[原著］Unbalanced distribution of health sector human resources and malfunctioning of peripheral health services in Lao P.D.R. : Analysis of the causes and possible solutions

Unbalanced distribution of health sector human resources and malfunctioning of peripheral health services in Lao P.D.R.

—Analysis of the causes and possible solutions—

Sumiko Ogawa[1], Boungnong Boupha[2], Ponmek Dalaloy[2], and Makoto Ariizumi[1]

[1] Department of Preventive Medicine, Faculty of Medicine, University of the Ryukyus, 207 Uehara, Okinawa 903-0215, Japan
[2] Ministry of Health, Vientiane, Lao People's Democratic Republic

(Received on September 22, 1998, accepted on November December 22, 1998)

ABSTRACT

A critical problem facing Lao People's Democratic Republic (Lao P.D.R.) is the lack of functioning peripheral health services. There appears to be a lack of resources, and at the same time an awareness of the need for such services is virtually nonexistent among the people. The reasons for the malfunctioning of peripheral health services in the community are analyzed from the viewpoint of human resources. The absolute number of government health staff decreased dramatically in 1990, but the average ratio of health sector human resources per total population in Lao P.D.R. is still not that low compared with other developing countries. Other causes were ascertained through the direct observation of the field situation. The unbalanced distribution of health sector human resources in rural areas is one of the most likely causes for the malfunctioning of peripheral health services, such as health posts, which are the most decentralized public health facilities in Lao P.D.R.

One possible way to solve this problem is to promote the role and function of health posts, thus giving motivation or incentive to the health staff working in remote areas where health posts exist. This will increase availability and accessibility to services and enable the rural population to utilize them as their first contact with the public health sector. *Ryukyu Med. J., 18(4)135~141, 1998*

Key words: health manpower, peripheral health services, health post (HP), new economic mechanism (NEM), Lao People's Democratic Republic (Lao P.D.R.)

INTRODUCTION

Lao People's Democratic Republic (Lao P.D.R.) is a landlocked country, situated in the center of the Southeast Asian peninsula and covering an area of 236,800 km^2. The country shares borders with Vietnam, Cambodia, Thailand, Myanmar and China. The climate is tropical and is affected by monsoon rains from May to September. The population is 4,591,000 divided into three main ethnic groups and some other subgroups. The lowland Lao represent 65.5%, the upland Lao 22%, and the mountain highland Lao 13% of the total population. Buddhism has long been the religion of the majority of the Laotians (85%). Lao P.D.R. is the least populated country in Southeast Asia and has the lowest population density in the region. About 15% of the population live in urban and 85% in rural areas.

This paper is written out of a strong interest for the special characteristics of the health care delivery system in Lao P.D.R. One of the most important issues in the public health sector in this country is the malfunctioning of peripheral public health services in the community. Peripheral public health services, i.e. health posts (HPs) are not well utilized by the population. The main aim of this paper is, to inspect and analyze the causes for the under-utilization of health services within the dynamics of public health sector human resources in Lao P.D.R.

First, the malfunctioning of health services, which was strongly affected by the 1990 decreases in health sector human resources, will be analyzed. The external factors are explained next. Furthermore, we review the field situation and consider the major problems confronting health sector human resources on the basis of

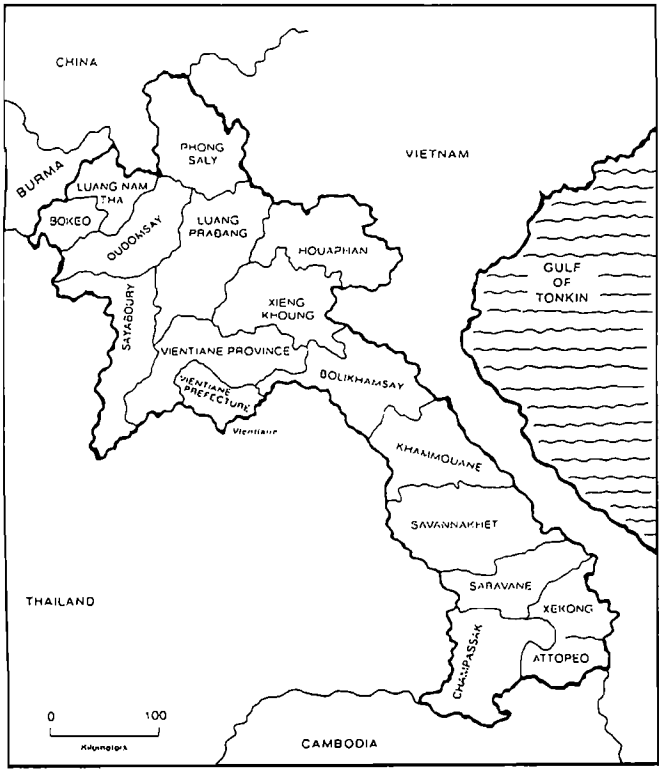

Fig. 1 The Lao P.D.R. and Provinces.

staff utilization. In conclusion, possible adaptable solutions for the improvement of local health services in Lao P.D.R. are suggested.

SUBJECTS AND METHODS

Health-related data at the national level were collected through the Lao local research group named 'Study on Health Needs and Appropriate Aid Policy based on the Concept of Health Transition'. Those at the provincial level were assembled by the Joint Japan /WHO technical cooperation for the primary health care project in Lao P.D.R. which had been implemented mainly in Khammouane Province.

HEALTH CARE SYSTEM IN LAO P.D.R.

(1) Institutional reform

1-1 Centralization (1975-1986)

Lao P.D.R. is divided administratively into three levels: the central government in Vientiane, 17 provinces plus 1 special zone and 1 municipality. There is a further subdivision into 133 districts[1] (Fig.1). When the new republic was established in 1975, administration was centralized. Ministries were allocated resources, formulated national plans, and developed and managed budgets for their respective sectors. Provincial and district authorities merely implemented plans and administered budgets received from central ministries. The system thus employed a line reporting to the provincial or municipal health office while in turn authorities at provincial and district levels were almost non-existent, with the latter playing a primarily political-as distinct from managerial-role[2,3].

1-2 Decentralization (1986-1991)

In tandem with the new economic mechanism (NEM), a major policy initiative was undertaken during the 1986-1991 period. The NEM is designed to "transform (Lao) economic management from a central command system to one which is market-based and characterized by decentralized economic decision making, with the private sector playing an active role"[4].

The NEM were chartered by the Fourth Congress of the Lao People's Revolutionary Party and form part of the Second National Five Year Development Plan (1986-1990). The main pillars of the NEM are reform of state owned enterprises and stimulation of private sector investment. The intended result is the introduction of an economic management system rooted in market principles.

Planning and budgeting functions were devolved to provincial and district authorities, and central ministries reduced their staffing levels by 50 percent, with many of their employees being relocated to reinforce provincial offices. Decentralization in Lao P.D.R. meant the delegation to provincial authorities of responsibility for revenue generation, collection and management, and public administration and provision of public services. The point to note is that although the government intended to decentralize to the district level (i.e. to as close to the peripheral health services as possible), in fact, power could only be devolved to provinces because of the lack of financial, management and planning capacity at the district level.

The decentralized system had some negative impacts on the health service. The technical and planning functions managed from the central level became separated from political and financial decision making at the local level and the ministry lost influence on the direction of health policy[5].

1-3 Recentralization (1991-1996)

In 1991 the local budgeting authorities were transferred back to the central government. The main reasons were to avoid inequity of the health budget among provinces and to prevent low budget allocation to health sectors. Most of the local governments did not rank health sector as a priority (less than 3% of the total budget) before the recentralization.

The new reform policy has also affected the improvement of health policy. Efforts have been concentrated on the qualitative improvement of human resources development, authorization to open private clinics and pharmacies throughout the country, cost-recovery policies, and free services for the poor[6].

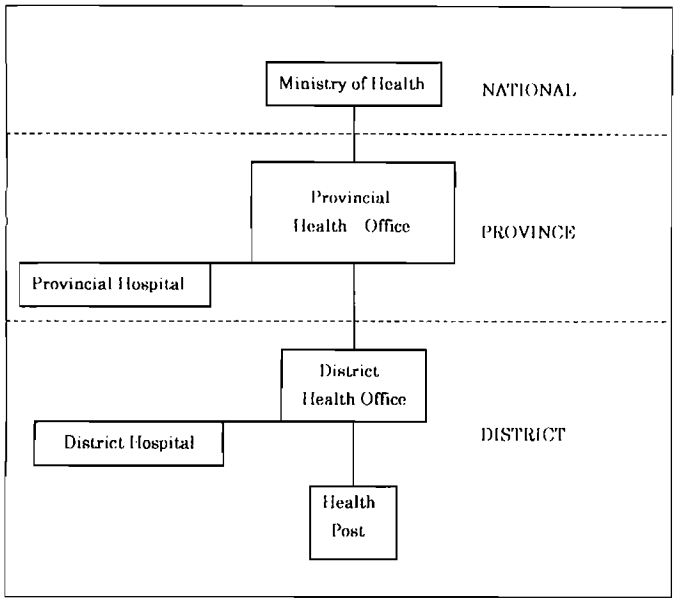

Fig. 2 Broad administrative structure of public system in Lao P.D.R. (*Holland et al., 1995*)[4].

(2) Administrative structure

The national system of public administration in Lao P.D.R. operates at four levels. Central level government institutions, including the ministry of health (MOH), are based in Vientiane. Then each of 17 provinces, 1 special zone and 1 municipality has a provincial or municipal governor and a provincial/municipal health office (P/MHO). Currently this level has 133 districts, each of which has a district governor and a district health office (DHO). Each district is further divided into sub-districts, in which health posts are located. The broad structure of the public health system is illustrated in Fig. 2[7].

(3) Human resources

Health sector human resources in Lao P.D.R. are classified into three levels.

Higher level professionals-medical doctors (MDs), pharmacists and dentists-study for five to six years at the University of Medical Sciences. There is only one medical university in Lao P.D.R. that has produced around 100 doctors per year since 1984.

Middle level health staff-medical assistants (MAs), assistant pharmacists, hygienists- study for three years after high school at a College of Health Technology. The main college is in Vientiane and there are three others in each of the three main regions of the country. Around 70 students graduate each year. MAs have taken the role of 'assisting MDs' mainly at the higher administrative levels (i.e. national and provincial levels), whereas they have acted as 'clinical doctor' at the lower administrative levels. Eighteen percent of the total medical students consist of experienced MAs who have gone back to school. In this respect, it is no exaggeration to say that the MA is a "hanging position" toward becoming a MD.

Lower level health workers - technical nurses and pharmacy technicians - complete two years or less in nursing schools. Prior to 1993 almost all provinces and the Vientiane Municipality had a school of nursing. The government is currently in the process of reducing the total number of nursing school to six, managed centrally by the MOH, each of which will teach a standardized curriculum. There will be an overall reduction in the number of nursing students[5,7].

Besides the government health personnel, traditional birth attendants (TBAs), village health volunteers (VHVs), and traditional practitioners exist in the rural areas. Some of them are "retired nurses". This doesn't mean that they retired because of age, but rather for health reasons. They were quantitatively produced in the 1980's.

(4) Expenditure and financing

4-1 Government health expenditure

Government health expenditure did not share proportionately in the growth of total government spending, decreasing from 5.1% of total spending in 1987 to 1.3% in 1991, with a recovery to 3.0% in 1992/93. In real terms government health expenditure continued to increase between 1986 and 1988, and then nearly halved in 1989 and continued to fall to reach a minimum in 1991, only to recover to the 1988 level in 1992/93. Thus the darkest years for the health sector were 1989-91. Government health expenditure as a proportion of GDP (Gross Domestic Product) decreased from 1.0% in 1988 to 0.3% in 1991, rising again to 0.7% in 1992/93. Nevertheless this is still low, if compared with percentages in 1990 of 1.1% in Vietnam and Thailand, and an average of 1.8 for Asia[8]. Government health expenditure per person in 1992/93 was 1,400 kip in the Lao currency, which is equivalent to less than US$2. This still represents a very low level of health spending, compared with an average of US$ 24 for Asia excluding India and China[8].

4-2 Foreign aid

Aid to the health sector in Lao P.D.R. decreased markedly in the second half of the 1980's. In 1990 prices, total health aid fell from over US$10 million in 1986 to just over US$3 million in 1989, the year in which there was also a severe slump in government health spending. This decrease in health aid reflected the reduction in assistance from the socialist countries during this period. Since then, the value of health aid has gradually recovered to reach a level, in 1990 prices, of over US$8 million in 1983. This recovery was the result of increased aid flows from multilateral agencies and NGOs, as well as from bilateral market donors. In 1993/94, 58% of health expenditure came from the government, whereas 38% came from foreign aid[9].

Table 1 The number of public health sector human resources in Lao P.D.R.

Year	1990	1997	Ratio (1991 : 1995)
Medical doctor (MD)	1173	1632	1 : 1.4
Medical assistant (MA)	2731	3241	1 : 1.2
Nurse (NS)	5874	5166	1 : 0.9

Source: Calculated from data reported Health sector reform and health transition in Lao P.D.R. Proceeding of the international conference on Comparative Study on Health Sector Reform Responding to Health Transition in Asia, 85-96, 1997)

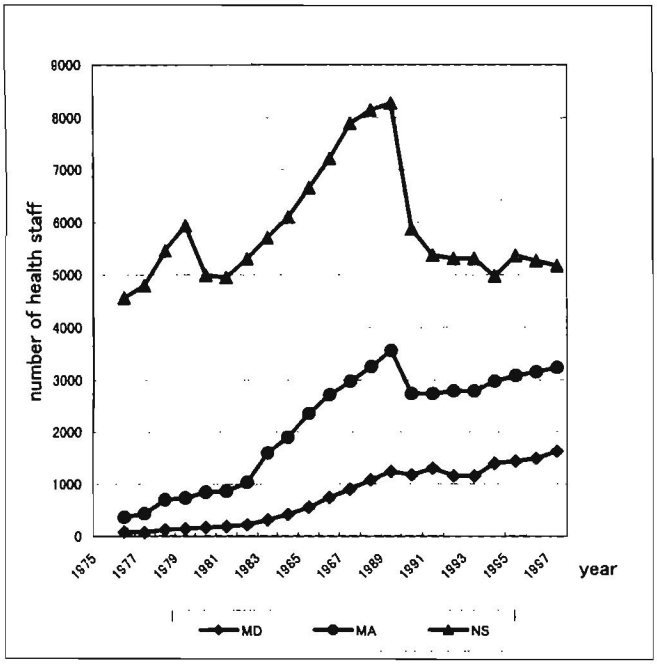

Fig. 3 Absolute number of public health staff in Lao P.D.R.

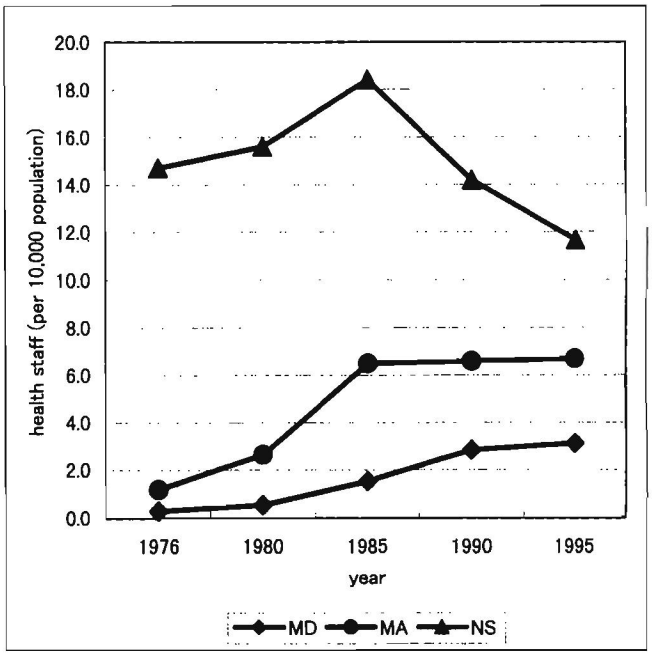

Fig. 4 Public health staff per 10,000 population in Lao P.D.R.

RESULTS AND DISCUSSION

(1) Starting point: observation of decreasing health sector human resources

In 1990, there was a sudden change in the number of governmental health manpower in Lao P.D.R. From 1989 to 1990, although the number of MDs decreased by only 6%, numbers of MAs and NSs decreased dramatically (24% and 29%, respectively)[6]. (Fig.3)

Observing the difference between 1976 to 1989, the number of MDs increased as much as 9 times, whereas numbers of MAs and NSs increased much less. The former quadrupled, while the latter doubled during this period. It is noted as well that even though there were dramatic decreases in the MAs and NSs in 1990, the numbers themselves remained stable after the period of 1990, compared to MDs. The 1997/1990 ratios were 1.2 for MAs and 0.9 for NSs, but 1.4 for MDs. (Table 1)

These proportions are furthermore clarified by evaluating health sector human resources per 10,000 population. During the period between 1976 and 1995, the number of MDs increased 10 times from 0.3 to 3.1, whereas the number of MAs has remained the same since 1985, while the number of NSs has dropped since 1985. (Fig.4)

(2) External factors

There were two likely external factors that may have influenced the decreases in health human resources in 1990: One was the adoption of the NEM and the other was the crisis of the communist block countries (1989-1990).

In tandem with the year of the NEM, the number of private pharmacies has increased 12 times[10]. It could

Table 2 Population per public health sector human resources in Lao P.D.R.

Year	1990	1997	Difference
Population / MD	3529	2953	−576
Population / MA	1516	1487	−29
Population / NS	705	933	+228

Source: Calculated from data reported Health sector reform and health transition in Lao P.D.R. Proceeding of the international conference on Comparative Study on Health Sector Reform Responding to Health Transition in Asia, 85-96, 1997)

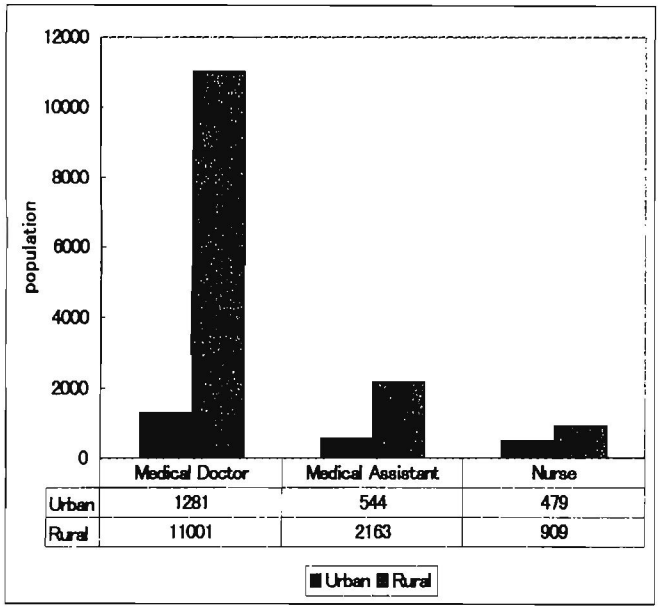

Fig. 5 Ratio of health staff allocatin in Lao P.D.R.

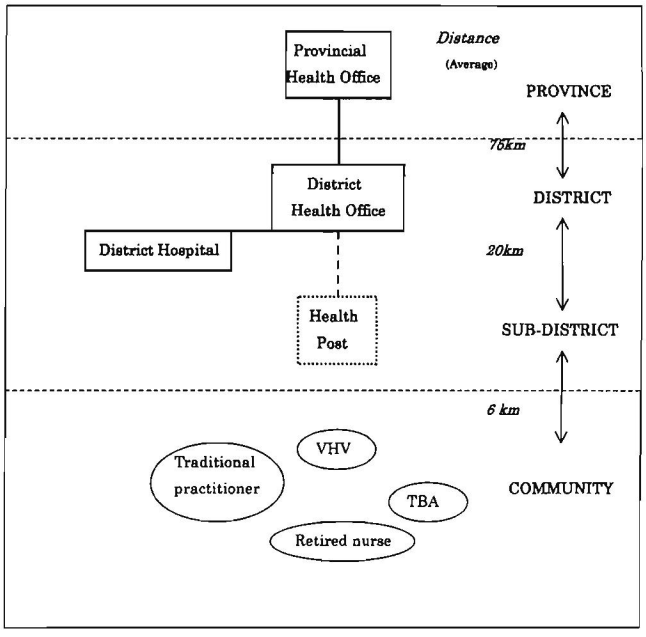

Fig. 6 Peripheral health system in Lao P.D.R. (Khammouane Province)

be logically assumed that due to the influence of NEM policy, public health staff had been running the private pharmacies. Moreover, external health aid expenditure decreased (29%) and government health expenditure also declined by 12% because of the fall out from the dissolution of communist countries in this period[7]. These two external factors were the likely causes for the decrease in public health sector human resources in 1990.

(3) Crucial problems in the distribution of health sector human resources

The core problem regarding the health sector human resources in the field was that few staff settled down in rural areas at the HP level. The population per MA had decreased slightly by 29 but NSs increased by 228 in 1997 compared to 1990. On the other hand, the population per MD fell to 2,953, a decrease of 520. (Table 2)

For example, in the late 1980's and early 1990's there were 730 persons for every MD in China, 2,439 in India, 2,857 in Vietnam, 5,000 in Thailand and 16,667 in Nepal[11]. The number itself is better than the average of 3,226 in Asia (excluding India and China). Still compared with the average of 11,238 per MD in the least developed countries, they have quite adequate ratios in Lao P.D.R[8,9].

The question now arises as to the distribution of health sector human resources between urban and rural areas: the ratios in urban vs. rural areas are 1:10 for MDs, 1:4 for MAs, and 1:2 for NSs[7]. (Fig.5)

To see what was actually happening on the field regarding health sector human resources, we examined some internal factors with the direct observation of one field example in Khammouane Province after the period of 1990.

(i) Field situation

Khammouane Province has 245,120 inhabitants. It is divided into 9 districts. The population density is 15 inhabitants per km^2 and the villages are scattered.

The percent of persons able to access a district hospital by foot within a day are 15.2%. There are 53.2% living in the province who need to stay overnight to access the district hospital which is in the center of the district, even using a vehicle. These inhabitants live in mountainous areas or in the bush which makes it much more difficult for them to access the hospital[12].

The general situation regarding HPs in the provinces is as follows: Each sub-district has one health post which is responsible for covering an average of 5,000 people, which in turn corresponds to administrative population unit. (Fig.6)

About one third of the health posts (17 out of 53) were functioning in terms of posting staff (1993). One of the reasons for this incomplete number of staff was that the government couldn't cover all places because of difficulties in geographical condition and sustained support.

With regard to basic equipment and facilities in HPs, these were extremely restricted if there was no support by international donor agencies. All HPs, except a few, had no electricity and little security. The typical appearance was a wooden construction divided into two rooms with two wood-beds. Little logistic support such as essential drugs, were provided by the government. It was quite often observed that HPs were located some distance away from the community because of their beliefs that "a place of illness" should be away from the community so as not to contaminate things.

In terms of financial resources, it was still unclear what was to be paid by whom. Before 1993 it was the responsibility of the community to support the HP, especially regarding wages. The problem is that role and responsibility have not yet been established clearly at the national level even though the recentralization has been executed and supported by the channel of MOH not only technically but also financially. For example, if there are some activities in the community, the district staff often directly contact the village bypassing the HP staff. This was quite often observed in the national vertical program, such as for EPI (expanded program on immunization) activities.

On the issue of health sector human resources, the district medical officer had a right to select and dispatch two staff to each HP. Two NSs were usually posted. Most of the time, women with limited experience were nominated. One of the big problems was that the staff were rotated every two or three years, which made it difficult for them to know and respond to the community demands because of their short period of duty.

Because of these negative conditions of HP in all possible resource categories, the community still tended to rely on their "retired nurses" which led to less utilization of the HP.

These "officially unrecognized" human resources in rural areas have been active in each village so as to respond to the community health demands according to their own limited experience in the absence of active HPs at the operational level.

(ii) Field situation - staffing and utilization

The range of posting MDs was only 1 for each district on average, whereas there were 21 MDs in the provincial hospital (except for the administrative office). In Hinboun District (11,520 inhabitants), 1 MD, 14 MAs, and 66 NSs were staffed. Out of the total number, 1 MA and 16 NSs were dispatched to 9 out of 16HPs (1994-1995). The number of outpatients per year was minimal at each level, such as 1,534 in the district hospital and 350 in one HP on average. The utilization rates are quite low; 0.13, and 0.04-0.1 cases /inhabitants/year, respectively[13].

Furthermore, the selection of health sector human resources might be another issue to note. Indeed, the students are obliged to start working in rural areas. But, in fact, it hasn't been strictly obeyed. The main reason is the candidate selection: for example, 46% of medical students were chosen by the local health officer in 1998, including 18% of experienced MAs. They were selected not by examination but through family or political connections. These students have enough protection to refuse working as MDs in rural areas after their education.

(iii) Analysis and explanation

The malfunctioning of peripheral health services in many places is likely to be much more influenced by unbalanced distribution of health sector human resources than by its decrease, according to these observations.

Based on these observations, it can be noted that the malfunctioning of peripheral health services is because of unacceptable and poor working conditions of the HP: they are located far from the center of communities, and physical, social and financial conditions are not secure. Even though there are many health staff available at district levels and the director has a right to post the staff to the HP, it is not enforced. This is because there is no confirmed "operational" policy in terms of strengthening peripheral health services at the national level and a lack of incentive for the health staff to work in rural areas.

The alternative solution for the people is to turn to "retired nurses", who have compensated by fulfilling the role of first health contact in treating patients in the community since the 1980's. This is the main reason why the malfunctioning of the HP has not been taken into account as the crucial problem for the population.

This doesn't mean that there is no need for the HP in the community. The peripheral health services should be integrated in the community. This means not only to consolidate essential drugs and equipment, but also to dispatch qualitatively acceptable health staff

to the community. They are also technically qualified through their experiences in health care, at least equivalent to or more educated than "retired nurses", and longer posting in a certain community would give them more confidence.

Furthermore, how has HP reacted to real demands? And how can it work as effectively as possible?

In terms of accessibility, the distribution and location of HPs must be considered more closely. They are located on an administrative basis. But the location of HPs is much more practical under the condition of an operationally normative basis. What must be considered first is accessibility: how can the patients easily access services and how can services cover the whole community. This should be taken into account as much as possible when HPs are constructed, especially among scattered villages in Lao P.D.R.

Acceptability and logistics systems must be strengthened. There was no regular drug supply without donor support. Task descriptions supported by regular supplies and supervision need to be established.

CONCLUSION

If both the above issues are addressed properly, staffing qualified health personnel from districts to HPs can be tried as a first measure. If the HP staff is given more motivation and security to work in the isolated field, the unbalanced distribution may be partly resolved. Reorganization of district human resources must be considered. More MDs are recommended to decentralize to the district level, and the MAs should be shifted to the HP level automatically. If the obligations of working rural areas after education are strictly implemented, the decentralization of health sector human resource will be better accomplished. As in the example of Thailand, it is also noteworthy to ask for reimbursement of tuition to medical students if they refuse to work in rural areas. The selection process for the students must be opened to equal competition. It might be also worth trying to employ the existing human resources as official health staff, such as brushing up the retired nursesin. the community. who were trained officially.

Lastly, redeployment of the existing staff to HPs could be carried out through incentives that motivate staff to work in rural areas. This might be accomplished not only by giving financial rewards, but also by career enhancement, re-training, refresher courses and schooling for the children.

ACKNOWLEDGEMENTS

The work was supported by a Grant for International Health Cooperation Research "Study on Health Needs and Appropriate Aid Policy Based on the Concept of Health Transition" from the Japanese Ministry of Health and Welfare. All the staff of the Joint Japan/WHO technical cooperation for primary health care project in Lao P.D.R. are also acknowledged and thanked.

REFERENCES

1) Lao Committee for Planning and Co-operation: Lao census, Preliminary Report 2, National Statistical Center, Vientiane. 1995.
2) UNDP: Development Cooperation, Lao People's Democratic Republic, Vientiane: United Nations Development Program, 1992.
3) Evans G.: Lao Peasants under socialism & post-socialism. Silkworm books, 1995.
4) Holland S., Phimphachanh C., Conn C. and Segall M.: Impact of economic and institutional reforms on the health sector in Laos. IDS Research Report 28, Sussex University, England, 1995.
5) Phimphachan C. : Improvement of district health management in Laos. Study Course Project Report No.16, Brighton, Institute of Development Studies at the University of Sussex, 1990.
6) Boupha B. and Dalaloy P. (ed.): Health Transition and Health Sector Reform in Lao People's Democratic Republic. Proceeding Report, International Symposium on Health Transition and Health Sector Reform in Asia. Department of Health Care Policy National Institute of Health Services Management, Tokyo, Japan, 95-105, 1999 (in press).
7) Abel-Smith B.: The world economic crisis. Part2, health manpower out of balance, Health policy and planning. 1(4) : 309-316, 1986.
8) Griffin CC.: Asia region discussion paper series 1. Health sector financing in Asia, Washington D.C., World Bank, 1990.
9) Lao Ministry of Health : Five Year Health Report (1987-1991), Vientiane, 1992.
10) Stenson B., Tomson G. and Syhakhang L.: Pharmaceutical regulation in context: the case of Lao People's Democratic Republic. Health policy and planning. 12(4), 329-340, 1997.
11) World Bank.: World Development Report. Oxford University Press, 1993.
12) Khammouane provincial health office (ed.): Midterm evaluation of MOH/WHO/JICA Primary health care project in Khammouane Province: 1-18, 1995.
13) Ogawa S.: JICA PHC Project - Data on PHC Implementation -, 1993.