

District health programmes and health-sector reform: case study in the Lao People's Democratic Republic

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Abstract The Lao People's Democratic Republic (Lao PDR) is classified by the World Bank as a low-income country under stress. Development partners have sought to utilize effective aid instruments to help countries classified in this way achieve the Millennium Development Goals; these aid instruments include sector-wide approaches (SWAps) that support decentralized district health systems and seek to avoid fragmentation and duplication. In Asia and the Pacific, only Bangladesh, Papua New Guinea and the Solomon Islands have adopted SWAps.

Since 1991, a comprehensive primary health care programme in the remote Sayaboury Province of Lao PDR has focused on strengthening district health management, improving access to health facilities and responding to the most common causes of mortality and morbidity among women and children. Between 1996 and 2003, health-facility utilization tripled, and the proportion of households that have access to a facility increased to 92% compared with only 61% nationally. By 2003, infant and child mortality rates were less than one-third of the national rates. The maternal mortality ratio decreased by 50% despite comprehensive emergency obstetric care not being available in most district hospitals. These trends were achieved with an investment of approximately US\$ 4 million over 12 years (equivalent to US\$ 1.00 per person per year).

However, this project did not overcome weaknesses in some national disease-control programmes, especially the expanded programme on immunization, that require strong central management. In Lao PDR, which is not yet committed to using SWAps, tools developed in Sayaboury could help other district health offices assume greater planning responsibilities in the recently decentralized system. Development partners should balance their support for centrally managed disease-specific programmes with assistance to horizontally integrated primary health care at the district level.

Keywords Primary health care/organization and administration; Health services administration; Health care reform; Lao People's Democratic Republic (*source: MeSH, NLM*).

Mots clés Soins santé primaire/organisation et administration; Administration services de soins; Réforme domaine santé; République démocratique populaire lao (*source: MeSH, INSERM*).

Palabras clave Atención primaria de salud/organización y administración; Administración de los servicios de salud; Reforma en atención de la salud; República Democrática Popular Lao (*fuente: DeCS, BIREME*).

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Bulletin of the World Health Organization 2006;84:132-138.

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Introduction

The Lao People's Democratic Republic (Lao PDR) is classified by the World Bank as a low-income country under stress: it has a human development index ranking of 135 and 39% of the population is classified as poor.¹ The country is a "fragile state" because of its poverty, which is related to its geographical isolation, one-party political system, the recent emer-

gence of a market-oriented economy, its dispersed and multi-ethnic population, its history of relatively recent conflict and its low technical and management capacity. Life expectancy in 2002 was 55 years compared with 69.3 years in Viet Nam and 69.6 years in Thailand.² In 2002, the infant mortality rate was more than three times higher than the rates in neighbouring Thailand and Viet

Nam, and the fertility rate was more than twice the rates in Thailand and Viet Nam.² The maternal mortality ratio was approximately 650 per 100 000 live births compared with 44 per 100 000 live births in Thailand and 130 per 100 000 in Viet Nam.²

The major causes of morbidity and mortality among women and children are malaria, diarrhoeal diseases, acute

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Ref. No. 05-025403

(Submitted: 19 July 2005 – Final revised version received: 22 September 2005 – Accepted: 23 September 2005)

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respiratory infection, measles, perinatal conditions, and complications of pregnancy and childbirth.³ These conditions are exacerbated by high levels of protein–energy malnutrition; an estimated 40% of children aged <5 years are underweight for their age; 15% are underweight for their height; and 40% are stunted.³ However, Lao PDR has a low prevalence of human immunodeficiency virus (HIV) (0.06%) compared with its neighbours.

Sayaboury is a remote mountainous province on the western side of the Mekong River; it shares a long border with Thailand. In 2003, Sayaboury had a population of 321 000, of whom 22% belonged to 33 ethnic minorities.

Description of programme

In 1991, Save the Children Australia began working with the Sayaboury Provincial Health Office in a setting of inadequate health-service infrastructure, difficult transportation and communications, and isolated and undertrained health staff. Maternal and child health services were used as an entry point for strengthening other primary health care services, such as communicable disease control, health education and nutrition promotion. The Sayaboury programme has been implemented by government staff with support from one expatriate health adviser, and it has been integrated completely into the work routine of the health system. Existing district health teams were strengthened, forming the building blocks of the provincial primary health care programme. The programme was coordinated by a provincial management team consisting of representatives from each participating district and the Provincial Health Office.

The programme was implemented in four three-year phases. The first phase focused on strengthening the management and training skills of the provincial management team, which conducted in-service training for district teams and dispensary staff in two southern districts and trained village health volunteers and traditional birth attendants. Fixed and mobile maternal and child health clinics were developed; dispensaries were constructed or upgraded; and essential equipment was provided. During the second phase, the programme expanded into four additional districts and was geared towards integrating primary health

care activities at all levels. District hospitals were provided with essential equipment and training to improve the quality of referral services and their capacity to support village-level activities. Seed capital and training in the management of revolving drug funds, based on the Bamako model, were provided at the district level and dispensary level.⁴ A health information system and routine monitoring and evaluation framework were developed. The provincial management team established six quality indicators for district health programmes: an accurate and timely health information system; annual and six-monthly district work plans; job descriptions for staff; regular supervision of dispensaries, village health volunteers and traditional birth attendants; the use of monitoring visits for problem-solving; and opportunities for district staff for professional development and promotion.

The third phase expanded into four newly-created districts in the north that were quite remote. The International Fund for Agricultural Development constructed dispensaries, augmenting the construction programme instituted by Save the Children Australia and expanding access to first-line health services. The fourth phase aimed to strengthen the skills of health workers, with an emphasis on those in the northern districts. The Integrated Management of Childhood Illness strategy was adopted in all districts. Training was mostly conducted in the Lao language by Lao trainers, and it was complemented by inputs from the Save the Children Australia health adviser and occasional short-term advisers, study tours, postgraduate public health courses and clinical placements in Vientiane

and Thailand. The outcomes of training were evaluated through a quality-of-care assessment system.

Studies have suggested that most of the undernutrition among children in Lao PDR is the result of inappropriate feeding practices.⁵ Given that undernutrition is a risk factor in 50% of childhood deaths worldwide⁶, the programme targeted its education towards those traditional nutrition practices that are damaging to children's health, thus the programme promoted exclusive breastfeeding until children were aged 6 months and the timely introduction of nutritious complementary foods. Recipes for healthy complementary foods made from locally available products were also distributed.

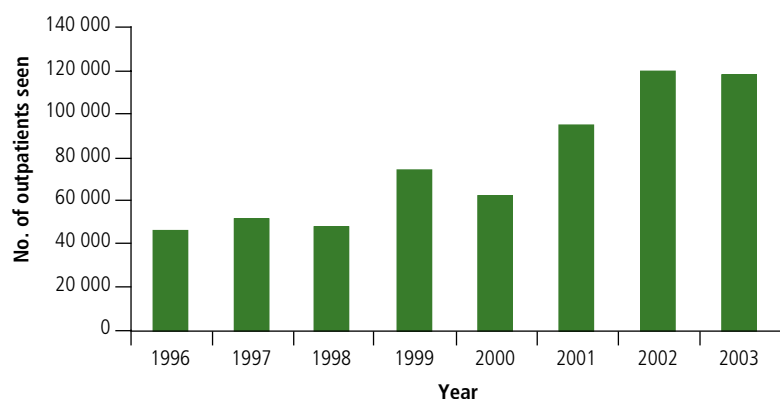
District mobile health teams visited each village at least twice a year, providing health education through dramatized videos in several local languages; they also provided clinical services, antenatal care, immunization, family planning and growth monitoring. District teams conducted quarterly "Health Days" at each dispensary, spending two days monitoring the quality of services, doing on-the-job training and providing clinical services.

Method of evaluation

The programme was evaluated in early 2004 by the provincial management team and an external evaluation adviser (MJT). The methods used are summarized below.

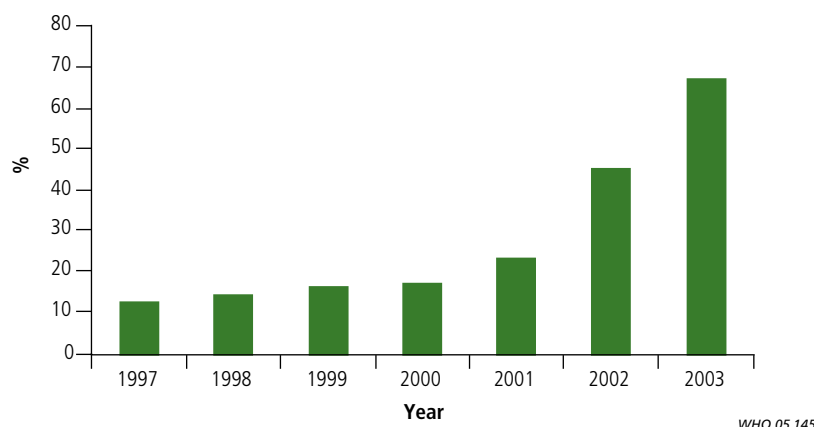
- Reports and documents, in English and in Lao, were reviewed including Health Data Summaries (1997–2003) and Six-Monthly Primary Health Care Activity Reports.

Fig. 1. Total no. of outpatients seen annually in all hospitals and dispensaries, Sayaboury Province, Lao People's Democratic Republic, 1996–2003



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Fig. 2. Proportion of women of reproductive age using a modern contraceptive method, all districts, Sayaboury Province, Lao People's Democratic Republic, 1997–2003



- Participatory evaluation workshops were held using the most significant change method of describing outcomes.⁷ Four domains of change were examined: district capacity, provincial management capacity, quality of health services (including community perceptions) and impact on the population's health.
- Impact data collected in annual reports of the health information system were reviewed for 1997–2003 as were the findings from the 1999, 2001 and 2004 population surveys in the northern districts.

Findings

Since 1991, provincial health services have expanded to include 69 dispensaries delivering clinical services and community-based health promotion. By 2003, 92% of all households (53 240 per 57 870) were 5 km or 60 minutes' walk from a health facility. Nationally, 61% of the population has access to health care but in the northern region (where Sayaboury is located) only 38% of the population has access to health care.³ Altogether, 629 village health volunteers and 573 traditional birth attendants, all chosen by village health committees, have been trained in 495 villages. They receive no financial remuneration, although they do receive an identity card entitling them to free medical treatment. Annual refresher training is provided to traditional birth attendants and village health volunteers.

Improvements in access have been accompanied by high utilization: there has been a threefold increase in the number of outpatients seen between 1997

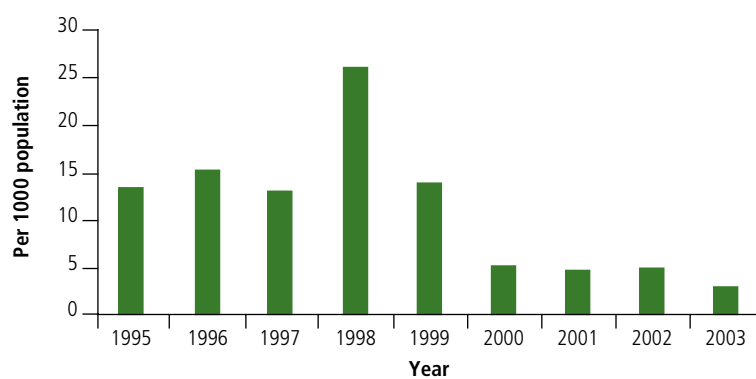
and 2003 (Fig. 1). The facility use rate in 2003 (392 per 1000 population) was more than double the national rate of 170 per 1000 population.³ Rates reported through the health information system have been confirmed in cross-sectional surveys in the four northern districts; for example, during the previous 12 months the proportion of children with an acute respiratory infection who went to a health facility increased from 38% in 1999 to 71% in 2004.

The maternal mortality ratio decreased from 218 per 100 000 live births in 1998 to 110 per 100 000 in 2003, compared with 530 per 100 000 nationally.⁸ Most maternal deaths in Lao PDR are due to postpartum haemorrhage and sepsis. Given that 86% of women deliver at home and comprehensive emergency obstetric care is not available in most district hospitals, this outcome warrants further analysis.⁸ One explanation might be the widespread adoption of contraception used for the purpose of

birth spacing. Current use of a modern contraceptive method increased from 12% of women in 1997 to 67% in 2003 (Fig. 2). This is more than double the national rate of 32%, and is reflected by a crude birth rate of 23 per 1000 population in 2003 compared with 34 per 1000 nationally.^{3,9} The proportion of pregnant women attending three antenatal clinic visits increased from 24% in 1997 (in six districts) to 58% in 2003 (in 10 districts), compared with 20% nationwide.⁸ Training and supervision of traditional birth attendants led to an increase in attended deliveries in the northern districts, from 17% of births in 1999 to 47% in 2004, compared with 17% nationally in 2000. The proportion of attended deliveries is higher in the six southern districts (67%). Moreover, all district hospitals in the province are able to provide basic emergency obstetric care.

The province-wide probability of dying (under age 5 years) in 2003 was 29 per 1000 live births and the infant mortality rate was 23 per 1000 live births, compared with national rates of 107 deaths per 1000 live births and 82 deaths per 1000 live births.² The low reported infant mortality rate was confirmed by a population survey in the four northern districts in 2004. The infant mortality rate was 21 per 1000 live births (95% confidence interval (CI) = 16–26), down from 47 per 1000 live births (95% CI = 41–53) in 1999. The decline in mortality is consistent with changing patterns of morbidity and health behaviours. For example, the incidence of reported cases of malaria increased between 1995 and 1998 perhaps as a result of a reporting artefact caused by expanded coverage of health facilities, but since that time it has steadily declined (Fig. 3). In 2003, 73% of households used an impregnated

Fig. 3. Incidence of malaria, Sayaboury Province, Lao People's Democratic Republic, 1997–2003



bednet (compared with 24% nationally), and the annual parasitaemia survey found a prevalence of 1.4% in 2003 compared with 6.6% in 2000. The malaria-specific mortality rate decreased from 15.8 per 100 000 population in 1995 to 2.5 per 100 000 in 2003.

There has been significant improvement in infant feeding practices. For example, the median age that mothers gave complementary foods increased from 2.8 months in 1999 to 3.7 months in 2001 and to 4.8 months in 2004. The rate of exclusive breastfeeding at 4 months of age increased from 28% in 1999 to 66.2% in 2004. Moreover, 63% of mothers surveyed in 2004 gave their child oral rehydration salts during their child's last episode of diarrhoea compared with 44% in 1999.

The one area of health service coverage that appears to remain inadequate is child immunization: only 26% of children aged 12–23 months surveyed in the four northern districts in 2004 had been fully immunized. The province-wide coverage of measles immunization in the same year was 30%. District teams attribute this to vaccine supply problems and a lack of adequate funds for outreach activities due to a poorly functioning national expanded programme on immunization.

Discussion

A comprehensive district-managed primary health care programme has achieved significant gains when compared with national health indicators (Table 1). However, some of our data are based on information from the routine health information system, which has been assessed as weak.¹⁰ Morbidity case reporting in Sayaboury has improved since fixed and mobile health services have expanded and health staff have been trained in basic epidemiology. The greatest weakness may be the reporting of births and deaths because there is no national vital events reporting system. Therefore, we checked the accuracy of data from the health information system by conducting three cross-sectional studies in the four northern districts, which represent the least developed part of the province. (Each survey used a standard two-stage random 30-cluster sampling technique with an administrative village as the primary sampling unit and a sample size of 600 households.) There was relatively

Table 1. Key health indicators in Sayaboury Province (2003) compared with national data from the Lao People's Democratic Republic (Lao PDR) (2002)

Indicator	Sayaboury (2003)	Lao PDR (2002)
Life expectancy at birth (both sexes)	71 years	59 years
Crude mortality rate	3.3 per 1000 population	6.3 per 1000 population
Crude birth rate	23 per 1000 population	34 per 1000 population
Infant mortality rate	23 per 1000 live births	82 per 1000 live births
Probability of dying for children aged < 5 years	29 per 1000 live births	107 per 1000 live births
Maternal mortality ratio	110/100 000 live births	530 per 100 000 live births

good correlation between indicators measured by the health information system and the population surveys.

Many programmes around the world have trained village health volunteers and traditional birth attendants; however, their long-term effectiveness has varied widely.^{11–13} The retention of village health volunteers and traditional birth attendants has depended on the quality of their supervision by higher levels of the health system and the willingness of the health system (and communities) to provide concrete roles.^{14,15} In the follow up in Sayaboury, supervision, monitoring and refresher training have been provided by district health teams, and retention rates have been high. District staff are not provided with salary supplements but are given accommodation and food allowances consistent with national government rates.

A reduction in the maternal mortality ratio without improved access to comprehensive emergency obstetric care contradicts many of the findings of safe motherhood literature.¹⁶ The United Nations Population Fund estimates that satisfying the unmet need for contraception and reducing pregnancies would reduce maternal mortality by 25–35%.¹⁶ The reduction in Sayaboury may be attributed in part to the high prevalence of contraceptive use; however, increased coverage of antenatal care, the training of traditional birth attendants, an increased rate of attended deliveries and improved basic emergency obstetric management have each played a part. Accessing antenatal care is known to positively influence safer care during delivery and has led to reductions in the maternal mortality ratio elsewhere even in the absence of comprehensive emergency obstetric care.^{17,18}

The Sayaboury programme has benefited from the long-term stability of provincial primary health care leadership, appropriate technical assistance and

consistent donor support. Its achievements have been realized with a modest investment of around US\$ 4 million over a 12-year period; this represents a cost of only US\$ 1.00 per person per year. A study in 2003 found that the recurrent costs of maintaining the programme (mobile clinics, health days, monitoring and supervision, three-monthly intersectoral and project management meetings, and annual refresher training for village health volunteers and traditional birth attendants) amounted to US\$ 41 000, or less than US\$ 0.13 per person per year.

Implications for national policy

Lao PDR is classified as a low-income country under stress where there is government commitment but little capacity to implement social programmes to aid the poor.¹⁹ A number of aid instruments and frameworks have been proposed to help improve the performance of such fragile states, including pooling donor funds, using social funds, contracting and providing budget support.²⁰ In some countries, governments and development partners have moved towards sector-wide approaches (SWAs); these have the advantages of creating greater efficiency and equity, decreasing transaction costs and sustaining health policy and systems development.²¹ In the Asia Pacific region only Bangladesh, Papua New Guinea, the Solomon Islands and several Indian states have adopted SWAs.

The Government of Lao PDR has gradually devolved administrative authority so that districts are responsible for planning and budgeting. Newly decentralized provincial and district health offices are struggling to cope with their increased technical and management responsibilities. Important lessons can be learnt from the decentralization experience of other low-income countries. The Tanzania Essential Health Interventions

Project was started in 1996 and developed 10 powerful planning tools and strategies that allowed health management teams in two districts to organize and integrate evidence-based health service delivery more efficiently. Extra-budgetary funds similar to those provided in Sayaboury — equivalent to about US\$ 1.00 per person per year — were provided by a sector-wide decentralized basket fund (mainly supported by Canada). The impact this had was similar to that seen in Sayaboury: mortality among children fell by more than 40% during the subsequent five years and death rates for men and women aged 15–60 years declined by 18% while health indicators for other districts in the United Republic of Tanzania remained stagnant.²² Although the Tanzania Essential Health Interventions Project has some similarities to the Sayaboury project (for example, a focus on malaria guided by local health information), it differs in that it was designed from its inception to influence policy in the health-service environment, following the 1993 World Development Report.²³

Health facilities in Lao PDR rely on user fees for most of their income; however, revolving drug funds provide a safety net for the poor in some provinces, such as Sayaboury. Pilot community health insurance programmes have not yet been scaled up, and they cover less than 10% of the population. Reliance on a combination of local resources and (often inadequate) central government grants may lead to more internal inequity. For example, in Ghana the level of income from user charges has varied considerably between regions, with the quality of services in poorer regions being significantly inferior to those in wealthier regions.²⁴ Other countries, such as Bangladesh, Uganda and Zambia, have focused on strengthening

district-level health management teams in the context of a SWAp. The SWAp process in Uganda has strengthened the move to decentralization and energized the Ministry of Health in the context of whole-of-government decentralization; in Zambia only the health sector has devolved.^{24,25} In Bangladesh, the Health and Population Sector Programme was introduced in 1997. It has already led to major efficiencies in the health sector that are symbolized by the shift made from 128 separate donor-funded health projects to a single programme. A review of the impact of the programme highlighted improvements in management but found little evidence of gains in service coverage and health status.²⁶

While a SWAp might be an effective strategy in Lao PDR, government policy currently focuses on the implementation of 31 health programmes classified as very high priority.¹⁰ In the absence of a SWAp, donors should support district-level and provincial-level partnerships that complement their central support for disease-specific programmes. This should be done in a way that helps achieve some of the currently defined elements of aid effectiveness. For example, province-focused and district-focused programmes should be aligned with national policies and should align their budgeting and reporting cycles to those of the national government. Projects should limit the number of expatriate technical advisers and avoid employing national staff on salaries many times higher than local government staff. If different development partners support health projects in different provinces, there should be harmonization through a regular process of donor roundtables. Joint monitoring and review missions should be undertaken so that different partners can observe progress in a number of provinces rather than only

those that are directly supported by a particular partner.

The policy and overseas aid environment in Lao PDR does not appear ready to adopt a SWAp. Countries such as Mozambique, Papua New Guinea and the United Republic of Tanzania have benefited from their key donors' commitments to SWAps; these donors include Switzerland, Australia, and Canada, respectively. However, there is no key health donor in Lao PDR; moreover, there has been a decrease in health support from donors. The government needs to make a conscious effort to analyse and incorporate lessons learnt from district-focused projects, such as was done in the United Republic of Tanzania. Other provinces would benefit if the Ministry of Health in Lao PDR were to adopt the district-level health management tools developed in Sayaboury and apply them elsewhere, most critically in the 47 poorest districts targeted by the National Growth and Poverty Eradication Strategy.²⁷ ■

Acknowledgements

The authors wish to acknowledge the role of all members of the Provincial Management Team and the 10 district teams in the implementation of the Sayaboury primary health care programme and its evaluation. Lisa Natoli reviewed the paper and provided valuable comments.

Funding: We acknowledge the consistent funding support provided by the Australian Agency for International Development (AusAID) and individual supporters of Save the Children Australia. Michael Toole was contracted through the Burnet Institute by Save the Children Australia to provide technical support to the evaluation of the Sayaboury programme.

Competing interests: none declared.

Résumé

Programmes de santé de district et réforme du secteur de la santé : étude de cas en République démocratique populaire lao

La République démocratique populaire lao (RDP lao) est classée par la Banque mondiale comme pays à faible revenu en difficulté. Les partenaires du développement cherchent à utiliser des instruments d'aide efficaces pour aider les pays ainsi classés à atteindre les objectifs du Millénaire pour le développement ; ces instruments comprennent des approches sectorielles (SWAp) appuyant des systèmes de santé de district décentralisés et visant à éviter la fragmentation et les chevauchements. En Asie et dans le Pacifique, seuls le Bangladesh, les Iles Salomon et la Papouasie-Nouvelle-Guinée ont adopté de telles approches.

Depuis 1991, un programme complet de soins de santé primaires dans la province reculée de Sayaboury a mis l'accent sur le renforcement de la gestion sanitaire au niveau du district, l'amélioration de l'accès aux établissements de santé et les efforts pour faire face aux causes de mortalité et de morbidité les plus courantes chez la femme et l'enfant. Entre 1996 et 2003, l'utilisation des établissements de santé a triplé et la proportion des ménages ayant accès à un établissement est passée à 92 %, alors qu'elle n'est que de 61 % au niveau national. En 2003, les taux de mortalité infanto-juvénile étaient inférieurs d'un tiers aux

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taux nationaux. Le taux de mortalité maternelle a diminué de 50 % bien que les soins obstétricaux complets d'urgence ne soient pas disponibles dans la plupart des hôpitaux de district. Ces tendances ont été obtenues avec un investissement de quelque US \$4 millions en 12 ans (c'est-à-dire l'équivalent de US \$1 par personne et par an).

Le projet n'a pas toutefois permis de surmonter les points faibles dans certains programmes nationaux de lutte contre des maladies, surtout le programme élargi de vaccination, qui exige

une gestion centrale forte. En RPD lao, pays qui ne s'est pas encore engagé à utiliser les approches sectorielles, les outils mis au point dans la province de Sayaboury pourraient aider d'autres bureaux de santé de district à assumer des responsabilités accrues en matière de planification dans le système récemment décentralisé. Les partenaires du développement devraient concilier l'appui apporté aux programmes de lutte contre des maladies spécifiques à gestion centralisée et l'aide aux soins de santé primaires intégrés horizontalement au niveau du district.

Resumen

Programas de salud de distrito y reforma del sector de la salud: estudio de casos en la República Democrática Popular Lao

La República Democrática Popular Lao (RDP Lao) está clasificada por el Banco Mundial como un país de bajos ingresos en dificultades. Los asociados para el desarrollo han procurado utilizar instrumentos de ayuda efectivos para ayudar a los países así clasificados a alcanzar los Objetivos de Desarrollo del Milenio; estos instrumentos de ayuda incluyen enfoques sectoriales que respaldan los sistemas de salud de distrito descentralizados e intentan evitar la fragmentación y la duplicación de esfuerzos. En Asia y el Pacífico, sólo Bangladesh, Papua Nueva Guinea y las Islas Salomón han adoptado enfoques sectoriales.

Desde 1991, un programa integral de atención primaria aplicado en la provincia remota de Sayaboury de la RDP Lao se ha centrado en fortalecer la gestión sanitaria de distrito, mejorar el acceso a los establecimientos de salud y responder a las causas más comunes de mortalidad y morbilidad entre las mujeres y los niños. Entre 1996 y 2003 se triplicó la utilización de los centros de salud, y la proporción de hogares con acceso a tales centros aumentó hasta un 92%, frente a sólo un 61% a nivel nacional. En 2003, las tasas de mortalidad infantil y en la niñez fueron de

menos de la tercera parte de las nacionales. La razón de mortalidad materna disminuyó en un 50% pese a que la mayoría de los hospitales de distrito carecían de servicios integrales de atención obstétrica de urgencia. Estos cambios fueron posibles gracias a una inversión de aproximadamente US\$ 4 millones a lo largo de 12 años (equivalente a US\$ 1 por persona y año).

Sin embargo, este proyecto no solucionó las deficiencias de que adolecían algunos programas nacionales de control de las enfermedades, especialmente el programa ampliado de inmunización, que requieren una gestión central robusta. En la RDP Lao, país que todavía no se ha comprometido a usar enfoques sectoriales, los instrumentos creados en Sayaboury podrían ayudar a otras oficinas de salud de distrito a asumir mayores responsabilidades de planificación en el sistema recientemente descentralizado. Los asociados para el desarrollo deberían equilibrar su apoyo a los programas orientados a enfermedades específicas gestionados centralmente con la asistencia a la atención primaria integrada horizontalmente a nivel de distrito.

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