

**Clean Birth Education by Midwives  
in Southern Lao PDR 2014-2016**

**By**

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## ABSTRACT

Lao Peoples' Democratic Republic struggles with high maternal and infant mortality. Yale School of Nursing midwifery faculty partnered with CleanBirth.org in 2014, 2015 and 2016 with the goal of reducing maternal and neonatal mortality in rural Salavan Province, Lao PDR, through the use of clean birth kits and safe birth practices. Over those years, CleanBirth.org delivered 5,000 kits, with 3,095 distributed in Salavan Province by nurses and primary care workers, who did 1,869 postpartum follow-up interviews. No maternal or newborn postpartum infections were reported; however several issues confound postpartum data reliability. Trainings in WHO Essential Newborn Care provided by Yale midwives were attended by 229 nurses, midwives and primary care providers. This paper describes clean birth kit distribution, evaluation and adaptation to fit local needs, along with capacity building education in basic midwifery skills.

**KEYWORDS:** *midwifery, clean birth kit, Lao PDR, maternal-child health, newborn care, puerperal sepsis, Salavan Province, public health*

## INTRODUCTION

The Lao Peoples' Democratic Republic (Lao PDR) has some of the poorest birth outcomes in the world, ranking high in maternal and infant mortality.<sup>1,2,3</sup> With increased efforts based on Millennium Development Goals 4 and 5 over the last 10 years, Lao PDR improved the maternal mortality rate from 405 per 100,000 live births in 2005 to 206 per 100,000 births in 2015.<sup>1</sup> The infant mortality rate decreased from 70 per 1000 live births in 2005 to 57 per 1000 live births in 2015.<sup>1</sup> Increasing the availability of midwives and using clean birth practices including clean birth kits, two strategies used in Lao PDR, can be important interventions to improve perinatal morbidity and mortality.

CleanBirth.org, a non-profit organization already distributing clean birth kits in Lao PDR, requested support in 2013 from the Yale School of Nursing midwifery faculty to 1) assess local birth and newborn care practices in order to assure that the CleanBirth.org birth kit met local needs; 2) assess kit distribution and data collection regarding perinatal infections in kit users; and 3) provide capacity building training in basic midwifery skills for nurses and primary care providers who used the kits in the absence of available midwives or obstetricians.

Globally, puerperal sepsis causes 10.7% of maternal mortality.<sup>4</sup> In developed regions, puerperal sepsis is rare and causes 4.7% of maternal deaths.<sup>4</sup> Worldwide, the highest proportion of puerperal sepsis related deaths occur in

southern Asia, accounting for 13.7% of all maternal deaths.<sup>4</sup> Birth in unclean environments increases the likelihood of maternal puerperal sepsis (sepsis developing in the first 42 days postpartum) as bacteria ascending the birth canal are the most frequent cause of postpartum infections.<sup>5</sup> Poor hand washing by birth assistants is also a leading cause of puerperal sepsis.<sup>5</sup>

Infections, including tetanus, cause approximately 7% of neonatal deaths worldwide.<sup>6,7</sup> Birth practices such as unhygienic cutting of the cord, the application of non-sterile substances to the cord, or clamping the cord with unclean materials can cause microorganisms to enter the cord stump, leading to cord infection and subsequent neonatal death due to sepsis.<sup>7</sup>

To combat puerperal and neonatal sepsis in developing countries, many organizations developed clean birth kits. Birth kits are inexpensive and portable, and usually provide a sterile drape or pad, gloves, soap, sterile cord clamps, and a razor to cut the umbilical cord. Birth kits operationalize the World Health Organization's concept of "six cleans," by providing supplies for: 1) clean hands; 2) clean delivery surface; 3) clean perineum; 4) nothing unclean inserted into the vagina; 5) clean cord cutting tool; and 6) clean cord tie during delivery.<sup>8</sup> Since 1987, clean birth kits have been implemented in 51 countries.<sup>9</sup> Basic needs are unique to each country, therefore the kits and training in their use must be tailored to community needs.

The results of studies following perinatal outcomes after birth kit implementation vary, as clean birth kits are never the sole intervention implemented. Overall, studies have shown a significant reduction in neonatal infection, however there are variable results on puerperal infection reduction. Common confounding variables in the analysis of clean birth kits are birth attendant skill and correct use of soap in hand washing.<sup>10</sup> Seward et al. summarize early studies where researchers found a 57% reduction in neonatal mortality in India, a 32% reduction in Bangladesh, and a 49% reduction in Nepal, yet no significant decrease in maternal infections.<sup>11</sup> The interventions and outcomes vary in each study, making it impossible to analyze effectiveness of birth kits alone. Clean birth kits have become such an integral part of programs to reduce perinatal morbidity in areas without sufficient midwives and obstetricians, that Hundley, et al. published three decision-making algorithms to guide policy makers considering kit use.<sup>12</sup> Hundley encourages kit composition that matches local needs, suggesting, for example that some locales may benefit from the addition of antibiotic cream for the umbilical cord stump.<sup>12</sup>

## **SALAVAN PROVINCE**

Salavan Province (also spelled Saravane) in southern Lao PDR is a region of forested mountains with minimal infrastructure, the least urbanized of the 18 Lao provinces.<sup>1</sup> In Lao PDR 84% of households have electricity, 61% have access

to an improved water source, and 73% have access to improved sanitation facilities.<sup>1</sup> Overall 80% of households own a motorcycle but only 16% own a van or truck, with 44.7% of rural households in areas with roads having a tractor and 30% in areas without roads.<sup>1</sup> Eleven percent of the population in Salavan live in villages without road access. In contrast to more urbanized areas, 75.5% of Salavan households have access to electricity, 59.3% have access to improved water sources and 37% have sanitary toilets.<sup>1</sup> Twenty-three percent of women in Salavan had no formal education.<sup>1</sup>

The Lao PDR had a 2015 crude birth rate of 28 with Salavan having one of the highest crude birth rates of 31 per 10000 population.<sup>1</sup> Health statistics for Salavan Province are some of the worst in the country. Overall, 58.4% of Lao births occur at home with approximately 70% occurring at home in Salavan.<sup>13, 14</sup> A 2009 study demonstrated a generational shift from unattended forest births to home births assisted by family members or traditional birth attendants in neighboring Savannakhet and Xekong Provinces.<sup>15</sup> The infant mortality in Salavan is 112 per 1000 births, compared to 54 per 1000 for all of Lao PDR.<sup>14</sup> Puerperal and newborn sepsis rates specific to Salavan are not published in English. The Lao government supports 35 primary care clinics in Salavan, each staffing plans for a nurse, a community midwife and a primary care provider (PCP).<sup>13</sup>

## MIDWIFERY IN SALAVAN PROVINCE

The Lao PDR Ministry of Health launched a “Skilled Birth Attendance Development Plan” in 2008 with input from the United Nations Population Fund, the WHO, the Japan International Cooperation Agency, and other donor agencies and nations. At that time, United Nations Population Fund assessments documented only 86 trained midwives in the country with only 18% of all births having a skilled birth attendant.<sup>16</sup>

The Ministry of Health estimated the immediate need for 1,000 health providers who had basic lifesaving skills for mothers and newborns. No schools of midwifery existed when this plan was developed, but the Ministry of Health aimed for their rapid development and deployment with a commitment to educate 1500 new midwives by 2015.<sup>17,18</sup> Four routes of midwifery education into practice were devised: 1 year study for community midwives, 2 year study for direct entry community midwives; 1.5 year and 3 year study for community midwives, and a 3 year bachelor degree in midwifery. Sixteen midwifery education programs were open in 2011, with the number of midwives increased to 343 along with another 763 community health workers and health professionals with some midwifery training and 69 obstetricians.<sup>19</sup> In spite of a lack of experienced midwifery teachers and teaching supplies, the Lao PDR graduated almost 200 new midwives in 2012, more than 300 in 2013 and more than 400 in 2014; numbers that assured attainment of their 1500 new midwives goal by

2015.<sup>18</sup> A 2014 review by the UNFPA encouraged increased education for midwifery teachers, including graduate education, increased supervised clinical practice opportunities for the midwifery students, and standardizing midwifery education into one 3 year model at the bachelor's degree level that met international standards. Teachers and newly graduated midwives who were interviewed requested more training.<sup>18</sup>

The Eighth Five-Year National Socio-Economic Development Plan (2016-2016) continues the Ministry of Health encouragement for all women to come to district hospitals or clinics to give birth.<sup>20</sup> This plan has a goal of having one midwife per village by 2020. Although this goal does not have a midwifery workforce baseline, the report states that 58% of births had a skilled attendant in 2009.<sup>19,20</sup> Hospitalization for birth is provided free of charge; however, with 11% of Salavan families living in villages without access to roads, transportation difficulties particularly during rainy season floods, may prevent women from giving birth in clinics or hospitals.<sup>1</sup>

## **ORGANIZATIONAL PARTNERSHIPS**

### **CleanBirth.org**

CleanBirth.org is a nonprofit organization founded in 2012 to distribute kits that contain the materials for birth using the WHO 6 Cleans. The 2014 kit contained a waterproof pad with an absorbent side as a clean birthing surface; a bar of soap for cleaning hands; a plastic cord clamp for clean cord-clamping and a



sterile blade to assure clean cord-cutting. A nonverbal instruction sheet with drawings of correct kit use was included in each kit. CleanBirth.org decides birth kit content and sources the kits from Ayzh, Inc. for 5 USD each.<sup>21</sup> Charitable donations obtained through fundraising pay for the kits and distribution expenses.

### **Association for Community Development**

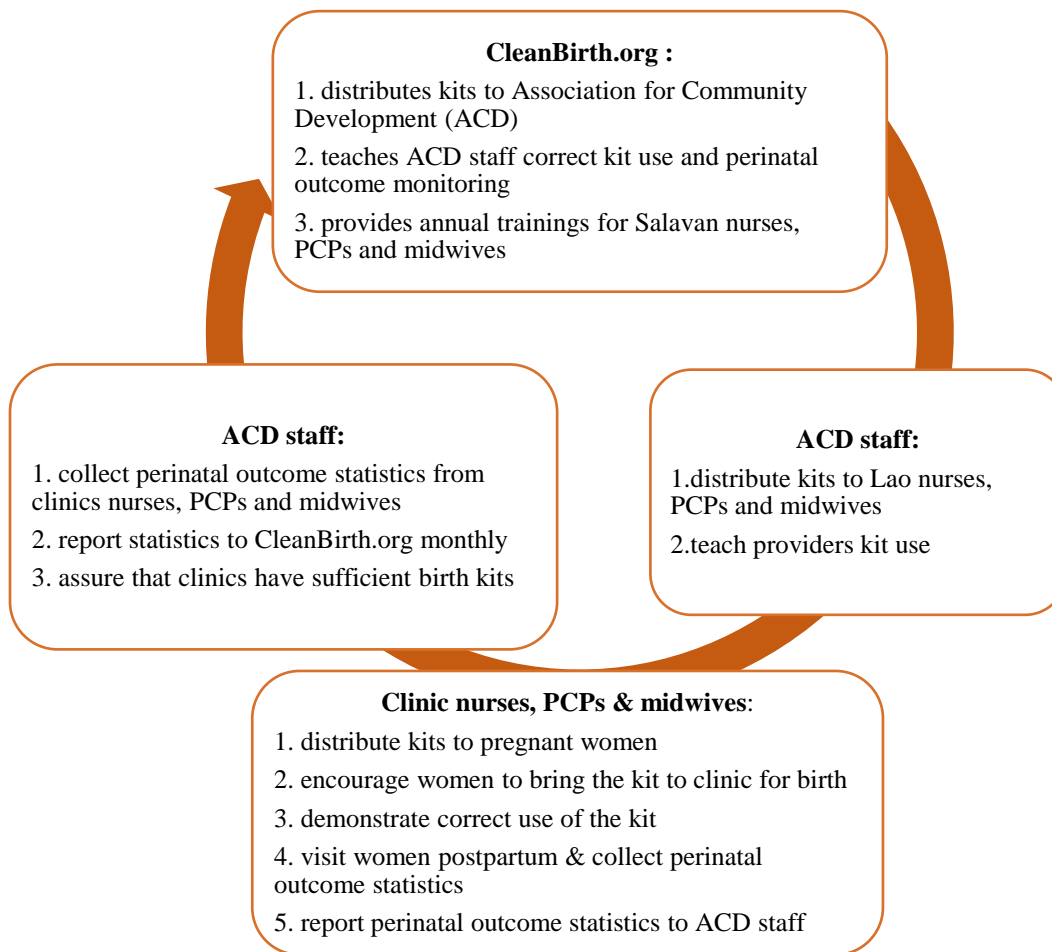
CleanBirth.org works through the Association for Community Development (ACD), a non-governmental organization in southern Lao PDR that has worked with ethnic minorities for ten years to improve rural education, employment and health. ACD staff members distribute clean birth kits to nurses, midwives and PCPs in Salavan Province, train them how to use the kits and collect data on infection rates and clean birth kit usage. The nurses, midwives and PCPs, in turn, provide kits to mothers, explain how to use the kits, and track data and infection rates. Clean birth kits are also used in the rural clinics when women come to give birth there. Figure 1 demonstrates birth kit distribution and data collection for birth kit use.

### **Yale School of Nursing**

The Yale School of Nursing has one of the largest schools of midwifery in the US. Midwives are educated at the master's level both as advanced practice registered nurses and as midwives using International Confederation of Midwives competencies. Yale's Center for International Nursing Scholarship and Education

funded a midwifery faculty member and two midwifery students to travel with CleanBirth.org in 2014, 2015 and 2016.

Figure 1. Birth Kit Distribution and Data Collection



## TRAININGS

CleanBirth.org provided trainings in 2013, 2014, 2015, and 2016 that focused on the correct use of the birth kits and data collection (Table 1). ACD staff members provided organization, transportation and language interpretation for the trainings. CleanBirth.org funded the costs associated with the trainings including ACD staff salaries and administration costs, meeting space rental, nurses' salaries and transportation and accommodation costs. Further, CleanBirth.org provided ACD with birth kits to be distributed to rural clinics.

CleanBirth.org trainings prior to 2014 included demonstration of the clean birth kit use to ACD staff and Salavan nurses and primary care workers along with instruction in project data collection. Data collected includes numbers of kits distributed, numbers of kits used, and surveillance for postpartum infections, morbidity or mortality for mother or newborn. The trainings also stressed the importance of having a birth partner present to use the kit. This had been a critical goal of the CleanBirth.org program because of the tradition for rural Salavan women to give birth alone.<sup>15,16,18,19</sup>

The CleanBirth.org/Yale team were told that although a small number of midwives practiced in Salavan hospitals, only nurses and primary care providers staffed the most rural Salavan Clinics. This was consistent with UNFPA findings during a 2014 review of skilled birth attendance in neighboring rural Savannakhet

Province.<sup>18</sup> Through ACD, those rural Salavan providers requested expanded training in 2014 to include the WHO Essential Newborn Care curriculum. WHO's Essential Newborn Care Course includes principles of physiologic birth, care of the newborn at the time of birth, delayed cord clamping, skin to skin contact, newborn examinations, breastfeeding support, resuscitation, and special situations such as small babies and kangaroo care.<sup>22</sup> When newborn resuscitation training was requested by Lao providers, the American Association of Pediatricians' Helping Babies Breathe curriculum was adapted for use in Salavan.<sup>23</sup> Additional training for teachers and new midwives was a common request during the 2014 UNFPA study of the Midwifery Component of the Skilled Birth Attendant Development Plan.<sup>18</sup>

The trainings used written materials, lectures, and training planning guides. Although the Helping Babies Breathe curriculum was available in Lao, not all training materials were available in Lao to the CleanBirth.org/Yale team, so the team used demonstration, discussion, role-play, and group work with Lao interpretation provided by ACD staff. After the demonstrations, the nurses and PCPs practiced the skills with role-play in small groups. The team members circulated among groups to observe skills practice and to provide immediate feedback and additional instruction.

## **FOCUS GROUP DISCUSSIONS**

An important goal starting with the 2014 trainings was to determine if the contents of the birth kit met the needs of local communities. First, ACD staff who received outcome data from the clinics' nurses and PCPs were asked three questions: 1) Were nurses and primary care workers receptive to kit use? 2) Was there any way a family could use the kit for a purpose other than birth? 3) Had they heard about problems with the kit from the nurses and PCPs?

Additional assessment of the birth kits was integrated into each training. The 25-35 nurses and PCPs attending the trainings became large focus groups. They were asked the same three questions as the ACD staff with the additional question, "Is there anything you would add to the kit or change in the kit?"

## **FIELD VISITS**

Following each training, the CleanBirth.org/Yale team joined ACD staff in delivering birth kits to rural clinics. Three rural clinics were visited annually. During the clinic visits, the CleanBirth.org/Yale team was able to assess the clinics for birth supplies, discuss birth support and complication management with the nurses and PCPs, and review the system for transporting mothers with perinatal problems. Clinics are positioned near a village, giving the team the opportunity to visit the village to see the resources available for women who might use the birth kit during birth at home.

## FINDINGS

### **CleanBirth.org Kit Evaluation**

Nurses and PCPs were receptive to the birth kits in the initial 2014 focus groups. They explained that their renewed focus on the 2008 government program encouraging women to come to the clinics for birth had shifted kit distribution patterns. Kits were used for births at the clinics. If women lived a distance from the clinic or the roads might be impassible due to the monsoons, women were given a kit during the pregnancy and asked to bring it back to the clinic for birth. Those women received instruction on kit use in case they could not travel to the clinic for birth.

When asked if the families used the kit for a purpose other than clean birth supplies, the clinic staff replied that many families had no blanket to cover the newborn so that the blue pad was sometimes mis-used as a baby blanket instead of a clean birth surface. Addition of a second blue pad as a newborn cover was planned for the 2015 kits.

As the team explored the custom of unattended birth, the nurses and primary care workers explained that some Salavan ethnic minorities believe that touching the blood of another person is bad luck and can cause sickness or death, producing a prohibition against assisting during birth. This apparent blood taboo is a logical combination of local experience with endemic Hepatitis B and the

Ministry of Health posters visible at each clinic illustrating the transmission and dangers of HIV infection. The nurses and primary care workers requested that a pair of gloves be added to the clean birth kits. Nurses and PCPs understood that hand washing with soap alone had been shown to reduce infections;<sup>24,25</sup> however, they thought adding a pair of gloves to the kit would help birth partners overcome the blood taboo if the birth occurred outside the clinic. They also requested that a second cord clamp be added to the kit. Accustomed to tying the cord in two places and transecting the cord between the ties, nurses and PCPs thought that replacing the string with two clamps would reduce blood leaking from the placenta, making assisting at a birth more acceptable to those helping at births happening in the villages. Gloves and a second cord clamp were added to the kit in late 2014.

Nurses and PCPs thought an instruction sheet with photos would be easier for clinic staff and the villagers to follow than the drawn pictures. A new instruction sheet with photos of a Lao woman using the kit was planned for 2015. Table 1 shows kit distribution, trainings, postpartum follow-up and outcomes.

Focus groups held during the 2015 trainings to evaluate the 2014 additions to the birth kit revealed that the nurses and PCPs were satisfied with the addition of a second absorbent sheet, a second cord clamp and a new instruction sheet using pictures of correct kit use. They found the gloves a useful addition to the kit; however, they requested a second set of gloves be added so that one pair

could be used for the birth and placental expulsion and one for cord transection and newborn care. A second pair of gloves was added in 2015.

**Table 1. CleanBirth.org Kit Distribution, Provider Education & Follow-Up 2014-2016** <sup>26</sup>

	<b>2014</b>	<b>2015</b>	<b>2016 Jan-Aug</b>
<b>Kits delivered to ACD by CleanBirth.org</b>	2000	1000	2000
<b>Kits distributed by ACD to rural clinics</b>	762	1,179	1154
<b>Postpartum interviews by nurses and PCPs</b>	489	748	622
<b>Postpartum follow-up rate</b>	64%	63%	Year incomplete
<b>Perinatal infections reported</b>	0	0	0
<b>Number of training groups done by CleanBirth.org &amp; Yale Midwives</b>	3	2	2
<b>Nurses &amp; PCPs trained</b>	88	70	71
<b>Midwives attending trainings</b>	0	0	2

The team met formally with the Salavan Ministry of Health in 2015, where ministers explained the 2008 initiative to have all births occur at the clinics.



The ministers requested that the kits be delivered to the clinics and hospitals to encourage birth there instead of being distributed to women in villages.

CleanBirth.org and ACD agreed to this change in distribution.

### **Capacity-Building Education**

In 2014, following training in birth kit use, the nurses and PCPs requested training in management of birth complications. The nurses and PCPs explained that the district hospitals had assigned midwives but at the clinics nurses and PCPs were responsible for births. Clinic staff had received United Nations Population Fund (UNFPA) training in the WHO Essentials of Newborn Care in the past but half of the 2014 training attendees were new nurses and providers who had never delivered a baby. The team used role-play with newborn manikins to demonstrate physiologic birth, management of a nuchal cord, breech birth, and third stage management including management of a retained placenta. The nurses and primary care workers asked for future trainings to include postpartum hemorrhage, preeclampsia, and use of episiotomy with perineal repair.

In 2015, half the nurses and PCPs were new to CleanBirth.org trainings. They again requested information on management of birth complications. Following the publication of the 2014 *Lancet* series on midwifery,<sup>27</sup> the midwifery faculty stressed evidence-based practices for quality care that were within the scope of practice for midwifery (Box 1), then provided training on birth

complications including prolonged rupture of membranes, postpartum hemorrhage, breech birth, and twin birth.

The CleanBirth.org/Yale Midwifery team planned the 2016 trainings to be “train the trainer” style presentations. In 2016, the team added Lao language training films from Global Health Media covering labor assessment, birth management, care of the newborn cord stump and warning signs of newborn illness.<sup>28</sup> As Global Health Media is a midwife-led organization, the techniques in the film are consistent with evidence-based techniques highlighted in the Lancet series (Box 1). MP3 files of these films were given to the ACD staff for distribution in Salavan. As in 2014 and 2015, nurses and PCPs requested practice with pregnancy complications such as breech birth. Two Salavan midwives attended the 2016 trainings. They shared their management experience with other providers during the demonstrations by the Yale midwives, thus validating midwifery techniques that could be used locally.

**Box 1. Effective Practices for Quality Maternal and Newborn Care within the Scope of Midwifery Care**

- Breast stimulation for cervical ripening or labor induction
- Continuous labor support
- Acupressure for pain management in labor
- Upright position for first stage of labor
- Relaxation techniques for pain relief in labor
- Perineal protection techniques for second stage of labor
- Restricted episiotomy use
- Active management of third stage of labor
- Skin to skin contact of mother and newborn
- Support for breastfeeding mothers; encouraging 6 months of exclusive breastfeeding

*Adapted from the 2014 Lancet series on Midwifery.<sup>27</sup>*

**Field Visits**

Visits to three rural clinics in 2014 showed clinics that had one birthing room with a wooden platform bed for labor and postpartum, a gynecology exam table with stirrups, and a sink. Surgical instruments routinely used for birth, basins, fetoscopes, bag and mask ventilators, and newborn scales were available. All centers had IV supplies, pitocin and antibiotics. Pillows, gowns and linens were not stocked as families were expected to bring their own supplies: clothing, baby blanket, and food. The CleanBirth.org birth kits were the only routine, disposable birth supplies evident. The clinics were staffed by a nurse and a PCP. Those clinicians said it was difficult to attract women to the clinics because of

transportations difficulties and that births at the clinic ranged from 5 to 10 per year.

The team visited three different clinics in 2015 with findings similar to those of the 2014 clinic visits. The numbers of births occurring at the clinics were low. One clinic and the Lao Nam hospital were visited in 2016 as the team visited during an election and clinics were used as polling places that were closed to visitors. Two midwives were on duty at the hospital during the visit. They reviewed the clean birth kit for inclusion into regular hospital supplies and requested stock. CleanBirth.org agreed to add sufficient birth kits into the supply chain for hospital use.

## **DISCUSSION**

### **CleanBirth.org Kit Evaluation**

Research in clean birth kit use is almost 30 years old; however kit use must be re-evaluated when used in new settings and adjusted to local practices and resources.<sup>8-12</sup> The Yale midwives' knowledge of varied birth support practices enabled them to assist CleanBirth.org in assessing the cultural appropriateness of the kit contents and use in a setting where professional midwifery care was limited. Kit contents were revised in 2014 and 2015 to include two pair of gloves and a second cover intended to keep the newborn warm. These additions were promoted by Pagel, et al. following studies of birth

kit use in rural South Asia in order to increase hand cleanliness and improve newborn thermal support.<sup>29</sup> Prior studies documented difficulty following clean birth kit instructions<sup>10</sup> supporting the Salavan nurses and PCP requests for instructions with photos instead of drawings. To further increase the acceptability of the photo instructions, a Lao woman residing in the US posed for the photos. Field visits revealed that the clean birth kits were important supplies in the rural clinics that also proved needed in hospital settings in 2016.

The post-partum data collected by the nurses indicated there was a zero maternal-infant infection rate with use of the birth kits from 2013-2016. These data, compared to the estimated rate of infection in a high neonatal death rate,<sup>6,7,15</sup> raise questions on the accuracy of post-partum interviews as a method of data collection, as well as how effectively the outcomes of birth kits as an intervention can be measured. The Salavan nurses were trained in WHO newborn essentials while simultaneously trained in use of the birth kits. Therefore, it is difficult to accurately measure the efficacy of birth kits in the presence of other interventions. Additionally, the nurses are instructed to log each birth kit that is given out and then interview the woman during the post-partum period. Because many women live greater than fifteen kilometers from a provincial clinic, it is likely their interviews will take place months after the birth. Salavan nurses and PCPs averaged a 63.5% postpartum follow-up rate during 2014 and 2015. The outcomes for the remaining 36% of women and their newborns especially related

to infection must be questioned. The Lao PDR does not have law requiring reporting of newborn deaths. How many rural deaths go unreported is unknown.

Birth kit contents are buried or burned by villagers after use. The kit currently contains a metal blade, plastic cord clamps, a pad with a plastic surface and vinyl gloves. Ideally, these items would be biodegradable and manufactured within Laos. There are no current sources for these materials in biodegradable form or local sourcing but these have become long-term program goals.

### **Capacity-Building Education**

The Yale midwives provided trainings in WHO Essential Newborn Care and birth complication management that reinforced correct use of clean birth supplies. The midwives planned curriculum so that the trainings augmented the Lao Ministry of Health midwifery development efforts and were consistent with the 2008 Skilled Birth Assistance Plan. The perinatal practices within midwifery scope of care outlined in *The Lancet* provide a useful framework for teaching midwifery basics to other providers when there is a shortage of trained midwives. Midwifery-led trainings informed by physiologic birth principles are ideal for use in remote areas with scarce supplies as the midwifery principles aim to reduce the risk of complications through physiologic birth support.

## **Field Visits**

Field visits demonstrated the challenges faced by the Lao Ministry of Health in moving birth from the remote villages to the district clinics. The district nurses and PCPs are able to travel periodically to the villages to provide vaccines and other preventative measures when the weather permits; however, laboring women must contend with impassable roads during the monsoon season, preventing them from accessing skilled midwifery.

District clinics were sparsely supplied. The team distributed birth kits to the lowest resource, most isolated clinics in Salavan giving a biased view of Lao progress in supporting maternal-newborn health. The two person clinic staffing and supplies on hand were consistent with reports from neighboring Champasack Province.<sup>30</sup> It is likely that clean birth kits will be needed in rural Salavan Province for some years as midwifery grows.

## **CONCLUSION & RECOMMENDATIONS**

Working in conjunction with the World Health Organization and the UNFPA, Lao PDR has dramatically improved perinatal outcomes in the last decade; however, there is potential for future work to improve maternal child health staffing and utilization especially in rural Lao PDR.<sup>31</sup> Clean birth kits and training in the WHO Essentials of Newborn Care are a small portion of perinatal health care needs that include more midwives and obstetricians, a more reliable

transportation system, and better nutrition. The CleanBirth.org/Yale Team plans continued funding and oversight of the project as the ACD assumes more responsibility in clean birth kit distribution and data collection while LAO PDR increases its ability to support mothers and newborns through the expansion of professional midwifery.

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