Life Saving Impact through High Quality Education

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Background:

Lao PDR, with an estimated popuation of 7.8 million in 2023 is among the poorest and least developed countries in Southeast Asia. Malnutrition and maternal mortality remain significant challenges. The World Bank has found that the lack of healthcare and education available to the Lao population results in reductions in human development such that a child born in Lao PDR today will only be half as productive as s/he could be.[1]

Lao has made steady progress on some fronts. In 1995, the maternal mortality estimate was 695 maternal deaths per 100,000 live births.[2] Since that time, Lao PDR through its own effort, and with intensive support by UN agencies, bilateral partners and NGOs, has made tremendous progress with addressing maternal mortality through a variety of interventions and investments.

Lao PDR ranked 8th among the 10 countries with the largest percentage reduction in the MMR between 2000 and 2020 dropping from 579 maternal deaths per 100,000 live births in 2,000 to 126 maternal deaths per 100,000 live births in 2020, an overall drop of 78.7% in 20 years.[3]

One of the impactful changes that Lao PDR has implemented is the reintroduction of midwifery training. This manuscript will discuss the development path from re-introduction through international accreditation and will identify the impact of the program on key indicators, lessons learned, and opportunities for future improvement.

Methods:

This report incorporates desk review of descriptive, instructive, and evaluative documentation for the Lao Midwifery Program, secondary data collected through three rounds of the Lao Social Indicator Survey (LSIS) and input from key informant interviews with government staff, UN staff, and health professionals who are teachers, graduates, or other members of the Lao medical workforce. The field work was conducted in January and February 2024. Ethics approval was received from the National Ethics Committee for Health Research.

Results:

Evolution of the program:

Prior to 1987, midwifery training existed in Lao PDR, but was discontinued for a period of 23 years until 2009 due to lack of funding. As of 2008, there remained only 100 midwives in the country and this critical shortage contributed to the country's high MMR of 361 per 100,000 live births[4] [5]. The development of the Skilled Birth Attendant Development Plan 2008-2012 by the Ministry of Health (MOH) created a national commitment to produce 1,500 more midwives by 2015 by establishing midwifery programs and providing refresher courses for health professionals[6]. To reflect the complexity involved in developing such a plan and in particular the need for cross-departmental collaboration and ownership, a Collaborating Committee was developed which was accountable to a high-level Responsible Committee.

The Responsible Committee, made up of heads of MoH departments, approved the final plan submitted to higher levels for MoH acceptance and adoption.[6] The United Nations Population Fund (UNFPA), the World Health Organization (WHO) and the Japan International Cooperation Agency (JICA) provided specific technical assistance to develop and implement the plan.[7]

The programs and their annual graduates are shown in **Table 1** below. Initially, three midwifery programs were offered: a 1 year post basic training for community midwives which first had graduates in 2010; a 2-year direct entry for community midwives and an 18-month post basic program for mid-level health providers began graduation in 2013.[4] In 2015, a 3-year high level diploma program and a 4-year Bachelor of Midwifery program began graduating midwives. The goal of reaching 1,500 midwives was reached, and surpassed by the end of 2015. However, the Skilled Birth Attendant Evaluation Report in 2014 expressed concern about the quality of midwifery education.

"These rapid didactic programs were producing a cadre of young, inexperienced and unskilled midwives who were unable to provide quality care.[6]"

UNFPA set out to revise and upgrade the program following the guidance from this review. This lead to the termination of the continuing and direct entry community midwife programs in 2015 and 2016 and a revision of 18-month midwifery program to create the three-year high-level diploma.

A total of 3,883 graduations occurred by 2023. Bachelor Degree programs graduated 218 midwives, Higher Education programs graduated 1,899 midwives and 1,766 community midwives graduated from the earlier, discontinued programs. As of February 2024, a total of 1,944 are currently deployed. Some midwives returned to or assumed new administrative or other roles outside of midwifery.[8]

Conclusion

Lao PDR has successfully reached an important hurdle that is effectively reducing infant and maternal mortality. To maintain this progress requires continued commitment/funding for positions and adherence to training requirements for re-accreditation. Health equity for rural, remote, ethnic communities is key to continued reductions in MMR.

Key Messages:

- Improving the quality of midwifery education in countries with high MMR can reduce maternal mortality significantly.
- Support from donors, and regional partnerships with countries to build capacity of midwife teachers was essential to the success of this program.
- In low-income countries, government budgets may not be adjusted adequately to support new graduates.

Table 1

Numbers of midwives trained by program type[9]

No	Midwifery Curriculum	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	Total[a]
1	Continuing community midwife education	140	167	191	175	46	13	Discontinued								732
2	Direct community midwife education				94	270	440	230	Discontinued							1034
3	Continuing midwife (Diploma education)				39	83	75	57	21	20	40	81	120	85	53	674
4	Direct Entry (Diploma education)						41	38	45	188	230	225	163	174	121	1225
5	Bachelor Degree (Direct Entry)						19	18	17	24	19	20	21	16	Disc.	154
6	Bachelor Degree (Continuing from Diploma											24	21	0	19	64
	Total:	140	167	191	308	399	588	343	83	232	289	326	304	275	193	3883

[a] Some programs only accept graduates from earlier programs, and therefore double count the numbers of graduates. All in line 3 are also in either line 1 or line 2, and all in line 6 are also in a previous line.

The path to accreditation

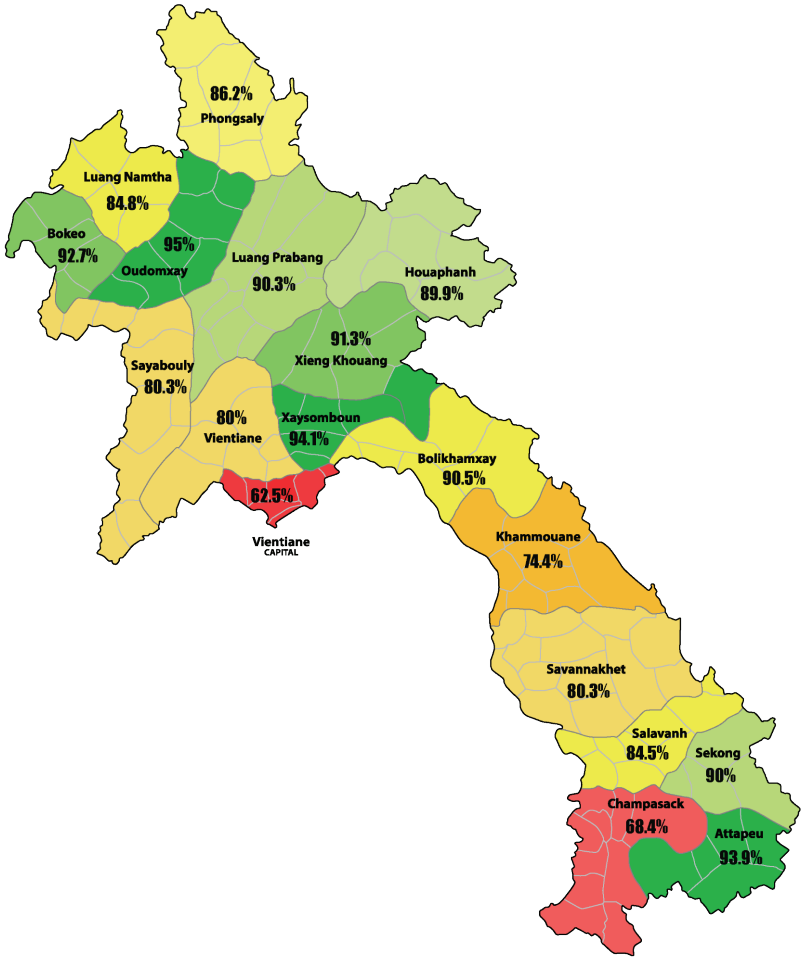
Currently, midwifery education is offered at eight schools in Lao PDR. Higher diploma courses are offered at seven provincial level colleges and bachelor level is offered at the University of Health Sciences in Vientiane. The Higher diploma curricula (3-year direct entry and 18-month upgrading from lower-level degree) were revised in 2022 in accordance with the International Confederation of Midwives (ICM) standards for the midwifery education accreditation program (MEAP). Curriculum revision and educator training was accomplished through a highly effective regional collaboration between Lao Ministry of Health, UNFPA and the Thai International Cooperation Agency (TICA) project.[10] Khon Kaen University in Thailand was selected as the education partner. Since Thailand did not have a separate curriculum for midwifery, a unique 6-month program was devised for Lao PDR to train midwifery educators.

Professor Pakvilai Srisaeng led the project to devise the training program and aligned it with WHO Midwifery Educator Core Competencies and ICM midwifery standards as a training framework.[11]

Three colleges of Health Science in Luang Prabang, Champasak, and Xieng Khouang received ICM accreditation in January 2023 following national accreditation in 2021/2022. These centers have been selected to become Centers of Excellence for Midwifery Education. National accreditation validity lasts between 3 and 5 years, ICM MEAP for 5 years, so plans are being developed to ensure national and international accreditation can be maintained.[4 7 9 12]

Figure 1 shows the percentage of Health Centers that have midwives or midwife volunteers, and the locations of the accredited schools in Luang Prabang, Xieng Khouang and Champasak. There are 183 out of 1,129 health centers (16%) in Lao PDR, without midwives. 92 health centers rely on midwives who are working as volunteers without salaries or official positions. Champasak Province, in the south of Lao PDR has the lowest coverage with midwives in only 68.4% of health centers. Vientiane Capital, despite low coverage of midwives in health centers, offers easy access to care in public and private hospitals.

Figure 1 Civil Servant and Volunteer Midwives Deployed by Province, January 2024



Source: Department of Health Personnel, Lao Ministry of Health

In 2022, the Direct Midwifery Curriculum (3 years) and the continuing midwifery curriculum (18 months) were reviewed and improved to meet the standards of the WHO and the ICM. A recent publication reviewing the adequacy of these curricula to provide training for the competencies required of midwives, has shown them to have over 90% alignment with the role of midwives as defined in the current scope of practice, clinical standard, and national competency for Lao PDR. This represents a substantial improvement over the earlier curricula and improves on earlier criticism of the quality of ANC. [13–15] The Scope of Practice, Clinical Standard, and National Competency for midwives were reviewed, improved and disseminated.[16] To support in-service training, Basic Emergency Obstetric and Newborn Care (BEmONC) was completed for 191 health personnel and Complete Family Planning training was completed for 1,219 health personnel.[17]

Advocacy

To establish an advocacy and oversight agency, the Lao Association of Midwives (LAM) was officially launched in 2022. With support from UNFPA, LAM received official organization status and became an Implementing Partner (IP) of UNFPA.[9]

LAM is implementing BEmONC training modules[17], organizing events to recognize International Day of the Midwife and running a hotline.

An interview with Madame Sengmany Khambounheuang, Deputy Director of Department of Health Personnel (DHP) and President of LAM identified an important way that LAM supports midwives - through WhatsApp groups where master trainers support midwives by sharing experience and building confidence.

Licensing and Registration

Registration of Lao Midwives was required by the Ministry of Health as of 2017. The Licensing and Registration process, under the leadership of the Health Professional Council, includes a number of steps as outlined below; separate guidelines were published to define requirements for each. [9]

Figure 2 Licensing Requirements for Lao Midwives

Initial License

Requirements:
Midwifery Higher Diploma or above, AND
National Examination

Full License

Requirements:
Initial License, AND
Professional Internship Program, OR
Minimal Clinical Experience

Re-License

Requirements:
Cumulative Scores of Continuing Professional Education as stipulated by Health Professional Council
To be completed after 5 years of full license

The initial license requires a Higher Diploma degree in Midwifery and completing the National Examination. The pathway for nurses and midwives from the initial license to the full license has been agreed upon in the form of an internship that routinely includes 2 months of intensive work in a provincial or central hospital, followed by supportive supervision once the midwife is placed. [9]

Upgraded skills, particularly for midwives who graduated from a course prior to the Higher Diploma, is required for full licensing and registration. Two midwives were interviewed for this work, both based in the northern province of Luang Prabang, working in remote Health Centers. Both midwives had originally been community intake midwives and had first graduated in 2015. With support from Luang Prabang district health office, both were able to upgrade their skills and complete the midwifery higher education program, graduating again in 2023. With renewed confidence that their skills are up-to-date, and BEmONC training fresh in their minds, these young midwives are essential members of their communities. They provide sexual and reproductive health (SRH) counseling, antenatal care (ANC) and deliveries both in the health center, and in emergencies, in the homes in their community.

Impact of the program:

Each respondent was asked what they felt were the most important points of impact of midwives in Lao PDR. All cited the impressive reduction in maternal mortality, the increases in antenatal care, and the improved ability of mothers in Lao PDR to raise healthy children with appropriate nutrition, immunization, and birth spacing. In remote areas, telehealth is also an important support offered to mothers (in three districts) that connects mothers with midwives to assess any signs of delivery onset, provide nutrition support, and encourage travel early to health facilities when bleeding, or fever are present.

Figure 3 below illustrates the reduction in maternal mortality rate from 695 maternal deaths per 100,000 live births in 1995 [18] to its current level of 126 maternal deaths per 100,000 live births.[3] [5] The main causes of maternal death as identified by the maternal and perinatal death surveillance and response system reports continue to be postpartum hemorrhage, eclampsia and sepsis, with complications from unsafe abortion also a significant cause of maternal mortality.[4] Reaching the target MMR of 70 by 2030 will require expanded use of contraception, Ante Natal Care (ANC), and Post Natal Care (PNC), and more midwives in the remote areas of the country.[4]

Figure 3 Trend in Maternal Mortality Estimates

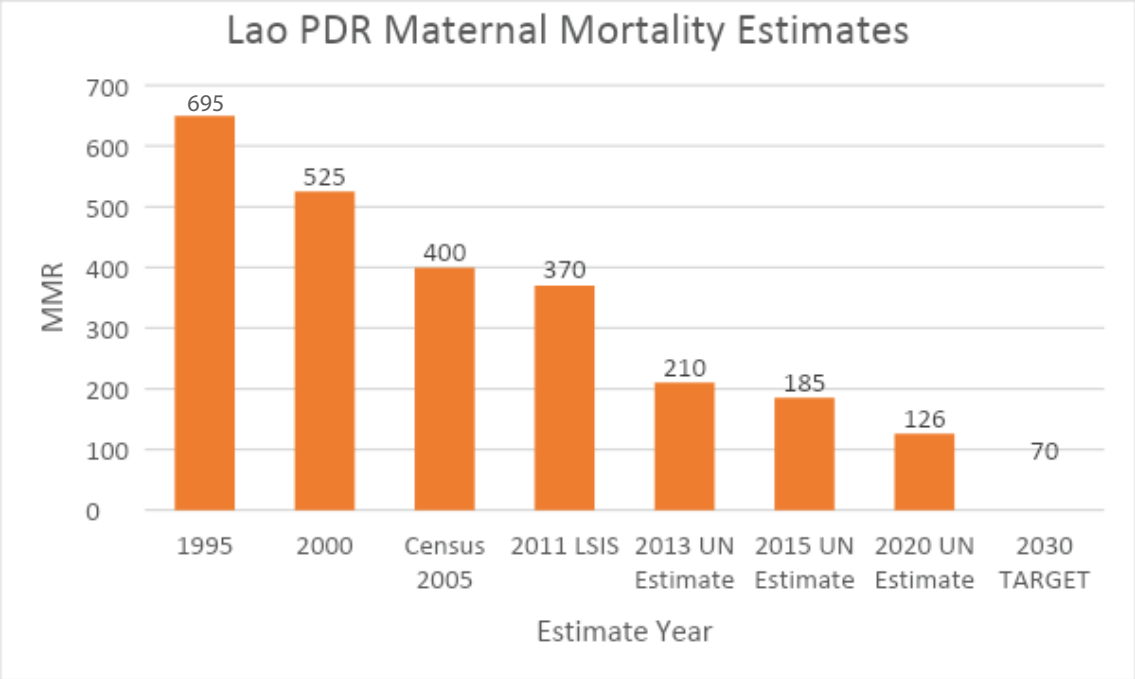
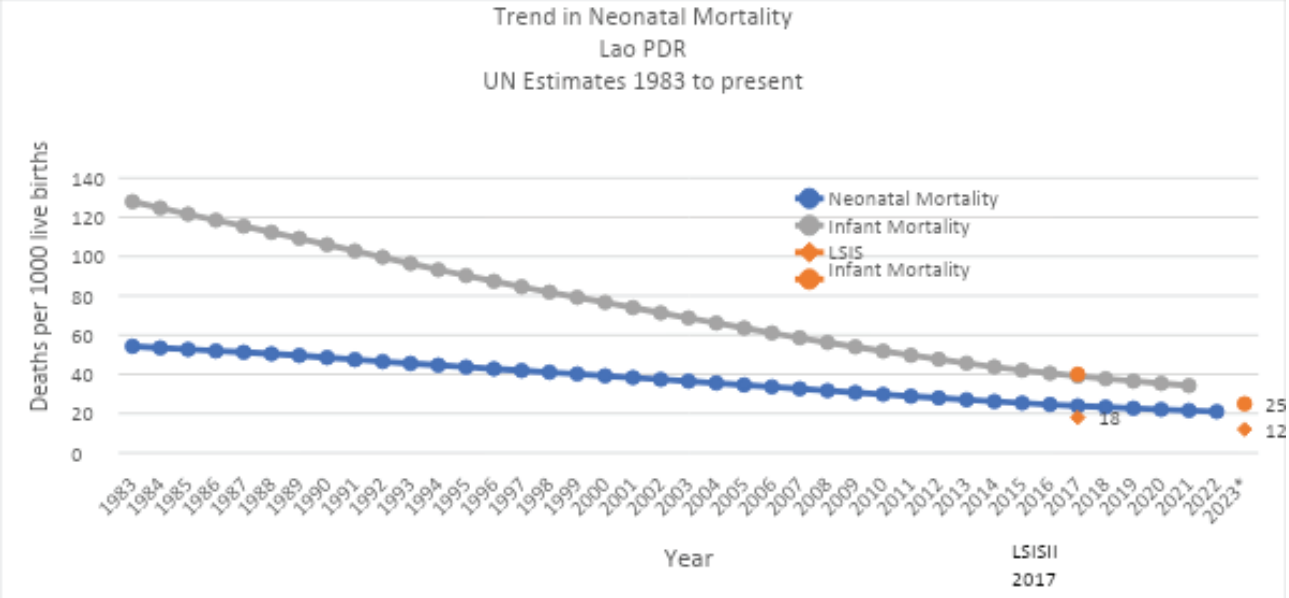


Figure 4 illustrates the downward trend in both neonatal and infant mortality.[19] Additional recent estimates from the Lao Social Indicator Survey (LSIS) reinforce the rate of decline, with estimates of 25 deaths per 1000 live births for infant mortality and 12 for neonatal mortality in 2023. [20] [21]

Figure 4 Trend in Neonatal and Infant Mortality 1983 to present.



In an analysis of the factors associated with high infant mortality among women who were included in the 2017 LSIS dataset, several are directly influenced by the presence of midwives, particularly when those midwives are placed in rural areas populated by ethnic groups other than Lao where women frequently have low levels of education. [22]

"You need to be very culturally sensitive… you have to listen and work with them."

Table 2 shows the progress in maternal healthcare between 2006 and present reinforcing the impact of midwives on women in rural settings, non-Lao ethnicity, and low levels of education. This might be the primary result from placing midwives in rural health centers that support the portion of the population who does not have access to district (DH) or provincial hospitals (PH) due to economic reasons, or remoteness of location.

Table 2

Utilization of maternity services

Indicator	MICS 2006[23]	LSIS 2011/12[24]	LSIS 2017[20]	LSIS 2023[21]
Antenatal care coverag	35.1%	54.2%	78.4%	89.7%
ANC provider (% Nurse/Midwife)		6.9%	18.2%	20.3%
Skilled attendant at delivery	20.3%	41.5%	64.4%	79.8%
Village Location: Urban	67.8%	79.6 %	89.7%	94.8%
Rural with road	15.2%	33.3%	59.2%	77.5%
Rural without road	3.0%	12.4 %	34.1%	47.2%
Mother's Education: No education	3.4%	16.1%	36.0%	49.0%
Secondary or higher	62.8%	89.6 %	91.2%	93.3%
Wealth Quintile: Poorest quintile	3.0%	10.8%	32.6%	53.3%
Richest quintile	81.2%	90.70%	96.8%	99.5%
Head of Household Language: Lao	31.8%	58.5 %	78.2%	90.6%
Mon Khmer		20.8%	47.7%	68.5%
Hmong Mien		17.8%	45.7%	71.1%
Chinese-Tibetan		18.3%	42.5%	61.2%

Source: Multi Indicator Cluster Survey 2006, Lao PDR Social Indicator Survey 2012, 2017, 2023

Additional impact from the integration of midwives into communities was identified through the interview process. Where midwives are publicly acknowledged by the village heads, they are more rapidly recognized as a trusted provider.

"In the past I was accepted 90%, and now 100% because the naiban introduced me, and now everyone accepts me"
Sengmany, Midwife

Midwives are active with adolescents in their communities, providing pre-marital counseling for both young men and women on contraception and family planning. They also provide counseling of expectant mothers to encourage them to plan for facility-based births and help them improve their own and their family's nutrition. They arrange for transportation for emergency cases to district or provincial hospitals either by ambulance, or by requesting assistance from the community to transport urgent cases.

Lessons Learned:

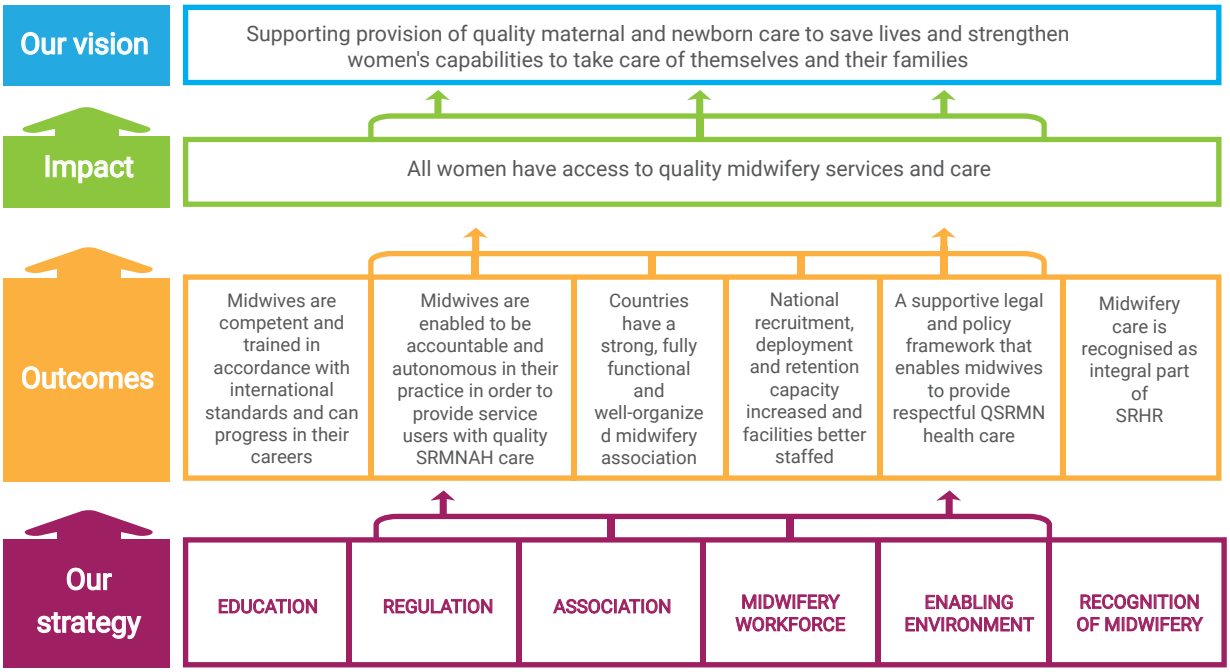
Through the interview process, some lessons learned and responses to evaluation-identified short-comings were discussed. The most recent evaluation cited limitations in the skills of newly graduated midwives, therefore changes to internship programs in hospitals were made to ensure new graduates had more delivery exposure before moving to health centers.[4] Ongoing support is also provided through regional WhatsApp groups. Each district now has access to at least one ambulance for urgent hospital transfers; the attending midwife travels with the patient to ensure an effective hand-off. Health volunteers provide translation support for ethnic mothers who cannot communicate to the Lao-speaking midwife. BEmONC and breast-feeding training helps upskill midwives who are already deployed; outreach programs in villages provide ANC, PNC, and other health services every three months in each village.

Challenges remain with the lack of available staff in many health centers, and the lack of suitable equipment and medical supplies, including in some cases a lack of electricity and/or water -- completely or intermittently unavailable in some health centers.

Continued need to expand and revise the program

The UNFPA Lao Midwifery Strategy for Country Programme 7th cycle (2022-2026) [9] builds on the UNFPA Global Midwifery Strategy 2018-2030.[4] The vision of the UNFPA Global Midwifery Strategy is to support the provision of quality maternal and newborn care to save lives and strengthen women's capabilities to take care of themselves and their families. The strategy, shown below in **Figure 5** is built on 6 pillars: Education, Regulation, Association, Midwifery Workforce, Enabling Environment and Recognition of Midwifery as an integral part of SRH. To achieve the impact statement that all women have access to quality midwifery services and care more funding for salaries and facilities, more graduates and continuing education of existing cadres will be needed. Additional areas of focus, including health equity, case management and emergency management were identified in recent evaluations and have been partially addressed but ongoing commitment to raising the bar is needed.

Figure 5 UNFPA Global Midwifery Strategy



More Graduates: Based on projections from the State of the World's Midwifery 2021 country profile, 3,500 more midwives will be needed by 2030[25]. There are also 900 of the 1,400 lower-level degree midwives who need to upgrade their degree by 2030. Using minimum deployment levels per health facility figures, about 700 midwives need to be deployed urgently as per table below from MoH deployment data.[4]

More Quota: This represents a significant funding challenge to the Ministry of Health, where currently there many midwives working as volunteers, without salaries, waiting for hiring quotas to open. Salaries for midwives are under $100 per month. Recruiting the numbers of midwives required may be challenging even if placements are guaranteed.

"The District Hospitals in Vientiane Capital are still like the same level as Health Centers in provinces, sometimes the dentist does the delivery." Midwife in Central Hospital

Table 3

Number of health facilities with adequate staff and number of additional midwives needed in Lao PDR[25]

Health Facility Level	Number of HF in the country	Number of HF with adequate staffing	Proportion of HF with adequate staffing	**Number of additional midwives required**
Central Hospital	10	3	30.0%	N/A*
Provincial Hospital	17	5	29.4%	**58**
District Hospital	135	28	20.7%	**326**
Health Centre/ Small Hospital	1074	764	71.1%	**310**
TOTAL	1236	800	64.7%	**694**

Upskilling of teaching staff and graduates: There is an ongoing need for licensing and continuing professional development using creative low cost means to provide training and support for graduates and teachers.

Additional certification is needed to ensure all midwifery teachers have a Post Graduate Certificate in Health Care Teaching and meet WHO Midwifery Teacher Competencies.

Building a continuous quality improvement cycle required feedback and mentorship between new graduates and experienced midwives to ensure experience is balanced with new skills. Routine assessment of ongoing training needs helps ensure upskilling prioritizes the appropriate areas, and the skill sets of working midwives don't fall behind new technology and evidence-based methods.[26]

"Most have limited knowledge of evidence-based practice… they rely on WHO documentation…most can't read English"

Case Management: Case management of maternity cases from ANC through delivery and PNC should be implemented in both community and hospital settings to provide patient-centered care from family planning through infant nutrition.

Health Equity and Cultural Sensitivity: Targeted recruitment of ethnic minority students into midwifery programs with guaranteed placement of those midwives into the communities they represent will improve engagement with mothers from non-Lao ethnic groups. Integration of healthcare delivery with non-harmful traditional practices could improve skilled birth attendance and PNC for targeted groups of ethnic women – creating acceptance by allowing ethnic women to have input into the design of their birth experience.

Conclusion

The Lao Government, with support from UNFPA, JICA, Thailand and a community of international NGOs has successfully reached an important hurdle that is effectively reducing maternal, neonatal, and infant mortality. The challenge that remains is to maintain this progress and push ahead to reach the 2030 goals. These may be at risk if funding levels for midwifery positions are not increased, if adherence to training needs and standards for teachers and midwives is not sufficient to re-accredit programs, and if direct attention is not paid to health equity for rural, remote, ethnic communities who have limited ability to access other points of care.

Affiliations :

1. UNFPA Lao PDR Consultant
2. UNFPA Lao PDR
3. Department of Health Personnel, Lao People's Democratic Republic Ministry of Health, Lao Association of Midwives
4. UNFPA Lao PDR

Author contributions:

Christi Lane Barlow: Field research, preliminary draft preparation
Sally Sakulku: Research design, project management, manuscript review
Sengmany Khambounheuang: interview input, manuscript review
Bakhtiyor Kadyrov: Manuscript Review

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Annex 1 Interviewees

Position	Location	Interview
Department of Health Personnel, MOH	Vientiane Capital	Ms. Sengmany Khambounheuang
Educational and Training Institutes	Xieng Khouang	Ms. Souksavanh Keobailuang
Ethnic Midwifery Students Graduate	Luangprabang	Dr. Buakeo
Khon Kaeng University	United States	Professor Pakvilai Srisaeng
Mittapharp Hospital	Vientiane Capital	Midwife Pinkeo
Setthathirath Hospital	Vientiane Capital	Midwife Sakhone

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UNFPA in Lao PDR

UN House, Lane Xang Avenue
P.O Box:345, Vientiane, Lao PDR

laos.office@unfpa.org

lao.unfpa.org