

CHAPTER 7

INFECTIOUS DISEASES CONTROL PROGRAMMES

7.1 BACKGROUND

In the Lao PDR, malaria, acute respiratory infection (ARI) and diarrhoea diseases are three major mortality causes, accounting for more than 70% of deaths in children under five years of age in the country¹. Reduction of the death number due to these illnesses could lead to an improvement in health indicators such as infant mortality, under-5-year mortality and life expectancy. High childhood mortality seems to be associated with underdeveloped socio-economic conditions that result in poor sanitation, inadequate hygiene, and lack of safe water supply. Adverse health impacts like malnutrition, anaemia, vitamin A deficiency, and intestinal helminth infection are also caused by poor socio-economic status.

The National Programme for the Control of Diarrhoeal Diseases (CDD) and ARI were established in 1982 and 1987, respectively. The National Malaria Control Programme was switched from eradication to control focus in 1980's. Various ongoing programmes or projects for reducing the mortality of children have been established. Despite significant input of resources and effort, these illnesses still persist and constitute the majority of the disease burden, and infant and under 5-year mortality are high² (Infant Mortality Rate: 82, Under-5-year Mortality Rate: 106 in 2000), well beyond the level recommended by WHO in the Strategy for Health for All in the Year 2000.

Protein-energy malnutrition is pervasive and present in all regions, although the breast-feeding promotion programme and other nutritional counselling have been running under the national programmes³. Also, micronutrient deficiency disorders, in particular Vitamin A deficiency, are widespread and serious in some rural isolated regions of the country. Malnutrition is closely linked with high mortality in children caused by infectious diseases as well as maternal and perinatal health. In developing countries, malnutrition, childhood death from infection and maternal mortality seem to share common key issues associated with poverty and neglect.

¹ MOH: *Health Strategy up to the Year 2020*, 2000.

² IMCI, MOH: 2001

³ MOH, 2000, op.cit.

In the Lao PDR, Integrated Management of Childhood Illness (IMCI) was launched in 2001⁴. The new programme was introduced first in three districts; Pakkading (Bolikhamxay), Vang Vieng (Vientiane) and Champone (Savannakhet), which are in the early implementation phase of IMCI. The programme will be expanded to six districts until 2005. The main strategy of IMCI is designed to establish a new management structure that works horizontally across programmes such as CDD, ARI, Nutrition programme, Malaria programme, EPI and Essential Drug. Another strategy is to improve the skills of health staff at the Health Centre level and health-seeking behaviours of caretakers using simple educational materials and methods at the household level. An improvement of the health care system to deliver quality care is also an essential part of programme.

7.2 PROGRAMMES FOR CHILDHOOD INFECTIOUS DISEASES

The main target illnesses for childhood infectious diseases are ARI and diarrhoea disease. Conventional programmes for ARI/ diarrhoea disease, namely, Control of Diarrhoeal Diseases (CDD) and ARI were focused on an improvement of case management skills through ORS for diarrhoea disease and drug package including antibiotics for ARI. The newly established IMCI programme is designed to emphasize the management structure joining both programmes horizontally based on its function.

Patients with cholera, adults as well as children, have been reported sporadically since 1993 in the country. A severe outbreak with over 12,000 cases and 600 deaths occurred in the rural remote villages from 10 provinces in 2000 (Report from MOH). Conventional CDD/ARI programmes are targeted to those under 5 years of age and covering only 2,919 villages with easy access out of 12,160 in the country (Report from IMCI, MOH), suggesting that people living in remote areas will remain vulnerable and neglected. The lack of resources to perform full programmes, an inadequate administrative structure and a poor surveillance system were pointed out to be major constraints for the programmes.

Early recognition of patients with ARI/diarrhoea disease by caretakers at the household level, seeking appropriate care in time, and correct treatment by a village health volunteer (VHV) or private health provider at the village level (or at Health Centre) are the main focuses in patient care. Caretakers' knowledge and attitude regarding care for sick children within the household and health-seeking practices are generally inadequate in the country. A household survey in 2000 shows that caretakers have poor or incorrect health-seeking behaviours and knowledge during the onset of her/his child's illness⁵. An improvement of care skills for the sick children at the household and VHV level through education is essential and a first step in the programme.

⁴ MOH: *Integrated Management of Childhood Illness; National Plan of Action for the Early Implementation Phase of IMCI 2001-2000*.

⁵ MOH: *National Health Survey 2000*, 2000.

In the case of ARI/ diarrhoea disease, the recommendation would be to build the capacity for performing diagnosis and treatment at the village or health centre level. Lack of availability of essential drugs, including vaccines, aggravates the status of childhood infectious diseases. A proper logistic system to provide essential drugs and proper prescription by village health providers (or VHV) could easily reduce the mortality caused by infectious diseases. On the other hand, unnecessary or inadequate use of antibiotics, and usage of counterfeit drugs could quickly produce drug resistant bacterial agents.

Following an early case detection by a caretaker, a VHV or village health provider who might make a diagnosis and provide proper treatment using ORS or antibiotics, and identify severe patients requiring case management at the hospital, is a key-person in a community-level ARI/ diarrhoea disease programme. Capacity building at province/district hospitals to provide severe patients referred from villages with proper and prompt treatment is also crucial.

Another major issue in ARI/ diarrhoea disease programme implementation is the limited accessibility of the population to referral facilities (district or provincial hospitals) because of the geographical distance, poor transportation system in the rural areas, and high medical costs of treating catastrophic illnesses. In addition, an inadequate relationship between the population and public health providers make the population hesitate to consult the public health facilities.

ARI/ diarrhoea disease impose heavy disease burdens on Lao PDR. The burden is highest in deprived areas with no Control Programme of CDD/ARI and inadequate sanitation and hygiene, poor nutrition, crowded households (ARI), exposure to smoke (ARI) and unsafe drinking water (diarrhoea diseases). Poor nutritional status includes low birth weight, inadequate infant-feeding practices, under-nutrition, and vitamin A deficiency. An approach for improving socio-economic status to mitigate risk factors has been suggested as a strategy for the prevention of childhood diseases. Regarding a child mortality reduction, rural development is necessary in the remote areas of the country.

Infections due to helminths are a national public health problem, particularly for pre-school and school children. Although there are no precise data on the morbidity and mortality due to helminthic infections, they may produce a range of diverse consequences: from impairment of the growth and development of children, to reduction in educational performance, and contribution to mild to severe anaemia.

7.3 PROGRAMMES FOR VECTOR-BORNE DISEASES

The disease burden due to vector-borne diseases at the national level is not entirely known. Malaria, however, imposes a huge burden on the country – accounting for 1.4 million attacks per year, resulting in 14,000 deaths, and ranking as the most serious public health problem⁶ in

⁶ Mekong Malaria, Southeast Asian Journal of Tropical Medicine and public Health, Volume 30 Supplement 4, 1999.

the country. The rural population living in or near forests and hilly areas along streams seem to be most at risk. Among the population at risk, under 5 children and pregnant women are the most vulnerable subjects, more likely to die from malaria or complications like cerebral malaria, renal failure, pulmonary oedema. In addition, pregnant women with malaria often suffer miscarriages and give birth to premature or low-weight babies.

After the international malaria meeting in 1992, global malaria strategies focused on early diagnosis and prompt treatment, selective and sustainable preventive measures including vector control, early detection and prevention of near future epidemics. Also, local capacity for basic and applied research is essential to allow the regular assessment of the malaria situation, particularly on ecological, social and economic aspects of the disease. The new initiative of Roll Back Malaria in 1998 insisted on establishing a partnership among participating countries and a network for technical support. Lao PDR participated in the Mekong Malaria Initiative⁷. Its prevention and control measures follow the global malaria strategy, and are mainly based on community and family participation.

Before the introduction of global control strategies, residual spraying with DDT had been applied in 1980's in Lao PDR under WHO Malaria Eradication Programme. Since environmental contamination with DDT increased and the organization could not afford the high cost of the operation, an eradication programme using residual spraying was abandoned and switched to a new control programme (Personal Communication, MOH).

The community-based impregnated bed net (IBN) distribution to family units and the early diagnosis and treatment (EDAT) at health centre level are now basic measures for malaria prevention and control approach in Lao PDR. They began massively in 1998 with support from WHO, ADB, WB, European Commission, JICA and international NGOs. The whole malaria endemic area is supposed to be divided among the different donor programmes, but so far these have covered only about 30% of malaria endemic villages in the country. Because of financial constrains, the programme cannot be expanded to the national level. To make things worse, most of existing international donor programmes are supposed to be terminated by the end of 2002.

The recent nation-wide surveys on health show a high coverage of bed-net usage at the household level and women's knowledge about malaria prevention⁸, although the information from the Centre for Malaria, Parasitology and Entomology shows that 30% of the villages or 35% of the population in the endemic area is covered by the IBN operation. These results from nation-wide surveys suggest that the IBN programme could expand to rural malaria endemic areas and maintain re-treatment with insecticide regularly if surveys were conducted in a reasonable manner and results were available.

⁷ Mekong Malaria, op.cit.

⁸ MOH, 2000, National Health Survey, op.cit.

Malaria stations were constructed in 12 provinces to operate Malaria control activities regularly. In order to make a difference, malaria VHV should be re-trained to manage and maintain effective and efficient IBN and EDAT operations under the national malaria control programme. Also, to achieve early detection and rapid treatment at the village level, the community-based surveillance for malaria should be promoted by VHV and health staff. Re-training of VHV and health staff is a key issue to achieve good performance.

Final diagnosis for malaria using microscopy or dry chemistry (dip stick method) is conducted in district or provincial laboratory facilities. Upgrading these facilities and health staff skills must improve sensitivity and specificity for malaria diagnosis. To introduce a highly sophisticated tool like dry chemistry, further study should be performed in order to evaluate their cost effectiveness as well as their technical and administrative feasibility. External quality control of malaria diagnosis and the provision of reliable results could avoid an expansion of drug resistant malaria parasites.

Most of the deaths from malaria are caused by its complications. Capacity building at province/district hospitals to equip them with adequate facilities and provide severe complicated malaria patients with quality treatment is crucial for a referral system. This process could be expected to establish a good relationship between the population in the village and public health providers. Collaboration with other disease control programmes such as EPI and IMCI at the village level through exchange among VHVs could bear good results.

Dengue fever is the second public health problem among vector-borne diseases in the country. There is no prophylaxis tool, and dengue fever sometimes turns into hemorrhagic stage in children. Dengue hemorrhagic fever can be fatal, especially for children under 15, since a patient with dengue fever often cannot reach a hospital in time because of insufficient knowledge of the disease and lack of a proper referral system. In the Indo-China peninsula including Lao PDR, periodic outbreaks of dengue fever were observed every four to five years. An outbreak of dengue fever with cases of dengue hemorrhagic fever/ dengue shock syndrome was reported in 1987 and 1998 in the country, and the endemic area is gradually expanding to the rural regions⁹.

Vectors transmitting the dengue virus adapt to the environment of cities as well as sub-urban areas, and outbreaks seem to be associated with recent urbanization and the rainy season. Community-based prevention with vector control is the most effective and conventional method to combat a spread of dengue fever. Cleaning stagnant pools of water, which serve as breeding sites for vector mosquitoes, is applied as control measures in Lao PDR without any support from international donors (Personal Communication, MOH). Serological diagnosis using commercial kits is available at a few provincial hospitals in the country.

⁹ Centre for laboratory and Epidemiology, MOH: *Epidemiological Surveillance project and Epidemic Reaction*, 2001 (Lao language).

7.4 PROGRAMMES FOR HIV/AIDS AND STI

The HIV pandemic, which began in the late 1970s, now affects Lao people under the big wave of globalisation. In order to fight HIV/AIDS, the National Committee for the Control of AIDS Bureau (NCCA Bureau) was established in November 1998 as a core organization responsible for planning, coordination, resource allocation, management and administration of the National HIV/AIDS Programme¹⁰.

Lao PDR is classified as a low prevalence country for HIV/AIDS, with a prevalence rate estimated at 0.04%, though nation-wide surveillance does not exist. Because of the existing cultural background that promotes monogamy and faithfulness in a conservative discipline, commercial sex is relatively rare in the country. Moreover, the number of intravenous drug users (IDUs) is lower than in neighbouring countries.

Lao PDR, however, is surrounded with countries showing HIV/AIDS prevalence from medium to high. An increase in the international population movements, including travellers and migrants, enhances the risk for transmission of HIV. Poorly developed health care services including counselling and education can aggravate the expansion of HIV/AIDS. In addition, a low level of awareness about HIV/AIDS/STI and how to protect oneself from them, among Lao people is another key issue for the performance of the HIV/AIDS programme.

By early 2001, HIV/AIDS surveillance including collection, analysing and sharing the information on illness, has been established in 12 provinces in the country: Vientiane municipality, Oudomxay, Bokeo, Luangphabang, Savannakhet, Bolikhamxay, Khammuane, Champasack, Luangnamtha, Attapeu, Saravane and Sekong. The reported figures from 10 provinces at the end of 2000 show that 717 cases out of 64,130 subjects were serologically positive to HIV, using two steps serological diagnosis with Particle Agglutination (PA) test for the screening and ELISA for the confirmation. The number of patients with AIDS and deaths from AIDS were 190 and 72, respectively. The results are characterized by the sharp increase among the young reproductive group aged 20-39 years since 1998. The samples were obtained from suspected HIV/AIDS patients or those who voluntarily participate in this surveillance study.

The new HIV/AIDS policy in Lao PDR is composed of three sections: prevention from HIV infection, care and support for those with HIV/AIDS, and mitigation of the adverse impacts caused by HIV/AIDS¹¹. While an expensive antiretroviral drug therapy for HIV/AIDS is still beyond the country's means to combat this terrible illness, well-designed and low-cost HIV prevention can have a strong impact on the spread of HIV. Prevention of new transmission in Lao PDR is attempted through low-cost interventions including access to cheap condoms, HIV

¹⁰ National Committee for the Control of AIDS Bureau (NCCA Bureau): *Country Report on HIV/AIDS*, 2001a.

¹¹ National Committee for the Control of AIDS Bureau (NCCA Bureau): *HIV/AIDS Policy of the Lao PDR*, 2001b.

surveillance and counselling, and sex education at school. Prevention using low-cost intervention should be recommended as a first priority strategy in the National HIV/AIDS Programme in Lao PDR. In addition, the promotion of safer sexual behaviour includes an encouragement of sexual abstinence until marriage, and of fidelity within marriage under the Lao HIV/AIDS policy.

Pilot programmes for the treatment and care of those living with HIV/AIDS have been launched on a hospital basis at Savannakhet province and Sethathirath Hospital. Symptomatic treatment for conditions associated with AIDS will be made available with an essential drug list, although anti-retroviral treatment is hardly feasible due to its high cost and inadequate capacity in the health care system. Patients with HIV or AIDS should receive quality care without any stigma. The number of counsellors for those living with HIV/AIDS is actually limited relative to the needs of a support programme in the country.

Awareness of Lao people about HIV/AIDS and protection against it remains low. The National Health Survey in 2000 shows that about one third of women in reproductive age has never heard about HIV/AIDS, and does not know how to protect oneself from HIV infection¹². Another survey on reproductive health by UNFPA shows that nearly 70% of women have never heard of HIV/AIDS and its transmission route¹³. Capacity building regarding acceptance of knowledge and behaviour at the community level is an essential process for HIV prevention measures to work. It should include education and training using IEC (information, education and communication) at the community level that heightens population awareness in order to reduce HIV infection.

Sexually transmitted infections (STIs), such as gonorrhoea, chlamydia, syphilis and trichomonas, are a known co-factor in facilitating and amplifying HIV transmission. Care and prevention of STIs are an integral priority component of HIV/AIDS control in new Lao HIV/AIDS policy¹⁴. Since significant prevalence of STIs are estimated in Lao PDR, an acceptable and confidential STIs care and easy access to essential drugs to treat STI are also crucial for HIV prevention.

7.5 PROGRAMMES FOR VACCINE-PREVENTABLE DISEASES

The Expanded Programme on Immunization (EPI) was launched in 1982, and it has covered six vaccine preventable diseases: tuberculosis, measles, diphtheria, pertussis, polio for children, and tetanus for reproductive aged women as well as children. On October 2000, polio eradication from Western Pacific Region was declared. The last case of polio in Lao PDR was found in 1996.

¹² MOH, 2000 – National Health Survey, op.cit.

¹³ SPC and NSC, *Lao Reproductive Health Survey 2000*, 2001

¹⁴ NCCA, 2001b, op.cit.

Like other developing countries, the programme has focused on the eradication of Polio from the Lao PDR. Although there is no precise data, considerable cases of vaccine-preventable diseases are reported. Hospital based national surveillance data show that cases reported were 3 for diphtheria, 67 for pertussis, 332 for measles, and 23 for neonatal tetanus in 2000. The latest immunization coverage of children for DTP3, Plio-3 and measles vaccine is 52.8%, 57.1% and 41.8%, respectively in the National Health Survey in 2000¹⁵. The report from EPI operation teams shows similar coverage rate except for measles, which is 60% (Report from MOH).

A major impediment to full immunization coverage seems to be the inadequate logistic system and insufficient operational funds to reach whole targeted populations. In order to achieve full immunization nation-wide equally, subjected children and his/her caretaker have to visit the EPI site (usually at a given village) four times per year. That poses a serious physical and economic difficulty for people residing in far from the EPI site, and contributes to the low coverage of immunization in Lao PDR. A high motivation of subjected population through health education is a key issue to keep a good performance of EPI programme. The reduction of child morbidity and mortality at the community level could constitute tangible returns for the villagers and increase their motivation.

In the logistic system for the EPI programme, a station (or base) is located at the District Health Office. It is recommended from a logistic point of view to transfer some part of EPI station from the District Health Office to the Health Centre whenever possible; already some stations began to transfer to the Health Centre. Health staff at the Health Centre is familiar with local conditions, and can access the villages with ease and steady. Furthermore, health staff has an advantage in giving guidance for other programmes during an EPI operation with assistance from a VHV. More organized partnerships between health staff and VHV should be built beyond their territorial responsibilities through education, re-training and programme operation. The capacity to build and maintain their incentives are another key issue to assure greater programme integration.

Since 1995, the EPI Plus strategy has promoted Vitamin A supplements in the Lao PDR. This strategy has obtained an excellent result with over 80% coverage rate (Report from MOH). Following an experience with Vitamin A supplementation, an integration of EPI with other programmes should be evaluated and recommended from a cost-effectiveness point of view in a country with limited health resources. The EPI Plus strategy expands to integrate with breast-feeding, birth spacing, condom access, iodide supplement and health education. Malaria and tuberculosis control programmes are excluded from EPI Plus because of complicated manipulation and time consuming diagnosis.

For example, the EPI programme, particularly in Polio, uniquely covers almost all Lao villages, reaching even the most remote areas. The logistic system behind EPI and its strategy for

¹⁵ MOH, 2000 - National Health Survey, op.cit..

personnel training could be applied to other related programmes such as reproductive health and CDD/ARI. In Lao PDR, an integration of EPI with other programmes for maternal and child illnesses using EPI logistic system and concept is necessary because they share common issues and principles. Future programmes will require horizontal administration system based on a categorization of functions instead of a vertical system based on diseases.

Polio has been eradicated from the Western Pacific region since 2000. Besides offering OPV and AFP (acute flaccid paralysis) surveillance within the Polio programme, new schemes such as the introduction of DPT-HB vaccine, and NNT (neonatal tetanus)) and Measles elimination are under preparation in Lao PDR.

7.6 PROGRAMMES FOR MYCOBACTERIAL DISEASES

Tuberculosis (TB), a disease once thought to be under control, has re-emerged with a vengeance to kill a huge number of people a year. One-third of the world population has been infected with TB at a latent stage of infection. Eight out of ten among those struck by TB are in an economically productive age group (15-59 years old), suggesting that the disease imposes a huge economic burden. To make matters worse, infection with HIV weakens the immune system and can activate latent TB infection. Anti-TB drug resistant bacteria, making treatment more difficult, are invading developed as well as developing countries because of increasing cases of incomplete treatment.

According to a report from the Department of Curative Medicine, MOH, case detection rate of sputum positive per 100,000 and that of all cases are 28.82 and 42.25, respectively in 2000. Treatment success rate was enhanced from 30% in 1995 to 85% in 2000 following the introduction of DOTS programme¹⁶.

The conventional treatment schemes require prolonged hospitalisation, consume a large amount of resources, and are hardly acceptable to developing countries like Lao PDR. The application of DOTS (Directly Observed Treatment, Short-course) is expected to be an inexpensive and acceptable strategy for the detection and treatment of TB patients. In Lao PDR, this effective and efficient health care package involves detection of TB cases using low-cost sputum smear tests with direct observation, hospitalisation at district hospital for 2 months, and follow-up for 6 months of treatment with a combination of inexpensive drugs at village level under observation from a VHV.

The National TB Control Programme applying DOTS is performed at the National TB Centre and in 14 provinces: Vientiane Municipality, Luangnamtha, Oudomxay, Luangphabang, Xayaboury, Xiengkhuang, Vientiane, Bolikhamxay, Khammuane, Savannakhet, Saravane, Sekong, Champasak and Attapeu. At the district level, 79 districts out of 142 have established a

¹⁶ WPRO, WHO: *Stop Malaria Special Project. Country Plans: Summary Lao PDR*, 2001

laboratory for TB diagnosis with trained laboratory staff. This facility could also cover other bacteriological and parasitological examinations using microscopy. External quality control has been done between provincial and district hospital regularly under the national TB control programme. The programme is supposed to be expanded nation-wide by 2005.

A key component in this programme is a regular detection of TB suspected patients showing serial cough over two weeks by VHV and continuous support at community level. This includes following observations to ensure that patients undergo the appropriate treatment with anti-TB drug and the follow-up sputum tests to determine whether it has been successful. The VHV responsible for the PHC operation is in charge of the programme. Upgrading the VHVs skills to identify and follow the TB patients and keeping their incentives are essential. Collaboration with the community is also important in order to improve the programme performance.

Final diagnosis of TB using microscopy is followed by an admission for proper treatment at district or provincial hospital. The capacity to make a quality diagnosis and treatment should be built at the national level.

The ongoing Lao National Leprosy Control Programme (NLCP) began in 1979 with support from Netherlands Leprosy Relief. The long-term objective is the complete eradication of leprosy from Lao PDR, and to bring the national prevalence below the WHO target figure of less than 1 case per 10,000 population in 1998. Patients with leprosy are actively detected by provincial/district health staff at village level and treated with multi drug treatment (MDT). There are six facilities for patients with leprosy, but most of them are followed up at their village. This follow-up necessarily requires collaboration with VHVs.

CHAPTER 8

HEALTH INFRASTRUCTURE AND EQUIPMENT

8.1 HEALTH FACILITIES IN LAO PDR

There are three types of health facilities classified according to service provider, in Lao PDR: (1) MOH facilities, (2) private clinics, and (3) military and police hospitals.

8.1.1 Health Facilities under MOH

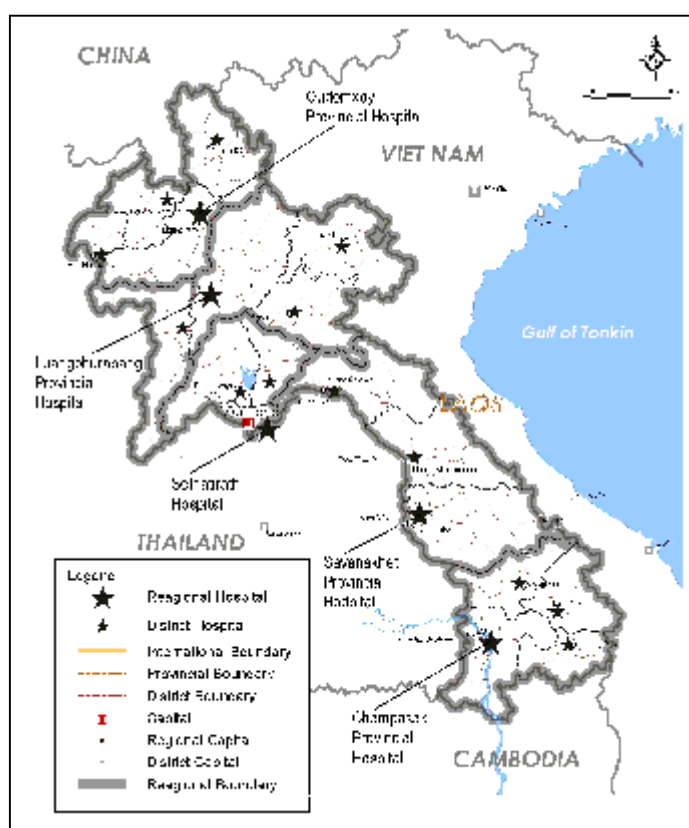
The health service delivery in Lao PDR is organised with central, provincial, district and sub-district levels under the overall responsibility of the MOH. Health care facilities at each level are summarised in Table 8.1.

Table 8.1 Health Facilities at Each Level

Level	No. of hospitals*5		Service Population	Definition
Central Hospital & Special Centres	2 Hospitals		The whole population	Tertiary curative care. The third level hospital in the referral system. Mahosot Hospital Friendship Hospital
	6 Special Centres		The whole population	Mother and Child Health Centre Traditional Medicine Centre Dermatology Centre Tuberculosis Centre Ophthalmology Centre Rehabilitation Centre
Regional Hospital*4	5 Hospitals	18 Hospitals	Population 670,000-125,000	The Regional Hospital is the second level hospital in the referral system. It has responsibility for providing health care for the entire population in the region. The following hospitals are to be upgraded to regional hospitals: North: Luangphrabang, Oudomxay Central: Sethathirath *1 South: Savannakhet, Champasak
	13 Hospitals		Population 70,000 – 700,000 5 – 12 districts	Provincial hospital covers 5 functions*2 and maintains technical standards determined by MOH Second level in the referral system.*3
District Hospital	131 Hospitals		Population 10,000 – 100,000	The first level of the referral system and a local training site for health care and primary health care activities in the district
Health Centre	654 Health Centres			Health Centre provides primary health care services including prevention, health promotion, diagnosis and treatment of basic diseases

- Notes: *1 Sethathirath Hospital is one of the central hospitals as well as a Provincial Hospital for Vientiane Municipality.
- *2 Five related services are stipulated by the MOH:
- (1) Provide consultation, treatment and health promotion in accordance with accepted technical standards for the entire population and all ethnic groups.
 - (2) Provide preventive health services, health education and health promotion.
 - (3) Conduct practical and technical training for health students and all categories of professional health staff.
 - (4) Conduct scientific research and testing in order to strengthen the health service.
 - (5) Supervise and provide technical assistance to health facilities at all lower levels under its responsibility.
- *3 In the Health Strategy 2020, it is envisaged that Provincial Hospitals will provide first referral services including emergency care and surgery.
- *4 The regional hospital is a concept newly introduced. The upgrading hospitals will be implemented gradually. The planned service coverage is shown in Figure 8.1.
- *5 The number of health facilities is from the facility based survey.

Figure 8.1 Location of district hospitals and planned service coverage of regional hospitals



Source: Provinces covered by the regional hospitals are based on the oral information from curative department.

The number of hospitals, health centres and pharmacies in each hospital are shown in Table 8.2. Service to be provided, staffing, buildings, and infrastructure of each facility level has been studied by MOH.

Table 8.2 Number of Health Facilities by Province

	No. of District #1	No. of Village #1	Area (km ²) #1	Population #1	No. of Health Facilities										Population or Area / Facility				No. of HC required, if 10 villages / facility			
					MOH Facilities					Private Clinics					No. of Pharmacies #3	Pop./ Hosp. (PH,DH)	Area/ Hosp. (PH,DH)	Pop/ Health Facility (PH,DH,HC, PrivateC)		Area/ Health Facility (PH,DH,HC, PrivateC)		
					Regional		District		Health Center	Private Clinic (Grade1)		Private Clinic (Grade2)		Private Clinic (Grade3)							Total	
					Central H /Special (CH) #2	Regional /Provincial (PH) #2	Hospital (DH) #2	District Hospital (DH) #2	Health Center (HC) #2	No. of Private Clinic (Grade1) #2	No. of Private Clinic (Grade2) #2	No. of Private Clinic (Grade3) #2	Total									
1. Vientiane Municipality	9	490	3,920.0	598,000	8	1	9	37	55	115	0	0	0	115	170	497	59,800.0	392.0	3,518	23.1	49	
2. Phongsaly	7	613	16,270.0	174,000		1	6	13	20	1	0	0	1	21	28	24,857.1	2,324.3	8,286	774.8		61	
3. Louangnamtha	5	431	9,325.0	131,000		1	5	19	25	0	0	2	2	27	35	21,833.3	1,554.2	4,852	345.4		43	
4. Oudomxay	7	776	15,370.0	240,000		1	7	40	48	0	0	7	7	55	66	30,000.0	1,921.3	4,364	279.5		78	
5. Borkeo	6	371	6,196.0	130,000		1	6	23	30	4	0	0	4	34	25	18,571.4	885.1	3,824	182.2		37	
6. Louangphabang	11	1162	16,875.0	416,000		1	11	44	56	0	1	20	21	77	166	34,666.7	1,406.3	5,403	219.2		116	
7. Houaphanh	8	854	16,500.0	279,000		1	7	25	33	0	0	9	9	42	69	34,875.0	2,062.5	6,643	392.9		85	
8. Xaibouly	10	551	16,389.0	333,000		1	10	58	69	0	0	0	0	69	112	30,272.7	1,489.9	4,826	237.5		55	
9. Xiengkhouang	7	507	15,880.0	229,000		1	7	42	50	1	1	26	28	78	88	28,625.0	1,985.0	2,936	203.6		51	
10. Vientiane Province	10	529	15,927.0	327,000		1	10	27	38	2	8	0	10	48	219	29,727.3	1,447.9	6,813	331.8		53	
11. Borlikhamxay	6	413	14,863.0	187,000		1	5	34	40	0	4	0	4	44	101	31,166.7	2,477.2	4,250	337.8		41	
12. Khammouan	9	799	16,315.0	311,000		1	9	74	84	2	5	13	20	104	140	31,100.0	1,631.5	2,990	156.9		80	
13. Savannakhet	15	1541	21,774.0	766,000		1	14	85	100	3	8	0	11	111	205	51,066.7	1,451.6	6,901	196.2		154	
14. Salavanh	8	722	10,691.0	292,000		1	7	25	33	0	3	10	13	46	92	36,500.0	1,336.4	6,348	232.4		72	
15. Sekong	4	248	7,665.0	73,000		1	3	12	16	0	0	0	0	16	14	18,250.0	1,916.3	4,563	479.1		25	
16. Champasak	10	907	15,415.0	572,000		1	9	58	68	24	0	0	24	92	261	57,200.0	1,541.5	6,217	167.6		91	
17. Attapeu	5	208	10,320.0	100,000		1	4	24	29	0	0	3	3	32	16	20,000.0	2,064.0	3,125	322.5		21	
18. Kaisonboun	5	129	7,105.0	62,000		1	2	14	17	0	0	0	0	17	0	20,666.7	2,368.3	3,647	417.9		13	
	142	11,251	236,800.0	5,220,000		8	18	131	654	811	152	30	90	272	1,083	2,134	35,033.6	1,589.3	4,820	218.7		1,125

Other than MOH facilities, the Centre for National Laboratory and Epidemiology (CNLE) and Malariology, Parasitology, and Entomology Centre have all been implementing vertical programmes in close co-operation with provincial and district level health facilities.

The World Bank-supported “Health System Reform and Malaria Control Project” introduced the concept of the Inter-District Hospital as a component of “Basic Health Service”. The intention behind this was to upgrade the clinical capacity of some district hospitals to include areas such as abdominal surgery, caesarean sections, ectopic pregnancies, and sterilisation. These Inter-District Hospitals are planned to serve several districts with a population of 150,000; Champhone district hospital in Savannakhet has been upgraded to an inter-district hospital, and some other hospitals are also planned.

Due to the staff allocation, buildings and equipment, service level of hospitals vary considerably among the provincial hospitals and the district hospitals respectively.

8.1.2 Non-Governmental and Private Medical Care Providers

There are some private clinics, but there are no non-governmental or private hospitals in Lao PDR. MOH has decided to adopt a registration system for the establishment of private clinics in order to expand outpatient care services. Private clinics are under the control of Ministry of Health and the Provincial Health Offices.

In order to open a private clinic, the registrant must be a registered medical doctor with at least 7 years’ clinical experience, a Lao citizen, and have been permanently resident in Lao PDR for at least 10 years. Applications are registered to the Curative Department of MOH through the relevant Provincial Health Office, and must receive final approval from the Minister of Health.

There are two kinds of registration: (1) clinics operating after office hours only, and (2) clinics operating 24 hours a day. MOH staff are able to open a category (1) Clinic. Private clinics are further classified according to the facilities and service they provide:

- Grade 1: Clinics with a laboratory and equipped with X-ray equipment, ultrasound, electrocardiograph and fibre endoscopes;
- Grade 2: Clinics with a laboratory and equipped with X-ray and/or ultrasound equipment;
- Grade 3: General consultation and treatment only.

A private clinic must have a waiting room, a consultation room, a treatment room (for injections and wound cleansing), and a W.C.

Table 8.3 shows the increasing number of private clinics registered in the last six years.

Table 8.3 Number of Private Clinics and Pharmacies

Category	1996	1997	1998	1999	2000	2001
General	128	160	163	187	214	251
Dental	27	28	30	24	30	36
Physiotherapy	1	5	5	15	12	15
Acupuncture	1	2	2	2	2	4
Traditional medicine	2	4	2	2	2	3
Laboratory	0	0	0	0	1	0
Sub Total	159	199	201	230	261	309
Pharmacy						2,132
Total						2,441

Source: Curative Department, 2001

The number of private clinics has increased by two fold in the 6 years of operation. 87% of private clinics are run as a second job by staff of MOH or other organisations. This may indicate that it is difficult for private practitioners to operate full-time private clinics under current circumstances. The following table shows the number of private clinics by category and grade.

Table 8.4 Number of Registered Private Clinics in 2000

	Category	Category (1)			Category (2)			Total
		Grade1	Grade2	Grade3	Grade1	Grade2	Grade3	
1	General	13	38	137	6	5	15	214
2	Dental	2	10	13	2	3		30
3	Physiotherapy	6	1	5				12
4	Acupuncture and Moxibustion			1		1		2
5	Traditional Medicine			1	1			2
6	Laboratory		1					1
	Total	21	49	157	9	8	15	261

Notes: Category (1) : Clinics operating after office hours only

Category (2) : Clinics operating for the whole days

Apparently significant numbers of private clinics operate without having been registered. But retired or non-registered medical doctors, nurses and pharmacists play an important role, particularly in rural areas. The Health Strategy 2020 emphasises on non-governmental health services at the village level should be encouraged in order to reduce government expenditure and improve the living standards and health status of the population.

According to the Household Survey in 11 Provinces of Lao PDR conducted by ADB, 73% of the villages surveyed had a modern medical resident practitioner. Although it remains to be confirmed whether this figure is representative for the entire country, it may nevertheless suggest that more effective use could be made of the experiences of retired medical staff.

8.1.3 Military and Police Hospitals

Military hospitals come under the control of the Ministry of National Defence. Police hospitals are under the responsibility of the Ministry of the Interior. Free services are provided to military and police staff. The general public can also use these hospitals though they must pay for services. Military hospitals are located in every province. The central military hospital in Vientiane - known as the “103 Hospital” - has a CT(Computed Tomography) scanner machine, the only one in the country. The hospital works jointly with MOH in certain areas such as EPI and MCH.

8.1.4 Development of Health Facilities

The number of health facilities and the number of beds have changed as shown in Table 8.5.

Table 8.5 Transition of the Number of Health Facilities and Beds

	1976		1980		1985		1990		1995		2000	
	No. of Facilities	No. of Beds	No. of Facilities	No. of Beds	No. of Facilities	No. of Beds	No. of Facilities	No. of Beds	No. of Facilities	No. of Beds	No. of Facilities	No. of Beds
Central Hospital	4	465	4	540	4	660	8	750	8	852	8	876
Regional Hospital											5	
Provincial Hospital	12	1295	13	2180	18	2125	17	2025	18	1937	12	837
District Hospital	96	2675	102	3080	107	3168	115	2989	122	2291	127	2381
Health Centre	294	1743	610	4050	994	3870	937	4600	521	1241	596	1223
No. per 1000 population	0.14	2.14	0.23	3.07	0.31	2.71	0.26	2.50	0.15	1.37	0.15	1.04

Source: Basic Statistics of the Lao P.D.R 1975-2000

Table 8.5 shows a significant decrease in the number of health centres during the early 1990's due to the closure and consolidation of co-operative health centres. The number of health centres has, however, begun to increase again since the late 1990's. The increase in the number of central hospitals reflects the establishment of special hospitals, such as those for ophthalmology and dermatology. The number of district hospitals has increased gradually but substantially. However, this increase does not suggest any increased capacity of district hospitals.

The development of PHC services is shown in Table 8.6.

Table 8.6 The Historical Development of Health Centre Policy

Before 1975	<p>Lao PDR was divided into two zones - the Liberated Zone and the Royal Lao Government Zone</p> <p>Liberated zone: covered by Army Health Service. A network of Military Hospitals and Health Centres was set up in caves or hidden in the forest, providing curative care. Sanitary education based on the “Three Hygienic Practices”(eat clean, keep the house clean, wear clean clothes)was introduced.</p> <p>Royal Lao Government zone: Health care was provided in urban areas only.</p> <p>Lao PDR was divided into two zones, Liberated Zone and Royal Lao Government Zone</p>
1975-1987 Centralization	<p>The Lao PDR was established in 1975.</p> <p>The co-operative system was developed, and health centres were operated by co-operative committees.</p> <p>National Policy called for the integration of “health care delivery in the farming co-operative system”, with each co-operative expected to have a health centre with 5 beds on average. Wooden health centres were generally constructed by villagers. Construction materials were provided by villagers. Equipment was provided with support from WHO and UNICEF. Most drugs came from the socialist countries.</p> <p>Health centres were staffed by 2-4 auxiliary nurses. These staff was supported by the co-operative. They received 20kg of rice per month and a small cash allowance from the Co-operative Committee. Money was also assigned for the operation of the health centre.</p>
1987-1991 Decentralization	<p>Decentralization to the provincial and district level.</p> <p>Due to the break down of the communes, support to the health centres by the cooperatives also ended.</p> <p>Due to the collapse of the health centres, the district hospital became the most peripheral government health service point.</p> <p>Foreign assistance began to increase, and technical institutes, such as Maternal and Child Health Institute, the Tuberculosis centre were established at the central level</p>
1991 –1996 Re-centralisation	<p>Foreign aid was more oriented towards the provision of services at the provincial and district hospital and health office levels.</p> <p>Efforts were concentrated on the qualitative improvement of health personnel, and some health centres were integrated. Introduction of an official cost recovery system in the health services, introduction of authorisation to open private clinics and pharmacies for MOH employees, and involvement of mass organisations such as the Lao Women’s Union, and the Youth Union, as well as local communities.</p>
1996-	<p>Major donor projects started. Strategy to expand service coverage beyond the district level.</p> <p>Strengthening support for PHC services to remote areas.</p>

Source: Volume 2-Primary Health Care Plan, Laos Primary Health Care Expansion Project

8.2 POLICY REGARDING HEALTH FACILITIES

8.2.1 Policy of the Ministry of Health

Policies regarding health facilities such as hospitals and health centres are contained in the “Health Strategy up to the Year 2020(Health Strategy 2020)”, the “Health Development Plan Toward Years 2020 and 2010, and Health Development Plan 2001-2005”, the “Policy on Primary Health Care”, and “Direction and Plan of Curative 2001-2005(second plan)”:

Health Strategy 2020

In the Health Strategy 2020, “improving and expanding hospitals at all levels and in remote areas” is one of the six major directions of Health Development. Table 8.7 outlines the main strategies in the Health Strategy 2020 dealing with health facilities.

**Table 8.7 Aspects relating to Health Facilities
in the PHC Development Strategy and Plan 2000-2020**

Policy	Target
To expand and improve access to the health care service network	80% of population lives within 1 hour of a public health facility, health centre, district or provincial hospital. 90% of population lives within 1 hour of a public health facility or a village health provider. 100% of health facilities and Village Health Volunteers without supply shortages. 100% of health facilities are suitably staffed.
To expand the health care network in order to develop a complete and comprehensive system.	Upgrade and equip 142 district and 18 provincial hospitals throughout the country. Set up mobile clinical teams. (based at all 18 provincial hospitals)
To increase participation at all management levels, and to develop standardised management tools. To decentralise authority, delegate responsibility, budget and personnel to the implementation levels	Build and equip PHC Offices in the Ministry of Health and in Provincial Health Offices. (Building and equipment of PHC office at MOH and 18 provincial health office)

Source: MOH, 2000, Health Strategy 2020

Regarding access to health facilities, the Health Strategy 2020 notes that in the 11 provinces surveyed, 79% of villages were within 4 hours of a district hospital in the dry season, while 52% of villages are within one hour of a health centre. However, the figures vary from province to province, ranging from 11% to 82%, and indeed many villages are more than half a day’s travel from the nearest health facilities. It is clear that considerable efforts are required in order to achieve the targets described in Table 8. 7 .

According to the PHC Division, it is not realistic to pursue these targets immediately, and in fact an interim target of “within two hours” has been established.

The PHC Division is trying to introduce the concept of “Health Zoning” for remote areas with the target that all people in each zone will be able to reach a health facility or health personnel who has Drug Kits within two hours. The required number of health centres will be designed after consideration of many factors including human resources and social and economic development.

The formation of mobile teams is also mentioned in the plan, though there is no description of their activities, team members, or relationship with district hospitals and health centres.

5 Years Plan for the Curative and Rehabilitation Strategies (2001-2005)

Central Hospital Level	<p>Mahosot hospital</p> <ul style="list-style-type: none"> - Build and renovate Mahosot to ensure its role as a teaching hospital and 3rd level referral hospital for the whole country. <p>Friendship hospital</p> <ul style="list-style-type: none"> - Maintenance and repair of buildings and other facilities - Provide modern equipment.
Regional Hospital Level	Upgrade selected hospitals to regional status
Provincial Hospital Level	Establish new buildings for some provincial hospitals and renovate others.

Source: MOH, 2000, Health Strategy 2020

Direction and Plan of Curative 2001-2005

<p>Goals of the 5-year plan</p> <ul style="list-style-type: none"> - Standardisation of Mahosot and Friendship Hospitals - Mahosot, Friendship and Sethathirath hospitals to become teaching hospitals - Increase Bed Occupancy Rate(BOR): Central hospital 52.17% (2000)>>70.79% Regional and Provincial Level 54.76%>>78.46% - Upgrading of surgery techniques at 20 district hospitals in 17 provinces - Renovation and expansion of 2 central hospitals (Mahosot and Friendship) - Improvement of 2 regional hospitals (Oudomxay and Champasak) - Construction of China - Lao Friendship Hospital in Luangphrabang (funded by P.R.China) - Improvement of 5 District Hospitals: Samphanh (Phongsaly), Sing (Luangnamtha), Tonpherng (Bokeo), Parktha(Bokeo), Xamtay (Huaphanh) - Renovation and rehabilitation of 45 District Hospitals
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Source: Curative Department, Ministry of Health

Several kinds of hospital renovation and expansions are planned, based on requests from provincial health offices. Detailed plans have been made regarding the central hospitals, but no further details are available concerning the plans for provincial and district hospitals.

Based on these plans, each provincial health office and Provincial Hospital prepared their own annual plan.

8.2.2 Donors' Support

The development of health facilities in Lao PDR has been supported by a number of donors, as shown in the following table.

Table 8.8 Major Health Facility Development Projects Supported by Donors

Agency	Project	Location	Facilities and Equipment	Duration
ADB	<i>PHC-I</i> Development of PHC management systems and capacity, rehabilitation and construction of health infrastructure, pilot health financing in 2 provinces and 1 district in zone.	- Oudomxay - Xiengkhuang - Xaysomboun SZ (Thathome District)	Renovation of 3 provincial hospitals and 8 DH Construction of 73 Health Centres	1995 – 2000
	<i>PHC-II</i> Development of PHC management systems and capacity, rehabilitation and construction of health infrastructure, pilot health financing in 8 provinces	Northern 10 provinces	Renovation of PH. Construction of 5 DH, renovation and upgrade of 11 DH. Construction of 41 health centres, and renovation of 6 health centres. Construction of 5 PHC centres.	2000-2005
WB (with Belgium Technical Cooperation)	<i>Health System Reform and Malaria Control Projects</i> Development of PHC management systems in selected districts, malaria control, development of health education capacity	Basic Health Service - 5 provinces Malaria Control - 8 provinces	Renovation of 3 PH, 7 DH, Improvement of 2 Inter-district Hospitals, Construction and renovation of 25 Health Centres, Construction of Malaria Centres	1998-2003
GTZ	Development of PHC services and capacity in selected districts/integrated village and district development	Bolikhamxay	Renovation of DH, Construction of 16 health centres and 2 training centres. Bike, boat, vehicle for transportation.	1996-2006
AusAID	Development of PHC services and capacity and support/village social development	Phongsaly Huaphanh	Construction of Health Centres	1997-2002
SCA	Development of PHC services and capacity and support/village social development	Xayaboury	Renovation of Health Centres	1998-2001
MSF	Development of PHC services and capacity in selected districts	Bokeo, Champasak, Sekong	Construction of Health Centres	1997-2000
Swiss Red Cross	Development of PHC services and capacity Support for Luangphrabang regional training institute	Luangphrabang, Oudomxay	Construction of Health Centres	1997-2000

Source : Lao PDR Health Project Identification Mission (July 2000)

SCA: Save the Children Australia

Following is the brief explanation of Health System Reform and Malaria Control Project.

Experience in Health System Reform and Malaria Control Project

Health System Reform and Malaria Control Project: 1995-2003

Funding from World Bank, with technical assistance and some funding from Belgian Technical Cooperation

<Activities>

1. Basic Health Service in 5 provinces (Savannakhet, Sekong, Xaysomboun Special Region, Champasak, and Vientiane Province)
 - (1) Upgrading and reconstruction of Provincial Hospitals in Savannakhet and Sekong.
 - (2) Interdistrict hospitals: 2 Interdistrict Hospitals in Savannakhet and one in Sekong
 - (3) Health Centres: Construction and Rehabilitation of Health Centres in Sekong, Savannakhet, Champasak, and Xaysomboun Special Region.
2. Malaria control in 8 provinces (Luangnamtha, Bokeo, Luangphrabang, Vientiane Province, Savannakhet, Saravane, Sekong, Champasak, Attapeu, Xaysomboun Special Zone)

<Experience>

Health Centres for the pilot project were selected after discussions with Provincial Health Offices according to criteria such as good access, and allocation of staff etc., and Locations for new Health Centres were selected after discussions with Provincial and District Health Offices. However, in some cases, certain sites were specifically requested by local authorities. Such facilities built in response to personal requests tend to have few patients.

Each Health Centre has three full-time staff, and there is always at least one member of staff available. The staff live near the Health Centre, and may stay at home when there are no inpatients. Installation of solar energy systems have proved to be very effective, since it makes it possible for patients to visit the Health Centre at night.

Community Participation: communities within the catchment areas have been closely involved since the Health Centres were established. In some cases, villages outside the catchment area have requested to join the zone

Source: interview with Belgian Technical Cooperation

Because of the limited budget, the construction and renovation of health facilities at the provincial level rely mostly on donor support. Each project has its own policy, and the conditions of provincial health services are influenced by the donor projects.

Table 8.8 shows some examples of health centre projects supported by international donors. There are various types of health centres, because the physical conditions of buildings were planned to adequate for their needs. For example, a health centre, built by a project focuses on the maternal and child care system, has a delivery room, and the one built by the Malaria project has a laboratory.

Though the Construction Unit of the Ministry of Health was involved in the preparation stage of each project, building specifications for health centres vary from project to project. From the point of view of facility management and maintenance, the standardisation of health centres

would make procurement of spare parts and maintenance training much easier and more cost effective. The Construction Unit of MOH intends to establish a standard for health centres.

Table 8.9 Comparison of Health Centres built by Major Projects

Donor	Project Name	Facility Components	Community Contribution	Floor Area (m ²)	Construction Cost
WB	Health System Reform & Malaria Control (1995-2001)	Waiting hall, examination rm., laboratory rm., observation room, delivery room, nurses room, kitchen, toilet etc.	Provide site The first year only: Community provides gravel, sand, labour etc.	79.5 m ² Concrete frame and timber truss	US\$15,500 – 19,900
ADB	PHC I 1998 -2001	Consultation rm., pharmacy, observation rm.(2beds and 4beds), staff house, kitchen, toilet, incinerator, well etc.	Community provides gravel, sand, labour etc. Construction of fence. Support for construction of kitchen and well	38m ² (2beds), 54m ² (4beds) Wooden type (Remote area) Concrete type (Sub-urban area)	US\$ 15,000 (US\$22,000 incl. Utilities)
GTZ	Lao-German Family Health project 1999 -2002	Consultation room, dressing room, observation room, MCH room, drug storage, and a motorbike	Provide land. Construction of Staff House. Construction of Fence	67.5 m ² Concrete Frame	US\$ 12,000 (US\$18,000 incl. Equipment, Furniture, and transportation) US\$18,000 in very remote area
AusAID	Lao Australia Health & Social Development Project 1997 -1999	Consultation room, observation room, etc.	Provide gravel and sand, labour for transportation and construction, staff house	90m ²	US\$12,000 – 21,000
SWISS RED CROSS	Cost-effective Health Building 1988 -1992	Veranda 2 service rooms for clinical examination, drug dispensing, drug storage and staff room, observation room	Provide gravel and sand, labour for transportation and construction, staff house	90m ² Wooden Frame	US\$ 7,000 (US\$12,000 incl. Utilities)

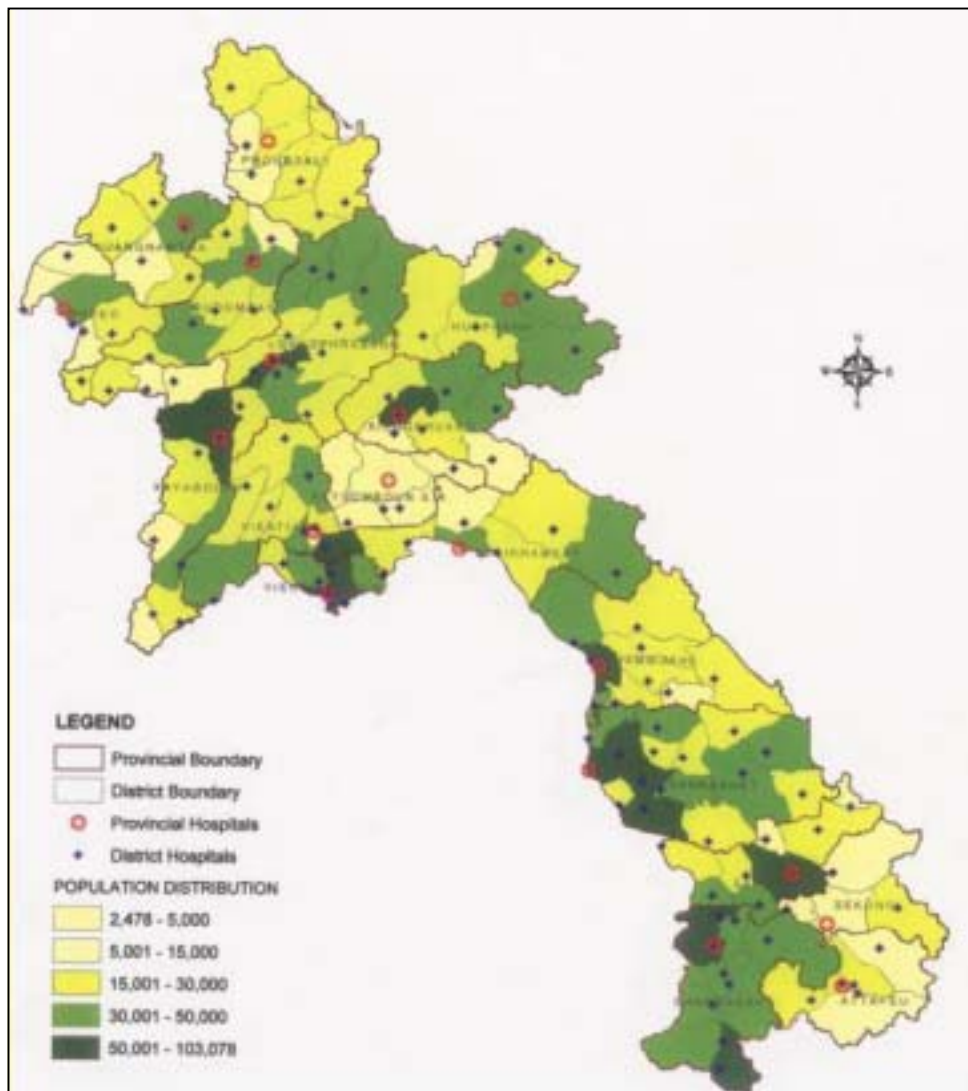
Source: Construction Unit, MOH

8.3 DISTRIBUTION OF HEALTH FACILITIES, AND ACCESSIBILITY OF HEALTH CENTRES

8.3.1 Geographical Distribution

The number of hospitals, health centres, and private clinics in each district is shown in Table 8.2. Due to the differences in population and area between provinces and districts, the population and area covered by each provincial and district hospital vary widely. The distribution of health facilities is shown in Figure 8.2.

Figure 8.2 Distribution of Hospitals and Population



According to the “District Health Facilities: Guidelines for Development & Operation” published by WHO, the average coverage in the Western Pacific Region is (The figures are very wide ranges) as follows:

- Primary health care facility: 5,000-10,000 population
- Intermediate level primary health care facility: 10,000-50,000 population (only some countries)
- First level referral hospitals: 50,000-500,000 population

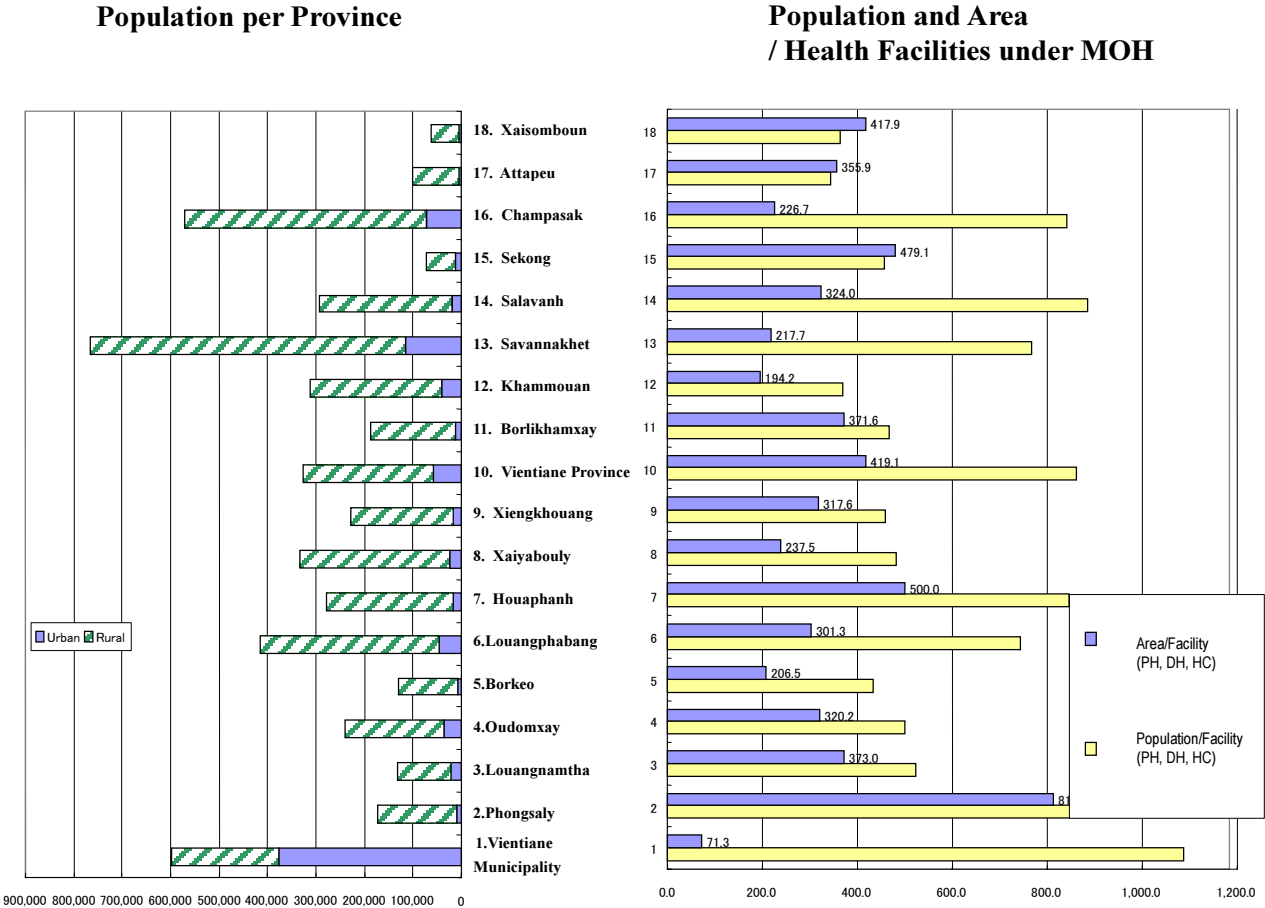
Judging by the WHO guidelines, provincial hospitals in Lao PDR would seem to be comparable to the first level referral hospital mentioned above.

The population density in Laos is quite low and shows significant regional differences. Both population and area should be taken into consideration when estimating the number of facilities required.

Figure 8.3 demonstrates the differences in population to be served by each provincial hospital. However, the concept of the Inter-District Hospital has been introduced in the most populous province of Savannakhet in order to support the provincial hospital's service.

Not only at provincial level, district hospitals also vary in the ratio of population to health facility.

Figure 8.3 Population to be covered by provincial hospitals



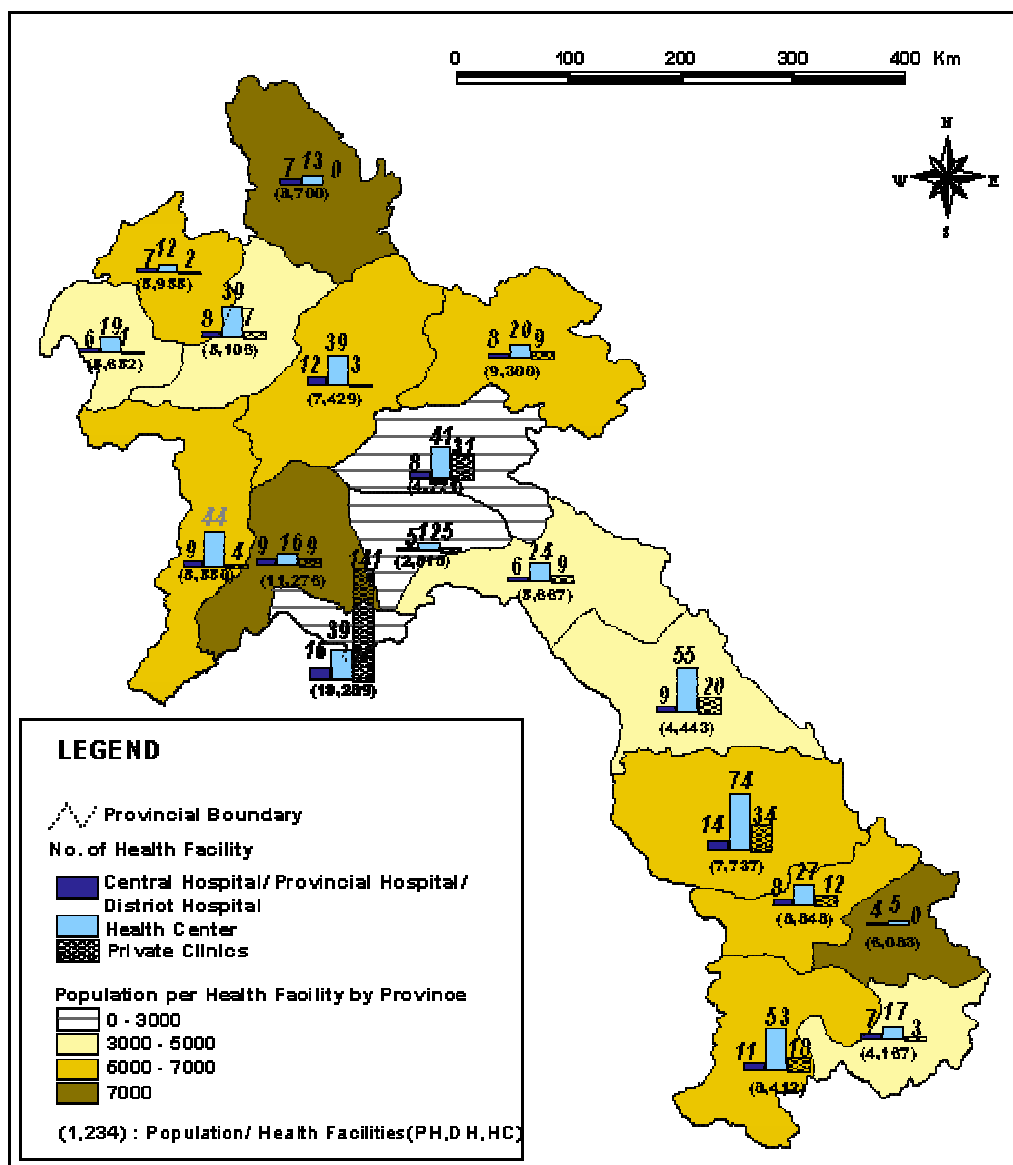
Source: Population : NSC, Results from the Population Censuses 1995, 1997
 Number of Facility: Facility Based Survey

The population per MOH health facility ranges from 3,448 to 10,873, when private clinics are included, the range of population per facility becomes 2,936 to 8,286. Figure 8.4 shows the distribution of health facilities by province and their population per health facility.

Most private clinics are located in large towns, most notably Vientiane Municipality. These private clinics play an important role in compensating for the shortage of health facilities in the heavily populated Vientiane municipality.

In Lao PDR, it is difficult to calculate the number of health centres required based on the population because of the low population density. A simple calculation based on the assumption that one health centre covers 10 villages would mean that an additional 384 Health Centres are required or to be constructed.

Figure 8.4 Health Facilities in Each Province

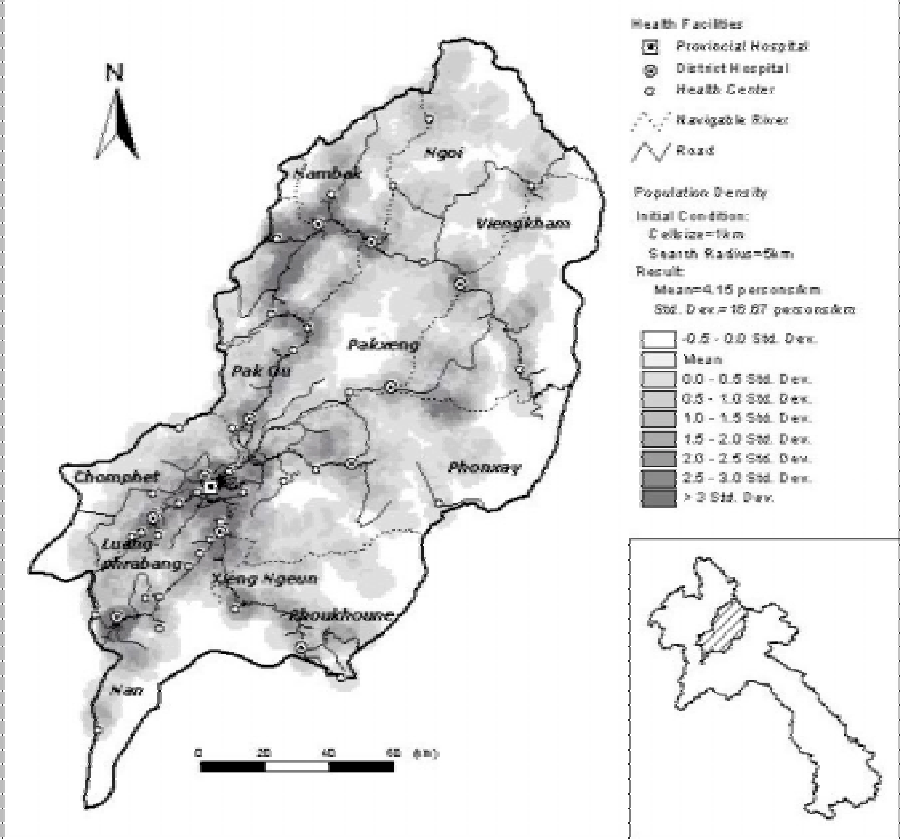


Source: JICA Study Team's compilation of data collected from PIDP project(1999) and the Curative Department(2001)

As an example in the provincial level, Figure 8.5 shows the distribution of population and health facilities in Luangphrabang province. Most of the populous area is along the roads or rivers and many people rely on the river transportation, and also most of the health facilities are located along the roads or rivers. The distribution of health facilities almost overlap the

populated area, however, there are some areas which are left without any health facilities, even though some villages are located there.

Figure 8.5 Distribution of Population and Health Facilities in Luangphrabang



Source: The JICA Study Team’s compilation of data from IRAP project (data of roads, villages, rivers) and from PIDP project (data of village population and health facilities).

The actual level of access to health facilities is still a long way from the target stated in the Health Strategy 2020 (that 80% of the population should live within 1 hour of a public health facility). The results of the National Health Survey 2000 reveal a significant disparity between urban and rural areas regarding the distance to the nearest Health Centre. 78.3% of villages are within 4km of the nearest health centre in urban areas, but only 54.7% in rural areas.

8.3.2 Access to Health Facilities

(1) Actual Service Coverage of Health Facilities

1) Health Centre Coverage and Accessibility to Health Centre from Villages

Two extensive surveys conducted in recent years looked at access to health services, although the sample sizes should be borne in mind when making comparisons. However, we have to understand that these results reflected the samples of the surveys.

- Household Survey in 11 provinces (ADB):

“ 45%of villages are located within one hour of a health centre during the dry season”

- Health Status of the People of Lao P.D.R:

“61.5% of villages are located within 4 km of a health centre”

■ Health Status of the People in Lao PDR

(Sample: 6,449 households, in 264 villages in 128 districts in 18 provinces, year 2000)

	Less than 4 km	4 to 16 km	More than 16 km
To the nearest Health Centre	61.5%	24.3%	14.2%
To the nearest Hospital	35.1%	28.1%	36.8%
To the nearest Pharmacy	68.3%	20.0%	11.7%
Villages with VHV and TBA	63.3%		
Villages availability of 4 essential drugs	52.3%		

Source: MOH, 2000, National Health Survey 2000

■ Household survey in 11 provinces of Lao PDR

(Sample: 4,620 households in 308 villages in 11 provinces, year 1998)

	Less than 1 Hr	1Hr to 4 Hrs	More than 4Hrs
To the nearest Health Centre	52%		
To the nearest Hospital	47.7%	31.65%	20.65%
To the nearest Pharmacy	63.08%	21.58%	15.33%

Source: Household survey in 11 provinces of Lao PDR

■ World Bank Survey in 1995 Access within 3 km

Hospital	Pharmacy	Health Centre
23%	38%	30%

Source: UNICEF, Children & their families in the Lao People's Democratic Republic, 1996

■ Integrated Rural Accessibility Planning (IRAP)

Average travel times to hospitals and pharmacies were surveyed, as follows:

	Luangnamtha	Oudomxay	Luangphrabang	Xiengkhuang
Villages without Any Medical Staff	82%	63%		
Average Travel Time to Nearest Pharmacy / Health Centre	256min	303min	150 min	241min
Average Travel Time to Nearest Clinic / Hospital	303min	416min	22-480min	161min
Villages with Permanent Midwife	11%	12%		
Villages with Regular Visits by Medical Staff	91%	97%		
Villages with Permanent Health Volunteer			65.8%	36%

Source: IRAP Provincial Summary

■ Zone Zero Strategy of EPI program:

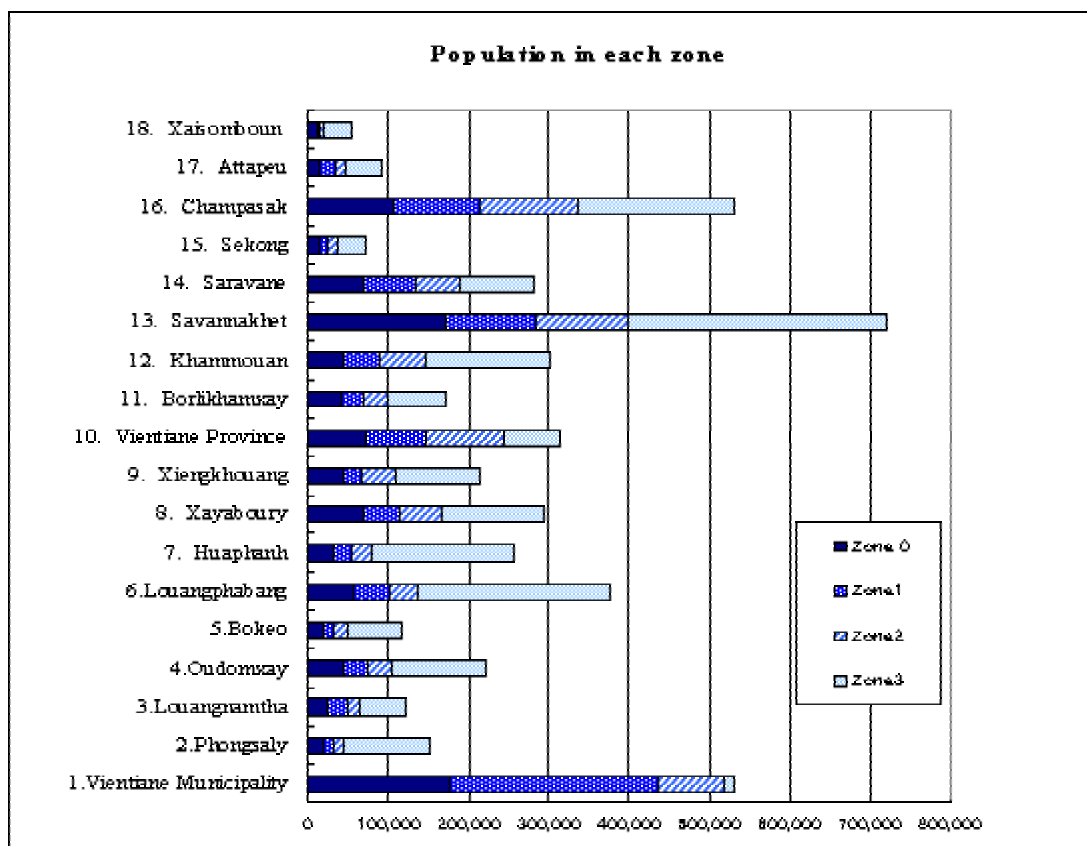
In the EPI program, all villages are categorized into 4 zones according the following criteria of EPI. The number of villages and population in each zone is shown in the following table.

	Definition*1	PIDP*2	
		Villages	Population
Zone 0	Villages within 3 km of fixed centre for immunisation	11.87%	21.66%
Zone 1	Villages in which a vaccinator from the hygiene station or fixed centre can conduct a vaccination session in one day by walking, riding a bicycle or rowing a canoe to village and back.	14.07%	19.19%
Zone 2	Villages in which a vaccinator from the hygiene station or fixed centre can conduct a vaccination session in one day by using a motorbike, motor boat, or taking public transport to go and return.	16.05%	16.96%
Zone 3	Villages in which vaccinators from the hygiene station or fixed centre cannot travel to, conduct a vaccination session, and return to the fixed centre in one day.	58.01%	42.20%

Source: * 1 : Plan of Action for 2001, Mothers and Child Health Centre, MOH, December 2000

* 2 : Data from Paediatric Infectious Disease Prevention Project (2001)

Figure 8.6 Population in Each Zone by Province (EPI Zoning)



Source: Data from Paediatric Infectious Disease Prevention Project (PIDP, 2001)

The number of facilities carrying out the Zone Zero Strategy is still limited: 79.5% of District Hospitals, and 7.4% of Health Centres. Though the classification of EPI Zones is complex, it is assumed that these figures show the number of villages within 3km of the nearest hospitals.

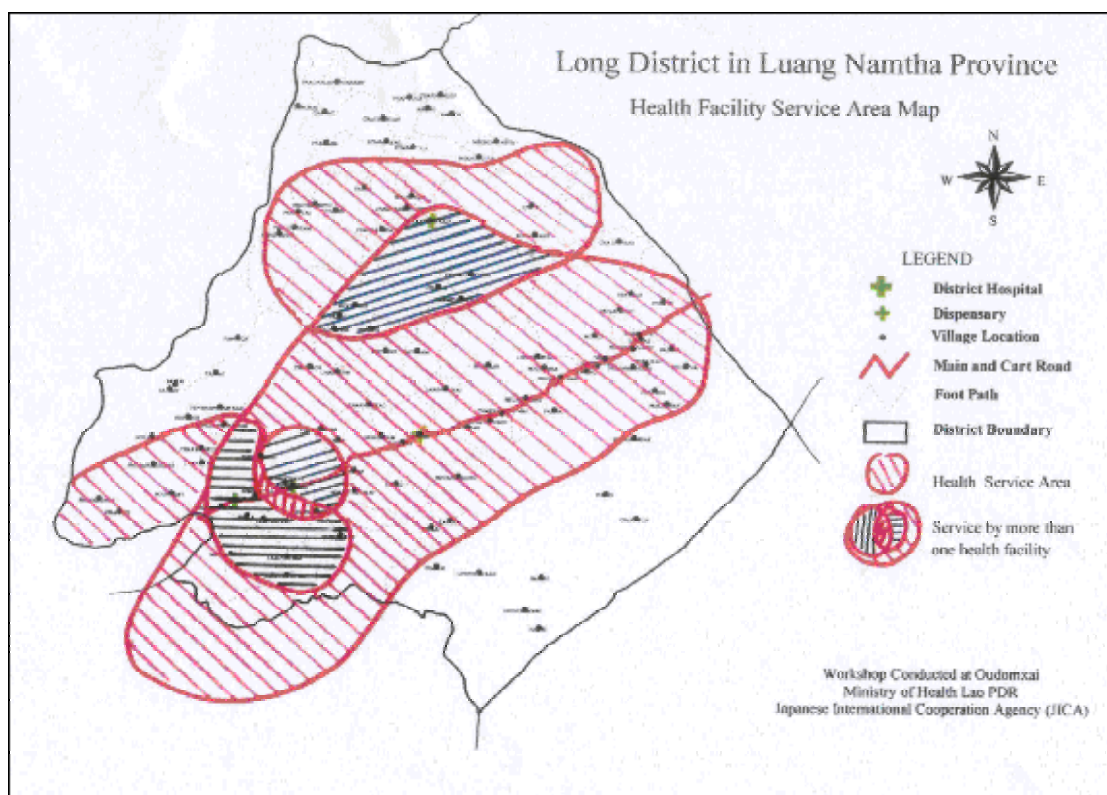
Different measurements of access to health facilities are used in each survey. If for the purposes of comparison it is assumed that a one-hour walk is equivalent to 3-4km, inconsistencies can be seen in the results of these surveys.

It is thought that the results of these surveys identify the character of each sample, and it cannot be said that these survey result shows the actual situation of Lao PDR. It is necessary to have a survey with the samples that shows the actual situation of each province.

a. Service Coverage from the Supply Side

EPI Catchment areas to be served by each health facility are devised by the District Health Office. However, a GIS(Geographical Information System) seminar held in Oudomxay on 2-3 July, 2001, revealed that villages in some provinces are not covered by health facilities at all. The reasons given were that some villages are very difficult to access while others are accessible due to be moved to Focal Sites.

Figure 8.7 Service coverage of health facilities



Source: Map prepared in the GIS Workshop in Oudomxay

The allocation of villages to be covered by each Health Centre is to be managed and controlled by District and Provincial Health Offices; countermeasures such as mobile teams will aim to cover villages which fall outside these catchment areas.

b. Catchment area of Health Centres

In reality, health centres tend not to serve their entire catchment area. Patient information from health centres suggests that in some cases patients from only 2 or 3 villages actually use the health centre rather than the planned figure of 10. In other cases, villagers health facilities located in a different catchment area, in other districts or even another province.

Given these findings, the possibility of demarcating health zones which do not necessarily follow existing administrative boundaries has been mooted as part of the ADB-supported PHC II Project. While still in the study stage, such an approach to health zoning is being planned in Luangnamtha, based on the premise of limiting the distance between village and Health Centre or Drug Kit to 2 hours.

2) Secondary and Tertiary Health Care Coverage and Accessibility

Referrals should in principle follow the hierarchy of health centre to district hospital to provincial hospital. Figure 8.8 shows examples of the structures of provincial health care systems in Lao PDR. However, in practice, the provincial hospital has an important role in Primary Health Care because of the limited resources available at other health facilities. In some provinces, health centres cover the areas lacking access to the provincial and district hospitals. Case A is the ideal system theoretically, and seen in only a few areas. Case B is one of the systems seen in most areas.

Figure 8.8 Sample Case of Health Care System

