



Assessment of Skilled Birth Attendance in Lao PDR



Ministry of Health - UNFPA
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Map of Lao PDR with the 4 provinces described in this assessment



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Glossary of Terms

ADB	Asian Development Bank
AMDD	Averting Maternal Death and Disability
AMTSL	Active Management of Third Stage Labor
ANC	Antenatal Care
AUN	Auxiliary Nurse
BTC	Belgian Technical Cooperation
CHP	Champasak
CS	Caesarean Section
DH	District Hospital
DOP	Department of Organization and Personnel
EED	Enfants et Developpement
EmONC	Emergency Obstetric and Neonatal Care
EPI	Expanded Program of Immunization
FIGO	International Federation of Gynecologists and Obstetricians
HC	Health Center
HRH	Human Resources for Health
ICM	International Confederation of Midwives
IMCI	Integrated Management of Childhood Illnesses
IMG	International Management Group (for Maternity Waiting Homes)
IMPAC	Integrated management of pregnancy and childbirth
IMR	Infant Mortality Rate
JICA	Japan International Development Agency
Lao PDR	Lao People's Democratic Republic
LPB	Luang Prabang
LUX	Luxembourg Development Cooperation
MCH	Maternal Child Health
MD	Medical Doctor
MDG	Millennium Development Goals
MgSO ₄	Magnesium Sulphate
MNH	Maternal Newborn Health
MMR	Maternal Mortality Ratio
MWH	Maternity Waiting Homes
MOH	Ministry of Health
MOMS	Midwives and Others with Midwifery Skills
N/A	Not Available
NGO	Non-Governmental Organization
NUR	Nurse
ObGyn	Obstetrician/Gynecologist
PHC	Primary Health Care
PHO	Provincial Health Office
PH	Provincial Hospital
XKH	Xieng Khouang
SBA	Skilled Birth Attendance; Skilled Birth Attendant
SCA	Save the Children, Australia
SNSEDP	Sixth National Socio-Economic Development Plan
SRV	Saravan
TICA	Thailand International Development Cooperation Agency
TBA	Traditional Birth Attendant
TOT	Training of Trainers
UNFPA	United Nations Population Fund
U5MR	Under 5 Mortality Rate
VHV	Village Health Volunteer
WFP	World Food Program
WHO	World Health Organization

EXECUTIVE SUMMARY

1. INTRODUCTION

Lao PDR has made progress in recent years to improve the provision of maternal child health care, but many challenges still remain, with the maternal mortality ratio remaining high. Lao PDR is committed to achieving its own Millennium Development Goals (MDGs), including reduction of MMR from 405 to 185 in 2015. The government is looking at ways to improve childbirth delivery services, recognizing that skilled birth attendance, including availability of EmONC, for all women is crucial. Resulting from a workshop in July 2007 where national MCH experts examined the situation on skilled care in Lao PDR, the Ministry of Health requested a comprehensive review of skilled birth attendance in the country. It is planned that this review will inform the next steps and contribute to the Human Resource Development Plan planned for later in 2008.

There exists a profound under-utilization of Maternal Child Health services in Lao PDR for many reasons. Over 80% of births are delivered without a skilled health worker, and in rural areas without roads 94.7% of births are without a health worker, with deliveries mainly conducted by a relative or friend. Women deliver at home, most of them still believing it is not necessary to seek medical care. There is a shortage of health providers, both in absolute numbers and in their distribution, with most in urban settings. The available provider and facility services, often of poor quality, attempt to function within an inadequate service delivery system (access, coordination, communication, referral, monitoring, and evaluation). Aggravating the poor health care situation are travel logistics; the reality is that Lao PDR at present has a dispersed, rural population, with up to 21 % living in rural areas without roads.

2. PURPOSE

The purpose of this review is to answer the question: *“What is the current capacity of Lao PDR to provide skilled birth attendance, also called skilled care, to its population?”*

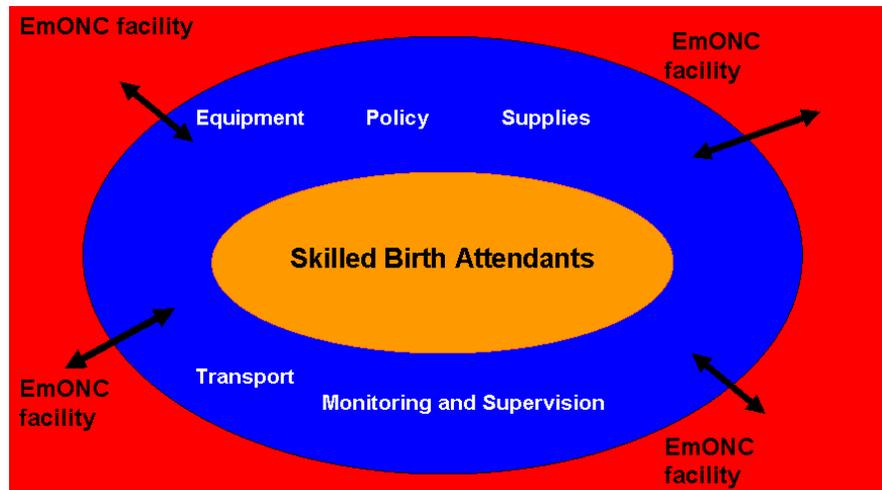
First, it is important to give an explanation of two key terms used throughout this study which are central to an understanding of the life-saving requirements for mothers and babies.

- 1. Skilled birth attendance, (SBA) is defined as a skilled birth attendant (SBA) working in an enabling environment with – or linked to – a referral system.** These three inter-connected elements comprise the fundamental international standard for saving mothers’ and babies’ lives. The **(I) skilled birth attendant** knows how to do the right things (knowledge) in the right way (skills). The **(II) enabling environment** means that both the policies and the work place conditions support the provision of the necessary care. **(III) Referral** means there is a reliable system in place for transport to a higher and suitable level of care.

The definition of a skilled birth attendant is: “an accredited health professional – such as a midwife, doctor or nurse – who has been educated and trained to proficiency in the skills needed to manage normal (uncomplicated) pregnancies, childbirth and the immediate postnatal period, and in the identification, management and referral of complications in women and newborns.” (WHO, 2004). While skilled birth attendants at

referral facilities require additional EmONC skills, all skilled birth attendants in the community require a core set of life saving EmONC skills.

Skilled Birth Attendance: Provider and supportive environment



2. **Emergency Obstetric and Newborn Care (EmONC)** is a set of functions that are internationally recognized as being requisite for saving the lives of mothers and babies in childbirth emergencies. Depending on level of the facility these are:

Basic EmONC (7 functions)

1. Parenteral (IV/IM) antibiotics
2. Parenteral oxytocics
3. Parenteral anticonvulsants for pre-eclampsia/eclampsia (magnesium sulphate recommended).
4. Neonatal resuscitation
5. Manual removal of placenta
6. Removal of retained products (MVA preferred)
7. Assisted vaginal delivery (vacuum aspiration or forceps)

Comprehensive EmONC (9 functions: above 7 plus):

8. Blood transfusion
9. Caesarean section

The national SBA assessment attempts to answer the following questions:

- 1) Do the policies provide for and support the provision of skilled attendance ?
- 2) Can staff provide skilled attendance, in particular the appropriate EmONC functions for the place they work?
- 3) Can facilities provide skilled care, in particular the appropriate EmONC functions?
- 4) Can education and training centers train/educate up to the required level for SBA? Can any existing cadre(s) be trained up to become competent SBA providers?
- 5) What community support by women and their families exists for utilization of health care facilities and providers to ensure they get skilled care?

- 6) Is there adequate coverage, meaning does the population have access to skilled care? Are referral systems in place, including transport, so that women and babies who require more advanced EmONC can receive the necessary treatment?

3. METHODOLOGY

The Minister of Health appointed an SBA assessment team committee. Under the management of the Vice Minister of Health, Mr Khamhoung Heuangvongsy, the SBA committee was comprised of high level representatives of the Department of Personnel, Department of Hygiene and Prevention, Cabinet, Department of Curative Services, MCH Centre, College of Health Technology, University of Health Sciences, and the Public Health School. Preliminary meetings with the Ministry of Health SBA Assessment Committee were held in mid December, 2007, followed by a workshop in Thalath with three consultants supported by UNFPA where the assessment plans were developed.

Throughout the survey the team did background literature review, gathered national data, and met with key informants at the national level.

The SBA Committee of the MOH selected 4 provinces for the field assessment, which took place in January 2008: Luang Prabang, Xieng Khouang, Champasak, and Saravan. The methodology used for the SBA field assessment adapted tools from midwifery reviews in Mongolia and Cambodia and EmONC tools from AMDD. The field assessment was included facility audits, questionnaires for providers, case scenarios and practical skills testing, as well as focus group discussions with the community. In all a total of 39 facility sites and 319 individuals were assessed, and 16 focus group discussions conducted with the community.

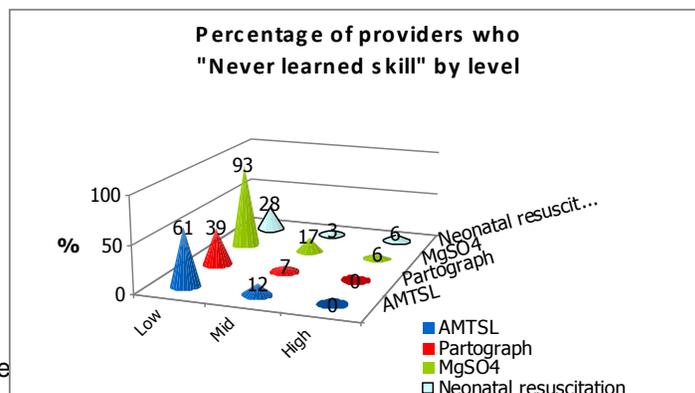
4. RESULTS

POLICY

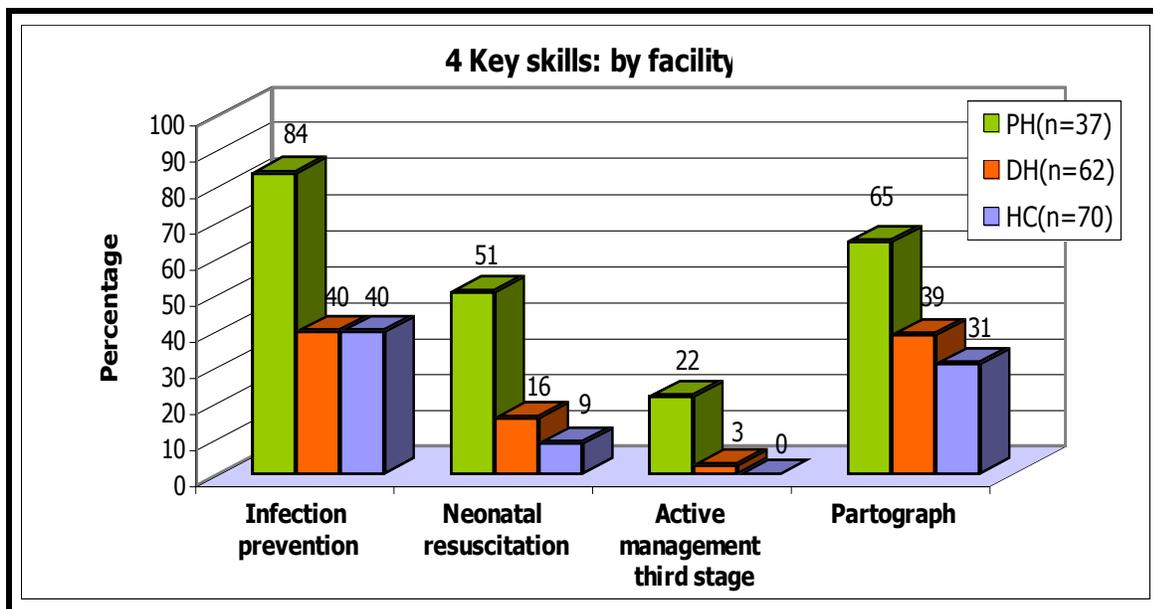
- The Ministerial Decision on Nursing and Midwifery Regulation, No. 656, MOH, of June 20, 2007, puts both nursing and midwifery together in its decree with a shared scope of practice but does distinguish the two disciplines with role descriptions for each.
- The *Essential Drug List* does not include the life-saving drugs, MgSO₄ or IM/IV antibiotics in the formulary for the health center level, and yet these medicines are on the most basic EmONC functions list.

PROVIDERS

The findings conclude that the capacity to provide skilled care in pregnancy, birth and the postnatal period is overall low in all 4 sample provinces. Of the 169 providers (low, mid, and high level) who were assessed most of the high and mid level providers had received training in the maternal and newborn health skills tested, while higher percentages of the low level staff had not received training.



However, the average scores from both the self-assessments and skills testing were less than 20% competency in selected maternal health skills. The overall score for all providers, at all facilities, in all provinces on the management of shock is only 21%. Knowing how to stabilize a mother in a hemorrhagic emergency is a fundamental skill required of all providers regardless of cadre or site of the birth whether it is home or central hospital.

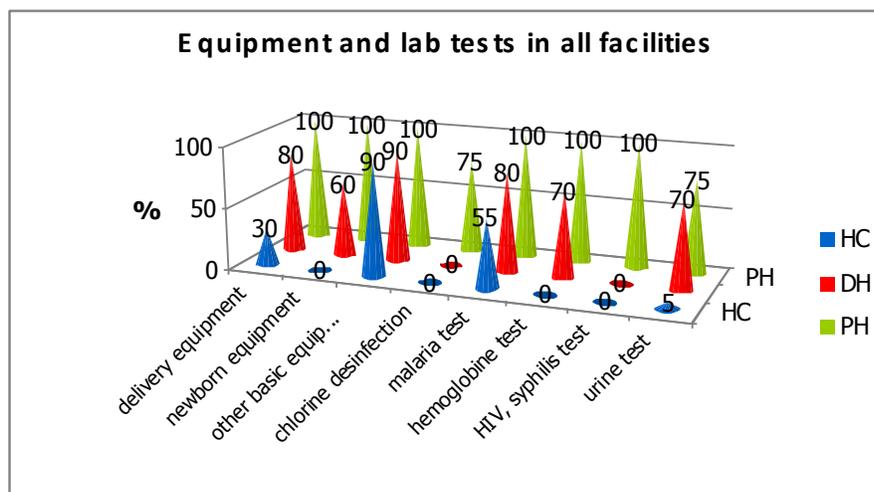
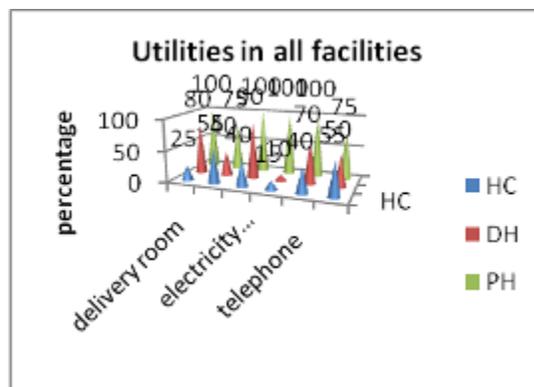
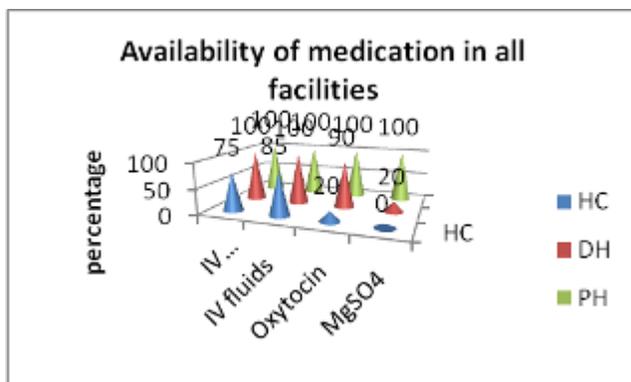


In the testing of skills provincial hospital providers performed better than district hospital and health centres. However, only 22% of provincial providers tested were competent in active management of third stage of labour, an important skill to reduce the incidence of post partum haemorrhage.

Providers get little chance to maintain their skills, with most births still occurring at home, especially at health center and district levels. Workforce shortages and mal-distribution of available staff for MCH services (preponderance working in urban rather than rural areas) need to be addressed. Despite the limited number of staff at district level, there are not enough healthcare jobs being created to deal with the workforce requirements or provide work for new nursing and medical school graduates

FACILITIES

The SBA team assessed 4 provincial hospitals, 10 district hospitals (4 type A with operation theatre, 6 type B without operation theatre) and 20 health centres. While provincial hospitals in general had adequate basic medications, equipment and facilities, there were deficits in district hospitals and health centres. Magnesium sulphate (the emergency management for eclampsia) was not available in most district hospitals or health centres. Health centres usually do not have oxytocin, necessary for both normal deliveries (AMTSL) and treatment of haemorrhage. Often toilets and running water were not available in or near delivery rooms, and cleanliness was not satisfactory in approximately half of the district hospitals and health centres. Chlorine, a recommended and cost effective disinfectant was not available in most facilities. Ambubags were not available in health centres and several district hospitals, although these are used in neonatal resuscitation.



EDUCATION/TRAINING

Pre-service education

The history of midwifery and nursing training in Lao PDR has undergone much change resulting in confusion about nursing and midwifery strata and titles. Other than medical school (not assessed), the other current health care trainings are for professional and technical nurse (mid level) and primary health care (PHC) worker (low level). There are plans, yet to be finalized, to resume medical assistant (mid level) training.

The review team assessed two health schools: the health school in Luang Prabang province and the school in Champasak province. MCH content in curricula for technical nurse and PHC worker are only 10% and 4%, respectively. Teachers do not employ adult learning methodologies, techniques used are still primarily lectures. In the testing of a small sample of provincial trainers, less than half could use Ambubag, perform AMTSL correctly or use partograph.

Facilities were adequate, recently upgraded by donors. More educational materials in Lao language were needed. Because of the low numbers of deliveries in facilities, students had difficulty getting sufficient delivery experiences to become SBAs. The central teaching hospitals have sufficient deliveries to become training centres, but at present do not provide the best teaching environment. Recommended medications and equipment eg MgSo4 and Ambubag

were not available in some, and teaching models and libraries were not available in most of the teaching hospitals.

In-service training

There are four regional training centers for MCHC, based at the regional hospitals or the schools: Vientiane, Champasak, Savannakhet, and Luang Prabang. The central facilities in Vientiane used for training are MCH hospital, Sethathirath hospital and Mahosot hospital. In terms of EmONC, the training package is based on the Lao translation of the WHO *Managing Complications in Pregnancy and Childbirth* MCHC staff expressed concern that they have no monitoring and evaluation system in place and that there are inadequate equipment and supplies to conduct trainings, and the number of trainings is dependent on available budget, usually from donor agencies and NGOs.

COVERAGE /ACCESS/ REFERRAL

Coverage

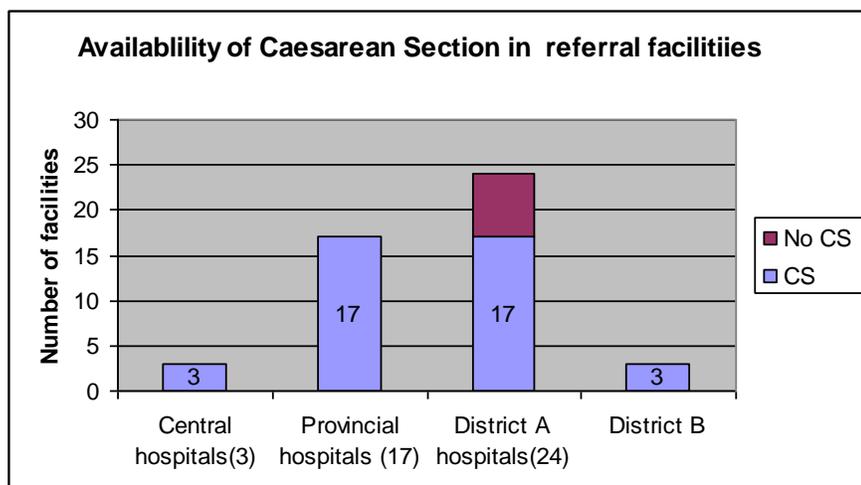
Pertaining to maternal child health, as quoted in the *Human Resources for Health Analysis of the situation in the Lao PDR, October 2007*, “The analyses of the correlation with maternal and child health needs show that those provinces that have the highest need are also the ones that have the lowest share of their medical staff and doctors at the district level.” There are inadequate numbers of health care staff in the workforce to provide skilled birth attendance. There is also mal-distribution of existing staff with a higher proportion in urban rather than rural areas. In 2005, 39% of newly recruited staff were allocated to the central level, and those were mostly high and mid level workers. Only 8 doctors are at health centers in the entire country.

The majority of the health workforce is made up of auxiliary nurses, a low level category. Medical assistants, mid level workers, are the next most numerous category.

According to the *HRH Analysis*, the staffing plan is to recruit no more of these cadres into the workforce. Meanwhile there are an increasing number of enrollees in nursing and medical schools without a concurrent increase in jobs for them upon graduation. This situation presents a workforce gap.

Access to EmONC

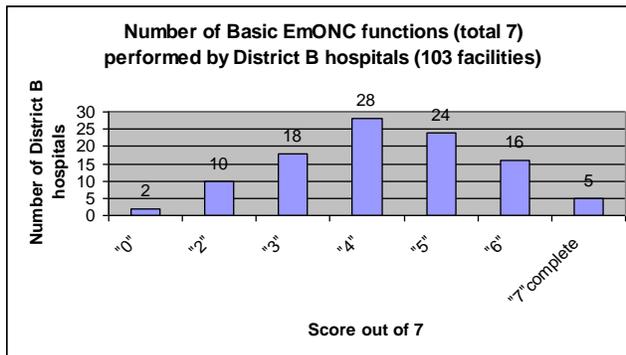
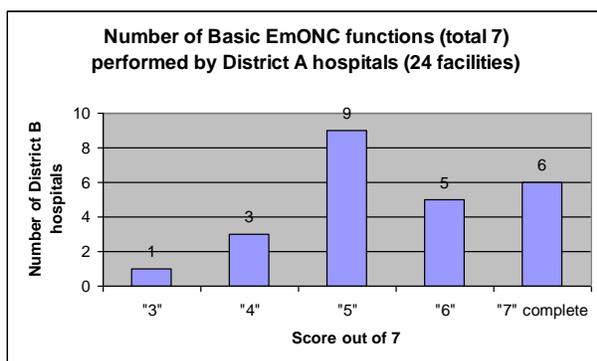
A national mapping, through a self reported survey of EmONC functions available in each province, was undertaken to measure the *availability* of health facilities which can offer emergency obstetric & neonatal care EmONC.



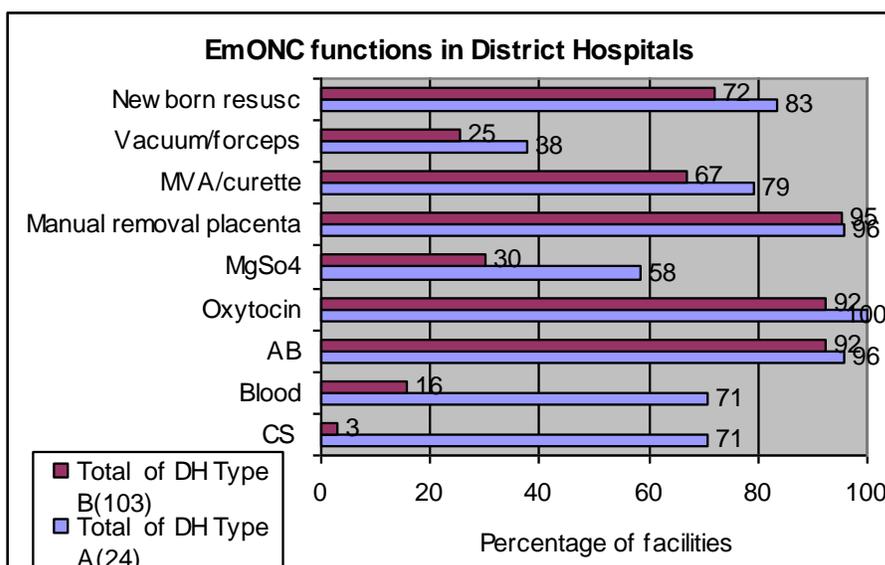
All central and provincial hospitals report that they can provide comprehensive EmONC. Seventeen of 24 district A can perform Caesarean section, and 3 district B hospitals have been upgraded to be able to. Although providing Caesarean section, less than two thirds of these hospitals could provide the full nine required functions of CEmONC (Annex 4).

Based on population and geographical location, the coverage of comprehensive EmONC is potentially adequate. However, these facilities are underutilized, as seen by the national Caesarean rate is 2%, well below international standard minimum of the 5% considered necessary for increased maternal/neonatal survival. In some provinces the percentage of births delivered by Caesarean section is 0.2-0.3%, based on available data.

The coverage of Basic EmONC, which is required close to the community, is low. Only 25% of District A hospitals can actually provide all 7 basic EmONC functions.

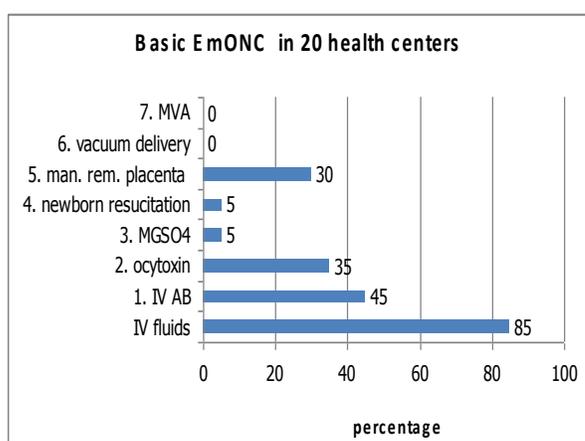


District B hospitals are in general even less able to function as Basic EmONC facilities, as only 5% report provision of the 7 basic functions. Excluding those district A and B hospital that are performing as comprehensive facilities, only five district hospitals are providing full Basic EmONC, four of which are in Xayabouly. Xayabouly had the best coverage of EmONC, with four hospitals providing all CEmONC functions, four district hospitals with full BEmONC functions, and four other district hospitals providing six of the seven required BEmONC functions.



As seen in the figure of EmONC functions, many facilities lack magnesium sulphate for eclampsia, Ambubags and skills for neonatal resuscitation. Several require increased capacity to perform forceps/vacuum for assisted deliveries.

The UN Indicator recommends that a healthcare facility with basic EmONC is within an hour of every childbearing woman. 50% of women who die of postpartum hemorrhage do so within 2 hours, and initial life-saving steps within the first hour can make the difference. In Lao, given the geographical barriers to reaching hospital, this requires that health centres should be able to provide life saving EmONC functions such as provision of oxytocin, antibiotics, magnesium sulphate and neonatal resuscitation, as well as IV fluids for resuscitation prior to referral. The study sample of 20 health centre shows that while most health centres can provide IV fluids and one third can provide oxytocin, availability of newborn resuscitation and magnesium sulphate was low. However, some health centres were successfully providing at least some of these elements, showing that health centres could provide these functions.



Referral

Throughout Lao PDR, lack of accessibility to health care, especially accessibility to a referral center, is one of the impediments to having a skilled birth attendant at every birth. For the 4 provinces assessed, as elsewhere, the distance between villages to health facilities is one of the main obstacles for access to EmONC.

Facilities and providers must have clear lines of referral, communication (phone/radio), transportation, with direct links from where births take place (home or health facility) to the referral facility DH-A or PH which can provide comprehensive EmONC. These are still lacking in Lao PDR.

COMMUNITY

From the community discussions it appears that women, at least those in the vicinity of the district hospitals and health centers assessed, are starting to feel they can trust the care in facilities and see the benefit of services. The community works together in emergencies to help front the money if needed and make sure the women get transport to the hospital.

In several districts where TBAs have received training for their role in educating women about the need for skilled care, there are higher percentages of women coming into facilities for ANC

and delivery. The role of TBAs needs continued support, not to do the births themselves, but for helping link women to the healthcare system. The TBA should be seen as an extension of the health care system, serving as an advocate for women to get skilled birth attendance, providing social support and community mobilization.

5. THE WAY FORWARD: RECOMMENDATIONS AND OPTIONS

Faced with such a large-scale problem of poor capacity in skilled birth attendance, as confirmed by the review, it is tempting to look for the immediate solution, the “quick fix”, the cheapest option. Instead, the review focused on the long-term solutions for improving the capacity for skilled birth attendance (including EmONC) in Lao PDR because it is strongly felt that improvements will only come from a national commitment to a well-developed, carefully thought out plan, one which takes time, talent, cooperation, and resources.

The evidence in both developing and developed countries in the region shows that it is midwives and others with midwifery skills that can make a difference (UNFPA, 2007) in the lives of mothers and babies and contribute to the reduction in the MMR and neonatal mortality. It is estimated that up to 15% of women and newborns will have complications that require interventions. The availability of EmONC when required is essential to save lives. For the provision of skilled birth attendance and EmONC access for all pregnant women and families, the review makes the following recommendations.

LONG TERM SOLUTIONS

To improve access to skilled providers at delivery and availability of EmONC:

Introduce Midwifery Skills Education Program(s)

Start programs in registered or community midwifery (minimum 18 months up to 4 years) at both vocational and academic schools, creating a number of pathways to increase the availability of midwifery skills in Lao PDR. Much must be done before the teaching can begin: the curriculum has to be developed or adapted; teachers/trainers must be found or educated to teach the students, and facilities (both school and clinical sites) must be expanded to receive the added students. Jobs must be created for those midwives once they graduate. And prior to all that, funding is required to support training programs once the concept is approved at the highest level. A public relations campaign could be started to promote the use of midwives, since midwifery is not commonplace or well known in Lao PDR at present.

The 2 categories of midwifery skills would be:

1. Low level midwifery skills program, with child health skills (Title could be “Maternal/child community provider”, “primary health midwife”) of 2 years if direct entry. It is intended that recruitment should be similar to the primary health care worker, from ethnic groups or local communities attending the health centre where the provider will be placed post graduation. This solution addresses the government goal of having a skilled birth attendant at every health center.

2. Mid level midwifery program leading to a bachelor degree for a professional midwife (1.5 – 2 years for existing technical nurses; 4 years for direct entry).The first 2-3 years of the direct entry

course would be shared with professional nurse training supported by the College of Health Technology.

The main report details the different routes of entry to these midwifery programs.

Issues Related to Above Long-Term Solutions:

Curricula need to be developed for above midwifery programs, using internationally recognized standards of practice, incorporating basic skills adapted from the International Confederation of Midwives (ICM) Core Competencies. Such curricula exist but need adaptation to the Lao context. Likely outside midwifery/EmONC curriculum expert(s) and competency-based trainers would be needed. Programs need to use adult-learning theory, with use of models for teaching skills in the classroom and have at least 60% clinical practice component. Clinical practice sites must reach minimum criteria for numbers of deliveries and other standards. Additionally, there must be accreditation of clinical practice sites, especially that they can provide the number of deliveries required of the students.

To achieve more ethnic women trained as midwives or skilled birth attendants, more attention to primary and secondary education for these groups is required. Consider midwifery scholarships in secondary school for those interested in completing secondary education and becoming midwives.

Increase MCH component in pre-service education of all cadres.

Particularly at the health center level, all cadres (including PHC, registered and professional nurses, and doctors) require basic MCH knowledge including FP and life saving EmONC skills in emergencies. They do not require full SBA competencies and will not be classified as skilled birth attendants. However all health staff have to have the ability to recognize problems, stabilize and refer.

Teachers need to be trained up. This requires immediate attention so teachers learn EmONC/SBA/midwifery competencies and can teach them up to the necessary standard. Intensive Training of Trainer courses are needed, of 3-6 month duration, with a strong clinical component for teachers to gain clinical competency themselves.

MCH Hospital can become the national training center. Being considered for upgrading or being rebuilt, it would be a good clinical training site for midwife students and teachers to get TOT as there are more than 10 births a day. This would be then considered a “centre of excellence”.

All in-service trainings must be approved by the MOH who are to be informed of all staff receiving in-service training, regardless of the organization providing it, in order to maintain an HRH database. Such tracking will make it easier for MOH when/if staff change location. Additionally, in order to maintain skills proficiency, a system is needed for periodic refresher training wherever there have been EmONC trainings.

Donor groups need even more coordination of their activities, especially trainings and education programs, to avoid duplication, confusion, work at cross-purpose, and waste of money.

Need for consistency in training methods and content:

- Use same manuals (e.g. IMPAC book, adapted to Lao context),
- All trainers trained to same standard.
- Monitoring and evaluation build-in from the start.

SHORT TERM SOLUTIONS

Attention to this need for some immediate solutions to get facilities upgraded and providers trained with EmONC skills, must not take the focus away from the long-range goal of developing cadres of skilled birth attendants, primarily midwives.

❖ **PROVIDERS:**

Make a coordinated national plan for in-service training for life saving EmONC trainings for existing providers, to take place at district level when suitable.

This should be of two types 1) life saving skills for all providers and 2) more detailed plan should be made for specific skills in higher level facilities, based on additional needs assessments for skills not covered in this assessment eg MVA, Vacuum/forceps, Caesarean section.

Given the very low scores that the review found in assessing staff on EmONC it is imperative to figure out ways to get staff trained up as soon as possible.

- Length of trainings will depend on which level of EmONC functions are being taught. Participants need to be given enough time clinically to practice the new functions under supervision.
- This needs a training team skilled in competency-based training, with end evaluation of participants' skills. Coordination is needed between MCHC and Curative department for this training, with an agreed plan for joint monitoring and supervision.

Increase clinical experience through site visits to neighbouring countries with high numbers of institutional deliveries.

- Particularly for trainers, a rapid increase in clinical experience is required. This can be achieved through site visits to neighbouring countries with hospitals which have high numbers of births. The quality of the trainers in the clinical sites needs to be ascertained prior to these training visits and a detailed plan for improving specific competencies needs to be designed for Lao providers. The site visits need to be part of an overall training plan for providers.

SBA staffing requirements:

- Minimum 1 SBA should staff all functioning health centers that provide MCH care = 630 HC. These staff will provide FP, ANC, life saving EmONC skills, PPC and newborn care, as well as management of childhood illness (IMCI). In certified health centres they will also provide facility delivery services. They require the necessary drugs and equipment (including oxytocin, magnesium sulphate, Ambubag, IV fluids) to provide the core life saving 4 EmONC skills.
- SBA needed at DH level: 5 per DH = 620; these should all be mid level staff, able to provide the 7 basic EmONC skills.

- SBA needed at PH/CH level: 10 per hospital = 200; these should all be mid and high level staff. In addition to the 7 basic EmONC skills, a core number of staff need to be able to do Caesarean section and blood transfusion.

Many more jobs are needed and need to be created so that graduates of healthcare programs have jobs to go to. There has been a recent increase in health education class size without a corresponding increase in the number of graduates hired. More staff needs to be placed at district level in those provinces with highest need. Also, those districts need a higher proportion of mid-level providers.

Skilled birth attendants need salary scales that reflect their education and the level of responsibility that their jobs entail. There needs to be an incentive structure for retention of skilled birth attendant providers in rural posts and retirement plans for them.

Traditional birth attendants have varying roles in births across Lao. While the majority of births are attended by relatives/friends, TBAs only attend 12.1% of births nationally. However in some provinces in the south, TBAs play a larger role. In these provinces it is recommended that the role of TBAs is changed from delivery to being the community educator about FP, pregnancy and the need for skilled health personnel to attend the delivery. They could also have a role in community mobilization for emergency transport. Younger TBAs could be encouraged to undertake the 2 year training to become a community midwife.

❖ **FACILITIES:**

Facility upgrade for maternal and newborn health

Basic requirements are running water in delivery rooms and toilet facilities near to delivery rooms in all district and provincial hospitals. A monitoring system should ensure that basic cleanliness standards are maintained.

Comprehensive and Basic EmONC

Central and Provincial hospitals are able to provide CEmoNC. District A hospitals (and the 4 District B hospitals) currently providing Caesarean section need to be upgraded to provide all 9 CEmONC functions. All district B hospitals need to be able to provide all 7 basic EmONC functions. This is achievable in a relatively short time period. In some cases this only requires regular logistic supply of Magnesium sulphate, oxytocin and supply of Ambubags. Others require MVA, vacuum extraction with appropriate training (as above).

Proved all HCs with the “basic EmONC kit” (IV set, parenteral antibiotics, oxytocin, magnesium sulphate, ambu bag), as well as training for all staff at health centre level. To address the emergency complications arising in remote rural areas, all health centres should be able to provide these life saving skills for initial emergency stabilisation prior to referral to district hospitals.

Some health centers that provide MCH (Health Centre Type A) should be designated to become birth centers:

- They should be upgraded to have communication and referral capabilities.
- They must have at least the very basic 4 EmONC functions, preferably the 7 functions for remote rural birth centres.

- There must be one mid level provider with midwifery/SBA skills and one low level provider with EmONC skills.
- There should be a separate birthing room with necessary equipment and enough space for husband and/or family member.
- There must be running water, electricity, telephone, transport,
- Proper decontamination and sterilization equipment.
- Care must be provided 24 hours.
- Accreditation with a logo as an approved birth center.

Require mandatory accreditation of all health facilities to reach their EmONC standard¹ within 2 years; provide incentives for administrators and staff to achieve the goal. Facility to receive a logo when standards achieved that indicates level of service of facility. Similarly staff can have recognition of number of competencies achieved after EmONC training.

An operational referral system to basic EmONC should be no more than 1 hour away from the woman's home. While addressing referral systems was beyond the scope of this report, increased support of community transport systems and improved communication from village to hospitals should be investigated more fully.

DH-A hospitals could add, especially in remote areas, a maternity waiting room for patients, as in the Silk Homes project, or on a smaller scale, the help encourage women to come into facility in the last weeks of pregnancy, await birth there, meanwhile receiving important health information and late pregnancy monitoring. The women should not have to pay to reside there while waiting, nor have to pay for their maternity services.

❖ **POLICY:**

Policy should require provision of EmONC throughout the Lao PDR health care system, **basic or comprehensive, depending on the facility level. The policies must stipulate who can provide it, the essential drugs to be provided (including life saving EmONC medication at health centre level), the facility requirements for it, a referral plan, and a monitoring system to maintain quality level of EmONC. As proposed, the limited set of 4 basic EmONC functions (IM/IV antibiotics, injectable oxytocin, injectable magnesium sulphate, and neonatal resuscitation, plus IV fluids for emergency stabilization) should be accepted as suitable and required for health center level or where births occur.**

Policies and standards must stipulate that midwives and nurses can do births and emergency measures on their own responsibility. Too often in hospitals the doctors do the births when the nurses and midwives are capable but do not get the practice, thus their skills suffer. Allow nurses to do normal deliveries in hospitals. Policy permits but standard of practice often has the doctor do the birth if he/she is on site.

6. CONCLUSION

¹ Comprehensive and District A hospitals should have accreditation for the 9 CEmONC functions; District B hospitals for 7 Basic EmONC functions. Health centres should have accreditation for a minimum of 4 functions. After training, providers should have similar accreditation for individual competencies, for each of the maximum of 9 competencies.

The lack of adequate human resources is the primary gap found in the assessment of skilled birth attendance in Lao, PDR. Creating a new cadre of skilled birth attendant and the up-grading of existing MCH workforce to become skilled birth attendants, is the foremost need. Nonetheless, making these urgent human resource improvements cannot occur in a vacuum. There must be concurrent attention to all the other factors that establish the enabling environment. These are:

- political will to make change happen,
- the funding for it,
- functional facilities that provide the suitable level of EmONC,
- good education and training programs for skilled birth attendants/midwives,
- access, and a community ready to utilize and benefit from a good maternal child health delivery system.

CHAPTER 1

MATERNAL AND CHILD HEALTH CARE IN LAO PDR

Background

A woman giving birth in Lao PDR faces more risks than a woman giving birth in one of her neighboring countries. In Lao PDR, at least 3 women die every day due to pregnancy. That means 1,300 women die each year (WHO/UNICEF/UNFPA/The World Bank 2007). A woman's lifetime risk of maternal death is 1 in 33 for Lao PDR, the highest in SE Asia, and third highest in the Asia Pacific region. Despite multi-lateral efforts in the last decade by the government and donor partners to improve maternal and newborn health, maternal mortality remains alarmingly high. MMR is difficult to measure accurately but the 2005 Census estimate was 405/100,000 (Census 2005). This is lower than the estimate of 660 for the same year ((WHO/UNICEF/UNFPA/The World Bank 2007), which has a range of uncertainty of 190 to 1600 . Contrast that number with those of the neighboring countries: Vietnam (150), China (45), Myanmar (380, and Thailand (110) ((WHO/UNICEF/UNFPA/The World Bank 2007).

Babies don't fare any better. Each year in Lao PDR it is estimated that 5,200 babies die in the first week of life and 6,400 are stillborn (WHO 2005). The neonatal mortality rate is 26/1000 births (LRHS 2005). The infant mortality rate (IMR) is 70/1000 babies born (Census 2005). To achieve a decrease in infant mortality, it is important to address early neonatal mortality (deaths in the first week of life, which are closely related to care in pregnancy and delivery), which accounts for a significant proportion of infant deaths (28% of Lao IMR in 2000, WHO 2005).

Despite the numbers, progress has been made in recent years, and these numbers reflect improvements overall. The government estimate for MMR of 405 is an improvement from the previous figure of 530 in 2002.

Lao PDR is a signatory of the Millennium Declaration to eliminate global poverty and is therefore committed to achieving its own Millennium Development Goals (MDGs). In Lao PDR, the policies, although non-specific, do reflect the emphasis of the government to make improvements in Maternal Child Health (WHO, 2004).

To reach the MDG targets, the Lao PDR's MMR needs to decrease from the government estimate of 405 to 300 in 2010 and to 185 in 2015. The IMR should reduce from the current 70 to 45 in 2015.

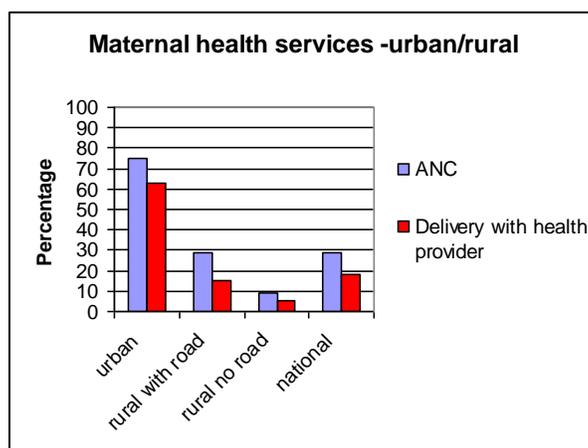
As Maternal Mortality Ratio is difficult to estimate with accuracy, the proportion of births attended by skilled birth attendants is used as a key process indicator for the MDGs. In Lao PDR, only 18.5% of women have a skilled provider at delivery (LRHS 2005). This has only increased marginally (from 17.4%) in the last 5 years. This is the lowest coverage in the southeast Asia region, and fourth lowest in the Asia Pacific region (UNFPA 2007). The national MNCH program has the objective of increasing births attended by skilled personnel to 35% and 50% by 2010 and 2015 respectively. Only 12.8% of women deliver in a facility (LRHS 2005). In remote rural areas without roads, only 5.3% deliver with skilled personnel and 96.5% of women deliver at home (LRHS 2005).

Nationally, the majority of deliveries are assisted by relatives i.e. 63.4% of the deliveries are assisted by relatives. A lower 12.1% are assisted by TBA's, making clear that use of TBA's is not the most common practice in the country (LRHS 2005). Reasons for not giving birth in the hospital are: 75.7% of women do not find it necessary to deliver in the hospital, while for 33.7% of home births, long distance from a hospital was a factor, while only 5.5% of women mentioned cost as a barrier to delivery in a facility (LRHS 2005).

In comparison to other countries in the region where antenatal care coverage is relatively high, in Lao PDR 71.5% of women have no antenatal care, thus having no links with the health system during pregnancy, making it unlikely she will deliver with skilled personnel or in a facility. Again, this is more extreme rural areas without roads, where 91.1 per cent of pregnant women do not see a provider during pregnancy.

In Laos, 27% of the population lives in urban areas, 52% in rural areas with road access and 21% in rural areas without roads (Census). From the National Health Survey 2001, 61.5% of villages are less than 4 km from a health facility, and only 14.2% are more than 16 km. Maternal health services are not being utilized by women in rural areas, even for those who live relatively near facilities, with road access (Figure 1.1, source LRHS 2005)).

Figure 1.1 Utilisation of maternal health services by urban/rural



International and regional studies show that 15% of women and newborns will develop complications in pregnancy and birth requiring medical intervention. Few of these complications can be predicted but most can be managed with a skilled birth attendant, with back up referral to an EmONC facility. The 81.5% of women delivering in Lao without skilled personnel face high risks of mortality and morbidity due to complications. In addition to a skilled provider at delivery, access to facilities and staff who can provide back up emergency obstetric and neonatal care (EmONC) is required.

There is a shortage of health providers, both in absolute numbers and their distribution in the country, the majority being in urban rather than rural areas. (Vangkonevilay, 2007). Maternal health services are not being provided by the most cost effective staff. Over half the antenatal care is provided by doctors. Similarly in urban areas, doctors provide assistance in 56% of the

attended deliveries, whereas their skills are better utilized managing complicated cases only. There is a lack of capacity in designated EmONC facilities and lack of referral systems.

Summary

Thus there exists a profound under-utilization of Maternal Child Health services in Lao PDR. These provider and facility services, often of poor quality, attempt to function within an inadequate service delivery system (access, coordination, communication, referral, monitoring and evaluation). Although there are geographical barriers to remote rural areas, the majority of the population are accessible, but are not being provided with quality maternal and newborn health services.

CHAPTER 2

PURPOSE: TO ASSESS THE CURRENT CAPACITY OF SKILLED BIRTH ATTENDANCE IN LAO PDR

The purpose of this review is to answer the question: “*What is the current capacity of Lao PDR to provide skilled birth attendance, also called skilled care, to its population?*”

The reason for doing an assessment of Skilled Birth Attendance (SBA) is to identify where things are right now in Lao PDR. The methods, the tools, represent the “ruler” that is used to measure. The point is not to show “good” and “bad” places and providers but to establish what the average care level is in Lao PDR right now. From that benchmark it can be learned where health care services have to go in order to meet the minimum international standard required to save the lives of mothers and babies

First, it is important to give an explanation of two key terms used throughout this study and central to an understanding of the life-saving requirements for mothers and babies.

- 3. Skilled Birth Attendance, (SBA)** is defined as a **skilled birth attendant (SBA) working in an enabling environment with – or linked to – a referral system.** These three inter-connected elements comprise the fundamental international standard for saving mothers’ and babies’ lives. The **(I) skilled birth attendant** knows how to do the right things (knowledge) in the right way (skills). The **(II) enabling environment** means that both the policies and the work place conditions support the provision of the necessary care. **(III) Referral** means there is a reliable system in place for transport to a higher and suitable level of care.

The skills required by a skilled birth attendant depend on the level – community or referral. The table below summarises the delivery skills that are required at community level, whether the delivery occurs in the health centre or at home. These include several emergency obstetric and neonatal care functions, as described in the section.

A skilled attendant should be able to perform the following functions at home or in a facility

1. Safely conduct a normal delivery using aseptic techniques
2. Use partograph to recognize obstructed labour
3. Active management of the third stage of labour²
4. Provide immediate care of the newborn including resuscitation
5. Initial management of post partum haemorrhage through use of parenteral oxytocics and abdominal massage

² Active management of third stage of labour includes 1) prophylactic oxytocin before delivery of placenta, 2) controlled cord traction and 3) fundal massage.

6. Initial management of pre-eclampsia and eclampsia through use of magnesium sulphate
 7. Recognize and manage post partum infection through use of parenteral antibiotics
 8. Know how and when to refer women to the next level of care and stabilize them for their journey
- And in a facility delivery, all of the above plus*
9. Repair of tears
 10. Manually remove the placenta
 11. Perform assisted vaginal delivery through the use of a vacuum extractor
 12. Manage incomplete abortion with manual vacuum aspiration (MVA)

Adapted from Carlough and McCall 2005. and UNFPA 2004.

1. Emergency Obstetric and Newborn Care (EmONC) is a set of functions internationally recognized as being requisite for saving the lives of mothers and babies in pregnancy and childbirth emergencies. The number of functions provided depends on the level the knowledge and know-how to stabilize a mother and baby in an emergency of the facility. In addition, at all levels of health facility it is required that staff have and for transport.

There are 2 levels of EmONC:

(1) **Basic EmONC** skill which should be available at all district hospitals (DH), both A and B, provincial hospitals as well as central hospitals. These include:

1. Parenteral (IM/IV) antibiotics
2. Parenteral Oxytocin
3. Parenteral anticonvulsants (Magnesium Sulphate)
4. Neonatal resuscitation
5. Manual removal of placenta
6. Assisted vaginal delivery (Vacuum or forceps)
7. Removal of retained products (MVA)*
(plus IV fluids for stabilization of mother)

Note * : it is believed that Lao PDR does not yet have manual vacuum aspiration (MVA) that is recommended by WHO as preferable to curettage. MVA can be performed in low level facilities..

(2) **Comprehensive EmONC** skills, which should be provided in all district A hospitals and all provincial hospitals include all of the above, plus:

- | |
|--|
| <ol style="list-style-type: none">8. Caesarean section9. Safe blood transfusion |
|--|

For the Lao context, a more limited set of life saving skills could be considered for low levels such as health centres, prior to referral to District hospitals for additional interventions. The core set of functions for all lower level staff should include:

- | |
|---|
| <ol style="list-style-type: none">1. Injectable antibiotics2. Injectable oxytocin3. Injectable Magnesium Sulphate4. Neonatal resuscitation <p>(plus IV fluids for stabilization of mother)</p> |
|---|

The national SBA assessment attempts to answer the following questions:

- 1) Do the policies provide for and support the provision of skilled attendance (skilled care)?
- 2) Can staff provide skilled care, in particular the appropriate EmONC skills for the place they work?
- 3) Can facilities provide skilled care, in particular the appropriate EmONC skills?
- 4) Are referral systems in place, including transport so that women and babies who require more advanced EmONC can receive the necessary treatment?
- 5) Is there adequate coverage, meaning does the population have access to skilled birth attendance?
- 6) Can education and training centers train/educate up to the required level for SBA?
- 7) What community support by women and their families exists for access and utilization of health care facilities and providers to ensure they get skilled care?
- 8) Can any existing cadre(s) be trained up to become competent SBA providers? If so, what are recommendations for how to achieve this? If not, what recommendations can be considered for introducing new cadre(s), given the current capacity?

Summary

From the information obtained, by the field research, analysis of data, desk reviews, and meetings with key informants and stakeholders, the MOH/UNFPA review team will answer these important questions, draw clear conclusions and make recommendations for solutions, both short-term and long-term.

It is anticipated that this report will make a key contribution to the development of a midwifery skills development plan and provide input into the Lao PDR Human Resource Development master plan.

CHAPTER 3

METHODOLOGY FOR CONDUCTING THE REVIEW

3.1. Preparations

Preliminary meetings with the Ministry of Health SBA Assessment Committee were held in mid December, 2007, to discuss the approach for doing the assessment and initial plans for conducting it. These discussions involved deciding on the workforce and facilities to be studied for the evaluation of SBA capacity. Also discussed were selection of the assessment tools and which provinces to use for the most representative sample.

Important note: in most developing countries, a review of midwifery would be conducted, as it was in Cambodia and Mongolia in 2007, since midwives are key providers of MCH care in countries. That is not possible in Lao PDR as there is no distinct midwifery profession at present. Thus to obtain the information of who does or does not provide skilled care, it was decided that this review would evaluate all cadres of health professional involved in providing maternal child health.

There followed a workshop in Thalath organized by the MOH SBA Committee, their Technical Team, and the UNFPA assessment team. In all, 21 people worked for 2 days, December 20-21, 2007 to further develop the assessment plans. The participants divided into 3 work groups, each focused on either: 1) finalizing the assessment survey instruments, 2) determining the sites to be studied and the travel logistics, or 3) developing tools for obtaining national statistical data on current workforce and facility capacities.

Finally, there were several meetings between the UNFPA Nurse/Midwifery Technical Specialist and the MOH SBA Committee Chairman to finish preparations regarding field personnel, the budget, the airline and ground travel schedules, and accommodations in the field. All of this work required precise coordination with the provincial and district health officers of the sites to be visited. Meanwhile, final preparation time was spent on printing, copying, coding, organizing the large number of assessment tools, and assembling the equipment required to conduct the skills tests.

3.2. Sample



- The intent was to choose a sample representative of the 17 provinces in Lao PDR, but the choice of provinces were limited by time constraints and travel restrictions. Thus the selection was not a random sample but a hybrid between convenience and of representation.
- The SBA Committee of the MOH selected 4 provinces for field testing: 2 in the north, Luang Prabang and Xieng Khouang, the first considered a high functioning province in terms of health care and the second considered lower-functioning. For the south, Champasak province was selected for high-functioning status and Saravane province as a lower-functioning location.
- It was hoped to obtain a 10% sampling. That was achieved with the district hospitals. 100% of provincial hospitals were studied. It was not possible to visit 10% of health centers which would have meant more than 80 health center visits, impossible in the time frame. The similarities found in the 20 health centers assessed were believed to indicate that they were an adequate representative sample.
- Site assessments were done of the 4 provincial hospitals (PH), 10 district hospitals (DH), 20 health centers (HC), 3 maternity waiting homes (MWH), and 2 health education facilities.
- Human resource assessments were completed for all cadres of MCH health staff at hospital and health center sites for a total of 169 providers.
- 39 Teachers and 111 students from 2 health educational facilities were assessed.
- Opinion from women in the community regarding SBA was obtained from 16 Focus Group Discussions (FGDs), held at 10 different gatherings near selected district hospitals and health centers, for a total of 162 mostly female village members.

- Annex 2 is a table which summarizes all the sites and providers in the field assessment.

3.3. Tools

6 tools were used:

- Tool #1 Provider
- Tool #2 Health Care Facility
- Tool #3 Community
- Tool #4 Teacher
- Tool #5 Student
- Tool #6 School

- Tool # 1 for the **Provider** is an amalgam of 2 tools, developed because it was decided to use one tool to test all cadres (from auxiliary nurse up to ObGyn doctor). The tool used by other studies in the region, Cambodia and Mongolia in 2007, is specifically designed for midwives, based on the ICM core competencies. That tool is combined with the Columbia University, Averting Maternal Death and Disability (AMDD) tool which is used for assessments of EmONC in childbirth providers. The combined tool has a total of 85 questions, asking knowledge, learning, and expertise on skills for normal birth, increasing in complexity to the skills required of ObGyn doctors. In most settings, where there were no doctors, respondents would stop at question # 62, since they had no knowledge or exposure to the more advanced skills in the later questions.

Tool # 1 for Providers is a three-part tool in order to use a triangulation method of testing: 1) a self-assessment questionnaire asking respondents' feelings of competency in skills, 2) a practical hands-on test of 4 skills³, and 3) questions to assess problem-solving/critical thinking for 3 clinical scenarios⁴.

- Tools # 2 is a walk-through assessment of **Health care facilities**, including interview of personnel. Information was asked and physical inspection revealed the condition of facility, equipment and supplies, services, ability to do EmONC skills and referral (if applicable) and record-keeping. Staff was interviewed about their cadre, years of training years worked at facility, number of births per year.
- Tool # 3 for the **Community** FGDs is a list of questions (adapted from an AMDD tool) to guide the discussion of women's perceptions of their experiences surrounding pregnancy and childbirth and the care they received.
- Tool # 4 for the **Teacher** is essentially the same as the AMDD survey instrument used by the aforementioned studies. Interview questions cover topics on teacher preparation training, curriculum, teaching methods, educational resources available, conduct with students, attitudes, ability to teach and practice SBA, proportion of time in clinical setting, refresher courses taken. Additionally, there is a series of "soft-data" questions on career satisfaction and wishes for the future.

³ Infection prevention, partograph, neonatal resuscitation and active management of third stage of labour

⁴ FP provision and counseling, recognition and referral of pre eclampsia, recognition and treatment of shock

- Tool # 5 for the **Student** is a new tool, adapted from the teacher and educational facility tools. It is designed to get the responses of students to similar questions asked of their teachers to compare responses. Other questions focus on their curriculum, especially as related to SBA, time in clinical practice, and adequacy of educational resources available. Soft-data questions ask about their plans following graduation.
- Tool # 6 for the **Educational facility** is a combination walk-through assessment and interview. Observations are made of classroom, laboratory practice room, library, and student study areas.

These survey instruments were adapted to the needs of Lao PDR and then translated by the national consultant. To finalize them, the UNFPA Team and the MOH Technical Team partook of a one-day workshop to review the tools for their accuracy, cultural appropriateness and correct translation. As part of that workshop the group practiced how to give instruction and administer the self-assessment questionnaire and rehearsed how to conduct the skills test at the 4 skills stations.

A one-day pilot test of the tools was conducted in Vientiane Province, Phone Hong district, at the Maria Theresa Hospital and the adjacent nursing school. 9 Providers were assessed using the triangulation method of self-assessment questionnaire, problem-solving questions on clinical situations, and hands-test on clinical skills.

A walk-through assessment of the school and hospital was done to test the value of 2 facility tools. Then 10 teachers and 10 students were given the self-assessment tools to answer questions about their curriculum, their teaching and learning, respectively, and the educational facility itself. 4 of the teachers and 4 of the students also did the hands-on skills test.

Following the testing, a meeting was held with a small group of those tested to get their feedback on the tools and assessment methods.

Based on the pilot findings, the only change was to reorganize the Provider tool. All content remained the same.

3.4. Data Collection

3.4.1. Field survey: The field survey is the heart of this review. It was the most complex, interesting, and informative aspect of the entire work. The field work was conducted over a 3-week period in January, 2008. The team, comprised of the international advisors, national consultant, the national MOH Technical Team, and a member from the MOH SBA Central Committee, spent a week in each of the two provinces in the north. For the two southern provinces, the team divided, each group spending a week in a designated province. In all a total of 39 facility sites and 391 individuals were assessed, and 16 focus group discussions with communities were conducted.

3.4.2. Meetings with key informants: Meetings were held with government officials centrally and in the provinces, as well as representatives from international organizations and donors who have programs providing assistance in MCH in Lao PDR to better understand the many aid projects (Annex 11). Additional site visits were made to the 3 central training centers in Vientiane capital to talk with doctors and trainers who conduct in-service trainings at the central level.

3.4.3. Desk review: Review of policy papers, documents, curricula, research articles, reports, HRH analyses, strategies, etc. were on-going throughout the period of the review (See Bibliography).

3.5. Data Analysis

With the assistance of the senior international midwifery advisor and the regional UNFPA technical advisor, data cleaning and analysis of the field findings took place the second week of February, 2008.

Review and evaluation of MCH policies, workforce strategies, standards, and coverage, educational requirements, curricula for the different educational cadres and in-service training manuals continued throughout the three month review period.

3.6. Limitations

Preparation

The team had time limitations. There were only 3 weeks to prepare for the field work, including tool adaptation, getting supplies, copying, scheduling and logistics for the field. It required much intense coordination. Those concentrated preparation days, some of which coincided with national holidays, only left one day for field testing of the instruments. The following workday, the team left for the field, allowing little time to review the pilot testing.

Sample

There were a limited number of choices for selecting provinces for study that were representative. For example, in the north of the country it was desired to evaluate Luang Namtha or Phongsali, but for reasons of access difficulty or weather considerations, the MOH eliminated those locations. It was decided to travel to locations on Mondays and return on Fridays which also limited choices because of airline schedules.

There is some concern that the sample does not take into account sufficient ethnic diversity, poverty level, or the very remote locations. However the sample sites appear to be representative of the range of provinces, as seen in the LRHS 2005 data below for assistance at delivery and place of delivery.

Table 3.1 Assistance at delivery for four provinces in the assessment. Source: LRHS 2005 data

	Assistance of delivery									Total SBA %
	Doctor	Nurse	Midwife	health worker	TBA	Relat./ friend	Others	No one	NS	
Champasak	8.4	0.9	4.3	11.8	61.5	10.2	0.7	2.0	0.4	13.5
Luang Prabang	8.4	1.3	2.6	2.8	3.2	62.7	10.7	7.5	0.9	12.2
Saravanh	2.8	3.4	1.4	5.3	18.5	66.7	0.0	0.8	1.2	7.5
Xiengkhuang	7.0	2.7	3.1	0.8	0.2	77.8	5.2	2.9	0.4	12.8
National	8.1	3.5	3.0	3.9	12.1	63.4	1.8	3.4	0.7	14.7

Table 3.2 Place of delivery for four provinces in the assessment. Source: LRHS 2005 data

	Place of delivery							
	Central hospital	Province/dist rict hospital	Health center	Clinic	Own house	Other house	Others	NS
Champasak	0.2	6.8	1.6	0.4	0.2	90.4	0.2	0.4
Luang Prabang	0.0	7.3	3.0	0.0	0.0	87.6	0.9	1.3
Saravanh	0.4	3.0	2.8	0.8	0.0	86.0	5.9	1.2
Xiengkhuang	1.4	6.4	2.7	0.2	0.0	89.0	0.0	0.4
National	1.8	5.1	4.8	0.8	0.3	84.8	1.2	1.1

Tools

Hindsight is always perfect, but had there been more time at the beginning to prepare, the tools might have been better adapted to the assessment goals, more “fit for purpose” than they turned out to be. Tool #1, the provider self-assessment tool, because it was a combination of 2 tools, was too long, taking participants more than one hour to complete. The instructions, once translated into Lao, were confusing to many participants. Occasional translation problems arose, mainly with the lengthy provider self-assessment tool. Given so many simultaneous activities at a given site, there was often a shortage of interpretation availability for the facility assessments.

Data Collection

During the data collection phase, the reliability was compromised because of need to make substitutions in the people doing the assessments midway through the field work. Some members of the Technical Team had other ministry obligations, necessitating changes in assessors. When the team divided to accomplish the assessment of the southern provinces, each new team added two provincial MCH personnel to help them conduct the work, especially for the skills testing, which might have altered the way the tests were administered.

There were many assessment activities taking place simultaneously at a given location. Needing to keep to a previously agreed schedule meant sometimes moving on to the next location before fully completing an assessment. This problem most often occurred with the facility assessment because the provider giving the necessary information about the facility was also taking the hour-long provider self-assessment test.

Summary

The methodology used for the SBA Assessment has been tested in the past year in Mongolia and Cambodia and was thought to be the best approach for the review in Lao PDR. The biggest constraint was the brief time frame available in which to tackle such an extensive inquiry. Every effort was made to verify data, but it was found that the data systems themselves often resulted in conflicting reports or that compiled data for some information did not exist. There were also some discrepancies in official information obtained, depending on the source, making correct assertions at times difficult.

CHAPTER 4

RESULTS: POLICIES

The following documents were reviewed in order to find the most up-to-date information on Lao PDR policies, standards, strategies, plans, ministerial decrees, and analyses relevant to Maternal Newborn Health in country:

Table 4.1 Lao PDR National documents relating to maternal and newborn health

- List of Essential Medicines of Lao PDR, 2008
- Strategic Framework and Implementation Plan for the Development of Human Resources for Health in Lao PDR, 2007
- Human Resources for Health Analysis, 2007
- Lao Reproductive Health Survey, 2007
- National Development and Population Policy, 2006
- Human Resources for Health Staffing standards, requirements and costs, 2006
- Decision of the Minister of the Ministry of Health on Organization and Function of the Health Center, 2006
- Ministerial Decision on Nursing and Midwifery Regulation, 2006
- National Reproductive Health Policy, 2005
- Maternal Child Health Regulation, 2004
- Health Strategy up to the Year 2020, 2000
- Policies on Maternal and Child Health Particularly Safe Motherhood in Lao PDR, 1997

The review revealed no recent, specific policy, strategy or plan for the provision of skilled birth attendance in Lao PDR. On the other hand, there are not overall policies that would disallow or prevent the implementation of such plans. Since the prevailing policies are working towards country improvements in MCH, and reduction of maternal and neonatal mortality is high on the national development agenda, evidence can be found to support the need for accessible skilled birth attendance for all women regardless of their ability to pay.

4.1. Enabling policy statements

The following excerpts from policy and standards documents for Lao PDR show language that supports skilled birth attendance.

Excerpt from the *National Population and Development Policy 2006*

“3.2 Implementation:

- Extend PHC, including pre-natal, delivery and post-natal care, and RH services
- Develop and promote knowledge on maternal health by providing health information, education and through the media.

- Expand immunization, promote nutrition and breast-feeding. Promote the systematic use of monitoring books on maternal and child health and nutrition.
- Extend health care centers, water supply and sanitation facilities.
- Increase effectiveness of policy implementation and research in order to improve delivery services and community participation.”

Excerpt from *National Reproductive Health Policy MOH October 2005*

“Objective: To reduce maternal, infant and peri-natal mortality and morbidity.

Strategy: Health Services Delivery

- Upgrade facilities and skills of health service providers at the district and sub-district levels to improve detection and early referral of emergency obstetric cases.
- Piloting establishment of maternity facility in selected ethnic remote village to be used as the village delivery room, with storage space for supplies and medicines. This will be an additional space for existing health dispensaries to accommodate pregnant women during delivery. Trained health professionals and birth attendants will operate this village maternity facility assisted by volunteers.
- Disseminate clinical practice guidelines on safe motherhood at all health dispensaries and district health facilities.”

This excerpt from the *MOH Ministerial Decision on organization and function of the Health Center* specifically mentions the need for health centers to provide maternal and child health care service and specifies the need to provide care during birth: “Duties: 1)...mother and child health is identified as priority...

2)...in-patient services in emergency and urgent cases...normal birth delivery assistance, gynecology, and emergency-resuscitation especially for the new born baby.”

Lao PDR’s acknowledgement and commitment to maternal and child health is not new and extends back to 1997 as this excerpt from the *Policies on Maternal and Child Health Particularly Safe motherhood in Lao PDR 1997* shows:

“During delivery:...encourage to use partograph at the health facilities in order to prevent prolonged labour and fetal and neonates hypoxia.”

“2.2 Emergency care at the health centers or hospitals on hemorrhage and prolonged labor. District hospital should have the capability to solve these problems on: Manual removal placenta; Initiate emergency management for pre-eclampsia, eclampsia, hemorrhage, sepsis; Emergency management for incomplete abortion; Neonates resuscitation and thermal control.”

The following, from an annex draft to the *HRH Strategic Framework and Implementation Plan 2007 – 2020, called Essential Package of Care on Integrated Maternal, Newborn and Child Health Care* is, in fact, quite specific in its section *Delivery and the Immediate Newborn Care* :

“First level care: care during labour and delivery:

- Diagnosis of labour
- Monitoring progress of labour with partograph
- Providing supportive care and pain relief
- Detection of problems and complications
- Treatment of abnormalities and complication (e.g. prolonged labour, vacuum extraction, breech presentation, episiotomy, repair of genital tears, manual removal of placenta)

- Pre-referral management of serious complications (e.g. obstructed labour, fetal distress, preterm labour, severe peri-and postpartum haemorrhage)
- Emergency management of complications
- Delivery and immediate care of the newborn baby, initiation of breastfeeding
- Newborn resuscitation
- Active management of third stage of labour...”

4.2. Policy and other statements pertaining to human resources

None of the above policies however can be enacted without adequate human resources for health. In terms of skilled attendance this means adequate numbers of competent skilled birth attendants, recruited, deployed, as well as supported (supervised) and retained close to where women give birth. Here too current policies do supply a good basis to work from.

The Ministerial Decision on Nursing and Midwifery Regulation, 2007, specifies the duties of a midwife:

“The midwife may practice in any setting, including the home, community and health care facility....the nurse who has education and adequate professional experience in the midwifery may practice the above-mentioned duties.”

Moreover, excerpt from *Human Resources for Health Staffing standards, requirements and costs in 2007*, dealing with the issue of staff, specifically mentions:

“1. Actual policy and standards...The 6th NSEDP has reemphasized the need to enhance proximity services by increasing the number of health workers at village and district level....acknowledges the importance of *capacity* (italics added) of these workers to achieve the party’s objectives.”

“As stated in the national policy and planning tools the major challenge in human resources in Lao PDR is how to allocate, and keep qualified, efficient and motivated health workers where they are the most needed: at district level (health centers and district hospitals)...it is evident that a reflection on the reform of the actual policy for the allocation and management of “health civil servants” is urgent.”

“...it will be impossible to allocate new performing staff in those regions without corresponding awards or incentives. Financial incentives are not sufficient but they are the easiest and first step to ensure the motivation of staff to work in difficult conditions.”

“Human resources development and management is a keystone for the health system and therefore requires a specific policy and planning.”

“The nature of primary health care services provided at health center level may better technically and economically be provided by middle and well trained low and middle level staff with strong PHC curricula.”

And, finally these excerpts from *HRH Strategic Framework and Implementation Plan 2007 – 2020, DOP/MOH, October, 2007 (Draft)* further address the concerns of the assessment study:

“...HRH Development is targeted first and foremost at the needs of vulnerable population groups.”...”and ensures that all Lao people have access to healthcare services.”...”Existing staff at all levels in the health sector should be retrained.”

4.3. What is needed to strengthen existing policies?

While the above policies and guidance are supportive, there are, however, policies and decisions which are constraints on the provision of skilled birth attendance. For example:

The *Ministerial Decision on Nursing and Midwifery Regulation, 2007*, does not establish Midwifery as a distinct profession with its own standards, competencies, professional organization, annual day of celebration, etc. The midwifery role and duties continue to be described together with those of nursing and are barely distinguishable from them.

Both describe the responsibilities as those of education, cooperation with physician, support and assistance. Nowhere does it say that the midwife can do curative treatment on his/her own authority. Furthermore, there is only one combined scope of practice for both nurse and midwife. And for the nurse, under description of her role, nowhere does it stipulate that nurses can do deliveries but only support; the language is purposely vague but suggests that the nurse is always to be cooperating with and assisting the doctor. Nurses, too, need authority to be able to implement curative measures on their own responsibility, essential where there is no doctor and in cases of emergency.

The *List of Essential Medicines of Lao PDR, January 2008* enumerates the drugs that should be provided and available at each level of service.

In the table 4.2 below, one can see the *List of Essential Medicine for Lao PDR, 2008*. At health center level, only oxytocin is to be available. At district level and provincial level, oxytocin, injectable antibiotics and magnesium sulphate (MgSO₄) are to be available.

Table 4.2. List of Essential Medicines of Lao PDR, 2008

Medicine	Health facility level				
	central	provincial	district	health center	drug kit
Oxytocin	Yes	Yes	Yes	Yes	No
Injectable antibiotics (Ampicillin, Amoxicillin, Gentamycin)	Yes	Yes	Yes	No	No
Magnesium sulphate = MgSO ₄	Yes	Yes	Yes	No	No

Looking at the 3 essential drugs (oxytocin, injectable antibiotics, and injectable magnesium sulphate) needed for all levels of EmONC and thus needed for skilled birth attendance, all are mentioned for central, provincial, and district hospitals.

However, neither injectable antibiotics nor injectable magnesium sulphate are on the formulary for the health center. Unless and until that standard is modified, the health center level of care is not able to provide the Lao PDR basic EmONC enabling emergency treatment of women with severe postpartum infection or pre-eclampsia/eclampsia.

4.4. International policy/standards for skilled birth attendance

Finally, there are international policies that stipulate the necessity for midwives, and others with midwifery skills (MOMS), as the providers who can most effectively/economically implement skilled birth attendance. In *Making pregnancy safer: the critical role of the skilled attendant. A joint statement by WHO, ICM and FIGO, Geneva 2004*, there are international standards that describe the central competencies required of skilled birth attendance (Annex 1). The joint

statement document further describes the strategies for implementing skilled birth attendance in countries.

The WHO policy guideline for the number of skilled birth attendant providers (SBA) required to assure skilled birth attendance is 1 SBA for every 175 births per year. However, this ratio is only acceptable for compact communities and therefore needs to be adjusted for dispersed communities such as exist in Lao PDR.

The UN indicators for essential Emergency Obstetric and Neonatal Care (EmONC) which are fundamental to the provision of skilled birth attendance, were enumerated in the introductory chapter, and should be incorporated into country policy.

Summary

Overall, official policy statements support the provision of skilled birth attendance. Nurses and midwives need to be given more official authority to do births on their own responsibility and to carry out emergency measures.

Incorporating some of the language from *Making pregnancy safer: the critical role of the skilled attendant, a Joint Statement by WHO, ICM and FIGO, 2004*, into governmental policy and strategies will facilitate implementing skilled birth attendance in Lao PDR.

CHAPTER 5

RESULTS : HUMAN RESOURCES – THE PROVIDERS

5.1. Workforce

Perhaps the most fundamental aspect of the health care situation to review is the human resource component: the people themselves who are providing the maternal health services.

The bulk of the health care workforce in Lao PDR is made up of the no-longer trained Auxiliary Nurses, who number somewhere approximately 4,200 (see table 5.1.). Data was obtained from the DOP staffing statistics for 2006 and the *Human Resources for Health Strategic Framework and Implementation Plan 2007 -2020*, staffing data from 2005.

Below are the numbers of each cadre in the workforce, based on 2 different tabulations:

Table 5.1. Number of different cadres in workforce

Cadre	facility where they work	# persons from HRH data 2005	# persons from DOP data 2006
Medical Doctor	PH, some DH	1243	1177
Specialist Doctor	PH	415	497
Professional Nurse	PH, DH	848*	690*
Technical Nurse	all sites		
Primary Health Care Worker	HC	88	87

Cadres/workers who are still in the workforce from previously existing health education programs:

Cadre	When program ended	facility where they work	# persons from HRH data 2005	# persons from DOP data 2006
Auxiliary Nurse Assistant Nurse Auxiliary Midwife	1976, 1993	all sites	4281	4165
Medical Assistant	1998	all sites	1532	1524
Registered Nurse Diploma Nurse Registered Midwife	1991 &2003	all sites	*included in above table	* included in above table
Midwife Nurse/Midwife	incorp. in other programs	all sites	108 mid-level 80 low- level	103

The number of workers in the other nurse cadres is also difficult to determine, listed by the 2 sources as either 690 or 848.

Currently there are approximately 1,530 Medical Assistants working in Lao PDR in settings from Provincial Hospital to Health Center.

5.2 Profile of providers assessed in the four provinces

Of the 169 providers assessed, 161 identified their professional qualifications in the survey questionnaire.

Table 5.2. Providers by level and by province

PROVIDERS N = 161	TOTAL	Luang Prabang	Xieng Khuang	Champasak	Saravane
Low level (aux nurse, PHC)	55	16	9	16	14
Mid level (MA, 3yr nurse)	89	31	21	16	21
High level (doctor, specialist)	17	4	4	6	3

It is relevant and interesting to give some information on the provider backgrounds, issues, and perceptions:

- 118 of the providers assessed are female and 40 are male (11 did not classify themselves).
- 86% are married; of those married, all have children.
- 64% are between 30 and 44 years old.
- 89% are low or mid level providers.
- 76% work at district hospital or health center level.
- 55% had upper secondary education before professional school.
- 50% of the sample have over 15 years of experience in their cadre,
- 37% between 6 and 15 years in their cadre.

If a typical profile of the average worker assessed were compiled it might state: she is a married female mid-level nurse, with 3 children, about 36 years old, who has been at her job at the district hospital for 12 years; she would like more training, better equipment at her job, and might like to be trained to become a professional midwife.

5.3 Assessment results by province

Qualitative data on health care providers in Lao PDR is key to an understanding of the current capacity to provide skilled birth attendance. Consequently, much of the review's time and attention was devoted to getting this information, as much of it as possible, with as much completeness, objectivity, and accuracy as possible.

There was a huge amount of information amassed by the end of the field survey. To prioritize, the team decided to focus on those provider skills needed for EmONC and the knowledge and care strategies required of a skilled birth attendant. Finally, there were the soft-data questions, to be addressed at the end of the section.

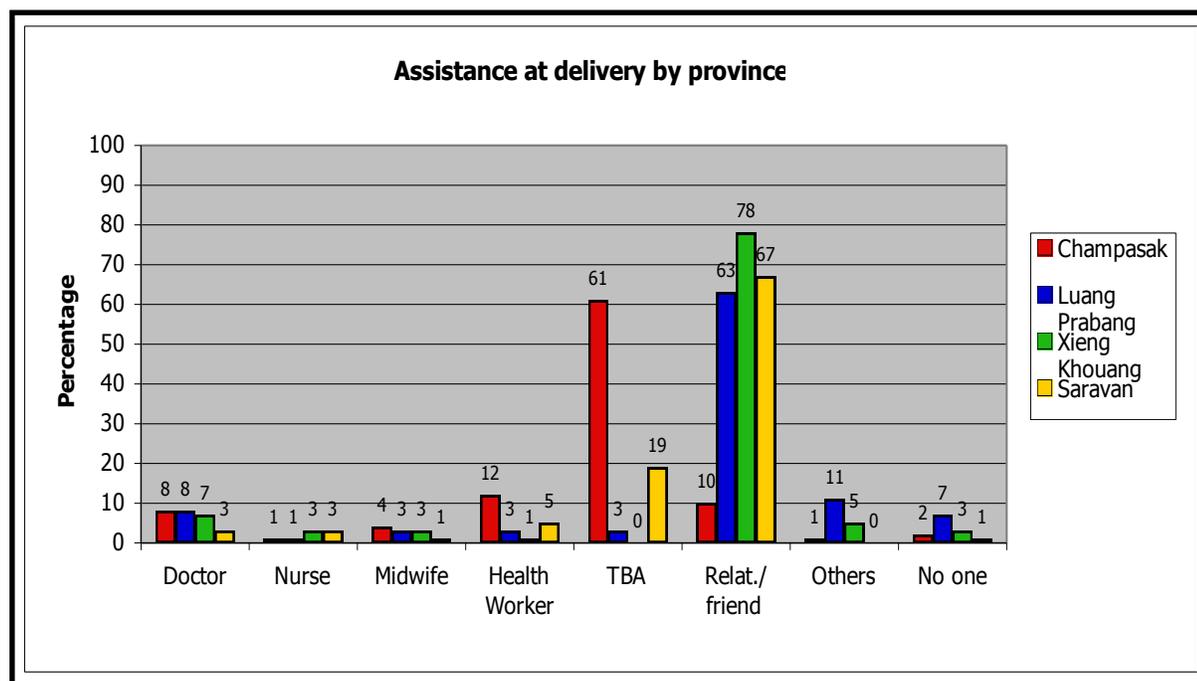
For analyzing the provider data collected during the field research, it was divided and analyzed by province, cadre of health provider, and type of facility. The number of providers assessed was 169.

Table 5.3. Number of providers assessed by province

Province	LuangPrabang	Xieng Khouang	Saravan	Champasak
Total = 169	51	39	40	39

To give the context of care provision for birth in Lao PDR it is useful to know who attends the mother in childbirth. The following graph shows assistance at delivery in the four provinces in the assessment (data from LRHS 2005).

Graph 5.1. Assistance at delivery by province

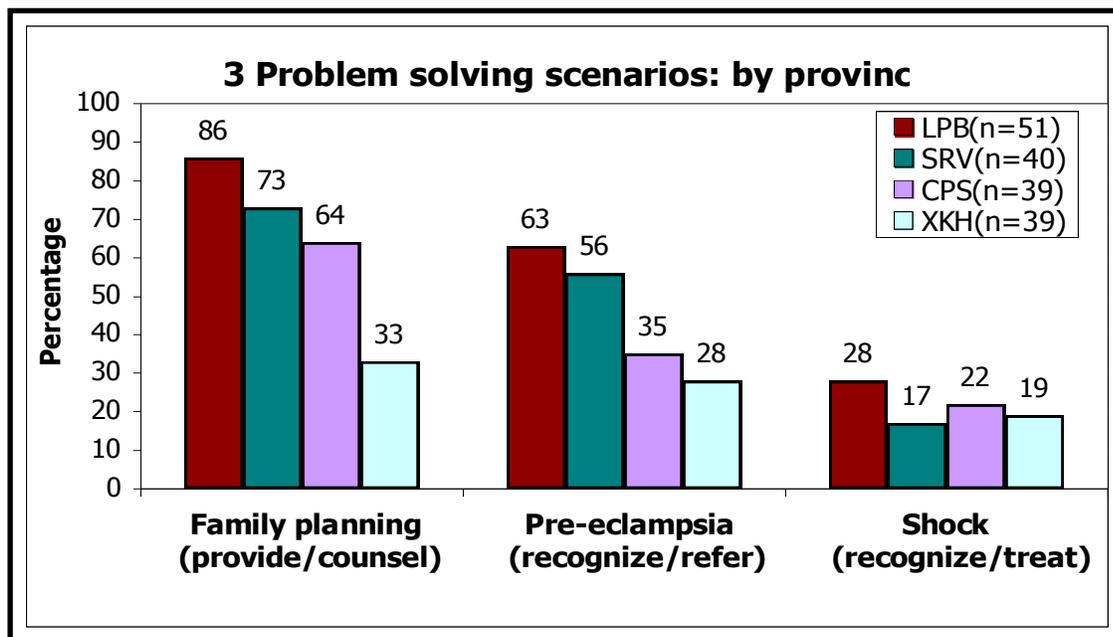


The results are remarkable for how few are attended by a trained health care provider (doctor, nurse, midwife, or health worker): on average 16%. Champasak shows the highest percentage of births with a health care provider at 24 %, though 12 % of those are with a “health worker” whose training is unclear. If the data is further dis-aggregated to exclude the “health worker” the average for the 4 provinces is only 10% for attendance by a trained health care professional. The data also shows that in all provinces the vast majority of births are attended by a relative or friend, TBAs or no one; the average for all 4 provinces is 83%. Of note is the fact that Champasak has far more TBA attended births than the other 3 provinces, all of which have the majority of births attended by a relative or friend. The data represented in the graph reflects

what is known statistically about the country overall, thus helping validate that the sample is representative.

One category organized by province is health provider competency. The 169 persons tested were given 3 clinical situation scenarios for which they had to do critical-thinking and problem-solving in order to answer questions on patient management.

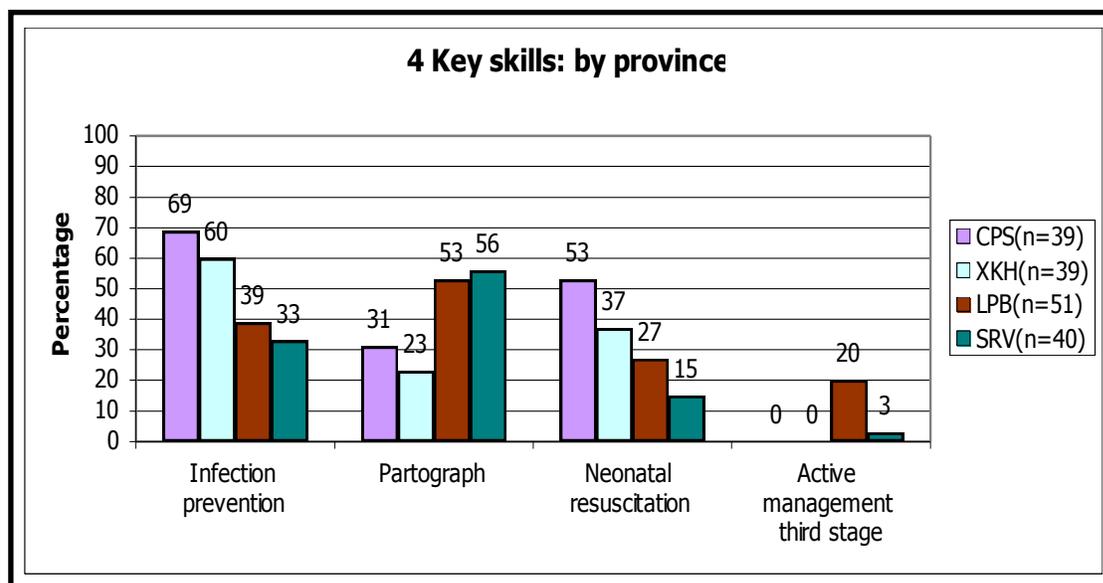
Graph 5.2. Problem solving scenarios: by province



The scenario on family planning (provision and counseling) was high-scoring by all provinces (64-86%) except Xieng Khuang (33%). The scenario on pre-eclampsia (recognize/refer) received moderate scores by Luang Prabang (63%) and Saravane (56%) but low scores by Champasak (35%) and Xieng Khuang (28%). The management of shock scenario (recognize/treat) received low scores in all 4 provinces, averaging only 21%.

The hands-on skill testing of the 169 providers also showed some interesting findings, based on province. Looking at the 4 skills tested (infection prevention procedures, active management of third stage labor, neonatal resuscitation, and management of obstructed labor, using partograph), all 4 provinces scored an average of 33%.

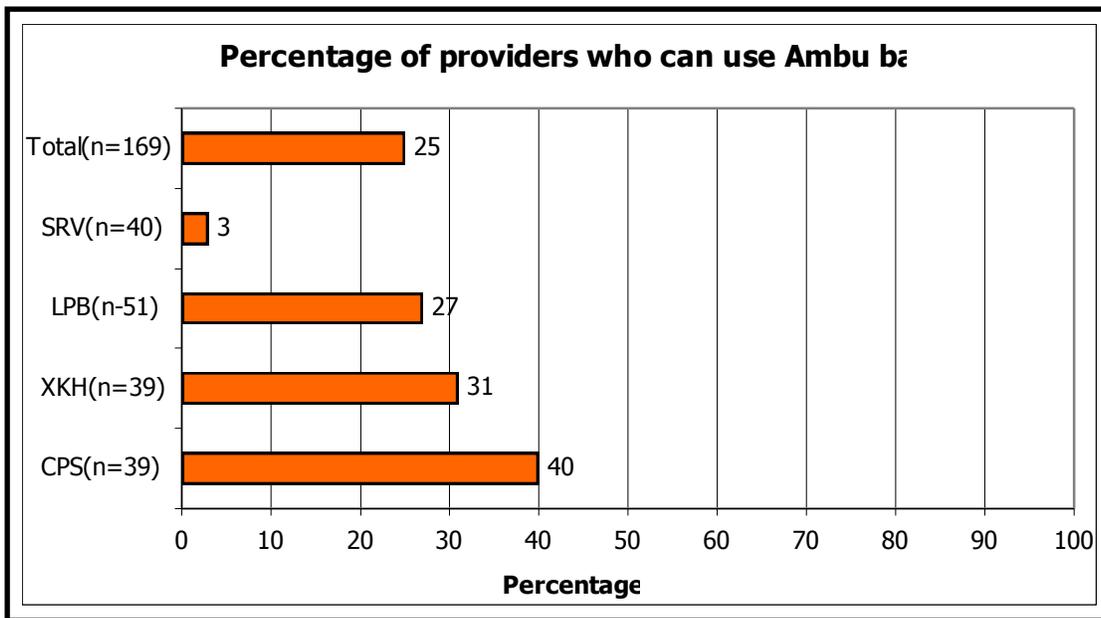
Graph 5.3. Key skills by province



Some provinces scored high in one test but low in another; there was no clear pattern. Champasak was the highest overall at 38%, then Luang Prabang at 35%, then Xieng Khuang at 30% and finally Saravane at 27%. Although the 2 provinces with the nursing schools, Champasak and Luang Prabang, and considered to be higher functioning provinces, did score higher, the scores were not much different than those of the supposed lower-functioning provinces.

The 5 actions of the neonatal resuscitation skill test were further broken down, looking at scores collected for just the skill of using an ambu bag. The average score of all 169 participants from all 4 provinces was 25%, the highest being 41% for Champasak, the lowest 3% for Saravane.

Graph 5.4. Providers who can use Ambu bag



Again, the provinces considered higher-functioning did score higher than the others but not by much and - at less than 50% - not with very acceptable scores. A cautionary note: with these small numbers it may be unfair and/or inaccurate to make comparisons of one province to another, but the fact of the low scores overall show that provider knowledge and skill levels are low throughout.

5.4. Assessment results by cadre of provider

The total number of providers assessed was 169. Eight of those did not classify themselves and were thus not included in data sets where cadre is a consideration. As shown previously, the following table shows the numbers of assessed providers (161) by level and by province.

PROVIDERS N = 161	TOTAL	Luang Prabang	Xieng Khuang	Champasak	Saravane
Low level (aux nurse, PHC)	55	16	9	16	14
Mid level (MA, 3yr nurse)	89	31	21	16	21
High level (doctor, specialist)	17	4	4	6	3

Gathering bio-data from provider respondents showed a vast array of worker categories or cadres. The Medical Assistant (MA) and Primary Health Care worker (PHC) cadres were easily classified. It was very difficult, however, to categorize the various nurse cadres which self-reported as: auxiliary nurse, assistant nurse, auxiliary midwife, assistant midwife, diploma nurse, registered nurse, registered midwife, technical nurse, professional nurse, bachelor nurse, etc.

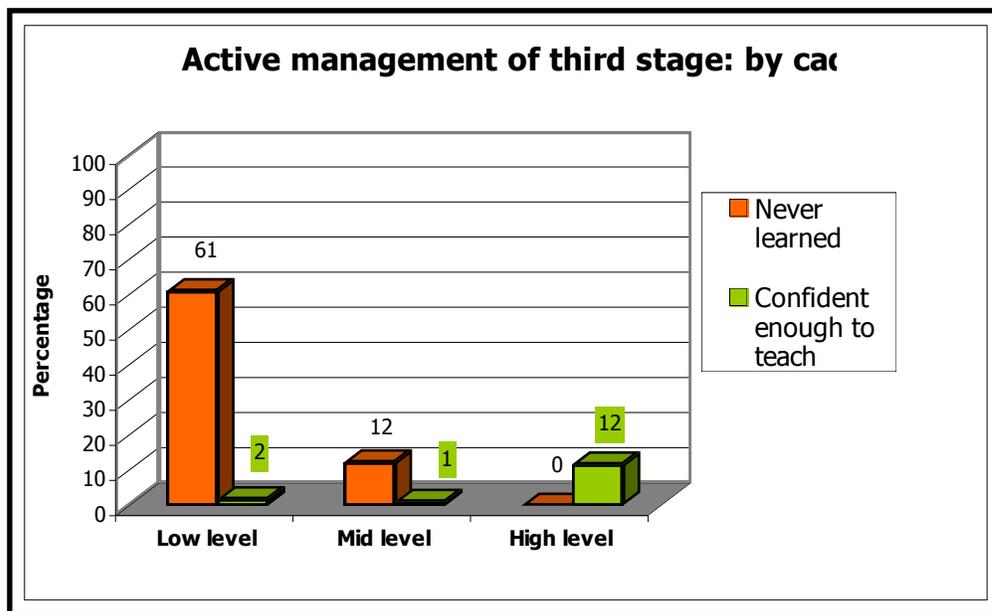
By matching stated cadre to information on type and number of years of professional education, the team was finally able to categorize them. In keeping with the divisions used in the *Human Resources for Health Analysis*, the categories were divided into low, middle and high level workers. The low level providers encompass the auxiliary nurse and equivalent cadres and the

primary health care worker (PHC). The mid level providers comprise the technical or professional nurse or equivalent and the medical assistant (MA). The small number of general doctors and specialist ob/gyn doctors are grouped as the high level providers.

The team first looked at the provider self-assessment questionnaire in which participants were asked about their level of experience on a list of skills. For each one they were to answer “never learned it”, “had training about it”, “learned it but need to know or practice more”, “do it regularly on the job”, or “confident and could teach it to others”.

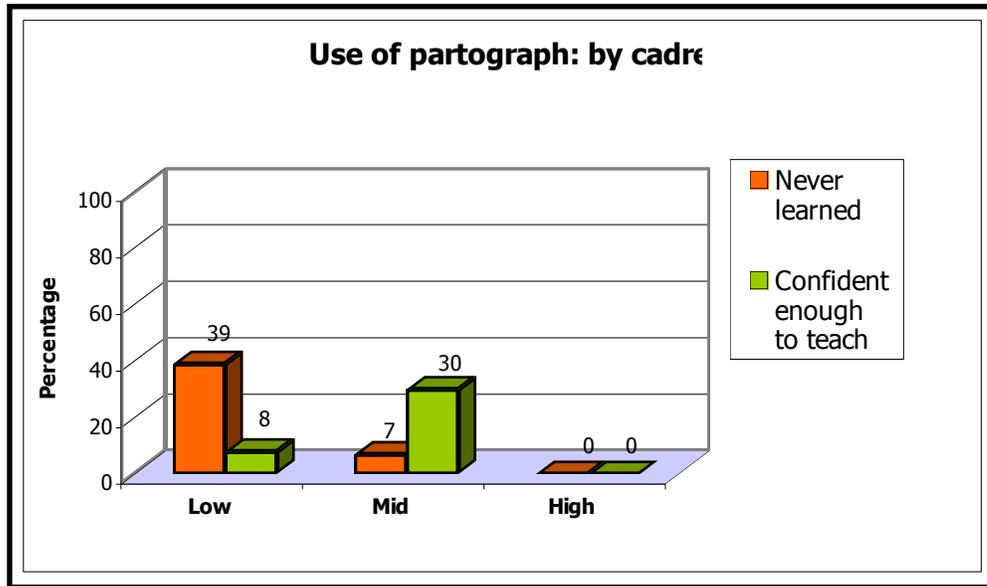
Data was disaggregated by the provider levels described above: low, mid, and high. Taking some of the key skills needed for EmONC, and looking at the numbers who said they had never learned the skill and the numbers who said they were confident enough to teach it, the following results were found:

Graph 5.5. Active management of third stage labor by cadre



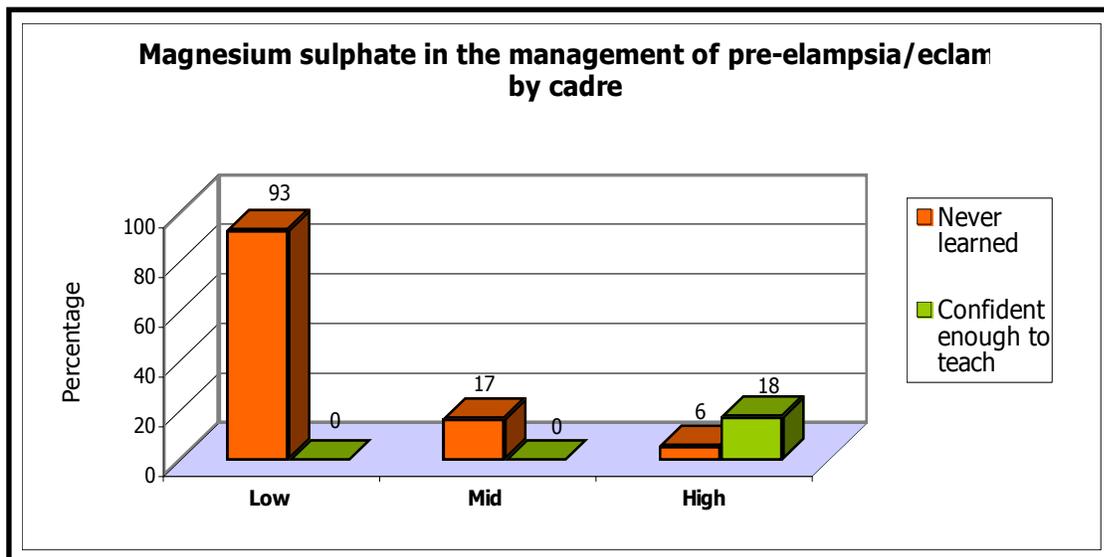
The majority (61%) of low-level providers said they had never learned this skill while only a small percentage of mid and high-level providers (12%) said they had never learned it. Nonetheless, only 1% of mid-levels and only 12% of high-levels felt confident enough to teach active management of third stage of labor. Although not on this graph, another look at the data set, at those who said they do active management of third stage of labor routinely on their job showed that only 9% said they do.

Graph 5.6. Use of the Partograph in labor:



Interestingly in this analysis, it shows that the mid-level provider feels the most confident about using/teaching the partograph (30%). Although all the doctors reported having learned it, none of them felt confident to teach it. It may be a factor of nurses doing the labor care and doctors not being in attendance for the labor, perhaps just doing the delivery and thus not familiar with using partographs.

Graph 5.7. Magnesium sulphate for management pre-eclampsia/eclampsia by cadre

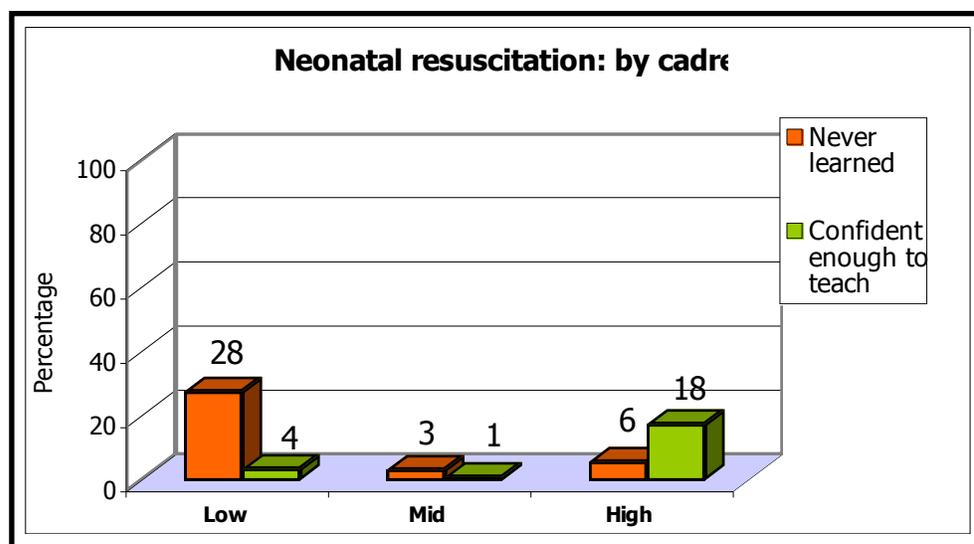


Almost all (93%) of low-level providers stated they had never learned about magnesium sulphate in the management of pre-eclampsia/eclampsia. Most mid and high-level providers had learned.

However, only 17-18% of them felt confident to do it and teach it. The scores of mid and high-level providers were nearly identical.

Neonatal resuscitation:

Graph 5.8. Neonatal resuscitation by cadre



On neonatal resuscitation, the majority of all 3 cadre levels had learned the skill, but confidence to teach it was low for all, only 1% for mid-levels, 4% for low-levels and 18 % for high-level providers.

The self-assessment questionnaire asked other questions that are important for knowledge of basic EmONC skills. The following table shows the results of providers who “feel confident enough to teach” these essential skills:

Table 5.4. Providers who feel confident to teach by three skills

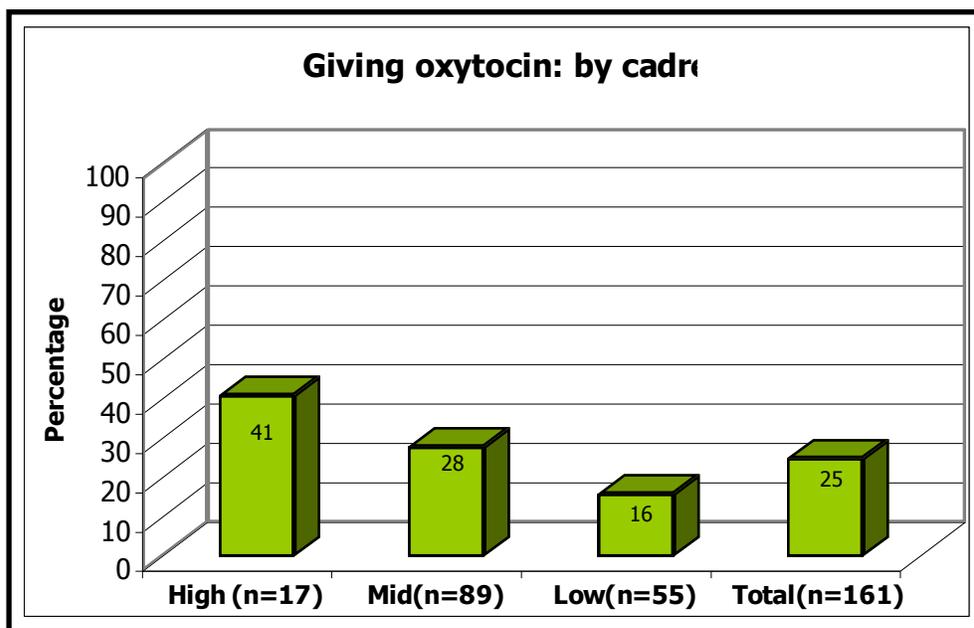
EmONC skill	injectable antibiotics in management postpartum infection	management postpartum hemorrhage	manual removal of placenta
Cadre			
low	4%	1%	10%
mid	3%	1%	36%
high	18%	11%	51%

One of the factors likely associated with the low rates of confidence that providers have in doing these EmONC skills, is the few numbers of births that occur in hospital, which reduces the number of opportunities health providers have to practice and maintain their skills.

Next, reviewers studied provider scores on the 4 hands-on skill tests. Scores for all levels of providers on the infection prevention skill test were relatively high, with most providers understanding that use of chlorine for decontamination is the first step, but that chlorine generally is not available in Lao PDR. It was decided to focus on the other 3 skill sets instead.

The review first took a look at whether providers use oxytocin at delivery (this single skill was extracted from the skill set of active management of third stage labor).

Graph 5.9. Giving oxytocin by cadre



The average score for all providers (n=161) was 25%. The highest score was 41% for high-level providers, 28% for mid-level, and 16% for low-level. In all nearly ¾ of providers in the sample do not give oxytocin at time of delivery. Later the review will compare these scores with availability of oxytocin at facilities.

It is relevant to look at skill scores for just the mid and low-level health care providers, (all nurses, midwives, medical assistants, and primary health care workers, n=144) since they comprise the majority of the providers in Lao PDR. For these 3 skill sets reviewed, the following table shows low and mid-level provider proficiency:

Table 5.5. Provider skills test proficiency

SKILL	Partograph	Neonatal Resuscitation	Active mgt third stage labor
CADRE			
Low level (n=55)	16 %	24 %	13%
Mid level (n=89)	25%	29%	19%

These scores were then compared to the self-assessment questionnaires of low and mid-level providers answering questions about their level of experience in those same skills. The following table shows the percentage of those who “feel confident and can teach others” the skill:

Table 5.6. Provider confidence per self-assessment

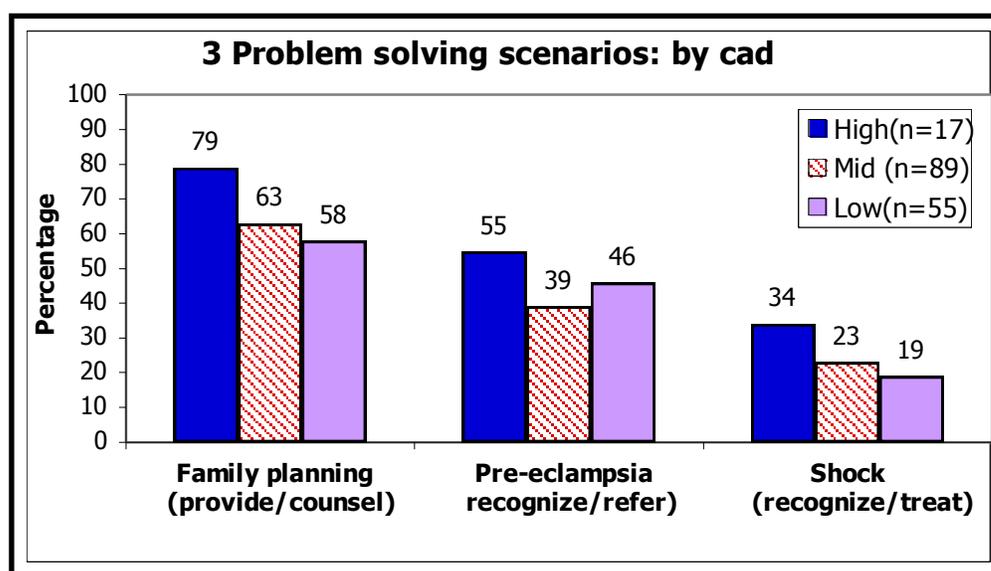
Self-Assessment	Partograph	Neonatal Resuscitation	Active mgt third stage labor
CADRE			
Low level (n=55)	14%	9%	4%
Mid level (n=89)	22%	12%	2%

Interestingly, the answers reflect less confidence in the skills than are shown by their scores in doing the skills. In any case, once again, the percentages of competency are very low on skills, knowledge, and use of skills that are considered essential in EmONC for saving the lives of mothers and babies.

In reviewing the questions that assessed provider problem-solving ability, and looking again at all 3 cadre levels, the results showed higher percentages by all levels on the family planning scenario: 58-79%.

There were moderate scores on the questions about pre-eclampsia: 46-53%, but – across all cadres – low scores on the scenario for managing shock: 19-34%. It is interesting how closely grouped all levels were on the skills.

Graph 5.10. Problem-solving scenarios by cadre



Note that there is very little difference in percentages of the low and mid-level cadres for all three scenarios. Also, since postpartum hemorrhage is the biggest cause of maternal mortality, recognition and proper treatment of shock is critical for all health care providers, and the scores for that condition were universally very low.

Finally, reviewers looked at the percentages of competency on EmONC skills of all providers at all levels and correlated that information with percentages of providers who had received in-service training in EmONC. The following table shows the correlation:

Table 5.7. Correlation between skills and training

CADRE	HAD EmONC TRAINING	SKILLS TESTING		
		neonatal resuscitation	active mgt of third stage	partograph
High (n=17)	12%	65%	24%	24%
Mid (n=89)	4%	28%	19%	25%
Low (n=55)	5%	24%	13%	16%

It was unclear from the data whether the in-service trainings were EmOC or EmONC, since the addition of neonatal resuscitation (the “N”) is quite recent. As shown, high-level providers (doctors) had higher skills, especially in neonatal resuscitation, and were recipients of more EmONC training. The results show that there is not much in-service education in EmONC and, as the data reveals, that essential skills for skilled birth attendance are deficient. The higher scores, especially for doctors, on neonatal resuscitation are possibly a result of the trainings on neonatal resuscitation conducted by the MCH Hospital, Vientiane, in the provinces for PH and DH staff in 2006 and 2007.

5.5. Assessment results by type of facility

To evaluate EmONC capability at the different facility levels, the review dis-aggregated providers’ skills data according to their place of work: health center, district hospital or provincial hospital. Since this separation did not take into account the different cadre of the provider, the review was able to include all 169 providers in this classification.

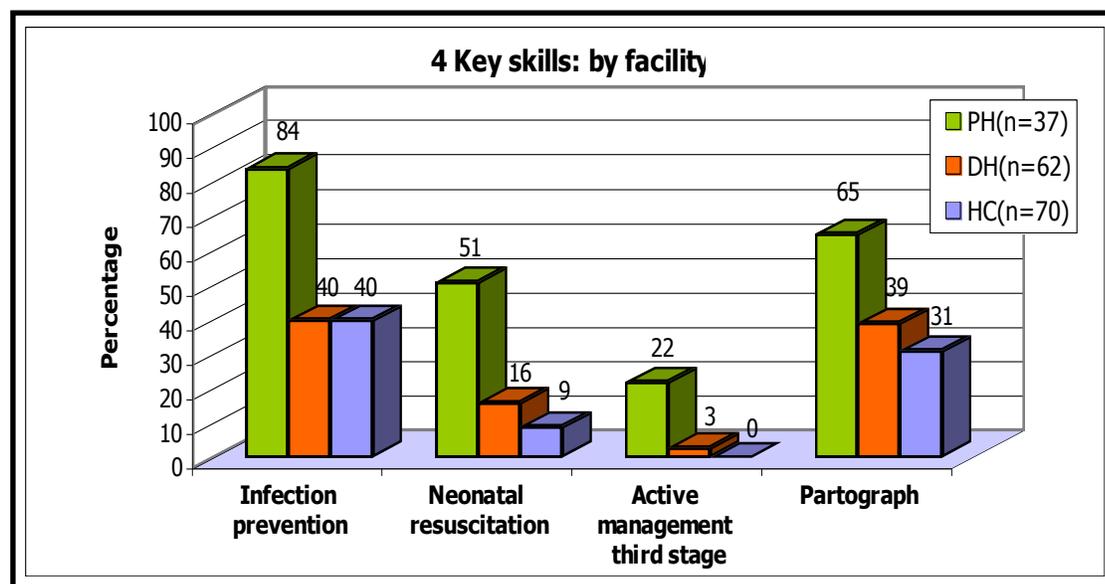
The table shows numbers of health care workers in the sample from the different levels of health facility where they work.

Table 5.8. Providers per different facility type

PROVIDERS	TOTAL	Provincial Hospital	District Hospital	Health Center
by different facility	169	37	62	70

The graph shows how the different levels of facility scored on skills required for being a skilled birth attendant.

Graph 5.11. 4 key skills by facility



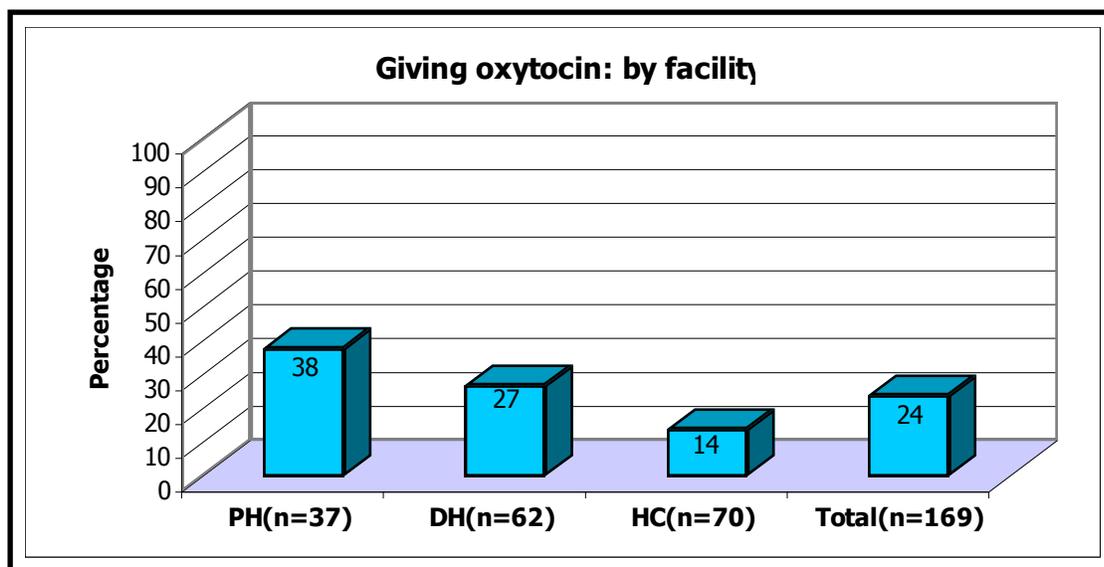
The provincial hospitals competency scores were between 51% and 84%, with the exception of scores for the active management of third stage labor which were only 22%.

District hospitals and health centers, however, did not have competency scores above 40% in any of the skills, and they were below 20% competency in both neonatal resuscitation and active management of third stage labor. Unfortunately, the review did not make the distinction in the skills testing data of whether it was district hospital -A or district hospital-B. Note that district hospitals and health centers both scored mid marks on the partograph test, when it is known that they are not used at health center level and only in some district hospitals.

The partograph skills test was a series of questions about obstructed labor with the partograph skill as only part of it. The other skills and questions in that set were about checking dilation, recognizing abnormality and knowing when to refer. These higher scores may likely reflect respondents' ability to recognize abnormality and make referrals. Further disaggregation of the data confirmed this, although not graphed here. It showed that 80% of all those tested recognized that the labor was abnormal, and 77% knew to refer. But only 19% of all those tested could plot on the partograph.

Finally, looking at a specific aspect of EmONC, giving oxytocin routinely at delivery, only 24% of providers at all facilities performed that skill.

Graph 5.12. Giving oxytocin by facility



5.6 Provider's perspectives on challenges in maternal health service provision

The obstetric problems in their facilities mentioned most often by providers are: postpartum hemorrhage, bleeding in early and late pregnancy, ectopic, eclampsia, transverse presentation, and dystocia. When asked about needs, the two mentioned most often were SBA training (21 mentioned) and more delivery equipment (12 mentioned). When asked what training they would like to have, 56 said general obstetric training, 15 said EmOC, and 8 said neonatal resuscitation. For a question asking if they would like to be trained to become a professional midwife and why or why not, 70 said yes, one said no; the others did not respond. The reason mentioned most often as to why was to get more knowledge.

When the team asked whether the providers had heard recently about a mother who died, almost all answered they never heard about it. Very few providers (5) had heard about a case.

When they were asked what would be the solution to reduce MMR, responses were: health education in the villages during monthly visits together with EPI or in a mobile MCH clinic, better equipment, more training for staff, good cooperation with TBAs.

When the staff in health centers were asked about pre-eclampsia, they said they never had seen a case.

A Newborn Story

Our SBA team was doing assessment of a district hospital, one which demonstrated a high level of service including good equipment, adequate staff, plus nursing and medical students, and caesarean section and blood transfusion capability. In touring the well-equipped delivery area, I saw an infant warmer with a baby receiving oxygen through its nose.

We learned the baby was being observed. She had been born the previous night, a difficult breech delivery, and had required resuscitation. The delivery room had a newborn-size Ambu bag and mask, oxygen and tubing, and the radiant warmer where the baby was now lying: all the equipment necessary for resuscitation.

Further inquiry revealed that the baby girl had not been resuscitated until 10 minutes after delivery. Looking at her more closely it was evident she was unresponsive, had no muscle tone, and the pupils of her half-open eyes were fixed and non-reactive, sure signs of oxygen deprivation and, unfortunately, brain damage. We learned the reason for the delay was that the ambu bag had been ready but not the oxygen (fittings unconnected), and the person to do the resuscitation had to be summoned from another department. The birth attendant DID have the skill to do newborn resuscitation but not the “authority” and thus waited.

Who knows whether the delay in starting resuscitation was the cause of this baby’s dire condition or if she had suffered the injury prior to the birth itself. What is known – and why EmONC is such an essential skill – is that it saves lives. Newborn resuscitation does not require an “authorized” person to perform it. Every skilled birth attendant should, de facto, have that authority. Furthermore, an ambu bag can be used with just room air, eliminating the delay of setting up oxygen.

The message of this sad story is that in a setting that had all the elements for a successful resuscitation, an unnecessary delay, a bad policy, and a small missing piece of knowledge, had resulted in a preventable tragedy.

The story further shows that improvements in SBA are gradual; they take time, money, commitment, training, and the political will to make the necessary changes.

Summary

First of all, it is no surprise that skilled birth attendance ability is low given that the vast majority of women still give birth at home, unattended. Consequently, providers get little chance to maintain their skills, especially at HC and DH levels.

In summarizing the results of the provider assessments, it seems clear that EmONC competencies are very low in all provinces, for all providers, and at all facilities, with some exception at the provincial hospitals. Case in point: the overall score for all providers, at all facilities, in all provinces on the management of shock was only 21%. Knowing how to stabilize a mother in a hemorrhagic emergency is a fundamental skill required of all childbirth providers regardless of cadre or site of the birth whether it is home or central hospital. To save a mother's life, no less is acceptable.

There are not predictable patterns based on province, such as differences in those higher functioning compared to lower functioning, or north versus south. Nor is there very much difference between the scores of low and mid level providers. And finally, scores based on facility, especially differences between health centers and district hospitals, where one would expect a considerably higher level of care, are surprisingly similar.

As would be expected, the high level providers (doctors) score the highest in all testing; however, their scores overall are still not satisfactory. More importantly, in this review sample and in the country generally, there are very few doctors. The mid and low-level providers, who comprise the bulk of Lao PDR care providers, have scores in all skills that are very, very low.

CHAPTER 6

RESULTS : FACILITIES

“No matter how motivated and skilled health workers are, they cannot do their jobs properly in facilities that lack clean water, adequate lighting, heating, vehicles, drugs, working equipment and other supplies” (MOH and WHO, 2007).

The SBA team assessed 4 provincial hospitals, 10 district hospitals (4 type A with operation theatre, 6 type B without operation theatre) and 20 health centers. Facilities at the first level are the health centers and district hospitals B. Facilities at the referral level are district A and provincial hospitals.

The reviewers did a walk-through audit of the facility accompanied by staff. For the provincial hospitals only the maternity ward, delivery room, neonatal ward and MCH section were audited. The table below shows the facilities the team assessed.

Table 6.1. All facilities assessed in January 2008

Province	Provincial hospital	District A hospital	District B hospital	Health center
Luang Prabang	Luang Prabang	Nambak*	Chompet Nan Xieng Ngeun	Nam Thouam Nam Nga Nong Phou Nan Ngue Tongkhan Nam Phak Phon Zay
Xieng Khouang	Phonsavan	Kham	Khoun	Nam Phaa Sop Maa Nong Pet Latbouak Nam Phan Njoun
Champasak	Pakse	Khong	Sanasoumboun	Khampeng Saphai Houa Khong Khinak
Saravan	Saravan	Khong Xedone	Toumlan	Kok Mouang Naadou Kheng Houat

*The category of the district hospital might not correspond to the reality: a district hospital type A with operation theatre which is not functioning becomes a type B. This is the case for Nambak district hospital.

The team assessed whether the facilities provide an enabling environment for Emergency Obstetric and Neonatal Care. Therefore 3 criteria were assessed: availability of basic medication, the utilities in the facilities (clean water, telephone, electricity, toilets, cleanliness), and lab tests and equipment. (The issues of referral and access are discussed in Chapter 8: Coverage).

6.1. Availability of basic medication

In the health centers

According to the *List of Essential Medicines of Lao PDR, 2008* (table 4.2), only oxytocin is provided at health center level. Injectable antibiotics and MgSO₄ are not available. However,

reviewers found that 20% of health centers did have oxytocin, and that up to 75% of health centers do have parenteral antibiotics, which they usually use to treat childhood infections.

In the district hospitals

Although all 3 of these medicines should be available at the district hospital level, the team found MgSO4 is only available in 20% of the 10 district hospitals assessed. Oxytocin is available in 90% and IV antibiotics at all of them.

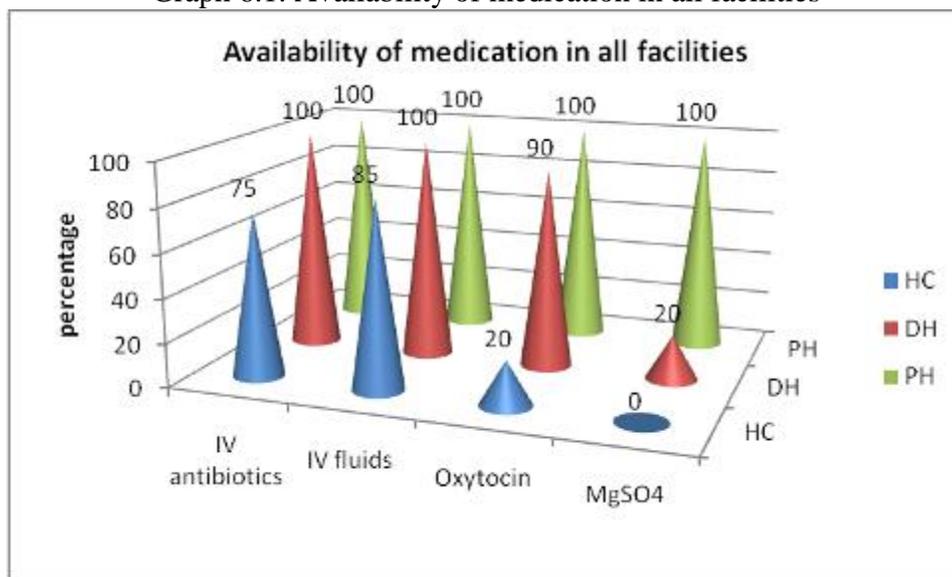
In the provincial hospitals

Looking at the availability of the 3 medications at the 4 provincial hospitals, the team found 100% compliance.

Summary for the availability of medication

The graph below summarizes the availability of medication at all facilities the team visited. Most noteworthy is the lack of oxytocin at the health center level and the lack of MgSO4 at the health center and district hospital levels.

Graph 6.1. Availability of medication in all facilities



6.2. The utilities in the facilities

For the walk-through assessment, utilities were defined as: separate birthing room, toilets for the women, 24 hour electricity, running water in birthing room and toilets, telephone and overall cleanliness.

In the health centers

The health centers reviewed score low on all utilities. The review team found only 5 of the 20 health centers having a birthing room (25%), most often in Xieng Khouang province. Only 55% have toilets. Toilets usually had water available but never running water; nor is there soap or towel. The pit is never covered.

Forty percent of the health centers have 24 hour electricity. The rest have temporary electricity from a generator or none and work using candles at night. The lack of running water is the case in almost all health centers. Of the 15% with water, often the tap is broken. Some health centers have no water at all inside the building and use an outside water pipe. 40% of health centers have telephone. Most health providers use Winphone, their own mobile phone, or their house phone. Cleanliness scores are 55%; health centers are either very clean, or very dirty and uncared for.

In the district hospitals

Eighty percent of the district hospitals have a delivery room. District hospitals score very low on water supply (10%) and average on availability of toilets (40%) and cleanliness (50%). 90% of them have of electricity, but only 70% have telephone. Lack of telephone is a problem when needing to make a referral.

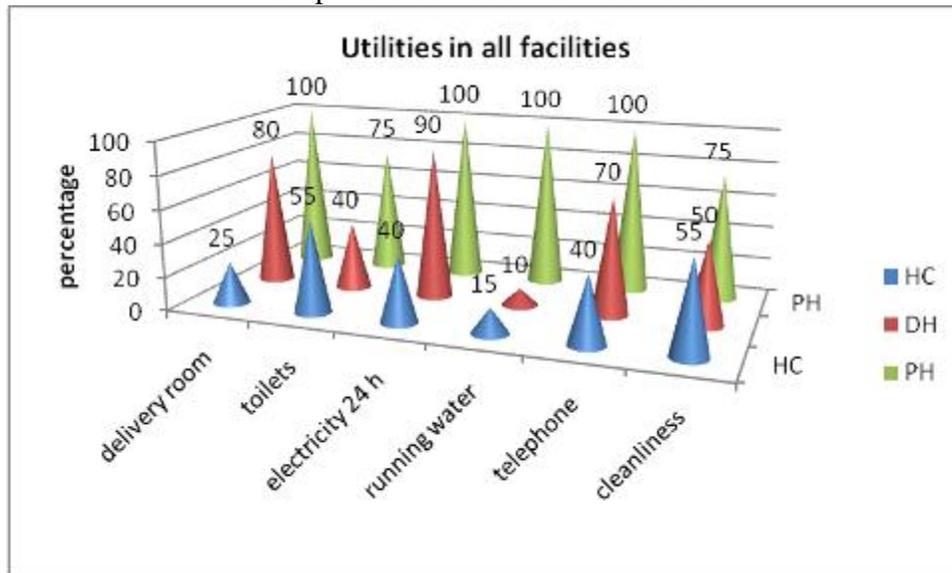
In the provincial hospitals

All utilities at provincial level were found to be 100% functional with the exception of toilets and cleanliness which were each scored as 75%.

Summary of the utilities

The graph below gives an overview of all utilities in all facilities. Lack of a delivery room and no running water are problems for health centers and district hospitals. Unavailability of telephone communication is significant problem for many health centers.

Graph 6.2. Utilities in all facilities



6.3. Equipment and laboratory tests

Delivery equipment includes a delivery table and minimum 1 delivery set (1 scissors, 2 clamps). Newborn equipment includes a flat surface and ambu bag for resuscitation. Other basic equipment is a sphygmomanometer, stethoscope, thermometer, etc. Chlorine solution should be used for decontamination of instruments, but is actually not available in health centers or district hospitals.

In the health center

Thirty percent of the health centers have delivery equipment. Rarely, there is a bucket under the delivery table for fluid collection. Instruments such as clamps, scissors, speculum, might be available but not in good condition. (There is no equipment/medicine for offering the woman pain relief in labor or for suturing the perineum). None of the health centers have neonatal resuscitation equipment: no flat surface to put the baby on, no Ambu bag. Baby towel has to be brought by the family.

Ninety percent of the health centers have the necessary basic equipment. Sphygmomanometer and stethoscope are usually available. In 2 health centers, the sphygmomanometer was broken for more than a year and not replaced. One health center had no equipment at all and borrowed instruments from the primary health care worker. Even though births are rarely done at the health center, the health providers need the equipment for assisting the woman to give birth at home in the village.

Chlorine powder for decontamination is not available. Some health centers boil instruments; others clean with soapy water and disinfect with alcohol, and some use a sterilizer. The reviewers saw one health center with a brand new autoclave packed up in the cupboard and never used. For the laboratory tests, malaria testing is available in 55% of the health centers; no health center does hemoglobin testing. Only 5% of health centers provide urine test.

In the district hospital

Nine DH of the 20 DH have a delivery room. This room was found to be either a clean room with sufficient functioning equipment or a dark, dirty room with only an old table. Sometimes there is a privacy curtain.

Ninety percent of the DH have basic equipment. Sphygmomanometer and stethoscope are available but not always in good working condition. The instruments, like scissors, clamp, speculum, needle holder are not always in good condition. Vacuum extractor is usually not available. Forceps is never available. Again, no pain relief is available for labouring/birthing women. Only 60% of the district hospitals have newborn equipment. A newborn table and Ambu bag for resuscitation is sometimes available. Baby towels have to be brought by the family. Bulb suction, weighing scale is available.. In one district hospital, the reviewers saw an infant incubator which did not work. In another district hospital, the ultrasound machine had been broken for more than a year and not sent for repair.

Chlorine decontamination is not available. There is no standard method for disinfection: some district hospitals boil instruments, others clean with water and soap and disinfect with alcohol and some use an autoclave. The district hospitals overall score well for lab tests, except for HIV and syphilis testing. Although some district hospitals have no laboratory equipment, most (70-80%) have a microscope and do tests for hematocrit, hemoglobin, blood group, rhesus factor, white blood cell count and urine analysis.

In the provincial hospital

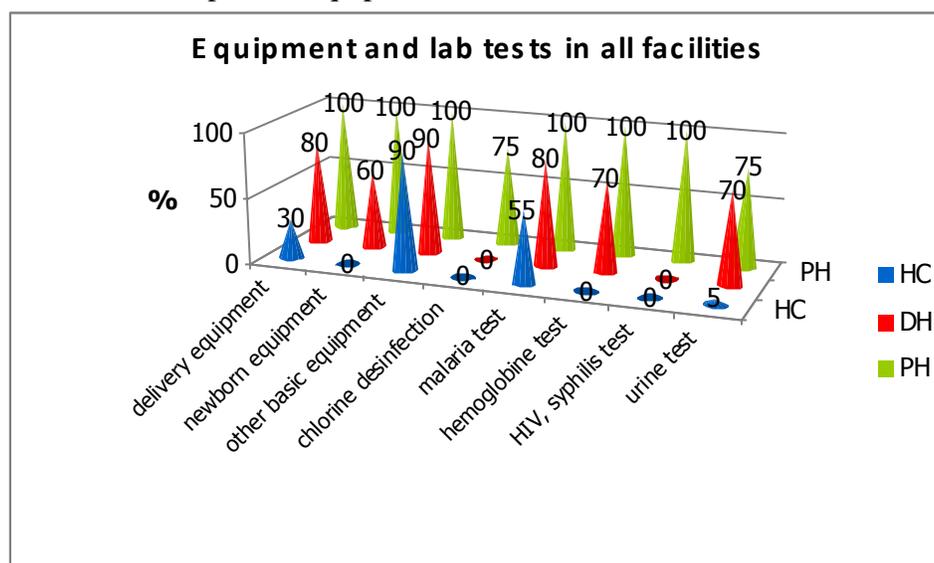
All provincial hospitals score high for equipment and lab tests. 75% of the provincial hospitals use chlorine, and 75% have urine tests available.

Summary on equipment and lab tests

The graph below summarizes the availability of equipment and lab tests for all facilities. Chlorine for decontamination is only available at the provincial level. Significant at the HC level is lack of equipment for neonatal resuscitation and the inability to do urine and hemoglobin testing. At DH level, most significant is the lack of newborn resuscitation (50-60% available).

Also, equipment is generally in poor condition, and there are unsafe methods for decontamination and sterilization.

Graph 6.3. Equipment and lab tests in all facilities



Can facilities provide EmONC?

In the health centers at the first level

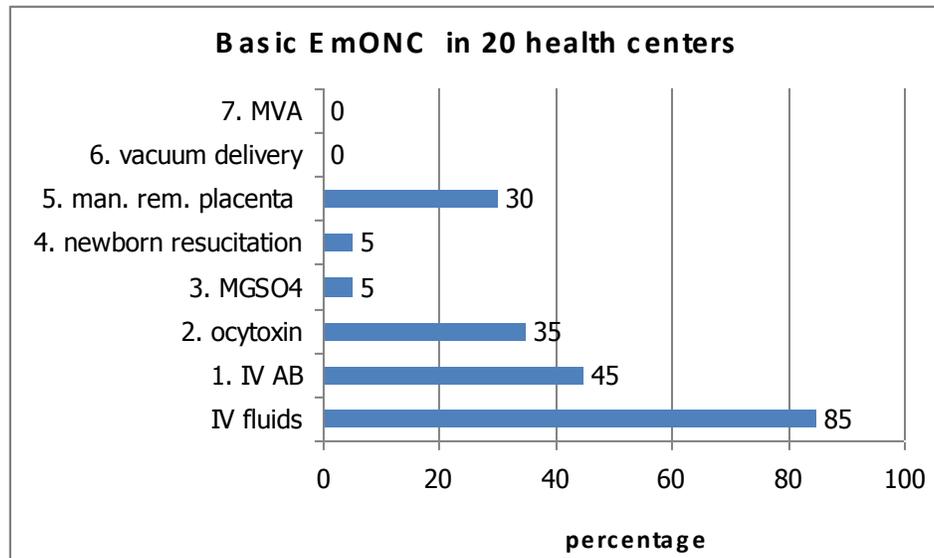
Of the 20 HC visited, 5 (25%) have a separate birthing room, 3 of those in Xieng Khouang province and none in Champasak province. Most deliveries still occur at home, with those births not recorded, thus the low numbers of births as indicated in table below.

Table 6.2. Health centers with birthing room and number of births in 2007

Province	Health center with birthing room	Total births in 2007
Luang Prabang	Nam Phak	5
Xieng Khouang	Nam Phaa	27
Xieng Khouang	Nong Pet	NA
Xieng Khouang	Latbouak	1
Champasak	0	0
Saravan	Kheng Houat	2

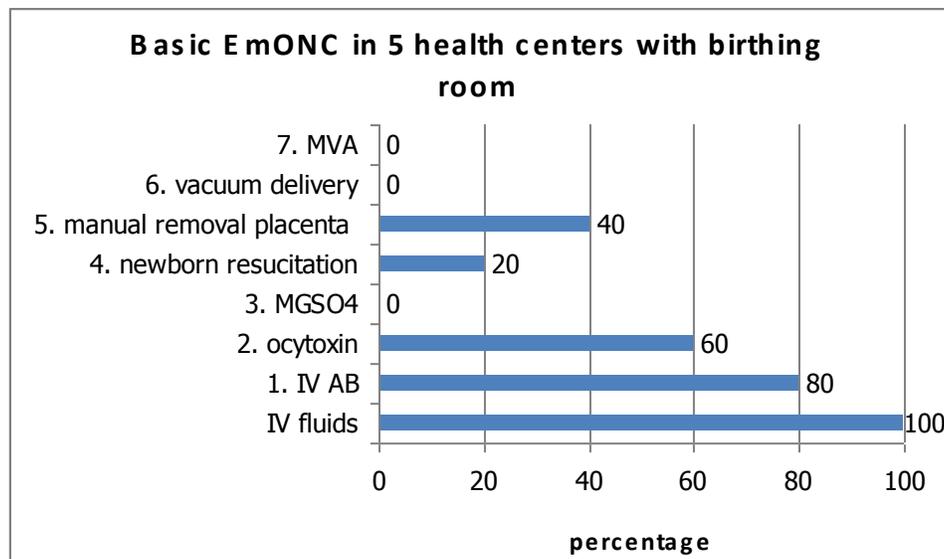
None of the 20 health centers from the sample can provide life saving EmONC functions as seen in the graph below. 85% provide IV fluids, but only 45% provide IV antibiotics, 35% provide oxytocin, 5% provide Magnesium Sulphate and 5% can do newborn resuscitation. In 30% of the health centers, manual removal of placenta is performed; none do vacuum delivery. Note: Since MgSO₄ was not available at HC level during the assessment, the data that 5% can provide MgSO₄ may be incorrect.

Graph 6.4. Basic EmONC in 20 health centers



Disaggregating the data further for the 5 health centers where births take place (graph below), one can see that these 5 health centers cannot provide EmONC: all 5 of them can give IV fluids but only 80% give parenteral antibiotics, 60% use oxytocin, none uses MgSO₄, 20% do newborn resuscitation, 40% do manual removal of placenta, and no one uses vacuum for delivery. It is especially critical for health centers that conduct births to have at least the most basic 4 functions of EmONC, but the data shows that none of these 5 health centers can provide it.

Graph 6.5. Basic EmONC in 5 health centers with birthing room



➤ *The district B hospitals at the first level*

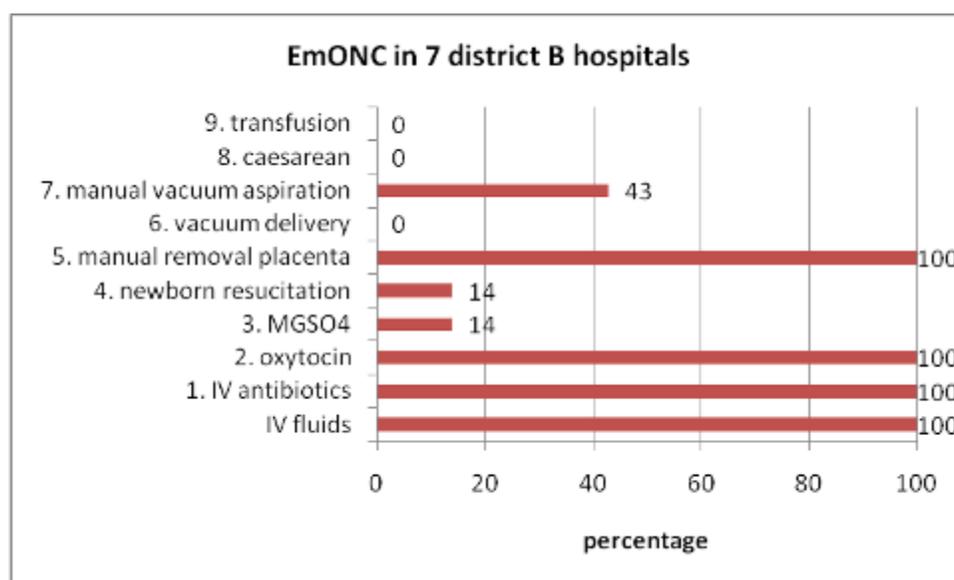
The team assessed 10 district hospitals as seen in the table below. Nambak hospital, classified as Type A, has an operation theatre, but the surgeon left for one year training, and the anesthesia equipment is out of working order, hence Nambak hospital has to be considered only as a type B at the first level and not as a type A at the referral level.

Table 6.3. Number of births and caesarean in 2007 in the assessed district hospitals

Province	District A hospital		District B hospital	
	Total # births (CS excluded)/ # caesarean (CS) in 2007		Total # births 2007	
Luang Prabang			Chompet	56
			Nan	83
			Xieng Ngeun	156
			Nambak	132
Xieng Khouang	Kham	350/10	Khoun	65
Champasak	Khong	77/3	Sanasoumboun	25
Saravan	Khong Xedone	144/11	Toumlan	13

In the 7 type B hospitals (graph below), the EmONC provided is 100% for IV antibiotics, oxytocin, and manual removal of placenta, but only 14% for use of MgSO₄ and newborn resuscitation, 0% for vacuum delivery and 43% for manual vacuum aspiration. In sum, none can provide the 7 basic EmONC functions, and only 14% can provide the life saving 4 functions. Overall, district B hospitals in the assessment were not able to provide basic EmONC as they provide only 3 of the 7 functions for basic EmONC.

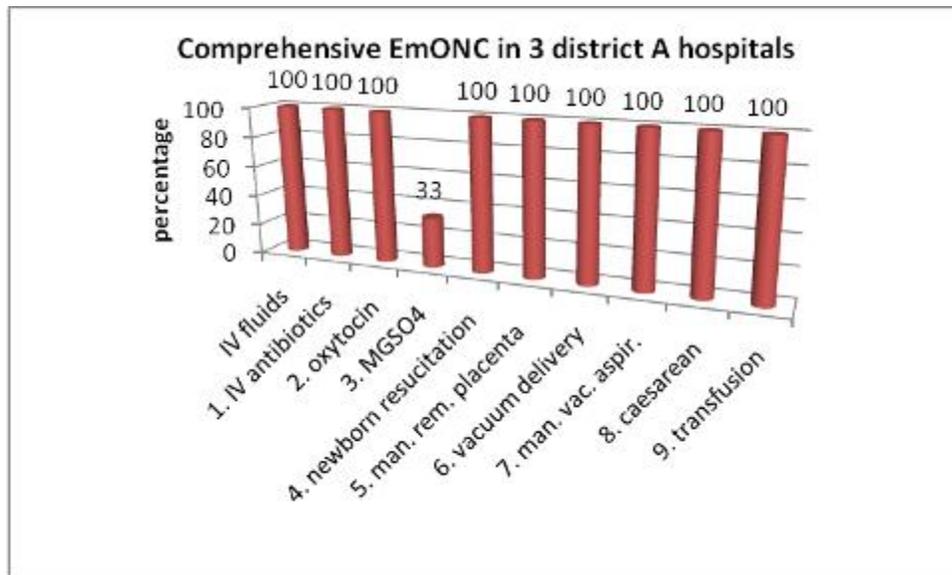
Graph 6.6. EmONC in 7 district B hospitals



➤ *The district A hospitals and provincial hospitals at the referral level*

The graph below refers to 3 district A hospitals. Comprehensive EmONC is very good (100%), except for the use of MgSO₄ (33%).

Graph 6.7. Comprehensive EmONC in 3 district A hospitals



The team assessed 4 provincial hospitals (table below).

Table 6.4. Number of births and caesarean in 2007 in the 4 assessed provinces, per mapping data

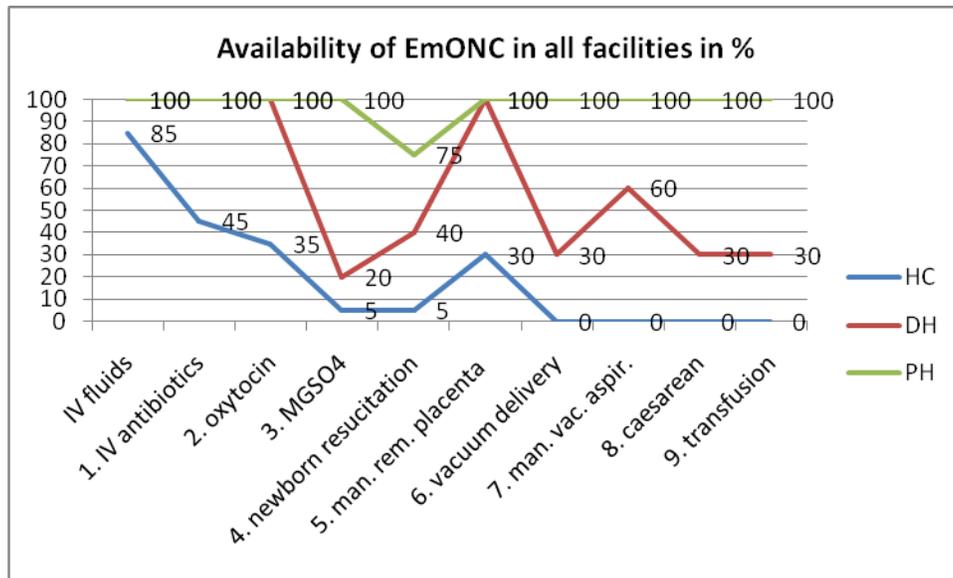
Province	Total # births 2007(excluded CS)	# caesarean 2007	% caesarean rate
Luang Prabang	9,257	126	1.4
Xieng Khouang	5,379	159	3.0
Champassak	12,317	220	1.8
Saravan	8,868	20	0.2

These Caesarean rates are below the 5% considered to be the minimum rate necessary for safe obstetric care.

For the 4 provincial hospitals comprehensive the reviewers found that the availability of the EmONC functions are very high (100%), except for newborn resuscitation (75%), and it was only the Saravan PH that could not provide neonatal resuscitation.

In the graph below one can see availability of EmONC in all facilities.

Graph 6.8. Availability of EmONC in all facilities in %



Summary

- None of the 20 health centers can provide full 7 functions of basic EmONC, including 5 with birth room. That means 0 percent could provide the most essential four life saving EmONC functions.
- The 7 district B hospitals from the sample cannot provide basic EmONC; they score low for use of MgSO₄ and neonatal resuscitation, only 14% for each.
- The 3 district A hospitals from the sample can provide all functions of comprehensive EmONC, with the exception of provision of MgSO₄ is only 33%..
- 3 of the 4 provincial hospitals can provide comprehensive EmONC (Luang Prabang, Champassak, Xieng Khouang). Saravan hospital can provide nearly all CEmONC, lacking only in neonatal resuscitation.
- Health centers are the facilities close to the woman, 80% of whom deliver at home. Providers at this level go with their equipment to assist the woman in her home or village hut. health centers could provide at least the four essential life saving EmONC functions with minimum financial investment, as they can be provided in any setting.
- Unless the List of Essential Medicines for health center level is amended to include MgSO₄ and parenteral antibiotics (in addition to oxytocin), health centers will not be able to offer basic EmONC care, whether provided at the HC itself or in the woman's home.
- Many district hospitals (both A and B) could be brought up to satisfactory levels of EmONC by the simple provision of MgSO₄ and Ambu bags. Of course, that includes the staff having training in their proper use

Maternity Waiting Homes (MWH) project

The maternity waiting homes (MWH), also known as the Silk Homes, are a project in 3 southern provinces in Lao PDR. The program addresses the MOH strategy to bring underserved women from remote areas into district hospital for the last weeks of pregnancy. This encourages facility delivery for a population which now reportedly has 93% of births at home. 17 such MWHs are being built in Saravan, Sekong, and Attapeu. Several opened their doors in December, 2007; the rest are now functioning or nearing completion.

Women arrive at the MWH, receiving ANC and other educational services in the 2-3 weeks preceding labor and birth. There are accommodations for 8 mothers and their families. Downstairs are educational space, exam room, birthing/postpartum room, open area for families to cook, and outside areas, including an herb garden. A weaving laboratory is being constructed beside each home.

The women during their stay are to spend an hour a day receiving education on health, nutrition, birth spacing, child care, etc. If women attend their education sessions, the world food program (WFP) supplies rice and oil to the homes. As incentive, the women are paid 10,000 kip/day and are given clothing and household items when they leave. Additionally, the adjacent district hospital is supplied with complete equipment for the delivery room, including autoclave, delivery instruments, light, specula, retractors, vacuum extractor, suture, sterile gloves, Ambu bag (adult and neonatal), chlorine, etc.: everything for skilled birth attendance and the basic EmONC skills.

The women may deliver in the maternity waiting home but most apparently choose, or are directed, to deliver next door in the hospital. A nurse from the district hospital is trained-up in SBA skills and “seconded” to the MWH. Women are permitted to “sit on the fire”, as is their custom, for their postpartum days in the waiting home.

Training and income-generating activities are conducted at the homes, not only for the pregnant women but also others in the community. They are taught weaving skills, silk production and tend an herbal garden for producing herbal medicines. There are other schemes planned such as making bamboo products, planting mulberry farms for the silk, and making mulberry paper. With the sale of a woman’s or family’s products, some of the money received goes into a community-based health insurance (CBHI) program. Thus when health care is needed, the money is already paid in, and the service is free at the point of care.

The review team visited 3 of the MWHs in Saravan province. One is the Silk Home in Vapi where already 11 births have taken place. All the births occurred in the adjacent hospital. The team learned the typical length of stay was 4 days. The reason for the low number resulted because several women arrived just as labor started, instead of 2 – 3 weeks beforehand; those cases brought the statistics down. It was acknowledged this was not the intended use for the homes, that more outreach to the community was needed to help them understand the ways to use the program. The district health officer confirmed that the homes were being well received by the community, word spreading quickly, aided by information campaigns.

The start up costs for the MWHs were quite expensive, and health officers stated that they have concerns about the project’s sustainability.

The project anticipates that within 2 years of operation 8-10,000 women will have utilized the 17 MWHs, gaining knowledge and practical skills which is hoped to aid the

alleviation of poverty in the area and ultimately reduce the maternal and infant mortality in the region.

The current funding for the program, presently through the Italian government, will terminate in May, 2008. The project believes that the homes, as a result of their various income-generating activities, will become self-sustaining once the project support ends.

CHAPTER 7

RESULTS: EDUCATION AND TRAINING

7.1. Pre-Service Education relative to MCH care

7.1.1. Nursing and Midwifery education

7.1.1.1. History of nursing/midwifery education

The history of midwifery and nursing training in Lao PDR has undergone persistent stops and starts resulting in much inconsistency in programs and confusion about nursing and midwifery strata and titles. Some of these changes at least in part resulted from war and socio/political upheaval, some perhaps because of donors backing different types of programs. In 1976, the medical doctor education and nurse education were interrupted until 1981.

The only distinct professional midwifery education program in the country took place at the College of Health Technology in Vientiane between 1987 and 1989. 88 professional midwives graduated and some of them are still in the workforce. The Department of Personnel 2006 database does not have a clear number of midwives in the workforce.

The previous nursing programs generally included a midwifery, meaning “maternity nursing” component, with graduates generally considered to be midwives as well as nurses or nurse/midwives. However, it is doubtful these programs conformed (in terms of theoretical content, practical training or percentage of curriculum) to what would be necessary to graduate as a professional midwife today, according to international standards and the International Confederation of Midwives (ICM) Core Competencies.

As can be seen in table 7.1 below, there have been different education programs in Lao PDR since 1960:

- a low-level *Auxiliary Nurse* program of 2 years from 1960-1976
- a low-level *Assistant Nurse* program from 3 months to 2 years was in place from 1976-1993
- a 2-year *low-level Nurse/Midwife* (also called auxiliary nurse) program ran from 1993-2002
- a mid-level 3-year diploma program in *Registered Nurse* from 1969-1976, recommenced from 1981-1991
- a mid-level 3-year *Nurse/Midwife* program existed from 1991-2002
- a mid-level 3 year *Midwife* program from 1987-1989.

All of these programs have been phased out.

Table 7.1. All health education programs in Lao PDR 1960- 2008

Curriculum and duration	60-65	66-70	71-75	76-80	81-85	86-90	91-95	96-00	01-05	06-08
Registered Nurse 3 years		69-----76			81-----91					
Midwife 3 years						87-89				
Mid level Nurse/Midwife 3 years							91-----02			
Auxiliary Nurse 2 years	60-----76									
Assistant Nurse 3 months to 2 years				76-----93						
Low level Nurse/Midwife 2 years							93-----02			
Technical Nurse =Registered Nurse =Diploma Nurse 2 years+6 months									03-----	
Professional Nurse 4 years									02-----	
Primary Health Care Worker 3 years									02-----	
Medical Assistant 3 to 5 years	58-----79				-----96					
	4-5 years				; 3 years					
Medical Doctor 7 years				-----76		81-----				

The bulk of the health care workforce in Lao PDR is made up of the no-longer trained Auxiliary Nurses, who number approximately 4,200 (some variation depending on the source of data in Table 5.1). The number of workers in the other nurse cadres is also difficult to determine, listed by 2 sources as either 690 or 848.

7.1.1.2. Current nursing education

With assistance from WHO and TICA, (Thailand International Development Cooperation Agency), the low-level and mid-level nurse/midwife curricula was revised. The result of this revision was the introduction of 2 new curricula, the professional nurse curriculum in 2002 and the technical nurse curriculum in 2003. The programs follow to some extent the Thai model. Currently these 2 nursing programs are taught in Lao PDR. Midwifery content is included in both programs, but there is no content for management of complications.

- *Technical Nurse (also called Registered Nurse, Diploma Nurse)*, a 2 year 6 months program, since 2003. There are 6 provincial nursing schools where technical nurses are trained. *10% of the curriculum is devoted to MCH.*
- *Professional Nurse*, a bachelor level program started in 2002. The only institution in Lao PDR teaching the professional nurse program is the College of Health Technology in Vientiane. For the initial period, this program had a “bridging” curriculum, taking technical nurse graduates and giving them an extra 2.4 years of education to become bachelor-level professional nurses. After 4 such batches, and 127 graduates, the school began enrolling students in 2006 from upper secondary school into a 4-year bachelor program to become professional nurses. These graduates are considered to be the ones who will become the future teachers, leaders, and administrators for the nursing profession. *Only 5% of the curriculum is devoted to MCH.* This is less than the technical nurse curriculum and almost the same as the Primary Health Care Worker curriculum.

7.1.1.3. Future plans for midwifery education

Based on the Ministerial Decision on Nursing and Midwifery Regulation, No. 656, MOH, of June 20, 2007, the governmental strategy is to develop once again a midwifery profession. *The ministerial decision puts both nursing and midwifery together in its decree with a shared scope of practice but does distinguish the two disciplines with role descriptions for each.*

The current review should provide some guidance for that decision, providing the evidence to allow for the elaboration of a detailed Midwifery Development Plan.

7.1.2. Other health care workers who provide MCH care

The training of medical doctor and ObGyn were not be analyzed in this review.

7.1.2.1. Primary Health Care Worker

The Primary Health Care (PHC) worker program started as a short-term measure to fill a gap, intended by MOH Primary Health Care Policy in January 2000 “to guide the implementation of health care service provision in the community, aiming at improving and extending health care service network to cover all areas in an appropriate manner with the real situation of locality, and responding to the need of multiethnic people.” This lower level program was started because of the lack of health staff at health centers in remote areas where ethnic populations are living.

The PHC worker plan recruits lower secondary graduate applicants from villages, chosen by their villages, and thus having the same ethnicity as the local population. Students are guaranteed a paid job as government staff at their local health center upon graduation. The PHC worker program is a 3-year program. The curriculum is designed within MOH Department of Education and Training and *only 4% of the curriculum is devoted to Maternal Child Health.*

The program started in the northern part of the country with education programs in the health schools from Oudomxai and Luang Prabang in 2002 and in Xieng Khouang in 2003. The first groups were graduated in 2005.

In these 3 schools, the PHC worker students come from the 8 northern provinces where the Asian Development Bank is funding the Primary Health Care Expansion Project. Luang Prabang school has students from Luang Prabang, Bokeo and Sayaboury provinces; Oudomxai school has

students from Oudomxai, Luang Namtha and Phonsaly provinces and Xieng Khouang school has students from Xieng Khouang and Houaphanh provinces. In the 3 schools, 64% of the students are from ethnic minorities while 34% are Lao Loum. 64% of the students are male and 36% are female.

The education program of PHC worker was taken over by the World Bank who is active in the 8 southern provinces of Lao PDR. Education of PHC workers started in Savannakhet in 2005 and in Saravane, Khammouane and Champasak province in 2006.

Approximately 87 PHC workers are included in the national workforce statistics (Table 5.1). However, according to ADB, there are actually 377 PHC workers in the workforce in the 8 northern provinces.

The fact that students are guaranteed a paid job at their local health center upon graduation has apparently caused friction with other healthcare cadres who upon graduation from their schools, have no guarantee of a job and often have to volunteer, sometimes for at least 2 years, until they can find paid work.

World Bank is just initiating an activity which sends the PHC worker or new graduate (only females) to the provincial hospital for a 5 month internship program in MCH, for experience in deliveries, EmONC, ANC, family planning, using the Integrated Management of Childhood Illnesses (IMCI) approach. They are doing this acknowledging the scant amount of MCH (4%) that the current PHC curriculum provides and because the PHC worker, because of location in the remote areas where women still birth primarily at home, get very little maternity experience. While this training is not extensive enough for certification as a SBA, these MCH skills are essential in all PHC workers. An expansion of this program, incorporating the ICM Core Competencies, could actually produce PHC midwives.

Asian Development Bank states their PHC worker training is at a crossroads. The actual curriculum will be discontinued. ADB is supporting a new MOH plan to make the PHC worker a mid level (3 years post upper secondary education). Another plan is to give extra training in EmONC to the existing cadre of PHC worker. The problem arises where to send the students for practical training since number of births in the hospitals is low.

As mentioned above, a corollary program could be developed to make a mid-level PHC midwife cadre.

7.1.2.2. Medical Assistant

Starting in 1958, because of the shortage of medical doctors, a cadre called medical assistant was trained through a 4-5 year program from 1958 to 1979 and a 3-year program from 1979 to 1996.

This training program replaced the 3-year registered nurse program, took place initially at Mahosot Hospital in Vientiane, then at the provincial health schools and continued until 1996, when it was discontinued with no new intakes. There were other types of medical assistant training in the past, including a 5 years curriculum at the medical faculty.

They are mid level health workers, and actually they are the second largest category of medical health worker in the country. Currently there are approximately 1,200 (database Department of Personnel) medical assistants working in settings from provincial hospital to health center.

It was decided in 2007 to restart the medical assistant program though it has yet to receive final government approval and curriculum is in draft; a start date is as yet undetermined. The training site is scheduled to be the Public Health School in Luang Prabang. Applicants are to be upper secondary graduates; intake is to be 40 – 60 students/year. Duration of the educational program will be 4 years. It is difficult to ascertain the percentage of curriculum devoted to MCH.

7.1.3. Educational facilities, teachers and students

The review team assessed 2 health schools: the health school in Luang Prabang town in Luang Prabang (LPB) province and the health school in Pakse town in Champasak (CHP) province. In both schools, the team did a walk-through of the facility with one staff from the school and assessed teachers and technical nurse students. The assessment of the teachers comprised a self-assessment questionnaire, a skills test and short interview. The students filled in a questionnaire and did the same skills test as the teachers. In the table below, one can see the numbers of teachers and students assessed.

Table 7.2. Number of teachers/students assessed in Luang Prabang and Champassak

	# teachers	# students
Luang Prabang	19	52
Champasak	20	59
Total	39	111

In both schools the 2 years 6 months *technical nurse* curriculum (since 2004) and the 3 years *primary health care worker* (PHC, since 2002 in LPB and since 2006 in CHP) are taught. Both curricula have an MCH component (10% for technical nurse and 4% for PHC worker). For both schools, there will be no new intakes for PHC worker in September; this curriculum will be interrupted as discussed above. In Luang Prabang there are a total number of 62 teachers for 522 students, the teacher/student ratio is 1:9. In Champasak there are 48 teachers for 436 students, the teacher/student ratio is 1:8.4 (see table below).

Table 7.3. Number of teachers/students in Luang Prabang and Champassak in 2008

As off January 2008	Luang Prabang school			Champasak school		
# permanent teachers	27			34		
# teachers from outside	35			14		
Total # teachers	62			48		
Technical nurse curriculum	Total # students = 372 2 classes of 55-75 students/year			Total # students = 316 2 classes of 50 students/year		
	# students/ year	1st year 135	2nd year 150	1/2 year 117	1st year 103	2nd year 106
Primary health care worker curriculum	Total # students = 150 2 classes of 50 students/year			Total # students = 120 2 classes of 20 students/year		
	# students/ year	1st year 50	2nd year 50	3th year 50	1st year 40	2nd year 40
Total # students	522			436		

7.1.3.1. The teachers

The teacher tool was completed as a self-assessment questionnaire, with many Yes/No questions about curriculum, teaching methods, attitudes. There were also questions to complete regarding bio-data and teachers' thoughts on their career, future, and what would make their jobs easier or better. The reviewers spoke individually to 19 teachers in Luang Prabang and to 10 teachers in Champassak.

Luang Prabang school has 27 permanent teachers and 35 external teachers. Champassak school has 34 permanent teachers and 14 teachers from outside. In the table below, one can see the number of teachers by cadre in Luang Prabang school.

Table 7.4. Number of teachers by cadre in Luang Prabang 2008

Cadre of teachers	# teachers in LPB school
Master Public Health	1
ObGyn	0
Medical doctor	3
Medical assistant	4
Professional nurse	4
Registered nurse/midwife	1
Technical nurse	5
Auxiliary nurse	1
Total	19

The teachers are predominantly female, and 13 of the 39 are men. Age range is 22-48 years. Respondents have been at their teaching posts anywhere from 4 months to 26 years, as in the case of the one Ob/Gyn specialist doctor.

The subjects of teaching for 19 permanent teachers in Luang Prabang are (some teachers teach 2 subjects):

Table 7.5. Number of teachers by subject in Luang Prabang in 2008

Subject	# of teachers teaching the subject
Basic nursing	6
Adult nursing	1
Anatomy-physiology	2
Anatomy-pathology	1
Pathology	1
Infectious diseases	1
Community health	2
First aid	2
Nutrition	1
Nursing management	1
English	3

In Luang Prabang, teachers said that 13 teachers have attended a 15 days Training of Trainers' course, however for some teachers this training dates back to 10 years ago. Other teachers have attended or are attending training programs in Thailand, Indonesia, Philippines and Vietnam (3

months to 2 years). But when asked about trainings in the last 5 years in the written questionnaire, only 3 responded: one had an Essential Drugs 5 day course in 2005 by ADB; one had a 1 month breastfeeding in 2004 by UNFPA; one had a TOT for TBA in 2007, agency not mentioned.

When asked in the written questionnaire about whether they are a skilled birth attendant themselves, two said yes: a bachelor nurse who used to work in gynecology and the ob/gyn specialist, who stated he does it because he “loves to do this”.

To the written question as to whether the respondents teach SBA, 8 replied yes, 4 saying it is because they “love it”. Only 2 of the 5 midwives said they are SBA teachers. One of them said she has never practiced midwifery.

When asked what they would like to be doing in 5 years, most said they want to be teachers. Three said they want to be midwife teachers; one of the nurse/midwives wants to get a masters in midwifery.

To the question on whether it is a good idea as a nursing teacher to also work in the hospital, 56% said yes, because it would make them better teachers.

Asked if they should have their own private practices in addition to their teaching job, 51% responded yes, most citing that it would be better for maternal/child health and that it would be better for infection prevention. No one mentioned additional income as a reason.

Finally, to the question about what would make their jobs easier or better the majority of answers said: more teaching materials; knowledge of the correct methods and getting updated knowledge.

7.1.3.2. The students

The 111 last-year technical nurse students who were given the assessment tool were asked a number of questions about their future plans. Over 50% did not know where they were going to work upon graduation. 21% said in their own town district hospital, but did not say they had a job yet. *Only 3 of the 111 students chose health center as desired place of work.*

When students were asked if they wanted to become a professional midwife, 79% of the Luang Prabang students did, and 97% of the Champasak students did.

When asked (Yes/No) questions about their schools: teachers, learning environment, the curriculum and teaching methods, adequacy of clinical experiences, the students on both campuses had overwhelmingly positive responses. One wonders if the interview tool had been structured differently, with open-ended questions instead of Yes/No questions, whether the answers would have been the same. Students when asked these questions, may not have wanted to risk answering negatively. *Only 50% of all the students felt that they had enough practice in the classroom skills laboratories before they were expected to perform in the clinical area.*

The students were very positive about the number of models with which to practice; they felt they had adequate number of books on SBA available to study, that the curriculum taught all the basic emergency obstetric skills, including resuscitation of the newborn. The majority said they had adequate experiences doing deliveries in the hospital. Students in Champasak felt they had adequate knowledge or experience with birth in the home setting whereas only half of the Luang Prabang students did.

54% of the students said they had knowledge of managing cases of eclampsia, postpartum hemorrhage, and postpartum infection.

Skills testing of teachers and students

A sampling of the teachers and students at the educational facilities were given the hands-on skill tests, the same skills test given to all the health facility providers.

In Luang Prabang, only 2 of the 19 teachers assessed said they taught the MCH part of the curriculum, so they were the only ones put through the skill stations. In Champasak 10 of the 20 assessed teachers were skill tested. Students also were skill tested, 6 out of the 52 assessed in Luang Prabang and 10 out of the 59 in Champasak.

The student and teachers scores of performance of the skills are listed in the table below. The intent is to see if students learn from what teachers know and teach about these skills. Note that the sample is too small to make any accurate correlation.

Table 7.6. Performance of skills in % for teachers/students

	Luang Prabang		Champasak	
	Teachers # = 2	Students # = 6	Teachers # = 10	Students # = 10
Use ambu bag for neonatal resuscitation	0%	33%	50%	0%
Give oxytocin for active management of third stage labor	50%	17%	40%	100%
Plot partograph for managing obstructed labor	50%	17%	10%	0%

The teachers in the table above are the classroom teachers. Part of student learning is gained in the clinical situation. This might be the reason why students know how to do what classroom teachers do not; however, classroom teachers should know.

Students were known to be in their final year of their technical nurse program, thus advanced students who should have learned their skills. Still, conclusions cannot be drawn from this data because the sample is too small and some variables are unknown.

The 52 Luang Prabang students were further tested on the 3 clinical competency questions (the same as the providers in the health facilities) to test their clinical thinking and problem-solving abilities. On recognizing and managing shock properly the average score was 47%. For recognizing and treating pre-eclampsia the average score was 40%. On the scenario for providing and counseling on family planning, students scored 100%.

7.1.3.3. Results from the walk-through audit in both schools

- **Staff development/institutional capacity building**

Both schools had external support by JICA for upgrading the buildings. In Champassak, JICA has 1 staff working in the school on a daily basis for upgrading the staff. In the past, LPB school was supported for many years by Swiss Red Cross for upgrading the buildings and staff support from 1 expatriate.

Teachers report in CHP that they get SBA preparation before doing the job, but not so in LPB. In both schools there is a system to monitor teacher quality.

- **The curriculum**

The curriculum of technical nurse was designed in the education department of MOH and started in 2002. PHC worker curriculum was designed by ADB and started in 2004. There's no involvement of teachers or students in the design of the curriculum. *In the technical nurse curriculum, teaching SBA skills is 10% of total curriculum, while in PHC worker curriculum, the SBA part is about 4%.* According to the teachers, the curriculum allows for the development of all basic EmONC skills, plus essential newborn care and resuscitation. In CHP, teachers say that minimum 60% of curriculum for SBA competency takes place in the clinical area with hands on practice, while in LPB teachers say it is not 60%. Both schools say the curriculum is arranged to allow students to develop simple skills in classroom laboratory to complex skills and competencies in clinical area. The curriculum also contains opportunity for hand-on practice in the community for care of mothers and newborns as well as in the facility.

In both schools the curriculum is validated by an accreditation committee and it is updated within 5 years based on best practices.

In Champasak, teachers say that the students get a manual (outline of the curriculum/expected competencies/schedule/times of assessment etc), while the students in LPB do not. In both schools there are written guidelines to assess students.

- **Educational Processes**

In both schools, the teachers do not use multiple education methods/techniques based on principles of adult learning theory (small group/role play/games etc). Teachers do not use a problem-based approach to learn to encourage independent and autonomous practice and critical thinking. But they report they use competency-based methodologies and checklists for development of clinical skills.

In both schools, the teachers accompany students to the clinical areas for hands-on practice and provide students with feedback on their progress. The assessment of clinical competency includes theoretical and practice-based assessments.

- **Support to students**

In LPB school, there is no formal mechanism by which students can make a complaint about the program, teacher performance or behavior, or other grievances, while there is in CHP. In both schools there is a formal mechanism to support and counsel students having personal problems and a formal mechanism for consultation with students so that they can give feedback on program and teacher performance.

- **Clinical Practice & Support**

For both schools, the provincial hospitals from Luang Prabang and Champassak are adequate practice sites for hands-on SBA care, although the case load of births and caesarean is not high, as seen in the table below.

Table 7.7. MCH services in Luang Prabang and Champasak provincial hospitals

2007	LPB hospital	CHP hospital
ANC clients	4776*	7657*
# Births	1249	1452
# Caesarean	118	209
Natural abortion	60	409
Induced abortion	69	NA
Vacuum extraction	33	37
Premature	47	43
Less than 2,500 kg	65	27
Stillbirth	14	34
Maternal death	3	1

*Hospitals do not report ANC sessions and attendees in the same way, hence the different numbers.

Since births in the community are 80% at home, it is almost sure that students practicing in community have very little chance for hands-on practice in the health facilities. Both schools have a mechanism for assessing all clinical practice sites, including community placements, to ensure they are quality-learning environments. Each student keeps a log book about their SBA experiences.

- **Faculty/Teaching staff**

There are a sufficient number of teachers (the norm is ratio 1:15 students) in both schools. The preparatory program in adult learning consists in a 15 days training of trainers' course. Teachers teaching SBA are required to be clinically competent as a midwife and maintain their clinical competence: this is not the case in LPB, but teachers in CHP report they do. On-going study in SBA updates is not happening in either school.

- **Facilities**

In both schools, the classrooms are safe and hygienic, recently upgraded by JICA. The students do not have a separate study room. The skills lab has old models and not enough equipment given the number of students. There are not sufficient working models for SBA available. Both schools have an auditorium/large meeting room. Each classroom is equipped with teaching aids. There are sufficient desks and chairs, there is proper ventilation in classrooms and the classrooms are well lit. OHP, TV and video/DVD are available and working.

- **Learning Materials**

In both schools there is a well-stocked library, however most books are in Thai language. Both schools have the IMPAC book (to support SBA) translated in Lao and available in different copies. The library is only open during class time. Students cannot access the library after class

time, but they may borrow books/materials and use after hours. Photocopying is not available for student use. Internet is not available for teachers and students.

- **Student Accommodation (if at the school)**

In Champasak, the school and student's accommodation is just opposite the street of the provincial hospital. The school campus is very small. Accommodations do not have sufficient residential space on the campus and there are no recreational facilities for the students.

In Luang Prabang, the student's accommodation is not on the school campus but about 3 km out of town, located beside the new provincial hospital. The school grounds are quite spacious and the young man can play sports after school.

There's no TV for student's use in both schools, although TV is available in the audiovisual room in LPB.

Summary

Data on students in the current healthcare education programs is in Annex 8, showing the annual graduate numbers.

There are sufficient numbers of teachers (the norm is 1 teacher for 15 students) in both schools. In Luang Prabang school the ratio is 1:9, in Champasak the ratio is 1:8.4.

None of the teachers interviewed call themselves a skilled birth attendance (SBA) teacher and none of them teaching SBA has been practicing in the hospital before. In the technical nurse curriculum, teaching SBA skills is 10% of total curriculum. In primary health care worker curriculum, the SBA part is about 4%. Teachers do not use adult learning education methods, nor do they use problem-based approach to encourage independent and autonomous practice and critical thinking.

Practice taking place in skills laboratory/classroom, prior to real clinical placement is limited. In both schools, the skills lab has old models and not enough equipment seen the high number of students. There are not sufficient working models for SBA available.

While teachers in Champasak school say that minimum 60% of curriculum for SBA competency takes place in the clinical area with hands on practice, teachers in Luang Prabang deny this. The high number of students might be an inhibiting factor for necessary hand-on practice to develop all SBA competencies for basic and comprehensive EmONC. The number of births is low in the provincial hospitals, hence the question whether students have chance to do deliveries themselves. The fact that nurses have no authority to do deliveries in provincial hospitals, might mean students have even less chance for practice. Students practicing in the community have little hands-on practice for basic EmONC since 80% of the births happen at home.

In both schools the buildings have been upgraded by JICA and they are good learning environment. All classrooms are equipped with white board and overhead projector. In both schools there is a well-stocked library, however many books are old versions and the majority in Thai language. There are few books in Lao language. Both schools have the IMPAC book translated in Lao, with several copies, to support SBA. The library is only open during class time. Students cannot access the library after class time, but they may borrow books/materials and use after hours. There is no TV or Internet for student's use in both schools. Recreational facilities for the students are very limited in Champasak school because the campus is small. In Luang Prabang the school campus is bigger and young man play sports.

7.2. In-service training relative to MCH care

7.2.1. Overview

During interview with two key informants from MCHC center, the following information was gathered. There are four regional training centers for MCHC, based at the regional hospitals or the schools: Vientiane, Champasak, Savannakhet, and Luang Prabang. A team of staff have been prepared so they can offer in-service training, two trainers at each site.

- **Master trainers**

Primarily medical ob/gyn doctor specialists, but also some other non-physician maternity staff, confusingly also referred to as ob/gyn staff, were selected from central and provincial hospitals to become master trainers. The training of master trainers was a 10-day course. Master trainers in turn train other provincial staff, then district hospital staff and health center staff. It is not clear if this training of regional trainers focused only on technical issues or if it included developing the trainers' competence as a trainer by using participant-centered, adult learning methodologies.

- **Training sites**

Trainings take place at the provincial schools or hospitals. The central facilities in Vientiane used for training are MCH hospital, Sethathirath hospital and Mahosot hospital. These 3 facilities are described later in detail. For the regional training centers, the team assessed the provincial hospital in Luang Prabang and Champasak as health care facility and not as training centre.

- **Training**

There is an average of 12 people per training. The 10-day training has expanded to one month. Additional practice time was needed in the facility because the number of births in remote areas (where some trainees come from) are so low, the trainees do not get enough practice in their local sites to gain competency. All participants are issued a certificate upon completion. It is unclear whether it is for attendance or given only if competency has been demonstrated through performance assessment. For health center staff, a simplified training is given, focusing on routine essential care, complication recognition, and making referrals.

MCHC states they conduct trainings on many different topics such as nutrition, family planning, IMCI, EPI, etc. For the purposes of the review, the inquiry focused on types of trainings related to EmONC and SBA.

Trainings include some strengthening of service sites and provision of essential training equipment. This may be only at the regional training centers.

- **Training Materials**

In terms of EmONC, the training package is based on the Lao translation of the WHO *Managing Complications in Pregnancy and Childbirth* (commonly called the IMPAC book). Mainly WHO has supported this master EmONC training and developed the training manual.

A separate manual has been produced in Lao for district level staff. It has taken selected sections of the WHO IMPAC manual and adapted them to meet the local context. The adaptation focuses

on the common problems seen in Lao PDR, using local resources and terminology, and simplifying some of the protocols to make them easier to understand for local staff.

A further adaptation of the manual was created for the health center level. The manuals were reviewed to see if they are “fit for purpose”, in other words, whether they cover the EmONC skills that are necessary to know for the particular level of care of that facility.

This graph shows if the necessary subjects are included.

Table 7.8. MCHC In-service training manuals

Service Level	1	2	3	4	5	6	7	8	9
	IV Antibiotics	Oxytocin	Magnesium Sulphate	Neonatal Resuscitation (ambu bag)	Manual removal of Placenta	Vacuum delivery	Manual Vacuum Aspiration	Cesarean Delivery	Blood Transfusion
Health Center	✓	✓	No	No	✓	No	No	No	No
District Hospital	✓	✓	No	✓	✓	No	✓	No	No
Provincial Hospital	✓	✓	✓	✓	✓	✓	✓	✓	✓

Reference: Mother and Child Health Care, Ministry of Public Health, 2006, ‘Obstetrics Guide Books’

For health centers and district hospitals, the manuals state to give IV or anal Diazepam for pre-eclampsia/eclampsia, but, according to the Essential Drugs List, Diazepam is not on the formulary for health center level.

Note also that neonatal resuscitation is not covered in the manual for health center level training.

One infection prevention detail noted for both district hospitals and health centers is that the manual says they should have chlorine for cloth disinfectant but to use soap for utensil cleaning.

- **Issues**

There is no information to show that nurse tutors have been trained as master trainers and it would be useful for the future. Especially if the MOH decides to re-commence a midwifery program, there must be dedicated midwifery teachers who have received such master training and who are also involved with in-service training so that there can be better consistency across programs.

MCHC staff stated there are two major problems in the MCHC training programs:

- 1) There is no monitoring and evaluation system in place.
- 2) There are inadequate equipment and supplies to conduct the trainings.

The number of trainings conducted depends on the central budget. In 2007 MCHC reported that there were few trainings compared to previously. The following table shows the number of persons given training in EmONC in last 3 years:

Table 7.9. Data of MCHC EmONC trained human resources

Levels	Year 2005	Year 2006	Year 2007
At provincial level	24	10	0
At district level	0	16	18
At health center level	0	0	0
Total	24	26	18

Reference: Ministry of Public Health, Mother and Child Health Center, Training Center, 2008, *Record of EmONC training by province according to the registration at the training dates from 2005-2007*

- **Follow-up**

MCHC reported they are aware of the importance of follow-up to ensure compliance with what has been learned during the training and for quality improvements. They state that some follow-up has taken place, done by central level MCHC staff and at least one of the EmONC trainers. They emphasized that follow-up is a problem for them because of limited budget.

- **Donor support for in-service training**

MCHC staff members are of the opinion that donor support for all MCHC programs could be strengthened and that there is little support for follow-up activities. Some donors such as World Bank and ADB are providing their own EmOC or EmONC or MCH trainings, not necessarily consistent with those of MCHC. The programs and materials (manuals, etc.) differ slightly from the MOH programs but – in the opinion of MCHC – are in line with them. The review team was told that there is no reporting system in place for number of staff trained by donor-sponsored groups so that MOH has no data on who and how many are trained, if trainings meet national/international standards, and whether there are monitoring and evaluation follow-up activities.

7.2.2. Training facilities and modules

It is important to take a closer look at the SBA and EmONC trainings conducted at the central level since it is these trainers, those they teach, and the skills taught that are then disseminated to the rest of the country.

Assessment of 3 in service training institutes in Vientiane capital

The number of births and caesarean sections for the MCH hospital, Mahosot (central) hospital and Setthathirath (university) hospital can be seen in the table below.

Table 7.10. Number of births and caesarean in 2007 in 3 main hospitals

2007	MCH hospital	Mahosot hospital	Setthathirat hospital
# births	3,623	2,895	1,400
# caesarean	630 = 17%	301 = 10%	190 = 14%

The 3 sites are considered the 3 main training institutes in Lao PDR, because of their location in the capital beside the faculty of medicine and training college of nurses, the highest numbers of births, the highest number of professional staff (ObGyn, doctors, registered and professional nurses/midwives) and the highest level equipment.

The review team did a walk-through assessment combined with interview of the head of the ward. The walk through assessment showed 3 well functioning facilities. All 3 sites have different donor support (ADB, JICA, NGO's, University cooperation, Swiss Cooperation...).

- **The trainers**

Compared to staff in the provinces, the nurses/midwives and doctors in these 3 sites are usually senior staff, speaking French and English, some being trained overseas (midwifery in Russia or Hungary, doctor in Germany). Until 1975 all working documents in the hospitals were in French, hence the knowledge of French and the resulting interest of French speaking donors to support and upgrade buildings and staffs (Swiss Cooperation, Luxembourg, Medecins Sans Frontieres, Comite de Cooperation avec le Laos, Enfants et Developpement, Service Fraternel d'Entraide).

The staff in the 3 hospitals have an extended and varied work (over) load: they give curative care to the patients; they monitor and supervise nurse students and doctor students; they function as in-service trainers for staff from provinces (PH, DH, HC); they go out to the provinces to give training; they receive training themselves by donors and some of them teach at the faculty of medicine or the nursing school.

In MCH hospital, all staff are trainers (82 medical staff), while in Mahosot and Setthathirath only 6 persons (doctors, nurse/midwives) of the total maternity care staff are trainers. Some of these trainers have received a short Training of Trainers Course (TOT). The trainers go regularly out to provinces in provincial and district hospitals, supported by donors. On the other hand, when trainees come to one of the 3 hospitals, the trainer eventually gets a financial compensation for providing training. This can be 10.000 kip/hour theory teaching and 10.000 kip/day practice supervision.

All trainers have the necessary skills to teach SBA competencies. In-service training for the trainers is dependent on donor funding (e.g. 1 midwife in Mahosot just came back from 1 month EmONC training in Sweden).

- **The trainees in 2007**

Table 7.11. Profile of trainees in 3 main hospitals

2007	MCH hospital	Mahosot hospital	Setthathirath hospital
# persons	25-30	12	4
cadre	Not available	doctor, MA, nurse	nurse
from where in the provinces?	PH, DH	PH, DH, HC	DH
length of training	2 weeks	2 weeks to 6 months	3 months
funding	US NGO for newborn resuscitation & others	AB, WB, Service Fraternel d'Entraide & others	Lao-German university & others

- **The curriculum**

All 3 institutes use the IMPAC book, the WHO-UNPFA-UNICEF-WB syllabus '*Managing Complications in Pregnancy and Birth*' translated in Lao. The curriculum has the necessary hands-on practice to develop all SBA competencies for basic and comprehensive EmONC.

In Mahosot hospital the use of partograph was taught by Enfants et Developpement (EED) in earlier years. The partograph is somewhat different from the internationally-accepted partograph. The trainers use the EED partograph when they go for training to the provinces.

- **EmONC skills**

Oxytocin: In all 3 sites routinely administrated IM as soon as the baby's shoulder is out.

Magnesium sulphate (MgSO₄): In MCH hospital, MgSO₄ is not used because of difficulties with dilution. They use Nepresol and Valium. In Mahosot hospital, MgSO₄ is not used. They use Nepresol, Aldomet and Valium. They reported that Nepresol cannot be found in the pharmacy or in the market for the moment. In Setthathirath, MgSO₄ is always used (the ward director was educated in Germany and got this practice from there).

Newborn resuscitation: In all 3 hospitals, the Ambu bag is used by the pediatric doctor. MCH hospital is the only place where the Ambu bag was in delivery room on the table where the newborn will be taken care of. In the 2 other hospitals the Ambu bag was not available for immediate use. In Mahosot the Ambu bag was locked up in a cupboard in delivery room and the key was outside with a responsible person. In Setthathirath the Ambu bag is only available in pediatric ward. The pediatric doctor who has been called to assist the delivery will bring the Ambu bag. The question rises how much time is needed in emergencies to get the Ambu bag to the newborn table.

For the moment the pediatric department in MCH hospital is training 2 persons/district hospital from all provinces. So far, 500 persons have been trained since 2005. Only Xieng Khouang, Houaphan, Phongsali, Sayabouri province have not been covered. At the end of the training, an Ambu bag is provided to take back to the district hospital. The plan is to train all health centers in next 3 years, if the funding from the US based NGO will continue.

- **Teaching equipment**

All 3 facilities have good learning environment (clean water, separate toilets for women, 24h electricity). Setthathirath hospital was rebuilt with JICA support in 2000 and is well equipped with classrooms with learning equipment and library. However, models and mannequins are missing. Mahosot hospital has no classroom, no library and no teaching aids using models. MCH hospital has a lot of models. Internet for students use is nowhere available.

Table 7.12. Equipment/environment in 3 main hospitals

	MCH hospital	Mahosot hospital	Setthathirat hospital
Adult learning equipment in good working order		Only transparent projector	Well equipped by JICA
Good learning environment (clean water etc)	Small building but clean	Old building but clean	New building
Adequate books/learning resources	No library no internet for students use	No library no internet for students use	Well equipped library, no internet for students use
Adequate models/other learning resources	Many models	No models	No models
Practice in classroom	No classroom	No classroom	Classroom available

Summary

- Annex 9 shows the number of EmONC-trained staff by province.
- The 3 sites can train trainees to the level required to provide skilled care. The total number of trainees in 3 sites for 2007 was 52 persons and training varied between 2 weeks and 6 months. All 3 facilities have good learning environment.
- The staff has the skills to teach SBA competencies although there is no standardization in skills and ways of teaching. For example the treatment of pre-eclampsia and the use of MGSO₄ are different in every site. Also the type of partograph differs from one site to another.
- Newborn resuscitation is in the hands of doctors, and ambu bags are not immediately available in 2 sites. Since this skill is one of the 4 basic EmONC skills, the question rises whether lower level staff can do this practice. Nurses usually do not do the deliveries, although the policy allows them.
- Learning resources (adequate books) are only available in Setthathirath. Teaching aids (models and mannequins) are missing in Mahosot and Setthathirat. Only MCH hospital has models. Computer with internet access for students use is not available in none of the 3 sites.

CHAPTER 8

COVERAGE

For the health system to work there needs to be more than the correct policies, the capable providers, and the functional facilities. There has to be the appropriate proportion of staff where they are needed to meet the needs of the population (coverage). Also, the functional facilities have to be available, the ones near the people working as they should (access). Finally, people have to be able to get to the right level of care as needed (referral). This chapter looks at these components to assess the overall capacity to give skilled birth attendance (including access to EmONC) to women in Lao PDR.

8.1. HUMAN RESOURCES

8.1.1. Shortages/gaps

According to the *Human Resources for Health Analysis of the situation in the Lao PDR, October 2007*, there are inadequate numbers of health care staff in the workforce to provide skilled birth attendance. As well there is mal-distribution of existing staff with a higher proportion in urban rather than rural areas. In 2005 39% of newly recruited staff were allocated to the central level, and those were mostly high and mid level workers. An example: the provincial health office in Saravan province said they had not been able to recruit a doctor to come there in over 5 years.

There is also an un-even distribution of staff to the different facility types. The majority of health workforce is at the district level, but 88% of those are low and mid level. At health center level, 99% are low and mid level workers; and of those health center workers, 81% are low level. In fact only eight doctors work at health centers in the entire country.

The majority of the health workforce is made up of auxiliary nurses, a low level category. Medical assistants, mid level workers, are the next most numerous category. Together those two cadres comprise 60% of the health care workers in Lao PDR. The current recommendation of the government according to the health staffing standards is to recruit no more medical assistants or auxiliary nurses into the workforce; they are to be replaced by mid-level nurses. The current draft proposal is that at health center level they are to be replaced by mid-level nurses and PHC workers. (MOH and WHO, 2007). However, this will provide very little MCH expertise at health centre level, due to the current lack of MCH in nursing and PHC curricula.

In the *World Health Report 2006*, WHO estimated that at least 57 countries, including Lao PDR have a critical shortage of health workers (MOH, 2007).

Many factors contribute to the inadequate number of staff in Lao PDR :

- Health workers are concentrated in better-off regions where they have better living and working conditions.
- Recruitment quotas are low. For the last 2 years, increases in the workforce have been below 2 %; this percentage is less than the population growth which is 2.5%.

- Attrition rate is considered to be 10%/year. (The assessment sample calculated 8% for those reaching retirement age in the next 5 years; to that must be added losses due to illness, death, job change, etc.)
- According to the HRH analysis, there is an absence of any means to recruit, allocate, and maintain new health workers where they are needed.
- Salaries are very low. Health care workers need a decent living wage. Nurses earn about \$45/month. A beginning PHC worker may earn only \$20/month. Compare that with \$75/month for a new military recruit and \$120/month for a worker in a salt-manufacturing plant, stirring the salt mixture over a fire.
- An increasing number of students are being enrolled in health care education while few jobs are being created for them to apply for upon graduation. For example, only 52 of the 127 recent professional nurse graduates have jobs, and all but one are at the central or provincial level. (Loun, 2007).

8.1.2. Staffing standards for skilled birth attendance

Pertaining to maternal child health, as quoted from the *HRH Analysis*: “The analyses of the correlation with maternal and child health needs show that those provinces that have the highest need are also the ones that have the lowest share of their medical staff and doctors at the district level. This illustrates the necessity for incentives for deployment of skilled medical staff at the district level.”

According to the WHO Indicators, there needs to be one skilled birth attendant for every 5,000 of population. Another way to calculate the need is to divide the expected births by 175 to get the number of skilled birth attendants needed. The difficulty is to dis-aggregate the data further to determine how many in the workforce are allocated to do MCH care, especially since most workers at health center level and district hospital level are general purpose providers, not specifically working solely as skilled birth attendants. (Annex 5).

Equally difficult to find is the source data on how many skilled birth attendants (SBA) are needed, based on the staffing standards at each level of care, again because at the district level the care providers generally do not have specialty areas. It can reasonably be said that at health center level, 1-2 SBA are needed; only one is needed at a time, but one person should not have to be available 24 hours/7 days/week. At district level 5 SBA would be necessary on average, but the number could be adjusted based on the size and census of the particular facility. At provincial level, generally 10 SBA are needed, again depending on the patient volume.

Compounding the problems of access/coverage is the problem of so few deliveries occurring in facilities. The providers - even if they were trained with good skills - cannot retain them because they don't get enough practice. As for students, they do not get enough hands-on experience to develop good skills in the first place. The end result is that even if there is coverage, even if there is access, it may not be skilled care that the woman actually receives.

8.1.3. Field notes

The following notes from the field point to just a few of the barriers to access of skilled care, even when human resources are available. These include lack of equipment and transport for

referral, lack of career structure and incentives, and barriers to community utilisation due to sociocultural, geographical and financial barriers.

- A midwife from a health center in Luang Prabang province, whose husband is the auxiliary nurse there, said: “if I had better equipment, more women would come because I have very much experience; women trust me.” She said she wanted more training. She manages her deliveries with 1 clamp, a pair of dull scissors, and thread.
- A young male midwife from a remote district hospital, who has excellent skills/knowledge and dedication, is applying for a scholarship to attend medical school, and wants to leave the rural area for a better life in the city.
- A doctor at a district hospital at least 2 hours by bumpy dirt road and washed out bridges, said his staff needs training, needs more skills, emphasizing that in remote areas health providers have to have even better skills than elsewhere because in the rainy season the roads are impassable and referral is not even possible. Yet the money is not allocated for his district, because there are places with even higher needs.
- The provincial health officer in Saravan said that in one district, where the standard states there should be 5 doctors, there is only one, and he is a dentist. He went on to say that to get the women to come in for care, they must be cared for by their own and that ethnic women are the ones who have to be educated to become their health providers.
- A comment by a nurse in a Xieng Khouang health center: “They (donor) built me a birth room here in 2003 but still the women don’t come. We don’t speak the same language; it’s a barrier. They don’t trust me. I am Lao Loum and they are Lao Seung.” Most health care providers, even in the remote areas, are the Lao Loum, whereas their patients are from different ethnic groups, speak different languages, have different culture and beliefs.
- A medical assistant, chief of a Saravan health center located in a “model village” cluster where a birthing hut has been built by the government to bring women in from home, said people from other villages won’t use it, because the villages do not join one another, but keep to themselves.
- A district health officer at a Saravan hospital said that there is an increasing willingness of women and families to use facilities; they are starting to see the benefits of services but want the services in their own villages.
- A worker at one of the maternity waiting homes said that women are still charged for their contraception at the hospital, even though she knows it has been donated and should be free. The problem is that charging medication fees is one of the few ways that hospitals and providers can get a little extra money for the hospital or to supplement their meagre incomes.

Case study: Facilitating environment for providers – skills, equipment and referral

District hospitals in the B category need to be able to offer full delivery services including partograph, active management of third stage of labour, and provide basic EmONC, but refer a proportion of women for additional care such as Caesarean section and blood transfusion.

However, there is often a discrepancy between standards, skills of providers and available medication and equipment. In the assessment, one of DH-B hospitals “Hospital X” and the five providers (2 doctors, 2 mid-level nurses and one auxiliary nurse) working there were reviewed in detail. In the national mapping Hospital X reported that it was able to provide all 7 of the basic EmONC skills. However in the skills testing only one provider had the skills required for basic neonatal resuscitation. None of the 5 providers did active management of third stage of labor, giving oxytocin with the delivery, although oxytocin was available at their facility.

The hospital, although in theory able to provide EmONC functions, had no referral system in place: no ambulance or car; patients had to make their own way to the referral hospital if needed. Nor were they sent with any record of the care received at the district hospital, nor was there follow-up by the district hospital on the outcome of the care at the referral hospital. Basically, there was no system for sending or retrieving information.

This is a good example of why it takes the coordination of all the elements in order to give good care. If the facility is equipped, but the providers do not have the capability, authority, or training to provide the most basic EmONC and/or there is no referral system, the hospital cannot be considered a functional facility.

8.2. ACCESS to EmONC

8.2.1 The EmONC Process indicators

Access to a functioning health care system is a key factor in reducing maternal mortality. In order to assess the capacity for coverage, meaning the appropriate level and number of health care facilities/providers for the population served by them, it was agreed that a national mapping should be undertaken to measure the *availability* of health facilities which can offer emergency obstetric & neonatal care (EmONC.). Availability and utilisation of EmONC can be measured through the recently revised UN EmOC process indicators (UNICEF 1997, WHO 2006,). The revised six process indicators are listed in Table 8.1 below, as well as a summary of the data on each indicator in Lao PDR.

Table 8.1 The 6 Process Indicators of EmOC

Indicator	Acceptable level	Summary of Lao context
1. Availability of emergency obstetric care (EmOC): Basic EmOC and Comprehensive EmOC facilities	For every 500,000 population, there should be <i>at least 5</i> EmOC facilities (including at least 1 Comprehensive EmOC facility).	Achieved nationwide, but international standards are not appropriate for Lao PDR with a rural and dispersed population
2. Geographic distribution of EmOC facilities	All sub-national areas have <i>at least 5</i> EmOC facilities (including at least 1 Comprehensive EmOC facility) for every 500,000 population.	Achieved for comprehensive EmONC, not for basic EmONC
3. Proportion of all births in Basic and Comprehensive EmOC facilities*	Target to be set locally	Only 11.4% of all deliveries are in district, provincial and central hospitals. In rural areas with roads, only 8.6% of deliveries are in facilities and, in rural areas without roads only 1.6%
4. Met Need for EmOC: Proportion of women with major direct obstetric complications who are treated in EmOC facilities	At least 100% of women estimated to have major direct obstetric complications are treated in EmOC facilities.	Not measured in assessment, as records on complications not kept in facilities. Recommendation that registers be kept in all facilities
5. Caesarean sections as a percentage of all births*	The proportion of estimated births in the population that are caesarean sections is not less than 5% nor more than 15%.	Approximately 2% nationwide, below the standard of 5%. In 5 provinces it is less than 1%, with three provinces 0.2 -0.3%.
6. Case fatality rate for direct obstetric causes	The case fatality rate among women with direct obstetric complications in EmOC facilities is less than 1%.	No data available

The minimum level of services that a health facility should offer in order to qualify as a *basic* and comprehensive EmONC facility. In Lao PDR, central, provincial and district A hospitals are designated as providing comprehensive EmONC (9 functions) and District B hospitals providing the seven functions of basic EmONC. A *comprehensive* EmONC facility should, in addition to

the *basic* EmONC⁵ services, be able to perform surgery (caesarean section) and give safe blood transfusion (WHO, 1997). The provision of EmONC functions should not be restricted to these facilities however, as all skilled birth attendants should be able to provide at least four functions of EmONC, even in a home birth. Therefore it is proposed that, at a minimum, health centres and staff should be able to provide 1) injectable antibiotics, 2) injectable oxytocin, 3) injectable magnesium sulphate, and 4) neonatal resuscitation. Also required is the ability to stabilise a woman with an intravenous infusion

To assess the national capacity, a reporting form was developed, called Nationwide EmONC Mapping which was sent by the MOH Department of Personnel to each provincial health office with request for its return, data completed, by a set date.

In addition, during field visits each facility was assessed by the team, using a checklist, to inventory the availability of antibiotics for parenteral use, anticonvulsants and oxytocin, as well as availability of working equipment for obstetric and neonatal use, general hygiene, cleanliness of the facility, availability of basic amenities such as bathrooms, water and electricity/power supply. The results of these field assessments are discussed previously in results of field survey, under Facilities.

8.2.2 National mapping of EmONC

Table 8.2 details the findings on availability of comprehensive and basic EmONC by province. The third column contains the number of provincial and district A and B hospitals which should be able to provide Comprehensive and Basic EmONC in theory. The last column is the number of facilities which report being able in practice to provide the required number of functions. It is notable in Xayabouly, a poor province but with improved MCH indicators, there is a good availability of both comprehensive EmONC (4 facilities fully functioning) and basic EmONC (4 facilities fully functioning, with a further two providing six of the seven EmONC functions).

Table 8.2 National Mapping of EmONC

Province	Population	Number of EmONC Facilities (in theory)		Number of EmONC Facilities (fully functioning with 9 CEmONC or 7 BEmONC functions)	
		Comprehensive	Basic	Comprehensive	Basic
Vientiane Capital (includes three central hospitals)	698 318	4	9 (DH A, DH Bx8)	4	
Phongsali	165 947	2 (PH &DH A)	5 (DH Bx5)	1	
Luangnamtha	145 310	1 (PH)	4 (DHBx4)	1	1

⁵ Basic EmONC functions: Parenteral (IM/IV) antibiotics, Parenteral Oxytocin, Parenteral anticonvulsants (Magnesium Sulphate), Neonatal resuscitation, Manual removal of placenta, Assisted vaginal delivery (Vacuum or forceps) Removal of retained products (MVA)

Oudomxay	265 179	2 (PH&DH A)	5 (DH Bx5)	1	
Bokeo	145 263	1 (PH)	5 (DH A,DH Bx4)	1	
Luangprabang	407 039	3 (PH, DH Ax2)	9 (DH Bx9)	1	
Houaphanh	280 938	3 PH, DH A,DH B)	5 (DH A,DH Bx4)	1	
Xayabouly	338 669	4 (PH, DH Ax3)	6 (DH Bx6)	4	4
Xiengkhouang	229 596	1 (PH)	7 (DH A,DH Bx6)	1	
Vientiane	388 895	2 (PH, DH A)	11 (DH Ax2,DH Bx9)	1	
Bolikhamxay	225 301	2 (PH, DH A)	4 (DH Bx4)	2	
Khammouane	337 390	1 (PH)	8 (DH A,DH Bx7)	1	
Savannakhet	825 902	6 PH, DH Ax4,DH B)	10 (DH Bx10)	3	
Salavan	324 327	2 (PH &DH A)	6 (DH Bx6)	1	
Xekong	84 995	1 (PH)	3 (DH Bx3)	1	
Champasack	607 370	4 (PH, DH Ax2, DH B)	6 (DH Bx6)	1	
Attapeu	112 120	1 (PH)	4 (DH Bx4)	1	

PH Provincial hospital, DH A District A Hospital, DHB District B Hospital

8.2.3 Coverage of Comprehensive EmONC in Lao PDR

All central hospitals and all provincial hospitals are able to perform Caesarean section and blood transfusion (*comprehensive* EmONC), and were able to provide all basic EmONC functions. Seventeen of the 24 facilities designated as District A could provide Caesarean section, as well as three District B hospitals. As seen in Table 8.2 ten provinces have more than one *comprehensive* EmONC facility, and all provinces have at least one facility per 340,000 population, which would be better than the minimum international standard of one per 500,000 population, if all facilities were fully functioning. However, in Lao where the population is geographically dispersed with difficult access, higher ratios are required than the international standards.

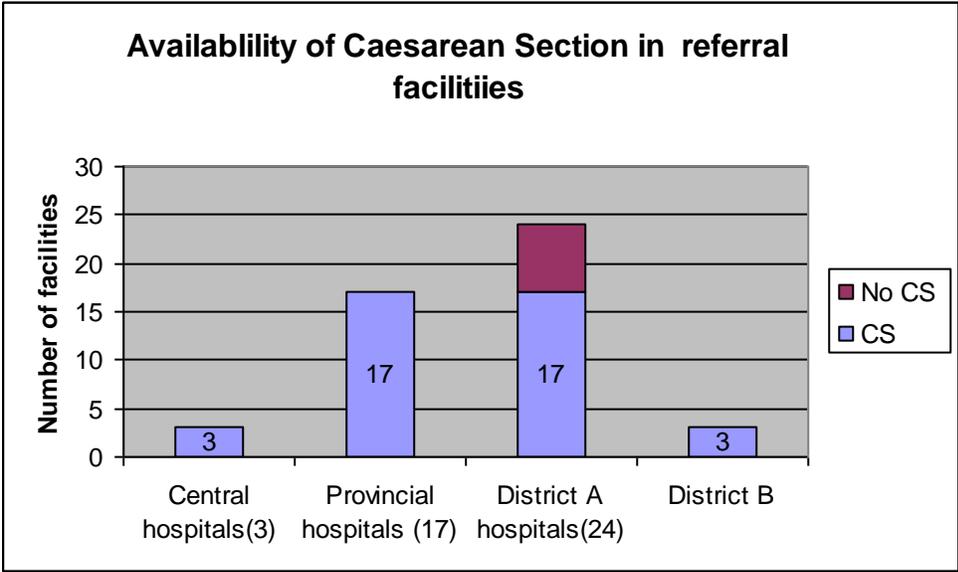
Table 8.3 Ratio of comprehensive EmONC facilities per population per province

Province	Ratio of Comprehensive EmONC facilities (if fully functioning) per population	Province	Ratio of Comprehensive EmONC facilities (if fully functioning) per population
Bokeo	1:145,000	Vientiane Province	1:194,000
Luangnamtha	1:145,000	Bolikhamxay	1:113,000
Huaphanh	1: 94,000	Khammouane	1:337,000
Phongsaly	1: 83,000	Savannakhet	1:138,000
Xiengkhouang	1:230,000	Saravan	1:162,000
Oudomxay	1:133,000	Xekong	1: 85,000

Luangprabang	1:136,000	Champasack	1:152,000
Xayabouly	1: 85,000	Attapeu	1:112,000
Vientiane Capital	1:174,000		

However, while all central and provincial hospitals were reported as providing all CEmONC functions, only six District A (mainly in Xayabouly) can in practice be classified as providing full comprehensive EmONC. Therefore Lao PDR has only 26 comprehensive EmONC facilities, instead of the potential 40 facilities which are already providing Caesareans, which is 65% fully functioning at present. Three district facility reports showed availability of Caesarean section without availability of blood transfusion. If this data is correct, this needs to be addressed urgently.

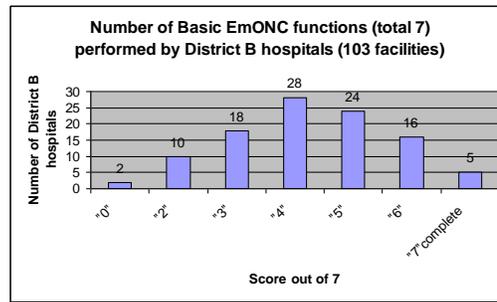
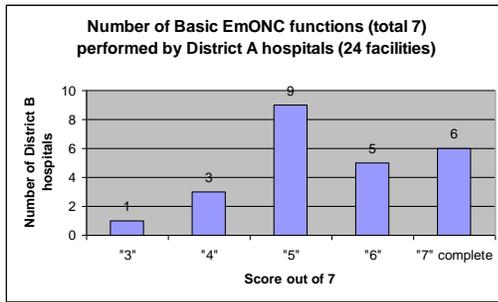
Figure 8.1 Availability of Caesarean section and blood transfusion in referral facilities



8.2.4 Coverage of Basic EmONC in Lao PDR

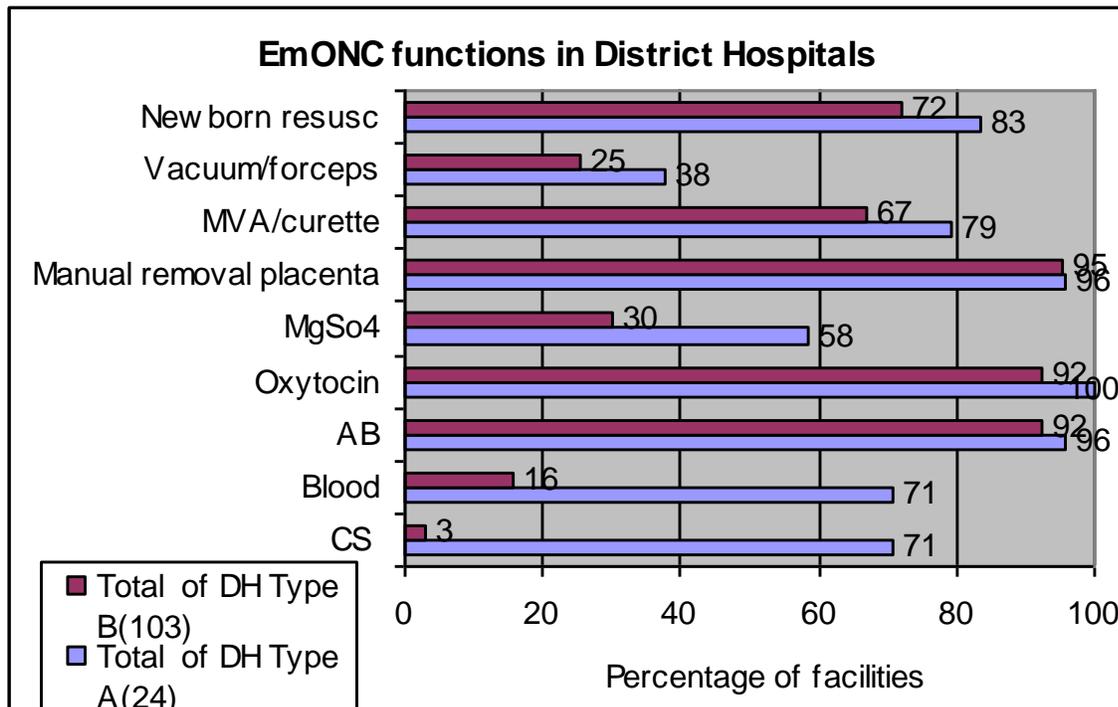
The coverage of Basic EmONC is quite low. Notably only 25% of District A facilities (6 facilities) provide all seven BEmONC functions, even though the majority are providing Caesarean sections and should be functioning as higher CEmONC facilities. All District B facilities should be able to provide the 7 Basic EmONC functions, however only 5 percent (5 facilities) were functioning as full basic EmONC facilities. Therefore, while in theory there are 107 facilities which should be providing Basic EmONC, only five percent (5 facilities) are functioning with all 7 BEmONC functions.

Figures 8.2 and 8.3 Number of Basic EmONC functions in District A and B hospitals



As seen in Figure 8.4, in order to improve the coverage of BEmONC, all District facilities need to be provided with MgSo4 for eclampsia and receive training in newborn resuscitation (with Ambubag). Additional training of selected staff on vacuum/forceps in each hospital is also required.

Figure 8.4 EmONC functions in District hospitals



8.2.5 Caesarean sections as a proportion of all births

It is estimated that a minimum of five percent Caesarean section rate is required for optimal maternal and newborn health. Data from the statistics division of the MOH reports 2399 CS over a 12 month period 2006/7. It is estimated that there were approximately 114,000 births over that period, which is a Caesarean section rate of only 2%, well below the international minimum of 5%. In 5 provinces, the Caesarean section rate is less than 1%, with three provinces 0.2 -0.3%, representing lack of access to comprehensive EmONC.

There are some limitation to these estimates. The data reports in the MOH may be incomplete, as six provinces with district hospitals provided only one report, presumably for the provincial hospital, although it may have been combined for the province. A number of women from the provinces receive Caesarean sections in Vientiane capital. However, from the LRHS 2005, less than 0.5% of women in 11 provinces delivered in Central hospitals, so this would not increase the coverage of Caesareans per province markedly. Only in Borikhamxay (1.2%) , Xiengkhuang (1.4%) and Vientiane province (1.6%) slightly more than 1% of women deliver in central facilities.

Table 8.4 Caesarean section as a proportion of all deliveries

Province	Reported Caesarean sections	Estimated number of births annually	Percentage of deliveries by Caesarean section
Vientiane Capital (includes four central hospitals)	1096	10743	10.2
Phongsali	10*	3249	0.3
Luangnamtha	30	3082	1.0
Oudomxay	87	6714	1.3
Bokeo	30	2 755	1.1
Luangprabang	126	9 257	1.4
Houaphanh	13	6 209	0.2
Xayabouly	46	5 335	0.9
Xiengkhouang	159	5 379	3.0
Vientiane	124	5 663	2.2
Bolikhamxay	47	4 417	1.1
Khammouane	160	7 258	2.2
Savannakhet	176	16 332	1.1
Salavan	20	8 868	0.2
Xekong	15	2 791	0.5
Champasack	220	12 317	1.8
Attapeu	40	3 143	1.3

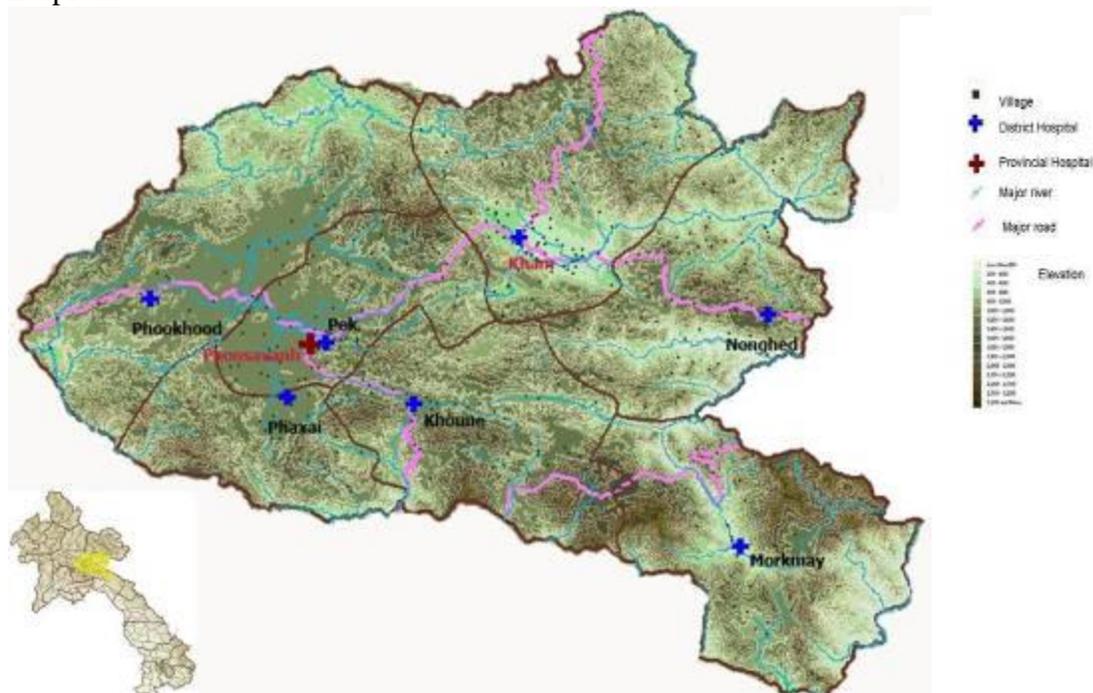
- *Figure from Phongsaly Provincial hospital
- Data source Statistics Division MOH for financial year 2006/7

8.2.6 Geographical accessibility of facilities

Ideally BEmONC facilities should be within 1-2 hours travel time of all women. As Lao Census data indicates 14.2% of villages are > 16 km from a facility, and 21% of the population does not

have access to roads, a significant proportion of women are greater than 2 hours from Basic EmONC.

Mapping of the facilities in the four provinces of the assessment also shows the geographical barriers which increase travel time for even shorter distances. As shown here for Xieng Khouang province as an example, many of the villages are in mountainous area (higher elevation in darker shading), requiring river crossings and travel without roads to access district hospitals



Therefore the provision of at least the four minimum functions: antibiotics, oxytocin, magnesium sulphate and neonatal resuscitation at each health centre would bring EmONC closer to a women with obstetric complications living in remote villages.

Summary

In summary, Lao PDR achieves coverage of one CEmONC per 500,000 population or per subnational area (province), but due to geographical barriers in Lao, a higher ratio is required. Utilisation of CEmONC is suboptimal, as evidenced by the low Caesarean rate of 2% nationally, and ranging as low as 0.2% in some provinces. There are not enough functioning BEmONC facilities, with only 5% of the 107 district hospitals providing full BEmONC. If all District hospitals were upgraded to supply all 7 basic functions, the coverage would be much improved. Ideally BEmONC should be within 1-2 hours travel time of all women. As Census data indicates 14.2% of villages are > 16 km from a facility, and 21% of the population does not have access to roads, this rapid access is not achievable through district hospitals alone. However, provision of at least the four minimum functions: antibiotics, oxytocin, magnesium sulphate and neonatal resuscitation by providers at health centre level would bring life saving EmONC closer to the community.

8.3. REFERRAL

Throughout Lao PDR, the lack of accessibility to health care, especially accessibility to a referral center, is one of the impediments to having a skilled birth attendant at every birth. The distance between villages and health facilities is one of the main obstacles for access to EmONC.

Twenty four hour availability of services, communication and transport are key components of referral. The review team found only 3 of the 20 assessed health centers where staff are available for 24 hours. Only 2 health centers could be reached by telephone; in all others providers use their own mobile phone. In case of referral, the staff will usually go with the patient to the referral hospital. In 70% of the district hospitals, providers are available 24 hours and 70% have telephone. Only 2 of the 10 district hospitals in the assessment had an ambulance. All the provincial hospitals have an ambulance, and nurses are available 24 hours.

8.3.1. Referral procedure

The following outline shows how the referral system works in Lao PDR from the standpoint of the person needing the referral care.

For general public

- In emergency care, patients may go by themselves to any health care facility they want (health center, district, provincial or central hospital).
- There is no need to pass through health center or district or provincial level; there are no “gate keepers”.
- If they want to pass through these health facilities, they may. These hospitals may or may not treat the patients first. Normally, if patients pass through these facilities, the facilities will issue a referral ‘letter’ mentioning for example:
 - Bio-data of the patients (name and surname, age, profession, from which village)
 - Initial diagnosis/symptoms/status of the patient
 - Treatment undertaken at the sender hospital
 - Referral reasons
 - Referral date/signature of responsible doctor /nurse.
 - Patients may or may not be accompanied by health care providers

For those with health insurance schemes

- Community Based Health Insurance (CBHI, run by MOH) and Health Insurance for the Public Sector (run by Ministry of Labor and Ministry of Social Welfare)
 - With these insurance schemes, patients have to be treated at the district hospitals first.
 - DH may or may not treat patients but they have to issue a referral letter, which is similar in each health insurance scheme.
 - Sometimes, in a very urgent case, patients may go to the contracted hospitals first, then request referral later (usually patients refer themselves first then request a letter later).
- Health Insurance Scheme for the private sector (run by the MOLSW)
 - In cities, patients will be treated at the provincial or the central hospital. In districts, they may or may not be treated at the DH. If they are, they must have referral letter.
- The equity fund for the poor is not detailed here.

8.3.2. Mode of transport

- Ambulance service is available at provincial/central level (but many of them are not working.)
- Some districts have an ambulance, but not all are working.
- There is no transportation from health centers.
- Ambulances at all level can be called to pick up patients anywhere, but usually, patients only close to the designated hospital call for services since patients have to pay with their own pocket money.
- The general public use their own means or hire a local transport as available. The local transport can be simple transportable ‘*bed*’, kart, tuktuk, van, truck, car. The family pays.
- Health insurance schemes: normally, in the areas far from the provincial hospitals, the district hospitals make a contract with the local ‘*taxi*’ to be the means for transporting referred patients, thus to reach the destined hospital as quick as possible.

8.3.3. Referral Costs

- General public: paid by the patient’s own pocket money.
- Health insurance (government): paid by the plan.

8.3.4. Recipient hospitals

- General public: pay for their treatment care. They can also, if financially able and wish to pay more, get better accommodation and new expensive drugs.
- Health insurance: patient costs are paid as patients have rights according to the scheme.

8.4. COMMUNITY

8.4.1. Overview

The following are the perceptions of participants attending the community focus group discussion (FGDs). They describe their birth experiences provided by health care providers at different levels. They do not include discussion of birth assistance by TBAs or family members. The perceptions of the communities include those of access, quality of received care at local level, attitudes of health care providers, linkage to referral and related issues.

Focus Group Discussions were conducted by the assessment team in 16 communities close to facilities reviewed. The groups were convened by the district health office, and held adjacent to the district hospital. Therefore, they are not necessarily representative of community members at large. Especially those communities living in more remote areas and far from the hospitals are not represented. Having been summoned by the district hospital, one wonders how freely these women felt they could give their opinions about the care at that district hospital.

With the collaboration of community leaders and the local Lao Women’s Union, 160 women and 2 men participated in the discussion. One man observed. There was a health care provider at district or health center or a volunteer in each group. The presence of health care personnel was useful for completing any missing information, but might have hindered responses of participants.

In term of ethnic distribution of the groups, the majority living close to district hospitals are Lao Loum. Those living close to health centers in Luang Prabang, Saravan and Champasak were a mix of Lao Loum and Lao Theung.

Community group profiles

Table 8.5 Participant's profiles

Age range	17 to 70, (oldest man: more than 70, oldest woman: 58)
Marital status	Only 2 single
Educational level range	Majority: 1-3 year 1 st degree of high school level. Some: High school Few: illiterate.
Job range	Majority: housewife. Some: farmers Few: government officers (teacher, administrator, health workers)
Number of children range	Less than 5 children for young mothers 5-12 for older mothers
Ages of youngest child range	Majority: 1-6 years Some: 2-11 months old Few : 7- 21years

Objectives and methodology

The main objective of the Community FGDs is to seek community's perception of skilled birth attendance, i.e., are they served by skilled birth attendants, what is healthcare environment and what is the referral linkage. To this end several pertinent questions were raised during the discussion with the communities.

8.4.2. Results

➤ Community support access

In general, the discussion with all communities revealed that the pregnancy perception trend has changed. In the old belief '*when a woman is pregnant, she is waiting for the death*' now contrasts with the new one stating that '*pregnancy is normal and is not scary to all women*'.

The participants over 40 informed the facilitator that the health situation was worse in their time, the war time. There were few roads but they could not be used to travel. Few health facilities existed at district level and none at village level. None of them attended ante-natal care. The majority labored at home, in kneeling position. Women were assisted by their family members or the non-formal birth attendants, who cut the umbilical cord with newly sharpened special bamboo, '*Mai Hia*' with knife put on the hot charcoal. Health communication did not exist. Some women in their communities experienced longer or excessive bleeding. Some died. Some lost their babies from '*crying for month before dying*'.

Recently, all mentioned that the general situation has improved. Many roads have been built, and although dirt, they can be used to link villages to districts and provinces as needed in most seasons. The district hospitals and health centers are situated along the roads and close to their communities. Equipment and drugs are available. The health care providers or '*Thane Mor*'

assists them on any request at any time at any place when they are present in communities. This is because they live in the same communities and they have a strong and close relationship.

The care costs at these health facilities are low and affordable. Some did not pay any money for their care since they were members of the health insurance schemes. (See Table 8.6 below: Sample of costs of ANC and normal delivery)

Table 8.6. Samples of costs of ANC and normal delivery

Items	Costs in Kip	
	Administration/paper	Drugs
Ante natal care at health center	0	cheap (cost of drugs in the national drug list)
Ante natal care at district hospital	1,500-15,000 for ANC book	
Labor at health center or district in normal delivery	20,000	
At home	Give in goods or nothing depending on the wellness of women	

The above-mentioned factors contributed to the increased access of health care in general and of MCH care specifically. The increased access was illustrated by the majority of participants attending antenatal care and laboring at the facilities or at home with the attendance of the health care workers and volunteers trained on mother and child health care. In terms of birthing, the communities who lived close to the district hospital labored there, whereas, those who lived close to the health centers gave birth in the home setting. A few women expecting difficult births labored at the health centers because they thought that it would be safer to give birth there.

➤ **Ante natal care and skills of health care providers/volunteers**

In general, the ANC practiced by the health care providers at the health facilities follows antenatal ‘*protocol*’. However, the antenatal care given by the health care workers or volunteers at home did not match to the antenatal care criteria, for example, none of these women mentioned that they were weighed at any visit.

➤ **Uses of Partograph to monitor labor progress and active management of labor at the 3rd stage**

Asking the mothers who labored at the district hospitals or the health center about how they were treated during childbirth, some said that they were examined. Then they were advised to walk and to call the health care providers if they had strong and close contractions. Although women did not see how the labor document was recorded, they did not think the partograph was not in use.

After the baby came out, they were given an injection on the front of the leg; then, they had pain in the abdomen and not very long after the placenta came out. It showed that the active management of 3rd stage labor was practiced.

In cases of labor at home, partograph and active management of third stage labor were not practiced. Women were given “drug tablets”, but did not know what they were.

➤ **Eye Care and immediate breastfeeding**

The majority who gave birth at the district hospitals or the health centers did not know how their babies were cared for. Some mentioned that the babies had their eyes blackened at one end. Some mentioned that the babies had something on their eyes like wax. This was not done in the home delivery setting.

In all cases either at the health facilities or at home, all laboring women stated that the health care providers assisted the baby to breastfeed in the labor room or in the home setting.

➤ **Repairing tears**

Many laboring women said that tears were repaired at the district hospitals. Some health care workers mentioned that they could repair tears since they had been trained to do so. However, rarely, had they seen cases of tearing. When there was tearing, they told the women to press their legs together for some days because they had no equipment to suture.

➤ **Comforting the pregnant women in labor room**

Many women said that '*Than Mor*' allowed the family members to stay near them during the birth. But some said that their husbands preferred to stay outside the rooms, that probably they were scared. Their absence did not affect them.

➤ **Discharge**

The majority of women giving birth at the health facilities were discharged a minimum of 4 hours after delivery. They were advised to come back to the district hospitals or to the health centers immediately if they continued to bleed excessively or to have fever. In addition, the health education on how to care for the umbilical cord and on taking adequate nutrition was given. Fortunately, none of them had these signs.

➤ **Follow up within 24 hours after delivery**

Asking about whether they had received follow up on their health status after their discharge from the district hospitals or after their labor at home, many responded they had. Every day, when passing the homes of the new mothers, the health care providers/workers/volunteers asked them how they and the babies were and how was the 'bleeding'? Some stopped to drink hot medicinal water and assisted in bathing the babies. Still almost all women had food taboos. The common food taboos are meat of white buffaloes, some special carp type fish, strong smelt vegetables, pickled food. Many mentioned that they have eaten grilled meat.

➤ **Consultation after 1 month of delivery**

One month after delivery, none of the women returned for her health consultation because they felt they were healthy. Those who lived close to the health center brought their babies for health consultation and vaccination.

➤ **Attitudes of the health care providers**

At local level, because the communities and the care providers were the local people and both knew each other quite well, all said that they could bare each other's behaviours. It means that even though the attitudes of the health care providers were not acceptable sometimes, they could talk about such unacceptable behaviour in a joking way to release tension. This contrasts to the referral situation where referred patient has no close relationship with the health care providers, where the referred patients recognized that they should kept their '*unease*' feeling inside themselves

➤ **Encountered problems related to pregnancy, labor and post labor**

Recently no female participants had encountered emergency problems related to pregnancy, birth or postpartum. Some had their '*legs heavy and swollen*' or '*edema*' in pregnancy in the last trimester but none of them had blood and urine tests. They did not know how important these tests were or whether these tests were available or not. They simply said that the '*Thane Mor*' did not tell them. These women were advised to have food with low salt and sleep with their feet up, higher than their head. They were also told to come immediately to health facilities if they had severe headache or if the edema had not disappeared. It had been emphasized that these women should follow the advice of the health care providers strictly and should keep their clinic appointments.

However, in 2003, one woman encountered excessive bleeding prior to labor. She had been referred to Luang Prabang Provincial Hospital, a 2 1/2 hour drive from her home, where she underwent an operation. She and her baby were safe. The doctors had told her that she had placenta praevia. In addition, three years ago, one woman in Champasak, had postpartum bleeding. Luckily, she labored at the District Hospital, therefore, she was safe. She was told that she had uterine inertia.

Last year in Luang Prabang, they heard about 1 young mother who died 3 hours after she had birthed her first baby. She had excessive and non stop bleeding. They said that actually this woman had gone for antenatal care regularly. She was told that her pregnancy was normal. Therefore, she gave birth in the home setting with the assistance of the health family since the health care workers were working in the field. In the same year, the community had heard one Lao Soung woman died of excessive bleeding after she gave birth in her upland rice field assisted with her husband. The husband had carried her to the health center. Unfortunately, she died before reaching there.

These death event stories spread quickly and frightened all nearby communities. Consequently, more pregnant women were pushed to have care at the health facilities and to not neglect their health. Now, pregnant women who previously never had antenatal care went to the health center to be examined. In addition, the health center was requested to communicate with nearby communities so that women and families would know what to do in case of emergency.

➤ **First places to go for help when having problems and decision making**

Asked what should be done when severe problems occurred, all of them responded that they would go to the health care providers first. Then, they would follow their suggestions. If they

suggested that women should be referred, women themselves have the right to decide on it. There was not prohibition or a long discussion from parents, husbands and relatives as there had been in the past. If a woman did not want to go, others would push her to go. This was because these communities have learned from their unwanted past experiences and from information given by the health care providers.

➤ **Referral means and costs**

There would be a local transport arrangement since there were no ambulances in district hospitals. Two modes of transport were available: ambulance to pick up patients or hiring the local transport. However, the patients had to pay double for the pick up costs. The majority said that usually the community would hire the local cars or trucks, which are available at their communities. The transport costs varied from 150,000 Kip to 700,000 Kip depending on the distance from community to referral hospital. Generally, the health care providers, workers or volunteers would accompany the patients and their family members to the referral hospital. For the poor who could not afford to pay for referral, the community members would help them go to the hospital first, then, they would discuss later about the transport payment method. Usually, some of the payments would be partially paid from a '*social relief fund*' of the village. The large amount would be paid by the family of the patient if she was not covered by any health insurance scheme. If the family of the women was very poor, the community would share the transport fees. Still, the families have to pay back some small amount back into the *social relief fund*.

➤ **Enabling environment which support the skilled birth attendance**

The last question asked what participants thought of the healthcare environment of the district hospitals and the health centers. Many responded that they would like to have essential equipment and sufficient health care providers, so, they would not have to go to any facility further away. Going to other hospitals costs all communities. Two communities requested to have surgery done in their district hospitals as it was done in the past.

Many communities close to the health centers requested to have more staff because when both health providers go to the field far away from their communities, there is no one to assist them. Finally, the health care worker and volunteers requested to have essential equipment such as clamps, scissors and 'nasal suction instrument' to assist normal birth attendance.

Summary

- The majority of woman thought that pregnancy is normal for married women and that getting good care is better now than in the past.
- In term of access, the majority of communities living close to the health care facilities, nowadays usually go for ANC, labor and birth at these centers. Most do not go for postnatal follow-up. People living farther away tend to stay at home for the birth and do not get ANC.
- The overall healthcare environment in the districts was thought to be acceptable. However, at one facility it was seen as a bad change that surgery was no longer available at their hospital.

- At health centers, there are some health care workers who do not respond to the woman's needs because they have to go work in the field.
- In terms of linkage to referral, although transportation issues had generally been worked out, there was a concern involving cost.
- Regarding women's preference, they wanted to have care closer to their homes.

CHAPTER 9

CONCLUSIONS

General remarks

To make a substantial reduction in the MMR, international studies have shown that priority interventions are:

(1) Expanded Family Planning programming to reduce unwanted pregnancies. (One of the saddest things of all is a maternal death in an unwanted pregnancy)

(2) Provision of Skilled Birth Attendance for 100% of deliveries

(3) Access to Emergency Obstetric and Neonatal Care (EmONC) for all pregnant women.

Family Planning assessment was not the purpose of this review. However, family planning programming with universal access to contraceptive services certainly needs to be mentioned as being an equally important and parallel effort to achieve a reduction in maternal death. The following analysis focuses on (2) the provision of skilled birth attendance and (3) access to EmONC.

Summarizing the study results: Returning to the 6 elements that are needed for skilled birth attendance:

1. POLICY

- Policies and strategies for MCH care do support, in general terms, the provision for skilled birth attendance. They show a government commitment to try to meet the needs of the under-served and address inequities. While it is highly recommended that women come into facility for delivery, there is also the acknowledgement that qualified care needs to be provided wherever women choose to give birth.
- Policy allows for the skilled attendant to give childbirth services at home. What is needed are specific standards for “out of facility” birth so that EmONC equipment is taken to those births, that they are always attended by SBAs, and that those births are duly recorded and reported in national data, and that there is follow-up care. Preventative measures and initial life-saving steps for most childbirth emergencies can be *initiated* in any setting where there is an SBA who has basic EmONC skills and equipment.
- The *Essential Drug List* does not include the life-saving drugs, MgSO₄ or IV antibiotics in the formulary for the health center level; these medicines are on the most basic EmONC skill list.

2. PROVIDERS

- For human resources, the findings conclude that the capacity to provide skilled care in pregnancy, birth and the postnatal period is very low in all 4 sample provinces. Of the

169 providers (low, mid, and high level) who were assessed, using scores from self-assessments and skills testing, the average was less than 20% competency in selected EmONC skills. The mid and low-level providers, who comprise the bulk of Lao PDR care providers, had overall scores even lower. It can be assumed that this low level is replicated across the country, with the exception of Vientiane capital and a few places where donors have a big commitment to on-going healthcare training and facility upgrading.

- Workforce shortages and mal-distribution of available staff for MCH services (preponderance working in urban rather than rural areas) need to be addressed. The MOH decision, if applying its alternative staffing standards, to cease recruitment of medical assistants and auxiliary nurses (MOH, 2007), will create future gaps in the workforce of both mid and low level workers.
- There are not enough healthcare jobs being created to deal with the workforce need or provide work for new nursing and medical school graduates.

3. FACILITIES

- While Central and provincial hospitals had adequate facilities in general, there were marked deficiencies in medications and equipment in district hospitals and health centres. The facilities at these levels often lacked toilets and running water in delivery rooms, and cleanliness levels were less than satisfactory in 50-75% in the different levels of facilities.
- It is recommended that a healthcare facility with basic EmONC is within an hour of a woman, and comprehensive EmONC available at referral facilities. 50% of women who die of postpartum hemorrhage do so within 2 hours, and initial life-saving steps within the first hour can make the difference.
- All central and provincial hospitals self reported that they can provide comprehensive EmONC, with all 9 functions. The assessment in the four provinces agreed with these reports in general but found one of the four assessed provincial hospitals lacked skills such as neonatal resuscitation. Seventeen of 24 district A can do caesarean section, and 3 district B hospitals have been upgraded to provide CS. Even though less than two thirds of these facilities are at present providing the full 9 functions of CEmONC, the coverage of comprehensive EmONC is potentially adequate (Annex 4).
- However, these facilities are underutilized, as seen by the national Caesarean rate is 2%, well below international standard minimum of the 5% considered necessary for increased maternal/neonatal survival. In some provinces the percentage of births delivered by Caesarean section is 0.2-0.3%, based on available data.
- The coverage of Basic EmONC, which is required close to the community, is low. Nationwide, only 25% of District A hospitals reported providing all 7 basic EmONC functions. This was consistent with the findings of the assessment where three out of the four visited could not provide required functions. District B hospitals are in general even less able to function as Basic EmONC facilities, as only 5% report provision of the 7

basic functions. The findings of the assessment in the four provinces was similar, finding none of the District B hospitals visited could provide all 7 functions. Many facilities lack magnesium sulphate for eclampsia, Ambubags and skills for neonatal resuscitation and capacity to perform forceps/vacuum for assisted deliveries (Annex 4)

- The study sample showed that not even the limited set of 4 most basic EmONC skills is available at the health center level. As shown in Annex 7, of the 818 health centres, 90% (740 HCs) and only 77% (630 HCs) have functioning MCH, meaning they have appropriate staff, equipment, drugs, and working utilities. This does not mean, however, they can provide EmONC care. Although none of the 20 health centers assessed in the sample were able to provide the most basic EmONC, mostly because of not having MgSO₄ for the treatment of pre-eclampsia/eclampsia, or Ambu bag for neonatal resuscitation, it is possible that with adequate staff training and a modicum of equipment improvement (Ambu bag, MgSO₄, oxytocin, IV antibiotics), the vast majority of the country's health centers that do MCH care *could* provide the requirement of very basic EmONC care.

4. EDUCATION/TRAINING

- Of particular concern is the lack of expertise to address the skills gaps of the providers. This leads back to the educational and training system in the country, necessitating upgrading of teacher and trainer skills and knowledge.
- MCH content is a very small percentage of current curricula in the schools for nurses and PHC workers.
- Education programs need more adult-learning approaches.
- The fact of most births occurring at home makes the likelihood of adequate numbers of delivery experiences very limited for students or those taking refresher training.
- At present, although there is a lot of MCH training, mostly by donors, there is not a centrally coordinated national plan to disseminate those trainings to ensure consistency and coverage.

5. COMMUNITY

- From the community discussions it appears that women, at least those in the vicinity of the district hospitals and health centers assessed, are starting to feel they can trust the care in facilities and see the benefit of services. The community works together in emergencies to help front the money if needed and make sure the women get transport to the hospital.
- In several districts where TBAs have received training for their role in educating women about the need for skilled care, there are higher percentages of women coming into facilities for ANC and delivery. The role of TBAs needs continued support, not to do the

births themselves but for helping link women to the healthcare system. The TBA should be seen as an extension of the health care system, serving as an advocate for women to get skilled birth attendance, providing social support and community mobilization.

6. REFERRAL/ACCESS

- The ideal is skilled care - including basic EmONC - provided close to the community. Based on the new WHO Indicator, basic EmONC should be within one hour of all women. Lao PDR does not yet meet this standard.
- **Facilities and providers must have clear lines of referral, communication (phone/radio), transportation, with direct links from where births take place (home or health facility) to the referral facility DH-A or PH which can provide comprehensive EmONC. These are still lacking in Lao PDR.**
- Even when and if the provider gaps, facility gaps, and education/training gaps are closed, there remains the issue of inadequate coverage because of access problems and the difficulty of improving these conditions without infrastructure changes in the country itself.

Addressing the gaps

On February 15, 2008, the UNFPA SBA Team, with assistance of the MOH Technical Team, gave a formal presentation to the Central SBA Assessment Team Committee of the SBA Assessment preliminary findings. After discussing some of the data results and analysis, the group returned to the 6 elements required for SBA, described above, and determined what is needed to close the gaps and build capacity in Lao PDR. These are addressed with specific recommendations and options in the final chapter, The Way Forward.

CHAPTER 10

THE WAY FORWARD: RECOMMENDATIONS AND OPTIONS

Faced with such a large-scale problem of poor capacity in skilled birth attendance, as confirmed by the review, it is tempting to look for the immediate solution, the “quick fix”, the cheapest option. Instead, the review will focus on the long-term solutions for improving the capacity for skilled birth attendance (including EmONC) in Lao PDR because it is strongly felt that improvements will only come from a national commitment to a well-developed, carefully thought out plan, one which takes time, talent, cooperation, and resources.

The evidence in both developing and developed countries in the region shows that it is midwives and others with midwifery skills that can make a difference (UNFPA, 2007) in the lives of mothers and babies and contribute to the reduction in the MMR and neonatal mortality. It is estimated that up to 15% of women and newborns will have complications that require interventions. The availability of EmONC when required is essential to save lives.

For the provision of skilled birth attendance and EmONC access for all pregnant women and families, the review makes the following recommendations.

10.1. LONG TERM SOLUTIONS

To improve access to skilled providers at delivery and availability of EmONC the following is proposed:

INTRODUCE MIDWIFERY SKILLS EDUCATION PROGRAM(S)

Start programs in professional or registered or community midwifery (minimum 18 months up to 4 years) at both vocational and academic schools, creating a number of pathways to increase the availability of midwifery skills in Lao PDR. Much must be done before the teaching can begin: the curriculum has to be developed or adapted; teachers/trainers must be found or educated to teach the students, and facilities (both school and clinical sites) must be expanded to receive the added students. Jobs must be created for those midwives once they graduate. And prior to all that, money must be raised to get the programs off the ground once the concept is approved at the highest level. A public relations campaign could be started to promote the use of midwives, since midwifery is not commonplace or well known in Lao PDR at present.

The 2 categories of midwifery would be:

1. Low level midwifery program ((Title could be “Maternal/child community providers”, “primary health midwives”) of 2 years if direct entry.
2. Mid level midwifery program leading to a bachelor degree (1.5 – 2 years for qualified technical nurses; 4 years for direct entry).

Following are details for the different routes of entry to these midwifery programs:

1. Low level midwifery program (community or primary health care midwives).

- **Direct Entry**

Candidates for this midwifery program would be selected in the same way as the PHC worker students: chosen from their villages, by the village community. The program would function, in parallel with the PHC program, on their campuses, with their staff – plus additional MCH staff – to teach midwifery skills. Ideally students would be female upper secondary graduates, but lower secondary may be acceptable. The course of study would consist of midwifery skills, including EmONC, for 18 months. Additionally, these students would also receive training in child health (IMCI), for an approximate duration of 6 months. The training would be skills-based and 80% practice (either on models or in clinical sites), with very limited theory. The course will be flexible with the length of the training extended for individual students who are unable to meet the competencies in the specified time. A program of this type may be very suitable to women in the community who are already married with children rather than those just out of secondary school.

Some TBAs would logically be the ones chosen from their communities to enroll in this program of study to become SBAs/midwives.

Either way, graduates would be low-level providers, possibly called primary health midwives or maternal/child community providers. In either option the graduates should have guaranteed jobs in their local health centers. Taking lower-secondary graduates for entry into midwifery level might require a change in the Ministry of Health/ Ministry of Education entrance requirements. Additionally, students might need some community incentives, such as having a house build for them upon graduation. Or perhaps the government would provide.

One benefit of this primary health midwife program is that it addresses the issue of ethnic groups being more adequately represented in the workforce. More providers of the same ethnic group as the community they serve, would in turn result in more women coming into facility to seek skilled care.

Having this low level midwife also brings skilled attendant staff to the health center level where they are most needed. This solution addresses the government goal of having a skilled birth attendant at every health center.

- **Upgrade of existing providers to low level midwifery providers**

PHC workers can be upgraded with an additional 18 months of study to become primary health midwives (with child health skills) themselves. This solution might require an incentive plan such as higher salary upon completion of program.

Upgrade auxiliary nurses and low level nurse/midwives

This would be a time-limited program as some of the auxiliary nurses are older and their training program no longer exists. However, auxiliary nurses are the largest category of health care worker in the country. The program would be a 2-tier system: a 1.5 year training, achieving primary midwife and maintains low-level category. A second tier, to become a mid level, is discussed in the next section.

2. Mid level midwifery programs

- **Bachelor of Science direct-entry midwifery program** at the College of Health Technology. This would be a 4-year program, conferring a bachelor degree and title of registered midwife. These students would study together with the bachelor nursing students for the first 2-3 years to cover the basic sciences, than branch into the midwifery specialty for the final 1-2 years (for a total duration of 4 years). It is believed these graduates would become the future teachers, leaders, administrators of the midwifery profession and of a professional midwifery association. It is essential to develop this level of nurse and midwife, so they can go on to graduate levels and become the faculty of the midwifery schools. This option is a long term process.
- **Upgrade existing cadres**
Upgrade technical nurses who wish to become midwives with a 1.5 – 2 year course in midwifery at the College of Health Technology, conferring on them a bachelor degree in midwifery and title of registered midwife. This can include those with technical nurse qualification who are not presently deployed in the government system. They would be mid-level providers. This would help solve the issue of needing more mid-level providers at the district level. They would likely become future trainers. Medical assistants (MA) could also be upgraded using the same mechanism, with a program course of 1.5 years. Again, incentives might be necessary.

Upgrade auxiliary nurses and low level nurse/midwives who wish to become midwives with a 2.5 year program which would upgrade them to registered midwife and mid-level worker. This option would be most suitable for the younger auxiliary nurses (while the older auxiliary nurses could be upgraded via the low level program mentioned above.).

For upgrading of existing cadres to both low level and mid level midwifery categories, experience credits could be awarded those with high levels of MCH experience/proficiency to shorten the training time; certification should be based on demonstration of competency.

ISSUES RELATED TO ABOVE LONG TERM SOLUTIONS:

Curricula need to be developed for above midwifery skills programs, using internationally recognized standards of practice, incorporating basic skills adapted from the International Confederation of Midwives (ICM) Core Competencies. Such curricula exist but need adaptation to the Lao context (Refer to Bibliography for website, under Core Competencies). Likely outside midwifery/EmONC curriculum expert(s) and competency-based trainers would be needed. Programs need to use adult-learning theory and have at least 60% clinical practice component. Clinical practice sites must reach minimum criteria for deliveries and other standards. For example, students should conduct 20 normal deliveries in different settings, 50 ANC exams, care for 50 postpartum mothers and babies, including postpartum exams, and newborn exams, etc. These criteria are a few suggestions, based on the WHO Midwifery Toolkit 7 criteria. They need to be further adapted for Lao context. (WHO, 2006). Additionally, there must be accreditation of clinical practice sites, especially that they can provide the number of deliveries required of the students.

To achieve more ethnic women trained as midwives or skilled birth attendants, more attention to primary and secondary education for these groups is required. Consider midwifery scholarships in secondary school for those interested in completing secondary education and becoming midwives. This way they would have the foundation to continue their education toward professions in the health care field.

A goal of government policy and effort is to have more women give birth in facilities. Likely more women especially in the remote areas will come into facility care and seek skilled birth attendance if their providers are from their own minority (ethnic) groups, whom they trust.

Increase MCH component in pre-service education of all cadres.

Particularly at the health center level, all cadres (including PHC workers, registered and professional nurses and doctors) require basic MCH knowledge including FP and life saving EmONC skills in emergencies. They do not require full SBA competencies, but have to have the ability to recognize problems, stabilize and refer. Current PHC programs have acknowledged this need and are increasing the MCH content in the basic pre service education and are providing up-grade training to existing PHC workers. Similarly, the technical nurse program with 10% MCH content and the professional nurse program with 5% MCH content, need to update the MCH portion of their curricula, making sure that these reflect the current evidence-based knowledge, have strong clinical component, and include all the above skills.

Teachers need to be trained up. **This requires immediate attention so teachers learn EmONC/SBA/midwifery competencies and can teach them up to the necessary standard; otherwise the lack of EmONC knowledge is perpetuated. Training of Trainer courses are needed. A possibility is through the College of Health Technology and the 3 Vientiane central training centers, developing a 3-6 month course. A training course of this length is important because of the need for a strong clinical component for teachers to gain clinical competency themselves. (Teachers in the review had complained of not having competency in skills they were required to teach).**

MCH Hospital to become the national training center. Being considered for upgrading or being rebuilt, it would be a good clinical training site for midwife students and teachers to get TOT as there are more than 10 births a day.

All in-service trainings must be approved by the MOH who are to be informed of all staff receiving in-service training, regardless of the organization providing it. This way such training can be included in the HRH database. Such tracking will make it easier for MOH when/if staff change location. Additionally, in order to maintain skills proficiency, a system is needed for periodic refresher training wherever there have been EmONC trainings.

Donor groups need even more coordination of their activities, especially trainings and education programs, to avoid duplication, confusion, work at cross-purpose, and waste of money. For example, JICA and LUX Development are both collaborating on the nursing curriculum, JICA focusing on strengthening the government nursing policies and LUX Development focusing on strengthening how curriculum is delivered, e.g. making lesson plans.

Need for consistency in training methods and content:

- Use same manuals (e.g. IMPAC book, adapted to Lao context),
- All trainers trained to same standard.
- Monitoring and evaluation build-in from the start.

10.2. SHORT TERM SOLUTIONS

Again, attention to this need for some immediate solutions to get facilities upgraded and providers with better EmONC skills, must not take the focus away from the long-range goal of developing cadres of skilled birth attendants, primarily midwives.

PROVIDERS:

Make a coordinated national plan for inservice training in EmONC trainings for existing providers,

Given the very low scores that the review found in assessing staff on EmONC it is imperative to figure out ways to get staff trained up as soon as possible. This should be of two types 1) life saving skills for all providers and 2) more detailed plan should be made for specific skills in higher level facilities, based on additional needs assessments for skills not covered in this assessment eg MVA, Vacuum/forceps, Caesarean section.

- For life saving core EmONC skills, it would be good to have both DH and HC staff training together for teamwork/relationship - building.
- This needs a training team skilled in competency-based training, with use of models for teaching (if clinical cases not available) with end evaluation of participants' skills.
- Coordination through MCHC and Curative department would be required, with joint plan for follow up monitoring and supervision of trainees
- Training should be through the central level trainers, currently at the 3 central hospitals, who would be responsible for skilling-up training teams (including provincial trainers) to go out to the districts to conduct these core EmONC trainings
- Length of trainings will depend on which level of EmONC functions are being taught.
- For more complex skills such as MVA, vacuum extraction, and Caesarean section participants need to be given enough time clinically to practice the new functions under supervision. Because emergencies occur unpredictably, a preceptor-model type of training could be used following the initial teaching of the functions whereby a trainer stays on site for 3 months to mentor trainees. External trainers funded by donors may be required if Lao trainers are not available for this period of time.

Increase clinical experience through site visits to neighbouring countries with high numbers of institutional deliveries.

- Particularly for trainers, a rapid increase in clinical experience is required. This can be achieved through site visits to neighbouring countries with hospitals which have high numbers of births. The quality of the trainers in the clinical sites needs to be ascertained prior to these training visits and a detailed plan for improving specific competencies needs to be designed for Lao providers. The site visits need to be part of an overall training plan for providers.

SBA staffing requirements:

- Minimum 1 SBA should staff all functioning health centers that provide MCH care = 630 HC, with the necessary drugs and equipment to provide the most basic 4 EmONC skills. These staff will provide FP, ANC, life saving EmONC skills, PPC and newborn care, as well as management of childhood illness (IMCI). In certified health centres they will also provide facility delivery services. They require the necessary drugs and equipment (including oxytocin, magnesium sulphate, Ambubag, IV fluids) to provide the core life saving 4 EmONC skills. .
- SBA needed at DH level: 5 per DH = 620; these should all be mid level staff, able to provide the 7 basic EmONC skills.
- SBA needed at PH/CH level: 10 per hospital = 200; these should all be mid and high level staff. In addition to the 7 basic EmONC skills, a core number of staff need to be able to do Caesarean section and blood transfusion.

Many more positions in the health service need to be funded.. There has been a recent increase in health education class size without a corresponding increase in the number of graduates hired. As jobs are created, attention must be placed on correcting the mal-distribution of workers. More staff needs to be placed at district level in those provinces with highest need. Also, those districts need a higher proportion of mid-level providers. New training courses should not be initiated without government commitment to fund the equivalent number of salaries for graduates in long term positions at district and health centre level.

Skilled birth attendants need salary scales that reflect their education and the level of responsibility that their jobs entail. There needs to be an incentive structure for retention of skilled birth attendant providers in rural posts and retirement plans for them.

Traditional birth attendants have varying roles in births across Lao. While the majority of births are attended by relatives/friends, TBAs only attend 12.1% of births nationally. However in some provinces in the south, TBAs play a larger role. In these provinces it is recommended that the role of TBAs is changed from delivery to being the community educator about FP, pregnancy and the need for skilled health personnel to attend the delivery. They could also have a role in community mobilization for emergency transport. Younger TBAs could be encouraged to undertake the 2 year training to become a maternal child community provider.

FACILITIES:

Facility upgrade for maternal and newborn health

Basic requirements are running water in delivery rooms and toilet facilities near to delivery rooms in all district and provincial hospitals. A monitoring system should ensure that basic cleanliness standards are maintained.

Comprehensive and Basic EmONC

Central and Provincial hospitals are able to provide CEmONC. District A hospitals (and the 4 District B hospitals) currently providing Caesarean section need to be upgraded to provide all 9 CEmONC functions. All district B hospitals need to be able to provide all 7 basic EmONC functions. This is achievable in a relatively short time period. In some cases this only requires

regular logistic supply of Magnesium sulphate, oxytocin and supply of Ambubags with training on neonatal resuscitation. Depending on needs, some facilities require selected staff to be trained on more specialized skills such as assisted delivery with vacuum/forceps and use of MVA for removal of retained products (a safer procedure than curettage).

Provide all HCs with the “basic EmONC kit” (IV set, parenteral antibiotics, oxytocin, magnesium sulphate, ambu bag), as well as training for all staff at health centre level.. To address the emergency complications arising in remote rural areas, all health centres should be able to provide these life saving skills as with the five items above, initial emergency stabilisation can be managed prior to referral to district hospitals.

Some health centers that provide MCH (Health Centre Type A) should be designated to become birth centers:

- They should be upgraded to have communication and referral capabilities.
- They must have at least the very basic 4 EmONC functions, preferably the 7 functions for remote rural birth centres.
- There must be one mid level provider with midwifery/SBA skills and one low level provider with EmONC skills.
- There should be a separate birthing room with necessary equipment and enough space for husband and/or family member.
- There must be running water, electricity, telephone, transport,
- Proper decontamination and sterilization equipment.
- Care must be provided 24 hours.
- Accreditation with a logo as an approved birth center.

Require mandatory accreditation of all health facilities to reach their EmONC standard⁶ within 2 years; provide incentives for administrators and staff to achieve the goal. Facility to receive a logo when standards achieved that indicates level of service of facility. Similarly staff can have recognition of number of competencies achieved after EmONC training.

An operational referral system to basic EmONC should be no more than 1 hour away from the woman’s home. While addressing referral systems was beyond the scope of this report, increased support of community transport systems and improved communication from village to hospitals should be investigated more fully.

DH-A hospitals could add, especially in remote areas, a maternity waiting room for patients, as in the Silk Homes project, or on a smaller scale, the help encourage women to come into facility in the last weeks of pregnancy, await birth there, meanwhile receiving important health information and late pregnancy monitoring. The women should not have to pay to reside there while waiting, nor have to pay for their maternity services.

⁶ Comprehensive and District A hospitals should have accreditation for the 9 CEmONC functions; District B hospitals for 7 Basic EmONC functions. Health centres should have accreditation for a minimum of 4 functions. After training, providers should have similar accreditation for individual competencies, for each of the maximum of 9 competencies.

POLICY:

Policy should require provision of EmONC throughout the Lao PDR health care system, **basic or comprehensive, depending on the facility level. The policies must stipulate who can provide it, the essential drugs to be provided (including life saving EmONC medication at health centre level), the facility requirements for it, a referral plan, and a monitoring system to maintain quality level of EmONC. As proposed, the limited set of 4 basic EmONC functions (IM/IV antibiotics, injectable oxytocin, injectable magnesium sulphate, and neonatal resuscitation, plus IV fluids for emergency stabilization) should be accepted as suitable and required for health center level where births occur.**

Policies and standards must stipulate that midwives and nurses can do births and emergency measures on their own responsibility. Too often in hospitals the doctors do the births when the nurses and midwives are capable but do not get the practice, thus their skills suffer. Allow nurses to do normal deliveries in hospitals. Policy permits but standard of practice often has the doctor do the birth if he/she is on site.

10.3 OTHER RECOMMENDATIONS

Eliminate user fees at point of service so women can get emergency help and routine pregnancy/birth care. Ensure transparency in facility record-keeping, revolving drug fund monies, etc.

Consider Community-Based Health Insurance and other insurance schemes to ease the financial barriers for women/families.

Increased education in villages/communities using mobile teams, radio/TV announcements, etc., to encourage women to come into facility for ANC, birth, postpartum follow-up and FP.

De-centralized approaches to health care management (for example, the BTC work in Savannakhet, LUX – Development work in Vientiane province and SCA project in Sayaboury) might help with efforts to give districts responsibility for planning and budgeting, monitoring, and evaluation.

Data collection and monitoring of maternal health needs to be strengthened. All births and complications should be recorded and fed into a national data base. Record keeping at health centers should include in and out of facility births and number of referrals and their details. At provincial level there needs to be summary information of all CS, number of complications treated in facilities, and maternal deaths/neonatal deaths. These should be collated at central level. Maternal death reviews should be conducted and analyzed at the central level annually.

Quality assurance (monitoring and evaluation) of provider practices and facility operations is needed at all facility levels. This would require coordination of both DHP and the Curative Department, to ensure that both MCH and curative staff from the hospital wards provide effective monitoring and supervision to levels below.

CONCLUSION

The lack of adequate human resources is the primary gap found in the assessment of skilled birth attendance in Lao, PDR. Creating a new cadre of skilled birth attendant and the up-grading of existing MCH workforce to become skilled birth attendants, is the foremost need. Nonetheless, making these urgent human resource improvements cannot occur in a vacuum. There must be concurrent attention to all the other factors that establish the enabling environment. These are:

- political will to make change happen,
- the funding for it,
- functional facilities that provide the suitable level of EmONC,
- good education and training programs for skilled birth attendants/midwives,
- access, and a community ready to utilize and benefit from a good maternal child health delivery system.

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Skilled attendant: the required skills and abilities

from *Making Pregnancy Safer: the Critical Role of the Skilled Attendant, a Joint Statement by WHO, ICM and FIGO, Geneva 2004*

All skilled attendants must have the core midwifery skills.³ The additional skills required will vary from country to country, and possibly even within a country, to take account of local differences such as urban and rural settings.

All skilled attendants, at all levels of the health system, must have skills and abilities to perform all of the core functions listed below.

Communicate effectively cross-culturally in order to be able to provide holistic “women-centred” care. To provide such care skilled attendants will need to cultivate effective interpersonal communication skills and an attitude of respect for the woman’s right to be a full partner in the management of her pregnancy, childbirth and the postnatal period.

In pregnancy care, take a detailed history by asking relevant questions, assess individual needs, give appropriate advice and guidance, calculate the expected date of delivery and perform specific screening tests as required, including voluntary counselling and testing for HIV.

Assist pregnant women and their families in making a plan for birth (i.e. where the delivery will take place, who will be present and, in case of a complication, how timely referral will be arranged).

Educate women (and their families and others supporting pregnant women) in self-care during pregnancy, childbirth and the postnatal period.

Identify illnesses and conditions detrimental to health during pregnancy, perform first-line management (including performance of life-saving procedures when needed) and make arrangements for effective referral.

Perform vaginal examination, ensuring the woman’s and her/his own safety.

Identify the onset of labour.

Monitor maternal and fetal well-being during labour and provide supportive care.

Record maternal and fetal well-being on a partograph and identify maternal and fetal distress and take appropriate action, including referral where required.

Identify delayed progress in labour and take appropriate action, including referral where appropriate.

Manage a normal vaginal delivery.

Manage the third stage of labour actively.⁴

Assess the newborn at birth and give immediate care.

Identify any life threatening conditions in the newborn and take essential life-saving measures, including,

where necessary, active resuscitation as a component of the management of birth asphyxia, and referral where appropriate.

Identify haemorrhage and hypertension in labour, provide first-line management (including life-saving skills in emergency obstetric care where needed) and, if required, make an effective referral.

Provide postnatal care to women and their newborn infants and post-abortion care where necessary.

Assist women and their newborns in initiating and establishing exclusive breastfeeding, including educating women and their families and other helpers in maintaining successful breastfeeding.

Identify illnesses and conditions detrimental to the health of women and/or their newborns in the postnatal period, apply first-line management (including the performance of life-saving procedures when needed) and, if required, make arrangements for effective referral. Supervise non-skilled attendants, including TBAs where they exist, in order to ensure that the care they provide during pregnancy, childbirth and early postpartum period is of sound quality and ensure continuous training of non-skilled attendants.

Provide advice on postpartum family planning and birth spacing.

Educate women (and their families) on how to prevent sexually transmitted infections including HIV.

Collect and report relevant data and collaborate in data analysis and case audits.

Promote an ethos of shared responsibility and partnership with individual women, their family members/supporters and the community for the care of women and newborns throughout pregnancy, childbirth and the postnatal period.

Skilled attendants working at the primary care levels in remote areas with limited access to facilities should also be able to do the following:

Use vacuum extraction or forceps in vaginal deliveries.

Perform manual vacuum aspiration for the management of incomplete abortion.

Where access to safe surgery is not available, perform symphysiotomy for the management of obstructed labour.

Advanced (optional) functions that may also need to be performed by selected skilled attendants working at a referral facility include, but are not limited to, the following:

Perform Caesareans sections.

Manage complications during pregnancy and childbirth.

Administer blood transfusions.

The exact set of additional and advanced skills must be determined and agreed upon nationally, depending on need, country context and policy and regulatory framework. In some cases, where the skilled attendant is the only primary health care worker, additional functions may also include, for example, identification and management of gynaecological problems, management of nutritional

problems and initial treatment for injuries.

3

Core midwifery skills have been defined by the International Confederation of Midwives in a document entitled Essential Competencies for Basic Midwifery Practice, available at <http://www.internationalmidwives.org>

4

Active management of the third stage of labour includes: using oxytocic drugs, clamping and cutting the cord, and applying controlled cord traction.

Annex 2 Facilities and # providers visited in January 2008

province	date	school	#	curric	prov. hospital	#	district A	#	com	district B	#	com	health centre	#	com	
Vientiane	3/1/08	students	10	tech nurse	Maria Theresa											
		teachers	10													
Luang Prabang	8/1/08	teachers	19	PHC	Lao-China hospital	10	(Nambak)	5	10				Nam Thouam	4		
		students	52	t- nurse										Nam Nga		10
	9/1/08									Chompet	5			Nong Phou	6	
														Nan Ngue		
	10/1/08									Nan	5	10		Tongkhan	7	
	11/1/08													Nam Phak		10
										Xieng Ngeun	5			Phon Zay	5	
Xieng Khouang	14/1/08				Lao-Mongolian hosp	10										
	15/1/08						Kham	5	10					Nam Phaa	8	10
														Sop Maa		
	16/1/08	x		PHC										Nong Pet	5	
	17/1/08									Khoun	5	10		Nam Phan	7	
													Njoun		10	
Champassak	21/1/08	teachers	20	PHC	Champassak hosp	10										
	22/1/08	students	59	tech nurse						Sanasoumboun	5	10		Khampeng	8	10
														Saphai		
	23/1/08						Khong	5	10					Houa Khong	15	10
	24/1/08													Khinak		
Saravane	21/1/08				Saravane	10										
	22/1/08						MWH Lao Ngam			Toumlan	5	10		Kok Mouang	5	10
														Naadou		
	23/1/08	x		PHC			MWH Saravane								10	
								MWH Vapy								
	24/1/08						Khong Xedone	5				10		Kheng Houat	6	10
					totals	4	40	4	20	30	6	30	50	20	86	80

Annex 3

Number of births and cost by province

No.	Provinces	Total Population (census 2005)	# births in 2007				# births at home with			Cost in Kips			
			CF/PH	DHA	DHB	HC	non TTBA	TTBS	FM	Normal delivery	Caesarian without blood transfusion	Caesarian with blood transfusion	Blood/sac
1	Bokeo	145,263	NG	NG	NG	NG	NG	NG	NG	NG	NG	NG	NG
2	Luangnamtha	145,310											
3	Huaphanh	280,938	449	NG	NG	NG	NG	NG	NG	130,000	1,200,000	1,372,000	86,000
4	Phongsaly	165,947	107	123	204	57	28	NG	NG	NG	NG	NG	NG
5	Xiengkhouang	229,596	988	1743*	NG	755*	144	NG	16	70,000	850,000	980,000	130,000
6	Oudomxay	265,179	761	NG	356	191	70	NG	NG	200,000	635500*	716500*	81,000
7	Luangprabang	407,039	2,454	132	1,018	194	0	227	324	500,000	1,500,000	3- 5,000,000	350,000
8	Xayabouly	338,669	386	436	693	NG	0	3,786	97	90,000	900,000	15,000,000	550,000
9	Vientiane Province	388,895	NG	NG	NG	NG	NG	NG	NG	120,000	1,300,000	1,380,000	120,000
10	Vientiane Capital	698,318											
11	Mahosot (Central)		2895										
12	Mittaphab												
	MCH		3623										
13	Setthathirath		1400										
14	Bolikhamxay	225,301	553	259	373	671	NG	157	NG	80-140,000	12,000,000	1,200,000	80-140,000
15	Khammouane	337,390	NG	NG	NG	NG	NG	NG	NG	NG	NG	NG	NG
16	Savannakhet	825,902	1,382	1,160	973	NG	NG	2,983	16,995	250-320,000	398,000	698,000	NG
17	Saravan	324327											
18	Xekong	84995											
19	Champasack	607,370	1,422	438	241	406	1,769		NG	185,000	1,680,000	1,763,000	83,000
20	Attapu	112,120	118	NG	97	44	65	118	NG	256,000	2,000,000	2,700,000	86,000

References: National Statistic Center, Ministry of Planning and Investment, 2006, '*National Census, 2005*', Vientiane, Lao PDR.

Department of Personnel and Organization, 2008, '*Nationwide Mapping received by fax from Provincial Health Services and in Vientiane Capital*', Vientiane, Ministry of Public Health

Abbreviation:

PH: Provincial Hospital, **DHA:** District Hospital type A, **DHB:** District Hospital type B, **HC:** Health Centre, **FHC:** Functioning Health Centre, **AH:** At Home, **HCP:** Health Care Provider, **non TTBA:** non Trained Traditional Birth Attendant, **TTBA:** Trained Traditional Birth Attendant, **FM:** Family members, **1 = Yes, 0 = No (for counting reasons).** **NG:** Not given yet

Remarks: **1753*** : both provincial and district hospitals, **755*** : District hospitals and Health Centre, **635500* Kip and 716500*:** Cost excluding post surgery drugs

Remarks: Patients do not pay for labour of health care providers. They only pay for drugs and medical sundries. Blood transfusion is not paid to the health facilities but to whom who give blood to patients as rewards. It is in the case where there is no blood donation in the blood bank of Lao Red Cross

Annex 4 EmONC facilities per province

No.	Provinces	Health Facility		Population	Actual availability of EmONC types	EmONC score (self reported)
		Type	Names			
1	Bokeo	PH	Bokeo	145,263	CEmONC	9/9
		DHA	Tonpheung		BEmONC	4/7
		DHB	Dan Phine		BEmONC	7-Apr
		DHB	Meung		BEmONC	4/7
		DHB	Pak Tha		BEmONC	5/7
		DHB	Pha Oudom		BEmONC	6/7
2	Luang Namtha	PH	Luang Namtha	145,310	CEmONC	9/9
		DHB	Sing		BEmONC	7/7
		DHB	Nalae		BEmONC	7-Jun
		DHB	Vieng Phoukha		BEmONC	5/7
		DHB	Long		BEmONC	5/7
3	Huaphanh	PH	Huaphanh	280,938	CEmONC	9/9
		DHA	Viengthong		CEmONC	5/9*
		DHA	Xam Tai		BEmONC	4/7
		DHB	Xiengkho		CEmONC	6/9*
		DHB	Viengxay		BEmONC	4/7
		DHB	Huamuong		BEmONC	4/7
		DHB	Sobbao		BEmONC	4/7
		DHB	Aed		BEmONC	4/7
4	Phongsaly	PH	Phongsaly	165,947	CEmONC	9/9
		DHA	Muong Khoa		CEmONC	7/9*
		DHB	Muong Mai		BEmONC	6/7
		DHB	Boun Neua		BEmONC	6/7
		DHB	BounTai		BEmONC	6/7
		DHB	Yod Ou		BEmONC	6/7
		DHB	Samphanh		BEmONC	6/7
5	Xiengkhouang	PH	Xiengkhouang	229,596	CEmONC	9/9
		DHA	Muong Kham		BEmONC	5/7
		DHB	Nong Haed		BEmONC	5/7
		DHB	Muong Khoun		BEmONC	5/7
		DHB	Phaxay		BEmONC	5/7
		DHB	Phoukoud		BEmONC	5/7
		DHB	Mokmai		BEmONC	5/7
		DHB	Thathome		BEmONC	5/7
6	Oudomxay	PH	Oudomxay	265,179	CEmONC	9/9
		DHA	Houn		BEmONC	8/9
		DHB	Nga		BEmONC	5/7
		DHB	Namor		BEmONC	4/7
		DHB	Beng		BEmONC	4/7
		DHB	Muong La		BEmONC	4/7
		DHB	Pak Beng		BEmONC	5/7

No.	Provinces	Health Facility		Population	Actual availability of EmONC types	EmONC score (self reported)
		Type	Names			
7	Luang Prabang	PH	Luang Prabang	407,039	CEmONC	9/9
		DHA	107 Hospital		CEmONC	7/9
		DHA	Nambak		CEmONC	5/9
		DHB	Vieng Kham		BEmONC	2/7
		DHB	Phonxai		BEmONC	2/7
		DHB	Pak Seuang		BEmONC	2/7
		DHB	Chompheth		BEmONC	2/7
		DHB	Muong Khay		BEmONC	2/7
		DHB	Pak Ou		BEmONC	2/7
		DHB	Nane		BEmONC	2/7
		DHB	Xieng Ngeun		BEmONC	2/7
		DHB	Phoukhoun		BEmONC	2/7
8	Xayabouly	PH	Xayabouly	338,669	CEmONC	9/9
		DHA	Pak Lai		CEmONC	9/9
		DHA	Xieng Hone		CEmONC	9/9
		DHA	Hongsa		CEmONC	9/9
		DHB	Khob		BEmONC	6/7
		DHB	Ngeun		BEmONC	7/7
		DHB	Phiang		BEmONC	7/7
		DHB	Thong Mixay		BEmONC	6/7
		DHB	Kaenthao		BEmONC	7/7
DHB	Botaen		BEmONC	7/7		
9	Vientiane Province	PH	Maria Teresa	388,895	CEmONC	9/9
		DHA	Phonehong		BEmONC	5/7
		DHA	Sanakham		BEmONC	5/7
		DHA	Vangvieng		CEmONC	8/9
		DHB	Keo Oudom		BEmONC	3/7
		DHB	Thoulakhom		BEmONC	3/7
		DHB	Viengkham		BEmONC	0/7
		DHB	Hineheub		BEmONC	3/7
		DHB	Kasi		BEmONC	3/7
		DHB	Maed		BEmONC	3/7
		DHB	Feuang		BEmONC	3/7
DHB	Hom		BEmONC	3/7		
DHB	Xaysomboun		BEmONC	3/7		
10	Vientiane capital	PH	Setthathirath	698,318	CEmONC	9/9
		DHA	Sisattanack		BEmONC	6/7
		DHB	Sang Thong		BEmONC	2/7
		DHB	Naxaythong		BEmONC	3/7
		DHB	Sikhottabong		BEmONC	4/7
		DHB	Chanthabouly		BEmONC	4/7
		DHB	Xaysettha		BEmONC	5/7
		DHB	Xaythany		BEmONC	7-May
		DHB	Hadxaiphong		BEmONC	5/7
		DHB	Pak Gnum		BEmONC	5/7

No.	Provinces	Health Facility		Population	Actual availability of EmONC types	EmONC score (self reported)
		Type	Names			
11	Central level	CH	Mahosot		CEmONC	9/9
			MCH Hospital		CEmONC	9/9
			Mittaphab		CEmONC	9/9
12	Bolikhamxay	PH	Bolikhamxay	225,301	CEmONC	9/9
		DHA	Khamkeuth		CEmONC	9/9
		DHB	Bolikhan		BEmONC	4/7
		DHB	Pakkading		BEmONC	4/7
		DHB	Thaphabath		BEmONC	4/7
13	Khammouane	DHB	Viengthong		BEmONC	4/7
		PH	Khammouane	337,390	CEmONC	9/9
		DHA	Ngommalath		BEmONC	6/7
		DHB	Nongbok		BEmONC	5/7
		DHB	Hineboun		BEmONC	5/7
		DHB	Xebanfai		BEmONC	6/7
		DHB	Mahaxai		BEmONC	4/7
		DHB	Burapha		BEmONC	4/7
		DHB	Nakai		BEmONC	5/7
14	Savannakhet	DHB	Xaibouathong		BEmONC	4/7
		PH	Savannakhet	825,902	CEmONC	9/9
		DHA	Adsaphangthong		CEmONC	9-Aug
		DHA	Xepon		CEmONC	6/9*
		DHA	Xongkhone		CEmONC	9-Sep
		DHA	Champhone		CEmONC	9-Sep
		DHB	Khaisone		BEmONC	0/7
		HB	Outhoumphone		CEmONC	9-Aug
		DHB	Phin		BEmONC	4/7
		DHB	Nong		BEmONC	5/7
		DHB	Thaphanthong		BEmONC	5/7
		DHB	Xonbuli		BEmONC	6/7
		DHB	Xaybouli		BEmONC	4/7
		DHB	Virabouli		BEmONC	6/7
		DHB	Atsaphone		BEmONC	5/7
		DHB	Xayphouthong		BEmONC	5/7
		DHB	Thaphalanexay		BEmONC	4/7
15	Saravan	PH	Saravan	324,327	CEmONC	9/9
		DHA	Khongsedone		CEmONC	8/9
		DHB	Ta Oye		BEmONC	3/7
		DHB	Toumlan		BEmONC	3/7
		DHB	Lakhonpheng		BEmONC	3/7
		DHB	Vapi		BEmONC	3/7
		DHB	Lao Ngame		BEmONC	5/7
16	Xekong	DHB	Samoun		BEmONC	3/7
		PH	Xekong	84,995	CEmONC	9/9
		DHB	Kalum		BEmONC	6/7
		DHB	Dakchung		BEmONC	6/7
		DHB	Tha Taeng		BEmONC	6/7

No.	Provinces	Health Facility		Population	Actual availability of EmONC types	EmONC score (self reported)
		Type	Names			
17	Champasack	PH	Champasack	607,370	CEmONC	9/9
		DHA	Champasack (District)		CEmONC	7/9
		DHA	Khong		CEmONC	7/9
		DHB	Sanasomboun		BEmONC	4/7
		DHB	Bacheng		BEmONC	4/7
		DHB	Paksong		CEmONC	7/9
		DHB	Pathoumphone		BEmONC	4/7
		DHB	Phonethong		BEmONC	4/7
		DHB	Soukhouma		BEmONC	4/7
		DHB	Mounelapamok		BEmONC	4/7
18	Attapu	PH	Attapu	112,120	CEmONC	9/9
		DHB	Xaysettha		BEmONC	3/7
		DHB	Xansai		BEmONC	3/7
		DHB	Phouvong		BEmONC	3/7
		DHB	Samanxai		BEmONC	3/7

Abbreviation:

* Labelled comprehensive as provides Caesarean Section, but reports no blood transfusion available

CEmONC: Comprehensive EmONC

Blue shading – providing all 9 functions

BEmONC: Basic EmONC

Green shading – providing all 7 functions

CH: Central Hospital

PH: Provincial Hospital

DH: District Hospital

Annex 5 Nationwide SBA needed numbers

No.	Items	Projected years												
		2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
1	Total Population projection	5,990,100	6,110,600	6,230,200	6,348,800	6,465,800	6,580,800	6,693,300	6,802,000	6,906,200	7,005,200	7,097,900	7,183,500	7,261,600
2	SBA standard	5,000	5,000	5,000	5,000	5,000	5,000	5,000	5,000	5,000	5,000	5,000	5,000	5,000
3	Total No. needed SBA	1,198	1,222	1,246	1,270	1,293	1,316	1,339	1,360	1,381	1,401	1,420	1,437	1,452

No.	Items	Projected years												
		2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
1	Total Projected Population	5,990,100	6,110,600	6,230,200	6,348,800	6,465,800	6,580,800	6,693,300	6,802,000	6,906,200	7,005,200	7,097,900	7,183,500	7,261,600
2	Crude Birth Rate/1000	31.6	30.7	29.9	28.0	28.1	27.2	26.2	25.1	24.0	22.8	21.5	20.1	18.7
3	Total increased numbers in the year	189,287	187,595	186,283	177,766	181,689	178,998	175,364	170,730	165,749	159,719	152,605	144,388	135,792
4	SBA standard	175	175	175	175	175	175	175	175	175	175	175	175	175
5	Total No. needed SBA	1,082	1,072	1,064	1,016	1,038	1,023	1,002	976	947	913	872	825	776

References: National Statistic Center, Ministry of Planning and Investment, 20006, '*National Census, 2005*', Vientiane, Lao PDR.

WHO's reference for SBA standards

Annex 6 Health Care Workforce (Data from the Ministry of Health)

No.	Data of human resources	Names of Provinces, Vientiane Capital and Central Hospital																		
		Luang Namtha	Bokeo	Oudomxay	Huaphanh	Phongsaly	Luang Prabang	Xayabuly	Vientiane Province	Vientiane Capital	Xieng Khouang	Bolikhamxay	Khammouane	Savannakhet	Saravan	Xekong	Champasack	Attapu	Central	Total Number
1	Total Number of Nurses (Technical & Professional) currently working in clinical practice	11	7	16	20	5	15	71	29	69	12	15	14	36	5	12	18	8	227	590
2	Total Number of Midwives currently <u>working as midwives</u>	0	11	1	2	3	2	0	1	7	6	0	13	5	2	0	16	0	34	103
3	Total Number of Auxiliary Nurses currently working in clinical practice	40	88	171	172	110	287	195	218	164	175	176	268	365	156	73	300	60	102	3120
4	Total No Auxiliary Midwives <u>currently employed and working in maternity</u>	3	18	1	0	5	0	0	1	5	4	0	0	8	5	0	9	1	3	63
5	Total No of PHC workers employed	8	4	22	3	7	18	20	1	1	2	0	0	1	0	0	0	0	0	87
6	Total No General physicians working in clinical practice*	9	16	28	20	8	33	36	47	102	20	29	41	70	18	15	66	20	264	842
7	Total No gynaco-obstetrics specialist working in clinical practice*	The 'Staffing Statistics 2006' categorizes the staff working in clinical areas only, so, it cannot be known whom among them work in OBGYN, Paediatricists or Anesthetists, unless, it has to re-collect these data from the hospitals throughout the country.																		
8	Total No. Paediatric specialists working in clinical practice*																			
9	Total no of Anesthetic working in clinical* / specialists																			
10	Total No of Medical Assistants working in clinical practice*	18	12	19	26	22	110	71	67	42	13	33	49	132	36	12	103	26	57	848
11	No lost from service per year in:	There were no lost in each year. Although some graduates/staff have not gone to the destined provinces appointed by the MoH, there would be replacements within the year, after the DoP got the feedback from the destined provinces. Instead, there is replacement delay depending on the provincial feedback time and the appointment procedure.																		
	- 2005																			
	- 2006																			
	- 2007																			

Remarks:

1 * = Working in clinical practice can be full time or part time, therefore, in this table, it includes the total number of contracted curative providers.

2 The total numbers of employees working as the curative work force in this Table include **the total numbers of staff of provincial and district hospitals and health centers.** However, in the central and provincial levels, the workforce include the administrative officers, therefore, it cannot know how many staffs working in the the curative workforce. Whereas, in district hospitals, there are clear-cut numbers of curative providers, called '*Total Numbers of Curative Unit*' according to '*the Statistics of the Staffing, 2006*' of the DoP.

3 For the General Physicians number, it consists of the numbers of all post graduate physician types.

4 Although, the Health Center work force is included in the total number of the curative work force since it also provides curative care in addition to its preventive care, its total numbers are classified specifically for its health care center work force. These numbers compose the numbers of whom who work in there irrespectively to their cadres and their contract types. Therefore, the total numbers are the sums of the number of the high, middle and auxiliary staff and the contracted employees.

5 The central hospitals consist of 3 hospitals in the central: Mahosot, Mother and Child Health Hospital and Mittaphab.

6 The staffing number in the *Statistics of the staffing 2006*, is disaggregated by sex only in the central level, therefore, in this Table, the work force is not disaggregated by sex.

7 There are no numbers of nurses working in any district hospital in Luang Namtha, which is an unusual case. However, the DoP notes that the data received from Luang Namtha are very confusing.

8 In Bokeo, 1 PHC is a medical assistant and 1 is a nurse at middle level; therefore, they are added in the total number of medical assistant and that of the nurses at middle level, while other Primary health Care Workers are auxiliary nurses.

9 Luang Prabang, Khammouane, Savannakheth: each has 2 nurses at Bachelor level.

References:

Department of Organization and Personnel, Personnel Division, 2006, '*Statistics of the staffing: 2006*', Vientiane, Ministry of Public Health.

Setthathirath Hospital, Vientiane Capital Health Service, 2008, '*Data of staff in Setthathirath Hospital, received 20/2/2008*', Vientiane Capital

Annex 7 Health care facilities all levels

No.	Provinces	Health Facility types and names/at home							
		¹ CH	¹ PH	¹ DHA	¹ DHB	² HC	FHC	MC in HC	FMCH in HC
1	Bokeo		1	1	4	30	12	12	12
2	Luang Namtha		1	0	4	35	32	32	12
3	Huaphanh		1	2	5	49	47	47	47
4	Phongsaly		1	1	5	26	20	20	20
5	Xiengkhouang		1	1	6	48	47	48	47
6	Oudomxay		1	1	5	39	39	39	3
7	Luang Prabang		1	2	9	57	57	47	47
8	Xayabouly		1	3	6	70	69	69	69
9	Vientiane Province		1	3	9	44	40	40	40
10	Vientiane capital	3	1	1	8	42	42	42	42
12	Bolikhamsay		1	1	4	40	40	40	33
13	Khammouane		1	1	7	72	72	66	66
14	Savannakhet		1	4	11	114	91	103	71
15	Saravan		1	1	6	49	39	41	39
16	Xekong		1	0	3	17	17	9	6
17	Champasak		1	2	7	60	58	58	58
18	Attapu		1	0	4	26	18	18	18
19	Total	3	17	24	103	818	740	731	630

Abbreviation:

CH: Central Hospital,

PH: Provincial Hospital,

DHA: District Hospital type A,

DHB: District Hospital type B,

HC: Health Centre,

FHC: Functioning Health Centre,

MCH in HC: Health Center with Mother and Child Care,

FMCH in HC : Health Center with Functioning Mother and Child Care.

References:

- Formation Division, Department of Personnel and Formation, Ministry of Public Health, 2008, '*Data of formation of Staffs in country and abroad up to 6/1/2008, from database*', Vientiane, Ministry of Public Health
- a). Vientiane, Ministry of Public Health
- b). Technical Division, Faculty of Health Sciences, Ministry of Public Health, 2007, '*Data of graduates, 2006-2007*', Vientiane.
- c). Dr. Alonkone, Post graduate Division, 2007, '*Post graduate Obstretics Division*', Vientiane.

Notes: In country training (Interviewed Dr. Alonkone, Chief of the division of the OBGYN specialist formation in February 2008, at the Post graduate Formation Center)

Course of OBGYN specialist: The objective of this course is to contribute to the reduction of the mother and child mortality. Since 2003, each year, 6 specialists were formed. Up to 2008, 18 specialists were formed. Then, they returned to their home town hospitals. In the exception, Xekong, Phongsaly and Huaphanh have not yet had the specialists training since the health care providers working in these hospitals are at the middle level.

EmNOC course: The specialist course consists of 18 modules and is based on international standard modules. EmONC is one of the modules. It is the IMPAC module of WHO. Dr. graduates, surgery and pediatrics specialist programmes have to study this module. In addition, the university provides EmONC training as per requests from hospitals, MCH and provincial hospitals. In hospitals, OBGYN, pediatrics and ICU staffs have learnt this subject since all involve in EmONC. Many provinces have trained their district staff already. But the university has no numbers of trainees. This month the OBGYN specialist course was opened at Luang Prabang with the cooperation of the German University.

Performance assessment and refreshment course: In next year, there will be an assessment of these post graduates. It will be followed by the National Conference, which will be organized once a year, from next year, to discuss about the feed back and emerging issues related to the performance of the 18 graduates. In addition, there will be CMI (Continuum Medical Education) or refreshment courses for the post graduates too. It is supported by the German Cooperation.

EmONC protocols: The Asia-pacific country representatives suggested that at least 5 important protocols related to EmONC should be developed in Lao PDR. However, up to now, there is no consensus on how to draft them. The university representative suggested that the Curative Department, Schools (University and technical Nursing School) and the hospitals should develop the protocols together, then, produce and post them in all central and district hospitals, so, there will be EmONC treatment standard. This also will increase the confidence of new graduated Drs.

Use of Magnesium Sulfate: The University teaches to treat pre- and eclampsia with Magnesium Sulfate. However, few graduates have used it to treat this disease. One of the reasons is that they are not sure about negative side effects of the drug.

Annex 9 Number of EmONC trained human resources by province

No.	Provinces	Data of EmONC trained human resources												Number of trainers	
		At provincial level			At district level			At health center level			Total				Total of 3 years
		2005	2006	2007	2005	2006	2007	2005	2006	2007	2005	2006	2007		
1	Luang Namtha	0	0	0	0	3	0	0	0	0	0	3	0	6	0
2	Bokeo	0	0	0	0	0	2	0	0	0	0	0	2	4	0
3	Oudomxay	0	3	0	0	3	0	0	0	0	0	6	0	12	0
4	Huaphanh	0	2	0	0	0	0	0	0	0	0	2	0	4	0
5	Phongsaly	0	0	0	0	4	0	0	0	0	0	4	0	8	0
6	Luang Prabang	0	0	0	0	6	0	0	0	0	0	6	0	12	1
7	Xayabuly	0	2	0	0	0	0	0	0	0	0	2	0	4	0
8	Vientiane Province	3	0	0	0	0	0	0	0	0	3	0	0	6	0
9	Vientiane Capital /Setthathirath	0	0	0	0	0	0	0	0	0	0	0	0	0	3
10	Xieng Khouang	3	0	0	0	0	0	0	0	0	3	0	0	6	0
11	Special zone	3	0	0	0	0	0	0	0	0	3	0	0	6	0
12	Bolikhamxay	0	0	0	0	0	4	0	0	0	0	0	4	8	0
13	Khammouane	3	3	0	0	0	4	0	0	0	3	3	4	20	0
14	Savannakhet	0	0	0	0	0	4	0	0	0	0	0	4	8	2
15	Saravan	3	0	0	0	0	0	0	0	0	3	0	0	6	0
16	Xekong	3	0	0	0	0	0	0	0	0	3	0	0	6	0
17	Champasack	3	0	0	0	0	4	0	0	0	3	0	4	14	1

No.	Provinces	Data of EmONC trained human resources												Number of trainers	
		At provincial level			At district level			At health center level			Total				Total of 3 years
		2005	2006	2007	2005	2006	2007	2005	2006	2007	2005	2006	2007		
18	Attapu	3	0	0	0	0	0	0	0	0	3	0	0	6	0
19	Mahosot (Central level)	0	0	0	0	0	0	0	0	0	0	0	0	0	4
20	MCH	0	0	0	0	0	0	0	0	0	0	0	0	0	5
21	Mittaphab Hospital	0	0	0	0	0	0	0	0	0	0	0	0	0	2
	Total	24	10	0	0	16	18	0	0	0	24	26	18	136	18

Reference: Ministry of Public Health, Mother and Child Health Center, Training Center, 2008, 'Record of EmONC training by province according to the registration at the training dates from 2005-2007', Vientiane.

Remarks:

- 1) The EmONC trainers were trained in 2003
- 2) The provincial training was organized at Setthathirath Hospital, Vientiane Capital, 17/01-04/02/2005. Trainees from Saravan, Sekong and Attapu were supported by UNFPA. Sekong, Attapeu were supported by UNFPA.
- 3) The district trainings for the northern region were organized at Luang Prabang Provincial Hospital, 10/07-09/08/2006 and 16/10-14/11/2006. WHO supported the trainings. 16/10-14/11/2006. WHO supported.
- 4) The district training was organized at Setthathirath Hospital, Vientiane Capital, 11/12/06-11/01/2007. Trainees were from Bolikhamxay and Bokeo. WHO supported the training. from Bolikahmsay and Bokeo. WHO supported.
- 5) The district training was organized at Champasack Hospital, 11/07-11/08/2007. Trainees were from Khammouane, Savannakheth and Champasack. WHO supported the training. Savannakhet, Champassak. WHO supported.

Annex 10 **Minimum number clinical experiences for midwifery students**

Minimum number clinical experiences for midwifery students:

The following is an outline of the minimum clinical experiences which students should have during their program, as outlined in the midwifery toolkit 7:

- Conduct a minimum of 100 antenatal examinations in a variety of settings, including some examinations on admission to hospital and completion of records; identify any abnormal signs or symptoms and take appropriate and timely action.
- Conduct a minimum of 40 normal deliveries, having cared for the women in the first stage of labour
- Assist at 3 breech deliveries.
- Conduct a minimum of 3 vacuum extractions, under supervision.
- Perform at least one mediolateral episiotomy.
- Suture the perineum, following an episiotomy or second degree tear, on at least 3 women.
- Assess the condition of the newborn at birth and resuscitate, as required.
- Examine 100 newborn babies, noting any abnormal conditions, and take appropriate and timely action.
- Conduct a minimum of 100 postnatal examinations, identify any abnormal signs or symptoms and take appropriate and timely action.
- Care for at least 100 postnatal women and their newborn infants, giving appropriate health education and advice, and providing the support, midwifery care and prophylactic treatments which are required.
- Assist mothers with breast feeding, as appropriate, and give correct advice and care to women who develop breast problems.
- Give emergency care, under supervision, to women with obstetric and gynaecological problems, eg abortion, ectopic pregnancy, ante and postpartum haemorrhage, prolonged, pre-labour rupture of the membranes, obstructed labour, retained placenta, eclamptic fits, puerperal sepsis.
- Management of shock.
- Cardio-pulmonary resuscitation on a model.
- Resuscitation of the newborn, first observation, then assistance and finally practice, under supervision.
- Liaise with the community in order to have an effective system to ensure that rapid referral is possible when complications occur and to make arrangements for referral, when required.
- Liaise with the community to give information about the health services which are available and devise and implement strategies to increase the uptake of care by a skilled attendant.

- Provide health education in the community and first level health facilities to pregnant women, families and to adolescents, with emphasis on good nutrition, healthy life-styles, immunizations, the avoidance of harmful practices, the prevention of sexually transmitted diseases and unwanted pregnancies.
- Liase with schools, churches, mosques, women's groups and places of employment to provide appropriate health education.
- Provide information and counselling on safe sex and contraceptives at family planning clinics and provide women with the method of their choice and follow-up care.
- Perform appropriate screening tests and give appropriate prophylactic treatments and/or immunizations, as required, e.g. for STDs, tetanus toxoid, anti-malarials, mebendazole, vitamin A if in deficient areas, iron/folate.
- Liase with other health care professionals in the community to monitor the health and well being of mothers and their infants, the uptake of care and devise strategies together to further improve the quality and uptake of care and health facilities.
- Liase with traditional birth attendants, spiritual healers and other untrained personnel in the community who are involved in care before, during or after childbirth in order to encourage safe practices, the acceptance of training opportunities where they exist, information on the early recognition of complications and the promotion of early referral when complications arise.

WHO. Strengthening Midwifery Toolkit: Guidelines for Policy Makers and Planners to Strengthen the Regulation, Accreditation and Education of Midwives, Final Draft. Geneva: World Health Organization, 2006.