3 EXISTING HEALTH SERVICES IN THE PROJECT INTERVENTION AREA

3.1 Introduction to the Area

The number of heath facilities in the Lao PDR has dramatically increased during the past decade. Nevertheless there are still serious inequities with respect to the distribution of qualified manpower and the location of these sites throughout the nation, within provinces, and even within selected districts. The relatively few central and regional hospitals, located in the Vientiane Municipality and the large provincial centers in the northern (Luang Prabang), central (Savannkahet), and southern (Champassack) sections of the country, account for the largest number of experienced and qualified physicians, surgeons, technicians and public health specialists. The MOH has tried to rectify this situation by constructing new facilities, renovating and modernizing existing sites, as well as offering expanded in-service training opportunities to improve the technical, clinical, and administrative capacity of health workers at all levels. However many problems continue to persist. Many existing hospitals and health dispensaries are under-utilized due to

a lack of appropriate medical supplies and equipment, and/or the low competency-skill levels of the service providers.

3.2 Health Facilities in Khammouane

The health care delivery system in Khammouane, the main site within the Nam Theun 2 Project intervention area, is similar to several other large provinces in the country. As one leaves the provincial capital of Thakhek situated alongside the Mekong River, and heads eastward through the Mekong plain, up into the hills, and then into the more remote mountainous forests, the number of health facilities and the qualifications of local medical staff dramatically decline. Below are two tables illustrating the distribution of health manpower, as well as the actual location of health facilities, in Khammouane.

Table 2: Existing Health Infra-Structure in Khammouane Province.

Province & Districts	Provincial & District Hospitals			Health Centers		Village Level					
	Hospital Level	Prov. Hosp. Beds	District Hosp. Beds	Total # Health Centers	# Functioning Health Cent.	# of Villages	# Poor Villages	# Vill. > 3 Hrs to HC	# VHVs	# TBAs	# Rev. Fund Drug KIts
Thakhek	PH	150	26	13	12	141	0	8	220	64	15
Mahaxay	B		15	6	6	89	69	31	91	11	33
Nongbok	B		15	10	10	72	20	0	72	72	29
Hinboun	B		15	17	17	166	13	22	87	36	34
Nhommalat	B		15	5	5	71	57	58	71	71	42
Boualapha	B		15	3	3	82	78	52	93	30	11
Nakai	B		15	5	5	67	49	48	100	10	26
Xebangfay	B		15	7	6	50	2	0	105	10	46
Xaybouathong	B		15	4	3	68	61	52	66	66	5
Total		**150**	**146**	**71**	**67**	**806**	**349**	**271**	**905**	**430**	**235**

Table 2 graphically illustrates the unequal distribution of health facilities located in Khammouane. The largest concentration of hospital beds and health centers are concentrated in the three districts [Thakhek, Nongbok, and Hinboun] situated along the Mekong River, where it should also be noted that the majority of the people in the province live. Although the province has 67 functional health dispensaries, approximately half of these sites are located in the "homes" of local health staff and are not "formal" health facility structures. Most health centers situated > 3 hours from the home of prospective clients are concentrated in the eastern and remoter districts of Nakai, Boualapha, Xaybouathong, Nhommalat, and to a lesser extent Mahaxay. What these figures do not indicate, is that many health dispensaries are actually located more than a 1-2 day walk from the district hospital. Thus seriously ill patients are often beyond the reach of appropriate health care in times of severe illness or emergency. These are precisely the geographic locations where the vast majority of maternal, infant, and under-five year old mortalities occur.

3.3 Health Staff in Numbers

Khammouane has a total of 755 health personnel stationed at 1 provincial health office and 1 adjacent provincial hospital, 9 district hospitals with 9 adjacent health offices, and 67 village level health dispensaries. Health personnel can be divided into two categories comprised of 666 medical staff and 89 non-medical staff. Of the 9 medical staff who completed post-graduate or higher education, all are based at the provincial health office (7) or the provincial hospital (2).

Of the 63 medical staff who completed university level [generally referred to as "Phaet San Sung"], 47 are physicians, 12 are pharmacists and 4 are dentists. Of these categories, 32 (68%) of the physicians are either based at the provincial health office (5) or provincial hospital (27). Five of the districts each have only 1 physician, 2 districts each have 2 physicians, while another 2 districts each have 3 physicians. Of the 15 physicians deployed outside the provincial capital, 6 are stationed at district health offices, 7 at district hospitals, and only 2 at health dispensaries.

Of the 12 pharmacists, 9 (75%) are either based at the provincial health office (8) or provincial hospital (1). The remaining three pharmacists are deployed to two district hospitals and 1 health dispensary. Of the 4 dentists, 2 (50%) are stationed at the provincial hospital, while the remaining two individuals are deployed to two district hospitals.

Of the 173 medical staff who completed a "mid-level" pre-service health curricula [generally referred to as "Phaet San Kang"], 90 are medical assistants, 16 are nurses, 14 are assistant pharmacists, 4 are assistant dentists, 12 are physiotherapists, 21 are laboratory assistants, 9 are hygienists, and 7 are prosthetics assistants. None of the last six categories of health workers are deployed to the health dispensary level. Of these six categories more than 50% of the total cohort are deployed at the provincial level.

Of the 90 medical assistants, 38 (42%) are either at the provincial health office (21) or provincial hospital (17); 48 (53%) are deployed to district health offices (30) or district hospitals (18); while only 4 (4%) are found at health dispensaries. Similarly of the 16 nurses, 5 (31.5%) are deployed to the provincial health office (1) or provincial hospital (4), while 10 (62.5%) are deployed to district level facilities, and only 1 (6%) is at the health dispensary level.

Of the 421 medical staff who completed a "low-level" pre-service health curricula [generally referred to as "Phaet San Ton"] 389 are nurses, 5 are laboratory technicians, and 27 are pharmacy technicians. Of the 27 pharmacy technicians 12 are deployed to provincial level facilities, while 10 are dispersed between the 9 districts, and 5 are stationed at health dispensaries. Of the 5 laboratory technicians, 3 are at provincial facilities and the remaining 2 are at district facilities. Seven districts do not have any laboratory technicians whatsoever. Of the 389 nurses, 118 (30%) are at the provincial health office (26) or provincial hospital (92), while 172 (44%) are at district health offices (95) or district hospitals (77). The remaining 99 (26%) nurses are stationed at the health dispensary level. This is the only category of professional health worker that is deployed in relatively substantial numbers to health dispensaries.

Of the 89 non-medical staff deployed throughout Khammouane, the only one of significance at the health dispensary level are the "contracted staff" who frequently represent the only category of health worker stationed at remote health dispensaries. Of the 41 "contracted staff", 37 (90%) are deployed to health dis-

pensaries. Many of these “contracted staff”, deployed to the remote sections of Nakai, Nhommalat, Mahaxay, and Boualapha districts have only completed 2 or 3 grades of primary school. These individuals, however, generally have some previous medical experience, usually as former army nurses or medics. They have subsequently received an additional 6 months of “formal” medical education, at the provincial or district level, before being eligible for deployment to their respective health dispensary.

Of the 153 health workers [both medical and non-medical] deployed to the 67 health dispensaries throughout the province, almost 2/3 [i.e. 63.4%] are located in the three districts that are adjacent to the Mekong River/Plain [i.e. Thakhek, Hinboun and Nongbok]. As mentioned above, approximately half of the 67 health dispensaries in the province are not “formal” health facilities, but rather health stations established in the homes of the local “health staff”. Accordingly the types of services offered at these village level health facilities can dramatically differ from other “health dispensaries” located elsewhere in province or perhaps even within the same district.

Table 3: Medical staff by facility and district.

Personnel	Personnel By Facility					TOTAL	Personnel by Districts (including provincial level)										TOTAL
	Prov. Health Office	Prov. Hosp.	Dist. Health Office	Dist. Hosp.	Health Centers		Provinical	Thakhek	Mahaxay	Nongbok	Hinboun	Nhommalat	Boualapha	Nakai	Xebangfay	Xaybouathong	
Postgraduate level and higher	7	2				*9*	9										*9*
University graduate level	13	30	6	11	3	*63*	43	2	2	4	4	1	1	2	2	2	*63*
Medical Doctor	5	27	6	7	2	*47*	32	1	1	3	3	1	1	2	2	1	*47*
Pharmacist	8	1		2	1	*12*	9	1		1						1	*12*
Dentist		2		2		*4*	2		1		1						*4*
Nurse						*0*											*0*
Laboratory Specialist						*0*											*0*
Middle-level	35	48	46	39	5	*173*	83	5	9	14	13	8	12	8	12	9	*173*
Med. Asst	21	17	30	18	4	*90*	38	4	5	8	8	6	6	4	6	5	*90*
Nurse	1	4	4	6	1	*16*	5		1	4	1		2	1	1	1	*16*
Midwife						*0*											*0*
Assistant Pharmacist	4	3	2	5		*14*	7		2		1		1	2	1		*14*
Assistant Dentist		4				*4*	4										*4*
Physiotherapist		7	1	4		*12*	7			1	1		1		1	1	*12*
Laboratory Assistant	3	9	3	6		*21*	12	1	1	1	1	1	1	1	2		*21*
Hygienist	5		4			*9*	5				1		1		1	1	*9*
Prosthetics Assistant	1	4	2			*7*	5					1				1	*7*
Low-level	34	99	100	84	104	*421*	133	50	23	50	45	28	23	16	34	19	*421*
Nurse	26	92	95	77	99	*389*	118	49	21	49	40	27	21	16	31	17	*389*
Midwife						*0*											*0*
Lab. Technician		3	1	1		*5*	3				1		1				*5*
Pharmacy Technician	8	4	4	6	5	*27*	12	1	2	1	4	1	1		3	2	*27*
Non-Medical Staff	13	19	13	3	41	*89*	32	2	7	2	8	5	13	10	3	7	*89*

Univ. & Higher Level	1					*1*	1									*1*
Middle Level		1	1			*2*	1					1				*2*
Primary Level	4	6	4			*14*	10	1			1		1	1		*14*
Support Staff		6	1	2	4	*13*	6		2		3	1	1			*13*
Contracted Staff	8	6	7	1	37	*59*	14	1	5	2	4	3	11	9	3	7	*59*
TOTAL	102	198	165	137	153	*755*	300	59	41	70	70	42	49	36	51	37	*755*
District Office								18	17	21	20	22	16	13	24	14	
District Hospital								0	17	29	14	14	22	12	13	16	
Health Centers								41	7	20	36	6	11	11	14	7	

3.4 Difficulties and Constraints in the Existing Health System

The situation found in Khammouane, the primary site of the Nam Theun 2 Project, is not substantially different from other large provinces. It is generally difficult to find qualified health personnel willing to be deployed to remote district hospitals and health centers. Although the director of the district health office theoretically can decide whom to deploy or rotate to health dispensaries, he is often constrained by other factors beyond his control. These include the following issues:

- Staff salaries are insufficient to cover expenses associated with the actual cost of living. In the past it was also quite common for monthly salary payments to arrive late. This situation has created a need for district level health personnel to seek secondary occupations, such as agriculture or private medical services, to supplement their incomes and support their families. As such few staff are eager to be deployed to remote health centers.

- Few staff are eager or willing to be posted to remote areas that are plagued with poor living conditions, lack of social services, and/or isolation due to inadequate or non-existent road networks. A large number of remote health dispensaries, as mentioned above, are located anywhere from 1-3 days from the district hospital.

- Few government health personnel are members of ethnic minorities, and accordingly soon find themselves culturally and linguistically isolated from the communities they are sent to serve.

- Family members are also reluctant to move to remote areas, and it is rare for staff, unless they are not married, to take up a long-term assignment without being accompanied by their family.

These constraints have forced many districts to train local villagers, who are subsequently hired on a contractual basis, to be assigned to health dispensaries. In the Nakai District, for example, 10 of the 11 health workers deployed to the five health dispensaries are employed on a “contractual basis”.

The preceding section has emphasized some of the apparent weaknesses and constraints in the existing health care delivery system, as they directly influence the level and quality of health services presently available to various populations living in the proposed NT 2 Project intervention area. Although it is possible that this situation may greatly improve, over the next couple of years, this nevertheless is the context in which analytic scenarios for *“business as usual”* or *“best practice”* patterns need to be made. This statement does not necessarily imply

that it will be difficult or impossible to resolve most of the important health problems NT2 Project intervention residents currently face. New health issues and problems, however, related to the construction of the reservoir, power station, downstream channels, as well as other external economic development initiatives, may soon force health personnel to concentrate their efforts on a more select population living in towns and various camp sites. The nature and types of new health problems expected to emerge are also ones for which the existing health care system is presently unprepared or trained to handle. This includes an increase in vehicular accidents, the possible introduction of new vector-borne diseases such as Dengue Hemorrhagic Fever (DHF), or a sky-rocketing incidence and prevalence of HIV/AIDS and STIs.

As the tables above illustrate, most district hospitals in the NT2 Project intervention area presently do not have more than one physician. These facilities also do not have “operating theaters”, and in case of serious accidents or injuries, staff currently can only provide simple emergency care, such as cleaning, suturing, and dressing minor wounds, before sending the patient on to the provincial hospital. The same situation pertains to emergency obstetrics. Each year district hospital staff assist with a relatively small number of uncomplicated deliveries. For complicated deliveries, or true emergencies, the patient needs to be referred to the provincial level. It is unknown how many of such cases, in remote villages, simply die at home.

An equally important issue is the lack of routine comprehensive promotive, preventive, and curative outreach clinics geared to up-grade the technical, clinical, and administrative skills of health dispensary workers, while at the same time providing selected health services to the local population. Certain EPI and malaria control activities appear to be the exceptions. As noted in the preceding section the incidence and prevalence of malaria, the malaria case fatality rates, and the slide positivity rates, have all dramatically declined throughout the Lao PDR. This has come about as a result of the distribution and re-impregnation of insecticide treated bed nets (IBNs), the early diagnosis and treatment of suspected and confirmed malaria cases, and the establishment of drug and bed net revolving funds to sustain these efforts. The National Malaria Control Program, supported by many international donors, has made a dramatic impact in reducing malaria morbidity and mortality and thus has directly contributed to improving the overall health status of people living in rural and remote geographic areas. Deaths from malaria have become rare events in Nakai, Nhommalat, and Mahaxay districts; where formally the overwhelming majority of out-patients and in-patients were treated for malaria; and where malaria was always listed as one of the leading causes of death. These impressive results were to a great extent made possible by the efforts of district and village level health workers and volunteers, supported by mass organizations and local village leadership.

3.5 Village and Household Level

But the overall health status of rural/remote communities will only improve once Primary Health Care activities, focusing on the health of women and young children permeate down to the village and household level. Most rural residents, especially ethnic minority men and women, still do not fully understand and appreciate the importance of birth spacing-family planning services in improving the health of mothers, women of reproductive ages, and young children vulnerable to communicable diseases and malnutrition. Similarly they are not aware of the value of regular ante-natal care examinations to monitor the health of the expectant mother and to identify women who are potentially at risk for complicated la-

bor. Likewise communities, and individual families, are not aware of the need for trained birth attendants to assist at the time of delivery and to visit the mother and newborn infant during the immediate post-partum period to provide important health information concerning breast-feeding, immunization, nutrition, and birth-spacing. Educating women on the value of birth-spacing services, and making these services available at the health dispensary and village level, can in a relatively short period of time dramatically reduce maternal and infant mortality; the two most sensitive indicators of a community's health status. One of the key messages that is frequently omitted during training sessions is simply, *"Contraceptives Save the Lives of Women and Infants"!*