Research Article

# Home delivery in Southern Lao PDR: Challenges to Achieving MDG 4 & 5 Targets

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**Abstract**

This study investigated rural Lao PDR village women's views and experiences of recent, or impeding, childbirth to better understand barriers to maternity service usage. Lao PDR has the highest maternal mortality rate (MMR) in the South-East Asian region with very low utilization rates for skilled birth assistance and health sector delivery services. The study site, Sekong, a southern Lao province, was lowest in the country on virtually all indicators of reproductive and maternal health, despite several recent maternal health service interventions. The study's aim was to gain a fuller understanding of barriers to maternity services usage to contribute towards maternity services enhancement, and district and national policy-making for progressing towards 2015 MDG 4 & 5 targets.

A descriptive cross-sectional study was used. First, face-to-face questionnaires were used to collect demographic and reproductive health and health care experience data from 166 village woman (120 with a child born in the previous year, and 46 who were currently pregnant). In-depth individual interviews then followed with 23 purposively selected woman, to probe personal experiences and perspectives on why women preferred home birthing.

The majority of women had given birth at home, assisted by untrained birth attendants (relatives or neighbours). While seventy percent had accessed some antenatal services, postpartum follow-up attendance was very low (17 percent). Limited finances, lack of access to transport and prior negative health service experiences were important factors influencing women's decision making. Giving birth at home was seen by many, not just as unavoidable, but, as the preferred option.

Recent top-down maternal health initiatives have had little impact in this region. Improving maternal and child-health strategies requires much greater community participation and use of participatory action methodologies, to increase women's engagement in policy and planning and subsequent usage of health service developments.

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**Introduction**

Lao PDR, like the rest of the developing world, is striving to reduce maternal, infant and child mortality to meet Millennium Development Goals 4 and 5 (MDG 4 and 5) by 2015. The MDG 5 target is three quarters reduction in maternal mortality rate (MMR), and MDG 4 a two thirds reduction in under 5 mortality rate (U5MR) by 2015 (UNDP, 2010). Among the 68 countries in the MDG countdown, Lao PDR is one of 21 on track to achieve MDG4, but is considered most unlikely to achieve MDG5 (MOH, 2009).

Although the Lao PDR 1998 Safe Motherhood initiative was an encouraging development, the country still has the highest MMR in the region (Acuin et al., 2011); Lao PDR MMR was estimated at 480 in 2008, compared to near neighbors, Cambodia (290), Myanmar (240), Vietnam (56), Thailand (48), and China at (38) (WHO, 2010). Everyday at least two Lao women die due to pregnancy and childbirth problems. One in every 49 women giving birth is at risk of dying. In this region, Thailand has already achieved MDGs 4 and 5, China and Vietnam are considered on track to achieve MDG5 by 201; Myanmar has made insufficient progress, while Lao PDR and Cambodia have been identified as making steady progress (WHO, 2010).

The 2005 Lao National Reproductive Health Survey ((CPI, 2007) showed the majority of Lao women (85 percent) give birth at home with only 28.5 percent of children being born to women who had received antenatal care. Most (91 percent) of the births in Southern Lao took place at home and more than half (52 percent) of live births were assisted by relatives. The main reason for home births was the mothers' belief that it is unnecessary to deliver at hospital (76 percent). Several studies show that traditional cultural beliefs and decision-making practices influence birthing practices and choice of delivery site (Doussantouse, 2011; Eckermann, 2006: Eckermann & Deodato, 2008; Sychareun, Phengsavanh, Hansana, Somphet, & Menorah, 2009). Reasons for giving birth at home, even if complications are anticipated included: hospital attendance delayed by geographical barriers, traditional beliefs such as sacrificing an animal would protect them against complications, fear of mounting and unaffordable costs, and fear of unwelcome medical intervention (Yabuta, 2008).

Southern Lao PDR's Sekong province has the highest unmet need for reproductive health in the whole country and fares lowest on virtually all indicators of reproductive and maternal health and wellbeing; knowledge of family planning is 69.6 percent compared to the national average of 89 percent, and 85 percent of couples use no contraception compared to the national average of 61 percent. Only 6 percent of women deliver in the provincial or district hospital compared to 15 percent nationwide. Almost all births occur in the home (92.5 percent), compared to 85 percent nation-wide, and births are assisted by unskilled people such as mothers and husbands in 80 percent of cases, compared to 63 percent nationwide (District Health Office, 2011).

In 2006 a maternal health services needs assessment in Sekong's Thateng district found most babies (92 percent) were born in the villages; only 8 percent in a hospital (Eckermann & Deodato, 2008). Only 25 percent of reproductive age women used any contraceptive method. Thirty-one infant deaths were reported and one mother died across the 18 villages that year. Women often felt uncomfortable with the Western birthing position imposed in hospital births and preferred to give birth in the traditional position in the villages. Women from some ethnic groups gave birth outside, or, under the house without their husbands. All villages used a newly cut piece of bamboo to cut the umbilical cord rather than sterilized knives. Traditional Birth Attendants (TBA) or family members assisted at most births. In some cases women gave birth alone. Minority ethnic groups felt unhappy with the health system because they also considered that they were patronised or treated badly by health staff.

Although, health management systems had been upgraded and many maternal health intervention programs initiated in Thateng district, after a decade, maternal and reproductive health indicators had shown little improvement (District Health Office, 2011). This study was a follow-up study to Eckermann and Deodato's (2006) assessment for the need for a Maternity Waiting Home intervention that led to the “Silk Homes” project in Southern Lao PDR. Seventeen maternity waiting homes were built, in each of the 17 districts of Sekong, Saravan, and Attepu provinces to provide a place for women from isolated villages to await the birth of their child near a district hospital. As women from rural or isolated villages could not access a hospital if an emergency arose during labor, the Silk Home project provided safe places nearer to a hospital where women could stay while awaiting the birth. Each “Silk Home” provided a range of ante and post-

natal care, free medicines, and free delivery care. In addition, a per-diem allowance was paid for each day women were waiting to compensate for being away from the fields or other income generating activities. Initially women gave birth in the home itself but later all women were transferred to the district hospital at birth onset. However, despite the potential benefits of this initiative, the homes still remain under-utilized.

Over more than a decade the Silk Home project, and other maternal and child health initiatives, had proved ineffective in increasing skilled birth attendant, or hospital delivery service usage in this region. This study's aim was to further understand barriers/resistance to maternity services usage, as a way to enhance those services, and, to contribute to further district and national level policy-making for strategies to progress towards MDG 4 & 5 targets by 2015.

**Method**

This was a descriptive cross-sectional study with data collection in December 2011. The setting, Thateng district in Sekong province, was purposively selected given the lack of improved usage of maternal and child health services after a decade of maternity health services interventions. The district has 6 sub-districts: Thateng, Kokphoung-Neua, Thongvai, NongNok, Thonenoy, and Chula. The total population was 34,399, almost all (98%) from ethnic minority groups (Ministry of Planning and Investment, 2009). Among the 6 sub-districts, NongNok, with 7 villages (total population 3461; 54% female) and 8 different ethnic groups was randomly selected as the study area.

All 166 women in the sub-district who had a child in the past year, or were currently pregnant (120 births, 46 currently pregnant), were approached by their respective village "nai-bans" (leaders) about the study. All agreed to meet with the researcher (first author), and interpreter when necessary, and all subsequently agreed to participate. All spoke Laoloum (Lao national language) but, for many it wasn't their first language. As almost all participants were illiterate and unable to provide written consent an audio taped consent process was adopted. After explaining the research project and privacy/confidentiality provisions, the researcher tape recorded his invitation to join the study and each participant's verbal consent.

Ethics approval was obtained from Khon Kaen University's Humanities and Social Sciences Ethical Committee (HE 542073) and Lao PDR's Ministry of Health National Ethics Committee for Health Research. Permission was also obtained from the provincial and district health offices in the study area.

**Data collection**

Quantitative and qualitative data was collected. First, quantitative data was collected from all 166 participants using face-to-face questionnaires covering demographic and past maternal health-care data. A 19 point structured questionnaire was developed from previous research literature and validated by two academic experts in reproductive health and two working for local reproductive health NGO's (questionnaire available from first author). Qualitative data were gathered later, using in-depth interviews with a structured open-ended questionnaire to probe personal experiences and perspectives on why women preferred to birth at home. Twenty three participants were purposively selected for interview on the basis of having had either past delivery difficulties, or difficulties with maternal health services, and were thus considered to have potentially rich insights germane to the study's aims (nine had given birth in the previous year and 14 were currently pregnant).

**Data analysis**

Quantitative data was analyzed using descriptive statistics such as frequency, central tendency and percentages, using SPSS version 17. Qualitative data were analyzed using content analysis (Neuman, 2011; Silverman, 2005). Interview tape recordings were transcribed and checked for completeness with written notes. Separate ideas were then coded throughout the transcripts and cast into categories, with related categories eventually collapsed into broad themes.

**Results**

***Demographic and reproductive health data***

Maternal demographic data shows mean age of the 166 participants was 26.8 years (range 15-45 years). Almost all were married, the majority (85%) had no, or very limited, formal schooling and they came from a variety of ethnic groups. Table 1 displays demographic data.

**Table 1.** Demographic characteristics of participants who either gave birth in the previous year and/or were pregnant during the study (N=166) .

| | N | % |
|---|---|---|
| **Mean age** 26.8 years (SD 6.8) | | |
| **Age distribution** | | |
| 15-25 years | 84 | 50.6 |
| 26-35 years | 59 | 35.5 |
| 36-45 years | 23 | 13.9 |
| **Marital status** | | |
| Married | 164 | 99.2 |
| Divorced | 1 | .4 |
| Separated | 1 | .4 |
| **Religion** | | |
| Buddhism | 16 | 9.6 |
| Animism | 150 | 90.4 |
| **Educational level** | | |
| No formal schooling | 52 | 31.3 |
| Incomplete primary school | 90 | 54.2 |
| Secondary school | 13 | 7.8 |
| Certificate of adult education | 11 | 6.6 |
| **Ethnic group** | | |
| Katu | 54 | 32.5 |
| Gne | 2 | 1.2 |
| Taoy | 17 | 10.2 |
| Talieng | 6 | 3.6 |
| Alak | 70 | 42.2 |
| Xouy | 4 | 2.4 |
| Laoloum | 13 | 7.8 |

**Table 2.** Reproductive health data of participants who gave birth in previous year (N= 120).

| | | N | % |
|---|---|---|---|
| **Mean age at first child** | 18.7 years (SD 2.83) | | |
| **Mean pregnancies per woman** | 4.09 (SD 3.098) | | |
| **Mean children born per woman** | 3.83 (SD 2.83) | | |
| **Number of pregnancies per woman** | | | |
| 1 | | 23 | 19.2 |
| 2-3 | | 43 | 35.8 |
| 4-5 | | 25 | 20.8 |
| 6-7 | | 12 | 10.0 |
| >7 | | 17 | 14.2 |
| **Number live deliveries per woman** | | | |
| 1-3 | | 76 | 63.3 |
| 4-6 | | 20 | 16.7 |
| 7-9 | | 18 | 15 |
| 10-12 | | 6 | 5 |
| **Site of last delivery** | | | |
| Home | | 94 | 78.3 |
| Health facility | | 26 | 21.7 |
| **Prior experience with infant death** | | | |
| All live births | | 73 | 60.8 |
| Infant death | | 47 | 39.2 |
| **Delivery assistance at last home birth** | | | |
| Trained birth attendant | | 11 | 13.5 |
| Relative and/or neighbor | | 70 | 86.5 |
| **Antenatal care attendance in past 12 months** | | | |
| Yes | | 83 | 69.2 |
| No | | 37 | 30.8 |
| **Postpartum care attendance** | | | |
| Yes | | 21 | 17.5 |
| No | | 99 | 82.5 |
| **Postpartum traditional practice** | | | |
| Yu Fai. (Use of charcoal fire beside/under bed) | | 90 | 75 |
| Herbal medicine | | 30 | 25 |
| **Smoked cigarettes during pregnancy** | | | |
| Yes | | 63 | 52.5 |
| No | | 57 | 47.5 |

Reproductive health data of the 120 participants who had given birth in the previous year showed first child birth at a young age (18.7 years) and an average of 3.83 children born per women. The majority of deliveries had been at home (78.3 percent) and again the majority (86.5 percent) assisted by untrained birth attendants. Almost seventy percent had accessed some antenatal care services but less than 20 percent had followed through with postpartum care services. Full details are presented in table 2.

Reproductive health data from the 46 participants who were pregnant during the study showed most had given birth previously (89.1 percent), about 70 percent

had accessed antenatal services and over half (56.5%) were anticipating giving birth in a health facility. Table 3 displays their data in full.

**Table 3.** Reproductive health data of participants pregnant during study (N= 46).

| | N | % |
|---|---|---|
| **Birthing experience** | | |
| Previous deliveries | 41 | 89.1 |
| First delivery | 5 | 10.9 |
| **Antenatal care visits** | | |
| Yes | 32 | 69.6 |
| No | 14 | 30.4 |
| **Smoked cigarettes during pregnancy** | | |
| Yes | 18 | 39.1 |
| No | 28 | 60.9 |
| **Expected birthing site** | | |
| Health facility | 26 | 56.5 |
| Home | 20 | 43.5 |
| **Expected delivery assistance** | | |
| Skilled birth attendant | 34 | 73.9 |
| Traditional birth attendant | 5 | 10.9 |
| Birth alone | 5 | 10.9 |
| Don't know | 2 | 4.3 |

**Delivery experiences and preferences**

Quantitative data above clearly show the majority of the women had opted for home delivery. Qualitative data revealed several themes underlying this option: Lack of funds for transport to health services and/or payment for services was common, as was expectations of easy births given prior experience. Prior negative experiences with health services also reduced the likelihood women would use health services in future. However, women with prior birthing complications felt they would be much safer in future with health centre or hospital assisted births.

Women who lacked funds for transport and services also often preferred unskilled birth attendants as first choice, such as husband, mother, and sister. They trusted the people selected, and maintaining personal relationships within the village. For example;

*"I gave birth at home because I don't have money for transport. My mother assisted my delivery. I thought my mother could help me to give birth because my first baby was assisted by her too and now my baby is safe. For my next birth I am not sure where to give birth, if it is not a difficult birth I will give birth at home and if becomes difficult we will go to hospital"* (Woman - 2 pregnancies ).

*"It is because there is no money and we have no transport that I gave birth at home. My husband and mother assisted with the births. I am afraid of unsafe birth too, but I had no choice. When we go to hospital we have to pay for services so I prefer to give birth at home"* (Woman - 4 pregnancies*).*

"*My husband assisted both of my two babies at home. I had my last birth at home with my husband assisting because we cannot find anyone to help. We do not have money or a vehicle, so we didn't go to hospital. In addition, I cannot estimate the birthing date"*(Woman - 2 pregnancies).

"*All of my 5 babies were born at home. I gave birth at home because they came quickly and I had no time to go to the hospital. A midwife assisted me… I was shy to go to hospital and I was afraid of the cost. I was not satisfied with giving birth at home but had no money to go for hospital services. I would like the government to pay for my transportation. For the next pregnancy I will go to hospital*" (Woman with 5 pregnancies).

The majority of women claimed that they did not see the necessity for health centre or hospital assisted births given their previous successful home birth experiences. For them home birth was the preferred choice rather than driven by financial or other considerations.

*"I prefer to give birth alone at home because my previous experiences in birthing were that they were easy and I had no problems. My mother can help me to cut the umbilical cord of the baby. I don't want to spend money for services I don't need"* (Woman 3rd pregnancy, currently 5 months pregnant).

*"If it is an easy birth, I will not go to hospital. I don't want any help from other people because I have always given birth easily"* (Woman 9th pregnancy, currently 6th months pregnant).

Negative perceptions from previous health sector contact also underscored choice for birthing at home. Some reported that on previous hospital contact for medical advice during pregnancy they had been turned away because contractions had not started. Given the efforts they had made to attend hospital, they were now unlikely to seek medical assistance again. They said:

*"If it is not difficult during the delivery I will give birth at home. When I attended at the hospital the doctor told me that my baby was not ready to be born yet so I came back home and don't want to go back again. If I do go back I will have to pay for transportation and services again"* (Woman 7th pregnancy, currently 5 months pregnant).

*"All my previous 5 babies were born at home. For this pregnancy, I still prefer to give birth at home. I would like to give birth at hospital but I am afraid that the doctor will not admit me. Twice before I have been to the hospital but they did not admit me and then I returned home and gave birth at home and I don't want to go hospital again. At home my husband assisted me without any problems"* (Woman 6th pregnancy, currently 8 months pregnant).

*"It depends on the circumstances. If it is not a difficult birth, I will give birth at home. My previous time in a hospital the doctor told me my baby was not ready to be born. I come back home and don't go back again* (Women 3rd pregnancy, currently 9 months pregnant).

Previous experiences of complications and prolonged labor strongly increased the chances of preferring a hospital birth. Several women reported feeling safer in hospital;

"*I have planned for my coming baby to be born at the health centre or hospital because I need a doctor to assist. My previous experiences are that it took many long hours before the baby finally came out.*" (Woman 4th pregnancy, currently 8 months pregnant).

*"For this pregnancy I will give birth at the hospital because I require the doctor's help because my previous birth was very difficult."*(Woman in 8th pregnancy, 8 months pregnant).

**Discussion**

These findings clearly show home delivery and with unskilled attendants as the preferred delivery mode. This preference prevails despite new health care service interventions and programs in Thateng district, and fee-exemptions for maternal health care services for poor people provided through Lao Prime Ministerial Decree No.52 (1995) and *Health Equity Fund* support for transportation costs for delivery.

This pattern of home births mirrors data from provincial and nationwide surveys (Committee for Planning & Investment, 2007; District Health Office, 2011). and needs assessment research for establishing the Silk Homes maternity waiting homes project in the district (Eckerman, 2006). Little has changed over the past decade. The proportion of births attended by SBAs or TBAs is used as a proxy measure for maternal and child deaths and to track progress towards Millennium Development Goals targets (United Nations, 2009). Of babies born at home, only 11 (13.5%) were assisted by a TBA. Similar results were reported in the 2005 Lao Reproductive Health Survey (MoH, 2009) with 80% of Sekong births assisted by unskilled people. This does not auger well for Lao PDR meeting MDG 5 by 2015.

Lao health ministry policy as well as health intervention programs are intended to encourage women to deliver in health facilities with skilled birth attendants to minimize complications. However, many women's experiences of previous healthy home deliveries make health sector assistance appear unnecessary. Limited economic resources and prior negative experiences with the health service appear as barriers to health service usage making health facilities inaccessible or seen as the last resort for delivery.

Current results are similar to those in other Lao provinces (Sychareun, Phengsavanh, Hansana, Somphet, & Menorah, 2009), and other developing countries such as Afghanistan, Tanzania and Indonesia (Kaartinen & Diwan, 2002; Mrisho et al., 2007; Titaley, Hunter, Dibley, & Heywood, 2010). The experience of antenatal care visits did not change delivery practices in this study. Most women who had at least one ANC visit still chose home birthing. However, results were different in rural Cambodia where antenatal care attendance was a

significant determinant of facility delivery, though more ready access to transport in Cambodia, even in rural areas, may contribute to this (Yanagisawa, Oum & Wakai, 2006).

Contact with maternity services did not appear to increase understanding of advantages for birthing in health facilities. First-parity women claimed they did not know a safe place for their delivery, or, who they could call upon for birth assistance. This is consistent with reports that other maternity health education campaigns have not had behavior change impacts (Ministry of Planning and Investment, 2009). Many felt it was time-wasting to wait at hospital for birthing, rather than as an opportunity for child care and health education. Notably, when women were turned away from the hospital because labor was not advanced enough, they rarely returned.

These results are consistent with earlier observations about women's responses to the health system when they felt that they were patronized or treated badly by health staff (Eckerman, 2006). Economic, geographic, and social factors also influenced these women's decision making about place for birthing, such that home delivery was not just seen as unavoidable, but, as the preferable option. Furthermore, maternity health interventions for example, the Silk Homes project did not bring about sustainable changes to maternity facility utilization or use of skilled attendants or midwives.

**Conclusion and recommendation**

**P**reference for home delivery, either alone, or, with unskilled birth attendants, hinders maternal and infant health improvements in Lao PDR. In this study women's satisfaction with previous home deliveries, limited transport or funds, and, prior negative experiences all appear as contributors to very low maternity health service usage. Maternity-focused public health services provided by national, provincial, district and local health offices are typically “top-down” and do not engage local communities in planning and decision-making about service provision or evaluation. Trust in, and a sense of community ownership of, health service is low, no doubt contributing to low service utilization.

To more fully understand current problems and barriers to maternity service provision women's views must be actively canvassed. Future researchers should use more appropriate methodologies such as Participatory Action Research (PAR) to enhance the chances of getting active engagement from the communities themselves. Understanding rural village women's lived childbirth experiences should add significantly to building strategies for improving maternal and child health development in Lao PDR.

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