Technical Report

National Center for Global Health and Medicine
Bureau of International Medical Cooperation

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March, 2014

Hepatitis B Prevalence Survey in Lao PDR

ການສຶກສາອັດຕາການຕິດເຊື້ອ ອັກເສບຕັບຊະນິດ ບີ ໃນ ສປປລາວ

NCGM

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Ministry of Health, Lao PDR
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Capacity Development for Sector-wide Coordination in Health-Phase2
Strengthening Integrated Maternal, Neonatal and Child Health Services
Sustainable Development of Human Resource for Health to Improve Maternal, Neonatal and Child Health Services

World Health Organization
Regional Office for the Western Pacific
Lao PDR office

Acronyms

C.I.	Confidence interval
DPT-HepB 3	Diphtheria, pertussis, tetanus, hepatitis B vaccine the third dose
EPI	Expanded Programme on Immunization
HB	Hepatitis B
HBsAg	Hepatitis B surface antigen
JICA	Japan International Cooperation Agency
MoH	Ministry of Health, Lao PDR
NCGM	National Center for Global Health and Medicine
NCLE	National Center for Laboratory and Epidemiology, MoH
NIP	National immunization Program, Maternal and Child Health, MoH
PPS	Probability proportionate to size
SBA	Skilled birth attendance
VPD	Vaccine preventable diseases
WHO	World Health Organization

Executive Summary

To assess current hepatitis B prevalence among general population and the impact of hepatitis B vaccine introduction in Lao PDR, Ministry of Health, Lao PDR, and NCGM planned a serology and questionnaire survey. The survey, which covers the whole country, was completed in February 2012. This report summarizes the results of the survey.

Objectives

Primary objectives of the survey are summarized below.

1. To estimate hepatitis B surface antigen sero-prevalence among children
2. To estimate hepatitis B surface antigen sero-prevalence among mothers
3. To evaluate the potential risk factors

Target ages, areas, and time

Ages	Children	Five to nine year-old
	Mothers	15 to 45 year-old
Areas	Whole country	
Time	January and February, 2012	

Survey methodologies

All 143 districts in Lao PDR were stratified into two categories; high and low third DPT-hepatitis B immunization coverage reported in 2010. 12 districts from each stratum were selected by probability proportionate to size (PPS) sampling, and then two villages were selected from each district by PPS. In each village (cluster), surveyors randomly selected 21 child-mother pairs from resident lists. After explanation of survey purposes, methods, confidentiality policy, and obtaining informed consent, questionnaire and blood sampling were conducted. Blood samples were tested HBsAg using Determine® rapid test.

Results

A total of 2,016 blood samples (1,008 children and 1,008 their mothers) were collected and found to have hepatitis B virus prevalence of 1.7% (95%C.I.=0.8, 2.6) for children between five to nine years old and 2.9% (95%C.I.=1.6, 4.2) for their mothers with child bearing age. Mother's infection status was positively associated with their children's HBsAg positivity, while other potential risk factors (mother's age, ethnicity, time to the nearest health center, level of mother's education, and medical history) were not.

Discussion and recommendations

This is the first nationwide population-based hepatitis B sero-prevalence survey in Lao PDR. The prevalence results of the survey were lower than the results from surrounding countries. The major reasons of differences are unclear. Hepatitis B birth dose and three vaccinations

during infancy remain important preventive strategies; therefore, careful monitoring and repeated evaluation for national immunization program are needed.

1. Introduction

Background

More than two billion people have been infected with hepatitis B (HB) virus worldwide and every year approximately one million people die of HB virus infection, 33 % caused by hepatocellular carcinoma, and the rest with terminal complications of liver diseases [1, 2]. The Regional Committee for the World Health Organization (WHO) Western Pacific adopted the resolution WPR/RC54.R3 in 2003 and resolution WPR/RC56.R8 in 2005, calling for the reduction of chronic hepatitis B infection to less than 2% among 5-year-old children, as an interim milestone towards the final regional goal of less than 1%, by 2012. Regional progress in hepatitis B control strategies has resulted in a dramatic decline in hepatitis B infection among children, and 27 countries and areas are expected to achieve the milestone (WPR/RC61/10).

Lao People's Democratic Republic (Lao PDR) has initiated its expanded programme on immunization (EPI) in selected regions in 1984. The program has scaled up to nationwide in 1994. Hepatitis B has included in EPI in 2002, and gradually expanded (Table 1). Study from neighboring countries, such as Cambodia, China, Myanmar, Thailand, and Vietnam, revealed high HB antigen prevalence [3, 4, 5, 6], but there have been no previous reports of chronic HB virus infection rates among general population of Lao PDR. Therefore, population-based sero-prevalence survey for HB is necessary to understand the current situation and to evaluate the progress of immunization policy targeting prevention for mother to child transmission [7, 8].

The Ministry of Health (MoH), Lao PDR and National Center for Global Health and Medicine (NCGM) have agreed that sero-prevalence is investigated. In January and February 2011, the team focuses on central region of the country as the pilot survey, and the whole country was covered in January to February 2012.

Table 1. Hepatitis B vaccination activities in Lao PDR

2002	DTP-HepBDTP-HepB as routine immunization
2004	Birth dose introduced in Capital hospitals
2005	2 southern province hospitals added
2007	8 more provincial hospitals added
2008	Remaining provincial and all 123 district hospitals added
2009	Started Hepatitis B birth dose home visits using health center workers in 50 districts from 9 provinces
2010	Training of skilled birth attendants (SBA) who can work both in facilities and attend births at home

- Survey objectives

Primary objectives of the survey are;

1. To estimate hepatitis B surface antigen sero-prevalence among children
2. To estimate hepatitis B surface antigen sero-prevalence among mothers
3. To evaluate the potential risk factors

2. Methods

Sample size calculation

Considering desired level of confidence measure of 1.96, margin of error of 0.02, expected HBsAg positive rate of 0.05, design effect of 2.0, with two strata, and response rate of 0.95, we calculated required sample size of 961, which indicates 961 pairs of mothers and children (1,922 individuals). For practical purposes, 1,008 pairs of children and mothers (2,016 individuals) are planned to be collected.

Sampling strategies

Stratified multi-stage random cluster sampling was used to select pairs of children and mothers with child bearing age.

Lao PDR comprises Vientiane capital and 16 administrative provinces in the country. The country includes 143 districts and more than 10,000 villages according to census 2005. We divided all districts into two strata in terms of DPT-HepB3 (diphtheria, pertussis, tetanus, and hepatitis B third dose) immunization coverage; high (72 districts >=76%) and low (71 districts <76%). Twelve districts were randomly selected from each stratum, with applying probability proportionate to size (PPS) sampling as the first stage. For the second stage, two villages were randomly selected from each district by PPS. In each of 48 villages, household list was made based on residents list by poverty reduction program. When poverty reduction program's list was not available, EPI list, or relevant residents list was used when survey team visits selected village. 21 child and mother pairs were randomly selected using a paper-based lottery system.

Since questionnaire and blood collection time is expected as 20 minutes per pair, and transportation is often difficult in and among villages, six pairs per day per survey team were considered to be appropriate. Twenty four survey teams were organized, and each team had two surveyors.

Data collection

Blood samples were taken by trained surveyors using finger-prick method in selected villages. Safety lancet® and glass capillary tube was used for taking blood. Approximately 50 micro liter of blood are needed to apply Determine rapid test.

The survey included a brief questionnaire to verify the participants' sex, age and date of birth, place of residence, sociodenographic characteristics, family history of hepatitis, vaccination history, and potential risk factors of getting hepatitis B.

After pre-testing in a non-selected village, two-day training session for supervisors and surveyors was held just before the survey. The national advisors attended the session, too. The

lecturers were recruited from NIP and NCLE, MoH, Lao PDR.

HBsAg detection using Determine®

HBsAg was assayed using **Determine® (Arlier, Japan)**. Briefly explaining, the blood apply onto the sample pad, followed by the chase liquid. Fifteen minutes to 24 hours later, the results can be read.

Data entry and analysis

All the information was input into the excel file sheets. Data was validated by testing double-entry checking.

The results were analyzed by STATA ver. 12.0 (Stata Corp., College Station, Tx, USA).

Ethical considerations

To minimize risks, each blood sample collection used a new, disposable lancet. Supervisors and surveyors were trained during training session. Surveyors followed manufacturer instructions and used a pair of latex gloves for each child. Immediately after use, all lancets and cotton balls were placed in safety boxes.

Before conducting the survey, local authorities (village leaders and the presidents of local Women's Union) and the parents or guardians of selected children received oral and written information. Special attention was paid for this explanation, as more than 70% of mothers would be illiterate in rural Lao PDR.

Participant information was remained anonymous and confidential. Each participant has identification number, which is common between questionnaire and blood sample.

The HBsAg results were informed to mothers on request. Survey teams considered following issues before giving results; 1) Viral hepatitis is not curable in Lao PDR, 2) Determine® is not used for individual diagnostic purposes, but for epidemiological research, 3) HBsAg positive persons may be discriminated by villagers according to local beliefes, even survey teams give detailed explanation about hepatitis B.

Survey implementation

The hepatitis B survey was prepared, organized, executed and implemented at national, provincial, district, and village levels. The steps involved in survey implementation are summarized as follows.

Ethical approval

NIP, NCLE, and NCGM had discussion of rationale, methodology, necessary information, funding, and human resources required for the survey with assistance from WHO (WPRO and Lao PDR) offices. The study group developed the survey protocol and submitted to ethical

committees in MoH, Lao PDR and in NCGM, Japan. The ethical committee in MoH, Lao PDR approved the survey protocol in January 20, 2011, and the NCGM ethical committee approved the survey in January 6, 2011 (NCGM-950) and January 10, 2012 (NCGM-G-001130-00).

- Official request letter to survey sites and collecting lists of eligible subjects

After selection of villages, the MoH cabinet sent an official letter to the relevant provinces, districts and villages. Complete lists of the residents were not available beforehand, therefore, selection using paper-based lottery system was considered.

- Survey subjects selection

Based on the lists provided by each village, NIP staff randomly selected 21 children for participation. Child and mother pairs were randomly selected using a paper-based lottery system in which 21 rectangular strips of paper, measuring 20 x 2 cm and numbered from 1 to 250, were randomly drawn from an envelope to select 21 child and mother pairs. Each survey team had one envelope containing 250 strips of paper.

When a selected village lacked sufficient number of children, the survey team selected the nearest village on the way back to district center, made combined list of residents, and followed the same selection process.

- Training supervisors and surveyors

The study team recruited 11 national advisors (six from NIP and five from NCLE), 13 provincial supervisors, and 48 surveyors in the field. The surveyors' background were mainly laboratory and epidemiology staff. National advisors supervised one or two provinces, and responded to clarifications and questions from the surveyors.

Two-day training for both supervisor and surveyor provided finger-prick using safety lancet, blood collection and Determine® result reading, and taking questionnaire. The training also included national policy against hepatitis B, coding system, ethical issues, and confidentiality. To ensure random selection in villages, using a paper-made lottery sysytem was emphasized.

- Preparing materials

Before conducting the survey, NIP staff prepared the coding system for each participant. Coding included a cluster code (province number-district number-village name) and a personal code (two digits ranging from 01 to 21 plus 'C' for children and 'M' for their mothers). Each code was written on the questionnaire sheets, and Determine® rapid test. All survey materials

specific to each cluster were packaged together with. Each survey team received these packages of materials before departing to survey sites.

- Conducting serology in the field

After the blood taking and questionnaire, a small gift was handed (a packet of confectionary, stationery materials, and so on), and hard candy was avoided, as participants' younger sibrings may have possibility of suffocation. At the end of each day, the supervisors and surveyors verified the questionnaire and blood test results.

The data collection was carried out from January 25th to February 4th excluding transportation time, and completed within two weeks. Data input was conducted in Lao PDR and in Japan.

3. Results

The survey teams successfully visited all 48 selected villages except one village, which could not be approached because of difficult road condition. An alternative village was chosen according to predetermined selection criteria. Data collection was successfully carried out and sampled 1,008 children and 1,008 their mothers. The overall response rate was 100%; however, 43 pairs were excluded from the analysis due to age ineligibility. That is, four children were over 9 years of age and 30 were less than 5 years of age. Moreover, five mothers were over 45 years of age and four were less than 15 years of age. A total of 965 pairs were included for the prevalence calculation.

Seventeen out of 965 children (1.8%) and 28 out of 965 mothers (2.9%) showed positive for HBsAg. The table below shows the overall HBsAg prevalence among children and their mothers after taking the sampling design and sampling weight for each individual into account. HBsAg prevalence in each age gourp by strata (high and low DPT-HepB 3 coverage) is also presented.

HBsAg prevalence among children (five to nine year-old) and their mothers (15 to45 years-old)

Table. National HBsAg prevalence among children and their mothers

Ages	HBsAg prevalence	95% C.I.	Design effect
Children (n=965)	1.7%	0.8-2.6%	1.1
Mothers (n=965)	2.9%	1.7-4.2%	1.3

Table. HBsAg prevalence among children and their mothers by DPT-HepB 3 coverage

Ages	HBsAg positive rate	95% C.I.
Children, low coverage (n=479)	2.3%	1.0-3.6
Children, high coverage (n=486)	1.2%	0.2-2.2
Mothers, low coverage (n=479)	1.9	0.7-3.1
Mothers, high coverage (n=486)	3.7	2.0-5.4

Table . HBsAg distribution by background characteristics

Factors	Value	Children		Mothers	
		HBsAg negative	HBsAg positive	HBsAg negative	HBsAg positive
Mother's age	<=19	4	0	4	0
	20-24	85	1	82	3
	25-29	294	7	286	8
	30-34	275	6	266	9
	35-39	176	3	173	3
	40-45	131	0	127	4
Ethnicity	Lowland Lao	642	9	632	19
	Midland Lao	242	6	243	5
	Highland Lao	62	2	61	3
Transportation to the nearest health facility	Walk	297	1	292	6
	Bicycle	14	0	14	0
	Bike	357	7	354	10
	Car	178	5	177	6
	Tractor	63	3	62	4
	Others	14	0	14	0

Factors	Value	Children		Mothers	
		HBsAg negative	HBsAg positive	HBsAg negative	HBsAg positive
Time to the nearest health facility(min)	0-4	31	0	30	1
	5-14	271	3	268	6
	15-29	226	5	220	11
	30-59	204	5	205	4
	60-480	153	3	152	4
Mother's education level	Primary school not finished	300	7	295	12
	Primary school finished	369	5	364	10
	Junior high school finished	182	3	183	2
	High school finished	73	0	72	1
	College or university finished	19	1	18	2
Family head occupation	Farmer	670	13	664	19
	Fisherman	5	0	5	0
	Labour	91	1	87	5
	Public officer	87	1	85	3
	Factory employee	8	0	8	0
	General Employer	15	1	16	0
	Merchant	62	1	63	0
	Others	8	0	8	0
Mother's surgical operation	Yes	93	2	93	3
	No	852	15	843	24
Child's sex	Male	479	7		
	Female	465	9		
Place of delivery	Province hospital	203	4	201	6
	District hospital	103	2	100	5
	Health center	10	0	10	0
	Private clinic	11	0	10	1
	House	561	8	555	14
	In bush	53	3	55	1
	Others(facility)	3	0	3	0
Child's surgical operation	Yes	22	0		
	No	922	16		

4. Discussion and Recommendations

Discussion

1. Implementation of the survey

HBsAg sero-prevalence survey was successfully completed because of variety of reasons.

1) The MoH, Lao PDR strongly committed to conduct the survey.
2) Communication and coordination was well established in all levels of work.
3) Local authorities and health volunteers are well involved.
4) Survey team was very well prepared, because they learned a lot from the pilot study targeting central region of the country in 2011.

2. HBsAg prevalence among children and their mothers in child bearing ages

The estimated HBsAg prevalence of the general population was much lower in both children and adults than that of previous reports from neighboring countries and Lao PDR [3, 4, 5, 6]. There are several potential explanations for these observations.

1) Lao PDR's population density is lower than that of surrounding countries, and thus, human contact is less frequent. Additionally, road, railway, aviation, and related infrastructure are less developed in Lao PDR, and thus, there is less chance for spread of viruses. Cultural, and behavioral differences may contribute to the lower prevalence.

2) The majority of the previous surveys did not adequately represent the entire population of the country. For example, previous two studies (blood donors [9] and the hospitalized patients [10]) revealed high prevalence of hepatitis B in urban areas of Lao PDR, however, the sampled individuals did not represent the general population.

3. Potential risk factors

The survey revealed that no potential risk factors were significantly associated with the children's infection status, with the exception of the mothers' hepatitis B infection status. Previous HBsAg prevalence studieys revealed that toothbrush sharing, history of surgery, level of mother's education, and ethnicity were independently associated with hepatitis B infection [11, 12, 13, 14]. The reason why we could not find any potential risk factors having a positive association with hepatitis B infection among children is not clear, but may be due to the small number of positive cases. However, it should be noted that the primary objective of the present study was to assess HBsAg prevalence, and not its risk factors. Additionally, some reports found that HIV positive individuals are positively associated with hepatitis B virus infection;

however, we did not investigate HIV due to limited budget.

4. WHO's regional target

The interim target of the WHO is to reduce HBsAg prevalence to less than 2% in children aged at least 5 years old by 2012 (WPR/RC56. R8). The point prevalence is used for monitoring the control of hepatitis B. Following these criteria, Lao PDR had already achieved its goal [7, 8]. However, it is unlikely that Lao PDR had achieved the target through the immunization program alone because the country has the lowest immunization coverage of all countries in the region. Considering the relatively lower HBsAg seroprevalence among the mothers compare to those reported in previous studies suggests that the country has a lower prevalence even before the introduction of the hepatitis B immunization program. Therefore, the final target of reducing HBsAg prevalence to less than 1% in children aged at least 5 years could be difficult to achieve if the country simply continues its current immunization policy.

Recommendations

1. To evaluate the progress of national immunization programs, the HBsAg prevalence survey should be repeated. The next survey should utilize the latest census data.

2. When conducting the next survey, we recommend that the target population include;
   1) mothers, because they are the source of vertical transmission
   2) 2) fathers, because they may be the source of horizontal transmission of hepatitis B virus to children
   3) marginalized population, such as floating immigrants or commercial sex workers, because they are often not registered, and may have higher prevalence of hepatitis B than general population. Special attention should be paid to collect data from them, such as oversampling methodology.

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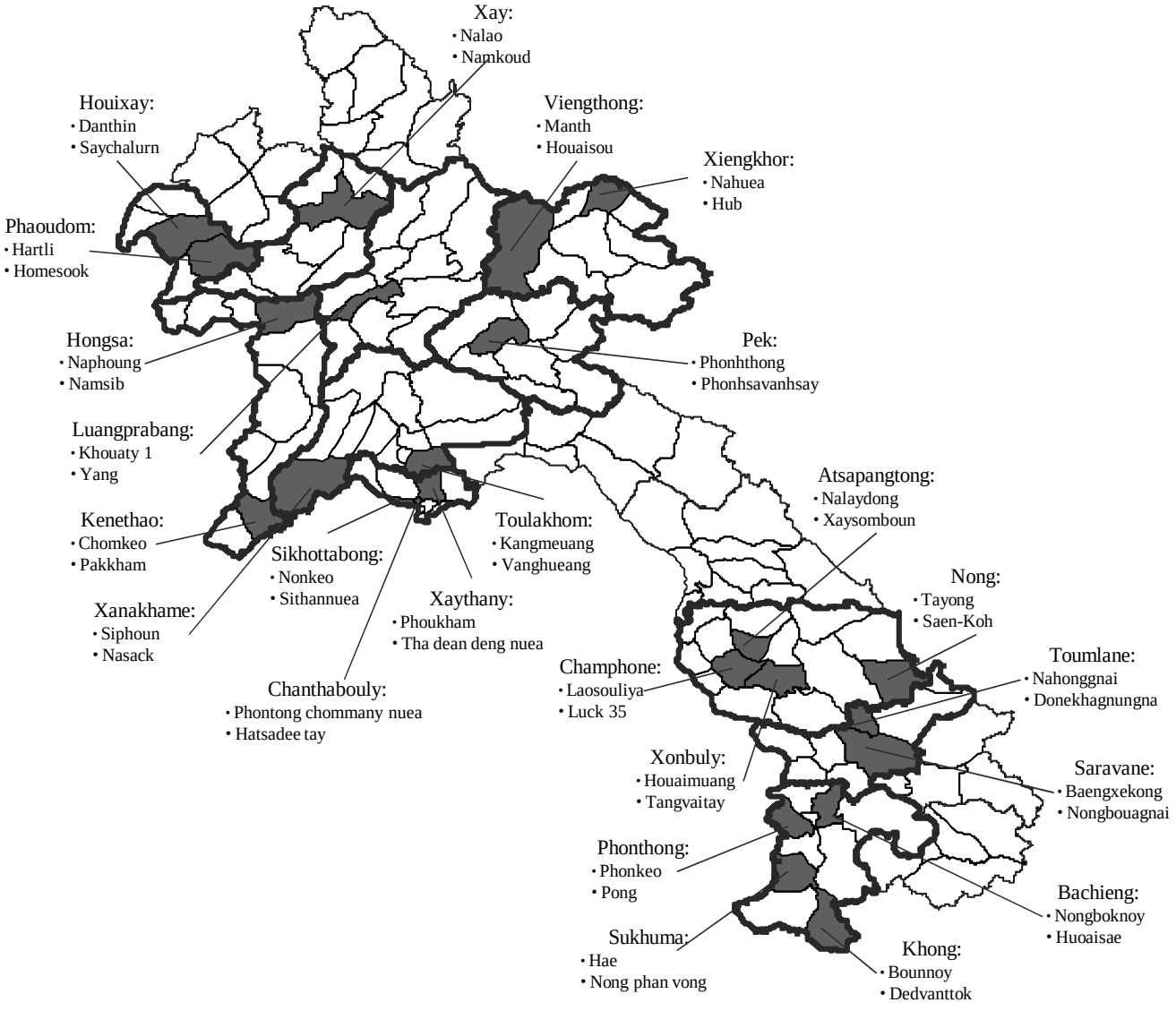
Annexes

Selected Districts and villages



Questionnaire for mother and child to evaluate the result of giving service for preventing the spread of Hepatitis B

	/ /	
Questionnaire ID	Date (D/M/Y)	Interviewer

Remarks: The objective of this questionnaire is to collect the information on improving health care services giving to mother and child for prevention of Hepatitis B. This is confidential, so we will not record your name. This questionnaire will be destroyed after data entry into the computor. To investigate the information, please answer correctly acccording to your knowledge.

I. General information (for mother*)
*age 15-45 years old

No.	question	answer	remark	code
Q101	Address	village_____ district_____ province_____		
Q102	Date of birth and age (mother)	(D/M/Y) ____/____/____ ___years old		[ ]
Q103	Ethnicity:	(select only one) 1. Lowland lao 2. Midland lao 3. Highland lao		[ ]
Q104	Do you use vehicle when you go to the nearest health facility? (provincial hospital, district hospital, clinic, health center). If yes, what kind of vehicle do you use?	(Select only one) 1. walk 2. bicycle 3. motor bike 4. car 5. hand tracter 6. others: specify_____		[ ]
Q105	How long does it take to the nearest health facility?	_____/_____ hours / minutes		
Q106	Which level did you finish your study? (for mother)	(Select only one) 1. no education 2. finished primary school 3. finished junior high school 4. finished high school 5. finished college / university 6. others specify_____		[ ]

Questionnaire ID

Q107	What is the occupation of the head of the family ?	(Select only one) 1. farmer (dry field or paddy) 2. fisherman 3. labor 4. public officer 5. factory employee 6. general employer 7. merchant 8. others specify _____		[ ]
Q108	Have you ever received blood transfusion?	(Select only one) 1. yes 2. no 3. do not know		[ ]
Q109	How many times have you had surgical operation? (including minor surgery, cesarean section, etc)	1. never 2. once 3. twice or more 4. do not know		[ ]
Q110	Is there anyone in your family who has liver disease or died from liver disease? (ex:jaundice of eye and body)	1. none 2. I have 3. Husband has or died from a liver disease 4. parent has or died from a liver disease 5. brother or sister has or died from a liver disease 6. do not know		Yes=1, No=0 [ ] [ ] [ ] [ ] [ ] [ ]
Q111	How many children do you have?	Number of children [ ]		[ ]

Questionnaire ID

I. Questions for a child

Choose the youngest child in the group of age between 5 to 9 years old

No.	question	answer	remark	code
Q201	Date of birth and age (child)	(D/M/Y) ____/____/____/ years old		
Q202	Sex of the child	(Select one) 1. male 2. female		[ ]
Q203	Where was this child born?	(Select only one) 1. provincial hospital 2. district hospital 3. health center 4. private clinic 5. house 6. in bush near house 7. other place specify: _____		[ ]
Q204	Why did you select the place to give birth?	(Choose all it apply) 1. feel safe 2. more convinient 3. more economical 4. family suggested 5. traditional birth attendant suggested 6. health center or hospital staff suggested 7. could not go to the hospital because the child was born too quickly 8. that has been the custom of the community 9. others specify _____		Yes=1, No=0 [ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ]

Questionnaire ID

Q205	Who attended or helped the delivery of this baby?	(Choose all it apply) 1. medical staff 2. village health volunteer 3. TBA 4. family member 5. no one 6. others specify _____		Yes=1, No=0 [ ] [ ] [ ] [ ] [ ] [ ]
Q206	Where did your child recieve vaccination?	(Select only one) 1. hospital 2. health center 3. in the village with medical staff 4. private doctor 5. did not recieve 6. do not remember 7. others specify _____		[ ]
Q207	How do you know about vaccine? Through what media or people do you get information about vaccine?	(Choose all it apply) 1. medical staff told you 2. it is wirtten on the vaccination note 3. brothers/sisters or friend told you 4. Radio / TV 5. local authority told you 6.others specify _____ 7. do not know		Yes=1, No=0 [ ] [ ] [ ] [ ] [ ] [ ] [ ]
Q208	Has the child ever received blood transfusion?	(Select only one) 1. yes 2. never 3. do not know		[ ]
Q209	How many times has the child had surgical operation?	(Select only one) 1. never 2. once 3. twice or more 4. don't know		[ ]
Q210	Has the child ever shared toothbrush with family members?	(Select only one) 1. yes, often 2. yes, sometimes 3. yes, but very rare 4. never 5. don't know		[ ]

Questionnaire ID

II.Other information related to immunization

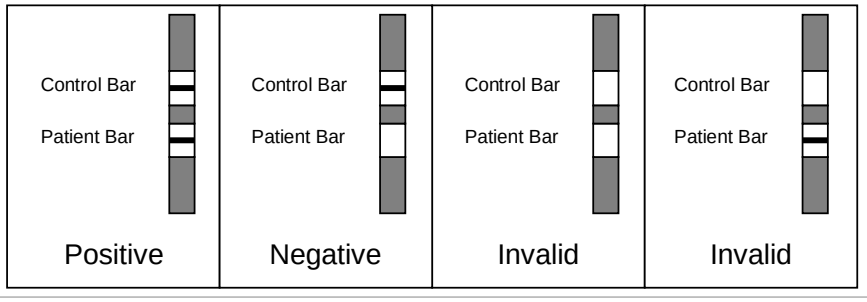
No.	question	answer	remark	code
Q301	Do you have vaccination card (yellow) or mother and child handbook? (for the child who was surveyed)	(Select only one) 1. have both 2. have only yellow card 3. have only mother and child handbook 4. have neither		[ ]
Q302	Usually who is the one to decide about giving vaccination?	(Select only one) 1. father 2. mother (yourself) 3.grandfather/ grandmother 4. village leader 5. others Specify_____		[ ]
Q303	How do you know the date that health center staffs come to give vaccination?	(Choose all it apply) 1. village leader 2. village health volunteer 3. woman's union 4. megaphone 5. advertisement poster 6. health center staff 7. official letter from the district governer 8. others specify _____		Yes=1, No=0 [ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ]

Check the child's Yellow Card, and record the dates of immunization below:

1.	BCG 0 – 11 months ……/……/…… D/M/Y	Hep B 0 – 24 hours ……/……/…… D/M/Y
2.	DPT-Hep B1 Minimum 6 weeks from 1 ……/……/…… D/M/Y	Polio1 Minimum 6 weeks from 1 ……/……/…… D/M/Y
3.	DPT-Hep B2 1 month after DPT-HepB1 ……/……/…… D/M/Y	Polio2 1 month after Polio1 ……/……/…… D/M/Y
4.	DPT-Hep B3 1 month after DPT-HepB2 ……/……/…… D/M/Y	Polio3 1 month after Polio2 ……/……/…… D/M/Y
5.	Measles	9 – 11 months ……/……/…… D/M/Y 12 – 23 months ……/……/…… D/M/Y

Record Determine results (Read Instruction carefully. Repeat test when 'Invalid')

	Determine test results	remark	code
Mother	1. positive 2. negative 3. not done		[ ]
Child	1. positive 2. negative 3. not done		[ ]



<Informed consent form for parents>

Dear parent,

1. Introduction

This research is conducted by Mother and Child Health Center, Ministry of Public Health, Lao PDR, in collaboration and agreement with NCGM (National Center for Global Health and Medicine).

2. Purpose of this research

Hepatitis B is caused by a virus called hepatitis B virus. If a virus stays in your body for a long period, virus can cause liver diseases later on. It seems that there are many people with this virus in Laos (possibly one person per 5-6 persons). It is important to prevent this virus to enter your body since it is difficult to treat once you get infected. Most people with this virus are considered to get infected from their mothers when they were born. You can avoid this disease for 95% if you get vaccinated immediately after you were born. Ministry of Health, Lao PDR has already started a vaccination programme to prevent mother to child transmission of this virus.

Ministry of Health needs information how many mothers and children have this virus in order to utilise this information to improve this programme in the future.

3. Participant selection of this research

We are inviting children (5-9 years of age) and their mothers (15-45 years of age).

4. Method of this research

We take a blood sample from your fingertip by using a safety lancet. We draw your blood from a small wound in your fingertip and put it on a diagnostic kit and a filter paper. The amount of blood we need is approximately between 0.05mL and 02 mL. All the blood taking process is done by a technician who has been trained for this research. They put a clean tape on your wound to prevent germs to get inside afterwards. We use a new safety lancet needle for each individual.

5. Confidentiality

We will ensure that your information and your child's information are kept safe and anonymously. No one except the staff involved in this research will have access to information.

6. Right to refuse or withdraw

Your participation in this research is entirely voluntary. It is your choice whether to participate or not. Refusing to participate will not give you any disadvantage. You may stop participating in the research at any time you wish. Stop to participate will not give you any disadvantage either.

The above is information about this research and we inviting you to be a part of this research.
Please contact any of the members of staff if you have any further questions or queries.

The person in charge of the study

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<Informed consent for parents>

I have read the foregoing information, or it has been read to me. I have had the opportunity to ask questions about it and any questions I have been asked have been answered to my satisfaction. I consent voluntarily to be a participant in this study and understand that I have the right to withdraw from the study at any time without in any way affecting my medical care.

Print name of participant Signature of participant Date(Day/Month/Year)

_____ _____ _____

If illiterate

A literate witness must sign (if possible, this person should be selected by the participant and should have no connection to the research team). Participant who is illiterate should include their thumb print as well.

I have witnessed the accurate reading of the consent form to the potential participant, and the individual has had the opportunity to ask questions. I confirm that the individual has given consent freely.

Print name of participant Signature of participant Date(Day/Month/Year)

_____ _____ _____

I have accurately read or witnessed the accurate reading of the consent form to the potential participant, and the individual has had the opportunity to ask questions. I confirm that the individual has given consent freely.

Print name of participant Signature of participant Date(Day/Month/Year)

_____ _____ _____

A copy of this informed consent form has been provided to the participant

Training agenda 2012

23rd Jan		
08:00	Registration	
08:30	Opening	Dr. Phengta, Dr. Hachiya
09:00-10:00	Purpose of WS	Dr. Anonh
10:00-10:15	Break	
10:15-10:30	Study design	Dr. Hachiya, Dr. Anonh
10:30-12:00	Household listing (Lecture and practice)	Dr. Tongchanh
12:00-13:30	Lunch	
13:30-15:00	Questionnaire (Lecture and practice)	Dr. Tongchanh
15:00-15:15	Break	
15:15-16:15	TOR of surveyors, supervisors, advisors	Dr. Phengta, Dr. Anonh
16:15-16:30	Q & A	
24th Jan		
08:30-10:30	Blood sampling (Lecture and practice)	Dr. Tongchanh
10:30-10:40	Break	
10:40-11:20	Ethical consideration	Dr Anonh
11:20-12:00	Writing the identification numbers (Items; questionnaires)	Dr Anonh
	Reporting using SMS and collecting data (Lecture and practice)	Dr Anonh
12:00-13:00	Financial and logistic issues	
13:00	Closing	Dr Phengta, Dr Hachiya

Number	Name	Roles during Survey	Position
1	Ms. Vilaphenh Yengmala	Vientiane C Supervisor	Technical Officer
2	Ms. Kham Taune Kouangvanh	Vientiane C Surveyor	Epidemiology
3	Ms. Bounteing Phommavongsa	Vientiane C Surveyor	Deputy Chief of Labo.
4	Mr. Khamsen Phanouvong	Vientiane C Surveyor	Epidemiology
5	Ms. Sengphet Douangsavay	Vientiane C Surveyor	Laboratory
6	Pengthong Keomahavong	Vientiane C Surveyor	Epidemiology
7	Ms. Lamthong Pamisay	Vientiane C Surveyor	Laboratory
8	Mr. Houmpheng Thionkeo	Oudomxay Supervisor	Epidemiology
9	Phonepaseuth	Oudomxay Surveyor	Epidemiology
10	Thongkham Keobouachanh	Oudomxay Surveyor	Laboratory
11	Ms. Ketchanh Sysavath	Bokeo Supervisor	Epidemiology
12	Mr. Khamsim	Bokeo Surveyor	Epidemiology
13	Ms. Souchitta Heuanmisavath	Bokeo Surveyor	Laboratory
14	Mr. Bounleune Sitdavanh	Bokeo Surveyor	Epidemiology
15	Thongphet	Bokeo Surveyor	Laboratory
16	Mr. Phanthaly	Luangprabang Supervisor	Epidemiology
17	Ms. Somdy	Luangprabang Surveyor	Epidemiology
18	Ms. Manisouk Phonpadid	Luangprabang Surveyor	Laboratory
19	Mr. Aiew Thong	Huaphan Supervisor	Surveillance staff
20	Mr. Phanthong Souvannaly	Huaphan Surveyor	Surveillance staff
21	Mr. Bountienne Souphanthong	Huaphan Surveyor	Epidemiology
22	Ms. Pom Keohomdy	Huaphan Surveyor	Laboratory
23	Mr. Khamphanh Keobounta	Huaphan Surveyor	Laboratory
24	Ms. Siamphone Vannithorn	Xayabouly Supervisor	Epidemiology
25	Mr. Touk Souvannasing	Xayabouly Surveyor	Laboratory
26	Dr. Souvanxay Phetthanaxay	Xayabouly Surveyor	Epidemiology
27	Mr. Thongdy Phouangkeo	Xayabouly Surveyor	Laboratory
28	Mr. Songkharm Masouvanh	Xayabouly Surveyor	Epidemiology
29	Ms. Somsanith Ounthavong	Xiengkuang Supervisor	Surveillance staff
30	Mr. Thoumphone Bounlieng	Xiengkuang Surveyor	Surveillance staff
31	Ms. Khamla Yoysaykhem	Xiengkuang Surveyor	Laboratory
32	Mr. Khounlavanh Keolakotphosy	Vientiane P Supervisor	Epidemiology
33	Ms. Manisong Vikayhong	Vientiane P Surveyor	Epidemiology
34	Ms. Bounvang Phinith	Vientiane P Surveyor	Laboratory
35	Mr. Sisouphan Davanh	Vientiane P Surveyor	Epidemiology
36	Ms. Bouasone Vilailoth	Vientiane P Surveyor	Laboratory
37	Ms. Orlathay Phongphoun	Savannakhet Supervisor	Epidemiology
38	Mr. Inpeng Nanthanontry	Savannakhet Surveyor	Epidemiology
39	Mr. Salika Kietsatit	Savannakhet Surveyor	Laboratory
40	Mr. Khampha Senviseth	Savannakhet Surveyor	Laboratory
41	Ms. Phoukhao	Savannakhet Surveyor	Epidemiology
42	Ms. Sypaseulk	Savannakhet Surveyor	Laboratory
43	Ms. Bounthan Souvannavong	Savannakhet Surveyor	Epidemiology
44	Ms. Bounta Xayavong	Savannakhet Surveyor	Laboratory
45	Dr. Laycham Chamsina	Savannakhet Surveyor	Epidemiology
46	Dr. Viengsayphone Mylounsa	Saravane Supervisor	Epidemiology
47	Ms. Souphalack Keoounheuane	Saravane Surveyor	Laboratory
48	Dad Samkham	Saravane Surveyor	Epidemiology
49	Mr. Sengdavy Syonesa	Saravane Surveyor	Epidemiology
50	Mr. Vilayvong	Saravane Surveyor	Laboratory
51	Ms. Viengsavanh Phimpiseng	Champasak Supervisor	Epidemiology
52	Mr. Khamla Souphavady	Champasak Surveyor	Epidemiology
53	Mr. Visay Xounthay	Champasak Surveyor	Epidemiology
54	Ms. Khaysy Vonvilay	Champasak Surveyor	Epidemiology
55	Ms. Phimmasone Duangvilay	Champasak Surveyor	Laboratory
56	Mr. Maly Thoubthong	Champasak Surveyor	Epidemiology

Number	Name	Roles during Survey	Position
57	Ms. Saovalith Simeuang	Champasak Surveyor	Laboratory
58	Ms. Phaiboun Chansavad	Champasak Surveyor	Laboratory
59	Ms. Manivone Bouathong	Champasak Surveyor	Laboratory
60	Dr. Darouny Phonekeo	Vientiane C National Advisor	NCLE staff
61	Dr. Anonh	Oudomxay National Advisor	EPI Director
62	Dr. Khansay Sengsaya	Bokeo National Advisor	NCLE staff
63	Dr. Virasack Somoulay	Luangprabang National Advisor	NCLE staff
64	Dr. Khamphet Louanglat	Hoaphan National Advisor	EPI staff
65	Dr. Khongxay	Xayabuly National Advisor	EPI staff
66	Dr. Souphatsone Houathougkham	Xiengkuang National Advisor	NCLE staff
67	Dr. Dasavanh Manivong	Vientiane P National Advisor	MCH staff
68	Dr. Chansay Pathammavong	Savannakhet National Advisor	EPI staff
69	Dr. Chanthavy Soulaphy	Saravane National Advisor	NCLE staff
70	Dr. Somvang Bouphaphanh	Champasak National Advisor	EPI staff
71	Dr. Phengta Vongphrachanh	Lecturer	NCLE Director
72	Dr. Bounthanom Sengkeopraseuth	Lecturer	NCLE staff
73	Mr. Khamphet	Driver	EPI staff
74	Mr. Bouavanh Boualivanh	Accounting	EPI staff
75	Ms. Bounsalong Xayasinh	Accounting	EPI staff
76	Ms. Bounphet Sisoumang	Accounting	EPI staff
77	Ms. Phailamphanh Manivong	Vientiane P National Advisor	Epidemiology
78	Ms. Vilaphanh Yengmala	Savannakhet National Advisor	Surveillance staff

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PLOS ONE

Chronic Hepatitis B Prevalence among Children and Mothers: Results from a Nationwide, Population-Based Survey in Lao People's Democratic Republic

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Abstract

Background: Hepatitis B is regarded as a serious public health issue in Lao People's Democratic Republic (Lao PDR), a Southeast Asian country. However, disease epidemiology among the general population is not well known, and thus a nationwide cross-sectional survey for hepatitis B surface antigen (HBsAg) prevalence in children and their mothers was conducted.

Methods and findings: We applied three-stage cluster sampling using probability proportionate to size. After randomly selecting child (5 to 9 years old) and mother (15 to 45 years old) pairs from the selected villages, questionnaires and HBsAg rapid tests were conducted. Data from 965 child and mother pairs were analyzed. Multivariate logistic regression analyses were used to investigate the independent association of individual background characteristics for the odds of being HBsAg positive. In total, 17 children and 27 mothers were HBsAg positive. HBsAg prevalence was estimated to be 1.7% (95% confidence interval: 0.8%-2.6%) in children, and 2.9% (95% confidence interval: 1.7%–4.2%) in their mothers after taking sampling design and weight of each sample into account. Mother's infection status was positively associated with HBsAg positivity in children ($p<0.001$), whereas other potential risk factors, such as ethnicity, proximity to health centers, and history of surgery, were not. There were no significant associations between mother's HBsAg status and history of surgery, and other sociodemographic factors.

Conclusions: Despite the slow implementation of the hepatitis B vaccination program, HBsAg prevalence among children and their mothers was not high in Lao PDR compared to reports from neighboring countries. The reasons for the differences in prevalence among these countries are unclear. We recommend that prevalence surveys be conducted in populations born before and after the implementation of a hepatitis B vaccination program to better understand the epidemiology of hepatitis B.

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Introduction

More than two billion people have been infected with hepatitis B worldwide, and among these individuals, more than 350 million suffer from chronic hepatitis B virus (HBV) infection [1,2,3]. Infection with HBV results in 600,000 to 1.2 million deaths per year due to chronic hepatitis, cirrhosis, and hepatocellular carcinoma [2,4]. HBV is responsible for 60% to 80% of the world's hepatocellular carcinoma cases, one of the major three causes of death in Africa, Asia, and the Pacific Rim, and accordingly, has been categorized as a Group 1 carcinogenic agent to humans by the International Agency for Research on Cancer [5].

The prevalence of hepatitis B differs throughout the world. Southeast Asian countries have been estimated to have a chronic HBV infection rate of more than 8% before the introduction of hepatitis B vaccination [6]. The Western Pacific region of the World Health Organization (WHO), to which most of the Southeast Asian countries belong, is assumed to have a high prevalence of hepatitis B [7]. Specifically, the prevalence is estimated to be 9% to 12% among women of childbearing age [8] and 8% to 10% among children in pre-vaccine era [9]. The WHO

estimates that the region has 28% of the global population, while it accounts for almost half of all chronic hepatitis B infections worldwide [10].

Hepatitis B vaccination, especially within 24 hours after childbirth, is considered the most effective and efficient preventive measure against hepatitis B infection [3,11]. Based on these assumptions, the WHO set goals to lower the prevalence of chronic hepatitis B among children over 5 years of age to 2% by 2012 and 1% by 2017. To achieve these goals, the WHO plans to increase immunization coverage to 65% for the birth dose and 80% for the third dose of the hepatitis B vaccine [7].

Lao People's Democratic Republic (Lao PDR) is a Southeast Asian country, located in the center of the Indochina peninsula. The country is landlocked and surrounded by China, Vietnam, Cambodia, Thailand, and Myanmar. The neighboring countries report relatively high hepatitis B prevalence compared to other parts of the world. For example, a survey from two provinces in Cambodia reported a hepatitis B surface antigen (HBsAg) prevalence of 7.7% (95% CI: 6.2%–9.3%) among healthy volunteer adults [12]. Another population-based survey in a province in rural Vietnam found that 18.8% (95% CI: 15.7%–21.9%) of adults and 12.5% (95% CI: 9.7%–15.3%) of infants were HBsAg positive at the time of the survey [13]. Thus, Lao PDR has been regarded as one of the hyperendemic countries for hepatitis B for quite some time and is ranked as a priority country by the WHO [7,9] despite a lack of data on the prevalence in a representative population. Pre-vaccine era prevalence was estimated as 11.8% [4], 8–10% [9], or 8% or more [6] for Lao PDR and Indochina countries. In response to this situation, Lao PDR has implemented the hepatitis B vaccine into the routine immunization program since 2002 (at 6, 10, and 14 weeks after birth), as well as birth dosing since 2004. The birth dosing was initiated at referral hospitals in the capital city, and then gradually expanded into rural hospitals (2006), and eventually home deliveries (2010). However, since then, no direct investigation has been conducted, and thus a nationwide survey is warranted [7,9]. The routine immunization coverage is reported as 56% for BCG, 50% for the third DPT, 50% for the third hepatitis B, 40% for measles, and 46% for oral polio vaccine in 2007, when a proportion of target children were born [14].

The primary objective of the present study was to estimate the chronic HBV infection rates by measuring the seroprevalence of HBsAg among children aged 5 to 9 years, and their mothers aged 15 to 45 years.

Methods

Ethical considerations

The survey protocol was reviewed and approved by the Ethical Committee of the Ministry of Health, Lao PDR, and the institutional review board of the National Center for Global Health and Medicine, Japan (NCGM-G-001130-00). Access to selected households was granted by the Ministry of Health, and the provincial and district government authorities.

After obtaining approval to conduct the survey from local authorities, surveyors explained the purpose of the survey to village leaders, selected participants, and their caregivers, assured them that all information would be strictly confidential and that no names would be gathered, and that there would be no benefit or penalties for agreeing or refusing to participate. Written informed consent was obtained from each mother on behalf of her child for each pair. Written informed consent was obtained from legal representatives (next of kin, caregivers, or guardians) when mothers were illiterate. The respondents' names were not recorded on the questionnaire sheets.

Study population

The target population was children aged 5 to 9 years (date of birth: January 2, 2002 to January 1, 2007) and their mothers aged 15 to 45 years (date of birth: January 2, 1966 to January 1, 1997) living in the selected cluster at the time of the survey. The reasons for this selection criteria are: 1) the national and regional hepatitis control policy target is to reduce chronic hepatitis B prevalence among children aged 5 years or older [7]; 2) Lao PDR does not have reliable HBsAg prevalence data among healthy adults, and mothers of childbearing age are considered the major source of hepatitis B infection for children; and 3) our pilot survey revealed that between 20 and 25 mother and child pairs can be practically sampled from each village.

Calculation of sample size

The equation used to calculate the required sample size is as follows [15,16]:

$$n = Z^2 \times p(1-p)DEFF \times 2/(d^2 \times RR)$$

where n = sample size
Z = significance level for 95% confidence
p = expected prevalence
$DEFF$ = design effect
d = precision
RR = response rate

The sample size (n) of 961 was calculated on the basis of an expected HBsAg seroprevalence (p) of 5%, a 5% level of significance (Z), precision (d) of ±2.0%, design effect ($DEFF$) of 2.0, two strata, and response rate (RR) of 95%. For field practicability, we requested 24 survey teams to sample 21 child and mother pairs from each cluster, with the aim of gathering 1,008 pairs in total.

Survey design and sampling

The survey applied a stratified three-stage random cluster sampling design, a type of probability sampling recommended by the WHO [15,17]. The survey was carried out by 24 survey teams (two members per team). Team members were recruited from the same districts that were under investigation to implement the survey more smoothly. The survey teams consisted of epidemiology, surveillance, or laboratory staff. The survey teams were supervised by 11 national personnel (six from the National Immunization Program and five from the National Center for Laboratory and Epidemiology, Ministry of Health) as well as 13 provincial officers.

For stratified multistage cluster sampling, immunization coverage by district and population data were obtained from the National Immunization Program, the Ministry of Health, and the Department of Statistics, Lao PDR. For post-survey weight adjustment, the survey teams obtained the latest population data from village leaders or health volunteers.

All 143 districts in Lao PDR were stratified into two strata, one having high (more than 76%) and the other having low (76% or less) immunization coverage for the third diphtheria, pertussis, tetanus, and hepatitis B (DPT-HepB)vaccines as reported in 2010. For the first stage, we selected 12 districts from each stratum using probability proportionate to size (PPS) sampling based on the population census of 2005. For the second stage, we selected two villages from each selected district by PPS sampling, and 48

villages were randomly sampled in total. In the instances in which the selected village lacked a sufficient number of children or the survey team could not approach the selected village due to safety or security reasons, the nearest village on the way back to the district center was selected. For each selected village, surveyors obtained a list of households, including age and sex, primarily from the poverty reduction program data with the assistance of the village leader, women's union, and/or healthcare volunteer. From these lists, 21 mothers aged 15 to 45 years old with children aged 5 to 9 years were randomly selected using a paper-based lottery system. When a mother had multiple children aged 5 to 9 years old, the youngest child was chosen for the survey. Special attention was paid to ensure that the child's biological mother was surveyed, as adoption is common in rural Lao PDR.

The survey was carried out from January 25th to February 4th, 2012. Each survey team successfully approached their assigned villages, with the exception of one village, which could not be visited because of road difficulties. An alternative village was chosen according to the predetermined selection criteria. In total, 1,008 children and 1,008 mothers were sampled. The overall response rate for HBsAg was 100%; however, 43 pairs were excluded from the analysis due to age ineligibility. That is, one child was over 9 years of age and 33 were less than 5 years of age. Furthermore, three mothers were over 45 years of age and six were less than 15 years of age. This happened as 43 mothers confused calendar age with traditional age. In rural areas, newborns start at one year old and a year is added to their age for each passing of a Lunar New Year. The surveyors asked participants for their age in years and their date of birth, and checked that they matched. A total of 965 pairs were included for analysis.

Questionnaires

A brief face-to-face questionnaire was administered to the sampled mother. The questionnaire consisted of 25 questions in four domains of inquiry: sociodemographic background of the family (i.e., ethnicity, family head's occupation, and mother's education level), family history of liver diseases, including mother, demographic characteristics of the child (i.e., age, sex, and place of birth), and immunization records. Additionally, questions were asked regarding exposure to potential risk factors for acquiring hepatitis B infection (e.g., history of blood transfusion, surgical operation, and sharing of toothbrush). The questionnaire was developed in English, translated into Lao, back-translated into English, and then compared and revised by bilingual staff members. A small pilot test was conducted prior to the data collection.

Testing for HBsAg

We used a simple and rapid test (Alere Determine HBsAg test card; Alere Medical Co. Ltd., Chiba, Japan) rather than the traditional ELISA test, as it was better suited to use in the field [14]. The sensitivity and specificity of the test were reported as high in two Asian countries [18,19]. In Vietnam, the Determine HBsAg test validity was measured based on comparison with HBsAg EIA. Results were 100% in both sensitivity and specificity in 328 samples [18]. In China, the Determine HBsAg performance was evaluated in comparison with HBsAg EIA for 671 samples. The sensitivity was reported to be 98.9% and specificity 100% [19]. The Determine HBsAg examination kit is one of the most reliable point-of-care HBsAg tests, and is recommended by the WHO [15]. HBsAg testing was performed according to the manufacturer's instructions. Blood was collected from a finger prick using a safety lancet (BD Safety Lancet, Becton Dickinson, NJ, USA) and glass capillary tube, and the blood was applied onto the sample pad of the rapid test kit. After applying the chase buffer, surveyors assessed the results after at least 15 minutes, but no longer than 24 hours. When no control bar appeared after 15 minutes, the test results were considered invalid, and the test was repeated. Blood spots were collected onto filter paper for further testing. A 2-day training session was organized for surveyors and supervisors on the use of the rapid test and the completion of the questionnaire. To ensure the safety of the blood collection procedure, surveyors always used a new pair of latex gloves. Surveyors were instructed to place all capillary tubes and lancets into safety boxes immediately after use.

Data entry and statistical analysis

All of the completed questionnaires were brought to a centralized location and the data were entered into a Microsoft Excel 2007 spreadsheet. Data were double-entered and cross-checked. Logistic regression tests and odds ratios were used to examine the relationship between the independent variables and HBsAg results. Multivariate logistic regression was used to investigate the independent association of different household and individual characteristics with the odds of being HBsAg positive. All estimates and standard errors were calculated by taking the multistage clustered sampling design and the weight of each sample into account to give representative, unbiased results. A p value <0.05 was considered statistically significant.

In our regression analyses, we adjusted for potential confounders by using the following variables: third DPT-HepB immunization coverage at the location of current residence, mother's age, ethnic group, mother's education level, family head's occupation, and mother's HBsAg status. For multivariate logistic regression analyses, multicollinearity was tested by calculating the variance inflation factors for each independent variable, and a value of more than 10 was considered as having multicollinearity.

All statistical analyses were carried out using STATA version 12 (Stata Corp., College Station, TX). Means and proportions were calculated using STATA's 'svy' function, with each sample weighted according to estimated population size.

Results

Socioeconomic backgrounds

The baseline characteristics of the 965 mothers and their children are summarized in Table 1. The mean age of the mothers was 29.1 years (95% CI: 26.2–33.1), and the mean age of the children was 5.8 years (95% CI: 5.4–6.3). Of the sampled children, 474 (49.4%) were male and 486 (50.6%) were female (five were unknown).

HBsAg prevalence among the general population

Of the 965 pairs included in the study, 17 children and 27 mothers were positive for HBsAg. Six child and mother pairs were HBsAg positive. The estimated prevalence was 1.7% for children (95% CI: 0.8%–2.6%) and 2.9% for mothers (95% CI: 1.7%–4.2%) after taking the sampling design and weight of each sample into account. HBsAg prevalence did not change significantly between DPT-HepB3 high and low coverage districts in both children and mothers (Table 2).

Potential risk factors

To determine whether background characteristics affect HBsAg status, we conducted multivariate logistic regression analysis in children and their mothers. In children, the mother's HBsAg status was positively associated with hepatitis B infection (Table 3),

Table 1. HBsAg prevalence among children (5 to 9 years old) and mothers (15 to 45 years old) in Lao PDR by selected background characteristics.

		n	%	Children's HBsAg (+)	%	95% CI	Mothers' HBsAg (+)	%	95% CI
Mothers' age(n = 965)	15–19	4	0.41	0	0.00		0	0.00	
	20–24	85	8.80	1	1.18	0.00–3.52	3	3.53	0.00–7.53
	25–29	294	30.47	7	2.38	0.63–4.13	8	2.72	0.85–4.59
	30–34	275	28.50	6	2.18	0.44–3.92	9	3.27	1.16–5.39
	35–39	176	18.24	3	1.70	0.00–3.64	3	1.70	0.00–3.64
	40–45	131	13.58	0	0.00		4	3.05	0.07–6.04
Ethnicity (n = 963)	Low land Lao	651	67.60	9	1.38	0.48–2.28	19	2.92	1.62–4.22
	Mid land Lao	248	25.75	6	2.42	0.49–4.34	5	2.02	0.25–3.78
	High land Lao	64	6.65	2	3.13	0.00–7.51	3	4.69	0.00–10.01
[1]Transportation (n = 939)	on foot	298	31.74	1	0.34	0.00–1.00	6	2.01	0.41–3.62
	bicycle	14	1.49	0	0.00		0	0.00	
	motor bike	364	38.76	7	1.92	0.51–3.34	10	2.75	1.06–4.43
	car	183	19.49	5	2.73	0.35–5.12	6	3.28	0.67–5.88
	hand tractor	66	7.03	3	4.55	0.00–9.71	4	6.06	0.15–11.97
	other	14	1.49	0	0.00		0	0.00	
[2]Time (n = 901)	< 5 minutes	31	3.44	0	0.00		1	3.23	0.00–9.81
	5 to 15 minutes	274	30.41	3	1.09	0.15–2.33	6	2.19	0.45–3.93
	15 to 30 minutes	231	25.64	5	2.16	0.27–4.06	11	4.76	2.00–7.53
	30 to 60 minutes	209	23.20	5	2.39	0.30–4.48	4	1.91	0.04–3.79
	> 60 minutes	156	17.31	3	1.56	0.00–4.68	4	2.56	0.06–5.07
[3]Education (n = 962)	did not finish primary school	307	31.91	7	2.28	0.60–3.96	12	3.91	1.73–6.09
	primary school	374	38.88	5	1.34	0.17–2.51	10	2.67	1.03–4.32
	junior high	185	19.23	3	1.62	0.00–3.46	2	1.08	0.00–2.59
	high school	73	7.59	0	0.00		1	1.37	0.00–4.10
	college/univ	20	2.08	1	5.00	0.00–15.47	2	10.00	0.00–24.41
	other or unknown	3	0.31	1	33.33	0.00–100.00	0	0.00	
[4]Occupation (n = 963)	farmer	683	70.92	13	1.90	0.88–2.93	19	2.78	1.55–4.02
	fisherman	5	0.52	0	0.00		0	0.00	
	laborer	92	9.55	1	1.09	0.00–3.25	5	5.43	0.71–10.16
	public officer	88	9.14	1	1.14	0.00–3.40	3	6.25	1.70–10.80
	factory employee	8	0.83	0	0.00		0	0.00	
	general employee	16	1.66	1	6.25	0.00–19.57	0	0.00	
	merchant	63	6.54	1	1.59	0.00–4.76	0	0.00	
	others	8	0.83	0	0.00		0	0.00	
Mother's surgery (n = 962)	yes	95	9.88	2	2.11	0.00–5.05	3	3.16	0.00–6.74
	no	867	90.12	15	1.73	0.86–2.60	24	2.77	1.67–3.86
Child's sex (n = 960)	male	474	49.38	9	1.89	0.67–3.13			
	female	486	50.63	7	1.44	0.38–2.50			
Place of delivery (n = 961)	province hospital	207	21.54	4	1.93	0.04–3.82	6	2.90	0.59–5.20
	district hospital	105	10.93	2	1.90	0.00–4.56	5	4.76	0.62–8.90
	health center	10	1.04	0	0.00		0	0.00	
	private clinic	11	1.14	0	0.00		1	9.09	0.00–29.35
	at home	569	59.21	8	1.41	0.44–2.38	14	2.46	1.18–3.74
	in the forest	56	5.83	3	5.36	0.00–11.44	1	1.79	0.00–5.36
	other health facility	3	0.32	0	0.00		0	0.00	
Child's surgery (n = 960)	yes	22	2.29	0	0.00				

Table 1. Cont.

	n	%	Children's HBsAg (+)	%	95% CI	Mothers' HBsAg (+)	%	95% CI
no	938	97.71	16	1.71	0.88–2.54			

[1]Transportation to the nearest health facility, [2] Time to the nearest health facility, [3] Mothers' completed education, [4] Family head's occupation.

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whereas the other potential risk factors were not associated according to the adjusted odds ratio. We did not obtain information regarding the type of delivery, and we did not find significant differences in HBsAg prevalence associated with delivery settings. No independent factor was positively associated with HBsAg positivity in mothers, according to the adjusted odds ratio (Table 4).

Immunization status

Written immunization records were available for 213 out of 965 children (22.1%). One hundred ninety eight children were vaccinated with three doses of hepatitis B vaccine, and 34 children were immunized on the day of birth or the following day. Five out of 213 children with immunization records were HBsAg positive (2.35%; 95% CI: 0.30–4.40%), while 12 of 752 without immunization records were HBsAg positive (1.60%; 95% CI: 0.70–2.49%). The differences between the two groups were not significant ($p = 0.46$).

Discussion

HBsAg prevalence among the general population

The estimated HBsAg prevalence in the general population was much lower in both children and adults than that of previous reports from neighboring countries and Lao PDR. For example, HBsAg prevalence in adults in Cambodia, Thailand, and Vietnam was reported to be 7.7% (95% CI: 6.2%–9.3%) [12], 6 to 10% [15,20], and 18.8% (95% CI: 15.7%–21.9%) [13], respectively. Data on HBsAg prevalence amongst children was relatively scarce, and reported to be 3.5% (95% CI: 2.4%–4.8%) in Cambodia [21], and 18.4% (95% CI: 13.4%–23.4%) in Vietnam [13]. In Lao PDR, studies in blood donors, hospitalized patients, and Lao migrant workers tested in Thailand showed HBsAg prevalence of 8.73% (95% CI: 8.69%–8.77%) [22], 17.99% (95% CI: 17.81%–18.17%) [23], and 6.86% (95% CI: 6.80%–6.92%) [24] based on the given numerators and denominators in the articles, respectively.

Since the study objective was to estimate the nationwide HBsAg prevalence among the general population of Lao PDR, and thus the study design is a cross sectional survey, it is difficult to explain the reasons for the unexpectedly low prevalence. There are several potential explanations for this observation. The survey methodology used was very different from that used for blood donors, patients, and migrant workers. We used probability sampling and thus the results are representative of the whole population, whereas studies of blood donors, hospitalized patients, and migrant workers used non-probability sampling and therefore the results are restricted to these populations. The primary objective of our survey was to estimate HBsAg prevalence among the general population, so probability sampling was the most appropriate choice. Demographic conditions among the sampled population are determined by survey methodology, and therefore the results showed discrepancy. The WHO strongly recommends probability sampling for hepatitis B prevalence survey [7,15,17]. Although Lao PDR has the lowest population density of the Indochina peninsula countries [25], the precise effects on hepatitis B prevalence of the reduced frequency of human to human contact due to the country's relatively low population density and less developed infrastructure remain unclear.

The number of HBsAg positives varied from 0 to 4 per cluster. Since the sampling design of the survey aimed to estimate the prevalence in the whole country, it is difficult to determine whether these differences reflect the local endemic status.

Potential risk factors

Our survey revealed that no potential risk factors were significantly associated with the children's infection status, with the exception of the mothers' hepatitis B infection status. HBsAg prevalence surveys in other countries revealed that history of surgery [26,27], level of education [26], and ethnicity [28] were independently associated with hepatitis B infection. The reason why we could not find any potential risk factors positively associated with hepatitis B infection among children is not clear. However, it should be noted that the primary objective of the present study was to assess HBsAg prevalence, and not its risk factors. Additionally, some reports found that HIV positive individuals are positively associated with hepatitis B virus infection

Table 2. HBsAg prevalence among children (5 to 9 years old) and mothers (15 to 45 years old).

	Children's HBsAg (+)	%	95% CI	Standard error	Design effect	Mothers' HBsAg (+)	%	95% CI	Standard error	Design effect
High coverage districts (n = 486)	6	1.14	0.23–2.04	0.44	0.82	18	3.79	1.79–5.79	0.97	1.24
Low coverage districts (n = 479)	11	2.39	0.75–4.03	0.79	1.27	9	1.88	0.49–3.37	0.69	1.22
Total (n = 965)	17	1.72	0.81–2.63	0.44	1.10	27	2.93	1.65–4.20	0.61	1.28

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Table 3. Unadjusted and adjusted odds ratio for being HBsAg positive among children from five to nine years old in Lao PDR by selected background characteristics.

		Unadjusted odds ratio	95% CI	p	Adjusted odds ratio	95% CI	p
DPT3 coverage	high	1(reference)					
	low	2.13	0.73–6.21	0.16	3.47	0.77–15.64	0.10
Mothers' age	15 to 29	1(reference)					
	30 to 45	0.70	0.28–1.78	0.44	0.87	0.31–2.47	0.79
Ethnicity	Low land Lao	1(reference)					
	others	1.90	0.67–5.40	0.22	1.41	0.26–7.72	0.68
Education	none	1(reference)					
	finished primary school or upper	1.50	0.67–3.36	0.30	1.03	0.27–3.89	0.96
Occupation	white collar	1(reference)					
	blue collar	1.15	0.37–3.64	0.80	0.60	0.18–1.96	0.38
Sex	male	1(reference)					
	female	0.75	0.21–2.62	0.63	0.65	0.21–2.08	0.46
Birth place	health facility	1(reference)					
	non-health facility	0.98	0.39–2.49	0.97	0.79	0.28–2.21	0.64
Mothers' HBsAg	negative	1(reference)					
	positive	24.02	9.45–61.07	0.00	28.13	10.21–77.53	0.00

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[29,30]; however, we did not investigate HIV due to limited budget.

WHO's regional target

The interim target of the WHO is to reduce HBsAg prevalence to less than 2% in children aged at least 5 years old by 2012 [7,31]. The point prevalence is used for monitoring the control of hepatitis B. The Regional Office for the Western pacific recommended that the country conduct a national HBsAg prevalence survey to verify whether the country has reached the regional prevalence target [9]. Following these criteria, Lao PDR had already achieved its goal. However, it is unlikely that Lao PDR achieved the target through the immunization program alone because the country has the lowest immunization coverage of all countries in the region [7,9]. Considering the relatively lower HBsAg seroprevalence among the mothers compared to those reported in previous studies, it is likely that Lao PDR had a lower prevalence even before the introduction of the hepatitis B immunization program. Therefore, the final target of reducing HBsAg prevalence to less than 1% in children aged at least 5 years could be difficult to achieve if the country simply continues its current immunization policy.

A nationwide prevalence survey targeting the general population is ideally conducted before implementing the immunization

Table 4. Unadjusted and adjusted odds ratio for being HBsAg positive among mothers from 15 to 45 years old in Lao PDR by selected background characteristics.

		Unadjusted odds ratio	95% CI	p	Adjusted odds ratio	95% CI	p
DPT3 coverage	high	1(reference)					
	low	0.50	0.20–1.28	0.14	0.47	0.19–1.16	0.10
Mothers' age	15 to 29	1(reference)					
	30 to 45	1.03	0.43–2.51	0.94	0.94	0.39–2.25	0.88
Ethnicity	Low land Lao	1(reference)					
	others	0.80	0.30–2.17	0.65	0.68	0.25–1.85	0.44
Education	none	1(reference)					
	finished primary school or upper	1.68	0.70–4.01	0.23	2.04	0.89–4.68	0.09
Occupation	white collar	1(reference)					
	blue collar	1.71	0.53–5.55	0.35	1.93	0.68–5.50	0.21
History of surgery	no	1(reference)					
	yes	1.28	0.39–4.25	0.67	1.30	0.35–4.78	0.68

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strategy to evaluate hepatitis B epidemiology. However, we were able to understand the epidemiology to some degree, even after implementation of immunization policy, because adults usually represent the pre-vaccination era [15,17].

Strengths of the study

The present study is the first nationwide survey on the prevalence of hepatitis B in the general population both before and after the implementation of a hepatitis B immunization policy in Lao PDR and other Southeast Asian countries. We applied multistage stratified cluster sampling to better represent the general population. The design effect of prevalence was calculated between 0.8 and 1.3, which was acceptable as we set it around 2.0 before the survey.

The background characteristics of our sampled population were similar to those of another nationwide population-based study, the Lao PDR Reproductive Health Survey (LRHS) [32] conducted in 2005. For example, the locations of current residence (north, central, and south) were 33.3%, 41.7%, and 25.0% in our survey, and 38.6%, 38.9%, and 22.5% in the LRHS. The levels of mothers' completed education (none, primary school, secondary school or more) were 31.9%, 38.9%, and 29.2% in our survey, and 28.8%, 43.7%, and 27.5% in the LRHS. The LRHS applied the multistage stratified cluster sampling method and surveyed more than 13,000 women all over the country. A direct comparison of the populations sampled by the two different surveys is difficult to perform as the primary objectives were different. Despite this, our sampled population is considered to likely represent the general population in Lao PDR.

Limitations of the study

There are several limitations in our study that should be addressed. First, the population data is based on the census conducted in 2005. After 2005, the population distribution may have changed and some of the villages could have merged, thereby creating bias in the findings. Fortunately, we did not survey any villages that disappeared or merged.

Second, floating or marginal populations are likely to be missed from the residential lists, and these populations could be a source of HIV and hepatitis B virus infections [33]. In future seroprevalence surveys, these subpopulations should be accounted for by using specific approaches, such as oversampling.

Third, population immunity levels were difficult to measure or estimate. The possession of immunization certificates was low, because many participants had already finished their scheduled vaccinations before 12 months of age, and relevant documents were lost. In the present study, we did not have enough data from health centers due to time and budget limitations. Since we did not examine immunization markers, such as HBsAb, herd immunity levels are unknown.

Lastly, adult men were not included in the survey. Serological studies in the past indicated that men have higher HBsAg rates than women [8,21,28]. In Lao PDR, male blood donors presented with 9.7% HBsAg positive prevalence, while the prevalence in females was 6.2% [22]. When considering the disease burden of hepatitis B virus infections, it is better to include both sexes [26].

To the best of our knowledge, this is the first nationwide, population-based serological survey on chronic hepatitis B virus infections both before and after implementation of hepatitis B immunization in Southeast Asia, where disease burden is high. As such, our results provide valuable information on a hepatitis B immunization program and a useful baseline against which to compare future assessments in this region.

National immunization policy should be based on the disease epidemiology [3]. However, in Southeast Asia, understanding of the epidemiology of hepatitis B remains unsatisfactory. Even when a country implements a hepatitis B immunization program for children and the prevalence of disease reaches the target (i.e., less than 2% among children aged 5 years or older), we cannot conclude that the immunization program alone contributed to reduced disease prevalence without comparing it to the disease prevalence in the pre-vaccine generation, i.e., adults. Nationwide surveys assessing disease prevalence in the generations before and after the implementation of a vaccination program will provide valuable information for understanding hepatitis B epidemiology. Therefore, we recommend surveying hepatitis B seroprevalence in both generations.

Conclusions

We determined the nationwide HBsAg prevalence among children (1.7%; 95% CI: 0.8%–2.6%) and their mothers (2.9%; 95% CI: 1.6%–4.2%) in Lao PDR. This is the first report to estimate the nationwide prevalence of chronic hepatitis B in pre- and post-hepatitis B immunization generations in Southeast Asia, where hepatitis B infections are a substantial burden. The estimated prevalence was below that of previous studies, suggesting that our understanding of this disease's epidemiology is lacking and warrants further investigation. We recommend that the prevalence among the pre- and post-vaccine eras should be investigated when conducting hepatitis B seroprevalence surveys.

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Author Contributions

Conceived and designed the experiments: AX MH KI TW MS. Performed the experiments: KK TK PV CP KP DP BS VSO TS. Analyzed the data: KK TK MH. Contributed reagents/materials/analysis tools: KI TW MS. Wrote the paper: AX PV MH. Revised the manuscript: KK TK PV CP KP DP BS VSO KI TW MS. Arranged laboratory for diagnosis: PV KI TW MS.

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ການສຶກສາອັດຕາການຕິດເຊື້ອ ອັກເສບຕັບຊະນິດ ບີ ໃນ ສປປລາວ

ສະແດງຄວາມຮູ້ບຸນຄຸນ

ພວກຂ້າພະເຈົ້າຂໍສະແດງຄວາມຂອບໃຈ ແລະ ຮູ້ບຸນຄຸນຕໍ່ການຈັດຕັ້ງ, ຄະນະທີ່ມງານ ແລະ ບຸກຄົນຕ່າງໆທີ່ໄດ້ໃຫ້ການຊ່ວຍເຫຼືອໃນການເຮັດການສຶກສາຄົ້ນຄວ້າໃນຄັ້ງນີ້ ດັ່ງລຸ່ມນີ້:

ກະຊວງສາທາລະນະສຸກແຫ່ງ ສປປລາວ

ໂຄງການສັກຢາການພະຍາດແຫ່ງຊາດ, ກະຊວງສາທາລະນະສຸກ

ສູນວິເຄາະ ແລະ ລະບາດວິທະຍາແຫ່ງຊາດ, ກະຊວງສາທາລະນະສຸກ

ສູນການແພດ ແລະ ສຸຂະພາບໂລກແຫ່ງຊາດ, ປະເທດຍີ່ປຸ່ນ

ສຳນັກງານຮ່ວມມືສາກົນຂອງການແພດລະຫວ່າງປະເທດ

ສູນຄົ້ນຄວ້າສຳລັບພະຍາດອັກເສບຕັບ ແລະ ພູມຄຸ້ມກັນ

ສະຖາບັນພະຍາດຕິດຕໍ່ແຫ່ງຊາດຍີ່ປຸ່ນ

ພະແນກຄົ້ນຄວ້າກ່ຽວກັບເຊື້ອຈຸລະໂລກ

ອົງການຮ່ວມມືສາກົນຂອງລັດຖະບານຍີ່ປຸ່ນ (JICA)

- ໜ່ວຍງານການພັດທະນາຄວາມສາມາດສຳລັບການປະສານງານຂອງຂະແໜງການທົ່ວໄປໃນລະບົບສາທາລະນະສຸກໄລຍະທີ 2
- ໜ່ວຍງານເສີມສ້າງຄວາມເຂັ້ມແຂງທາງດ້ານການໃຫ້ການບໍລິການດ້ານສຸຂະພາບຂອງແມ່ ແລະ ເດັກ
- ໜ່ວຍງານການພັດທະນາແບບຍືນຍົງຂອງຊັບພະຍາກອນມະນຸດສຳລັບບຸກຄະລາກອນແພດເພື່ອປັບປຸງການບໍລິການດ້ານສຸຂະພາບແມ່ ແລະ ເດັກ

ອົງການອະນາໄມໂລກ

ອົງການອະນາໄມໂລກປະຈຳ ພາກພື້ນປາຊີຟິກຕາເວັນຕົກ

ອົງການອະນາໄມໂລກປະຈຳ ສປປ ລາວ

ອັກສອນຕິວຫຍໍ້

DPT-HepB 3	Diphtheria, pertussis, tetanus, hepatitis B vaccine the third dose
EPI	Expanded Programme on Immunization
HB	Hepatitis B
HBsAg	Hepatitis B surface antigen
JICA	Japan International Cooperation Agency
MoH	Ministry of Health, Lao PDR
NCGM	National Center for Global Health and Medicine
NCLE	National Center for Laboratory and Epidemiology, MoH
NIP	National immunization Program, Maternal and Child Health, MoH
PPS	Probability proportionate to size
SBA	Skilled birth attendance
VPD	Vaccine preventable diseases
WHO	World Health Organization

ສາລະບານ

ບົດສະຫຼຸບຫຍໍ້

ເພື່ອຕີລາຄາອັດຕາການຕິດເຊື້ອອັກເສບຕັບຊະນິດບີ ໃນປະຊາກອນທົ່ວໄປ ແລະ ເພື່ອປະເມີນປະສິດທິຜົນທີ່ໄດ້ຮັບຂອງ ໂຄງການສັກຢາປ້ອງກັນພະຍາດອັກເສບຕັບຊະນິດບີ ໃນ ສປປລາວ, ກະຊວງສາທາລະນະສຸກແຫ່ງ ສປປ ລາວ ຮ່ວມກັບ ສູນການແພດ ແລະ ສຸຂະພາບໂລກແຫ່ງຊາດຍີ່ປຸ່ນ ໄດ້ສ້າງແຜນການສຶກສາຄົ້ນຄ້ວາຂຶ້ນ, ເຊິ່ງໄດ້ມີການສຳຫຼວດໂດຍໃຊ້ ແບບສອບຖາມ ແລະ ການເກັບຕົວຢ່າງເລືອດ. ການສຳຫຼວດໃນຄັ້ງນີ້ແມ່ນໄດ້ກວມລວມເອົາທັງໝົດທົ່ວປະເທດ ລາວ, ເຊິ່ງໄດ້ສຳເລັດລົງໃນເດືອນ ກຸມພາ ປີ 2012. ບົດລາຍງານສະບັບນີ້ໄດ້ສະຫຼຸບຫຍໍ້ກ່ຽວກັບຜົນໄດ້ຮັບຂອງການສຳ ຫຼວດໃນຄັ້ງນີ້.

ຈຸດປະສົງ

ຈຸດປະສົງຕົ້ນຕໍຂອງການຄົ້ນຄວ້າໃນຄັ້ງນີ້ ມີດັ່ງລຸ່ມນີ້

1. ເພື່ອສຶກສາອັດຕາການຕິດເຊື້ອອັກເສບຕັບຊະນິດ ບີ ໃນເດັກນ້ອຍ
2. ເພື່ອສຶກສາອັດຕາການຕິດເຊື້ອອັກເສບຕັບຊະນິດ ບີ ໃນແມ່ຍິງໄວຈະເລີນພັນ

ກຸ່ມອາຍຸເປົ້າໝາຍ, ພື້ນທີ່ໃນການສຳຫຼວດ, ແລະ ໄລຍະເວລາລົງເຮັດການສຳຫຼວດ

ກຸ່ມອາຍຸເປົ້າໝາຍ ເດັກນ້ອຍອາຍຸລະຫວ່າງ 5 ຫາ 9 ປີ
ແມ່ຍິງໄວຈະເລີນພັນອາຍຸລະຫວ່າງ 15 ຫາ 45 ປີ
ພື້ນທີ່ໃນການສຳຫຼວດ ທົ່ວປະເທດ
ໄລຍະເວລາລົງເຮັດການສຳຫຼວດ ເດືອນມັງກອນ ຫາ ເດືອນກຸມພາ 2012

ວິທີວິທະຍາໃນການຄົ້ນຄວ້າ

ໃນຈຳນວນທັງໝົດ 143 ເມືອງທີ່ນອນຢູ່ໃນສປປລາວ ໄດ້ຖືກແບ່ງອອກເປັນສອງກຸ່ມດ້ວຍວິທີແບ່ງແບບຫຼາຍຂັ້ນຕອນ, ຄື ກຸ່ມຂອງເມືອງທີ່ຈັດຢູ່ໃນປະເພດທີ່ໄດ້ຮັບອັດຕາການສັກຢາກັນພະຍາດອັກເສບບີສູງ ແລະ ອີກກຸ່ມໜຶ່ງແມ່ນກຸ່ມຂອງເມືອງ ທີ່ຈັດຢູ່ໃນປະເພດທີ່ໄດ້ຮັບອັດຕາການສັກຢາກັນພະຍາດອັກເສບບີຕ່ຳ ຕາມລາຍງານໃນປີ 2010. ພວກເຮົາໄດ້ຄັດເລືອກ ເອົາເມືອງທີ່ເປັນກຸ່ມເປົ້າໝາຍ 12 ເມືອງຈາກແຕ່ລະກຸ່ມທີ່ໄດ້ກ່າວມາຂ້າງເທິງນັ້ນໂດຍໃຊ້ວິທີການສຸ່ມຕົວຢ່າງແບບທີ່ໃຊ້ ຄວາມໜ້າຈະເປັນເຊິ່ງໄດ້ສັດສ່ວນຕາມຂະໜາດຂອງກຸ່ມປະຊາກອນຕົວຢ່າງ(PPS), ແລະ ຫຼັງຈາກນັ້ນເຮົາໄດ້ຄັດເລືອກ ເອົາເມືອງລະ 2 ບ້ານດ້ວຍວິທີການສຸ່ມຕົວຢ່າງ(PPS)ແບບດຽວກັນ.ໃນແຕ່ລະບ້ານຜູ້ເຮັດການສຳຫຼວດໄດ້ເຮັດການສຸ່ມຕົວ ຢ່າງຄັດເລືອກເອົາຄູ່ແມ່-ລູກ 21 ຄູ່ ຈາກຈຳນວນລາຍຊື່ຂອງສຳມະໂນຄົວໃນແຕ່ລະບ້ານ. ຫຼັງຈາກໄດ້ມີການອະທິບາຍ ໃຫ້ຮູ້ຈຸດປະສົງ,ວິທີການຄົ້ນຄວ້າ, ຫຼັກການໃນການເກັບຮັກສາຄວາມລັບຂອງຜູ້ເຂົ້າຮ່ວມ, ແລະ ໄດ້ຮັບການຍິນຍອມຈາກຜູ້ ເຂົ້າຮ່ວມການຄົ້ນຄວ້າແລ້ວ, ພວກເຮົາໄດ້ດຳເນີນການເກັບຂໍ້ມູນຈາກຜູ້ເຂົ້າຮ່ວມດ້ວຍວິທີການສຳພາດ(ແມ່) ແລະໄດ້ເກັບ ຕົວຢ່າງເລືອດຈາກຜູ້ເຂົ້າຮ່ວມການຄົ້ນຄວ້າ(ແມ່ແລະລູກ). ຕົວຢ່າງເລືອດທີ່ເກັບໄດ້ແມ່ນຖືກທົດສອບໂດຍການນຳໃຊ້ການ ກວດຢ່າງໄວວາ (Determine® rapid test) ເພື່ອຊອກຫາເຊື້ອ ອັກເສບຕັບບີ (HBsAg).

ຜົນຂອງການສຶກສາ

ຈາກການກວດຕົວຢ່າງເລືອດທັງໝົດທີ່ເກັບໄດ້ຈາກຜູ້ເຂົ້າຮ່ວມ 2016 ຄົນ (ຈາກແມ່ 1008 ຄົນ ແລະ ຈາກລູກ 1008 ຄົນ) ພົບວ່າອັດຕາການຕິດເຊື້ອອັກເສບຕັບຊະນິດບີ ໃນເດັກນ້ອຍອາຍຸລະຫວ່າງ 5 ຫາ 9 (ລູກ) ມີປະມານ 1.7% (95%C.I.=0.8 -- -2.6), ແລະ ອັດຕາການຕິດເຊື້ອອັກເສບຕັບຊະນິດບີ ໃນແມ່ຍິງໄວຈະເລີນພັນ (ແມ່) ມີປະມານ 2.9% (95%C.I.=1.6 -- -4.2). ຈາກການສຶກສາພົບວ່າການຕິດເຊື້ອອັກເສບຕັບຊະນິດບີຂອງລູກແມ່ນມີຄວາມສຳພັນກັບການທີ່ແມ່ມີການຖືເຊື້ອອັກເສບຕັບຊະນິດບີມາກ່ອນແລ້ວ, ສ່ວນປັດໃຈອື່ນໆເຊັ່ນວ່າ: ອາຍຸຂອງແມ່, ຊົນເຜົ່າ, ໄລຍະເວລາທີ່ໃຊ້ໃນການເດີນທາງໄປຫາສຸກສາລາທີ່ໃກ້ທີ່ສຸດ, ລະດັບການສຶກສາ ແລະ ປະຫວັດການເຈັບປ່ວຍຂອງແມ່ ແມ່ນບໍ່ມີຄວາມສຳພັນກັບການຕິດເຊື້ອອັກເສບຕັບບີ ຂອງລູກ.

ການສົນທະນາບັນຫາ ແລະ ຂໍ້ສະເໜີແນະນຳ

ການສຶກສາໃນຄັ້ງນີ້ແມ່ນການສຶກສາຄັ້ງທຳອິດກ່ຽວກັບອັດຕາການຕິດເຊື້ອອັກເສບຕັບຊະນິດ ບີ ໃນກຸ່ມປະຊາກອນທົ່ວປະເທດລາວ. ຈາກຜົນຂອງການສຶກສາພົບວ່າ ອັດຕາການຕິດເຊື້ອອັກເສບຕັບຊະນິດ ບີ ແມ່ນຕ່ຳກວ່າຄ່າທີ່ໄດ້ຈາກການສຶກສາຂອງປະເທດໃກ້ຄຽງ. ເຫດຜົນສຳຄັນທີ່ເຮັດໃຫ້ອັດຕາການຕິດເຊື້ອອັກເສບຕັບຊະນິດບີແຕກຕ່າງຈາກປະເທດເພື່ອນບ້ານນັ້ນແມ່ນຍັງບໍ່ຈະແຈ້ງ. ການໃຫ້ຢາວັກຊີນປ້ອງກັນເຊື້ອອັກເສບຕັບຊະນິດບີໃນເດັກເກີດໃໝ່ພາຍໃນເວລາ 24 ຊົ່ວໂມງຫຼັງຈາກເດັກເກີດ, ຕິດຕາມດ້ວຍການສັກຢາປ້ອງກັນອີກສາມຄັ້ງໃນເວລາທີ່ເດັກຍັງເປັນເດັກອ່ອນອາຍຸລຸ່ມໜຶ່ງປີລົງມາແມ່ນໄດ້ຖືເປັນຍຸດທະສາດການປ້ອງກັນທີ່ສຳຄັນໃນການປ້ອງກັນການຕິດເຊື້ອອັກເສບຕັບຊະນິດບີ. ສະນັ້ນ, ແມ່ນມີຄວາມຈຳເປັນຕ້ອງມີການເອົາໃຈໃສ່ຕິດຕາມ ແລະ ມີການປະເມີນຜົນລື້ມຄືນເລື້ອຍໆຂອງໂຄງການສັກຢາກັນພະ ຍາດແຫ່ງຊາດ.

ບົດນຳ

ຄວາມເປັນມາ

ໃນທົ່ວໂລກພົບວ່າມີປະຊາກອນຫຼາຍກວ່າສອງຕື້ລ້ານຄົນທີ່ໄດ້ຕິດເຊື້ອອັກເສບຕັບຊະນິດບີ ແລະ ໃນແຕ່ລະປີ ແມ່ນມີປະມານໜຶ່ງລ້ານຄົນທີ່ຕາຍເນື່ອງຈາກອາການສິນຂອງເຊື້ອດັ່ງກ່າວເຊັ່ນ: 33% ພາໃຫ້ເປັນມະເຮັງຕັບ, ແລະ ສ່ວນທີ່ເຫຼືອກໍ່ພາໃຫ້ມີອາການແຊກຊ້ອນກາຍເປັນພະຍາດຕັບຊຳເຮື້ອໄດ້ [1, 2, 3, 4]. ຄະນະກຳມະການລະດັບພາກພື້ນຂອງອົງການອະນາໄມໂລກຢູ່ຂົງເຂດຕາເວັນຕົກຂອງມະຫາສະໝຸດປາຊີຟິກ (WHO) Western Pacific ໄດ້ລົງມະຕິຮັບຮອງເອົາວິທີການແກ້ໄຂບັນຫາ WPR/RC54.R3 ໃນປີ 2003, ແລະ ວິທີການແກ້ໄຂບັນຫາ WPR/RC56.R8 ໃນປີ 2005, ເຊິ່ງໄດ້ຮຽກຮ້ອງໃຫ້ມີການຫຼຸດຜ່ອນອັດຕາການຕິດເຊື້ອຊຳເຮື້ອຂອງພະຍາດອັກເສບຕັບຊະນິດບີໃນຈຳນວນເດັກນ້ອຍອາຍຸ 5ປີໃຫ້ໜ້ອຍກວ່າ2%.ເຊັ່ນດຽວກັນເພື່ອໃຫ້ບັນລຸເປົ້າໝາຍຂອງລະດັບພາກພື້ນໃນການຫຼຸດຜ່ອນອັດຕາການຕິດເຊື້ອຊຳເຮື້ອຂອງພະຍາດອັກເສບຕັບຊະນິດບີໃຫ້ໜ້ອຍກວ່າ1% ໃນປີ 2012 [5, 6]. ຜົນໄດ້ຮັບສຳລັບຄວາມຄືບໜ້າຂອງລະດັບພາກພື້ນທາງດ້ານຍຸດທະສາດໃນການຄວບຄຸມພະຍາດອັກເສບຕັບຊະນິດບີໃນເດັກນ້ອຍແມ່ນເປັນໄປຢ່າງເຊື່ອງຊ້າເຊິ່ງໃນ 27 ປະເທດ ແລະ ໃນເຂດຕ່າງໆແມ່ນມີຄວາມຄາດຫວັງທີ່ຈະບັນລຸເປົ້າໝາຍ (WPR/RC61/10) ເພື່ອຊ່ວຍຢັບຢັ້ງຢ່າງເປັນກ້າວ ໆ.

ສປປລາວ ໄດ້ລິເລີ່ມຂະຫຍາຍໂຄງການສັກຢາປ້ອງກັນພະຍາດແຕ່ປີ 1984 ໂດຍເລີ່ມຈາກເຂດຕົວເມືອງໃຫຍ່ ແລ້ວຂະຫຍາຍກວ້າງໄປທົ່ວປະເທດໃນປີ 1994. ໂຄງການສັກຢາປ້ອງກັນພະຍາດອັກເສບຕັບຊະນິດບີໄດ້ເລີ່ມຕົ້ນລວມເຂົ້າໃນໂຄງການສັກຢາກັນພະຍາດໃນປີ 2002 ແລະ ໄດ້ຂະຫຍາຍເປີດກວ້າງອອກຢ່າງເປັນກ້າວໆ (ຕາຕະລາງ1). ໄດ້ມີການສຶກສາຂອງບັນດາປະເທດໃກ້ຄຽງເຊັ່ນ: ກຳປູເຈຍ, ຈີນ, ມຽນມ້າ, ໄທ, ແລະ ວຽດນາມ ພົບວ່າອັດຕາການຕິດເຊື້ອພະຍາດອັກເສບຕັບຊະນິດບີແມ່ນມີສູງ, ແຕ່ບໍ່ເຄີຍມີການສຶກສາ ຫຼື ລາຍງານໃດໆກ່ຽວກັບອັດຕາການຕິດເຊື້ອຊຳເຮື້ອຂອງພະຍາດອັກເສບຕັບຊະນິດບີໃນປະຊາກອນທົ່ວໄປໃນ ສປປລາວ. ດັ່ງນັ້ນ, ການສຶກສາກ່ຽວກັບອັດຕາການຕິດເຊື້ອພະຍາດອັກເສບຕັບຊະນິດບີໃນປະຊາກອນລາວແມ່ນມີຄວາມຈຳເປັນເພື່ອເຂົ້າໃຈເຖິງສະພາບປະຈຸບັນ ແລະ ເພື່ອປະເມີນຄວາມຄືບໜ້າຂອງນະໂຍບາຍສັກຢາກັນພະຍາດສຳ ລັບພະຍາດສິ່ງຕໍ່ຈາກແມ່ຫາລູກ.

ກະຊວງສາທາລະນະສຸກແຫ່ງ ສປປລາວ ຮ່ວມກັບສູນກາງການແພດ ແລະ ສຸຂະພາບໂລກແຫ່ງຊາດຍີ່ປຸ່ນ ໄດ້ຕົກລົງເຫັນດີໃຫ້ມີການກວດເລືອດເພື່ອຊອກຫາການຕິດເຊື້ອດັ່ງກ່າວ ໃນເດືອນມັງກອນ ແລະ ກຸມພາ ປີ 2011, ໂດຍໃນໄລຍະເລີ່ມຕົ້ນນີ້ທາງທີມງານຄົ້ນຄວ້າໄດ້ເຈາະຈົງໃສ່ພາກກາງຂອງປະເທດລາວເປັນການທົດລອງການສຳຫຼວດ, ສ່ວນການສຳຫຼວດທົ່ວປະເທດແມ່ນໃນເດືອນມັງກອນ ແລະ ກຸມພາ ປີ 2012.

ຕາຕະລາງ 1. ກິດຈະກຳຂອງໂຄງການສັກຢາກັນພະຍາດອັກເສບຕັບບີ ໃນ ສປປລາວ

- 2002: ການສັກຢາກັນພະຍາດ ຄໍຕີບ, ບາດທະຍັກ, ໄອໄກ່ ແລະ ອັກເສບຕັບຊະນິດບີ ແມ່ນໄດ້ເຮັດເປັນປະຈຳຢ່າງສະໝ່ຳສະເໝີທົ່ວປະເທດ
- 2004: ການໃຫ້ຢາວັກຊີນປ້ອງກັນເຊື້ອອັກເສບຕັບຊະນິດບີໃນເດັກເກີດໃໝ່ພາຍໃນເວລາ 24 ຊົ່ວໂມງຫຼັງຈາກເດັກເກີດ ແມ່ນມີແຕ່ຢູ່ໃນໂຮງໝໍໃນນະຄອນຫຼວງວຽງຈັນ
- 2005: ການສັກຢາກັນພະຍາດອັກເສບຕັບຊະນິດບີ ແມ່ນເພີ່ມຕື່ມອີກຢູ່ໂຮງໝໍແຂວງສອງແຫ່ງຢູ່ພາກໃຕ້ຂອງລາວ
- 2007: ການສັກຢາກັນພະຍາດອັກເສບຕັບຊະນິດບີ ແມ່ນເພີ່ມຕື່ມອີກຢູ່ໂຮງໝໍແຂວງ 8 ແຫ່ງ
- 2008: ການສັກຢາກັນພະຍາດອັກເສບຕັບຊະນິດບີແມ່ນກວມລວມເອົາໂຮງໝໍແຂວງທັງໝົດທີ່ຍັງເຫຼືອ ແລະ ໃນ ໂຮງໝໍເມືອງ 123 ແຫ່ງ
- 2009: ເລີ່ມຕົ້ນການໃຫ້ຢາວັກຊີນປ້ອງກັນເຊື້ອອັກເສບຕັບຊະນິດບີໃນເດັກເກີດໃໝ່ພາຍໃນເວລາ 24 ໂດຍການ ລົງຢ້ຽມຢາມບ້ານຂອງພະນັກງານສຸກສາລາໃນຈຳນວນ 9 ແຂວງ 50 ເມືອງ
- 2010: ຝຶກອົບຮົມການຊ່ວຍເກີດໃຫ້ແກ່ພະນັກງານສຸກສາລາຜູ້ທີ່ສາມາດເຮັດວຽກໄດ້ທັ້ງຢູ່ໃນສຸກສາລາ, ຢູ່ໂຮງໝໍ, ແລະ ຊ່ວຍເກີດຢູ່ບ້ານ

ຈຸດປະສົງຂອງການຄົ້ນຄວ້າ

ຈຸດປະສົງຕົ້ນຕໍຂອງການຄົ້ນຄວ້າໃນຄັ້ງນີ້ ມີດັ່ງລຸ່ມນີ້

1. ເພື່ອສຶກສາອັດຕາການຕິດເຊື້ອອັກເສບຕັບຊະນິດ ບີ ໃນເດັກນ້ອຍ
2. ເພື່ອສຶກສາອັດຕາການຕິດເຊື້ອອັກເສບຕັບຊະນິດ ບີ ໃນແມ່ຍິງໄວຈະເລີນພັນ

ວິທີວິທະຍາຂອງການຄົ້ນຄວ້າ

ການຄິດໄລ່ຂະໜາດຕົວຢ່າງ

ການຄິດໄລ່ຂະໜາດຕົວຢ່າງແມ່ນອີງໃສ່ການກຳນົດຊ່ວງເຊື່ອໝັ້ນທີ່ 1.96, ຄວາມຜິດຜ່ຽງ 0.02, ໂດຍຄາດ ວ່າອັດຕາການຕິດເຊື້ອອັກເສບຕັບບີ ແມ່ນ 0.05, ຜົນກະທົບຂອງຮູບແບບການສຶກສາແມ່ນ 2.0, ມີສອງກຸ່ມ, ແລະ ອັດຕາ ການເຂົ້າຮ່ວມຂອງປະຊາກອນຕົວຢ່າງແມ່ນ 0.95, ສະນັ້ນພວກເຮົາຈຶ່ງໄດ້ຂະໜາດຕົວຢ່າງເປັນຈຳນວນ 961 ເຊິ່ງລວມມີ 961 ຄູ່ ແມ່-ລູກ (ລວມທັງໝົດ 1922 ຄົນ). ສຳລັບພາກປະຕິບັດຕົວຈິງພວກເຮົາຈະເກັບຂໍ້ມູນນຳ 1008 ຄູ່ ແມ່-ລູກ (ລວມທັງໝົດ 2016 ຄົນ).

ການສຸ່ມຕົວຢ່າງ

ໃຊ້ການສຸ່ມຕົວຢ່າງແບບແບ່ງເປັນກຸ່ມຫຼາຍຂັ້ນຕອນເພື່ອຄັດເລືອກເອົາຄູ່ ແມ່-ລູກ ເພື່ອເຂົ້າຮ່ວມໃນການສຶກສາ.

ປະເທດລາວປະກອບດ້ວຍນະຄອນຫຼວງວຽງຈັນ ແລະ 16 ແຂວງ. ໃນທົ່ວປະເທດລວມມີ 143 ເມືອງ ແລະ ຫຼາຍກວ່າ 10,000 ບ້ານໂດຍອີງຕາມປີ້ມສະຖິຕິແບບ census ໃນປີ 2005. ພວກເຮົາໄດ້ແບ່ງເມືອງທັງໝົດອອກ ເປັນສອງກຸ່ມເຊິ່ງແບ່ງໂດຍອີງຕາມອັດຕາສ່ວນຂອງການໄດ້ຮັບການສັກຢາກັນພະຍາດຄໍຕີບ,ບາດທະຍັກ,ໄອໄກ່ ແລະ ອັກ ເສບຕັບຊະນິດບີຄັ້ງທີ່ສາມຄື: ກຸ່ມທີ່ໄດ້ຮັບອັດຕາການສັກຢາກັນພະຍາດສູງ (72 ເມືອງ >= 76%) ແລະ ກຸ່ມທີ່ໄດ້ຮັບ ອັດຕາການສັກຢາກັນພະຍາດຕ່ຳ (71 ເມືອງ < 76%). ໃນຂັ້ນຕອນທຳອິດ, ເຮົາໄດ້ສຸ່ມເອົາ 12 ເມືອງໃນແຕ່ລະກຸ່ມ ດ້ວຍວິທີການສຸ່ມຕົວຢ່າງແບບທີ່ໃຊ້ຄວາມໜ້າຈະເປັນເຊິ່ງໄດ້ສັດສ່ວນຕາມຂະໜາດຂອງກຸ່ມປະຊາກອນຕົວຢ່າງ (PPS). ໃນຂັ້ນຕອນທີສອງ, ພວກເຮົາສຸ່ມເລືອກເອົາສອງບ້ານຈາກແຕ່ລະເມືອງໂດຍໃຊ້ວິທີ (PPS) ຄືກັນ. ພາຍໃນຈຳນວນບ້ານ ທັງໝົດ 48 ບ້ານທີ່ຖືກຄັດເລືອກ, ພວກເຮົາໄດ້ເຮັດຕາຕະລາງຈຳນວນຫຼັງຄາເຮືອນໃນແຕ່ລະບ້ານໂດຍອີງໃສ່ບັນຊີລາຍຊື່ ຫຼັງຄາເຮືອນທີ່ໄດ້ສ້າງຂຶ້ນຂອງໂຄງການຫຼຸດຜ່ອນຄວາມທຸກຍາກ. ຖ້າຫາກວ່າບັນຊີລາຍຊື່ຫຼັງຄາເຮືອນດັ່ງກ່າວບໍ່ຄົບຖ້ວນ ແມ່ນພວກເຮົາໄດ້ນຳໃຊ້ລາຍຊື່ບ້ານຂອງໂຄງການສັກຢາກັນພະຍາດ, ຫຼື ນຳໃຊ້ລາຍຊື່ບ້ານທີ່ມີຢູ່ຕົວຈິງໃນເວລາທີ່ຄະນະ ສຳຫຼວດລົງເກັບກຳຂໍ້ມູນ. ການສຸ່ມເລືອກເອົາຄູ່ແມ່-ລູກ 21 ຄູ່ແມ່ນໃຊ້ວິທີການຈົກສະຫຼາກເລກທີຂອງຫຼັງຄາເຮືອນທີ່ພວກ ເຮົາໄດ້ໃສ່ໄວ້ໃນຊອງ.

ເນື່ອງຈາກວ່າເວລາທີ່ໃຊ້ໃນການສຳພາດ ແລະ ການເກັບຕົວຢ່າງເລືອດແມ່ນປະມານ 20 ນາທີຕໍ່ ແມ່-ລູກຄູ່ໜຶ່ງ, ລວມທັງການໄປມາລະຫວ່າງບ້ານຫາບ້ານແມ່ນມີຄວາມຫຍຸ້ງຍາກຫຼາຍ, ສະນັ້ນຄະນະສຳຫຼວດຂອງພວກເຮົາຈຶ່ງສາມາດ ເກັບຂໍ້ມູນໄດ້ 6 ຄູ່ແມ່-ລູກຕໍ່ມື້ ຕໍ່ໜຶ່ງຄະນະ. ພວກເຮົາໄດ້ຈັດແບ່ງຄະນະເພື່ອລົງເກັບກຳຂໍ້ມູນອອກເປັນ 24 ຄະນະ, ເຊິ່ງແຕ່ ລະຄະນະຈະມີຜູ້ເກັບກຳຂໍ້ມູນສອງຄົນ.

ວິທີການໃນການເກັບກຳຂໍ້ມູນ

ຜູ້ເກັບຂໍ້ມູນທີ່ໄດ້ຮັບການອົບຮົມເປັນທີ່ຮຽບຮ້ອຍແລ້ວຈະລົງເກັບຕົວຢ່າງເລືອດໃນບ້ານເປົ້າໝາຍໂດຍໃຊ້ວິທີ ແທງເອົາເລືອດຢູ່ປາຍນິ້ວມື ແລ້ວໃຊ້ຫຼອດແກ້ວນ້ອຍໆດູດເອົາເລືອດເພື່ອຢອດລົງໃສ່ເຈ້ຍແຫ້ງສະເພາະ safety lancet® (ເຈ້ຍແຫ້ງບັນຈຸສານທົດສອບຫາເຊື້ອອັກເສບຕັບບີ). ພວກເຮົາຈະດູດເອົາເລືອດໃນປະລິມານ 50 micro liter ເພື່ອຢອດ ໃສ່ແຜ່ນເຈ້ຍດັ່ງກ່າວ.

ຜູ້ເກັບຂໍ້ມູນຈະສຳພາດແມ່ທີ່ຖືກເລືອກເຂົ້າໃນການສຶກສາກ່ຽວກັບເພດ, ອາຍຸ, ວັນເດືອນປີເກີດ, ບ່ອນຢູ່, ຄຸນລັກ

ສະນະທາງດ້ານສັງຄົມ ແລະ ປະຊາກອນສາດ, ປະຫວັດການເປັນພະຍາດອັກເສບຕັບຂອງຄົນໃນຄອບຄົວ, ແລະ ປະຫວັດການສັກຢາກັນພະຍາດ, ລວມເຖິງປັດໃຈສ່ຽງຕ່າງໆໃນການຕິດເຊື້ອອັກເສບຕັບບີ.

ຫຼັງຈາກທຳການທົດສອບເຄື່ອງມືຢູ່ບ້ານທີ່ບໍ່ໄດ້ຖືກເລືອກ, ທີມງານເກັບກຳຂໍ້ມູນ ແລະ ເກັບຕົວຢ່າງເລືອດຈະໄດ້ຮັບການອົບຮົມກ່ອນການລົງເກັບຂໍ້ມູນເປັນເວລາ 2 ວັນ ເພື່ອໃຫ້ຮູ້ກ່ຽວກັບເຕັກນິກວິທີການເກັບຕົວຢ່າງເລືອດ ແລະ ການເຮັດການສຳພາດ. ຜູ້ໃຫ້ຄຳປຶກສາລະດັບສູນກາງໄດ້ລົງຕິດຕາມຢ່າງໃກ້ຊິດ ແລະ ຜູ້ບັນຍາຍໃຫ້ການຝຶກອົບຮົມແກ່ຜູ້ທີ່ຈະລົງເກັບຂໍ້ມູນແມ່ນມາຈາກສູນແມ່ແລະເດັກ ກົມອະນາໄມ ແລະ ສິ່ງເສີມສຸຂະພາບ ແລະ ຈາກ ສູນວິເຄາະ ແລະ ລະບາດວິທະຍາ, ກະຊວງສາທາລະນະສຸກ ສປປລາວ (ພາກພະໜວກ).

ການກວດຫາເຊື້ອອັກເສບຕັບຊະນິດບີດ້ວຍແຜ່ນເຈ້ຍ Determine®

ການກວດຫາເຊື້ອອັກເສບຕັບຊະນິດບີ ແມ່ນກວດໄດ້ດ້ວຍການໃຊ້ແຜ່ນ Determine® (Arlier, Japan). ວິທີການໃຊ້ໂດຍຫຍໍ້ໃນການກວດມີຄື: ເອົາເລືອດຢອດໃສ່ແຜ່ນເຈ້ຍທົດສອບ, ແລ້ວກະຈາຍຢອດເລືອດໃຫ້ອອກເປັນແຜ່ນບາງໆ. ພວກເຮົາສາມາດອ່ານຜົນໄດ້ຫຼັງຈາກ 15 ນາທີ ຫາ 24 ຊົ່ວໂມງ.

ການບັນທຶກຂໍ້ມູນ ແລະ ການວິເຄາະຂໍ້ມູນ

ຂໍ້ມູນທັງໝົດຖືກບັນທຶກເຂົ້າໃນຕາຕະລາງ excel. ການກວດສອບຂໍ້ມູນຫຼັງຈາກບັນທຶກເຂົ້າຕາຕະລາງແມ່ນໄດ້ກວດສອບຄືນສອງຄັ້ງເພື່ອຄວາມໝັ້ນໃຈກ່ອນການວິເຄາະຂໍ້ມູນ. ຂໍ້ມູນທັງໝົດຈະຖືກວິເຄາະດ້ວຍໂປຼແກຼມ STATA version 12.0

ຈັນຍາທຳຂອງການຄົ້ນຄວ້າ

ເພື່ອຫຼຸດຜ່ອນຄວາມສ່ຽງຕໍ່ການຕິດເຊື້ອຂອງຜູ້ເຂົ້າຮ່ວມການຄົ້ນຄວ້າ,ໃນເວລາເຈາະເລືອດແຕ່ລະຄັ້ງພວກເຮົາຈະໃຊ້ເຂັມແທງເລືອດອັນໃໝ່ທີ່ໃຊ້ຄັ້ງດຽວແລ້ວຖິ້ມເລີຍ. ຜູ້ຕິດຕາມພາກສະໜາມ ແລະ ຜູ້ລົງເກັບຂໍ້ມູນແມ່ນໄດ້ຮັບການຝຶກອົບຮົມເປັນຢ່າງດີກ່ອນລົງປະຕິບັດຕົວຈິງ. ຜູ້ລົງເກັບຂໍ້ມູນປະຕິບັດຕາມຄຳແນະນຳ ແລະ ໃຊ້ຖົງມືອານາໄມໃນເວລາເຈາະເລືອດເດັກແຕ່ລະຄັ້ງ. ຫຼັງຈາກການເຈາະເລືອດ ອຸປະກອນເຄື່ອງໃຊ້ເຊັ່ນ: ເຂັມເຈາະເລືອດ, ສຳລີ, ຖົງມື ແມ່ນໄດ້ຖິ້ມລົງຖັງຂີ້ເຫຍື້ອອະເຊື້ອທີ່ມີຄວາມປອດໄພບໍ່ໃຫ້ມີການຕິດເຊື້ອ.

ກ່ອນມີການເກັບກຳຂໍ້ມູນແມ່ນຈະຕ້ອງໄດ້ຮັບການອະນຸມັດຈາກອົງການຈັດຕັ້ງ (ນາຍບ້ານ, ຫົວໜ້າສະຫະພັນແມ່ຍິງບ້ານ) ແລະ ໄດ້ຮັບຄວາມຍິນຍອມດ້ວຍຄຳເວົ້າປາກເປົ່າ ຫຼື ການເຊັນໃບຍິນຍອມຈາກພໍ່ແມ່ ຫຼື ຜູ້ປົກຄອງຂອງເດັກທີ່ຖືກຄັດເລືອກເສຍກ່ອນ. ນອກຈາກນັ້ນ, ພວກເຮົາຍັງໄດ້ເອົາໃຈໃສ່ເປັນພິເສດໃນການອະທິບາຍຂັ້ນຕອນຕ່າງໆໃນການສຳພາດ ແລະ ເຈາະເລືອດໃຫ້ແກ່ແມ່ຂອງເດັກນ້ອຍທີ່ຖືກຄັດເລືອກ ເນື່ອງຈາກວ່າ, ໃນເຂດຊົນນະບົດຂອງ ສປປ ລາວ ແມ່ຍິງລາວຫຼາຍກວ່າ 70% ແມ່ນບໍ່ໄດ້ຮຽນໜັງສື.

ຂໍ້ມູນຕ່າງໆຂອງຜູ້ເຂົ້າຮ່ວມການຄົ້ນຄວ້າຈະໄດ້ເກັບໄວ້ເປັນຄວາມລັບ ແລະ ບໍ່ໄດ້ຂຽນຊື່ໃສ່ໃນແບບສອບ ຖາມ, ຜູ້ເຂົ້າຮ່ວມແຕ່ລະຄົນຈະມີໝາຍເລກທີ່ກົງກັນລະຫວ່າງແບບສອບຖາມ ແລະ ຕົວຢ່າງເລືອດ.

ພວກເຮົາໄດ້ລາຍງານຜົນຂອງການກວດຊອກຫາເຊື້ອອັກເສບຕັບຊະນິດບີໃຫ້ແກ່ແມ່ທີ່ຕ້ອງການຮູ້ຜົນ. ຄະນະທີມງານເກັບຂໍ້ມູນໄດ້ມີການພິຈາລະນາເຖິງບັນຫາດັ່ງຕໍ່ໄປນີ້ກ່ອນທີ່ຈະບອກຜົນກວດແກ່ແມ່: 1.) ໃນ ສປປ ລາວ ພະຍາດອັກເສບຕັບທີ່ເກີດຈາກເຊື້ອຈຸລະໂລກແມ່ນບໍ່ສາມາດປິ່ນປົວໃຫ້ຫາຍຂາດໄດ້, 2.) ແຜ່ນເຈ້ຍ Determine® ນີ້ບໍ່ໄດ້ນຳ

ໃຊ້ເພື່ອຈຸດປະສົງໃນການບົ່ງມະຕິພະຍາດຂອງບຸກຄົນໃດໜຶ່ງ, ແຕ່ເປັນການນຳໃຊ້ສຳລັບການຄົ້ນຄວ້າຫາງລະບາດວິທະຍາຂອງເຊື້ອອັກເສບຕັບບີເທົ່ານັ້ນ, 3.) ເຖິງແມ່ນວ່າຫາງຄະນະທີມງານເກັບຂໍ້ມູນໄດ້ໃຫ້ຄຳອະທິບາຍຢ່າງລະອຽດກ່ຽວກັບພະຍາດອັກເສບຕັບຊະນິດບີແລ້ວກໍ່ຕາມ, ແຕ່ຜູ້ທີ່ຕິດເຊື້ອອັກເສບຕັບບີອາດຈະຖືກຈຳແນກຈາກໄຫບ້ານໃກ້ຄຽງຕາມຄວາມເຊື່ອຂອງທ້ອງຖິ່ນ.

ການຈັດຕັ້ງປະຕິບັດໃນການລົງເກັບຂໍ້ມູນ

ການສຳຫຼວດຄົ້ນຄວ້າກ່ຽວກັບພະຍາດອັກເສບຕັບບີແມ່ນໄດ້ຖືກກະກຽມ, ວາງແຜນການຈັດຕັ້ງ ແລະ ປະຕິບັດຢ່າງເປັນແຕ່ລະຂັ້ນໃນລະດັບຊາດ,ແຂວງ,ເມືອງແລະບ້ານ. ຂັ້ນຕອນແຕ່ລະຂັ້ນຕອນທີ່ກ່ຽວຂ້ອງກັບການຈັດຕັ້ງ ປະຕິບັດການຄົ້ນຄວ້າແມ່ນໄດ້ສະຫຼຸບຫຍໍ້ ດັ່ງຕໍ່ໄປນີ້:

ການອະນຸມັດດ້ານຈັນຍາທຳຂອງການຄົ້ນຄວ້າ

ໂຄງການສັກຢາກັນພະຍາດແຫ່ງຊາດ, ສູນວິເຄາະ ແລະ ລະບາດວິທະຍາແຫ່ງຊາດ, ກະຊວງສາທາລະນະສຸກຂອງລາວ, ແລະ ສູນການແພດ ແລະ ສຸຂະພາບໂລກແຫ່ງຊາດຍີ່ປຸ່ນໄດ້ມີການປຶກສາຫາລືກ່ຽວກັບເຫດຜົນ, ວິທີການ, ຂໍ້ມູນຂ່າວສານທີ່ຈຳເປັນ, ຜູ້ໃຫ້ທຶນ, ແລະ ບຸກຄະລາກອນທີ່ຕ້ອງການສຳລັບການຄົ້ນຄວ້າໃນຄັ້ງນີ້ເຊິ່ງໄດ້ຮັບຄວາມຊ່ວຍເຫຼືອຈາກອົງການອະນາໄມໂລກ (ອົງການອະນາໄມໂລກປະຈຳ ພາກພື້ນປາຊີຟິກຕາເວັນຕົກ ແລະ ປະຈຳລາວ). ທີມງານຂອງກຸ່ມສຶນທະນາດັ່ງກ່າວໄດ້ມີການສ້າງໂຄງຮ່າງ ແລະ ແຜນການຂອງການຄົ້ນຄວ້າຂຶ້ນ ຫຼັງຈາກນັ້ນໄດ້ສະເໜີຂໍອະນຸມັດຈາກຄະນະກຳມະການ ດ້ານຈັນຍາທຳຂອງກະຊວງສາທາລະນະສຸກ ສປປລາວ ແລະ ຈາກສູນການແພດ ແລະ ສຸຂະພາບໂລກແຫ່ງຊາດ ຍີ່ປຸ່ນ. ໂຄງຄົ້ນຄວ້ານີ້ໄດ້ຮັບການອະນຸມັດຈາກກະຊວງສາທາລະນະສຸກ ສປປລາວ ໃນວັນທີ 20 ມັງກອນ ປີ 2011, ແລະ ໄດ້ຮັບການອະນຸມັດຈາກສູນການແພດ ແລະ ສຸຂະພາບໂລກແຫ່ງຊາດຍີ່ປຸ່ນ ໃນວັນທີ 6 ມັງກອນ ປີ 2011 (ໃບອະນຸຍາດເລກທີ NCGM-950), ແລະ ໃນວັນທີ 10 ມັງກອນ ປີ 2012 (ໃບອະນຸຍາດເລກທີ NCGM-G-001130-00).

ຈົດໝາຍແຈ້ງການຢ່າງເປັນທາງການຈາກສູນກາງເຖິງອົງການຈັດຕັ້ງຂອງພື້ນທີ່ການຄົ້ນຄວ້າ

ຫຼັງຈາກທີ່ໄດ້ມີການຄັດເລືອກຈຳນວນບ້ານທີ່ຈະເຂົ້າຮ່ວມການຄົ້ນຄວ້າທາງຫ້ອງການກະຊວງສາທາລະນະສຸກ ໄດ້ສົ່ງໜັງສືແຈ້ງການເຖິງອົງການຈັດຕັ້ງແຂວງ, ເມືອງ, ແລະ ບ້ານທີ່ກ່ຽວຂ້ອງໃນການຄົ້ນຄວ້າໃນຄັ້ງນີ້. ເນື່ອງຈາກວ່າພວກເຮົາບໍ່ໄດ້ຮັບລາຍຊື່ຫຼັງຄາເຮືອນທີ່ຈະລົງໄປເກັບຂໍ້ມູນນັ້ນຢ່າງຄົບຖ້ວນກ່ອນການລົງເກັບຂໍ້ມູນຕົວຈິງ, ດັ່ງນັ້ນ ພວກເຮົາໄດ້ໃຊ້ວິທີຂຽນໝາຍເລກຂອງເມືອງ ແລະ ບ້ານ ແລ້ວປ່ອນໃສ່ໃນຊອງ, ຫຼັງຈາກນັ້ນຈຶ່ງໄດ້ທຳການຈົກສະຫຼາກເອົາເມືອງ ແລະ ບ້ານທີ່ຈະລົງໄປເກັບຂໍ້ມູນ.

ການຄັດເລືອກຄູ່ແມ່-ລູກເພື່ອເຂົ້າຮ່ວມການຄົ້ນຄວ້າ

ອີງໃສ່ລາຍຊື່ຫຼັງຄາເຮືອນທີ່ໄດ້ຈາກແຕ່ລະບ້ານ, ພະນັກງານຂອງໂຄງການສັກຢາກັນພະຍາດແຫ່ງຊາດໄດ້ຄັດເລືອກເອົາເດັກນ້ອຍ 21 ຄົນເພື່ອເຂົ້າຮ່ວມການຄົ້ນຄວ້າ. ຄູ່ແມ່-ລູກແມ່ນໄດ້ຖືກສຸ່ມເລືອກເອົາໂດຍໃຊ້ວິທີຈົກສະຫຼາກເຊິ່ງ ພວກເຮົາໄດ້ຕັດເຈ້ຍສີ່ຫຼ່ຽມຂະໜາດ 20x2 ຊມ, ຂຽນໝາຍເລກໃສ່ແຕ່ 1 ຫາ 250 ແລ້ວປ່ອນໃສ່ໃນຊອງ ຫຼັງຈາກນັ້ນພວກເຮົາໄດ້ຈົກສະຫຼາກເອົາ ຄູ່ແມ່-ລູກ 21 ຄູ່ຕໍ່ບ້ານ. ທີມງານເກັບຂໍ້ມູນແຕ່ລະທີມຈະມີຊອງທີມລະຊອງເຊິ່ງໃນຊອງດັ່ງກ່າວໄດ້ບັນຈຸເຈ້ຍທີ່ໄດ້ໝາຍເລກໃສ່ເພື່ອທຳການຈົກສະຫຼາກ 250 ອັນ.

ເມື່ອບ້ານທີ່ຖືກຄັດເລືອກມີຈຳນວນເດັກນ້ອຍບໍ່ພຽງພໍ, ທີມງານເກັບຂໍ້ມູນໄດ້ເລືອກເອົາບ້ານທີ່ໃກ້ທີ່ສຸດກັບຕົວເມືອງ, ທຳການລວບລວມລາຍຊື່ຫຼັງຄາເຮືອນ ແລ້ວທຳການຈົກສະຫຼາກເອົາຕາມວິທີທີ່ໄດ້ກ່າວມາຂ້າງເທິງ.

ການຝຶກອົບຮົມຜູ້ຕິດຕາມພາກສະໜາມ ແລະ ຜູ້ເກັບຂໍ້ມູນ

ທີມງານການຄົ້ນຄວ້າໄດ້ຄັດເລືອກເອົາທີ່ປຶກສາລະດັບສູນກາງ 11 ທ່ານ (6 ທ່ານຈາກໂຄງການສັກຢາກັນພະຍາດແຫ່ງຊາດ ແລະ 5 ທ່ານຈາກສູນວິເຄາະ ແລະ ລະບາດວິທະຍາ), ຜູ້ຕິດຕາມພາກສະໜາມຂັ້ນແຂວງ 13 ທ່ານ, ແລະ ຜູ້ເກັບຂໍ້ມູນ 48 ຄົນ. ປະຫວັດຄວາມເປັນມາຂອງຜູ້ລົງເກັບຂໍ້ມູນສ່ວນຫຼາຍແມ່ນພະນັກ ງານຂອງສູນວິເຄາະ ແລະ ລະບາດວິທະຍາແຫ່ງຊາດ. ທີ່ປຶກສາລະດັບສູນກາງໃຫ້ຄຳປຶກສາ ແລະ ຕິດຕາມ ດູແລໝໍ່ງຫາສອງແຂວງ, ຮັບຜິດຊອບ ໃນການຕອບຄຳຖາມ ແລະ ໃຫ້ຄວາມກະຈ່າງແຈ້ງແກ່ຜູ້ລົງເກັບຂໍ້ມູນ.

ຜູ້ຕິດຕາມພາກສະໜາມ, ທີມງານເກັບກຳຂໍ້ມູນ ແລະ ເກັບຕົວຢ່າງເລືອດໄດ້ຮັບການອົບຮົມເປັນເວລາ 2 ວັນ ເພື່ອໃຫ້ຮູ້ກ່ຽວກັບເຕັກນິກວິທີການເກັບຕົວຢ່າງເລືອດດ້ວຍວິທີການໃຊ້ແມ່ນເຈ້ຍ Determine® ແລະ ຮູ້ຈັກການອ່ານຜົນ, ລວມທັງຮູ້ຈັກ ແລະ ເຂົ້າໃຈວິທີການໃນການສຳພາດ. ການຝຶກອົບຮົມແມ່ນໄດ້ກວມລວມເອົາເລື່ອງນະໂຍບາຍແຫ່ງຊາດ ດ້ານການຕ້ານພະຍາດອັກເສບຕັບຊະນິດບີ, ວິທີການເຮັດເລກລະຫັດ, ຈັນຍາທຳການຄົ້ນຄວ້າ, ແລະ ການຮັກສາຄວາມ ລັບຂອງຜູ້ເຂົ້າຮ່ວມການສຶກສາ. ເພື່ອເປັນການຮັບປະກັນວິທີການຄັດເລືອກບ້ານຢ່າງຖືກຕ້ອງ ພວກເຮົາໄດ້ເນັ້ນໜັກໃຫ້ ແກ່ຜູ້ເຂົ້າຮ່ວມຝຶກອົບຮົມ ຮູ້ຈັກການນຳໃຊ້ວິທີການຈັກສະຫຼາກສຸ່ມເອົາບ້ານທີ່ ເຂົ້າຮ່ວມການສຶກສາໃນຄັ້ງນີ້.

ການກະກຽມອຸປະກອນ

ກ່ອນທີ່ຈະດຳເນີນການເກັບຂໍ້ມູນພະນັກງານໂຄງການສັກຢາກັນພະຍາດແຫ່ງຊາດ ໄດ້ທຳການໝາຍລະຫັດ ເລກທີໃສ່ແບບສອບຖາມ ແລະ ແຜ່ນເຈ້ຍເພື່ອເກັບຕົວຢ່າງເລືອດແຕ່ລະອັນ. ລະຫັດເລກທີລວມມີ ເລກທີແຂວງ, ເລກ ທີເມືອງ, ເລກທີບ້ານ ແລະ ເລກທີຂອງຜູ້ເຂົ້າຮ່ວມການຄົ້ນຄວ້າ (ເລກທີ 01 ຫາເລກທີ 21 ຕິດຕາມດ້ວຍຕົວອັກ ສອນ “C” ສຳລັບເດັກນ້ອຍ ແລະ ຕົວອັກສອນ ”M” ສຳລັບແມ່). ອຸປະກອນໃນການເກັບຂໍ້ມູນສະເພາະທັງໝົດແມ່ນໄດ້ຖືກຫໍ່ ໄວ້ນຳກັນເປັນຢ່າງດີ. ທີມງານເກັບຂໍ້ມູນແຕ່ລະທີມໄດ້ຮັບເອົາຖົງອຸປະກອນດັ່ງກ່າວກ່ອນຈະລົງເກັບຂໍ້ມູນຢູ່ ພື້ນທີ່ຕົວຈິງ.

ດຳເນີນການເກັບຕົວຢ່າງເລືອກຢູ່ພາກສະໜາມ

ຫຼັງຈາກທຳການສຳພາດ ແລະ ເຈາະເລືອດຄູ່ແມ່-ລູກແລ້ວ ພວກເຮົາໄດ້ມີການແຈກຢາຍຂອງຂວັນເລັກໆນ້ອຍ ໆເຊັ່ນວ່າ: ຂະໜົມ, ອຸປະກອນເຄື່ອງຂຽນ ແລະ ອື່ນໆ. ພວກເຮົາຫຼີກລ່ຽງການໃຫ້ຂະໜົມອົມ ເນື່ອງຈາກອາດຈະເປັນ ອັນຕະລາຍຕໍ່ເດັກນ້ອຍໄດ້ ເມື່ອເດັກກິນຂະໜົມອົມອາດເຮັດໃຫ້ຄາຄໍໄດ້. ໃນຕອນແລງຂອງແຕ່ລະມື້ຜູ້ຕິດຕາມພາກສະ ໜາມ ແລະ ຜູ້ເກັບຂໍ້ມູນໄດ້ກວກກາຄືນເບິ່ງແບບສອບຖາມ ແລະ ຜົນການກວດຂອງຕົວຢ່າງເລືອດທີ່ເກັບໄດ້.

ໄລຍະການເກັບກຳຂໍ້ມູນແມ່ນໄດ້ດຳເນີນ ແຕ່ວັນທີ 25 ເດືອນມັງກອນ ຫາ ວັນທີ ເດືອນກຸມພາ ປີ 2012 ໂດຍບໍ່ໄດ້ນັບລວມມື້ຂອງການເດີນທາງ. ການເກັບຂໍ້ມູນແມ່ນສຳເລັດລົງພາຍໃນສອງອາທິດ. ການບັນທຶກຂໍ້ມູນທີ່ເກັບກຳ ໄດ້ແມ່ນໄດ້ບັນທຶກຢູ່ໃນ ສປປລາວ ແລະ ຢູ່ປະເທດຍີ່ປຸ່ນ.

ຜົນຂອງການຄົ້ນຄວ້າ

ທີມງານໄດ້ຮັບຜົນສຳເລັດໃນການລົງເກັບກຳຂໍ້ມູນຢູ່ໃນ 48 ບ້ານ, ຍົກເວັ້ນໜຶ່ງບ້ານທີ່ພວກເຮົາບໍ່ສາມາດເຂົ້າເຖິງໄດ້ເນື່ອງຈາກວ່າມີຄວາມຫຍຸ້ງຍາກຂອງຖະໜົນຫົນທາງທີ່ຈະເຂົ້າໄປຫາບ້ານດັ່ງກ່າວ. ສະນັ້ນ, ພວກເຮົາຈຶ່ງໄດ້ຄັດເລືອກເອົາອີກບ້ານໜຶ່ງທີ່ຫົນທາງສາມາດເຂົ້າເຖິງໄດ້ເພື່ອເປັນຕົວແທນເຊິ່ງພວກເຮົາໄດ້ເລືອກເອົາບ້ານດັ່ງກ່າວຕາມວິທີການທີ່ໄດ້ກຳໜົດໄວ້. ການເກັບຂໍ້ມູນແມ່ນປະສົບຜົນສຳເລັດ ແລະ ລວບລວມໄດ້ 1,008 ຄູ່ແມ່-ລູກ. ອັດຕາການເຂົ້າຮ່ວມການຄົ້ນຄວ້າໂດຍລວມແມ່ນໄດ້ 100%; ເຖິງຢ່າງໃດກໍ່ຕາມຄູ່ແມ່-ລູກ 43 ຄູ່ໄດ້ຖືກຕັດອອກຈາກການວິເຄາະຂໍ້ມູນເນື່ອງຈາກວ່າອາຍຸຂອງແມ່ ແລະ ເດັກບໍ່ຢູ່ໃນເກນທີ່ເຮົາກຳນົດໄວ້ຄື: ເດັກນ້ອຍ 4 ຄົນມີອາຍຸກາຍ 9 ປີ ແລະ 30 ຄົນມີອາຍຸໜຸດ 5 ປີ; ນອກຈາກນັ້ນແມ່ 5 ຄົນມີອາຍຸກາຍ 45 ປີ ແລະ 4 ຄົນມີອາຍຸໜຸດ15 ປີ. ດັ່ງນັ້ນ, ພວກເຮົາຈຶ່ງໄດ້ຄູ່ແມ່-ລູກທັງໝົດ 965 ຄູ່ ເພື່ອໃຊ້ເຂົ້າໃນການຄິດໄລ່ອັດຕາການຕິດເຊື້ອພະຍາດອັກເສບຕັບບີໃນຄັ້ງນີ້.

ອັດຕາການຕິດເຊື້ອພະຍາດອັກເສບຕັບບີໃນເດັກ (ກຸ່ມອາຍຸ 5 ຫາ 9 ປີ) ແລະ ແມ່ (ກຸ່ມອາຍຸ 15 ຫາ 45 ປີ)

ຈາກການສຶກສາຄັ້ງນີ້ພົບວ່າເດັກນ້ອຍ 17 ຄົນ ຈາກ 965 ຄົນ, ຄິດເປັນສ່ວນຮ້ອຍ 1.7% ແລະ ແມ່ 28 ຄົນ ຈາກ 965 ຄົນ, ຄິດເປັນສ່ວນຮ້ອຍ 2.9% ມີການຕິດເຊື້ອພະຍາດອັກເສບຕັບບີ. ຕາຕະລາງລຸ່ມນີ້ສະແດງໃຫ້ເຫັນອັດຕາການຕິດເຊື້ອພະຍາດອັກເສບຕັບບີໂດຍລວມເດັກນ້ອຍ ແລະ ແມ່ຂອງເຂົາເຈົ້າຫຼັງຈາກການອອກແບບການສຸ່ມຕົວຢ່າງ ແລະ ນ້ຳໜັກຕົວຢ່າງຂອງແຕ່ລະບຸກຄົນ. ນອກນັ້ນໃນຕາຕະລາງຍັງສະແດງໃຫ້ເຫັນອັດຕາການຕິດເຊື້ອພະຍາດອັກເສບຕັບບີໃນແຕ່ລະກຸ່ມອາຍຸໂດຍແບ່ງຕາມສອງກຸ່ມ (ຄື ກຸ່ມທີ່ໄດ້ຮັບອັດຕາການສັກຢາກັນພະຍາດ ສູງ ແລະ ກຸ່ມທີ່ໄດ້ຮັບອັດຕາການສັກຢາກັນພະຍາດຕ່ຳ ຕໍ່ພະຍາດ ຄໍຕິບ, ໄອໄກ່, ບາດທະຍັກ ແລະ ພະ ຍາດອັກເສບຕັບຊະນິດບີຄົບສາມຄັ້ງ).

ຕາຕະລາງ. ອັດຕາການຕິດເຊື້ອພະຍາດອັກເສບຕັບບີທົ່ວປະເທດຂອງເດັກນ້ອຍ ແລະ ແມ່ຂອງເຂົາເຈົ້າ

ອາຍຸ	ອັດຕາການຕິດເຊື້ອພະຍາດອັກເສບຕັບບີ	ຊ່ວງເຊື່ອໝັ້ນ 95% C.I.
ເດັກ (n=965)	1.7%	0.8-2.6%
ແມ່ (n=965)	2.9%	1.7-4.2%

ຕາຕະລາງ. ອັດຕາການຕິດເຊື້ອພະຍາດອັກເສບຕັບບີຂອງເດັກນ້ອຍ ແລະ ແມ່ຂອງເຂົາເຈົ້າແບ່ງຕາມກຸ່ມທີ່ໄດ້ຮັບອັດຕາການສັກຢາກັນພະຍາດຄໍຕິບ, ໄອໄກ່, ບາດທະຍັກ ແລະ ພະ ຍາດອັກເສບຕັບຊະນິດບີຄົບສາມຄັ້ງ

ອາຍຸ	ອັດຕາການຕິດເຊື້ອພະຍາດອັກເສບຕັບບີ	ຊ່ວງເຊື່ອໝັ້ນ 95% C.I.
ເດັກທີ່ໄດ້ຮັບອັດຕາການສັກຢາກັນພະຍາດຕ່ຳ (n=479)	2.4%	0.8-4.0
ເດັກທີ່ໄດ້ຮັບອັດຕາການສັກຢາກັນພະຍາດສູງ (n=486)	1.1%	0.2-2.0

ແມ່ທີ່ໄດ້ຮັບອັດຕາການສັກຢາກັນພະຍາດຕ່ຳ (n=479)	1.9	0.5-3.4
ແມ່ທີ່ໄດ້ຮັບອັດຕາການສັກຢາກັນພະຍາດສູງ (n=486)	3.8	1.8-5.8

ການແຜ່ກະຈາຍຂອງການຕິດເຊື້ອອັກເສບຕັບຊະນິດ ບີ ຕາມລຸບລັກສະນະພື້ນຖານຄວາມເປັນມາທາງດ້ານສັງຄົມ ແລະ ປະຊາກອນສາດ

ຕາຕະລາງ. ການແຜ່ກະຈາຍເຊື້ອພະຍາດອັກເສບຕັບບີ ໂດຍລັກສະນະພື້ນຖານຄວາມເປັນມາທາງດ້ານສັງຄົມ ແລະ ປະຊາກອນສາດ

				ເດັກ (ອາຍຸ 5 ຫາ 9 ປີ)			ແມ່ (ອາຍຸ 15 ຫາ 45 ປີ)		
		ຈຳນວນ	%	HBsAg (+)	%	95% CI	HBsAg (+)	%	95% CI
ອາຍຸຂອງແມ່ (n=965)	15-19	4	0.4	0	0.0		0	0.0	
	20-24	85	8.8	1	1.2	0.0-3.5	3	3.5	0.0-7.5
	25-29	294	30.5	7	2.4	0.6-4.1	8	2.7	0.9-4.6
	30-34	275	28.5	6	2.2	0.4-3.9	9	3.3	1.2-5.4
	35-39	176	18.2	3	1.7	0.0-3.6	3	1.7	0.0-3.6
	40-45	131	13.6	0	0.0		4	3.1	0.1-6.0
ຊົນຊາດ (n=963)	ລາວລຸ່ມ	651	67.6	9	1.4	0.5-2.3	19	2.9	1.6-4.2
	ລາວເທິງ	248	25.8	6	2.4	0.5-4.3	5	2.0	0.3-3.8
	ລາວສູງ	64	6.6	2	3.1	0.0-7.5	3	4.7	0.0-10.0
ຍານພາຫະນະທີ່ໃຊ້ໃນການເດີນທາງເພື່ອໄປສະຖານທີ່ບໍລິການສາທາລະນະສຸກທີ່ໃກ້ທີ່ສຸດ (n=939)	ຍ່າງ	298	31.7	1	0.3	0.0-1.0	6	2.0	0.4-3.6
	ລົດຖີບ	14	1.5	0	0.0		0	0.0	
	ລົດຈັກ	364	38.8	7	1.9	0.5-3.3	10	2.8	1.1-4.4
	ລົດໃຫຍ່	183	19.5	5	2.7	0.4-5.1	6	3.3	0.7-5.9
	ລົດຕ່ອກໆ	66	7.0	3	4.6	0.0-9.7	4	6.1	0.2-12.0
	ອື່ນໆ	14	1.5	0	0.0		0	0.0	
ເວລາທີ່ໃຊ້ໃນການເດີນທາງເພື່ອໄປຫາສະຖານທີ່ບໍລິການສາທາລະນະສຸກທີ່ໃກ້ທີ່ສຸດ(ນາທີ) (n=901)	< 5 ນາທີ	31	3.4	0	0.0		1	3.2	0.0-9.8
	5-15 ນາທີ	274	30.4	3	1.1	0.2-2.3	6	2.2	0.5-3.9
	15-30 ນາທີ	231	25.6	5	2.2	0.3-4.1	11	4.8	2.0-7.5
	30-60 ນາທີ	209	23.2	5	2.4	0.3-4.5	4	1.9	0.0-3.8
	> 60 ນາທີ	156	17.3	3	1.6	0.0-4.7	4	2.6	0.1-5.1

ລະດັບການສຶກສາ ຂອງແມ່ (n=962)	ບໍ່ຈົບປະຖົມ	307	31.9	7	2.3	0.6-4.0	12	3.9	1.7-6.1
	ຈົບປະຖົມ	374	38.9	5	1.3	0.2-2.5	10	2.7	1.0-4.3
	ຈົບມັດທະຍົມຕົ້ນ	185	19.2	3	1.6	0.0-3.5	2	1.1	0.0-2.6
	ຈົບມັດທະຍົມປາຍ	73	7.6	0	0.0		1	1.4	0.0-4.1
	ຈົບວິທະຍາໄລ/ຈົບມະຫາວິທະຍາໄລ	20	2.1	1	5.0	0.0-15.5	2	10.0	0.0-24.4
	ອື່ນໆ ຫຼື ບໍ່ຮູ້	3	0.3	1	33.3	0.0-100.0	0	0.0	
ອາຊີບຂອງຫົວໜ້າ ຄອບຄົວ (n=963)	ຊາວນາ	683	70.9	13	1.9	0.9-2.9	19	2.8	1.6-4.0
	ຫາປາ	5	0.5	0	0.0		0	0.0	
	ກຳມະກອນ	92	9.6	1	1.1	0.0-3.3	5	5.4	0.7-10.2
	ລັດຖະກອນ	88	9.1	1	1.1	0.0-3.4	3	6.3	1.7-10.8
	ພະນັກງານ ໂຮງງານ	8	0.8	0	0.0		0	0.0	
	ຮັບຈ້າງທົ່ວໄປ	16	1.7	1	6.3	0.0-19.6	0	0.0	
	ຄ້າຂາຍ	63	6.5	1	1.6	0.0-4.8	0	0.0	
	ອື່ນໆ	8	0.8	0	0.0		0	0.0	
ແມ່ເຄີຍໄດ້ຮັບການ ຜ່າຕັດ (n=962)	ເຄີຍ	95	9.9	2	2.1	0.0-5.1	3	3.2	0.0-6.7
	ບໍ່ເຄີຍ	867	90.1	15	1.7	0.9-2.6	24	2.8	1.7-3.9
ເພດຂອງເດັກ (n=960)	ຊາຍ	474	49.4	9	1.9	0.7-3.1			
	ຍິງ	486	50.6	7	1.4	0.4-2.5			
ບ່ອນເກີດຂອງເດັກ (n=961)	ໂຮງໝໍແຂວງ	207	21.5	4	1.9	0.0-3.8	6	2.9	0.6-5.2
	ໂຮງໝໍເມືອງ	105	10.9	2	1.9	0.0-4.6	5	4.8	0.6-8.9
	ສຸກສາລາ	10	1.0	0	0.0		0	0.0	
	ຄລີນິກເອກະຊົນ	11	1.1	0	0.0		1	9.1	0.0-29.4
	ເຮືອນ	569	59.2	8	1.4	0.4-2.4	14	2.5	1.2-3.7
	ຢູ່ປ່າແຄມບ້ານ	56	5.8	3	5.4	0.0-11.4	1	1.8	0.0-5.4
	ບ່ອນອື່ນ	3	0.3	0	0.0		0	0.0	
ເດັກເຄີຍໄດ້ຮັບ ການຜ່າຕັດ (n=960)	ເຄີຍ	22	2.3	0	0.0				
	ບໍ່ເຄີຍ	938	97.7	16	1.7	0.9-2.5			

ພາກສ່ວນທະນາບັນຫາ

1. ການຈັດຕັ້ງປະຕິບັດການຄົ້ນຄວ້າ

ການຄົ້ນຄວ້າຊອກຫາອັດຕາການຕິດເຊື້ອອັກເສບຕັບຊະນິດ ບີ ໃນຄັ້ງນີ້ໄດ້ຮັບຜົນສຳເລັດລົງໄດ້ແມ່ນເນື່ອງມາຈາກເຫດຜົນຕ່າງໆດັ່ງລຸ່ມນີ້:

1) ກະຊວງສາທາລະນະສຸກ ແຫ່ງ ສປປລາວ ໄດ້ມີຄວາມມຸ່ງໝັ້ນຢ່າງຍິ່ງທີ່ຈະດຳເນີນການສຳຫຼວດ.

2) ການສື່ສານ ແລະ ການປະສານງານແມ່ນໄດ້ຖືກສ້າງຕັ້ງຂຶ້ນຢ່າງເປັນລະບົບໃນທຸກລະດັບຂອງການເຮັດວຽກ.

3) ອຳນາດການປົກຄອງທ້ອງຖິ່ນ ແລະ ອາສາສະໝັກສາທາລະນະສຸກແມ່ນມີສ່ວນຮ່ວມນຳກັນເປັນຢ່າງດີ.

4) ທີມງານການຄົ້ນຄວ້າແມ່ນໄດ້ມີການກະກຽມເປັນຢ່າງດີ, ຍ້ອນວ່າເຂົາເຈົ້າໄດ້ຮຽນຮູ້ມາຈາກການສຶກສາໃນຂັ້ນທົດລອງຢູ່ພາກກາງຂອງປະເທດໃນປີ 2011.

2. ອັດຕາການຕິດເຊື້ອອັກເສບຕັບຊະນິດບີໃນເດັກນ້ອຍ ແລະ ແມ່ຍິງໄວຈະເລີນພັນ

ອັດຕາການຕິດເຊື້ອອັກເສບຕັບຊະນິດບີໃນປະຊາກອນທົ່ວໄປຂອງສປປລາວ ແມ່ນຕ່ຳຫຼາຍກວ່າການຄາດຄະເນໄວ້ໂດຍຕ່ຳທັ້ງຂອງເດັກ ແລະ ຜູ້ໃຫຍ່,ເຊິ່ງຕ່ຳກວ່າອັດຕາການຕິດເຊື້ອທີ່ໄດ້ຖືກລາຍງານຂອງບັນດາປະເທດເພື່ອນບ້ານຂອງລາວ [7, 8, 9]. ຕົວຢ່າງເຊັ່ນ: ອັດຕາການຕິດເຊື້ອອັກເສບຕັບຊະນິດບີໃນຜູ້ໃຫຍ່ຢູ່ປະເທດກຳປູເຈຍ, ໄທ ແລະ ວຽດນາມແມ່ນ 7.7% (95% CI: 6.2% 9.3%) [10], 8.9% [11], ແລະ 18.8% (95% CI: 15.7 % 21.9%) [12] ຕາມລຳດັບ. ຂໍ້ມູນຂອງອັດຕາການຕິດເຊື້ອອັກເສບຕັບຊະນິດບີໃນເດັກນ້ອຍນີ້ແມ່ນຂ້ອນຂ້າງຫາຍາກ ເຊິ່ງມີຄ່າປະມານ 3.5% (95% CI: 2.4% 4.8%) ຢູ່ກຳປູເຈຍ [13], ແລະ 18.4% (95% CI: 13.4% 23.4%) ຢູ່ວຽດນາມ [12]. ມີຄຳອະທິບາຍທີ່ມີສັກກະຍະພາບຫຼາຍຢ່າງຕໍ່ຜົນໄດ້ຮັບນີ້ເຊັ່ນ:

1) ຄວາມໜາແໜ້ນຂອງປະຊາກອນຂອງ ສປປລາວ ແມ່ນຕ່ຳກວ່າບັນດາປະເທດອ້ອມຂ້າງເຮັດໃຫ້ການຕິດຕໍ່ພົວພັນກັບບັນດາປະເທດອ້ອມຂ້າງນັ້ນບໍ່ສະໝ່ຳສະເໝີ [14]. ນອກຈາກນັ້ນແລ້ວ, ຖະໜົນຫົນທາງ, ທາງລົດໄຟ, ການບິນ, ແລະ ພື້ນຖານໂຄງລ່າງແມ່ນມີການພັດທະນາໜ້ອຍໃນ ສປປ ລາວ, ດັ່ງນັ້ນຈຶ່ງເຮັດໃຫ້ມີໂອກາດໜ້ອຍໃນການແຜ່ກະຈາຍຂອງເຊື້ອຈຸລະໂລກ. ອີກດ້ານໜຶ່ງ, ຄວາມແຕກຕ່າງທາງດ້ານວັດທະນະທຳ ແລະການປະພຶດອາດເຮັດໃຫ້ອັດຕາການຕິດເຊື້ອອັກເສບຕັບຊະນິດບີຕ່ຳໃນ ສປປ ລາວ.

2) ສ່ວນໃຫຍ່ແລ້ວຜົນໄດ້ຮັບຂອງການສຳຫຼວດໃນຄັ້ງທີ່ຜ່ານມາແມ່ນບໍ່ໄດ້ຂະໜາດຕົວຢ່າງພຽງພໍທີ່ຈະເປັນຕົວແທນໃຫ້ແກ່ປະຊາກອນທັງໝົດໃນທົ່ວປະເທດໄດ້. ຕົວຢ່າງເຊັ່ນ: ການສຶກສາໜຶ່ງໃນຄົນບໍລິຈາກເລືອດໃນ ສປປລາວ ສະແດງໃຫ້ເຫັນອັດຕາການຕິດເຊື້ອອັກເສບຕັບຊະນິດບີ ແມ່ນໃນລະຫວ່າງ 7.2% ຫາ 9.7% ໃນກຸ່ມອາຍຸທີ່ແຕກຕ່າງກັນ [15]. ອີກການສຶກສາໜຶ່ງໃນຄົນເຈັບນອນໂຮງໝໍໄດ້ເປີດເຜີຍໃຫ້ເຫັນເຖິງອັດຕາຊຸກຊຸມຂອງການຕິດເຊື້ອອັກເສບຕັບຊະນິດບີ ໃນຜູ້ໃຫຍ່ຢູ່ນະຄອນຫຼວງວຽງຈັນແມ່ນ 18.0% [16]. ໃນຂະນະທີ່ການສຶກສາເຫຼົ່ານີ້ມີອັດຕາຊຸກຊຸມສູງ, ກຸ່ມປະຊາກອນຕົວຢ່າງໃນການສຶກສານີ້ບໍ່ສາມາດເປັນຕົວແທນຂອງປະຊາກອນທົ່ວໄປໄດ້.

3. ພື້ນທີ່ເປົ້າໝາຍຂອງອົງການອະນາໄມໂລກໃນຂົງເຂດພູມິພາກ

ເປົ້າໝາຍຂອງອົງການອະນາໄມໂລກແມ່ນການຫຼຸດຜ່ອນອັດຕາການຕິດເຊື້ອອັກເສບຕັບຊະນິດບີ ໃນກຸ່ມເດັກນ້ອຍອາຍຸຫຼຸດ 5ປີ ໃຫ້ໜ້ອຍກວ່າ 2% ພາຍໃນປີ 2012 (WPR/RC56.R8). ຈາກຄ່າອັດຕາຊຸກຊຸມຂອງການຕິດເຊື້ອນີ້ແມ່ນໄດ້ຖືກນຳໃຊ້ເຂົ້າໃນການຕິດຕາມຄວບຄຸມພະຍາດອັກເສບຕັບຊະນິດບີ [6, 7]. ຖ້າພວກເຮົາປະຕິບັດຕາມເງື່ອນໄຂດັ່ງກ່າວຂ້າງເທິງນັ້ນແມ່ນສະແດງວ່າ ສປປ ລາວ ໄດ້ບັນລຸເປົ້າໝາຍທີ່ທາງອົງການອະນາໄມໂລກໄດ້ວາງອອກຮຽບຮ້ອຍແລ້ວ. ເຖິງຢ່າງໃດກໍ່ຕາມ, ມັນມີຄວາມເປັນໄປໄດ້ຍາກທີ່ ສປປ ລາວ ຈະບັນລຸເປົ້າໝາຍໃຫ້ຫຼຸດ 1%

ໂດຍອີງໃສ່ໂຄງການສັກຢາກັນພະຍາດພຽງຢ່າງດຽວ ເພາະວ່າປະເທດລາວມີອັດຕາການສັກຢາປ້ອງກັນພະຍາດທີ່ຍັງຕ່ຳ ເມື່ອສົມທຽບກັບບັນດາປະເທດໃກ້ຄຽງທີ່ຢູ່ໃນຂົງເຂດດຽວກັນ.ເມື່ອພິຈາລະນາຈາກອັດຕາຊຸກຊຸມຂອງການຕິດເຊື້ອອັກເສບຕັບຊະນິດບີ ໃນແມ່ຍິງໄວຈະເລີນພັນຂ້ອນຂ້າງຕ່ຳເມື່ອສົມທຽບກັບລາຍງານການສຶກສາກ່ອນໜ້ານີ້ສະແດງໃຫ້ເຫັນວ່າປະເທດລາວມີອັດຕາການຕິດເຊື້ອອັກເສບຕັບຊະນິດບີຕ່ຳຢູ່ກ່ອນໜ້າທີ່ຈະມີການແນະນຳໂຄງການສັກຢາກັນພະຍາດອັກເສບຕັບຊະນິດບີ. ເພາະສະນັ້ນ, ໃນເປົ້າໝາຍສຸດທ້າຍຂອງການຫຼຸດຜ່ອນອັດຕາການຕິດເຊື້ອອັກເສບຕັບຊະນິດບີ ໃນເດັກອາຍຸຕ່ຳກວ່າ 5ປີ ໃຫ້ໜ້ອຍກວ່າ 1% ອາດຈະເປັນໄປໄດ້ຍາກທີ່ຈະບັນລຸເປົ້າໝາຍຖ້າຫາກວ່າປະເທດລາວຍັງສືບຕໍ່ນະໂຍບາຍຂອງໂຄງການສັກຢາກັນພະຍາດຕາມວິທີການປະຈຸບັນນີ້.

ຂໍ້ສະເໜີແນະນຳ

1. ເພື່ອປະເມີນຄວາມຄືບໜ້າຂອງໂຄງການສັກຢາກັນພະຍາດແຫ່ງຊາດ, ການສຳຫຼວດກ່ຽວກັບອັດຕາການຕິດເຊື້ອອັກຕັບຊະນິດບີ ຄືນໃໝ່, ເຊິ່ງການສຳຫຼວດໃນຄັ້ງຕໍ່ໄປຄວນນຳໃຊ້ຂໍ້ມູນການສຳຫຼວດສຳມະໂນຄົວຂອງປະຊາກອນອັນໃໝ່ຫຼ້າສຸດ.

2. ໃນເວລາທີ່ດຳເນີນການຄົ້ນຄວ້າໃນຄັ້ງຕໍ່ໄປ, ພວກເຮົາຂໍແນະນຳໃຫ້ມີການສຳຫຼວດກວມເອົາກຸ່ມປະຊາກອນເປົ້າໝາຍດັ່ງລຸ່ມນີ້:

1) ແມ່, ເນື່ອງຈາກວ່າພວກເຂົາເຈົ້າເປັນແຫຼ່ງຂອງການສົ່ງເຊື້ອໂດຍກົງຈາກແມ່ຫາລູກ

2) ພໍ່, ເນື່ອງຈາກວ່າພວກເຂົາເຈົ້າເປັນແຫຼ່ງຂອງການສົ່ງເຊື້ອໄປຫາລູກໂດຍທາງອ້ອມ

3) ປະຊາກອນທີ່ບໍ່ມີຫຼັກແຫຼ່ງປະຈຳເຊັ່ນ: ຄົນອົບພະຍົບ, ຫຼື ຄົນຂາຍບໍລິການທາງເພດ, ເພາະພວກເຂົາເຈົ້າມັກບໍ່ໄດ້ລົງທະບຽນສັງກັດຢູ່ບ່ອນໃດບ່ອນໜຶ່ງຢ່າງເປັນປະຈຳ, ແລະ ອາດຈະມີອັດຕາການຕິດເຊື້ອອັກຕັບຊະນິດບີຫຼາຍກວ່າຄົນທົ່ວໄປ. ພວກເຮົາຕ້ອງໄດ້ເອົາໃຈໃສ່ເປັນພິເສດໃນການເກັບກຳຂໍ້ມູນນຳພວກເຂົາເຫຼົ່ານີ້ ຄືຄວນມີການສຸ່ມຕົວຢ່າງຈາກເຂົ້າເຈົ້າໃຫ້ໄດ້ຫຼາຍໆ.

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ພາກພະໜວກ

ຄະນະທີ່ມງານຄົ້ນຄວ້າຈາກ ສູນການແພດ ແລະ ສຸຂະພາບໂລກແຫ່ງຊາດຍີ່ປຸ່ນ

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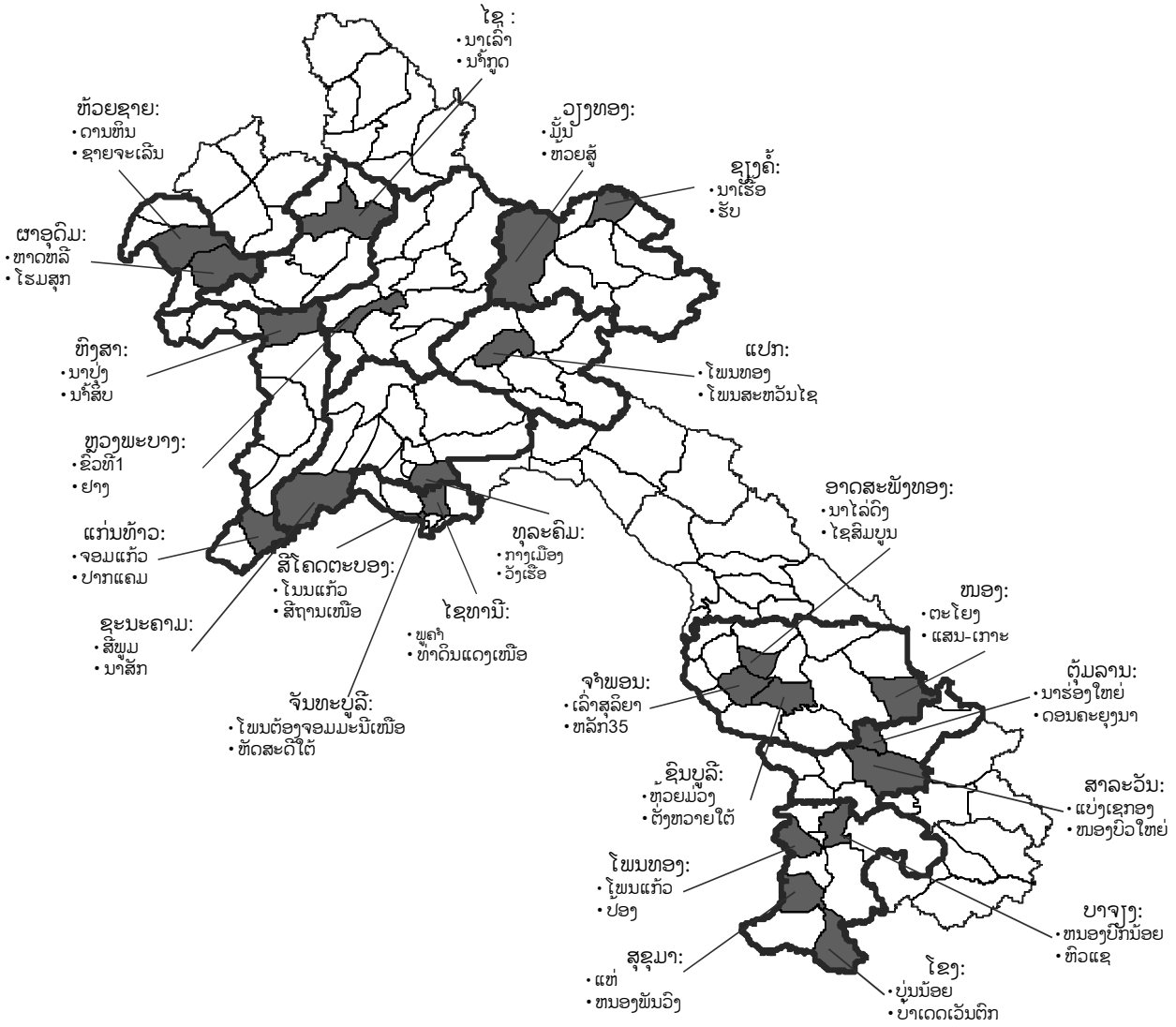
ເມືອງ ແລະ ບ້ານ ທີ່ຖືກຄັດເລືອກເຂົ້າໃນການສຳຫຼວດ



ຄຳຖາມສຳລັບແມ່ ແລະ ເດັກນ້ອຍ ເພື່ອປະເມີນຜົນການໃຫ້ບໍລິການປ້ອງກັນການແຜ່ເຊື້ອ ພະຍາດ ອັກເສບຕັບ ຊະນິດ ບີ

	/ /	
ເລກທີແບບສອບຖາມ	ວັນທີ (ວັນ/ເດືອນ/ປີ)	ຊື່ຜູ້ສຳພາດ

ໝາຍເຫດ: ຈຸດປະສົງຂອງຄຳຖາມນີ້ ແມ່ນເພື່ອຂໍຂໍ້ມູນຈາກທ່ານ ໃນການປັບປຸງການບໍລິການສຸຂະພາບແມ່ ແລະ ເດັກ ເພື່ອປ້ອງກັນພະຍາດອັກເສບຕັບຊະນິດ ບີ. ນີ້ແມ່ນຄຳຖາມທີ່ເປັນ ຄວາມລັບ, ສະນັ້ນ ຈະບໍ່ໄດ້ບັນທຶກຊື່ຂອງທ່ານ. ຄຳຖາມນີ້ ຈະຖືກທຳລາຍ ຫຼັງຈາກໄດ້ບັນທຶກຄຳຕອບໃສ່ໃນຄອມພິວເຕີ ເພື່ອການວິໄຈຂໍ້ມູນ.

ກະລຸນາໃຫ້ຂໍ້ມູນທີ່ຖືກຕ້ອງຈາກຄວາມຮັບຮູ້ຂອງທ່ານ.

I. ຂໍ້ມູນທົ່ວໄປ (ສຳລັບແມ່*)

* ອາຍຸແຕ່ 15 - 45 ປີ

ເລກ	ຄຳຖາມ	ຄຳຕອບ	ໝາຍເຫດ	ລະຫັດ
Q101	ທີ່ຢູ່	ບ້ານ _____ ເມືອງ _____ ແຂວງ _____		
Q102	ວັນ ເດືອນປີເກີດ ແລະ ອາຍຸ (ແມ່)	(ວັນ/ເດືອນ/ປີ) ____/____/____ ອາຍຸ ປີ		
Q103	ຊົນເຜົ່າ	(ຕົວຢ່າງ: ລາວລຸ່ມ, ລາວເທິງ, ລາວສູງ) ອື່ນໆ)_____		
Q104	ທ່ານໄດ້ໃຊ້ຍານພາຫະນະບໍ່ໃນເວລາທ່ານເດີນທາງເພື່ອໄປສະຖານທີ່ບໍລິການສາທາລະນະສຸກທີ່ໃກ້ບ້ານທ່ານທີ່ສຸດ? (ໂຮງໝໍແຂວງ, ໂຮງໝໍເມືອງ, ຄຣິນິກ, ສຸກສາລາ) ຖ້າທ່ານໃຊ້, ແມ່ນໃຊ້ຍານພະຫະນະປະເພດໃດ	(ໃຫ້ເລືອກເອົາແຕ່ຄຳຕອບດຽວ) 1. ຍ່າງ 2. ລົດຖີບ 3. ລົດຈັກ 4. ລົດໃຫຍ່ 5. ລົດຕ່ອກໆ 6. ອື່ນໆ: ລະບຸ _____		[ ]
Q105	ໃຊ້ເວລາດົນປານໃດເພື່ອໄປຫາສະຖານທີ່ບໍລິການສາທາລະນະສຸກ?	_____ /_____ ຊົ່ວໂມງ / ນາທີ		
Q106	ທ່ານຮຽນຈົບການສຶກສາລະດັບໃດ? (ສຳລັບແມ່)	(ໃຫ້ເລືອກເອົາແຕ່ຄຳຕອບດຽວ) 1. ບໍ່ໄດ້ເຂົ້າໂຮງຮຽນ 2. ຈົບປະຖົມ 3. ຈົບມັດທະຍົມຕົ້ນ 4. ຈົບມັດທະຍົມປາຍ 5. ຈົບວິທະຍາໄລ/ມະຫາວິທະຍາໄລ 6. ອື່ນໆ, ລະບຸ:.....		[ ]

ເລກທີແບບສອບຖາມ

Q107	ທ໊ອໜ້າຄອບຄົວເຮັດອາຊີບຫຍັງ?	(ໃຫ້ເລືອກເອົາແຕ່ຄຳຕອບດຽວ) 1. ຊາວນາ (ເຮັດໄຮ່ ຫລື ເຮັດນາ) 2. ຫາປາ 3. ກຳມະກອນ 4. ລັດຖະກອນ 5. ພະນັກງານໂຮງງານ 6. ຮັບຈ້າງທົ່ວໄປ 7. ຄ້າຂາຍ 8. ອື່ນໆ, ລະບຸ _____		[ ]
Q108	ທ່ານເຄີຍໄດ້ຮັບການໃຫ້ເລືອດ ຫລື ການສົ່ງເລືອດບໍ່?	(ໃຫ້ເລືອກເອົາແຕ່ຄຳຕອບດຽວ) 1. ເຄີຍ 2. ບໍ່ເຄີຍ 3. ບໍ່ຮູ້		[ ]
Q109	ທ່ານເຄີຍໄດ້ຮັບການຜ່າຕັດ ຈັກເທື່ອ? (ລວມຜ່າຕັດນ້ອຍ, ຜ່າຕັດເອົາລູກອອກ.. .ໆລໆ)	(ໃຫ້ເລືອກເອົາແຕ່ຄຳຕອບດຽວ) 1. ບໍ່ເຄີຍ 2. ໜຶ່ງຄັ້ງ 3. ສອງຄັ້ງ ຫຼື ຫຼາຍກວ່າ 4. ບໍ່ຮູ້		[ ]
Q110	ມີຄົນໃນເຮືອນທ່ານເປັນພະຍາດຕັບຫຼື ຕາຍຍ້ອນພະຍາດມະເຮັງຕັບບໍ່? (ເຊັ່ນ: ອາການຕາເຫຼືອງ, ເຫຼືອງຕາມ ຕົນໂຕ)	1. ບໍ່ມີໃຜ 2. ມີ 3. ຜົວເປັນ ຫຼື ຕາຍຍ້ອນພະຍາດຕັບ 4.ພໍ່ແມ່ເປັນຫຼື ຕາຍຍ້ອນພະຍາດຕັບ 5. ອ້າຍ/ເອື້ອຍນ້ອງເປັນ ຫຼື ຕາຍ ຍ້ອນພະຍາດຕັບ 6. ບໍ່ຮູ້		ແມ່ນ=1,ບໍ່ແມ່ນ=0 [ ] [ ] [ ] [ ] [ ] [ ]
Q111	ທ່ານມີລູກຈັກຄົນ?	ຈຳນວນ [ ]		[ ]

ເລກທີແບບສອບຖາມ

II. ຊຸ້ມນທົ່ວໄປ (ສຳລັບເດັກ**)

ໃຫ້ເລືອກເອົາເດັກທີ່ມີອາຍຸຕ່ຳສຸດໃນກຸ່ມເດັກອາຍຸລະຫວ່າງ 5-9 ປີ

ເລກ	ຄຳຖາມ	ຄຳຕອບ	ໝາຍເຫດ	ລະຫັດ
Q201	ວັນເດືອນປີເກີດ ແລະ ອາຍຸ (ເດັກ)	(ວັນ/ເດືອນ/ປີ) ____/____/____/ ອາຍຸເປັນປີ		
Q202	ເພດຂອງເດັກ	(ໃຫ້ເລືອກເອົາແຕ່ຄຳຕອບດຽວ) 1. ຊາຍ 2. ຍິງ		[ ]
Q203	ເດັກຄົນນີ້ເກີດຢູ່ໃສ?	(ໃຫ້ເລືອກເອົາແຕ່ຄຳຕອບດຽວ) 1. ໂຮງໝໍແຂວງ 2. ໂຮງໝໍເມືອງ 3. ສຸກສາລາ 4. ຄຼີນິກເອກະຊົນ 5. ເຮືອນ 6. ຢູ່ປ່າ ແຄມບ້ານ 7. ບ່ອນອື່ນ: ລະບຸ: _____		[ ]
Q204	ເປັນຫຍັງຈຶ່ງເລືອກໄປເກີດ ລູກຢູ່ບ່ອນນີ້?	(ໃຫ້ໝາຍໄດ້ຫລາຍຄຳຕອບ) 1. ຮູ້ສຶກປອດໄພ 2. ສະດວກກວ່າ 3. ປະຢັດກວ່າ 4. ຄອບຄົວແນະນຳ 5. ໝໍຕຳແຍແນະນຳ 6. ສຸກສາລາ ຫຼື ໂຮງໝໍແນະນຳ 7. ລູກເກີດໄວຈົນໄປໂຮງໝໍບໍ່ທັນ 8. ເປັນປະເພນີເດີມຂອງຊຸມຊົນ 9. ອື່ນໆ: ລະບຸ _____		ແມ່ນ=1,ບໍ່ແມ່ນ=0 [ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ]

ເລກທີແບບສອບຖາມ

Q205	ໃຜເຂົ້າຮ່ວມຫລື ຊ່ວຍໃນການເກີດລູກຜູ້ນີ້?	(ໃຫ້ໝາຍຫລາຍຄຳຕອບໄດ້) 1. ພະນັກງານແພດ 2. ອສບ 3. ໝໍຕຳແຍ 4. ສະມາຊິກໃນຄອບຄົວ 5. ບໍ່ມີໃຜຊ່ວຍ 6.ອື່ນໆ:ລະບຸ _____		ແມ່ນ=1,ບໍ່ແມ່ນ=0 [ ] [ ] [ ] [ ] [ ] [ ]
Q206	ເດັກໄດ້ຮັບການສັກຢາວັກຊີນກັນພະຍາດຢູ່ໃສ?	(ໃຫ້ເລືອກເອົາແຕ່ຄຳຕອບດຽວ) 1. ໂຮງໝໍ 2. ສຸກສາລາ 3. ຢູ່ບ້ານນຳທີມແພດເຄື່ອນທີ່ 4. ທ່ານໝໍເອກະຊົນ 5. ບໍ່ໄດ້ສັກ 6. ບໍ່ຈື່ບ່ອນສັກ 7.ອື່ນໆ:ລະບຸ _____		[ ]
Q207	ແມ່ຮູ້ຈັກວັກຊີນໄດ້ແນວໃດ? ຮູ້ດ້ວຍວິທີໃດ ຫຼື ແມ່ນໃຜເປັນຜູ້ໃຫ້ຂໍ້ມູນຂ່າວສານ	(ໃຫ້ໝາຍຫຼາຍຄຳຕອບໄດ້) 1. ແພດບອກ 2. ມັນຂຽນຢູ່ໃນບັດສັກຢາ 3. ພີ່ນ້ອງ ຫຼື ໝູ່ບອກ 4. ວິທະຍຸ/ໂທລະພາບ 5. ອຳນາດການປົກຄອງບອກ 6.ອື່ນໆ,ລະບຸ _____ 7. ບໍ່ຮູ້		ແມ່ນ=1,ບໍ່ແມ່ນ=0 [ ] [ ] [ ] [ ] [ ] [ ] [ ]
Q208	ເດັກເຄີຍໄດ້ຮັບການໃຫ້ເລືອດ ຫລື ສິ່ງ ເລືອດບໍ່?	(ໃຫ້ເລືອກເອົາຄຳຕອບດຽວ) 1. ເຄີຍ 2. ບໍ່ເຄີຍ 3. ບໍ່ຮູ້		[ ]
Q209	ເດັກໄດ້ຮັບການຜ່າຕັດຈັກເທື່ອ?	(ໃຫ້ເລືອກເອົາຄຳຕອບດຽວ) 1. ບໍ່ເຄີຍ 2. ໜຶ່ງຄັ້ງ 3. ສອງຄັ້ງ ຫຼື ຫຼາຍກວ່າ 4. ບໍ່ຮູ້		[ ]
Q210	ເດັກໄດ້ໃຊ້ແປງຖູແຂ້ວຮ່ວມກັບສະມາຊິກໃນເຮືອນຄົນອື່ນບໍ່?	(ໃຫ້ເລືອກເອົາຄຳຕອບດຽວ) 1. ເຄີຍ, ໃຊ້ຮ່ວມຜູ້ອື່ນເລື້ອຍໆ 2. ເຄີຍ, ໃຊ້ຮ່ວມຜູ້ອື່ນບາງຄັ້ງ 3. ເຄີຍໃຊ້,ແຕ່ຫາຍາກທີ່ສຸດດົນໆເທື່ອໜຶ່ງ 4. ບໍ່ເຄີຍໃຊ້ຮ່ວມກັບຜູ້ອື່ນ 5. ບໍ່ຮູ້		[ ]

ເລກທີ່ແບບສອບຖາມ

III. ຂໍ້ມູນອື່ນໆ ທີ່ກ່ຽວກັບການສັກຢາກັນພະຍາດ

ເລກ	ຄຳຖາມ	ຄຳຕອບ	ໝາຍເຫດ	ລະຫັດ
Q301	ທ່ານມີບັດ (ເຫຼືອງ) ສັກຢາ ຫຼື ປຶ້ມແມ່ ແລະເດັກບໍ່? ສຳລັບເດັກທີ່ຖືກສຳພາດ)	(ໃຫ້ເລືອກເອົາແຕ່ຄຳຕອບດຽວ) 1. ມີທັງສອງຢ່າງ 2. ມີແຕ່ບັດເຫຼືອງ 3. ມີແຕ່ປຶ້ມແມ່ແລະເດັກ 4. ບໍ່ມີທັງ 2 ຢ່າງ		[ ]
Q303	ປົກກະຕິແມ່ນໃຜເປັນຜູ້ຕັດສິນໃຈໃນ ການໃຫ້ເດັກສັກວັກຊີນ?	(ໃຫ້ເລືອກເອົາແຕ່ຄຳຕອບດຽວ) 1. ພໍ່ 2. ແມ່ (ທ່ານເອງ) 3. ພໍ່ເຖົ້າແມ່ເຖົ້າ 4. ນາຍບ້ານ 5. ອື່ນໆ; ລະບຸ:.....		[ ]
Q304	ທ່ານຮູ້ມື້ທີ່ແພດສຸກສາລາຈະມາໃຫ້ ການບໍລິການສັກຢາໄດ້ແນວໃດ?	(ໃຫ້ໝາຍຫລາຍຄຳຕອບ) 1. ນາຍບ້ານ 2. ອສບ 3. ສະຫະພັນແມ່ຍິງ 4. ໂທລະໂຄ່ງ 5. ປ້າຍໂຄສະນາ 6. ແພດສຸກສາລາ 7. ແຈ້ງການຂອງເຈົ້າເມືອງ 8. ອື່ນໆ; ລະບຸ _____		ແມ່ນ=1,ບໍ່ແມ່ນ=0 [ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ]

ກະລຸນາກວດເບິ່ງບັດສັກຢາກັນພະຍາດສີເຫຼືອງ ຂອງລູກທ່ານ ແລະ ການບັນທຶກຂອງມີ້ໄດ້ຮັບການສັກຢາດັ່ງຂ້າງລຸ່ມນີ້:

1.

BCG(ວັນນະໂລກ) 0-11ເດືອນ ...../...../..... ວັນ/ເດືອນ/ປີ	Hep B(ອັກເສບຕັບບີ) 0-24 ຊົ່ວໂມງ ຫຼັງເກີດ ...../...../..... ວັນ/ເດືອນ/ປີ

2.

DPT-Hep B1(ຄໍຕີບ,ໄອໄກ່,ບາດທະຍັກ-ອັກເສບຕັບບີ) ຢ່າງນ້ອຍສຸດ 6 ອາທິດຫຼັງຈາກເກີດ ...../...../..... ວັນ/ເດືອນ/ປີ	Polio 1 ຢ່າງນ້ອຍ 6 ອາທິດຫຼັງຈາກເກີດ ...../...../..... ວັນ/ເດືອນ/ປີ

3.

DPT-Hep B2 1 ເດືອນຫຼັງຈາກສັກ DPT-Hep B1 ...../...../..... ວັນ/ເດືອນ/ປີ	Polio 2 1 ເດືອນຫຼັງຈາກສັກ Polio 1 ...../...../..... ວັນ/ເດືອນ/ປີ

4.

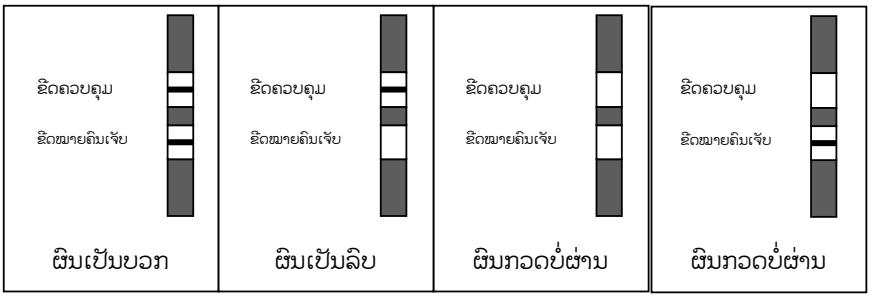
DPT-Hep B3 1 ເດືອນຫຼັງຈາກສັກ DPT-Hep B2 ...../...../..... ວັນ/ເດືອນ/ປີ	Polio 3 1 ເດືອນຫຼັງຈາກສັກ Polio 2 ...../...../..... ວັນ/ເດືອນ/ປີ

5.

Measles(ໝາກແດງ)	9-11 ເດືອນ ...../...../..... ວັນ/ເດືອນ/ປີ 12-23 ເດືອນ ...../...../..... ວັນ/ເດືອນ/ປີ

ບັນທຶກຜົນກວດສຸດທ້າຍ(ອ່ານຄູ່ມືຢ່າງລະມັດລະວັງ.ກວດຄືນຖ້າວ່າການກວດບໍ່ຜ່ານ'Invalid')

	ຜົນການກວດສຸດທ້າຍ	ໝາຍເຫດ	ລະຫັດ
ແມ່	1. ຜົນເປັນບວກ 2. ຜົນເປັນລົບ 3. ຜົນກວດບໍ່ໃຫ້ຄຳຕອບຫຍັງ		[ ]
ລູກ	1. ຜົນເປັນບວກ 2. ຜົນເປັນລົບ 3. ຜົນກວດບໍ່ໃຫ້ຄຳຕອບຫຍັງ		[ ]



<ແບບຟອມຕົກລົງຍິນຍອມສຳລັບພໍ່ແມ່>

ພໍ່ແມ່ທີ່ນັບຖື,

1. ພາກສະເໜີ Introduction
ການຄົ້ນຄ້ວາຄັ້ງນີ້ຈະໄດ້ຈັດຕັ້ງປະຕິບັດໂດຍສູນສຸຂະພາບແມ່ ແລະ ເດັກ, ກະຊວງສາທາລະນະສຸກແຫ່ງສປປລາວ , ໂດຍຮ່ວມມື ແລະ ເປັນເອກກະພາບກັບ NCGM (ສູນກາງການແພດ ແລະ ສຸຂະພາບໂລກແຫ່ງຊາດຍີ່ປຸ່ນ).

2. ຈຸດປະສົງຂອງການຄົ້ນຄ້ວາ
ພະຍາດອັກເສບຕັບບີມີສາເຫດມາຈາກໄວຣັດສ໌ຊະນິດໜຶ່ງເອີ້ນວ່າໄວຣັດສ໌ອັກເສບຕັບຊະນິດບີ. ຖ້າຫາກເຮົາໄດ້ ຮັບເຊື້ອໄວຣັດສ໌ເຂົ້າຮ່າງກາຍເປັນເວລາດົນ ໄວຣັດສ໌ຈະສາມາດກໍ່ໃຫ້ເກີດພະຍາດຕັບໄດ້ໃນພາຍຫຼັງ. ມີປະຊາກອນ ລາວຫຼາຍຄົນທີ່ຖືເຊື້ອໄວຣັດສ໌ຊະນິດນີ້ (ໃນສັດສ່ວນ 1 ຕໍ່ 5 ຫຼື 6 ຄົນ). ການປ້ອງກັນບໍ່ໃຫ້ຮ່າງກາຍຂອງທ່ານຕິດ ໄວຣັດສ໌ຊະນິດນີ້ແມ່ນສິ່ງທີ່ສຳຄັນ ເພາະມັນເປັນບັນຫາທີ່ຫຍຸ້ງຍາກໃນການປິ່ນປົວຜູ່ໃດຜູ່ໜຶ່ງເມື່ອໄດ້ຮັບເຊື້ອເຂົ້າໄປ ແລ້ວ. ສ່ວນຫຼາຍການຕິດເຊື້ອໄວຣັດສ໌ຊະນິດນີ້ແມ່ນຄິດວ່າໄດ້ຕິດເຊື້ອມາຈາກແມ່ໃນເວລາໃຫ້ການເກີດລູກ. ທ່ານ ສາມາດຫຼີກລ່ຽງຈາກພະຍາດນີ້ໄດ້ 95% ຖ້າຫາກທ່ານໄດ້ຮັບການສັກຢາວັກແຊ່ງໂດຍທັນທີພາຍຫຼັງທ່ານເກີດ. ກະຊວງສາທາລະນະສຸກແຫ່ງສປປລາວໄດ້ລິເລີ່ມການຈັດຕັ້ງປະຕິບັດໂຄງການສັກຢາວັກແຊ່ງເພື່ອປ້ອງກັນການສົ່ງ ຜ່ານເຊື້ອໄວຣັດສ໌ຊະນິດນີ້ຈາກແມ່ຫາລູກ.
ສະນັ້ນ ກະຊວງສາທາລະນະສຸກໄດ້ຮຽກຮ້ອງຂໍ້ມູນກ່ຽວກັບແມ່ ແລະ ລູກທີ່ໄດ້ຕິດເຊື້ອໄວຣັດສ໌ຊະນິດນີ້ວ່າມີຫຼາຍ ປານໃດ ເພື່ອຈະນຳໃຊ້ຂໍ້ມູນດັ່ງກ່າວນີ້ເຂົ້າໃນການປັບປຸງໂຄງການສັກຢາປ້ອງກັນການຕິດເຊື້ອໄວຣັດສ໌ຊະນິດນີ້ໃນ ອະນາຄົດ.

3. ການຄັດເລືອກຜູ້ຂ້ຳຮ່ວມໃນການຄົ້ນຄ້ວາ
ພວກເຮົາໄດ້ຄັດເລືອກເອົາເດັກນ້ອຍ (ອາຍຸ 5 ຫາ 9 ປີ) ແລະ ແມ່ຂອງເຂົາເຈົ້າ (ອາຍຸ 15 ຫາ 45 ປີ)

4. ວິທີການຂອງການຄົ້ນຄ້ວາ
ພວກເຮົາຈະເກັບຕົວຢ່າງເລືອດຈາກປາຍນິ້ວມືຂອງທ່ານດ້ວຍເຂັ້ມເຈາະທີ່ປັດສະຈາກເຊື້ອຕ່າງໆ. ພວກເຮົາຈະໃຊ້ ເຈ້ຍຊັບເອົາເລືອດຂອງທ່ານຈາກບາດນ້ອຍໆຢູ່ປາຍນິ້ວມືແລ້ວຢອດໃສ່ແຜ່ນເຈ້ຍເພື່ອທຳການບົ່ງມະຕິ. ເຊິ່ງປະລິມານ ທີ່ພວກເຮົາຕ້ອງການຢູ່ລະຫວ່າງ 0.05ml ຫາ 0.2ml. ຂັ້ນຕອນການເກັບເລືອດທັງໝົດຈະຖືກປະຕິບັດໂດຍ ພະນັກງານເຕັກນິກທີ່ໄດ້ຮັບການຝຶກອົບຮົມຈາກການຄົ້ນຄ້ວາຄັ້ງນີ້. ພວກເຂົາຈະຕິດແຜ່ນຕິດບາດທີ່ສະອາດບົນ ບາດແຜຂອງທ່ານ ເພື່ອປ້ອງກັນການຕິດເຊື້ອພະຍາດຕ່າງໆໃນພາຍຫຼັງ. ພວກເຮົາຈະໃຊ້ເຂັ້ມເຈາະເລືອດອັນໃໝ່ ບໍ່ຊ້ຳ ກັນໃນແຕ່ຄົນ.

5. ການປົກປ້ອງຄຸ້ມຄອງຄວາມເປັນສ່ວນຕົວ ແລະ ຮັກສາຄວາມລັບຂອງຜູ້ເຂົ້າຮ່ວມ

ພວກເຮົາຈະເກັບຮັກສາຂໍ້ມູນຂອງທ່ານ ແລະ ເດັກໄວ້ຢ່າງປອດໄພ, ເປັນຄວາມລັບ ແລະ ຈະບໍ່ໄດ້ບັນທຶກຊື່ຂອງທ່ານໃສ່. ນອກຈາກພະນັກງານ-ທີມງານຄົ້ນຄ້ວາແລ້ວບໍ່ມີໃຜທີ່ຈະສາມາດເຂົ້າເຖິງຂໍ້ມູນສ່ວນຕົວຂອງທ່ານໄດ້.

6. ສິດໃນການປະຕິເສດ ຫຼື ຖອນໂຕ

ການເຂົ້າຮ່ວມໃນການຄົ້ນຄວ້າຄັ້ງນີ້ຂອງທ່ານແມ່ນເປັນໄປຕາມຄວາມສະມັກໃຈ. ມັນແມ່ນສິດທິຂອງທ່ານໃນການເລືອກທີ່ຈະເຂົ້າຮ່ວມ ຫຼື ບໍ່ເຂົ້າຮ່ວມ. ການປະຕິເສດເພື່ອເຂົ້າຮ່ວມການຄົ້ນຄວ້າຈະບໍ່ສົ່ງຜົນສະທ້ອນຫຍັງເຖິງທ່ານ. ທ່ານສາມາດຢຸດການເຂົ້າຮ່ວມໃນການຄົ້ນຄວ້າຄັ້ງນີ້ໄດ້ທຸກເວລາຕາມທີ່ທ່ານປະສົງ. ການຢຸດເພື່ອເຂົ້າຮ່ວມໃນຊ້ວງໃດຊ້ວງໜຶ່ງຂອງການຄົ້ນຄວ້າກໍ່ຈະບໍ່ສົ່ງຜົນສະທ້ອນຫຍັງເຖິງທ່ານອີກເຊັ່ນກັນ.

ຂ້າງເທິງນີ້ແມ່ນຂໍ້ມູນກ່ຽວກັບການຄົ້ນຄ້ວາຄັ້ງນີ້ ແລະ ພວກເຮົາກຳລັງເຊີນທ່ານເພື່ອເປັນສ່ວນໜຶ່ງຂອງການຄົ້ນຄ້ວາ. ກະລຸນາຕິດຕໍ່ສະມາຊິກທ່ານໃດທ່ານໜຶ່ງຂອງທີມງານຄົ້ນຄ້ວາຖ້າຫາກມີຄຳຖາມ ຫຼື ຂໍ້ຂ້ອງໃຈຕ່າງໆ.

ບຸກຄົນທີ່ຮັບຜິດຊອບໃນການສຶກສາຄົ້ນຄ້ວາ.

Annoh Xeuatvongsa MD, PhD
ຫົວໜ້າ
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ສູນສຸຂະພາບແມ່ ແລະ ເດັກ
ກະຊວງສາທາລະນະສຸກແຫ່ງສປປລາວ

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ຂ້າພະເຈົ້າໄດ້ອ່ານຂໍ້ມູນທີ່ໄດ້ກ່າວມານັ້ນ ຫຼື ໄດ້ຮັບຮູ້. ຂ້ອຍໄດ້ມີໂອກາດຖາມຄຳຖາມກ່ຽວກັບຂໍ້ມູນດັ່ງກ່າວ ແລະ ບັນຫາຕ່າງໆທີ່ຂ້າພະເຈົ້າໄດ້ຖາມແມ່ນໄດ້ຖືກຕອບດ້ວຍຄວາມເພິ່ງພໍໃຈຂອງຂ້າພະເຈົ້າ. ສະນັ້ນ ຂ້າພະເຈົ້າ ຍິນຍອມ ສະມັກໃຈເຂົ້າເປັນຜູ່ເຂົ້າຮ່ວມໃນການຄົ້ນຄວ້າຄັ້ງນີ້ ແລະ ພ້ອມທັງເຂົ້າໃຈວ່າ ຂ້າພະເຈົ້າມີສິດໃນການປະຕິເສດເພື່ອຖອນ ໂຕຈາກການຄົ້ນຄວ້າໃນເວລາໃດກໍ່ໄດ້ໂດຍທີ່ບໍ່ມີຜົນກະທົບໃດໆທັງສິ້ນຕໍ່ລະບົບການປິ່ນປົວ-ຮັກສາສຸຂະພາບຂອງ ຂ້າພະເຈົ້າ.

ຊື່ຂອງຜູ່ເຂົ້າຮ່ວມ ລາຍເຊັນຂອງຜູ່ເຂົ້າຮ່ວມ ວັນທີ (ວັນທີ/ເດືອນ/ປີ)

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ຖ້າຫາກບໍ່ສາມາດອ່ານ ຫຼື ຂຽນ
ພະຍານທີ່ເປັນໂຕແທນໃຫ້ຜູ່ກົກໜັງສືຈຳເປັນຕ້ອງເຊັນຕາງໜ້າ (ຖ້າເປັນໄປໄດ້, ຕົວພະຍານຄວນໄດ້ຮັບການເລືອກຈາກຜູ່ ສະມັກເຂົ້າຮ່ວມທີ່ກົກໜັງສື ແລະ ຫຼີກລ່ຽງການມີສ່ວນພົວພັນໃດໆທັງສິ້ນກັບທີມງານຄົ້ນຄວ້າ). ຜູ່ສະມັກເຂົ້າຮ່ວມທີ່ກົກ ໜັງສື ຄວນຈຳລາຍນິ້ວໂປ້ມືເພື່ອເປັນຫຼັກຖານເຊັ່ນກັນ.

ຂ້າພະເຈົ້າໄດ້ເປັນພະຍານໃນການອ່ານຢ່າງລະອຽດຂອງແບບຟອມຍິນຍອມຫາຜູ່ທີ່ມີຄວາມເໝາະສົມເປັນຜູ່ເຂົ້າຮ່ວມ, ແລະ ຜູ່ກ່ຽວໄດ້ມີໂອກາດຊັກຖາມຄຳຖາມ-ຂໍ້ຂ້ອງໃຈຕ່າງໆ. ຂ້າພະເຈົ້າຂໍຢືນຍັນວ່າຜູ່ກ່ຽວໄດ້ໃຫ້ຄວາມຍິນຍອມຢ່າງ ອິດສະຫຼະ.

ຊື່ຂອງຜູ່ເຂົ້າຮ່ວມ ລາຍເຊັນຂອງຜູ່ເຂົ້າຮ່ວມ ວັນທີ (ວັນທີ/ເດືອນ/ປີ)

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ຂ້າພະເຈົ້າໄດ້ອ່ານ ຫຼື ເປັນພະຍານໃນການອ່ານຢ່າງລະອຽດຂອງແບບຟອມຍິນຍອມຫາຜູ່ທີ່ມີຄວາມເໝາະສົມເປັນຜູ່ເຂົ້າ ຮ່ວມ, ແລະ ຜູ່ກ່ຽວໄດ້ມີໂອກາດຊັກຖາມຄຳຖາມ-ຂໍ້ຂ້ອງໃຈຕ່າງໆ. ຂ້າພະເຈົ້າຂໍຢືນຍັນວ່າຜູ່ກ່ຽວໄດ້ໃຫ້ຄວາມຍິນຍອມ ຢ່າງອິດສະຫຼະ.

ຊື່ຂອງຜູ່ເຂົ້າຮ່ວມ ລາຍເຊັນຂອງຜູ່ເຂົ້າຮ່ວມ ວັນທີ (ວັນທີ/ເດືອນ/ປີ)

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ສຳເນົາແບບຟອມການຍິນຍອມໄດ້ມອບໃຫ້ຜູ່ເຂົ້າຮ່ວມ 1 ສະບັບ

ຕາຕະລາງການຝຶກອົບຮົມ 2012

ວັນທີ 23 ມັງກອນ 2012

08:00	ລົງທະບຽນ	
08:30	ເປີດການຝຶກອົບຮົມ	ດຣ. ແພງຕາ, ດຣ. ຮາຈີຢະ
09:00-10:00	ຈຸດປະສົງ ຂອງການຝຶກອົບຮົມ	ດຣ. ອານິນ
10:00-10:15	ພັກຜ່ອນ	
10:15-10:30	ການອອກແບບການສຶກສາ	ດຣ. ຮາຈີຢະ, ດຣ. ອານິນ
10:30-12:00	ຈັດລຽງລາຍຊື່ຫຼັງຄາເຮືອນ (ບັນຍາຍ ແລະ ປະຕິບັດຕົວຈິງ)	ດຣ. ທອງຈັນ
12:00-13:30	ພັກກິນເຂົ້າທ່ຽງ	
13:30-15:00	ທຳຄວາມເຂົ້າໃຈກ່ຽວກັບແບບຟອມສອບຖາມ ແລະ ວິທີການສຳພາດ (ບັນຍາຍ ແລະ ປະຕິບັດຕົວຈິງ)	ດຣ. ທອງຈັນ
15:00-15:15	ພັກຜ່ອນ	
15:15-16:15	ໜ້າທີ່ ແລະ ບົດບາດ ຂອງຜູ້ເກັບຂໍ້ມູນ, ຂອງຜູ້ຕິດຕາມ ພາກສະໜາມ ແລະ ຂອງທີ່ປຶກສາຂັ້ນສູນກາງ	ດຣ. ແພງຕາ, ດຣ. ອານິນ
16:15-16:30	ຄຳຖາມ ແລະ ຄຳຕອບ.	

ວັນທີ 24 ມັງກອນ 2012

08:30-10:30	ການເກັບຕົວຢ່າງເລືອດ (ບັນຍາຍ, ສາທິດ ແລະ ການປະຕິບັດຕົວຈິງ; ອຸປະກອນ)	ດຣ. ທອງຈັນ
10:30-10:40	ພັກຜ່ອນ	
10:40-11:20	ບັນຫາກ່ຽວກັບຈັນຍາທຳແພດ ດ້ານການຄົ້ນຄວ້າ	ດຣ. ອານິນ
11:20-12:00	ການຊຸນເຄື່ອງໝາຍສະແດງຕົວເລກ (ອຸປະກອນ, ແບບຟອມສອບຖາມ)	ດຣ. ອານິນ
	ລາຍງານການນຳໃຊ້ SMS ແລະ ການລົງເກັບຂໍ້ມູນ (ບັນຍາຍ ແລະ ປະຕິບັດຕົວຈິງ)	ດຣ. ອານິນ
12:00-13:00	ບັນຫາເລື່ອງການເງິນ ແລະ ການຄຳນວນ.	
13:00	ປິດການຝຶກອົບຮົມ	ດຣ. ແພງຕາ, ດຣ. ຮາຈີຢະ

ລ/ທ	ຊື່ ແລະ ນາມສະກຸນ	ໜ້າທີ່ຮັບຜິດຊອບໃນການຄົ້ນຄວ້າ	ຕຳແໜ່ງ
1	ນ. ວິລະເພັນ ແຍງມາລາ	ຜູ້ຕິດຕາມພາກສະໜາມ ນະຄອນຫຼວງ	ພະນັກງານ ວິຊາການ
2	ດຣ. ຄຳຕຸ່ນ ຄວງວັນ	ຜູ້ລົງເກັບຂໍ້ມູນ ນະຄອນຫຼວງວຽງຈັນ	ພະນັກງານລະບາດວິທະຍາ
3	ນ. ບຸນແຕ່ງ ພົມມະວົງສາ	ຜູ້ລົງເກັບຂໍ້ມູນ ນະຄອນຫຼວງວຽງຈັນ	ຫົວໜ້າພະແນກວິເຄາະ
4	ທ. ຄຳແສນ ພານຸວົງ	ຜູ້ລົງເກັບຂໍ້ມູນ ນະຄອນຫຼວງວຽງຈັນ	ພະນັກງານລະບາດວິທະຍາ
5	ນ. ແສງເພັດ ດວງສະໄຫວ	ຜູ້ລົງເກັບຂໍ້ມູນ ນະຄອນຫຼວງວຽງຈັນ	ພະນັກງານວິເຄາະ
6	ແປງທອງ ແກ້ວມະຫາວົງ	ຜູ້ລົງເກັບຂໍ້ມູນ ນະຄອນຫຼວງວຽງຈັນ	ພະນັກງານລະບາດວິທະຍາ
7	ນ. ລຳທອງ ພາມີໄຊ	ຜູ້ລົງເກັບຂໍ້ມູນ ນະຄອນຫຼວງວຽງຈັນ	ພະນັກງານວິເຄາະ
8	ທ. ທຸມແພງ ທິອ່ອນແກ້ວ	ຜູ້ຕິດຕາມພາກສະໜາມ ແຂວງອຸດົມໄຊ	ພະນັກງານລະບາດວິທະຍາ
9	ພອນປະເສີດ	ຜູ້ລົງເກັບຂໍ້ມູນ ແຂວງອຸດົມໄຊ	ພະນັກງານລະບາດວິທະຍາ
10	ທອງຄຳ ແກ້ວບົວຈັນ	ຜູ້ລົງເກັບຂໍ້ມູນ ແຂວງອຸດົມໄຊ	ພະນັກງານວິເຄາະ
11	ນ. ເກດຈັນ ສີສະຫວັດ	ຜູ້ຕິດຕາມພາກສະໜາມ ແຂວງບໍ່ແກ້ວ	ພະນັກງານລະບາດວິທະຍາ
12	ທ. ຄຳສົມ	ຜູ້ລົງເກັບຂໍ້ມູນ ແຂວງບໍ່ແກ້ວ	ພະນັກງານລະບາດວິທະຍາ
13	ນ. ສຸຈິດຕາ ເຮືອງມີສະຫວັດ	ຜູ້ລົງເກັບຂໍ້ມູນ ແຂວງບໍ່ແກ້ວ	ພະນັກງານວິເຄາະ
14	ທ. ບູນເລື່ອນ ສິດດາວັນ	ຜູ້ລົງເກັບຂໍ້ມູນ ແຂວງບໍ່ແກ້ວ	ພະນັກງານລະບາດວິທະຍາ
15	ທອງເພັດ	ຜູ້ລົງເກັບຂໍ້ມູນ ແຂວງບໍ່ແກ້ວ	ພະນັກງານວິເຄາະ
16	ທ. ພັນທະລີ	ຜູ້ຕິດຕາມພາກສະໜາມ ແຂວງຫຼວງພະບາງ	ພະນັກງານລະບາດວິທະຍາ
17	ນ. ສົມດີ	ຜູ້ລົງເກັບຂໍ້ມູນ ແຂວງຫຼວງພະບາງ	ພະນັກງານລະບາດວິທະຍາ
18	ນ. ມະນີສຸກ ພົນປະດິດ	ຜູ້ລົງເກັບຂໍ້ມູນ ແຂວງຫຼວງພະບາງ	ພະນັກງານວິເຄາະ
19	ທ. ອຽ ທອງ	ຜູ້ຕິດຕາມພາກສະໜາມ ແຂວງຫົວພັນ	ພະນັກງານເຝົ້າລະວັງ
20	ທ. ພັນທອງ ສຸວັນນາລີ	ຜູ້ລົງເກັບຂໍ້ມູນ ແຂວງຫົວພັນ	ພະນັກງານເຝົ້າລະວັງ
21	ທ. ບຸນຕຽນ ສຸພັນທອງ	ຜູ້ລົງເກັບຂໍ້ມູນ ແຂວງຫົວພັນ	ພະນັກງານລະບາດວິທະຍາ
22	ນ. ປ້ອມ ແກ້ວທອມດີ	ຜູ້ລົງເກັບຂໍ້ມູນ ແຂວງຫົວພັນ	ພະນັກງານວິເຄາະ
23	ທ. ຄຳພັນ ແກ້ວບຸນຕາ	ຜູ້ລົງເກັບຂໍ້ມູນ ແຂວງຫົວພັນ	ພະນັກງານວິເຄາະ
24	ນ. ສີອຳພອນ ວັນນີທອນ	ຜູ້ຕິດຕາມພາກສະໜາມ ແຂວງໄຊຍະບູລີ	ພະນັກງານລະບາດວິທະຍາ
25	ທ. ຕຸກ ສຸວັນນະສິງ	ຜູ້ລົງເກັບຂໍ້ມູນ ແຂວງໄຊຍະບູລີ	ພະນັກງານວິເຄາະ
26	ດຣ. ສຸວັນໄຊ ເພັດທະນາໄຊ	ຜູ້ລົງເກັບຂໍ້ມູນ ແຂວງໄຊຍະບູລີ	ພະນັກງານລະບາດວິທະຍາ
27	ທ. ທອງດີ ພວງແກ້ວ	ຜູ້ລົງເກັບຂໍ້ມູນ ແຂວງໄຊຍະບູລີ	ພະນັກງານວິເຄາະ
28	ທ. ສີງຄາມ ມາສຸວັນ	ຜູ້ລົງເກັບຂໍ້ມູນ ແຂວງໄຊຍະບູລີ	ພະນັກງານລະບາດວິທະຍາ
29	ນ. ສົມສະນິດ ອວນທະວົງ	ຜູ້ຕິດຕາມພາກສະໜາມ ແຂວງຊຽງຂວາງ	ພະນັກງານເຝົ້າລະວັງ
30	ທ. ທຸມພອນ ບຸນລ້ຽງ	ຜູ້ລົງເກັບຂໍ້ມູນ ແຂວງຊຽງຂວາງ	ພະນັກງານເຝົ້າລະວັງ
31	ນ. ຄຳຫຼ້າ ຍອຍສາຍຄຳ	ຜູ້ລົງເກັບຂໍ້ມູນ ແຂວງຊຽງຂວາງ	ພະນັກງານວິເຄາະ
32	ທ. ຄູນລາວັນ ແກ້ວລະກົດໂພສີ	ຜູ້ຕິດຕາມພາກສະໜາມ ແຂວງວຽງຈັນ	ພະນັກງານລະບາດວິທະຍາ
33	ນ. ມະນີສິງ ວິໄລຫິງ	ຜູ້ລົງເກັບຂໍ້ມູນ ແຂວງວຽງຈັນ	ພະນັກງານລະບາດວິທະຍາ
34	ນ. ບຸນວັງ ພິນິດ	ຜູ້ລົງເກັບຂໍ້ມູນ ແຂວງວຽງຈັນ	ພະນັກງານວິເຄາະ
35	ນ. ສີສຸພັນ ດາວັນ	ຜູ້ລົງເກັບຂໍ້ມູນ ແຂວງວຽງຈັນ	ພະນັກງານລະບາດວິທະຍາ
36	ນ. ບົວຊອນ ວິໄລລິດ	ຜູ້ລົງເກັບຂໍ້ມູນ ແຂວງວຽງຈັນ	ພະນັກງານວິເຄາະ

37	ນ. ອໍລະໄທ ທອງພູນ	ຜູ້ຕິດຕາມພາກສະໜາມ ແຂວງສະຫວັນນະເຂ	ພະນັກງານລະບາດວິທະຍາ
38	ທ. ອິນແປງ ນັນທະນິນຕຼ	ຜູ້ລົງເກັບຂໍ້ມູນ ແຂວງສະຫວັນນະເຂດ	ພະນັກງານລະບາດວິທະຍາ
39	ທ. ສາລິກາ ກຸງດສະຖິດ	ຜູ້ລົງເກັບຂໍ້ມູນ ແຂວງສະຫວັນນະເຂດ	ພະນັກງານວິເຄາະ
40	ທ. ຄຳພາ ແສນວິເສດ	ຜູ້ລົງເກັບຂໍ້ມູນ ແຂວງສະຫວັນນະເຂດ	ພະນັກງານວິເຄາະ
41	ນ. ພູເຂົາ	ຜູ້ລົງເກັບຂໍ້ມູນ ແຂວງສະຫວັນນະເຂດ	ພະນັກງານລະບາດວິທະຍາ
42	ນ. ສີປະເສີດ	ຜູ້ລົງເກັບຂໍ້ມູນ ແຂວງສະຫວັນນະເຂດ	ພະນັກງານວິເຄາະ
43	ນ. ບຸນທັນ ສຸວັນນະວົງ	ຜູ້ລົງເກັບຂໍ້ມູນ ແຂວງສະຫວັນນະເຂດ	ພະນັກງານລະບາດວິທະຍາ
44	ນ. ບູນຕາ ໄຊຍະວົງ	ຜູ້ລົງເກັບຂໍ້ມູນ ແຂວງສະຫວັນນະເຂດ	ພະນັກງານວິເຄາະ
45	ດຣ. ໄລຈັນ ຈັນສິນາ	ຜູ້ລົງເກັບຂໍ້ມູນ ແຂວງສະຫວັນນະເຂດ	ພະນັກງານລະບາດວິທະຍາ
46	ດຣ. ວຽງໄຊພອນ ມົລຸນສາ	ຜູ້ຕິດຕາມພາກສະໜາມ ແຂວງສາລະວັນ	ພະນັກງານລະບາດວິທະຍາ
47	ດຣ. ສຸພາລັກ ແກ້ວອຸ່ນເຮືອນ	ຜູ້ລົງເກັບຂໍ້ມູນ ແຂວງສາລະວັນ	ພະນັກງານວິເຄາະ
48	ທ. ດາດ ສາມຄຳ	ຜູ້ລົງເກັບຂໍ້ມູນ ແຂວງສາລະວັນ	ພະນັກງານລະບາດວິທະຍາ
49	ທ. ແສງດາວວີ ສີອ່ອນສາ	ຜູ້ລົງເກັບຂໍ້ມູນ ແຂວງສາລະວັນ	ພະນັກງານລະບາດວິທະຍາ
50	ທ. ວິໄລວົງ	ຜູ້ລົງເກັບຂໍ້ມູນ ແຂວງສາລະວັນ	ພະນັກງານວິເຄາະ
51	ນ. ວຽງສະຫວັນ ພິມພິແສງ	ຜູ້ຕິດຕາມພາກສະໜາມ ແຂວງຈຳປາສັກ	ພະນັກງານລະບາດວິທະຍາ
52	ທ. ຄຳຟ້າ ສຸພາວະດີ	ຜູ້ລົງເກັບຂໍ້ມູນ ແຂວງຈຳປາສັກ	ພະນັກງານລະບາດວິທະຍາ
53	ທ. ວິໄຊ ຊູນໄທ	ຜູ້ລົງເກັບຂໍ້ມູນ ແຂວງຈຳປາສັກ	ພະນັກງານລະບາດວິທະຍາ
54	ນ. ໄຄສີ ວົງວິໄລ	ຜູ້ລົງເກັບຂໍ້ມູນ ແຂວງຈຳປາສັກ	ພະນັກງານລະບາດວິທະຍາ
55	ນ. ພິມມະສອນ ດວງວິໄລ	ຜູ້ລົງເກັບຂໍ້ມູນ ແຂວງຈຳປາສັກ	ພະນັກງານວິເຄາະ
56	ທ. ມາລີ ທູບທອງ	ຜູ້ລົງເກັບຂໍ້ມູນ ແຂວງຈຳປາສັກ	ພະນັກງານລະບາດວິທະຍາ
57	ນ. ເສົາວະລິດ ສີເມືອງ	ຜູ້ລົງເກັບຂໍ້ມູນ ແຂວງຈຳປາສັກ	ພະນັກງານວິເຄາະ
58	ນ. ໄພບູນ ຈັນສະຫວັດ	ຜູ້ລົງເກັບຂໍ້ມູນ ແຂວງຈຳປາສັກ	ພະນັກງານວິເຄາະ
59	ນ. ມະນີອອນ ບົວທອງ	ຜູ້ລົງເກັບຂໍ້ມູນ ແຂວງຈຳປາສັກ	ພະນັກງານວິເຄາະ
60	ດຣ. ດາລຸນີ ພອນແກ້ວ	ທີ່ປຶກສາຂັ້ນສູນກາງ ນະຄອນຫຼວງວຽງຈັນ	ພະນັກງານສູນວິເຄາະແລະລະບາດວິທະຍາ
61	ດຣ. ອານົນ	ທີ່ປຶກສາຂັ້ນສູນກາງ ແຂວງອຸດົມໄຊ	ຫົວໜ້າສູນສັກຢາກັນພະຍາດ
62	ດຣ. ຂັນໃສ ແສງໄຊຍາ	ທີ່ປຶກສາຂັ້ນສູນກາງ ແຂວງບໍ່ແກ້ວ	ພະນັກງານສູນວິເຄາະແລະລະບາດວິທະຍາ
63	ດຣ. ວິລະສັກ ສົມອຸໄລ	ທີ່ປຶກສາຂັ້ນສູນກາງ ແຂວງຫຼວງພະບາງ	ພະນັກງານສູນວິເຄາະແລະລະບາດວິທະຍາ
64	ດຣ. ຄຳເພັດ ຫຼວງລາດ	ທີ່ປຶກສາຂັ້ນສູນກາງ ແຂວງຫົວພັນ	ພະນັກງານສູນສັກຢາກັນພະຍາດ
65	ດຣ. ກອງໄຊ	ທີ່ປຶກສາຂັ້ນສູນກາງ ແຂວງໄຊຍະບູລີ	ພະນັກງານສູນສັກຢາກັນພະຍາດ
66	ດຣ. ສຸພັດສອນ ຫົວທຸກຄຳ	ທີ່ປຶກສາຂັ້ນສູນກາງ ແຂວງຊຽງຂວາງ	ພະນັກງານສູນວິເຄາະແລະລະບາດວິທະຍາ
67	ດຣ. ດາສະຫວັນ ມະນີວົງ	ທີ່ປຶກສາຂັ້ນສູນກາງ ແຂວງວຽງຈັນ	ພະນັກງານສູນວິເຄາະແລະລະບາດວິທະຍາ
68	ດຣ. ຈັນໃສ ປັດທຳມະວົງ	ທີ່ປຶກສາຂັ້ນສູນກາງ ແຂວງສະຫວັນນະເຂດ	ພະນັກງານສູນສັກຢາກັນພະຍາດ
69	ດຣ. ຈັນທະວີ ສຸລະພີ	ທີ່ປຶກສາຂັ້ນສູນກາງ ແຂວງສາລະວັນ	ພະນັກງານສູນວິເຄາະແລະລະບາດວິທະຍາ
70	ດຣ. ສົມຫວັງ ບຸບຜາພັນ	ທີ່ປຶກສາຂັ້ນສູນກາງ ແຂວງຈຳປາສັກ	ພະນັກງານສູນສັກຢາກັນພະຍາດ
71	ດຣ. ແພງຕາ ວົງພຣະຈັນ	ວິທະຍາກອນ	ຫົວໜ້າສູນວິເຄາະແລະລະບາດວິທະຍາ
72	ດຣ. ບຸນຖະໜອມ ແສງແກ້ວປະເສີດ	ວິທະຍາກອນ	ພະນັກງານສູນວິເຄາະແລະລະບາດວິທະຍາ
73	ທ. ຄຳເພັດ	ຄົນຂັບລົດ	ພະນັກງານສູນສັກຢາກັນພະຍາດ
74	ທ. ບົວວັນ ບົວລີວັນ	ການເງິນ	ພະນັກງານສູນສັກຢາກັນພະຍາດ

75	ນ. ບຸນສະໜອງ ໄຊຍະສິນ	ກາມເງິນ	ພະນັກງານສູນສັກຢາກັນພະຍາດ
76	ນ. ບຸນເພັດ ສີສຸມັ່ງ	ກາມເງິນ	ພະນັກງານສູນສັກຢາກັນພະຍາດ
77	ນ. ໄພລຳພັນ ມະນີວົງ	ທີ່ປຶກສາຂັ້ນສູນກາງ ແຂວງວຽງຈັນ	ພະນັກງານລະບາດວິທະຍາ
78	ດຣ. ວິລະພັນ ແຍງມາລາ	ທີ່ປຶກສາຂັ້ນສູນກາງ ແຂວງສະຫວັນນະເຂດ	ພະນັກງານເຝົ້າລະວັງ

ເອກະສານສະບັບນີ້ແມ່ນບົດໂຄງຮ່າງບົດລາຍງານ ໃນເດືອນ ມິຖຸນາ 2013 ກ່ຽວກັບການສຶກສາອັດຕາການຕິດເຊື້ອ ອັກເສບຕັບຊະນິດ ບີ ໃນ ສປປ ລາວ. ບົດລາຍງານສະຫຼຸບສຸດທ້າຍສະບັບຄົບຖ້ວນຈະແລ້ວສົມບູນພາຍໃນມໍ່ໆນີ້

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ດຣ. ມາຊາຮິໂກະ ຮາຈິຍະ, PhD, MD, MPH (ຜູ້ທີ່ເປັນຕົ້ນຕໍໃນການເຮັດການສຶກສາຄົ້ນຄວ້າ)
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Hepatitis B Prevalence Survey in Lao PDR

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