of Human Resource Development, MoH	Dr. Touch Sokneang, Director
4/22	Sat	-	Report writing	
4/23	Sun	-	Report writing	
4/24	Mon	16:00	Embassy of Japan	Mr. Yohei Nakajima
		17:30	JICA Cambodia Office	Ms. Yuko Takahashi Dr. Hirotsugu Aiga, Senior Advisor on Health&Nutrition
4/25	Tue	10:30	UHS	Prof Saphonn Vonthanak, Rector
		14:00	JICA Cambodia Office	Mr. Yuichi Sugano, Chief Representative Ms. Nami Kishida, Representative Ms. Aya Mizusawa, Senior Program Officer Ms. Yuko Takahashi Dr. Hirotsugu Aiga, Senior Advisor on Health&Nutrition
4/26	Wed	8:00	Medical Council	Prof Dr. Lam Eng Hour, Vice President

3rd Field Survey

Date		Time	Activity/Visited facility	Meeting with
5/17	Wed	10:15～	Siem Reap Provincial Hospital	Dr. Pen Phalkun, Director, Siem Reap PRH Dr. Lim Heng, Vice Director, Siem Reap PRH Dr Kross Sarath, Director, PHD
5/18	Thu	8:40	Sonikom RH	Dr. Meas Sokham, Vice deputy director Bun Hol, Admin Bun Sokun, MET
		14:30	Angkor Chum RH	Mr. Nob Vanny, Director
5/19	Fri	9:00	Pouk RH	Mr. Mang Sambath, Chief Maraya Nonira, Accountant
		14:00	Krlanh RH	Rath Narin, Admin Kea Bun, Surgeon Assistant Nam Lihov, Hospital Information System
5/20	Sat	-	Siem Reap to Phnom Penh	
5/21	Sun	-	Report writing	
5/22	Mon		Phnom Penh to Kg Chhnang	
		9:00	Kg Chnnang PHD	Kong Chanthea, Chief of Technical Bureau
			Kg Chnnang Provincial Hospital	Dr. Sorin Tiraunthy, Director Tum Sambath, Vice Director Sar Savath, Chief administration Ou Sopheaktra, MET
5/23	Tue	9:30	Boribo RH	Dr. Soeng Samnang, Director
		13:00	KG. Tralach RH	Dr. Mom Kheang Heng, Director Dr. Te Vanna, Deputy Director Dr. Pol Phalla, Deputy Director
			Kg Chhnang to Phnom Penh	
5/24	Wed	9:00	Takeo PHD	Dr. Nuta Sinath, Director
		9:45	Takeo Provincial Hospital	Dr. Chhoun Chhuon, Director Tao Ro, MED HIS and Planning Administration
5/25	Thu	9:00	Prey Veng PHD	Dr. Nhekdim Nora Dr. Yi Visal, Chief of Technical Office
		9:40	Prey Veng Provincial Hospital	Dr. Ung Channthoeun, Director Dr. Leng Pini, Vice Director
5/26	Fri	11:00	JICA Cambodia Office	Mr. Takeharu Kojima, Senior Representative Ms. Nami Kishida, Representative Ms. Aya Mizusawa, Senior Program Officer

កម្រងសំណួរ សម្រាប់សម្ភាសមន្ទីរសុខភិបាលខេត្ត

Questionnaire【Provincial Health Department, PHD】

ជំរាបសួរលោកនាយក

ទីភ្នាក់ងារសហប្រតិបត្តិការអន្តរជាតិជប៉ុន (JICA) នឹងធ្វើការប្រមូលទិន្នន័យសម្រាប់ការអង្កេតពីធនធានមនុស្សផ្នែកសុខភាព និងសំភារៈសុខាភិបាលក្នុងគោលបំណងដើម្បីស្វែងរកលទ្ធភាពនៃការផ្តល់ជំនួយរបស់អង្គការ JICA ក្នុងពេលខាងមុខដើម្បីសម្រេចបាននូវគោលដៅសុខភាពជាសកលនៅក្នុងប្រទេសកម្ពុជា។ ក្រុមអ្នកអង្កេតនឹងចុះទៅទីតាំងសុខាភិបាលរបស់លោកនៅក្នុងខែកុម្ភៈ ឆ្នាំ ២០១៧ និងធ្វើការសម្ភាសដោយផ្អែកទៅលើកម្រងសំណួរ ។ យើងខ្ញុំពិតជារីករាយណាស់បើសិនជាលោកអាចចាត់តាំងឲ្យបុគ្គលិករបស់លោកសម្រាប់ចូលរួមការអង្កេត និងរៀបចំឯកសារពាក់ព័ន្ធទុកជាមុន។ ក្រុមអ្នកអង្កេតនឹងជូនដំណឹងពីកាលបរិច្ឆេទលម្អិតនៃការសម្ភាសនេះ។ សូមអរគុណទុកជាមុនចំពោះកិច្ចសហប្រតិបត្តិការរបស់លោកនាយក។

JICA will conduct the data collection survey on human resource for health and health facility in order to explore possibilities of JICA's future assistance to achieve UHC in Cambodia. The survey team will visit your facility in February 2017 and interview based on this questionnaire. It would be appreciated if you could assign your staff for this survey and prepare related documents. Proposed date of visit will be informed in due to course by the survey team. Thank you for your cooperation in advance.

ឈ្មោះអ្នកដែលបំពេញកម្រងសំណួរ: Name of the person completing the form:	
ឈ្មោះអ្នកចូលរួមឆ្លើយ / តួនាទី Name of respondents/ position	1- 2- 3- 4-
អាសយដ្ឋានអ៊ីម៉ែល / លេខទូរស័ព្ទ: E-mail address/ Telephone No:	1- 2- 3- 4-

1. ព័ត៌មានមូលដ្ឋាន **Basic information**

1.1. សូមប្រាប់ពីរចនាសម្ព័ន្ធគ្រប់គ្រងនៃមន្ទីរសុខាភិបាលខេត្ត

Please provide the organogram of the Provincial Health Department.

□ មាន Available (Take photo and upload)
□ មិនមាន Not Available

1.2. តើមានការិយាល័យសុខាភិបាលស្រុកប្រតិបត្តិប៉ុន្មាននៅក្នុងខេត្ត ក្នុងឆ្នាំ២០១៦? សូមបំពេញតារាងខាងក្រោម: How many Operation Districts (OD) are there in the Province in 2016? Please fill out the following table:

ឈ្មោះ OD Name of OD	ចំនួនប្រជាជនសរុប Population	ចំនួនមន្ទីរពេទ្យ No. of hospital	ចំនួនមណ្ឌលសុខភាព No. of Health Center	ចំនួនបុស្តិ៍សុខភាព No. of Health Post
ចំនួនសរុបក្នុងខេត្ត Total province				

1.3. សូមបំពេញតារាងខាងក្រោមពីចំនួនប្រជាជន: Please fill out the following table regarding the population:

ឈ្មោះ OD Name of OD	ចំនួនប្រជជនសរុប (ចំនួនប្រជាជន) Population (number of people)				
	2012	2013	2014	2015	2016
ចំនួនសរុបក្នុងខេត្ត Total province					

1.4. តើ OD និង/ឬ មន្ទីរសុខាភិបាលអាចជួលបុគ្គលិកដោយខ្លួនឯងឬទេ (មន្ត្រីកិច្ចសន្យា)? Can OD and/or PHD hire health personnel by themselves (contracting)?

□ អាច Yes (what financial source……)

□ មិនអាច No

1.5. សូមជួយរាយបញ្ជីការងារដែល PHD ធ្វើដោយខ្លួនឯង (សូមថែម ឬលុបចំណុចក្នុងបញ្ជីខាងក្រោម)។ សូមផ្តល់អោយយើងនូវឯកសារយោងបើមាន។ Please list up the jobs that PHD do autonomously (add or delete the items in the list below). Please provide us with the outline documents if any.

ពណ៌នាសកម្មភាព Description of Activities	ចំលើយ (បាទ/ ចាស) Answer (Yes/No)
រៀបចំផែនការប្រតិបត្តិប្រចាំឆ្នាំ Do you develop the Annual Operational Plan?	□ បាទ Yes □ ទេ No
រៀបចំផែនការគ្របដណ្តប់សេវាសុខាភិបាល Do you develop he Health Coverage Plan?	□ បាទ Yes □ ទេ No
រៀបចំប្រព័ន្ធប្រាក់ចំនូលមិនមែនព័ន្ធសម្រាប់អ្នកក្រីក្រ Do you have a Non-Tax income system for the poor people?	□ បាទ Yes □ ទេ No
- តើអ្នកមានប្រព័ន្ធហិរញ្ញប្បទានដែលបានចងក្រងជាឯកសារទេ Do you have the User Fee system which is documented?	□ បាទ Yes □ ទេ No
- តើអ្នកបានធ្វើការប៉ានប្រមាណគុណភាពសេវាសុខភាពដែរឬទេ? Do you conduct the Health Service Quality Assessment?	□ បាទ Yes □ ទេ No
- តើអ្នកមានបទបញ្ជាផ្ទៃក្នុងជាឯកសារដែរឬទេ? Do you have the staff regulations which is documented?	□ បាទ Yes □ ទេ No
- អ្នកមានការប្រជុំប្រចាំខែសម្រាប់ក្រុមការងារបច្ចេកទេសដែរឬទេ? Do you have the monthly meeting of “Technical Working Group For Health” with ODs, RHs and Health partners?	□ បាទ Yes □ ទេ No
- តើអ្នកមានផែនការថវិការសម្រាប់ការថែទាំបរិក្ខាពេទ្យ? Do you have the budgeting for maintenance of medical equipment?	□ បាទ Yes □ ទេ No
- ការអប់រំ និងបណ្តុះបណ្តាលបុគ្គលិកសុខាភិបាល Do you the budgeting for Education and training of medical personnel?	□ បាទ Yes □ ទេ No

1.6. សូមជួយផ្តល់ស្ថិតិចុងក្រោយរបស់មន្ទីរពេទ្យបង្អែកទាំងអស់។ បើសិនគ្មានទិន្នន័យទាំងអស់នេះ សូមបញ្ចូលព័ត៌មានពីមន្ទីរពេទ្យ CPA និមួយៗ ដូចខាងក្រោម: Please provide us the latest hospital statistics of all referral hospitals (CPA3, CPA2 and CPA1). If you don't have these statistics, please compile the information on each CPA hospital including following data:

ឈ្មោះមន្ទីរពេទ្យបង្អែក Name of Referral Hospital	ឆ្នាំបង្កើតមន្ទីរពេទ្យ Established Year	កំរិត Grade	ចំនួនបុគ្គលិក No of Staff	ចំនួនគ្រែ រួមទាំងផ្នែករបេង No of Bed exclude TB	ចំនួនគ្រែរបេង No of TB bed	ចំនួនផ្នែក No of Department
ចំនួនសរុបក្នុងខេត្ត Total province						

ឈ្មោះមន្ទីរពេទ្យបង្អែក Name of Referral Hospital	ចំនួនសរុបអ្នកពិគ្រោះជំងឺក្រៅ Total OPD	ចំនួនសរុបអ្នកចេញពីសម្រាកពេទ្យសរុប Total IPD Discharge	ចំនួនសរុបអ្នកសម្រាលកូន No. of Delivery	ចំនួនករណីបញ្ជូនចូលសរុប No of Referral Cases (IPD)	ចំនួនស្លាប់សរុប No of Death	អត្រាគ្រែគេង BOR (%)	អត្រាស្លាប់សរុប Mortality Rate (%)	រយៈពេលដេកពេទ្យជាមធ្យម Average Length of Stay (Days)
ចំនួនសរុបក្នុងខេត្ត Total province								

ជំងឺជួបច្រើនជាងគេទាំង ១០ ក្នុងចំណោមការពិគ្រោះជំងឺក្រៅរបស់មន្ទីរពេទ្យបង្អែក Top 10 diseases among outpatients of Referral hospitals (latest □ 2015 or □ 2016)

ជំងឺជួបច្រើនជាងគេទាំង ១០ Top 10 OPD Diseases		ចំនួនករណី Cases		
		ប្រុស M	ស្រី F	សរុប Total
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				

ជំងឺជួបច្រើនជាងគេទាំង ១០ ក្នុងចំណោមអ្នកជំងឺសម្រាកក្នុងមន្ទីរពេទ្យបង្អែកTop 10 diseases among inpatients of Referral hospitals (latest □ 2015 or □ 2016)

ជំងឺជួបច្រើនជាងគេទាំង ១០ Top 10 IPD Diseases		ចំនួនករណី Cases		
		ប្រុស M	ស្រី F	សរុប Total
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				

មូលហេតុចម្បងៗនៃការស្លាប់ក្នុងចំណោមអ្នកជំងឺសម្រាកពេទ្យក្នុងមន្ទីរពេទ្យបង្អែក Major causes of deaths among IPD of Referral Hospitals (latest □ 2015 or □ 2016)

ជំងឺជួបច្រើនជាងគេទាំង ១០ Top 10 IPD Diseases		ចំនួនករណី Cases		
		ប្រុស M	ស្រី F	សរុប Total
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				

ការបែងចែកថវិការនៃគម្រោងថវិការដោយមន្ទីរពេទ្យបង្អែក Budget breakdown of budget by referral hospital (latest □ 2015 or □ 2016)

ចំនួនគិតជារៀល Riel

ឈ្មោះមន្ទីរពេទ្យបង្អែក Name of Referral Hospital	ផែនការថវិការ Budget Plan of				
	រដ្ឋាភិបាល Government	ដៃគូអភិវឌ្ឍន៍ Development Partners	សេវាហិរញ្ញប្បទាន User fees	អង្គការក្រៅរដ្ឋាភិបាល NGOs	ផ្សេងៗ Other
សរុប Total					

1.7. តើមានគ្លីនិកឯកជនដែលស្ថិតនៅក្រោមការគ្រប់គ្រងរបស់មន្ទីរសុខាភិបាល ទាំងការផ្តល់ច្បាប់ និងបច្ចេកទេសដែរឬទេ? Are private clinics under management of PHD for legality and technicality?

□ បាទ Yes
□ ទេ No

1.8. តើគ្លីនិកឯកជនទាំងអស់គួរតែផ្តល់សិទ្ធដោយក្រសួងសុខាភិបាលដែរឬទេ? Shall all private clinics be authorized by MOH?

□ បាទ Yes (more detail)
□ ទេ No

1.9. បើមាន សូមជួយផ្តល់ព័តមានពីចំនួនសេវាសុខាភិបាលឯកជន (មន្ទីរពេទ្យឯកជន មន្ទីរពហុព្យាបាល គ្លីនិក កន្លែងពិគ្រោះជំងឺ ឱសថស្ថាន និងមន្ទីរពិសោធន៍) នៅក្នុងខេត្ត If yes, please provide us with the notified number of private medical facilities (Private Hospital, Polyclinics, Clinics, Cabinets, Pharmacy and Laboratories) in your province.

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ល.រ No	ប្រភេទសេវាឯកជន Type of Private Services	សរុប Total	ស្របច្បាប់ (បានចុះបញ្ជី) Legal (registered)	មិនស្របច្បាប់ (មិនបានចុះបញ្ជី) Illegal (unregistered)	សំគាល់ Remarks
1	មន្ទីរពេទ្យឯកជន Private Hospital				
2	មន្ទីរពហុព្យាបាល Polyclinics				
3	គ្លីនិក Clinic				
4	បន្ទប់ពិនិត្យជំងឺ Cabinets				
5	ឱសថស្ថាន Pharmacy				
6	មន្ទីរពិសោធន៍ Laboratory				

ផ្នែកឯកជនដូចជាកន្លែងពិគ្រោះជំងឺក្រៅ កន្លែងថែទាំវេជ្ជសាស្ត្រ កន្លែងពិនិត្យផ្ទៃពោះ ។ល។ Private Sector as Cabinet OPD Consultation, Nursing Care, ANC Cabinet etc.

ល.រ No	ប្រភេទសេវាឯកជន Type of Private Services	សរុប Total	ស្របច្បាប់ (បានចុះបញ្ជី) Legal (registered)	មិនស្របច្បាប់ (មិនបានចុះបញ្ជី) Illegal (unregistered)	សំគាល់ Remarks
1	កន្លែងពិគ្រោះជំងឺក្រៅ OPD consultation Cabinet				
2	ផ្ទះពេទ្យធ្មេញ Dental Care Cabinet				
3	បន្ទប់ថែទាំវេជ្ជសាស្ត្រ Nursing Care Cabinet				
4	បន្ទប់ថែទាំស្ត្រីមានផ្ទៃពោះ Cabinet of Pregnancy Care				
5	បន្ទប់ព្យាបាបលដោយចលនា Cabinet of Physiotherapist				
6	បន្ទប់ព្យាបាលជំងឺត្រចៀក ច្រមុះ បំពង់ក Cabinet of ENT				
7	បន្ទប់ព្យាបាលជំងឺផ្លូវចិត្ត Cabinet of Mental Health				
8	បន្ទប់ថែទាំស្បែក Cabinet of Skin Care				
9	បន្ទប់ពិសោធន៍ Cabinet of Laboratory				
10	បន្ទប់ថតកាំរស្មីអ៊ុច Cabinet of X-ray				

1.10. តើមន្ទីរសុខាភិបាលបានសម្របសម្រួលជាមួយមន្ទីរពេទ្យបង្អែកខេត្ត និងសាលាថែទាំវេជ្ជសាស្ត្រសម្រាប់ការ បណ្តុះបណ្តាលសិស្សនៅក្នុងមន្ទីរពេទ្យដែរឬទេ? បើសិនមាន សូមជួយពន្យល់លម្អិត Does PHD coordinate with the Provincial Referral Hospital and Medical/Nursing Schools for the training of students in the Hospital? If yes. Please explain it in detail.

□ មាន Yes (detail: how you coordinate……)
□ មិនមាន No

1.11. សូមផ្តល់ការណែនាំពីការបង្រៀន ឬឯកសារបង្រៀនសម្រាប់បណ្តុះបណ្តាលមុនពេលធ្វើការងារ Please provide teaching guidelines or manuals for pre-service training.

□ មាន Available	សូមផ្តល់ Please provide (Make a copy and bring it)
□ អត់មាន Nor Available	

2. ហិរញ្ញវត្ថុ Finance

2.1. សូមផ្តល់អោយយើងនូវគម្រោងផែនការថវិការរបស់មន្ទីរសុខាភិបាលពីឆ្នាំ ២០១២ ដល់ ២០១៦ Please provide us with the budget of PHD from 2012 through 2016

ចំនួនគិតជារៀល (Riel)

ផែនការថវិកាមន្ទីរ Budget of PHD	ឆ្នាំសារពើព័ន្ធ Fiscal Year	2012	2013	2014	2015	2016
ផែនការថវិការ Budget						
	រដ្ឋាភិបាល Government					
	ជំនួយ Donor					
Total						
ការចំណាយ Expenditure						
	ក្នុងមន្ទីរសុខាភិបាល PHD					
	ការិយាល័យស្រុកប្រតិបត្តិ OD					
	ក្នុងមន្ទីរពេទ្យខេត្ត និងមន្ទីរពេទ្យបង្អែក PH/ RHs					
	ក្នុងបុស្តិ៍សុខភាព HCs					
	ក្នុងបុស្តសុខភាព HPs					
TOTAL						

ប្រភពអាចមាន៖ របាយការណ៍ហិរញ្ញវត្ថុ Possible source: Financial Annual Report

2.2. តើមន្ទីរសុខាភិបាលអាចបង្កើតផែនការដោយដោយខ្លួនឯងដែរឬទេ? បើអាច តើអាចជួយបង្ហាញអោយលម្អិតពីខេត្តដូចខាងក្រោមបានទេ? Can PHD autonomously formulate their plans? If yes, could you present the details of the province?

□ អាច (សូមបំពេញតារាងខាងក្រោម) Yes (fill in the following table…)

□ មិនអាច No

(Riel)

ការចំណាយ Expenditures	គម្រោងថវិកាឆ្នាំ ២០១៦			គម្រោងថវិកាឆ្នាំ ២០១៧			គម្រោងថវិកាឆ្នាំ ២០១៨			គម្រោងថវិកាឆ្នាំ ២០២០		
	រដ្ឋ Gov.	ដៃគូរ DP	ហិរញ្ញប្បទាន UF	រដ្ឋ Gov.	ដៃគូរ DP	ហិរញ្ញប្បទាន UF	រដ្ឋ Gov.	ដៃគូរ DP	ហិរញ្ញប្បទាន UF	រដ្ឋ Gov.	ដៃគូរ DP	ហិរញ្ញប្បទាន UF
ចំនួនសរុបក្នុងខេត្ត Total province												
ការចំនាយលើបុគ្គលិក Staffing												
ការចំនាយមិនមែន បុគ្គលិក Non Staffing												
ការចំនាយមូលធន Capital Expenses												
ការវិនិយោគInvestment												
ជំនួយបច្ចេកទេស Technical Assist.												

Gov.: Government, DP: Development Partners, UF: User Fee

2.3. តើអ្នកមាន ODs ឬមន្ទីរពេទ្យដែលផ្តល់មូលនិធិសមធម៌ ឬជាប់កិច្ចសន្យាផ្ទៃក្នុងដែរឬទេ។ បើមាន សូមជួយផ្តល់ព័ត៌មានលម្អិត Do you have any ODs or hospitals introduced either Health Equity Fund or Internal Contracting? If yes, please give us the detailed information.

□ មាន Yes, (detail: ……
□ គ្មាន No

3. ប្រព័ន្ធផ្តល់សេវាសុខាភិបាល Health Service Delivery System.

3.1. សូមផ្តល់អោយយើងនូវរបាយការណ៍ទិន្នន័យសុខភាពខេត្ត ពីឆ្នាំ ២០១២ ដល់ ២០១៦ បើមាន។ Please provide us with the Provincial Health Statistics Report from 2012 to 2016 if any.

ល.រ No	ទិន្នន័យសុខភាព Health Statistic	2012	2013	2014	2015	2016
1	ភាគរយនៃការពិនិត្យផ្ទៃពោះលើកទី ២ % of ANC2					
2	ភាគរយនៃការពិនិត្យផ្ទៃពោះលើកទី ៤ % of ANC4					
3	ភាគរយនៃការសម្រាលសុខាភិបាលនៅមូលដ្ឋានសុខាភិបាល % of Delivery at Health Facilities					
4	ភាគរយនៃការសម្រាលដោយឆ្មបជំនាញ % of Delivery by Skill Birth Attendance					
5	ភាគរយនៃការថែទាំក្រោយសម្រាលលើទី ២ % of PNC2					
6	ភាគរយនៃការថែទាំក្រោយសម្រាលលើទី ៤ % of PNC4					
7	ភាគរយនៃការថែទាំក្រោយសម្រាលលើទី ៥ % of PNC5					
8	ចំនួនម្តាយស្លាប់ Number of Maternal Death					
9	អត្រាមរណភាពមាតា MMR					
10	ភាគរយនៃការចាក់ថ្នាំបង្ការជំងឺរលាកថ្លើមបេក្រោម ២៤ម៉ោង % of HepBo <24hours					
11	ភាគរយនៃការចាក់ថ្នាំបង្ការជំងឺរបេងសម្រាប់ ក្មេងអាយុក្រោម ១ឆ្នាំ % of BCG <1year					
12	ភាគរយនៃការចាក់ថ្នាំបង្ការ DPT-HepB3 សម្រាប់ក្មេងអាយុក្រោម ១ឆ្នាំ % of DPT-HepB3<1year					
13	ភាគរយនៃការចាក់ថ្នាំបង្ការជំងឺកញ្ជ្រឹល សម្រាប់ក្មេងអាយុក្រោម១ឆ្នាំ % of Measles <1year					
14	ចំនួនពិគ្រោះជំងឺក្រៅចំពោះក្មេងអាយុក្រោម ៥ឆ្នាំ ក្នុងរយៈពេលមួយឆ្នាំ Number of OPD consult. <5years old per year					
15	ចំនួនពិគ្រោះជំងឺក្រៅ(ទូទៅ)ក្នុងរយៈពេលមួយឆ្នាំ Number of OPD (general) consultation per year					
16	អត្រាគ្រែ (គិតជាភាគរយ) Bed of Occupancy Rate (%)					
17	រយៈពេលដេកពេទ្យជាមធ្យម Average Length of Stay					
18	អត្រាស្លាប់នៅមន្ទីរពេទ្យ (គិតជាភាគរយ) Hospital Mortality Rate (%)					

ប្រភពអាចមាន៖ របាយការណ៍ត្រួតពិនិត្យប្រចាំឆ្នាំនៃមន្ទីរសុខាភិបាល Possible source: Annual Review Report of Provincial Department

3.2. តើអ្នកមានការពិនិត្យឡើងវិញពីការស្លាប់របស់ម្តាយ រៀងរាល់ឆ្នាំដែរទេ? បើសិនមានសូមជួយបញ្ជាក់ពីមូលហេតុសំខាន់ៗនៃការស្លាប់? Are you conducting the Maternal Death Review every year? If yes, please specify the 3 major causes of maternal death.

□ មាន (សូមបញ្ជាក់) Available
(specify 1… ..... 2 ..... 3 .....……....)
□ អត់មាន Not Available

3.3. សូមប្រាប់យើងថាតើមានផែនការអភិវឌ្ឍន៍សុខាភិបាលខេត្តដែរទេ? Please provide us with the Provincial Health Development Plan if any.

□ មាន Available (Take a copy)
□ អត់មាន Not Available

3.4. បើសិនជាអាចសូមបង្ហាញពីចំនួន និងទីតាំងភូមិសាស្ត្រនៃមន្ទីរពេទ្យ មណ្ឌលសុខភាព និងទីតាំងសុខាភិបាលផ្សេងៗទៀតនៅក្នុងខេត្ត (សូមបញ្ចូលចំនុចទីតាំងក្នុងផែនទី) បើសិនផែនទីរដ្ឋបាល និងសុខាភិបាលមានព័ត៌មានទាំងនេះហើយសូមភ្ជាប់មកជាមួយ Could you show us the numbers and the geographical locations of hospitals, health centers and other kinds of health facilities in the Province (including the locations plotted on maps)? If the Administration and Health Facility Mapping covers that information, please submit them.

□ មាន Available (Photo code: ……)
□ មិនមាន Not Available

3.5. ទាក់ទងទៅនឹងការបែងចែកបុគ្គលិកសុខាភិបាល តើអ្នកអាចផ្តល់អោយយើងការពិនិត្យឡើងវិញនូវផែនការអភិវឌ្ឍន៍ធនធានមនុស្សក្នុងវិស័យសុខាភិបាល ឬឯកសារទាក់ទងផ្សេងទៀតទេ? Concerning distribution of health personnel, could you submit the Review of the Health Workforce Development Plan or related documents?

□ មាន Available (Take a copy)
□ មិនមាន Not Available

4. ព័ត៌មានទាក់ទងនឹងម្ចាស់ជំនួយ **Donor information**

4.1. សូមប្រាប់យើងពីសេចក្តីសង្ខេបគម្រោងសុខាភិបាលដែលបានអនុវត្តក្នុងរយៈពេល ៣ឆ្នាំកន្លងមក និងគម្រោងកំពង់ដំណើរការក្នុងខេត្តគាំទ្រដោយម្ចាស់ជំនួយផ្សេងៗ Please provide us with the summary of the health sector project implemented in the last three years and ongoing in the Province under various Donors.

ដុល្លារអាមេរិក (US Dollar)

ម្ចាស់ជំនួយ Donor	រយៈពេល Period	ឈ្មោះគម្រោង/គ្រោងរបស់គម្រោង Project Name/Project Outline	ថវិការគម្រោង Project Budget

4.2. សូមប្រាប់យើងពីសេចក្តីសង្ខេបគម្រោងសុខាភិបាលដែលបានដែលនឹងត្រូវអនុវត្តក្នុងរយៈពេល ៣ឆ្នាំក្នុងខេត្ត គាំទ្រដោយម្ចាស់ជំនួយផ្សេងៗ Please provide us with the summary of the health sector project that will be implemented in coming 3 (three) years in the Province under various Donors.

ដុល្លារអាមេរិក (US Dollar)

ម្ចាស់ជំនួយ Donor	រយៈពេល Period	ឈ្មោះគម្រោង/គ្រោងរបស់គម្រោង Project Name/Project Outline	ថវិការគម្រោង Project Budget

5. ធនធានមនុស្សសម្រាប់សុខភាព **Human Recourse for Health**

5.1. សូមផ្តល់អោយយើងនូវចំនួនបុគ្គលិកសុខាភិបាលនៅក្នុងភ្នំពេញពីឆ្នាំ ២០១២ ដល់២០១៦ សម្រាប់បុគ្គលិកសុខាភិបាលគ្រប់កំរិត Please provide us with the number of health workers in the Province from 2012 through 2016 for every line of health workers.

ចំនួនមនុស្ស (number of people)

កំរិតចំណេះដឹង Qualification	2012				2013				2014				2015				2016			
	ផែនការ Plan		ជាក់ស្តែង Actual		ផែនការ Plan		ជាក់ស្តែង Actual		ផែនការ Plan		ជាក់ស្តែង Actual		ផែនការ Plan		ជាក់ស្តែង Actual		ផែនការ Plan		ជាក់ស្តែង Actual	
	បុគ្គលិករដ្ឋ	បុគ្គលិកកិច្ចសន្យា	បុគ្គលិករដ្ឋ	បុគ្គលិករដ្ឋ	បុគ្គលិករដ្ឋ	បុគ្គលិកកិច្ចសន្យា	បុគ្គលិករដ្ឋ	បុគ្គលិកកិច្ចសន្យា	បុគ្គលិកកិច្ចសន្យា	បុគ្គលិករដ្ឋ	បុគ្គលិកកិច្ចសន្យា	បុគ្គលិកកិច្ចសន្យា	បុគ្គលិករដ្ឋ	បុគ្គលិកកិច្ចសន្យា	បុគ្គលិករដ្ឋ	បុគ្គលិកកិច្ចសន្យា	បុគ្គលិករដ្ឋ	បុគ្គលិកកិច្ចសន្យា	បុគ្គលិករដ្ឋ	បុគ្គលិកកិច្ចសន្យា
វេជ្ជបណ្ឌិតឯកទេស: Special Medical Doctor																				
វេជ្ជបណ្ឌិតជំនាញ Skilled Medical Doctor																				
វេជ្ជបណ្ឌិត Medical Doctor																				
គ្រូពេទ្យមធ្យម Medical Assistant																				
ឱសថការីឯកទេស Special Pharmacist																				
ឱសថការី Pharmacist																				
ឱសថការីមធ្យម Secondary Pharmacist																				
ទន្តបណ្ឌិត Dental Doctor																				
ទន្តពេទ្យ Dentist																				
ព្យាបាលដោយចលនាមធ្យម Secondary physiology																				
បរិញ្ញាប័ត្រគិលានុបុបដ្ឋាក Bachelor Nurse																				
គិលានុប្បដ្ឋាកមធ្យម:Secondary Nurse																				

គិលានុប្បដ្ឋាកបឋម: Primary nurse																				
បរិញ្ញាប័ត្រឆ្មប: Bachelor Midwife																				
ឆ្មបមធ្យម: Secondary Midwife																				
ឆ្មបបឋម: Primary Midwife																				
អ្នកបច្ចេកទេសមន្ទីរពិសោធន៍មធ្យម: Secondary Lab Technicians																				
អ្នកបច្ចេកទេសថត X-ray: X-ray technician																				
បុគ្គលិកពេទ្យផ្សេងទៀត: Other medical staff																				
សរុប: **Total**																				

ប្រភពអាចមាន៖ របាយការណ៍ប្រចាំឆ្នាំរបស់មន្ទីរសុខាភិបាលខេត្ត Possible source: Annual Report of PHD

5.2. តើអ្នកបានភ្ជាប់ផែនការត្រួតពិនិត្យធនធានមនុស្សផ្នែកសុខាភិបាលទៅក្រសួងសុខាភិបាលដែរឬទេ? Did you submit the annual HRH Plans to MoH?

□ មាន Yes

បើមាន តើនៅពេលណា? ហើយសូមបង្ហាញផែនការថតចម្លង If Yes, when? and show us the copy of the plan

……

□ មិនមាន No

6. គ្រឹះស្ថានសុខាភិបាល **Health Facility**

6.1. តើអ្នកមានគ្រឹះស្ថានសុខាភិបាលណាដែលនឹងត្រូវសាងសង់ ឬត្រូវជុសជុលនៅក្នុងខេត្តរបស់លោកដែរឬទេ? បើមានសូមបំពេញតារាងខាងក្រោម Do you have any health facility that will be newly constructed or needs to be renovated in your province? (Yes/No) If Yes, please fill in the following table.

□ បាទ ចាស Yes
□ ទេ No

ឈ្មោះគ្រឹះស្ថានសុខាភិបាល Name of health facility	ឈ្មោះ ODs Name of OD	សាងសង់ /ការជុសជុល Construction/renovation	លម្អិត Details

6.2. សូមជួយប្រាប់យើងពីដំណើរនៃការស្នើរសុំសាងសង់ ឬជុសជុលសំណង់គ្រឹះស្ថានសុខាភិបាលពីមន្ទីរពេទ្យ មណ្ឌលសុខភាព បុស្តិ៍សុខភាពនៅខេត្តរបស់លោកដែរឬទេ? Could you tell us your procedure when you are requested for construction or renovation of health facility from hospitals/HCs/HPs in your province?

ចម្លើយ Answer:

7. បរិក្ខាពេទ្យ **Medical Equipment**

7.1. សូមប្រាប់យើងពីចំនួនដែលចំណាយក្នុងទិញបរិក្ខារពេទ្យអោយគ្រឹះស្ថានសុខាភិបាលនិយមួយៗនៅក្នុងខេត្តរបស់អ្នក Please provide the amount of expenditure for procurement of medical equipment to each health facility in your province.

ចំនួនគិតជារៀល (Riel)

ឈ្មោះមន្ទីរពេទ្យ Name of hospital	ចំនួនចំណាយក្នុងការទិញបរិក្ខារពេទ្យ Amount of expenditure for procurement of medical equipment				
	2012	2013	2014	2015	2016

7.2. សូមប្រាប់យើងពីចំនួននៃការចំណាយលើការថែទាំបរិក្ខារពេទ្យនៅក្នុងគ្រឹះស្ថានសុខាភិបាលនិមួយៗនៅក្នុងខេត្តរបស់អ្នក Please provide the amount of expenditure for maintenance of medical equipment to each health facility in your province.

ចំនួនគិតជារៀល (Riel)

ឈ្មោះមន្ទីរពេទ្យ Name of hospital	ចំនួនចំណាយក្នុងការថែទាំបរិក្ខារពេទ្យ Amount of expenditure for maintenance of medical equipment				
	2012	2013	2014	2015	2016

7.3. តើលោកអាចធានាថាមានថវិការគ្រប់គ្រាន់សម្រាប់ទិញ និងថែទាំបរិក្ខារពេទ្យដែរទេ? បើអត់មាន តើហេតុអ្វី? Can you continue to secure enough budget for procurement and maintenance of medical equipment? If No, please tell us why.

□ មាន Yes

□ អត់មាន (មូលហេតុ) No (Why?)

.....

7.4. តើមានប្រព័ន្ធគ្រប់គ្រងបរិក្ខារពេទ្យដែលបង្កើតឡើងដោយគម្រោង JICA MEDEM ដែលដំណើរការនៅក្នុងមន្ទីរពេទ្យក្នុងខេត្តរបស់អ្នកដែរទេ? Is ME management system that was developed in JICA MEDEM project working in hospitals in your province?

□ មាន Yes

□ មិនមាន No

កម្រងសំណួរ (សម្រាប់មន្ទីរពេទ្យខេត្ត និងមន្ទីរពេទ្យបង្អែក)

Questionnaires【for Provincial Hosp./Referral Hosp.】

ជំរាបសួរលោកនាយក

ទីភ្នាក់ងារសហប្រតិបត្តិការអន្តរជាតិជប៉ុន (JICA) នឹងធ្វើការប្រមូលទិន្នន័យសម្រាប់ការអង្កេតពីធនធានមនុស្សផ្នែកសុខភាព និងសំភារៈបរិក្ខារសុខាភិបាលក្នុងគោលបំណងដើម្បីស្វែងរកលទ្ធភាពនៃការផ្តល់ជំនួយរបស់អង្គការ JICA ក្នុងពេលខាងមុខដើម្បីសម្រេចបាននូវគោលដៅសុខភាពជាសកលនៅក្នុងប្រទេសកម្ពុជា។ ក្រុមអ្នកអង្កេតនឹងចុះទៅទីតាំងសុខាភិបាលរបស់លោកនៅក្នុងខែកុម្ភៈ ឆ្នាំ ២០១៧ និងធ្វើការសម្ភាសដោយផ្អែកទៅលើកម្រងសំណួរ ។ យើងខ្ញុំពិតជារីករាយណាស់បើសិនជាលោកអាចចាត់តាំងឲ្យបុគ្គលិករបស់លោកសម្រាប់ចូលរួមការអង្កេត និងរៀបចំឯកសារពាក់ព័ន្ធទុកជាមុន។ ក្រុមអ្នកអង្កេតនឹងជូនដំណឹងពីកាលបរិច្ឆេទលម្អិតនៃការសម្ភាសនេះ។ សូមអរគុណទុកជាមុនចំពោះកិច្ចសហប្រតិបត្តិការរបស់លោកនាយក។

Dear Director,
JICA will conduct the data collection survey on human resource for health, health facility and medical equipment in order to explore possibilities of JICA's future assistance to achieve UHC in Cambodia. The survey team will visit your facility in February 2017 and interview based on this questionnaire. It would be appreciated if you could assign your staff for this survey and prepare related documents. Proposed date of visit will be informed in due course by the survey team. Thank you for your cooperation in advance.

ឈ្មោះអ្នកដែលបំពេញកម្រងសំណួរ: Name of the person completing the form:	
ឈ្មោះអ្នកចូលរួមឆ្លើយ / តួនាទី Name of respondents/ position	1- 2- 3- 4-
អាសយដ្ឋានអ៊ីម៉ែល / លេខទូរស័ព្ទ: E-mail address/ Telephone No:	1- 2- 3- 4-

1. ពត៌មានមូលដ្ឋាន៖ Basic Information

① ឈ្មោះរបស់មន្ទីពេទ្យ៖ Name of the Hospital:

② ទីតាំង / អាសយដ្ឋាន៖ Location/Address:

③ ទិន្នន័យប្រព័ន្ធ GPS៖ GPS data: រយៈទទឹង Latitude _____ រយៈបណ្តោយ Longitude _____

④ អ្នកតំណាង/នាយក។ Representative/Director:

⑤ លេខទូរស័ព្ទ-ទូរសារ និងអាសយដ្ឋាន E-mail។ Tel/Fax, E-mail address:

⑥ បង្កើតឡើងក្នុងឆ្នាំ។ Established in (year):

⑦ ចំនួនប្រជាជនគ្របដណ្តប់ Catchment Population:

⑧ ទំហំមន្ទីរពេទ្យនេះ Scale of the Hospital: _____ beds គ្រែ

⑨ ម៉ោងធ្វើការ Consultation hours: ៖ from ពី _____ to ទៅ_____

⑩ មានការកត់ត្រាចូលធ្វើការជាប្រចាំថ្ងៃរបស់បុគ្គលិក □ បាទ/ចាស Yes / □ ទេ No
Existence of daily attendance record of staff

⑪ មានការកត់ត្រាពេលវេលានៃការធ្វើការរបស់បុគ្គលិក Existence of working time record of staff
□ បាទ/ចាស Yes / □ ទេ No

2. សំណួរទូទៅ៖ General Questions

2.1. សូមផ្តល់ឱ្យយើងនូវច្បាប់ចម្លងនៃឯកសារដូចខាងក្រោមបើមាន Please provide us a copy of the following document when available

1. ការកត់ត្រាប្រចាំឆ្នាំ / របាយការណ៍ពីឆ្នាំ 2012 ដល់ឆ្នាំ 2016 Annual Record/Report from 2012 to 2016
   □ មានទាំងអស់ All available / □ មានខ្លះៗ Partially available / □ មិនមាន Not available
2. ផែនការប្រតិបត្តិការប្រចាំឆ្នាំពីឆ្នាំ 2012 ដល់ឆ្នាំ 2016 Annual Operation Plan from 2012 to 2016
   □ មានទាំងអស់ All available / □ មានខ្លះៗ Partially available / □ មិនមាន Not available
3. ផែនការមេ ប្រសិនបើមាន Master Plan, if any
   □ មាន Available □ មិនមាន Not available)
4. ផែនទីនៃមន្ទីរពេទ្យ Map of hospital
   □ មាន Available □ មិនមាន Not available)
5. រចនាសម្ព័ន្ធមន្ទីរពេទ្យ Organization Chart of Hospital
   □ មាន Available □ មិនមាន Not available)
6. វិកយប័ត្រអគ្គីសនី ឧស្ម័នហ្គាស និងការផ្គត់ផ្គង់ប្រេងរៀងគ្នាក្នុងមួយខែនៅឆ្នាំ 2016 ឬ ឆ្នាំចុង ក្រោយបំផុត។ Receipt of electricity, propane gas and oil supply respectively per month in the year of 2016 or latest year.
   - អគ្គិសនី Electricity □ មាន Available □ មិនមាន Not available
   - ឧស្ម័នហ្គាស Propane gas □ មាន Available □ មិនមាន Not available)
   - ការផ្គត់ផ្គង់ប្រេង Oil supply □ មាន Available □ មិនមាន Not available)
7. បទបញ្ជាផ្ទៃក្នុង Internal regulation □ មាន Available □ មិនមាន Not available
8. SOA(ភ្នាក់ងារសេវាប្រតិបត្តិការ) SOA (service Operating Agency)
   □ ចាស/បាទ (តើប្រាក់ចំណូលសរុបប៉ុន្មាន(រៀល)? Yes (How much income (Riel) in total?
   ក្នុងឆ្នាំ២០១៥ In 2015_____ រៀល Riel
   ក្នុងឆ្នាំ២០១៦ In 2016_____ រៀល Riel
   □ ទេ No

3. សេវាវេជ្ជសាស្ត្រ៖ Medical Service

3.1 **ផ្នែក៖** Department

ចំនួនផ្នែកសរុប៖ Total No. of departments: _____

ផ្នែក: Department	Tick ☑
ផ្នែកពិគ្រោះជំងឺក្រៅ: OPD	☐
ផ្នែកសង្គ្រោះបន្ទាន់ ICU	☐
ផ្នែកជំងឺទូទៅ Int.Med.	☐
ផ្នែករោគស្ត្រី OB	☐
ផ្នែកសម្ភព GY	☐
ផ្នែកជំងឺកុមារ: Pediatrics	☐
ផ្នែកជំងឺ ត្រចៀក ច្រមុះ និង បំពង់ក: ENT	☐
ការវះកាត់: Surgery	☐
-ទូទៅ: General	☐
-ជំងឺខួរក្បាល: Neuro	☐
-ជំងឺបេះដូង: Cardio	☐
-ផ្នែកតម្រងនោម:Urology	☐
ផ្នែកជំងឺភ្នែក: Eye	☐
ផ្នែកជំងឺ[illegible]ឆ្អឹង Orthopedics	☐
ផ្នែកជំងឺរបេង: TB	☐
ជំងឺឃ្លង់: Leprosy	☐
សុខភាពមាត់ធ្មេញ Dental	☐

ផ្នែក: Department	Tick☑
ផ្នែកដាក់ថ្នាំសណ្តំ Anesthesia	☐
ផ្នែកមន្ទីរពិសោធន៍ Laboratory	☐
ផ្នែកឱសថ: Pharmacy	☐
ផ្នែកទុកដាក់ឈាម Blood bank	☐
Mental Health	☐
Diabetes	☐
Neonatal Care	☐
ផ្សេងៗ: Others (specify……)	

3.2 សូមបំពេញតួរលេខនៃលទ្ធផលពិតប្រាកដរបស់មន្ទីរពេទ្យរវាងឆ្នាំ 2012 និងឆ្នាំ 2016 ។ Please fill the figure of Hospital actual results between 2012 and 2016.

3.2.1 លទ្ធផលពិតប្រាកដរបស់មន្ទីរពេទ្យរវាងឆ្នាំ 2012 និងឆ្នាំ 2016 ។ Hospital actual results between 2012 and 2016

ចំនួន៖ (Number)

	2012	2013	2014	2015	2016
ចំនួនគ្រែដែលមាន **No of Beds (existing)**					
ចំនួនអ្នកជំងឺនៅក្រៅ **No of outpatients**					
- ចំនួនអ្នកពិនិត្យជំងឺទូទៅGeneral medicine					
- ចំនួនអ្នកវះកាត់Surgery					
- ចំនួនអ្នកពិនិត្យរោគស្ត្រី និងសម្ភព Obstetrics & gynecology					
- ចំនួនអ្នកពិនិត្យរោគកុមារ Pediatrics					
- ចំនួនអ្នកពិនិត្យជំងឺភ្នែក Ophthalmology					
- ចំនួនអ្នកពិនិត្យជំងឺ ត្រចៀក ច្រមុះ និង បំពង់ក ENT					
- ចំនួនអ្នកពិនិត្យសុខភាពមាត់ធ្មេញ Dental					
ចំនួននៃអ្នកថែទាំមុនសម្រាល No. of antenatal care					
ចំនួនអ្នកជំងឺផ្លូវចិត្ត No. of Mental Disease					
ចំនួនអ្នកដែលមកសម្រាកពេទ្យ (មិនរួមបញ្ចូលទាំងអ្នកជំងឺរបេង) No of inpatients (Exclude TB)					
ចំនួនអ្នកដែលមកសម្រាកពេទ្យ (រួមបញ្ចូលទាំងអ្នកជំងឺរបេង) No. of inpatients (Include TB)					

	2012	2013	2014	2015	2016
- ការពិនិត្យជំងឺទូទៅ General medicine					
- ការវះកាត់Surgery					
- ផ្នែកសម្ភពObstetrics					
- ផ្នែករោគស្ត្រីGynecology					
- ផ្នែករោគកុមារPediatrics					
- ផ្នែកត្រចៀក ច្រមុះ បំពង់កENT					
- អ្នកជំងឺរបេងTuberculosis					
-ផ្សេងៗ Others (សូមបញ្ជាក់ Specify .....)					
ចំនួនអ្នកជំងឺបញ្ជូនមកពីមន្ទីរពេទ្យ/ គ្លីនិកផ្សេង: No of referred-in patients from other hospitals/clinics					
ចំនួននៃអ្នកជំងឺបញ្ជូនចេញទៅមន្ទីរពេទ្យផ្សេង No of referred-out patients to other hospitals					
អត្រាគ្រែពេទ្យសម្រាក: Bed occupancy rate					
ចំនួនអ្នកជំងឺសម្រាកពេទ្យ-ក្នុងថ្ងៃសរុប,: Number of inpatient-days, Total					
- ការពិនិត្យជំងឺទូទៅ General medicine					
- ការវះកាត់Surgery					
- ផ្នែកសម្ភពObstetrics					
- ផ្នែករោគស្ត្រីGynecology					
- ផ្នែករោគកុមារPediatrics					
- ផ្នែកត្រចៀក ច្រមុះ បំពង់កENT					
- អ្នកជំងឺរបេងTuberculosis					
- ផ្សេងៗ Others (សូមបញ្ជាក់ Specify .....)					

3.2.2 សូមបំពេញនូវចំនួនគ្រែដែលមានស្រាប់តាមផ្នែកនីមួយៗ ។ Please fill in the number of existing beds by each department.

ផ្នែក Department	ចំនួនគ្រែ: Number of beds					សម្គាល់ Remarks
	2012	2013	2014	2015	2016	
ផ្នែកពិនិត្យជំងឺទូទៅ General medicine						
ផ្នែកវះកាត់:Surgery						
ផ្នែកសម្ភព Obstetrics						
ផ្នែកវោគស្ត្រីGynecology						
ផ្នែកវោគកុមារ Pediatrics						
ផ្នែកជំងឺរបេង Tuberculosis						
ផ្នែកជំងឺភ្នែក ត្រចៀក ច្រមុះ បំពង់ក Eye, ENT						
សរុប Total						

3.2.3 សូមបំពេញឈ្មោះ និងចំនួនជំងឺដែលខ្ពស់បំផុតនៅក្នុងមន្ទីរពេទ្យនេះពីឆ្នាំ 2012 ដល់ឆ្នាំ 2016 (ចំនួនជំងឺ)សូមបំពេញក្នុងតារាងខាង ក្រោមនេះ៖ នូវមូលហេតុ និងចំនួននៃការស្លាប់ដែលខ្ពស់បំផុតក្នុងចំណោមជំងឺទាំង ១០ ក្នុងមន្ទីរពេទ្យពីឆ្នាំ 2012 ដល់ឆ្នាំ 2016 (ការស្លាប់) ។ Please fill in the top 10 names and the number of diseases in this hospital from 2012 to 2016 (Morbidity). And please fill in the below table; the top 10 causes and the number of deaths in this hospital from 2012 to 2016 (Mortality).

ចំនួនជំងឺ Morbidity	2012		2013		2014		2015		2016	
	Top 10	ចំនួនអ្នកជំងឺ No. of Patients	Top 10	ចំនួនអ្នកជំងឺ No. of Patients	Top 10	ចំនួនអ្នកជំងឺ No. of Patients	Top 10	ចំនួនអ្នកជំងឺ No. of Patients	Top 10	ចំនួនអ្នកជំងឺ No. of Patients
របួស Trauma										
ការសម្រាលកូន Delivery										
ជំងឺផ្លូវដង្ហើម Respiratory insufficiency										
របួសដោយសារគ្រោះ ថ្នាក់ចរាចរណ៍ Traffic Injury										
ជំងឺភ្នែក Ophthalmology disease										
ជំងឺរោគស្ត្រីGynecology disease										
ជំងឺរបេង Tuberculosis										
ជំងឺអេដស៍: AIDS										
ជំងឺគ្រុនពោះវៀនTyphoid fever										
ជំងឺគ្រុនចាញ់ (កំរិតមធ្យម): Malaria (mid case)										
ជំងឺគ្រុនចាញ់ (កំរិតធ្ងន់): Malaria (serious)										
ជំងឺលើសឈាម Hypertension										
លើសសម្ពាធឈាម: High blood pressure										
ជំងឺបេះដូង: Heart disease										
ជំងឺតេតាណុស Tetanus										
ជំងឺគ្រុនឈាម(កំរិតធ្ងន់): Dengue fever (serious)										
ផ្សេងៗ Others (សូមបញ្ជាក់ specify …….)										

ចំនួនអ្នកស្លាប់ **Mortality**	2012		2013		2014		2015		2016	
	Top 10	ចំនួនអ្នកជំងឺ No. of Patients	Top 10	ចំនួនអ្នកជំងឺ No. of Patients	Top 10	ចំនួនអ្នកជំងឺ No. of Patients	Top 10	ចំនួនអ្នកជំងឺ No. of Patients	Top 10	ចំនួនអ្នកជំងឺ No. of Patients
របួស Trauma										
ការសម្រាលកូន Delivery										
ជំងឺផ្លូវដង្ហើម Respiratory insufficiency										
របួសដោយសារគ្រោះ ថ្នាក់ចរាចរណ៍ Traffic Injury										
ជំងឺភ្នែក Ophthalmology disease										
ជំងឺរោគស្ត្រីGynecology disease										
ជំងឺរបេង Tuberculosis										
ជំងឺអេដស៍: AIDS										
ជំងឺគ្រុនពោះវៀនTyphoid fever										
ជំងឺគ្រុនចាញ់ (កំរិតមធ្យម): Malaria (mid case)										
ជំងឺគ្រុនចាញ់ (កំរិតធ្ងន់): Malaria (serious)										
ជំងឺលើសឈាម Hypertension										
លើសសម្ពាធឈាម: High blood pressure										
ជំងឺបេះដូង: Heart disease										
ជំងឺតេតាណុស Tetanus										
ជំងឺគ្រុនឈាម(កំរិតធ្ងន់): Dengue fever (serious)										
ផ្សេងៗ Others (សូមបញ្ជាក់ specify …….)										

3.2.4 សូមអនុញ្ញាតឱ្យពួកយើងដឹងអំពីចំនួននៃអ្នកជំងឺដែលផ្លាស់ចូល និងផ្លាស់ចេញ។ Please let us know the number of referred-in and out patients.

	2012	2013	2014	2015	2016
ចំនួនបញ្ជូនចូលមកពីមន្ទីរពេទ្យ/គ្លីនិកផ្សេងទៀត No of referred-in patients from other hospitals/clinics					
- ពីស្ថាប័នវេជ្ជសាស្ត្រសាធារណៈ From public medical institutions					
- ពីស្ថាប័នវេជ្ជសាស្ត្រឯកជន From private medical institutions					
ចំនួនអ្នកជំងឺបញ្ជូនចេញទៅមន្ទីរពេទ្យផ្សេង No of referred-out patients to other hospitals					

3.2.5 សូមបំពេញចំនួននៃការវះកាត់ (មិនរួមបញ្ចូលវះកាត់យកកូន) នៅក្នុងតារាងខាងក្រោម ។ Please fill in the number of operations (excluding caesarian surgery) in the table below.

ឈ្មោះនៃការវះកាត់: Name of operations	2012	2013	2014	2015	2016
ចំនួនវះកាត់តាមកម្មវិធី Number of scheduled operations					
ចំនួននៃការស្លាប់ក្នុងចំណោមវះកាត់តាមកម្មវិធី: Number of death among scheduled operations					
ចំនួនវះកាត់បន្ទាន់ Number of emergency operations					
ចំនួនស្លាប់ក្នុងចំនោមវះកាត់បន្ទាន់: Number of death among emergency operations					
ចំនួនការវះកាត់សរុប Total operations					

3.2.6 សូមបំពេញនៅចំនួនការវះកាត់តាមកម្មវិធី ដោយផ្អែកវះកាត់។ Please fill in the number of scheduled operations by surgery/orthopedics department.

ការវះកាត់: Surgery	ឆ្នាំចុងក្រោយបំផុត Latest year (☐ 2015 ☐ 2016)
ចំនួននៃការវះកាត់តាមកម្មវិធី (សរុប) Number of scheduled operations (total)	
- ក្បាល និងក Head and neck	
- ទ្រូង និងបេះដូង Chest and Heart	
- ពោះ Abdomen	
- ការវះកាត់ផ្នែកខាងក្រៅ Extremities (orthopedics)	

3.2.7 សូមបំពេញឈ្មោះការវះកាត់ធំៗចំនួន៥ និងចំនួនករណីពីឆ្នាំ ២០១២ ដល់ឆ្នាំ ២០១៦ តាមលំដាប់ករណីតូចទៅធំ។ Please fill in the names of 5 major operations and the number of cases from 2012 to 2016 in order of descending numbers of cases.

	2012	2013	2014	2015	2016	ម៉ោង Hours*

* រយៈពេលជាមធ្យមនៃការវះកាត់: *the average time of operations

3.2.8 សូមបំពេញចំនួននៃករណីក្នុងការសម្រាលកូនធម្មតា ការសម្រាលកូនមិនធម្មតា និងការសម្រាលកូនដោយវិធីវះកាត់ពី ឆ្នាំ 2012 ដល់ឆ្នាំ 2016 ។ Please fill in the number of cases of normal deliveries, abnormal deliveries and caesarean deliveries from 2012 to 2016.

	2012	2013	2014	2015	2016
ចំនួននៃការសម្រាលកូនធម្មតា Number of normal deliveries					
ចំនួននៃការសម្រាលកូនដោយវិធីវះកាត់ Number of caesarean deliveries					
ចំនួននៃការសម្រាលកូនមិនធម្មតា (ចំនួនរាយ) Number of abnormal deliveries (sub-total)					
- ទារកកើតស្លាប់ stillbirth					
- ទារកកើតអត់គ្រប់គីឡូ តិចជាង២ គីឡូ Low birth weight less than 2 kg					
- ការរំលូតកូនដោយធម្មជាតិNatural abortion					
សរុប: TOTAL					

3.2.9 សូមបំពេញនៅចំនួននៃ**ការស្លាប់**ក្នុងមន្ទីរពេទ្យពីឆ្នាំ 2012 ដល់ឆ្នាំ 2016។ Please fill in the number of **mortality** in the hospital from 2012 to 2016.

	2012	2013	2014	2015	2016
ផ្នែកជំងឺទូទៅ: General medicine					
ផ្នែកវះកាត់: Surgery					
ផ្នែកសម្ភព: Obstetrics					
ផ្នែករោគស្ត្រី: Gynecology					
ផ្នែករោគកុមារ: Pediatrics					
ផ្នែកជំងឺអេដស៍: HIV/AIDS					
ផ្នែកជំងឺគ្រុនចាញ់: Malaria					
ផ្នែកជំងឺរបេង: Tuberculosis					
ផ្នែកភ្នែក: Eye					
ផ្នែក ត្រចៀក ច្រមុះ បំពង់ក: ENT					
ផ្នែកសង្គ្រោះបន្ទាន់: Emergency					
ចំនួនសរុប: Total					
ចំនួននៃការស្លាប់របស់ស្ត្រីមានផ្ទៃពោះ Number of death for pregnant					
ចំនួននៃការស្លាប់របស់ទារក Number of death for neonatal					

3.2.10 សូមបំពេញចំនួននៃការវិភាគវេជ្ជសាស្ត្រ ពីឆ្នាំ 2012 ដល់ឆ្នាំ 2016។ Please fill in the number of clinical examinations from 2012 to 2016.

ចំនួន: (Number)

	2012	2013	2014	2015	2016
ការធ្វើតេស្តពីមន្ទីពិសោធន៍ **Laboratory test**					
- ពិនិត្យទឹកនោម: Urine					
- ពិនិត្យលាមក: Fecal					
-ពិនិត្យទឹករងៃ: Puncture fluid					
- ពិនិត្យបាក់តេរី Bacteriology					
- ពិនិត្យរកមេរោគរបេងTuberculosis					
- ពិនិត្យរកមេរោគគ្រុនចាញ់Malaria					
- ពិនិត្យមេរោគអេដស៍: HIV					
-ការពិនិ្យឈាម: Hematology					
- ការពិនិត្យគីមីជីវសាស្ត្រBiochemistry					
- ការធ្វើសេរ៉ូឡូជី Serology					
ការពិនិត្យសរីរាង្គ **Physiological examination**					
- ធ្វើ ECG					
- ការធ្វើ EEG					
ការពិនិត្យភាពលឺ Hearing					
- ការពិនិត្យមុខងារសួត Lung function					
- ការពិនិត្យផ្នែកក្នុងសរីរាង្គ - Fundus examination					
- ការពិនិត្យសម្លេង Tonometry					
ការពិនិត្យតាមរយៈវិទ្យុសកម្ម **Radiological examination**					
ថតកាំរស្មី X ទ្រូង: Chest X-ray					
-ថតកន្លែងផ្សេងៗ: Other X-ray					
- ថត CT scan ក្បាល: Head CT scan					
- ថត CT scan ទ្រូង: Chest CT scan					
ថត CT scan ពោះ: Abdominal CT scan					
ផ្នែកអេកូសាស្ត្រ **Echography**					
-ការពិនិត្យពោះ: Abdominal					
- ផ្នែកសម្ភព: Obstetric					

- ផ្នែកបេះដូង: Heart					
	2012	2013	2014	2015	2016
- ផ្នែកផ្សេងៗ: Other					
ការពិនិត្យ **Endoscope**					
- ពិនិត្យក្រពះ: Stomach					
- ពិនិត្យពោះវៀន: Intestine					
- ពិនិត្យទងសួត: Bronchial					
ចំនួនសរុប: Total					

4. កិច្ចការហិរញ្ញវត្ថុ**: Financial affairs**

4.1 សូមអនុញ្ញាតឱ្យពួកយើងដឹងពីស្ថានភាពហិរញ្ញវត្ថុរបស់មន្ទីរពេទ្យពីឆ្នាំ 2012 ដល់ឆ្នាំ 2016។ Please let us know the hospital's financial situation from 2012 to 2016.

រៀល: (Riel)

	2012	2013	2014	2015	2016
ប្រាក់ចំណូល: Income:					
ពីរាជរដ្ឋាភិបាល: From Government					
ពីការធានារ៉ាប់រងសុខភាពសហគមន៍ From Community-based health insurance (មូលនិធិសមធម៌ HEF, ធានារ៉ាប់រងសុខភាពសហគមន៍ CBHI, CBHC, កាដូរជាប្រាក់ Cash transfer)					
ពីអ្នកជំងឺ (សេវាហិរញ្ញប្បទាន): From Patient (user fee)					
ពីអង្គការក្រៅរាជរដ្ឋាភិបាល: From NGOs					
ពីប្រភពផ្សេងៗទៀត: Others					
ប្រាក់ចំណូលសរុប Total Income:					
ការចំណាយ Expenses:					
ការចំណាយប្រាក់ខែបុគ្គលិក: Salary expenses					
ការចំណាយលើថ្នាំពេទ្យ: Medicine expenses					
ការចំណាយលើសម្ភារៈផ្សេងៗ: Material expenses					
ការចំណាយលើបរិក្ខាពេទ្យ:					

Medical equipment expenses					
	2012	2013	2014	2015	2016
ចំណាយលើការថែទាំសម្រាប់ឧបករណ៍: Maintenance expenses for equip.					
ការចំណាយលើការថែទាំមន្ទីរពេទ្យ Maintenance expenses for facility					
ការចំណាយលើអគ្គីសនី: Expenses of electricity					
ការចំណាយលើការប្រើប្រាស់ទឹក: Expenses of water					
ការចំណាយលើការប្រើប្រាស់ហ្គាស: Expenses of gas					
ការចំណាយលើការគ្រប់គ្រងមន្ទីពេទ្យ: Hospital management expenses					
ផ្សេងៗទៀត (ជាទូទៅ): Others(General)					
ការចំណាយសេវាហិរញ្ញប្បទាន 60% User fee expense 60%					
ការចំណាយលើរាជរដ្ឋាភិបាល 1% Pay for the Government 1%					
ការចំណាយលើដំណើរការ Expense on process					
ការចំណាយសរុប :Total Expense					
តុល្យភាព: Balance					

4.2 សូមអនុញ្ញាតឱ្យពួកយើងដឹងអំពីការពិគ្រោះជំងឺ ការពិនិត្យវេជ្ជសាស្ត្រ ការទទួលព្យាបាល និងសេវាហិរញ្ញប្បទានសរុបពីឆ្នាំ 2012 ដល់ឆ្នាំ 2016 ដូចជាប្រព័ន្ធនៃការប្រមូល ។ Please let us know the consultation, examination and hospitalization **total number of patient by each service and total user fee** from 2012 to 2016 as well as the collection system.

រៀល: (Riel)

	2012		2013		2014		2015		2016	
	ចំនួនអ្នកជំងឺសរុប Total number	ចំនួនហិរញ្ញប្បទានសរុប Total user fee	ចំនួនអ្នកជំងឺសរុប Total number	ចំនួនហិរញ្ញប្បទានសរុប Total user fee	ចំនួនអ្នកជំងឺសរុប Total number	ចំនួនហិរញ្ញប្បទានសរុប Total user fee	ចំនួនអ្នកជំងឺសរុប Total number	ចំនួនហិរញ្ញប្បទានសរុប Total user fee	ចំនួនអ្នកជំងឺសរុប Total number	ចំនួនហិរញ្ញប្បទានសរុប Total user fee
ថ្លៃសេវាពិគ្រោះជំងឺក្រៅ: Outpatient consultation fee										
ថ្លៃសេវាពិគ្រោះយោបល់បញ្ហាធ្មេញ: Dentistry consultation fee										
ថ្លៃពិនិត្យមន្ទីរពិសោធន៍: Laboratory examination fee										
តម្លៃពិនិត្យកាំរស្មី X: X-ray examination fee										
ថ្លៃគ្រែសម្រាប់មួយថ្ងៃ: Bed for 1 day (IPD)										
ថ្លៃសេវាវះកាត់ (ធម្មតា): Operation fee (typical)										
ថ្លៃសេវាសម្រាលកូន: Delivery fee										
ថ្លៃរសេវាថយន្តសង្គ្រោះបន្ទាន់: Ambulance										
ផ្សេងៗ Others (សូមបញ្ជាក់ specify										

……..……..……..)										
សរុប: Total										

4.3 សូមអនុញ្ញាតឱ្យពួកយើងដឹងថាការកត់ត្រាពិតប្រាកដអំពីស្តង់ដានៃការព្យាបាលនៅមន្ទីរពេទ្យដោយឥតគិតថ្លៃ និងការពិគ្រោះជំងឺដោយឥតគិត។ Please let us know the actual records and the standard of the free hospitalization and free consultations

ចម្លើយ:Answer:

4.4 ប្រសិនបើអ្នកមានប្រាក់ចំណូលពីមូលនិធិសមធម៌ សូមបង្ហាញយើងពីចំនួនទឹកប្រាក់ពីឆ្នាំ 2012 ដល់ឆ្នាំ 2016. If you have income from Health Equity Fund, please show us the amount from 2012 to 2016.

រៀល: (Riel)

មូលនិធិសមធម៌: HEF	2012	2013	2014	2015	2016
ចំនួនទឹកប្រាក់: Amount					

5. ផ្នែកធនធានមនុស្ស: Human Resource

5.1 សូមសូមបំពេញចំនួនបុគ្គលិកនៅក្នុងមន្ទីរពេទ្យពីឆ្នាំ 2012 ដល់ឆ្នាំ 2016។ Please fill in the numbers of staff in the hospital from 2012 to 2016.

ចំនួន: (Number)

កំរិតចំណេះដឹង Qualification	2012				2013				2014				2015				2016			
	ផែនការ Plan		ជាក់ស្តែង Actual		ផែនការ Plan		ជាក់ស្តែង Actual		ផែនការ Plan		ជាក់ស្តែង Actual		ផែនការ Plan		ជាក់ស្តែង Actual		ផែនការ Plan		ជាក់ស្តែង Actual	
	បុគ្គលិកប្រុស	បុគ្គលិកកិច្ចសន្យា	បុគ្គលិកប្រុស	បុគ្គលិកប្រុស	បុគ្គលិកប្រុស	បុគ្គលិកកិច្ចសន្យា	បុគ្គលិកប្រុស	បុគ្គលិកកិច្ចសន្យា	បុគ្គលិកប្រុស	បុគ្គលិកប្រុស	បុគ្គលិកកិច្ចសន្យា	បុគ្គលិកកិច្ចសន្យា	បុគ្គលិកប្រុស	បុគ្គលិកកិច្ចសន្យា	បុគ្គលិកប្រុស	បុគ្គលិកកិច្ចសន្យា	បុគ្គលិកប្រុស	បុគ្គលិកកិច្ចសន្យា	បុគ្គលិកប្រុស	បុគ្គលិកកិច្ចសន្យា
វេជ្ជបណ្ឌិតឯកទេស: Special Medical Doctor																				
វេជ្ជបណ្ឌិតជំនាញ Skilled Medical Doctor																				
វេជ្ជបណ្ឌិត Medical Doctor																				
គ្រូពេទ្យមធ្យម Medical Assistant																				
ឱសថការីឯកទេស Special Pharmacist																				
ឱសថការី Pharmacist																				
ឱសថការីមធ្យម Secondary Pharmacist																				
ទន្តបណ្ឌិត Dental Doctor																				
ទន្តពេទ្យ Dentist																				
ព្យាបាលដោយចលនាមធ្យម Secondary physiology																				

បរិញ្ញាប័ត្រគិលានុប្បដ្ឋាក Bachelor Nurse																				
គិលានុប្បដ្ឋាកមធ្យម:Secondary Nurse																				
គិលានុប្បដ្ឋាកបឋម: Primary nurse																				
បរិញ្ញាប័ត្រឆ្មប: Bachelor Midwife																				
ឆ្មបមធ្យម: Secondary Midwife																				
ឆ្មបបឋម: Primary Midwife																				
អ្នកបច្ចេកទេសមន្ទីរពិសោធន៍មធ្យម: Secondary Lab Technicians																				
អ្នកបច្ចេកទេសថត X-ray: X-ray technician																				
បុគ្គលិកពេទ្យផ្សេងទៀត: Other medical staff																				
សរុប: Total																				

5.2 សូមផ្តល់ពត៌មាននៃការចូលរួមក្នុងការអនុវត្តវិជ្ជាជីវៈ (ឆ្នាំចុងក្រោយបំផុត☐ 2015 ☐ 2016)។ Please provide the information of dual professional practice engagement (latest year ☐ 2015 ☐ 2016).

ចំនួន: (Number)

	វេជ្ជបណ្ឌិត Doctors	គ្រូពេទ្យ Medical Assist.	ទន្តពេទ្យ Dentist	ឱសថការី Pharmacists	គិលានុប្បដ្ឋាក Nurses	ឆ្មប Midwifes	អ្នកបច្ចេកទេសមន្ទីរពិសោធន៍ Lab tech.
ចំនួនបុគ្គលិក: The number of staff							
ចំនួនបុគ្គលិកដែលចូលរួមនៅក្នុងអាជីវកម្មខាងក្រៅ (គ្លីនិក មន្ទីរពេទ្យ បន្ទប់ពិនិត្យជម្ងឺ): The number of staff involved in side-business (clinic hospital, cabinet, etc.)							

5.3 សូមបំពេញនូវចំនួនបុគ្គលិកនៅក្នុងមន្ទីរពេទ្យក្នុងនាយកដ្ឋាននីមួយៗនៅឆ្នាំ 2016 ។ Please fill in the numbers of staff in the hospital in each department in 2016.

ចំនួន: (Number)

សេវាកម្មព្យាបាល: Clinical Services	វេជ្ជបណ្ឌិត: Medical Doctor	គ្រូពេទ្យ: Medical Assist.	គិលានុប្បដ្ឋាក: Nurse	ឆ្មប: Midwife	អ្នកធ្វើការដែលមានជំនាញវិជ្ជាជីវៈផ្សេង Other professional workers
ផ្នែកពិគ្រោះជំងឺក្រៅ: OPD					
ផ្នែកសង្គ្រោះបន្ទាន់: ICU					
ផ្នែកជំងឺទូទៅ:Int.Med.					
ផ្នែកសម្ភព OB					
ផ្នែករោគស្ត្រី GY					

ផ្នែកជំងឺកុមារ Pediatrics					
ផ្នែកជំងឺ ត្រចៀក ច្រមុះ បំពង់ក: ENT					
ផ្នែកវះកាត់: Surgery					
ផ្នែកជំងឺភ្នែក: Eye					
ផ្នែក Orthopedics					
ផ្នែកជំងឺរបេង: TB					
ផ្នែកជំងឺឃ្លង់: Leprosy					
ផ្នែកសុខភាពមាត់ធ្មេញ: Dental					
ផ្នែកដាក់ថ្នាំសន្លប់: Anesthesia					
ផ្នែកមន្ទីរពិសោធន៏: Laboratory					
ផ្នែកឱសថស្ថាន Pharmacy					
ផ្នែកទុកដាក់ឈាម: Blood bank					
ផ្នែកព្យាបាលជម្ងឺទឹកនោមផ្អែម Diabetes					
ផ្នែកជម្ងឺផ្លូវចិត្ត Mental Health					
ផ្នែកថែទាំទារក Neonatal Care					
ផ្សេងៗ: Others (បញ្ជាក់ specify……)					

5.4 សូមអនុញ្ញាតឱ្យពួកយើងដឹងអំពីប្រព័ន្ធនៃធនធានមនុស្សយ៉ាងខ្លី។ តើអ្នកស្នើសុំ និងអ្នកដែលបម្រុង ទុកសម្រាប់ខ្លួនឯង យ៉ាងដូចម្តេច? Please let us know the system of human resource **briefly**. How do you request and who allocate the personnel?

ចម្លើយ:Answer:

5.5 សូមអនុញ្ញាតឱ្យពួកយើងដឹងថាប្រាក់ខែជាមធ្យមប្រចាំឆ្នាំដោយការរៀបរាប់ការងារនេះពីឆ្នាំ 2012 ដល់ឆ្នាំ 2016 ។ Please let us know the average annual salary by the job description from 2012 to 2016.

រៀល: (Riel)

មុខជំនាញ់: Professions	2012	2013	2014	2015	2016
វេជ្ជបណ្ឌិតឯកទេស: Special Medical Doctor					
វេជ្ជបណ្ឌិតជំនាញ Skilled Medical Doctor					
វេជ្ជបណ្ឌិត Medical Doctor					
គ្រូពេទ្យមធ្យម Medical Assistant					
ឱសថការីឯកទេស Special Pharmacist					
ឱសថការី Pharmacist					
ឱសថការីមធ្យម Secondary Pharmacist					
ទន្តបណ្ឌិត Dental Doctor					
ទន្តពេទ្យ Dentist					
ព្យាបាលដោយចលនាមធ្យម Secondary physiology					
បរិញ្ញាប័ត្រគិលានុប្បដ្ឋាក Bachelor Nurse					
គិលានុប្បដ្ឋាក មធ្យម:Secondary Nurse					
គិលានុប្បដ្ឋាកបឋម: Primary nurse					
បរិញ្ញាប័ត្រឆ្មប: Bachelor Midwife					
ឆ្មបមធ្យម: Secondary Midwife					
ឆ្មបបឋម: Primary Midwife					
អ្នកបច្ចេកទេសមន្ទីរពិសោធន៍មធ្យម: Secondary Lab Technicians					
អ្នកបច្ចេកទេសថត X-ray: X-ray technician					
បុគ្គលិកពេទ្យផ្សេងទៀត: Other medical staff					

សរុប: **Total**					

5.6 សូមជូនដំណឹងឱ្យយើងដឹងអំពីការផ្លាស់ប្តូរការងារ (ការដូរវេន) ។ សូមផ្តល់ឱ្យយើងនូវគ្រោងការណ៍នៃការបំពេញកាតព្វកិច្ចនៅពេលយប់ ។ Please inform us the working shift (rotation). Please provide us with the outline of the night-time duty.

ចម្លើយ: Answer:

□ តាមម៉ោងធ្វើការរដ្ឋ (ធ្វើការមួយថ្ងៃ៨ ម៉ោង ថ្ងៃយាម ២៤ម៉ោង ចុះយាមថ្ងៃបន្ទាប់) Follow government system (work same as other government staff 8 hour/day, on duty and day off after duty)

□ ផ្សេងៗ Other (បញ្ជាក់ specify ……)

5.7 តើមានគោលការណ៍គ្រប់គ្រងបុគ្គលិក (វេជ្ជបណ្ឌិត, គិលានុបដ្ឋាយិកា, សហវេជ្ជសាស្ត្រ និងស្មៀន)? បើមានសូមផ្តល់ឱ្យ យើងនូវសៀវភៅនោះ។ Are there any internal regulation for the staff (doctors, nurses, co-medical and clerks)? If yes, please provide us with the manual.

□ មាន (សូមផ្តល់អោយយើង): Available (please provide manual)

□ គ្មាន: Not available

5.8 តើមានប្រព័ន្ធការវាយតម្លៃការធ្វើការរបស់បុគ្គលិកដែរឬទេ? Is there evaluation system of the staff performance?

ចម្លើយ: Answer: □បាទ/ចាស: Yes (please provide the copy) □ទេ: No

បើ បាទ/ចាសនៅកលើសំណួរខាងលើ តើការវាយតម្លៃផ្អែកលើអ្វីខ្លះសម្រាប់វេជ្ជបណ្ឌិត។ If yes above question, what are evaluation basis for medical doctor?

1. ……
2. ……
3. ……
4. ……

……

តើមានវិធានការណាមួយ ដូចជាការផ្តល់ការលើកទឹកចិត្ត ដែលបានយកនៅក្នុងគោលបំណងដើម្បីបង្កើនការលើកទឹកចិត្តបុគ្គលិក? Are there any measures, such as giving an incentive, taken in order to raise the personnel's motivation?

ចម្លើយ: Answer: □ការលើកទឹកចិត្តបែបរូបិយវត្ថុ: Monetary Incentive □ផ្សេងទៀត(សូមបញ្ជាក់.....): Others (Specify ……)

5.9 **(សូមសួរតែមន្ទីរពេទ្យខេត្ត ask CPA3 only)**តើមន្ទីរពេទ្យនេះរៀបចំអង្គភាពបណ្តុះបណ្តាសម្រាប់មុនពេលបម្រើសេវា និងក្នុងពេលបម្រើសេវា នៅក្នុងមន្ទីរពេទ្យនេះដោយយោងតាមគោលការណ៍ណែនាំស្តីពី CPA ដែរឬទេ? ប្រសិនបើមាន សូមបំពេញឈ្មោះរបស់សមាជិកនៃអង្គភាពដែលបណ្តុះបណ្តានេះ(សួរតែCPA3ទេ)
Does the hospital organize the training unit for pre-service and in-service training in the hospital according to the guideline on CPA? If yes, please fill the name of the membership of training unit.

□ បាទ ចាស(បំពេញឈ្មោះខាងក្រោម): Yes (fill the name in below table) □ ទេ: No

សមាជិកនៃអង្គភាពបណ្តុះបណ្តាល: Membership of training unit:

ទូនាទី: Position		**ឈ្មោះ: Name**
ប្រធាន ឬ អនុប្រធានការិយាល័យបច្ចេកទេស (PHD) Chief or Vice Chief of Technical Bureau (PHD)	ប្រធាន Chair	
ប្រធាននាយកដ្ឋាននីមួយៗ Each Chief of the departments	សមាជិកMember	
គ្រូពេទ្យ និងវេជ្ជបណ្ឌិតជំនាញ Physician and specialist doctor	សមាជិកMember	
ប្រធានគិលានុប្បដ្ឋាកChief of Nursing	សមាជិកMember	
ប្រធានឆ្មប Chief of Midwife	សមាជិកMember	
ប្រធានផ្នែកថែទាំបរិក្ខារ Chief of Equipment Maintenance	សមាជិកMember	
ព្យបាល Preceptor, Clinical Preceptor	សមាជិកMember	

5.10 សូមផ្តល់ពត៌មានពីលើការបណ្តុះបណ្តាមុនផ្តល់សេវាសម្រាប់និស្សិតនៃស្ថាប័នបណ្តុះបណ្តាលសុខភាព និងសេវាបណ្តុះបណ្តាសម្រាប់អ្នកជំនាញផ្នែកសុខភាព។ Please provide the information on pre-service training for the students of health training institutions and in-service training for health professionals:

បណ្តុះបណ្តាមុនពេលផ្តល់សេវា (វេជ្ជបណ្ឌិត គិលានុបដ្ឋាក ឬឆ្មប ពីកន្លែងណា) Pre-service training (Doctor, Nurse or midwife, from where)	ចំនួនសិស្ស និស្សិត No. of Students						បណ្តុះបណ្តាល (ពី មួយខែ ទៅ មួយខែ) Training Duration (month to month)
	2012	2013	2014	2015	2016	2017 ផែនការ plan	
និស្សិតវេជ្ជបណ្ឌិតពីសាលារដ្ឋ Student Doctors from public school							
និស្សិតវេជ្ជបណ្ឌិតពីសាលាឯកជន Student Doctors from private school							
និស្សិតគិលានុប្បដ្ឋាកមកពីសាលាភូមិភាគ Student Nurse from RTC							
និស្សិតគិលានុបដ្ឋាកមកពី TSMC Student Nurse from TSMC							
និស្សិតគិលានុបដ្ឋាកមកពីសាលាឯកជន: Student Nurse from private school							
និស្សិតឆ្មបមកពីសាលាភូមិភាគ Student Midwife from RTC							
និស្សិតឆ្មបមកពី TSMC Student Midwife from TSMC							
និស្សិតឆ្មបមកពីសាលាឯកជន Student Midwife from private school							

បណ្តុះបណ្តាលក្នុងពេលផ្តល់សេវា In-service training		ចំនួនបុគ្គលិក No. of Staff						រយៈពេលនៃការ បណ្តុះបណ្តាល Training Duration
ឈ្មោះនៃការបណ្តុះបណ្តាល Name of training	សមត្ថភាព Qualification	2012	2013	2014	2015	2016	2017 plan	

6. ទីកន្លែង: Facility

6. 1 សូមប្រាប់ពីតំបន់នៅជាន់ផ្ទាល់ដីនៃមន្ទីរពេទ្យ។ Please provide the ground-floor area of the hospital.

_____ម៉ែត្រការ៉ Square meters

6. 2 សូមផ្តល់ពត៌មានអំពីអគារនេះដោយបំពេញក្នុងតារាងខាងក្រោម។ Please provide the information of the buildings by filling in the following table.

ឈ្មោះអាគារ / គោលបំណងនៃការប្រើប្រាស់ Building Name/ Purpose of Use	ជាន់ Story	ទំហំជាន់ (ម៉ែត្រការ៉) Floor Area (sqm)	រចនាសម្ព័ន (ពីបេតុង / ដែក / ឥដ្ឋ / ល) Structure (RC/ Steel/ Brick/ etc.)	ឆ្នាំបានសាងសង់ / រៀបចំឡើងវិញ Year Built	ឆ្នាំបានសាងសង់ / រៀបចំឡើងវិញ Year Renovated	Source of financial support for building 1- Government 2- Development partner 3- Private source	Source of financial support for building 1- Government 2- Development partner 3- Private source	ត្រូវការជួសជុលកែលំអ / ស្តារឡើងវិញ (បាទ ចាស / ទេ) Need Renovation/ Reconstruction (Yes/No)
(ឧទាហរណ៏) (Example) ការវះកាត់ Surgery Ward	2	400	ចាក់បេតុង Reinforced Concrete	1980	2005	1	3	☐បាទ/ចាសYes ☐ទេNo
								☐បាទ/ចាសYes ☐ទេNo
								☐បាទ/ចាសYes ☐ទេNo
								☐បាទ/ចាសYes ☐ទេNo
								☐បាទ/ចាសYes ☐ទេNo
								☐បាទ/ចាសYes ☐ទេNo
								☐បាទ/ចាសYes ☐ទេNo
								☐បាទ/ចាសYes ☐ទេNo

6. 3 សូមបញ្ជាក់អគារណាមួយដែលគ្រោងនឹងកសាងជាថ្មីឬ កែលម្អនៅក្នុងគោលបំណងដើម្បីប្រតិបត្តិមុខងារ របស់មុខងារនៅក្នុងមន្ទីរពេទ្យ។ Please specify the building which is planned to be reconstructed or renovated in order to operate the hospital function.

សូមបញ្ជាក់៖ Please specify:

6. 4 តើហេដ្ឋារចនាសម្ព័ន្ធ(ការផ្គត់ផ្គង់អគ្គិសនី ផ្គត់ផ្គង់ទឹក បង្គន់ ប្រព័ន្ធលូ ការចោលកាកសំណល់, ការទំនាក់ទំនង, ល) មាននៅនឹងកន្លែងដែរឬទេ? Are infrastructures (electricity supply, water supply, toilet, sewage treatment, waste disposal, communication, etc.) are in place?

ហេដ្ឋារច្នាសម្ព័ន្ធ: Infrastructures	ស្ថានភាព: Situation
ការផ្គត់ផ្គង់អគ្គិសនី: Electricity supply	□ មាន Available □មិនមាន Not available
ការផ្គត់ផ្គង់ទឹក:Water supply	□ទឹកពីក្បាលរ៉ូប៊ីណេ Tap water □អណ្តូង Well □ផ្សេងទៀតOther
បង្គន់: Toilet	□ មាន Available □មិនមាន Not available
ប្រព័ន្ធបន្សុតទឹក: Water purification system	□ មាន Available □មិនមាន Not available
ប្រព័ន្ធលូ: Sewage system	□ មាន Available □មិនមាន Not available
ការចោលកាកសំណល់: Waste disposal	□ ការដុតរំលាយ Incinerator □ ចង្ក្រានឡូរ STOVE
ការទំនាក់ទំនង: Communication	□ ទូរស័ព្ទ Tel □ទូរសារFax □ អ៊ីនធើណេ Internet
ការផ្គត់ផ្គង់ឧស្ម័នពេទ្យភាគកណ្តាល: Medical gas central supply	□ អុកស៊ីសែន O2 □ នីត្រូសែន N2 □ នីត្រូ អុកស៊ីសែន N2O2 □ ផ្សេងៗ: Others
ស៊ីឡាំងឧស្ម័នពេទ្យ Medical gas cylinder	□ អុកស៊ីសែន O2 □ នីត្រូសែន N2 □ នីត្រូ អុកស៊ីសែន N2O2 □ ផ្សេងៗ: Others

6. 5 តើការលំបាកប្រឈម និងបញ្ហាដែលទាក់ទងទៅនឹមន្ទីរពេទ្យនេះមានអ្វីខ្លះ? What is the hospital's challenges and problems related to the facility?

ចម្លើយ: Answer:

7. **ឧបករណ៍: Equipment**

7. 1 តើអ្នកមានបរិក្ខាពេទ្យណាមួយដែលអ្នកមានលើសពីស្តង់ដា CPA ដូចដូចខាងក្រោមនេះ។ Do you have any medical equipment beyond CPA standard like the following ones

No.	ឈ្មោះឧបករណ៍: Equipment name	កន្លែងដំឡើង Installed place	ចំនួនដែលមាន Number of existence	ឃើញស្ថានភាពឧបករណ៍*1 Equipment condition*1 see	ស្ថាភាពការប្រើប្រាស់ Utilizing condition*2	សម្គាល់ Remarks
1	CT scan					
2	ប្រព័ន្ធកាំរស្មី X ឌីជីថល: Digital X-ray system					
3	ឧបករណ៍កាំរស្មី UV សម្រាប់ទារកលឿង: UV Device for neonatal jaundice					
4	ម៉ាស៊ីនឆ្លុះក្រពះ Endoscope for stomach					
5	ម៉ាស៊ីនឆ្លុះទងសួត Bronchoscope					
6	ផ្សេងទៀត Others (បញ្ជាក់ specify ___)					

7. 2 តើអ្នកដែលបានផ្ញើរបាយការណ៍គ្រប់គ្រងបរិក្ខានៅឆមាសចុងក្រោយនៃឆ្នាំ 2016 ទៅក្រសួងសុខាភិបាលដែរឬទេ? ប្រសិនបើមាន, សូមផ្តល់ច្បាប់ចម្លង ។ Did you submit the ME Management Report on the latest semester, 2016 to MOH?, if you submit it, **Please provide the copy.**

□ មាន Available

□ មានខ្លះៗ Partially available

□ អត់មាន Not available

ប្រសិនជារបាយការណ៍គ្រប់គ្រងរបស់MEគឺមិនអាចរកបាន, សូមបន្តទៅ 7.7 ***If ME management report is not available, please proceed to 7.7***

7. 3 តើក្រុម ME មានការងារតិបត្តិការដែឬទេ? Does the ME Working group operate?

□បាទ ចាស Yes □ទេ No

7. 4 សូមបំពេញពត៌មាននៃសមាជិកក្រុមការងារនីមួយៗដោយយោងតាមបញ្ជីដូចខាងក្រោម។ Please fill in the information of each member of Working Group according to the following list.

ក្រុមការងារ ME ME-Working Group	ឈ្មោះផ្ទាល់ Person name	ទូនាទីការងារ Job Position	ឯកទេស Specialty	ប្រវត្តន៍ការងារ Job status	ប្រវត្តន៍ការងារ ទៅ Section belong
នាយក ME ME Manager					
នាយករង ME ME Deputy Manager					
អ្នកបច្ចេកទេស ME ME Technician					

7. 5 តើអ្នកមានអនុវត្តការថែទាំបរិក្ខាពេទ្យដោយយោងតាមគោលការណ៍ណែនាំនៅលើប្រព័ន្ធនៃការគ្រប់គ្រង ME ទេ? Do you carry out routine preventive maintenance of medical equipment according to the manual on the ME Management System?

□បាទ ចាស Yes

□ទេ No

7. 6 តើអ្នកដែលពិនិត្យមើលកាលបរិច្ឆេទ និងការកត់ត្រាស្ថានភាពឧបករណ៍វេជ្ជសាស្ត្រដែរឬទេ? ប្រសិន បើអ្នកអនុវត្តវា សូម ផ្តល់នូវសន្លឹកត្រួតពិនិត្យវា(ទម្រង់បែបបទ 3-2) នៃរបាយការណ៍គ្រប់គ្រង ME ។ (សូមបំពេញនៅក្នុងស្ថានភាព បរិក្ខារ (អត្រាប្រតិបត្តិការ) និងស្ថានភាពនៃការប្រើប្រាស់ (អត្រាប្រើប្រាស់) ទៅក្នុងបញ្ជីដូចខាងក្រោម។ បន្ទាប់ពីបញ្ចប់ សំណួរនេះសូមបន្តទៅ 7,7 ។ Do you perform up-date work and record medical equipment condition? if you perform it, please provide the ME Monitoring Sheet (Form 3-2) of the ME Management Report. (Please fill in Equipment condition (operating rate) and Utilizing condition (utilizing rate) to the following list. ***After finishing this question, please proceed to 7.8.***

បញ្ជីដូចខាងក្រោមនេះត្រូវបានដកស្រង់ពីសំណុំបែបបទ 1-2 នៃរបាយការណ៍គ្រប់គ្រង ***ME*** ។

Following list is extracted from the Form the Form 1-2 of ME Management Report.

	ស្ថានភាពឧបករណ៍ Equipment Condition				ចំនួនសរុប Total No.	ស្ថានភាពនៃការប្រើប្រាស់ Utilizing condition			
	ល្អ Good A	បង្គួរ Fair B	អាក្រ Bad C	មិនដឹង Unknown D		រាល់ថ្ងៃ Daily a	ម្តងៗ Sometimes b	មិនដែលប្រើ Not use c	មិនដឹង Unknown d
ចំនួននៃឧបករណ៍ No. of Equipment									
ចំនួនភាគរយ Percentage (%)					100				

ការពន្យល់អំពីតារាងខាងលើ Explanation about above table:

(ក្នុងគោលបំណងដើម្បីពិនិត្យមើលពីស្ថានភាពបរិក្ខារពេទ្យ, ការរៀបរាប់អំពីការកំណត់នៃនិយមន័យ ដូចខាងក្រោម៖ "ស្ថានភាពឧបករណ៍ និង" ស្ថានភាពនៃការប្រើប្រាស់ "។)

(In order to checking of Medical Equipment condition, describe the following definition of “Equipment condition and “Utilizing condition”.)

ស្ថានភាពរបស់ឧបករណ៍៖ មានន័យថាបរិក្ខាពេទ្យគឺអាចធ្វើបានឬមិនអាចធ្វើបាន **Definition of the equipment**

condition:

***1: ស្ថានភាពបរិក្ខា Equipment condition**

A.ល្អ៖ ឧបករណ៍នេះដំណើរការដោយគ្មានបញ្ហាទេ,មានន័យថាឧបករណ៍នេះគឺដំណើរការនៅមុខងារល្អ ឥតខ្ចោះ។ Good: The equipment operates without any problems; it means that the equipment is functional and in perfect condition.

B. ធម្មតា៖ ឧបករណ៍នេះអាចត្រូវបានប្រើ; និយាយឲ្យចំមុខងារសំខាន់របស់ខ្លួនគឺធម្មតាទេប៉ុន្តែ ផ្នែកមួយចំនួនខ្លះត្រូវបានខូចឬស្ថានភាពមិនធម្មតាប៉ុន្តែមិនប៉ះពាល់ដល់មុខងារសំខាន់របស់ខ្លួន។Fair: The equipment can be used; basically its main function is in normal but some parts are broken or abnormal condition but does not affect its main function.

C. មិនល្អ: ឧបករណ៍នេះគឺខូចហើយ មុខងារបស់វាគឺក្នុងស្ថាភាពខុសប្រក្រតី ដែលបណ្តាយឲ្យឧបករណ៍ទាំងនោះមិនអាប្រើប្រាស់បាន។ Bad: The equipment is broken, main function is in abnormal condition; as a result, the equipment cannot be used.

D. មិនដឹង: គ្មាននរណាដឹងថាឧបករណ៍អាចប្រើប្រាស់បានឬទេ។ ឧបករណ៍នេះមិនអាច រកឃើញនៅគ្រប់ទីកន្លែងនៅក្នុងមន្ទីរពេទ្យទេ។ Unknown: Nobody know if the equipment can be operated or not. The equipment cannot be found wherever in the hospital.

***2 ស្ថានភាពប្រើប្រាស់ Utilizing condition**

a. ការប្រើជាប្រចាំ: ឧបករណ៍នេះត្រូវបានប្រើជារៀងរាល់ថ្ងៃ. Daily use: The equipment is used every day.

b. ជួនកាលប្រើ: ឧបករណ៍នេះត្រូវបានគេប្រើម្តងម្កាល Sometime use: The equipment is used occasionally.

c. មិននៅក្នុងការប្រើប្រាស់: ឧបករណ៍នេះមិនត្រូវបានប្រើសម្រាប់រយៈពេលយូរ។ Not in use: The equipment not used for long time.

d. មិនស្គាល់: ឧបករណ៍នេះមិនអាចរកឃើញនៅគ្រប់ទីកន្លែងនៅក្នុងមន្ទីរពេទ្យ។ Unknown: The equipment cannot be found wherever in the hospital.

7. 7 សូមឆ្លើយសំណួរដូចខាងក្រោមពី (a) ទៅ (d)។ Please answer following questions from (a) to (d).

a). សូមបំពេញនូវស្ថានភាពឧបករណ៍នេះ ដោយយោងតាមបញ្ជីខាងក្រោមនៅក្នុងមន្ទីរពេទ្យរបស់អ្នក។ Please fill in the equipment condition according to the following list in your Hospital.

No.	ឈ្មោះឧបករណ៍ Equipment name	កន្លែងដែលបានដំឡើង Installed place	ចំនួនដែលស្ថិតនៅ Number of existence	ស្ថានភាពឧបករណ៍ Equipment condition*1	ស្ថានភាពប្រើប្រាស់ Utilizing condition*2	ការកត់សម្គាល់ Remarks
1	ម៉ាស៊ីនថតកាំរស្មី X និច្ឆ័យរោគX ray diagnostic machine	រូបភាពImagery				
2	ម៉ាស៊ីនរោគវិនិច្ឆ័យអ៊ុលត្រាសោ Ultrasound Diagnostic Machine	រូបភាពImagery				
3	កម្មវិធីត្រួតពិនិត្យអ្នកជំងឺ (ក្រៅពីការត្រួតពិនិត្យអ្នកជំងឺ) Patient Monitor (Bedside Monitor)	ICU or Ward				
4	ម៉ាស៊ីនសង្គ្រោះបេះដូង Defibrillator	ICU or Ward				
5	ស្នប់បូប Infusion Pump	ICU or Ward				
6	សារ៉ាងបូម: Syringe Pump	ICU or Ward				
7	ផ្នែកបូប Suction Unit	ICU or Ward				

8	ផ្នែកដាក់ថ្នាំសណ្តំAnesthesia Apparatus	OT				
9	ផ្នែកវះកាត់ដោយម៉ាស៊ីនអេឡិចត្រូ Electro-Surgical Unit	OT				
10	ភ្លើងវះកាត់ Operating Light (ជាប់ពិដាន Ceiling mount type)	OT				
11	តុវះកាត់: Operating Table	OT				
12	ម៉ាស៊ីនចំហុយសម្លាប់មេរោគ Autoclave (Steam Sterilizer)	CSSD				
13	ម៉ាស៊ីនឆ្លុះមើលទារក Doppler Fetus Detector	OB/GY				
14	គ្រែសម្រាលកូន Delivery bed	OB/GY				
15	ម៉ាស៊ីនចិញ្ចឹមទារក Infant Incubator	OB/GY				
16	ម៉ាស៊ីនចំរោះឈាម Centrifuge	បន្ទប់ពិសោធន៍ Laboratory				
17	មីក្រូទស្សន៍: Microscope	បន្ទប់ពិសោធន៍ Laboratory				
18	វិភាគឈាម Hematology Analyzer	បន្ទប់ពិសោធន៍ Laboratory				
19	ម៉ាស៊ីនសម្ងួត: Dry Oven	បន្ទប់ពិសោធន៍ Laboratory				
20	កៅអីទន្តសាស្ត្រ: Dental Chair	ទន្តសាស្ត្រ Dental				

ការពន្យល់អំពីតារាងខាងលើ Explanation about above table:

(ក្នុងគោលបំណងដើម្បីពិនិត្យមើលពីស្ថានភាពបរិក្ខារពេទ្យ, ការរៀបរាប់អំពីការកំណត់នៃនិយមន័យ ដូចខាងក្រោម៖ "ស្ថានភាពឧបករណ៍ និង" ស្ថានភាពនៃការប្រើប្រាស់ "។)

(In order to checking of Medical Equipment condition, describe the following definition of "Equipment condition and "Utilizing condition".)

ស្ថានភាពរបស់ឧបករណ៍៖ មានន័យថាបរិក្ខាពេទ្យគឺអាចធ្វើបានឬមិនអាចធ្វើបាន **Definition of the equipment condition:**

***1: ស្ថានភាពបរិក្ខា Equipment condition**

A.ល្អ៖ ឧបករណ៍នេះដំណើរការដោយគ្មានបញ្ហាទេ,មានន័យថាឧបករណ៍នេះគឺដំណើរការនៅមុខងារល្អឥតខ្ចោះ។ Good: The equipment operates without any problems; it means that the equipment is functional and in perfect condition.

B. ធម្មតា៖ ឧបករណ៍នេះអាចត្រូវបានប្រើ; និយាយឲ្យចំមុខងារសំខាន់របស់ខ្លួនគឺធម្មតាទេប៉ុន្តែ ផ្នែកមួយចំនួនខ្លះត្រូវបានខូចឬស្ថានភាពមិនធម្មតាប៉ុន្តែមិនប៉ះពាល់ដល់មុខងារសំខាន់របស់ខ្លួន។Fair: The equipment can be used; basically its main function is in normal but some parts are broken or abnormal condition but does not affect its main function.

C. មិនល្អ: ឧបករណ៍នេះគឺខូចហើយ មុខងារបស់វាគឺក្នុងស្ថាភាពខុសប្រក្រតី ដែលបណ្តាយឲ្យឧបករណ៍ទាំងនោះមិនអាប្រើប្រាស់បាន។ Bad: The equipment is broken, main function is in abnormal condition; as a result, the equipment cannot be used.

D. មិនដឹង: គ្មាននរណាដឹងថាឧបករណ៍អាចប្រើប្រាស់បានឬទេ។ ឧបករណ៍នេះមិនអាច រកឃើញនៅគ្រប់ទីកន្លែងនៅក្នុងមន្ទីរពេទ្យទេ។ Unknown: Nobody know if the equipment can be operated or not. The equipment cannot be found wherever in the hospital.

***2 ស្ថានភាពប្រើប្រាស់ Utilizing condition**

a. ការប្រើជាប្រចាំ: ឧបករណ៍នេះត្រូវបានប្រើជារៀងរាល់ថ្ងៃ. Daily use: The equipment is used every day.

b. ជួនកាលប្រើ: ឧបករណ៍នេះត្រូវបានគេប្រើម្តងម្កាល Sometime use: The equipment is used occasionally.

c. មិននៅក្នុងការប្រើប្រាស់: ឧបករណ៍នេះមិនត្រូវបានប្រើសម្រាប់រយៈពេលយូរ។ Not in use: The equipment not used for long time.

d. មិនស្គាល់: ឧបករណ៍នេះមិនអាចរកឃើញនៅគ្រប់ទីកន្លែងនៅក្នុងមន្ទីរពេទ្យ។ Unknown: The equipment cannot be found wherever in the hospital.

b) សូមបំពេញក្នុងចំពោះអ្នកដែលទទួលខុសត្រូវលើការគ្រប់គ្រងនិងការរក្សានូវឧបករណ៍វេជ្ជសាស្ត្រនេះយោងតាមតារាងខាងក្រោម។ Please fill in the responsible person who manages and maintains the medical equipment according to the following table.

ឈ្មោះ Person name	មុខងារ Job Position	ជំនាញ Qualification	ទទួលបន្ទុក In charge
(Example) Mr Sen Sikeang	Chief of medical equipment	Engineer	Medical equipment maintenance

c) តើអ្នកមានបញ្ជីសារពើភ័ណ្ឌនៃបរិក្ខាពេទ្យដែរឬទេ?(មាន/មិនមាន) បើមាន តើអ្នកអនុវត្តការធ្វើបច្ចុប្បន្នភាពសម្រាប់ឧបករណ៍វេជ្ជសាស្ត្ររបស់អ្នកទៀងទាត់ដែរឬទេ? Do you have Medical equipment inventory list? (Yes/No) If yes, do you perform update for your medical equipment periodically?

បញ្ជីសារពើភ័ណ្ឌនៃឧបករណ៍វេជ្ជសាស្ត្រ Medical equipment inventory list	ធ្វើឲ្យទាន់សម័យ update
□ មាន Available	□ ធ្វើបច្ចុប្បន្នភាពជាទៀងទាត់ Periodically updated □ មិនបានធ្វើបច្ចុប្បន្នភាព Not updated
□ មិនមាន Not available	

d) សូមបំពេញនៅក្នុងស្ថានភាពឧបករណ៍និងស្ថានភាពនៃការប្រើប្រាស់ទៅក្នុងតារាងខាងក្រោមបើអាច។Please fill in Equipment condition and Utilizing condition to the following table if possible.

	ស្ថានភាពឧបករណ៍ Equipment Condition				ចំនួនសរុប Total No.	ស្ថានភាពប្រើប្រាស់ Utilizing condition			
	ល្អ Good A	ធម្មតា Fair B	មិនល្អ Bad C	មិនដឹង Unknown D		ទៀងទាត់ Daily a	ម្តងម្កាល Sometimes b	មិនសូវ Not use c	មិនដឹង Unknown d
ចំនួនឧបករណ៍: No. of Equipment									
ភាគរយ(%): Percentage (%)					100				

7.8 តើអ្នកឆ្លើយតបយ៉ាងម៉េច នៅពេលដែលមានបរិក្ខាពេទ្យដែលមានតម្លៃដូចជាជា ម៉ាស៊ីនថតកាំរស្មី X, អ៊ុលត្រាសោម៉ាស៊ីនរោគវិនិច្ឆ័យវិភាគលោហិត,ល) ត្រូវបានខូចឬដំណើរការមិនល្អ?សូមជ្រើរើសសកម្មភាពពិតប្រាកដរបស់អ្នកក្នុងតារាងខាងក្រោម។ How do you correspond when the high specification or precision's medical equipment (e.g. X ray machine, Ultrasound diagnostic machine, Hematology analyzer, etc.) is broken or failure? Please select your actual action in the following table.

វិធានការ Countermeasure	ការជ្រើសរើសនិងបំពេញក្នុង☑ Select and fill in the ☑
ទំនាក់ទំនងទភ្នាក់ងាក្នុងស្រុកឬអ្នកផ្គត់ផ្គង់ទៅលើសម្ភារៈពេទ្យ Contact to local agent or supplier of Medical equipment	☐
ទំនាក់ទំនងទៅមន្ទីរសុខាភិបាកឬស្រុកប្រតិបត្តិContact to PHD or OD	☐
ទំនាក់ទំនងទៅក្រសួងសុខាភិបាលឬម្ចាច់ជំនួយដោយផ្ទាល់ Contact to MOH or donor directly.	☐

ផ្សេងទៀត Others (សូមបញ្ជាក់ Specify.....)	☐

7.9 តើអ្នកដែលបានប្រើភ្នាក់ងារក្នុងស្រុកឬអ្នកផ្គត់ផ្គង់ក្នុងស្រុកស្តីពីបរិក្ខាពេទ្យដែរឬទេ?បើដែល,សូមបំពេញនៅក្នុងព័ត៌មានការផ្គត់ផ្គង់នេះបើយោងទៅតាមបញ្ជីដូចខាងក្រោម។ Do you use the local agent or local supplier of medical equipment? If "Yes", please fill in the information of supplier according to the following list.)

ឧបករណ៍ដែលត្រូវប្រើ What equipment deal with	ឈ្មោះរបស់អ្នកផ្គត់ផ្គង់ Name of supplier	ប្រភេទនៃសេវា Type of service	តំលៃ(រៀល) Cost (Riel)
		□កិច្ចសន្យានៃការថែទាំ Maintenance contract □សេវាជាលក្ខណបុគ្គលពេលត្រូវការ On call service individually □ផ្សេងទៀត Other	
		□កិច្ចសន្យានៃការថែទាំ Maintenance contract □សេវាជាលក្ខណបុគ្គលពេលត្រូវការ On call service individually □ផ្សេងទៀត Other	
		□កិច្ចសន្យានៃការថែទាំ Maintenance contract □សេវាជាលក្ខណបុគ្គលពេលត្រូវការ On call service individually □ផ្សេងទៀត Other	

7.10 សូមបំពេញតារាងខាងក្រោមពីដំណើការសម្រាប់ការផ្គត់ផ្គង់គ្រឿងបន្លាស់និងអ្នកប្រើប្រាស់បរិក្ខាពេទ្យ។ Please full fill following table about the process for procurement of spare parts and consumables of medical equipment.

សំណួរ Question	ចម្លើយ Answer		
	ថតឆ្លុះកាំរស្មី X-ray film	បំពង់ផ្ទក់ឈាម Blood taking tube	ក្បាលចាប់ ECG electrode
a. តើញឹកញាប់ទេ ដែលអ្នកអនុវត្តទៅក្នុងការផ្គត់ផ្គង់? How often do you apply of procurement?			
b. តើអ្នកមានដែនកំណត់នៃថវិការបស់អនុវត្តសម្រាប់មួយឆ្នាំដែរឬទេ? Do you have budget limitation of apply for a year?			
c. តើចំណាយពេលប៉ុន្មាន ពីការបញ្ជាទៅដល់ការចែកចាយ? How long does it take from order to delivery?			
d. តើអ្នកមានគំរូនៃការអនុវត្តដែរឬទេ?Do you have a form of apply?			
e. តើអ្នកដែលធ្លាប់បានទទួកបានគ្រឿងបន្លាស់ជាសាច់ប្រាក់ឬ			

មួយជាប្រភេទ?Do you receive spare parts in cash or in kind?			
f. អ្នកមើលការខុសត្រូវក្នុងការអនុវត្តនៅក្នុងមន្ទីពេទ្យ។ Person in charge of apply in hospital.	ឈ្មោះ៖ Name: ..... . នាយកដ្ឋានDepartment: ..... មុខងារ៖ Position:	ឈ្មោះ៖ Name: ..... នាយកដ្ឋាន Department: ..... . មុខងារ៖ Position:	ឈ្មោះ៖ Name: ..... . នាយកដ្ឋាន Department: ..... មុខងារ៖ Position: .....

7.11 សូមបំពេញនៅក្នុងចំនួន(រៀល)នៃការទទួលបានគម្រោងថវិកាសម្រាប់ការថែទាំបរិក្ខាពេទ្យសម្រាប់រយៈពេល 5 ឆ្នាំ (2012-2016) ។ Please fill in the amount (Riel) of the acquisition of budget for medical equipment maintenance for past 5 years (2012-2016).

ប្រភពហិរញ្ញវត្ថុ Financial resource	2012	2013	2014	2015	2016
ការចំណាយថែទាំសរុប Total maintenance cost					
ថវិការរបស់រដ្ឋាភិបាល Government Budget					
ប្រាក់សេវាហិរញ្ញប្បទាន User fee					
មូលនិធិសមធម៌ Equity fund					

អ្នកផ្តល់ជំនួយ Donor					
ផ្សេងទៀត Others					

7.12 សូមបំពេញចំនួន (រៀល) នៃការចំណាយសម្រាប់ការថែទាំបរិក្ខាពេទ្យសម្រាប់រយៈពេល 5 ឆ្នាំ (ឆ្នាំ 2012 - ឆ្នាំ 2016) ។ Please full fill the amount (Riel) of expenditure for medical equipment maintenance for past 5 years (2012 – 2016).

សម្ភារៈដែលនឹងចំណាយ Items of expenditure	2012	2013	2014	2015	2016
កិច្ចសន្យាការថែទាំដោយភ្នាក់ងារក្នុងតំបន់ Maintenance contract by local agent					
សេវាជួសជុលតាមផ្ទះ Repairing service on call base					
លទ្ធកម្មឬប្រើប្រាស់គ្រឿងបន្លាស់ Procurement spare parts or consumables					
ផ្សេងទៀត Others					

សូមអរគុណ END- Thank You

កម្រងសំណួរ (មណ្ឌលសុខភាព/ប៉ុស្តិ៍សុខភាព)

Questionnaires【Health Center/Health Post】

ទីភ្នាក់ងារសហប្រតិបត្តិការអន្តរជាតិជប៉ុន (JICA) នឹងធ្វើការប្រមូលទិន្នន័យសម្រាប់ការអង្កេតពីធនធានមនុស្សផ្នែកសុខភាព និងសំភារៈបរិក្ខារសុខាភិបាលក្នុងគោលបំណងដើម្បីស្វែងរកលទ្ធភាពនៃការផ្តល់ជំនួយរបស់អង្គការ JICA ក្នុងពេលខាងមុខដើម្បីសម្រេចបាននូវគោលដៅគ្របដណ្តប់សេវាសុខភាពជាសាកល (UHC) នៅក្នុងប្រទេសកម្ពុជា។ ក្រុមអ្នកអង្កេតនេះនឹងទៅកាន់កន្លែងរបស់អ្នកនៅក្នុងខែកុម្ភៈឆ្នាំ 2017 និងធ្វើការសម្ភាសដោយផ្អែកទៅលើកម្រងសំណួរនេះ។ វាពិតជាល្អណាស់បើ ប្រសិនអ្នកចាត់តាំងបុគ្គលិករបស់អ្នកមកចូលរួម និងរៀបចំឯកសារពាក់ព័ន្ធសម្រាប់ការអង្កេតនេះ ។ កាលបរិច្ឆេទដែលបានស្នើឡើងលើការសម្ភាសនេះនឹងត្រូវបានជូនដំណឹងជាក់លាក់នាពេលខាងមុខក្នុងកំឡុងពេលនៃការសិក្សាដោយក្រុមអ្នកអង្កេត។សូមអរគុណទុកជាមុនចំពោះកិច្ចសហប្រតិបត្តិការរបស់អ្នក។

Dear Chief,
JICA will conduct the data collection survey on human resource for health, health facility and Medical equipment in order to explore possibilities of JICA's future assistance to achieve UHC in Cambodia. The survey team will visit your facility in February 2017 and interview based on this questionnaire. It would be appreciated if you could assign your staff for this survey and prepare related documents. Proposed date of visit will be informed in due course by the survey team. Thank you for your cooperation in advance.

ឈ្មោះអ្នកដែលបំពេញកម្រងសំណួរ: Name of the person completing the form:	
ឈ្មោះអ្នកផ្តល់ចំលើយ Name of respondents/ position	1- 2-
អាសយដ្ឋានអ៊ីម៉ែល / លេខទូរស័ព្ទ: E-mail address/ Telephone No:	1- 2-

1. ព័ត៌មានមូលដ្ឋាន Basic Information

ឈ្មោះខេត្ត Name of province	
ឈ្មោះស្រុកប្រតិបត្តិ Name of OD	
ឈ្មោះទីកន្លែង (មណ្ឌលសុខភាព/ បុស្តិ៍សុខភាព) Name of facility (HC/HPs)	

ទីតាំង / អាសយដ្ឋាន Location/Address		
ទិន្នន័យប្រព័ន្ធកូអរដោនេភូមិសាស្ត្រ GPS data	រយៈទទឹង	រយៈបណ្តោយ .....
រូបភាពនៃមណ្ឌលសុខភាព/បុស្តិ៍សុខភាព Photo of HC/HP		
ឈ្មោះប្រធានមណ្ឌលសុខភាព / បុស្តិ៍សុខភាព Name of HC/HP Chief		
ចំងាយពីមន្ទីរពេទ្យបង្អែកដែលនៅជិតបំផុត Distance from the nearest RH	ចំងាយ Distance _____គីឡូម៉ែត km	
សាងសង់ក្នុង (ឆ្នាំ) Constructed in (year)		
ទំហំនៃមណ្ឌលសុខភាព / បុស្តិ៍សុខភាព Scale of HC/HP (ចំនួនគ្រែ)	_____ គ្រែ Beds	
ចំនួនប្រជាជនគ្រប់ដណ្តប់ Population coverage	_____នាក់ People	
ចំនួនភូមិគ្របដណ្តប់ Number of covering village	_____ ភូមិ Village	
ចំនួនអ្នកជម្ងឺក្រីក្រលើកលែងពីការបង់ថ្លៃសេវា Number of poor patients exempted from user fees	_____ នាក់ People	
ចំនួនអ្នកជម្ងឺក្រីក្រឧបត្ថម្ភដោយមូលនិធិសមធម៌ Number of poor patients subsidized by equity fund	_____ នាក់ People	
ចំនួននៃបុគ្គលិក Number of staff	_____ នាក់ People	
ចំនួនអ្នកស្ម័គ្រចិត្តធ្វើការនៅមណ្ឌលសុខភាព ឬ បុស្តិ៍សុខភាព Number of volunteer work in HC/HP	_____ នាក់ People	

ចំនួនក្រុមទ្រទ្រង់សុខភាពភូមិ Number of VHSG	_____ នាក់ People
ថ្ងៃធ្វើការ Opening days	ពី From _____:_____ ទៅ to _____:_____
ម៉ោងធ្វើការ Opening hours	ពី From _____:_____ ទៅ to _____:_____
កំណត់ត្រាវត្តមានប្រចាំថ្ងៃរបស់បុគ្គលិក Existence of daily attendance record of staff	□ ចាស/បាទ Yes □ ទេ No
កំណត់ត្រាពេលវេលាធ្វើការរបស់បុគ្គលិក Existence of working time record of staff	□ចាស/បាទ Yes □ទេ No
SOA (ភ្នាក់ងារសេវាប្រត្តិបត្តិការ) SOA (service Operating Agency)	□ ចាស/បាទ (តើប្រាក់ចំណូលសរុបប៉ុន្មាន (រៀល)? Yes (How much income (Riel) in total? ក្នុងឆ្នាំ២០១៥ In 2015_____ រៀល Riel ក្នុងឆ្នាំ២០១៦ In 2016_____ រៀល Riel □ ទេ No

2. សេវាវេជ្ជសាស្ត្រ Medical Services

2.1 សូមបំពេញតួលេខនៃលទ្ធផលជាក់ស្តែងពីឆ្នាំ 2012 ដល់ឆ្នាំ 2016 Please fill the figure of actual results between 2012 and 2016.

2.1.1 ចំនួនអ្នកមកពិគ្រោះជម្ងឺក្រៅ Number of outpatients

ប្រភេទជម្ងឺ Disease	2012	2013	2014	2015	2016
ជម្ងឺរាកសរុប Total Diarrhea					
ជម្ងឺរាកធម្មតា Simple diarrhea					
ជម្ងឺរាកធ្ងន់ធ្ងរ Severe diarrhea					
រាកមូល Dysentery					
រលាកផ្លូវដង្ហើមលើ Upper ARI					
រលាកផ្លូវដង្ហើមក្រោម Lower ARI					
ក្អកលើសពី ១៤ថ្ងៃ Cough > 14 days					
ជម្ងឺគ្រុនចាញ់ Malaria					
ជម្ងឺគ្រុនឈាម Dengue Fever					
ជម្ងឺកញ្ជ្រឹល Measles					
ជម្ងឺខាន់ស្លាក់ Diphtheria					
ជម្ងឺក្អកមាន់ Pertussis					
ជម្ងឺខ្វិនទន់ស្រួចស្រាវ Acute Flaccid Paralysis					
ជម្ងឺតេតាណូសទារក Neonatal Tetanus					
ជម្ងឺតេតាណូសផ្សេងៗ Other Tetanus					
លើសសម្ពាធឈាម High Blood Pressure					
ជម្ងឺសើស្បែក Skin diseases					

	2012	2013	2014	2015	2016
ជម្ងឺកាមរោគ STI					
ខ្ទុះតាមបង្ហួរនោម Urethral Discharge					
ធ្លាក់ស Vaginal discharge					
ដំបៅប្រដាប់ភេទ Genital ulcer					
ដុះឬសប្រដាប់បន្តពូជ Genital warts					
គ្រោះថ្នាក់ចរាចរណ៍ Road Accidents					
គ្រោះថ្នាក់ដោយគ្រាប់មិនទាន់ផ្ទុះ Mine Accidents					
ជម្ងឺភ្នែក Eyes Diseases					
បញ្ហាពពក Goiter Problem					
បំពានសារធាតុញៀន Substance Abuse					
សុខភាពផ្លូវចិត្តផ្សេង Other Mental Health					
កង្វះអាហារូបត្ត(ទម្ងន់/ អាយុ) Malnutrition (Weight/Age)					
បញ្ហាសុខភាពផ្សេងទៀត Other Health Problem					
សរុប **Total**					

2.1.2 ចំនួននៃការធ្វើតេស្ត Number of examination

	2012		2013		2014		2015		2016	
	ធ្វើតេស្ត Tested	វិជ្ជមាន Positive	ធ្វើតេស្ត Tested	វិជ្ជមាន Positive	ធ្វើតេស្ត Tested	វិជ្ជមាន Positive	ធ្វើតេស្ត Tested	វិជ្ជមាន Positive	ធ្វើតេស្ត Tested	វិជ្ជមាន Positive
គ្រុនចាញ់ Malaria										
របេង TB										
អេដស៍ HIV										

2.1.3 ចំនួននៃការសម្រាលកូនពីឆ្នាំ 2012 ដល់ឆ្នាំ 2016 Number of deliveries from 2012 to 2016

	2012	2013	2014	2015	2016
ចំនួនសម្រាល Number of deliveries					
នៅមណ្ឌលសុខភាព At health center					
នៅផ្ទះ(ដោយឆ្មបជំនាញ) At home (Skilled birth attendance)					
នៅផ្ទះ(ឆ្មបបុរាណ) At home (Traditional birth attendance)					
ចំនួនម្តាយស្លាប់ Number of maternal death					

2.1.4 ចំនួនទារកដែលទើបនឹងកើត (តិចជាង៤សប្តាហ៍) នៅក្នុងតំបន់របស់អ្នកពីឆ្នាំ 2012 ដល់ឆ្នាំ 2016

Number of newborn (less than 4 weeks) in your catchment area from 2012 to 2016

	2012	2013	2014	2015	2016
ចំនួនទារកដែលទើបនឹងកើត Number of newborn					
ចំនួនទារកដែលទើបនឹងកើតហើយស្លាប់ Number of newborn death					

2.1.5 ចំនួនអ្នកជម្ងឺដែលបានបញ្ជូន Number of referral patients

	2012	2013	2014	2015	2016
ចំនួននៃអ្នកជម្ងឺបានបញ្ជូនទៅស្ថាប័នវេជ្ជសាស្ត្រផ្សេងទៀត Number of patients referred to other medical institutions					

2.1.6 តើភាគច្រើនបញ្ជូនអ្នកជម្ងឺទៅណា? Where do you mostly refer patients?

1	
2	
3	

2.2 សូមប្រាប់ពួកខ្ញុំអំពីសេវាចុះមូលដ្ឋានរបស់អ្នកនៅក្នុងឆ្នាំ 2016 Please tell us your outreach service in 2016

សេវាចុះមូលដ្ឋានឆ្នាំ2016 Outreach service in 2016	បានធ្វើ Conducted	ពេលវេលា Times	គ្រាំទ្រដោយ VHSG Supported by VHSG
ការចាក់ថ្នាំបង្ការ Immunization	☐		☐
ផ្តល់ថ្នាំគ្រាប់វីតាមីនA Vitamin A supplementation	☐		☐
លើកកម្ពស់សុខភាព Health promotion	☐		☐
ការផ្តល់ម្សៅអូរ៉ាលីត្រសម្រាប់កុមារមានជម្ងឺរាករូស Provision of Oralyte to children of diarrhea	☐		☐

សេវាពន្យាកំណើត Birth spacing service	☐		☐
ថ្នាំទន្លាក់ព្រូន Regular deworming	☐		☐
ការតាមដានជម្ងឺរបេង និងអ្នកជម្ងឺឃ្លង់ Follow up of TB and leprosy patients	☐		☐
ការផ្តល់ថ្នាំជាតិដែកទៅលើស្ត្រីក្រោយពេលសម្រាល Iron tablet complementation to postpartum women	☐		☐
ការថែទាំតាមផ្ទះ និងការតាមដានអ្នកជម្ងឺអេដស៍ Home-based care and follow up of AIDS patient	☐		☐
ផ្សេង Other (បញ្ជាក់ Specify……)	☐		☐

2.3 តើសេវាសុខភាពដូចខាងក្រោមមានការសហការណ៍ជាមួយអ្នកស្ម័គ្រចិត្តភូមិរួមទាំងVHSG ដែរឬទេ? Are the following health services collaborated with village health volunteers including VHSG?

	កម្មវិធីមណ្ឌលសុខភាព/បុស្តិ៍សុខភាព HC/HP program	នៅក្រោមកម្មវិធីអង្គការក្រៅរដ្ឋាលភិបាល Under NGO program	ផ្សេងៗ Others
អ្នកផ្ទុកមេរោគអេដស៍/ជម្ងឺអេដស៍ HIV/AIDS	☐	☐	☐
ជម្ងឺរបេង TB	☐	☐	☐
ជម្ងឺគ្រុនចាញ់ Malaria	☐	☐	☐
ជម្ងឺទឹកនោមផ្អែម Diabetes	☐	☐	☐
ជម្ងឺលើសឈាម Hypertension	☐	☐	☐
អាហារូបត្ថម្ភ Nutrition	☐	☐	☐
សុខភាពមាតា និងទារក Maternal and child health	☐	☐	☐
ផ្សេងៗ Others (បញ្ជាក់ specify _____)	☐	☐	☐

3. ហិរញ្ញវត្ថុ Finance

3.1. សូមនិយាយប្រាប់ឲ្យពួកខ្ញុំដឹងអំពីស្ថានភាពហិរញ្ញវត្ថុពីឆ្នាំ2012ទៅឆ្នាំ2016 Please let us know the financial situation from 2012 to 2016 ចំនួនគិតជារៀល (Riel)

	2012	2013	2014	2015	2016
ប្រាក់ចំណូល Income:					
ពីរដ្ឋាភិបាល From Government					
បានមកពីការធានារ៉ាប់រងសុខភាពសហគមន៍ (HEF,CBHI,CBHC, Cash transfer) From Community-based health insurance (HEF, CBHI, CBHC, Cash transfer)					
បានពីអ្នកជម្ងឺ(ហិរញ្ញប្បទាន) From Patient (user fee)					
បានពីអង្គការមិនមែនរដ្ឋាភិបាល From NGOs					
ផ្សេងទៀត Others					
ប្រាក់ចំណូលសរុប Total Income					
ការចំណាយ Expenses:					
ការចំណាយលើប្រាក់ខែ Salary expenses					
ការចំណាយថ្នាំពេទ្យ Medicine expenses					
ការចំណាយលើសម្ភារៈ Material expenses					
ការចំណាយលើការទិញបរិក្ខាពេទ្យ					
ការចំណាយលើការថែទាំបរិក្ខា Maintenance expenses for equip.					
ការចំណាយលើការថែទាំគ្រឹះស្ថាន Maintenance expenses for facility					
ការចំណាយទៅលើអគ្គិសនី Expenses of electricity					
ការចំណាយលើទឹក Expenses of water					
ការចំណាយលើឧស្ម័ន Expenses of gas					
ការចំណាយលើការគ្រប់គ្រង HC/HP management expenses					
ការចំណាយសេវាហិរញ្ញប្បទាន 60% User fee expense 60%					
ចំណាយសម្រាប់រដ្ឋាភិបាល 1% Pay for the Government 1%					
ផ្សេងទៀត(ទូទៅ) Others(General)					
ការចំណាយសរុប Total Expense					
តុល្យភាព Balance					

3.2. ប្រសិនបើអ្នកមានប្រាក់ចំណូលពីមូលនិធិសមធម៌សុខភាពសូមបង្ហាញយើងពីចំនួនទឹកប្រាក់ពីឆ្នាំ 2012 ដល់ឆ្នាំ 2016 If you have income from Health Equity Fund, please show us the amount from 2012 to 2016.

(រៀល) (Riel)

មូលនិធិសមធម៌ HEF	2012	2013	2014	2015	2016
ចំនួនទឹកប្រាក់ Amount					

3.3. តើអ្នកប្រើប្រាស់ប្រាក់ហិរញ្ញប្បទានសម្រាប់ធ្វើអ្វីខ្លះ?(ចម្លើយអាចមានច្រើន) What do you use user fee for? (multiple answer)

□ ប្រាក់លើកទឹកចិត្តទៅលើបុគ្គលិក staff incentive

□ ជួលបុគ្គលិក កិច្ចសន្យា hiring contractual staff

□ ទិញសំភារៈបរិក្ខា/របស់ប្រើប្រាស់ប្រចាំថ្ងៃ Procuring equipment/ consumable

□ ការថែទាំសំភារៈបរិក្ខា/របស់ប្រើប្រាស់ប្រចាំថ្ងៃ Maintaining equipment/ consumable

□ ផ្សេងទៀត Other (……)

4. Human Resource

សូមបំពេញចំនួនបុគ្គលិកពីឆ្នាំ2012ទៅ2016 Please fill in the number of staff from 2012 to 2016

បុគ្គលិកសុខភាព Health worker	2012			2013			2014			2015			2016		
	ផែនការPlan	ជាក់ស្តែង Actual		Plan ផែនការ	ជាក់ស្តែង Actual		Plan ផែនការ	ជាក់ស្តែង Actual		Plan ផែនការ	ជាក់ស្តែង Actual		Plan ផែនការ	ជាក់ស្តែង Actual	
		បុគ្គលិករដ្ឋ Gov.staff	អង្គភាពឯកជន		បុគ្គលិករដ្ឋ Gov.staff	អង្គភាពឯកជន		បុគ្គលិករដ្ឋ Gov.staff	អង្គភាពឯកជន		បុគ្គលិករដ្ឋ Gov.staff	អង្គភាពឯកជន		បុគ្គលិករដ្ឋ Gov.staff	អង្គភាពឯកជន
វេជ្ជបណ្ឌិត Medical Doctor															
គ្រូពេទ្យមធ្យម Medical Assistant															
គិលានុប្បដ្ឋាកមធ្យម Secondary Nurse															
គិលានុប្បដ្ឋាកបឋម Primary Nurse															
ឆ្មបមធ្យម Secondary Midwife															
ឆ្មបបឋម Primary Midwife															
បុគ្គលិកសុខាភិបាលផ្សេងៗ Other medical staff															
សរុប Total															

5. ទីកន្លែង Facility

5.1 សូមផ្តល់ប្លង់នៃទីកន្លែង បើអាចរកបាន។ Please provide the layout of the facility if available

□ មាន Available □ មិនមាន Not available

5.2 តើទីធ្លាមណ្ឌលមានប៉ុន្មានមែត្រការ៉ What is the area of your facility?_____ម៉ែត្រការ៉ square meters

5.3 សូមផ្តល់ព័ត៌មានពីអាគារដោយបំពេញតារាងខាងក្រោម Please provide the information of the buildings by filling in the following table.

ឈ្មោះអាគារ / គោលបំណងនៃការប្រើប្រាស់ Building Name/ Purpose of Use	ជាន់ Story	ទំហំជាន់ (ម៉ែត្រការ៉) Floor Area (sqm)	រចនាសម្ព័ន (ពីបេតុង / ដែក / ឥដ្ឋ / ល) Structure (RC/ Steel/ Brick/ etc.)	ឆ្នាំបានសាងសង់ / រៀបចំឡើងវិញ Year Built	ឆ្នាំបានសាងសង់ / រៀបចំឡើងវិញ Year Renovated	Source of financial support for building 1- Government 2- Development partner 3- Private source	Source of financial support for building 1- Government 2- Development partner 3- Private source	ត្រូវការជួសជុលកែលំអ / ស្តារឡើងវិញ (បាទ ចាស / ទេ) Need Renovation/ Reconstruction (Yes/No)
(ឧទាហរណ៍) (Example) ការវះកាត់ Surgery Ward	2	400	ចាក់បេតុង Reinforced Concrete	1980	2005	1	3	□បាទ/ចាស Yes ☐ទេ No
								□បាទ/ចាស Yes ☐ទេ No
								□បាទ/ចាស Yes ☐ទេ No
								□បាទ/ចាស Yes ☐ទេ No
								□បាទ/ចាស Yes ☐ទេ No
								□បាទ/ចាស Yes ☐ទេ No
								□បាទ/ចាស Yes ☐ទេ No

5.4 សូមបញ្ជាក់ពីអាគារដែលគ្រោងសាងសង់ថ្មី ឬត្រូវជួសជុលកែលម្អនៅក្នុងគោលបំណងដើម្បីប្រតិបត្តិមុខងារសុខភាព Please specify the building which is planned to be reconstructed or renovated in order to operate the health facility's function.

សូមបញ្ជាក់៖ Please specify:

5.5 តើហេដ្ឋារចនាសម្ព័ន្ធ (ការផ្គត់ផ្គង់អគ្គិសនី ផ្គត់ផ្គង់ទឹក បង្គន់ កាកសំណល់ ការចោលកាកសំណល់ ការទំនាក់ទំនង ។ល។) មានដែរឬទេ? Are infrastructures (electricity supply, water supply, toilet, sewage treatment, waste disposal, communication, etc.) are in place?

ហេដ្ឋារចនាសម្ព័ន្ធ Infrastructures	ស្ថានភាព Situation
ការផ្គត់ផ្គង់អគ្គិសនី Electricity supply	□ មាន Available □ មិនមាន Not available
ផ្គត់ផ្គង់ទឹក Water supply	□ទឹកម៉ាស៊ីន Tap water □ អណ្តូង Well □ ផ្សេងទៀត Other
បង្គន់ Toilet	□ មាន Available □ មិនមាន Not available
ប្រព័ន្ធបន្សុតទឹក Water purification system	□ មាន Available □ មិនមាន Not available
ប្រព័ន្ធលូរ Sewage system	□ មាន Available □ មិនមាន Not available
ការបោះចោលកាកសំណល់ Waste disposal	□ ឡដុត Incinerator □ ចង្ក្រាន Stove
ការទំនាក់ទំនង Communication	□ ទូរស័ព្ទ Tel □ ទូរសារ Fax □ អ៊ីនធើណែត Internet

5.6 តើមានអ្វីដែលជាការប្រឈម / បញ្ហាទាក់ទងសុខភាពនៅកន្លែងរបស់អ្នកដែរឬទេ? What is the challenge/problems of your health facility?

ចំលើយ **Answer**

6. បរិក្ខារ Equipment

6.1 សូមបំពេញពីស្ថានភាពសម្ភារៈតាមបញ្ជីខាងក្រោមនៅក្នុងមណ្ឌលសុខភាពឬបុស្តិ៍សុខភាពរបស់អ្នក។ Please fill in the equipment condition according to the following list in your HC or HP.

លរ No.	ឈ្មោះសម្ភារៈបរិក្ខា Equipment name	ចំនួនដែលមាន Number of existence	ស្ថាភាពសម្ភារៈ Equipment condition*1	ស្ថានភាពប្រើប្រាស់ Utilizing condition*2	កំណត់សម្គាល់ Remarks
1	ឧបករណ៍ Otoscope set				
2	ជញ្ជីងថ្លឹងទម្ងន់ Weighing Scale				
3	ម៉ាស៊ីនវាស់សម្ពាធឈាម Sphygmomanometer				
4	ឧបករណ៍វាស់កម្ពស់ Height measuring instrument				
5	ទូទឹកកកដាក់វ៉ាក់សាំង Vaccine Refrigerator				
6	ភ្លើងបំភ្លឺការវះកាត់ (ប្រភេទបញ្ឈរ) Operating Light (Stand type)				
7	គ្រែសម្រាល Delivery bed				
8	ម៉ាស៊ីនបឺតស្លេស និងជើង Aspirator Portable, foot operated				
9	ជញ្ជីងថ្លឹងទារក Infant Scale				
10	ស្មៅងរបួស Stretcher				

11	ឆ្នាំងរម្ងាប់មេរោគ Pressure Sterilizer				
12	ចង្ក្រានឧស្ម័ន Gas Stove				
13	ម៉ាស៊ីនកំរិតឧស្ម័ន Gas regulator				
14	ទឹកចម្រោះ Water filter				

និយមន័យនៃស្ថានភាពសម្ភារៈ

ស្ថានភាពសម្ភារៈ **Definition of the equipment condition:**

***1: ស្ថានភាពបរិក្ខា Equipment condition**

A.ល្អ៖ ឧបករណ៍នេះដំណើរការដោយគ្មានបញ្ហាទេ,មានន័យថាឧបករណ៍នេះគឺដំណើរការនៅមុខងារល្អ ឥតខ្ចោះ។ Good: The equipment operates without any problems; it means that the equipment is functional and in perfect condition.

B. ធម្មតា៖ ឧបករណ៍នេះអាចត្រូវបានប្រើ; និយាយឲ្យចំមុខងារសំខាន់របស់ខ្លួនគឺធម្មតាទេប៉ុន្តែ ផ្នែកមួយចំនួនខ្លះត្រូវបានខូចឬស្ថានភាពមិនធម្មតាប៉ុន្តែមិនប៉ះពាល់ដល់មុខងារសំខាន់របស់ខ្លួន។Fair:

The equipment can be used; basically its main function is in normal but some parts are broken or abnormal condition but does not affect its main function.

C. មិនល្អ: ឧបករណ៍នេះគឺខូចហើយ មុខងារបស់វាគឺក្នុងស្ថាភាពខុសប្រក្រតី ដែលបណ្តាយឲ្យឧបករណ៍ទាំងនោះមិនអាប្រើប្រាស់បាន។ Bad: The equipment is broken, main function is in abnormal condition; as a result, the equipment cannot be used.

D. មិនដឹង: គ្មាននរណាដឹងថាឧបករណ៍អាចប្រើប្រាស់បានឬទេ។ ឧបករណ៍នេះមិនអាច រកឃើញនៅគ្រប់ទីកន្លែងនៅក្នុងមន្ទីរពេទ្យទេ។ Unknown: Nobody know if the equipment can be operated or not. The equipment cannot be found wherever in the hospital.

***2 ស្ថានភាពប្រើប្រាស់ Utilizing condition**

a. ការប្រើជាប្រចាំ: ឧបករណ៍នេះត្រូវបានប្រើជារៀងរាល់ថ្ងៃ. Daily use: The equipment is used every day.

b. ជួនកាលប្រើ: ឧបករណ៍នេះត្រូវបានគេប្រើម្តងម្កាល Sometime use: The equipment is used occasionally.

c. មិននៅក្នុងការប្រើប្រាស់: ឧបករណ៍នេះមិនត្រូវបានប្រើសម្រាប់រយៈពេលយូរ។ Not in use: The equipment not used for long time.

d. មិនស្គាល់: ឧបករណ៍នេះមិនអាចរកឃើញនៅគ្រប់ទីកន្លែងនៅក្នុងមន្ទីរពេទ្យ។ Unknown: The equipment cannot be found wherever in the hospital.

6.2 តើអ្នកមានមនុស្សណាដែលទទួលខុសត្រូវគ្រប់គ្រងនិងរក្សានូវឧបករណ៍វេជ្ជសាស្ត្របានដែរឬទេ? បើមានសូមបំពេញនៅក្នុងតារាងខាងក្រោមនេះ Do you have in the responsible person who manages and maintains the medical equipment? If yes, please fill in the following table.

ឈ្មោះ Person name	មុខងារ Job Position	ជំនាញ Qualification	ទទួលបន្ទុក In charge
(Example) Ms Hem Sopheak	Chief of nurse	Nurse	Ward
Mr Sen Sikeang	Chief of medical equipment	Engineer	Medical equipment maintenance

6.3 តើអ្នកមានបញ្ជីសារពើភ័ណ្ឌឧបករណ៍វេជ្ជសាស្ត្រដែរឬទេ? Do you have Medical equipment inventory list?

□ បាទ/ចាស Yes □ ទេ No

6.4 តើអ្នកធ្វើយ៉ាងដូចម្តេច នៅពេលដែលឧបករណ៍ត្រូវបានខូច? សូមជ្រើសសកម្មភាពពិតប្រាកដរបស់អ្នក នៅក្នុងតារាងខាងក្រោម។ What do you do when the equipment is broken? Please select your actual action in the following table.

វិធានការ Countermeasure	ជ្រើសរើសនិងបំពេញនៅក្នុងប្រអប់ Select and fill in the box if Yes
ទំនាក់ទំនងទៅនិងភ្នាក់ងារក្នុងស្រុកឬអ្នកផ្គត់ផ្គង់ឧបករណ៍វេជ្ជសាស្ត្រ Contact to local agent or supplier of Medical equipment	☐
ទំនាក់ទំនងមកកាន់ក្រុមការងារMEមន្ទីរពេទ្យបង្អែក CPA3 Contact to the ME Working Group of CPA3 referral hospital	☐
ទំនាក់ទំនងទៅPHDឬOD Contact PHD or OD	☐
ទំនាក់ទំនងទៅMOHឬម្ចាស់ជំនួយដោយផ្ទាល់។ Contact to MOH or donor directly.	☐
ផ្សេងទៀត Others	☐

References

Document Title	Publisher	Year
Health Workforce Development Plan 2016-2020	MoH, Cambodia	2016
The Third Health Strategic Plan 2016-2020	MoH, Cambodia	2016
National Strategic Development Plan 2014-2018	Kingdom of Cambodia	
Health Strategic Plan 2008-2015	MoH, Cambodia	2008
University of Health Sciences strategic plan 2014-2018		2014
Cambodia-WHO Country Cooperation Strategy 2016-2020	WHO	
Human Resources for Health Country Profile Cambodia	WHO	2014
Cambodia Demographic and Health Survey 2014	National Institute of Statistics, Directorate General for Health, and ICF International	2015
The Kingdom of Cambodia Health System Review	WHO	2015
Guidelines on Complementary Package of Activities for Referral Hospital Development	MoH	2014
Guidelines on Minimum Package of Activities for Health Center Development 2008-2015	MoH	2007
Annual Health Workforce Report 2015	Human Resources for Health Committee, MOH	2016
Health Sector Progress in 2016	Department of Planning and Health Information	2017
Annual Health Financing Report 2015	Bureau of Health Economics and Financing Department of Planning and Health Information	2015
Population Projection of Cambodia 2013-2023	National Institute of Statistics, Cambodia	
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