CHAPTER IV

Findings and Analysis of Laboratory Supply System

This chapter presents the finding from all types of data of the extent problems related to condition of reagent, material, equipment, laboratory function and the factors influencing the system with emphasis on the key player that are directly or indirectly involved in the laboratory supply system.

1. Finding

From the interviewed and document reviewed found problems of lab supplies are as follow:

1.1 Reagent Problems

1.1.1 Quality

All informants were reported that most of the reagents and materials supply from the MoH were poor quality. Some examples of supplies problem cited by the people interviewed are:

- Microscope slides were reported to have fungus making it difficult to see the morphology of materials investigated. It was found in ML, TB, and the five

- laboratories investigated. By this reason the TB, and ML centers do not distribute these slide to their network (order in 1997 and 1998) and reordered from MoH and Donors. This two agencies have annual request for slides about 14,000 to 20,000 boxes from the MoH. This was about 70 % of the total amount for the whole country. Therefore, the slides have been distribute to all hospitals for general program and it were found not used by the national hospitals as the respondents said,

" We don't use that slide because it difficult, we use our own slide, now about 200 boxes are left in our stock "

" We have clear protocol for testing malaria, this type of slides can not use for national program"

- The Giemsa, reagent for Gram stain, provide by MoH in 1999 about 200liters (70% of annual purchasing), do not give proper staining were reported to have expired in the ML networks. New purchasing Giemsa stain was provided by WHO and EU to ML center. In addition, Malaria testing Dipstix (used for rapid investigating of malaria parasites) provided by the World Bank always has a short self-life, unable to serve the services for the whole year. This reagent is required to use only in urgent cases or in case no electricity because it was expensive (10 to 15 time higher than microscope examination), because of their it was used in simple case.

" I push them to used to avoid expired and they faced the problem of shortage Dipstix for urgent cases used" (chief of ML supplies said).

- Pregnancy testing Dipstix was reported useless because it provided unreliable results, found in the Mother Child and health in the amount of 15 kit of 50test which was equal 15% of total MoH supplies and in Kossomak and municipal hospital do not report on quantity. As a lab chief said when interviewed that, "it was for pregnancy testing but it was positive even for male urine"

- The reagents for investigating Hepatitis B & C and Syphilis were given the inaccurate results. Due to its expensive price (1test= 2.2 US$, and 6.4 US& and 1.5 US$) it was used even knew that the result was unreliable.

  " we use it but we re-check every positive result the hepatitis and Syphilis with our reagents "

From this statement, all the negative result were not checked although, due to unreliability, some might actually be positive (false negative) that may affect diagnosis and treatment decisions.

- The SGOT and SGPT reagent to determine the liver function were reported outdate of the technique in Preah Sihanu Hospitlal and the laboratory requested to return the reagent to the MoH for the amount of 30 kit each. It is about 15% of total country purchased. Because of the shortage of supplies, this case should not have happened but the hospital allowed staff to do private activities so the problem could be the laboratory staffs using their own reagent more than the reagents provided by the MoH.

"we don't want to used it our reagent gave the result faster" (the informant said)

1.1.2 Adequacy

From the interviewed informants receivers the reagents and materials provided by the MoH to every lab agencies in general is inadequate. The MoH was able to provide a maximum of 50% and average of 34% of the total needed reagents and lab materials to the NH laboratories. Interviewed the MoH supplies officials found that the MoH policy is to supply 100% of the basic need (see appendix C) to all referral hospital according to CPA activities. The national hospital can have supplies more than the basic for specialized hospital, for example Pediatrics hospital can received more than standard for the Heamatocrite tube.

For national program, the average of supplies was about 81%. To compensate all the need for the laboratory services from the shortage of the MoH supplies, the national program have other sources of supplies from donors. Hospital fees were used and staffs contribute money or group to buy the reagent as seen in the Table 4.1a and 4.1.b.

Table 4.1 a: The Percentage of Reagent / Material from Each Source in NP

National Program	% supplied by MoH	% supplied by Donor	% from Hospital fee	% of Adequate
Blood Bank	80	20(WB, GVC)		80
TB-Lepro	95 (1997,98, 99) 20 (2000)	5 (JICA) 80 (WB)		95 20
ML	70	30 (EU,WB)		70

Table 4.1 b: The Percentage of Reagent / Material from Each Source in NH

Hospital	% supplied by MoH	% supplied by Donor	% from Hospital fee	% Staff Funding
Municipal	20			80
Norodam	30			70
Pediatric	40	40 (Unicef)	20	
MCH	30	20 (JICA)	50	
Kossomac	50		15	35

The percentages given are not exact figures but estimations of the respondents. This data showed that catch of the national programs have at least two donors supporting them and include occasional support from WHO in addition to the MoH supplies. The percentage of need met by the MoH is higher than the Hospital. This showed that the MoH and donors are more concern about the national programs than the general program.

From the above statement the average of need for reagents supplies by MoH was only 34%, but some reagents especially reagent that have to used with the machine such as Bilirubine test kits; Blood Glucose kit, Syphilis test kit (TPHA), and Heamoglobine test kit were expired because too much provided. The reason is, these reagents need to use with equipment (Spectrophotometer) and not all laboratories have this machine and the lab planners have purchased by estimated for all lab. So reagents that purchased for many labs were provided to few laboratories that have

equipment. Therefore, it become too much and expired.

The reagent supplied exceeded need and expired are related to the users and the suppliers and will be describe in the next section. The amount of budget calculate from the reagents over supply not used in each hospital is shown in table 4.2.

Table 4.2 : Reagent and Cost that the Hospital not used* in three Hospitals

Reagent & material	Sources	Quantity	Unit price (Riel)	Total prices (Riel)
Dipstix for pregnancy test	Mther Child Health (MCH)	15 kit /50 test	274,606.9	4,119,103
ASO test	MCH	4kit of 50 test	256,495.1	1,025,980
HBs-Ag reagent	MCH	5Kit of 40test	371,036.6	1,855,318
HCV reagent	MCH	7Kit of 20test	493,851	2,469,255
SGPT reagent	MCH	40 bottles	136,789.8	5,471,5904,
				20,685,464 = 5,304US$
Glucose kit	Peadiatric	15kit	608,000	9, 120,000
TPHA reagent	Peadiatric	18 kit	1,026, 000	11, 268, 000
				9,120,000 =2,338 US$
SGOT reagent	Sihanu	70 kit	136,789	4, 103670
Hepatitis C reagent	Sihanu	2 kit	493,852	987,704
SGOT reagent	Sihanu	30 kit	136,789	4, 103670
SGOT reagent	Sihanu	30 kit	136,789	4, 103670
TPHA reagent	Sihanu	10kit	1,026, 000	10, 260, 000
				19,455,044 = 4,973 US$

*Not in use = expired + unfit for equipment and technique

Out of five laboratories investigated, quantitative data was provided only from three hospitals.

1.1.3 High Cost

It was commonly known that the price of laboratory products purchased by the MoH is quite high if compared with the price in the free market. The evidence of high cost was found from the comparison of the price from the MoH procurement receipt and the price list of the company for nine items that were available in the market from the same company, it showed an average of 28.4% higher cost.

Table 4.3: Comparison MoH purchasing Price and the Price in the Free Market

N	Description	Manufacture or Company	Origin	MoH Procurement Receipt /unit US$)	Market Price List / unit(US$)
1	Bilirubine liquicolor	Hunam	Germany	44.80	34
2	Creatinine liquicolor	Hunam	Germany	48.45	34.00
3	Urea liquicolor	Hunam	Germany	71.93	20.00
4	Humatrol N	Hunam	Germany	110.69	78.00
5	Humatrole P	Hunam	Germany	119.97	80.00
6	Glucose kit	Hunam	Germany	28.27	25.50
7	Microscope slide	Sokimex	China	6.20	3.00
8	Pregnancy test	Dynmic Pharma	Thai	1.7o	1.00
9	HbsAg	Dynmic Pharma	Thai	89.72	68.00
	Total			521.73	373.50

Sources: 1. MoH laboratory procurement list 2000

2. Human manufacture price list before June 2000

3. Dynamic Pharma price list 2000

The key informant interviewed showed their opinions about the price of laboratory supplies that normally are very high and having a negative effect on the adequacy of supplies.

" I notice that the price is quite high, some items are double price. If we purchased properly may be we would not face the shortage of reagent".

1.1.4 Equipments Problems

All the basic equipment was available in the four hospitals but was reported to be in poor condition and needing repair. Only one hospital, Mother Child Health (MCH), and three of the National Centers enough equipments was found and in good condition due to donors support. The MCH hospital is the new construction hospital and have full equipment in all services including laboratory, which is support by Japan International Cooperation (JICA). The laboratory in this hospital known as modern with high technology than the other laboratories and operate the user fee system well because of have enough reagent, equipment, facility. JICA has advised to manage and set the protocol for operating in the laboratory including management of supply and technology used. The equipment are supported by two leading donors, JICA and European Union. Even full of equipment but some are not necessary for the current practice for example the specific chairs for taking blood samples provided by the EU were reported not used or rarely used because the design is similar as saloon chair which is not fit for the current practice.

The three hospitals that currently have no NGO support have equipment donate a long time ago, so the type of equipment are very difference from nowadays and unable to find spare parts. A respondent said,

"...It was donated by Russia, now if you can find the spare part, it would be more expensive than buying the new machine..."

From the secondary data and the interviews, the MoH lab officers found that the greatest shortage of equipment is in the rural areas. The MoH survey in 1995 about laboratory facilities and equipment at the RH showed inadequacy of equipment that lead to inability to use the reagent supplies.

Table 4.4. The Availability of basic Equipment in Provincial and District RH labs

Equipment	**District (% labs)**	**Provinces (%Labs)**
Microscope	89%	100%
Centrifuge	12%	53%
Haematocrit centrifuge	09%	88%
Colourimeter	<1%	18%
Refrigerator	05%	24%
Blood freezer	02%	18%
Incinerator	08%	24%
Autoclave	05%	18%

Sources: MoH laboratory survey 1995

1.2 Problems of Donors Supply

Since 1993, the MoH has had the budget for allocating and re-established the health sector (before 1993, all budget for running heath services was supported by international organizations), there were few budget has input for equipment in 1999. In the rehabilitation plan for health sectors, the government decided to take loan from World Bank (WB) for purchasing equipments.

Regarding equipment problems, it related to the WB because the used of budget loan was under the control of WB officials and they was in charge in procurement and make decision on the type and condition of equipments that they going to provide to any laboratory agency. Equipments are also available from the generous donors gifts. The new gift equipments are mostly older model and the already used, thus it is difficult to find spare part or reagent to used. Therefore, the general problem of laboratory equipment is, the equipments do not fit with the current practice. The equipments found that did not fit with the current used are:

- The W B has purchased 20 sets of microscope binoculars for Tuberculosis Program. The microscopes were of poor quality not matching with the requirements of the center, and the laboratory staff was not familiar with using that model. The chief of lab supplies at the TB center complained that very often the WB did not provide what was ordered but replaced it with another type that is cheaper and different in some specification. The problem

of microscopes is still in negotiations between WB and the JICA laboratory advisor of TB center who refused to accept the replacements. She said,

" WB only think about cheap price, they never think about maintenance and how long it will last, this is the bad system of WB" (interview).

In general the receivers need high quality and the provider want to pay less, but the two party do not inform the MoH laboratory unit and discussed together on the quality of equipment standard that the MoH already has. This finding also showed that in the laboratory agencies supported by donors, the donors direct on the decision making and the local health officers unable to deal with any problems that related to the donors (microscope problem was negotiate between donors party).

- The GVC foundation donated scales for weighting blood 21 sets to Blood bank in 1998 and 16 were found left in the stock. It was reported the Blood Bank was unable to use then because its design prevent putting the blood bag on.

- A numbers of Sphignomometers for measuring blood pressure (for blood bank use) provided by GVC also were reported as poor quality and cannot used due to air leakage.

The TB center in 1996 the French lab advisor introduced the method for TB culture.

The TB center had to order reagents and materials for this purpose from The MoH. When the reagents arrived, the TB center had new lab advisors from Japan who used a different technique for TB culture that required different reagents; the previous reagent were left unused and later expired (reported by MOH lab officer).

Foreign advisors always introduce expensive technologies and use expensive reagent without considering the economic recurrences of the recipient country, as found in MCH laboratory, where the lab advisor set the protocol in using reagent and material. The MCH lab used only products from a specific manufacture that are costly and refused to use the other types. This makes it difficult for the MoH to purchase the specific reagent for only this laboratory in high price.

There are problems of the renovation and equipments provided by the ADB, WB and GTZ . These organizations have input the large fund on equipment and renovation the laboratory of national institute of public health. The equipments were over model, lower quality than the requirement of the lab professionals and its were can not used. The problems caused by donors do not follow the technical specifications proposed by the lab chief and his team.

More problems are on maintenance and spare parts that have to be used with over model or used equipment donated from several donors. This practice has to be change in order to reduce or cut off the maintenance problems. The donated equipment should

accepted in case donors provided together with service manual or spare parts that is possible to find locally. The laboratory professional should provide donors the information of equipment need with clear explanation on the principle used of equipment that donors have the figure in purchasing donated equipment. To solve the maintenance problems the MoH Medical Equipment Committee suggested the following policy for medical equipment

> " It is important for the MoH not to accept equipment from donors that would not be suitable for use in Cambodia. It occurs from time to time that ancillary equipment from the main equipment items is not available or very costly. As an example an old mammography machine was donated, but as the film cassettes are not available, the machine cannot be used. A cheap laboratory instrument was purchased, but the cost of the reagent for the machine is three times that of a more expensive instrument. The instrument is not being used as there are no funds to purchased the reagent." (MoH, Medical Equipment Book, 1999, p.16)

However, this policy has yet to be adopted; currently, the equipment problems still occur due to the MoH lack of clear agreement with most of suppliers regarding supply equipment from loan or aid. The donors or lending agency also lack of understanding the local situation supply equipment base on their own thinking.

2. Analysis

2.1 Donor Coordination

The International funding is very important for the Cambodia health sector especially the laboratory services. The main part of development of lab services is based on the

donors funding for equipments and renovation of several facilities. Donors provide the reagents and equipment to many disease control programs that allow these health agencies to operate their activities.

But many cases from finding showed their support is not effective because they supply low quality, older models or used equipment that the laboratories could not use due to lack of reagent, spare parts and technical problems. In addition, their operation behavior appeared to be harmful to the MoH system as seen in the following.

2.1.1 Donors Advisor

Many donors preferred to provide technical assistance and equipment but not the recurrent budget for operating services. The laboratory agencies usually received aid as lab technical advisors and not short-term contract. Foreign lab advisors had little knowledge about laboratory situation in Cambodia so their advised gave the negative effect to lab services. Finding showed that the international lab advisors advise used of different technology based upon the application of their countries. The input of reagents and materials depends on the technology used. Various lab advisors suggested different things. When one finished the mission, the newcomer advises using new technology that requires new input of reagents and materials and retraining staff.

The wasteful of budget and problems regarding ineffective practice and inappropriate

technologies introduced by foreign advisors are usually caused by the donors often underemphasizing the practical consequences of their work and insufficiently understanding the situation in local countries. Therefore, the impact of their advise including the power of being the donors have negative effect on the agencies they support.

2.1.2 Donor Decision Process

Donors fund and implementation of lab programs reflecting their own objectives without informing the MoH. The decision in purchasing equipment or reagents mostly is made without considering the user's or responsible organization's. Therefore, the equipments provided become unfit with the current practice because its do not address the need in terms of quality and priority. The consequences are expensive equipment not being used due to personnel capacity problems, facility, or technical specification. Example are the case of spectrophotometer support by GTZ and WB to Neikloeng RH the National Institute of Public Health (see Chapter I) and finding on equipment problems above.

The current inventory control system of the MoH is not well function. Therefore, the equipment provided was not sustainable because it was not registered in the MOH inventory and the MoH has not regulars check the equipment. So after the donor withdraws the equipment may no longer exited in some labs. The MoH do not realized

on this problem due to a lack of information and documentary evidences. An effective inventory control system has to be established with well collaborate from every level of health sector.

Many donors focus on a small number of issues they are interested, and each NPL has at least two donors supporting it and two or three national program supply to the same labs. This happened because donors preferred to support area in which they were interested; strictly respecting on its own initial objectives and being less concerned about the effective use of the resources. In addition, with budget support by donors, the national programs regularly supervise district or provincial labs separately. Each supervision team with at least three persons (including driver) goes to the district lab to see only a few specific tests for TB or ML or STD. So to get all the information in a district lab it required three or four supervision teams. This showed the duplication of work that lead to the waste of resources.

All donors consider coordinating and supporting all lab activities in terms of finances, appropriate technologies and management of services as the partners. In practice, donors draw their own plans to manage the services under their support by their own strategies include the allocation of budget for laboratory supplies and training laboratory staffs made without informing or discussing with the MoH lab unit. In this regard the budget donate are less effective because it were not appropriate provide, as a lot of lab equipment supplies by donors can not used such as spectrophotometer, scale,

microscope, chair for blood collecting. The reasons are donors do not understand well about the situation need of the local labs and decided without discus with the user or responsible program. The MoH always faces problems of improper budget allocation for the donors supported programs because of no information.

More over donors introduce the expensive technology by set the guideline in using reagent and test with expensive method without consider the budget constrain of the recipient country (case of laboratory in MCH that support by JICA and EU). After they finished support the technologies they introduce will not be able to applies because of too expensive.

2.2 Laboratory Work Professional

2.2.1 Capacities

Table4.5 : the Numbers and Capacity of Staff in the NH Labs

Hospital	Number of staff	Capacity
Pediatric	14	2 Pharmacists, 9 Laboratory technicians, and 2 Secondary labs, and 1 Primary Lab. Technician
MCH	14	2 Pharmacist, 12 Laboratory Technician
Kossomak	10	1 Pharmacist, 1 Medical Assistant, 2 Laboratory technicians, 6 primary Lab. Technician
Norodam	18	1 Medical Doctor, 2 Assist Pharmacist 10 Lab Tech and 5 Primary Lab. Technician
Municipal	10	2 Pharmacist, 8 Laboratory Technician

From interviewing the MoH lab officers and the laboratory chiefs, it was found that the maximum number of laboratory staff is 3 and the minimum is 2 at the district RH. The qualifications of the staff in general are that they received one-year training so they unable to use any new type of reagent supplier from the MoH because they have not been trained or cannot read the technical sheet attached (in English or French). This is different from the finding at the NH labs that have no problem with staff capacities and numbers.

]The skillful staffs are located in the urban more than rural area. At the district level, staffs in general have low capacity. The large difference in staff capacity between rural and city staffs also affects the supplies because the MoH provides supplies requiring sophisticated knowledge to use which rural staff may not have.

2.2.2 Activity Related Incentive

The finding from the interview and observations during the interview showed that one of the hospital with no support from NGOs has full equipment that belong to the laboratory staffs. The equipment were purchased by the staffs individually and include a spectrophotometers, computers, printers, automatic micro pipettes and so on. They provided private services, serving not only the hospital patient, but functioning as a private clinic. It is unethical function that the people use public proprieties (place, electricity, water, time) for personal purpose and even no

information found from interviewed but it could be possible that staff used the government reagent and material for their private income.

> " We bring equipment here for the private work; everyone have client in the private clinic...If one day the hospital does not allow to put, we will take its back ...otherwise we cannot survive"

The statement above showed that the lab staff could not make their living from the government salaries and this is the reason that staff have to do some private activities to increase their incomes even if it is against hospital regulations. The hospital administrators find it difficult to force staff through hospital discipline or regulation when the majority acts similarly or they may tolerate the situation because of the good relationship between staff and the managers.

It was found in the hospitals with out donors support, staff can conduct private activities even there is a hospital fee system (see Table 4.2). Therefore, the reason for overstock is perhaps that staff preferred to use their reagent for income. As found, the average of annual supplied of Microscope slides for each NH is about 60 boxes (MoH distribution list 1997,1998, 1999), but a respondent reported that,

> "our reagent is easier to used for this one it take long time, that is why we have not used it"

If the staffs have no benefit from using their own reagents, they have to used the reagent provide by the MoH even it difficult or take more time. This finding showed that the performance of lab services is related to the incentive they get. In each

laboratory, staff have extra incentive, but in different figures. In hospitals with fee systems, incentives are received from the hospital administration according to the policy and guideline of the hospital for dividing fees.

For the lab with donor's support, the contribution of equipment, and reagents supplies by donors leads to increasing the financial income for the hospital and laboratory so lab staffs receive more money from the hospital fee system; therefore, there are no private activities in the laboratory.

This is different from those hospital no donors support. Even if the hospital has a fee system it cannot afford to purchase equipment and provide for income for the laboratory. The poor condition of equipment dissatisfies the staff, so they mostly earned income by private operation in the laboratory. As found from those interviewed, a respondent complained that they faced the difficulty in managing the staff's behavior.

The problem found from the staffs' operating behavior is that, staffs who work for a specific health program STD-AID, TB, Blood Bank) only follow the working guideline of the specific program or donor due to donors providing an extra incentive from the donors. They pay less attention to the general guideline or discipline in the laboratory. This affects the morale of the other staffs, and the chief of laboratory.

" They are my staff, but what they do they never report their work, only that related to the national program and donor "

In a similar situation at the district level, the staffs perform well only ML and TB tests well because these programs sometime have additional fund to support the staff who work for their specific program. The unequal payment forces the staff who do not received extra incentive to perform their private activities in the public work place, ignoring their public work duties. It was found during the interviewed that staffs are not aware of the process of reporting or requesting for supplies.

2.3 MoH Coordination Mechanism

The majority of respondents reported that the current lab supply system is not good and ineffective because of deficient coordination. The lack of coordination in the lab supply system is the resource allocation and management of the performance of lab services.

2.3.1 Coordination between the MoH and Government

There is a big gap between budget promised and actual expenditure because of the over centralization of spending control from ministry of economic and finance. This causes development plan for health fail due to financial problem.

Table 4.6. Ministry of Health Budget and Expenditure-1995-1998

Year	Recurrent Budget	Budget allocated	% of Budget actually implemented
1995	14.9M	10.8M	72%
1996	22.9M	15.9M	69%
1997	20.2M	14.3M	70%
1998	16.8M	11.3M	67%
1999	21.M	13,7M	65%

Sources: MoH Budget and Expenditure Book

The lack of coordination that exists between various agencies, which provide funds for lab supplies, limits the effective use of budget. The government policy of centralization of procurement by bulk purchasing from monopoly supplier effect the appropriate of laboratory supply.

Firstly, it causes difficulty in planning for purchasing reagents on an annual for the whole country especially reagents that have short shelf life and need cold storage. Any problem with product quality and quantity will affect all labs as it was found every hospital has problems with similar items of reagents and materials.

Secondly, this policy facilitates high cost of the laboratory products and other health supplies as well. There are many steps and process for financial adoption from the MoH to the bureaucrats at the Ministry of Economic and Finance that the health

financial officers has to pass through until document done. From the interviewed, the government economic planners are too strict in financial checking, not flexible or tolerate for any priority need or urgent of the MoH, causing difficulty to health official for getting approved the financial document. The private company officer is getting the document done more easier,

> " Of course it is costly, but it has advantages because the suppliers' company is able to supply faster and process funding documents for approval faster than we can, otherwise we don't have anything to use for this year " (interviewed)

This statement showed the ministry of economic and finance particularly influenced the health sector and caused problems by the complicate process of funding approval. It could be possible that the monopoly supplier company pay some incentive to the government officers to facilitate their business. The nature of the business people is want to get benefit for every money spend, and this amount will be add to the price of the supplies product. The system has no price competition and therefore, the MoH always purchases the high cost products even in big amounts but at cost more expensive than the retail price. Therefore, it could be that some unethical occurred in the process of allocation and the pharmaceutical company might be involved and influenced to the level that responsible in procurement decision.

2.3.2 The Laboratory CoCom Subcommittee

None of the strategies of the LCS could be implement except the development of a draft of guideline of laboratory standard. The proposals could not be put on the agenda of the MoH Coordination Committee (CoCom) because of opposition to the idea among members of the LCS during final revision of the draft proposals. The main controversies were the members from the national programs. The proposal to integrate supplies and combing the laboratory services to be the single administrative organization would make their program or individual lost benefit. The national program already has sufficient supplies from donors and MoH they do not seek changes. The donors who support the national programs also oppose due to the decision did not match the mission statement or strategic direction of their organization. Both types of member, donors and national program members are the opposition party and they represent 50% of the members in the committee.

The failure of the LCS was also caused by indifferent leadership. It was found that the chair of the LCS rarely attended the CoCom secretariat meeting. He is the Co-directors of the European Union Organization and deputy directors of the Malaria Control Program Centers who was always busy with his main duties in his own organizations and less concerned about his duties in the LCS.

The LCS could not conduct regular meetings as the majority of the members often did not to attend the meeting. Initially, it had regular meetings in every two weeks in 1996, and during 1997-1999 there were three meetings a years with only a few member attend (LCS reports) and no important outcome from the meetings. The ineffective work of LCS cause by the member uninterested to support due to different objective. The opposition party wants to improve only the specific health problem, and the support party attempts to develop the whole lab services and unfortunately they present only 30% of the member's. Since the LCS reduced their meetings, the lab policy standard guideline and framework for improvement was unable to be defined and until now the CoCom did not provide any comprehensive system for lab services because there is no report from LCS.

2.3.3 The MoH Laboratory Officers

a) Procurement

The MoH responsible officers of lab services have the role in purchasing, distributing, and supervising lab supplies. The finding showed that their activities in allocating the budget was done improperly because some laboratories received more supplies in all categories of reagent and materials (very important, essential and nonessential) and some laboratories got very limited supplies. This problem was caused by the poor coordination among the lab stakeholders as discussion in chapter V.

The MOH lab officer allocates the budget by estimating because information of need is scarce. The policy of the MoH is more concerned about infectious disease control. This policy makes the MoH lab officer firstly considered the amount order for the national programs and the rest of the budget is then calculated for general programs. Therefore, most of the budget is consumed by national programs. In addition, National Program do receive loans or grants from donors; therefore, the national program has more resources than other programs. The waste or ineffectiveness of budget used often occurs because the program has more choices and this often causes problems related to their high priority in the health sector. In a case found in the Blood Bank, the agency ordered the reagent for syphilis testing in the amount need for one year. At the same time they also requested the reagent from the donors as they did not expected that the MoH would provide everything they; requested but the MoH did. Therefore, there was duplication of supplies of the syphilis testing reagent and Blood Bank officers blamed this on the fact that the MoH was late in providing information on what was approved, so they had to request donors help.

From above situation, the agencies that have more financial sources for supply always use the resources inefficiently due to the high ability to get supplies. Moreover, the National programs always select too high quality reagents. The test is qualitative; not the quantitative, analysis but they always required the best pure reagent. The MoH lab officer complained about the case of ethanol reagent. The local ethanol product is considered as being of acceptable quality and it was largely used, but the TB center

required the very pure quality that has to be purchased from overseas at a very expensive price.

The allocation for the general program is made without requests because of the poor process of requesting and reporting. Three of five respondents reported that they never make a request list because it was the responsibility of the pharmacy section. The MoH lab officer uses the draft of the standard list of lab sub CoCom to make procurement decision even thought the standard lists are known as inapplicable and need to be revised. The main reason for inappropriate reagent supplies is the lab officers and the users do not communicate well and cannot agree on the same point.

b) Allocation

Similar to the procurement process, the reagent and materials are also provided without requesting or checking the consumption report. The laboratory that has more activities will receive the same amount of supplies as those having less activities and often receives unwanted items with short shelf life.

> "we received less of what we need and what we don't need wee received more" (interviewed lab chief) .

> " We cannot leave it (reagent) expired at the CMS" (interviewed MoH lab officers)

These two statements present the poor linkage and coordination between the suppliers and the users, the ineffective budget allocation and distribution the lab supplies, and the problem of budget waste that results from the indifference and negligence of the MoH lab officers in performing their role.

c) Supervision

In additional to the lack of reporting, the MoH officers neglected their role of supervision. There was no supervision for lab services from 1995 to 1999 because the MoH provided a very small budget for supervision making supervision impossible