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Phnom Penh, 31 March, 2015

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Ref: Consulting Services of Household Survey for Model Health Villages, ADB Grant No.0231 CAM (SF), Contract No.HSSP2/ADB-GMS/CQS/HS/13/02

Subject: Submission of FINAL REPORT on Household Baseline Survey Greater Mekong Sub-Regional Communicable Disease Control Project- 2 (GMS-CDC2), Cambodia

Dear Prof. Eng Huot,

With reference to the above mentioned contract and subject, we hereby would like to submit you the **FINAL REPORT on Household Baseline Survey, Greater Mekong Sub-Regional Communicable Disease Control Project- 2 (GMS-CDC2), Cambodia.**

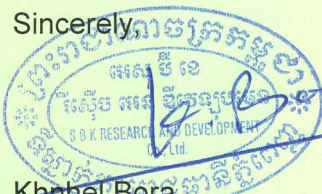
The report has been finalized incorporating valuable comments and suggestions made by the CDC2 project team members and respective division representatives of the MOH in a workshop organized to present the draft findings of the survey on 16th January 2014 at CDC meeting hall MOH. The report contains a comprehensive Executive Summary with detail descriptions and analysis of the data. Two types of data have been analyzed: i) 3,600 household survey data from 180 villages; and ii) 177 FGDs with VMG/VHSGs using appropriate charts and tables.

In general the findings of this Baseline Survey show that 180 project target villages are below the national average in terms of maternal, child health, communicable diseases and environmental health indicators. It is recommended that a coordinated and targeted intervention in many of the remote and ethnic minority villages in the coming days is essential to meet the expected outcome within the project period.

Please find attached Report for your reference.

Thank you for your kind cooperation and support.

Sincerely,



Khnhel Bora
Executive Director

Enclosed: FINAL REPORT on Household Baseline Survey (3 hard copies with 1 CD),
Raw Data Table in SPSS with Output Tables



FINALREPORT

Household Baseline Survey

**Greater Mekong Sub-Region Regional Communicable Disease Control Project- 2
(GMS-CDC2), Cambodia**

Contract No. HSSP2/ADB-GMS/CQS/HS/13/02

[SUBMITTED TO:](#)

MINISTRY OF HEALTH, HEALTH SECTOR SUPPORT PROGRAM

[SUBMITTED BY:](#)



SBK RESEARCH & DEVELOPMENT (SBK R&D)

MARCH 2015

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ACRONYMS	
ADB	Asian Development Bank
ANC	Antenatal care
BF	Breastfeeding
CDC	Communicable Diseases Control
CDHS	Cambodia Demographic and Health Survey
CLV	Cambodia-Laos-Vietnam
DHS	Demographic and Health survey
GMS	Greater Mekong Sub-Region
HC	Health Centre
HHs	Households
HIV/AIDS	Human Immunodeficiency Virus/Acquired Immunodeficiency Syndrome
HSSP	Health Sector Support Project
IAs	Implementing Agencies
KPC	Knowledge Attitude and Coverage
MoH	Ministry of Health
NIP	National Immunization Program
OD	Operational District
PHD	Provincial Health Department
PIUs	Project Implementing Units
RH	Referral Hospital
SBK R&D	SBK Research and Development
SRS	Simple Random Sampling
SPSS	Statistical Package for the Social Science
TBA	Traditional Birth Attendant
ToR	Terms of Reference
VMG/VHSG	Village Management Group/Village Health Support Group
WHO	World Health Organization

EXECUTIVE SUMMARY

Introduction

The Ministry of Health (MOH) contracted SBK Research & Development (SBK R&D) to undertake **(a) a baseline household survey in 3rd. quarter, 2014; (b) an end-line household survey at the conclusion of the project in the 3rd. quarter of 2015 or 2016** in each of the 180 villages that participate in the GMS-CDC2 project in Cambodia. The 180 villages are located in 56 border communes (Cambodia, Vietnam and Lao PDR) of Cambodia's 18 operational health districts (ODs) of 10 Provinces¹ .

The purpose of the survey was to establish baseline values on health status and care practices related to CDC in each 180 project targeted villages. The major outcome of the survey is to apply findings to inform project interventions and to serve as a benchmark for measuring impact of project activities on changes in health status and CDC practices.

Findings

Profile of Respondents

Among the 3,600 respondents 95% (n=3,424) were female and 5% (n=176) were male. The majority of the HHs respondents were young: 68 % of them being between 18 to 30 years old. 26% of respondents spoke another language other than Khmer. Among the survey respondents 32% were illiterate. Significantly higher proportion (69%) of illiterate respondents was reported in Ratanakiri and Mondulkiri (46%). Majority (75%) of respondents were farmers.

Age, Sex and Poverty status of household members

In the 3, 600 households there were 18,404 total populations. The average family size was 5.1. The proportion of male and female was found equal among the survey population. Under 5 years population constituted 24% and children under 12 years of age accounted for 41% in the total populations. Overall, 52% of population was married, 45% were single, 3% was widowed/widower and 1% had divorced.

Of the 3,600 HHs interviewed, 804 household (22%) were officially designated as poor and 78% were non poor based on their ID card.

Education Status

The overall level of literacy in survey area was low (49%) compared to CDHS 2010 (77%). Highest percentage of illiterate population was found in Ratanakiri (72%), 58% in Steung Treng and 57% in Mondulkiri. Majority of the educated had just completed primary education (38%), with 12% completed secondary school and 3% with high school level.

¹Stung Treng, Ratanakiri, Mondulkiri & Kratie (1st Phase)
Kampong Cham, Prey Veng, Svey Rieng, Kandal, Takeo, Kampot (2nd Phase)

Main occupation of HHs members (above 16 yrs of age)

About 35 different job options were mentioned by the respondents in 10 provinces. Majority of the respondents were farmers (40%). Other major jobs were: paid labourer and seller, housewife, home maker, fishing, teacher, private business employee, government employee, village chief etc. 8% had no job.

Distance of Household (HHs) residence to the International Border

More than half (57%) of the sampled households were within 9 Km from the nearest international boarder (Vietnam & Lao PDR). Among them 41% were even within less than 5 Km from the border. 71% of the households were in less than 15 Km and other 19% were in more than 20 Km from the border.

Housing and Assets Owned

96% of HHs owned their own house; almost the same percentage to all provinces. Most of the houses had some form of “permanent” roof, with the majority (75%) using zinc or GI sheeting. More expensive forms of roofing such as brick/tiles or asbestos were less commonly observed (16%), and 8% of all HHs still use a “traditional” roof made from local materials such as thatch, straw or bamboo.

Antenatal care (ANC) services

Women form 15- 49 years who received recommended 4 times ANC check-up was 52% which is slightly lower than the CDHS 2010. 52% of women had received ANC services four times during their last pregnancy, and 12% said they did not receive any ANC services in their last pregnancy. CDHS 2010 shows 59% of pregnant women had received recommended 4 or more an antenatal care services.

Child Delivery

61% of births occurred in health facilities, 50% in the public sector, 6% in private hospital/clinic and another 5% in hospitals outside Cambodia (mainly in Vietnam). Another 34% took place at home and 6% assisted by TBA.

CDHS 2010 shows that 54% of births in Cambodia occurred in health facilities, 44% in the public sector, and 10% in private sectors. Another 45% took place at home.

The survey shows that 64% births are assisted by skilled providers and 34% by TBAs. 67% couples had 1-2 children, 24% had 3-4 children, 6% had 5-6 children and another 2% had 7 or more children.

CDHS 2010 shows that 71% births are assisted by a skilled provider. Another 28% are assisted by a traditional birth attendant.

Maternal TT Injection Coverage

77% of women received TT injection before the last pregnancy. More than half or 59% received the injection during their last pregnancy. Among the interviewed women who received TT injection before and during the last pregnancy, 48% received TT injection at least four times.

Contraceptive Prevalence

56% of the respondents were using any kinds of contraceptive methods to delay their pregnancy, while 3% of the respondents were pregnant during the field data collection. Pill was the most commonly-used method being taken by 44% followed by the injectable (34%). Mondulkiri province has a highest rate of women using pill with 62% and the lowest rate being in Kampong Cham at 26%.

Anti-helminthes treatment coverage among women of child bearing age

31% of women of child bearing age reported that they were treated with de-worming tablets in the last six months. Only 5% of women had received the tablets during the last pregnancy.

Child Immunization Coverage

The majority (91%) of children aged from 12- 23 months old received BCG vaccination against tuberculosis. All children in Kandal province and Takeo province were vaccinated with BCG, while the lowest rate was reported in Ratankiri (82%). The majority of children (87%) received Polio drop1, while more than three fourth or 78% received Polio drop 2 and 70% received polio drop 3. Similarly, 86% of children had received DPT 1, 78% received DPT 2 and 72% received DPT 3. Measles coverage among children from 12- 23 months was 65% which is higher compared to other age groups, but still lower than the rates of children received polio 1, 2 and 3 and DPT 1, 2 and 3. One of the reasons for this low coverage of Measles could be due to starting of Measles vaccines only at the age of nine months where there is possibility that parents might forget or busy for other household chores and do not bring their children only for Measles vaccination. Another reason could be unavailability of Measles vaccines when the child is brought to the health facility.

The fully immunized coverage in the age group 12-23 months old was found 56.5% whereas CDHS 2010 reported 74% for the same age group. The coverage of BCG was recorded 91%, Polio3 70%, DTC3 72% and Measles coverage 65%.

Knowledge on communicable diseases

56% and 54% could describe that washing hand with soap and cleaning outside and inside the house respectively were methods to prevent diseases. Only small percentage of respondents were able to mention some simple methods to prevent disease such as spraying insecticide/bonfire to expel mosquitoes, properly wearing clothes, staying away from patients and wearing mask. The survey found that overall 21% were aware on 8 cleans methods.

Knowledge and Practice about danger signs among children

A majority of respondents (90%) were able to mention high fever as a danger sign of the illness that indicates a child needs treatment. The level of knowledge was almost the same between the provinces. Cough and fast or difficult breathing were raised by 47% of respondents, while 45% said that they had to bring their children to health facilities if they found their child looks unwell or not playing normally. 9% of respondents said that watery stools or diarrhea is a sign indicates that the child needs a treatment.

Safe Drinking water

92% of respondents stated that boiling water would make water safer for drinking. Only 39% of the respondents mentioned the use of water filter. 93% of households were using any kinds of methods to make water safer for drinking, while 7% did not treat water for drinking.

Measures to control Dengue fever

76% said that using bed net and cleaning outside and inside of the houses are the best methods to keep themselves away from mosquitoes, while 53% mentioned that burying unused water containers would stop mosquito's breeding. 68% of respondents reported that their households never received Abate during the last 12 months, while 16% reported receiving one time. All households visited during the field data collection had mosquito net that can be used for sleeping.

Fever in Children

71% of children under five years old experienced fever, while only 30% got diarrhea and 52% had ARI/pneumonia during the last two weeks of data collection day. Mondulkiri has the highest rate (83%) of children having fever, while Kampot has the highest percentages of children having both diarrhea and acute respiratory infection or pneumonia (37% and 67%) respectively. 90% of respondents sought for medical advice or treatment after their children got fever. 57% respondents reported seeking first treatment for their child one day after the fever began, while 29% spent two days and 15% spent more than three days before taking action.

Health center played a major role in providing treatment service (48%) followed by private clinic/hospital and pharmacy or drugstore. Some respondents said that they sought medical treatment with hospital at neighboring countries, while only few people (1%) consulted with community health workers for treating the fever.

89% of respondents said that they normally give cold compression for their children when they got fever, while 38% of the respondents gave paracetamol, only 2% of respondents mentioned that they gave traditional medicine, such as boiled water with bark or leave of trees.

Diarrhoea in Children

74% respondents reported that a watery stool many times a day is a danger sign of diarrheal disease that indicates the child needs immediate care and treatment. Lethargic, vomiting and sunken eyes, blood in stool, unable to suck breast milk, dry lips and mouth, pale skin and abdominal boating were mentioned other danger signs. Among danger signs 78% were able to count only less than 3 points, while only 22% of respondents could state at least three danger signs.

62% of the respondents reported that increased fluid intake was a home care practice they should use when a child gets diarrhea. 85% sought for medical treatment after their children got diarrhea, with the highest rate in Ratanakiri (97%) and the lowest in Kratie (56%).

Management of Pneumonia/Acute Respiratory Infection (ARI)

78% reported that when their children under five years old had cough they had breathing problem, such as difficult breathing or breathing faster than usual with short or fast breaths. This case was very high (91%) at Kampong Cham, with the lowest (64%) at Kandal. 86% reported seeking medical advice or treatment for their child when they had cough or fast breathing in the last two weeks. 26% of respondents were not able to mention any danger signs of acute respiratory infection. Only 19% of respondents said that they know at least three danger signs of ARI, but majority of them (81%) could count only one or two signs. 32% of them said that they sought for treatment for their children two days after the child had cough. Only 3% of the respondents responded that they sought for treatment for their children 5 days or more after the children had cough. 47% of respondents reported seeking medical advice/ treatment at health center, 30% at private clinics/hospital and 24% from pharmacy or drugstore.

Combined children age 0-59 months, experienced with diarrhea and Pneumonia

Among the total 4,410 under 5 children 1,953 children were found sick with different illnesses in the past 2 weeks of the survey. Out of them 1,022 (23%) were having pneumonia and 582 (13%) were having diarrhea. This means 36% of under 5 years children in the past 2 weeks were suffering only from these two illnesses.

Prevention and Management of Dengue Fever in Children

99% of children were kept under a mosquito on the previous night of the survey. However, only less than half or 46% of the mosquito nets were treated with an insecticide when receiving them. Only 32% of children had blood tested for dengue fever when they got fever. 96% of children took any kind of drug during fever.

One of the most common measures mentioned by HHs in controlling dengue fever was regular cleaning of courtyard and burry unused items (85%). Other measures adopted were sleeping under bed net at day and night time (49%), keep house clean and tidy (29%), cover water jar/washing of water jar (21%), use of Abate or other larvicides (16%).

Control of Worm Infection (Soil Transmitted Helminthes)

44% of children aged 1-5 years old had been treated with de-worming tablets. 45% reported they received de-worming tablets for their children age 6 to 14 years old last year. School plays an important role for providing de-worming tablets (50%) for children aged from 6 to 14 years old. Poor hygiene was pointed out by many respondents (69%) as the main cause of worm infection, 43% considered eating raw or uncooked foods as a cause of the infection, while 25% indicated drinking unclean or contaminated water.

Hand washing practices

95% of respondents reported washing their hands before eating, 35% of respondents practiced washing their hands after defecation and only 30% washed their hand before preparing foods. 22% of them washed their hands before feeding children, while only 8% washed their hands after helping the child defecating.

79% of respondents reported washing their vegetables with well water. Most commonly used cleaning stuff was detergent/ liquid (71%) and soap (20%).

Drinking water

Only 64% of the HHs owned a water jar with the highest being in Kampot (100%) and Kandal (98%), and lowest being in Ratanakiri and Mondulakiri (45%). A slightly lower rate was reported in poor HHs when compared to non-poor HHs. 33% of the households who owned water jars were all covered. Majority of HHs (56%) said they clean their water jar on a weekly basis.

Hygiene and Sanitation

Only 32% of families in project villages had access to toilet facilities and 68% practice open defecation (bush/field). The highest rate of open defecation was found in Ratanakiri (85%). Children wearing shoes was reported by 100 percent respondents. Only 9% of the HHs was found clean however a significantly higher proportion (72%) of HHs were rated medium clean. Another 20% were rated poor and a very few HHs were rated very poor.

Disease Surveillance and Emerging Illnesses

62% of respondents said they report to village chief when there appear any new illnesses or symptoms in their community. Other 24% mention they report to the health centre, 17% report to VHSG/VMG, 3% report to commune chief, tell to villagers/neighbours and 11% said do nothing.

Very few people in project villages were aware of hotline phone numbers set by MOH. Out of 3,600 household respondents only 24 were able to mention some important hotline numbers. The majority preferred reporting to village chief (60%). Report to health centre staff was (36%) and report to VHSG was 36%.

Bird Flu, Hand-foot- and mouth disease, Chikungunya , Ebola virus

80% of respondents said that they have heard about Bird Flu. Most common preventive methods mentioned were use of mask (48%), do not touch/eat dead birds/bury them (44%), wash hands with soap/warm water (24%), avoid public places if one is ill (14%).

Only 32% of respondents said that they have heard about Hand-foot- and mouth disease. Most common preventive measures mentioned was washing hand with soap/water (39%) and isolate contagious people (16%). 52% were not aware on any preventive measures.

Only 17% respondents said that they have heard about Chikungunya. Majority of respondents (76%) were not aware to any preventive measures.

Only 15% respondents said that they have heard about Ebola virus and its illness. Most common preventive measures mentioned were: use of mask (14%), hand washing with soap & water (11%), don't touch corpse (10%), avoid patient's urine, blood, stool, saliva, and semen (8%).

Source and contents of health message

Over 90% of the surveyed respondents reported that they received health messages by one or the other sources in the last 6 months. Major source of information were health centre/staff, CHW, television, radio. Most common messages recalled by respondents were on: Dengue fever, Bird Flu,

Malaria, birth spacing, child health, child immunization, hygiene, environmental health and sanitation and other specific diseases including emerging and new diseases.

Conclusions

Though there are some signs of improvement in health and social indicators in the project villages, most of the service indicators are still below the national figures or below the CDHS 210 findings. In terms of prevention and control of communicable diseases the majority of respondents had high level of knowledge, however when it comes to preventive and treatment practices it was found poor. The project villages have poor coverage of vaccination in terms of 6 vaccine preventable diseases among under one year, 2 years and 5 years of age.

Hygiene and sanitation is one of the key components of Communicable Disease Control programme. Though poor hygiene was pointed out by many respondents as the main cause of worm infection, the survey found that only 21% of respondents were aware on 8 Cleans methods. While the vast majority of the respondents reported having boiled their water before drinking and had soap at the place for hand washing, only 32% of families in project villages had access to toilet facilities and 68% practice open defecation (bush/field). Open defecation increases the risk of diarrheal disease in children which is a major cause of infant mortality in Cambodia.

Regarding the knowledge and practice about emerging diseases, Bird Flu was mentioned by majority of respondents but hand-foot- and mouth disease, Chikungunya and Ebola virus was known by very small proportion of population. Over 90% of the surveyed respondents reported that they received health messages by one or the other sources in the last 6 months. A majority of the respondents mentioned they had received health messages from health center staff or community health workers.

I. INTRODUCTION AND PROJECT BACKGROUND

The Ministry of Health (MOH) has contracted SBK Research & Development (SBK R&D) to undertake **(a) a baseline household survey in 3rd. quarter, 2014; (b) an end-line household survey at the conclusion of the project in the 3rd. quarter of 2015 or 2016** in each of the 180 villages that participate in the GMS-CDC2 project in Cambodia. The 180 villages are located in 56 border communes (Cambodia, Vietnam and Lao PDR) of Cambodia's 18 operational health districts (ODs) of 10 Provinces^{1 2} . This inception report has been prepared as part of the first consultancy output that includes the survey framework, sampling frame and sample size, methodology and survey instruments and a draft outline of the final report. It is expected that SBK study team will finalize any technical issues before administering the survey in field with comments from MOH, PSU, key Implementing Units and ADB, if any.

The Greater Mekong Sub-region Second Regional Communicable Diseases Control Project (GMS-CDC2, 2011-2015) is a partnership in regional, national, sub-national and community-targeted communicable disease control (CDC) between the Governments of Cambodia, The Lao People's Democratic Republic (The Lao PDR), Viet Nam (collectively: CLV), and the Asian Development Bank (ADB).

GMS-CDC2 is designed to assist improve the health of the population in the GMS. Specifically, to improve the health of women, children and indigenous people living in 180 poor villages of 56 communes close by GMS economic corridors in 18 selected border operational districts (ODs) of 10 Cambodian provinces that border with the Lao PDR and/or with Viet Nam.

GMS-CDC2 builds on the achievements of the first (CDC1, 2006-2010) which played an important role in Cambodia and in the GMS to contain the spread of emerging diseases, improves provincial health systems and CDC for vulnerable groups, and strengthens regional cooperation in CDC. The CLV Ministries of Health collaborate with the World Health Organization (WHO) through GMS-CDC2 to implement the International Health Regulations (IHR, 2005) and the Asia-Pacific Strategy for Emerging Diseases (APSED, 2010)

CDC2 Project focuses on three clusters of provinces (i) the northern cluster in the northern Lao PDR and northern Viet Nam bordering Yunnan Province, China; (ii) the central cluster in the southern Lao PDR, north-east Cambodia, and central Viet Nam; and (iii) the southern cluster in southern Viet Nam and southern Cambodia, linked to Thailand to provide assistance in controlling and preventing cross-border transmission of communicable diseases and support regional arrangements for sharing surveillance and development of cooperative CDC responses in the GMS.

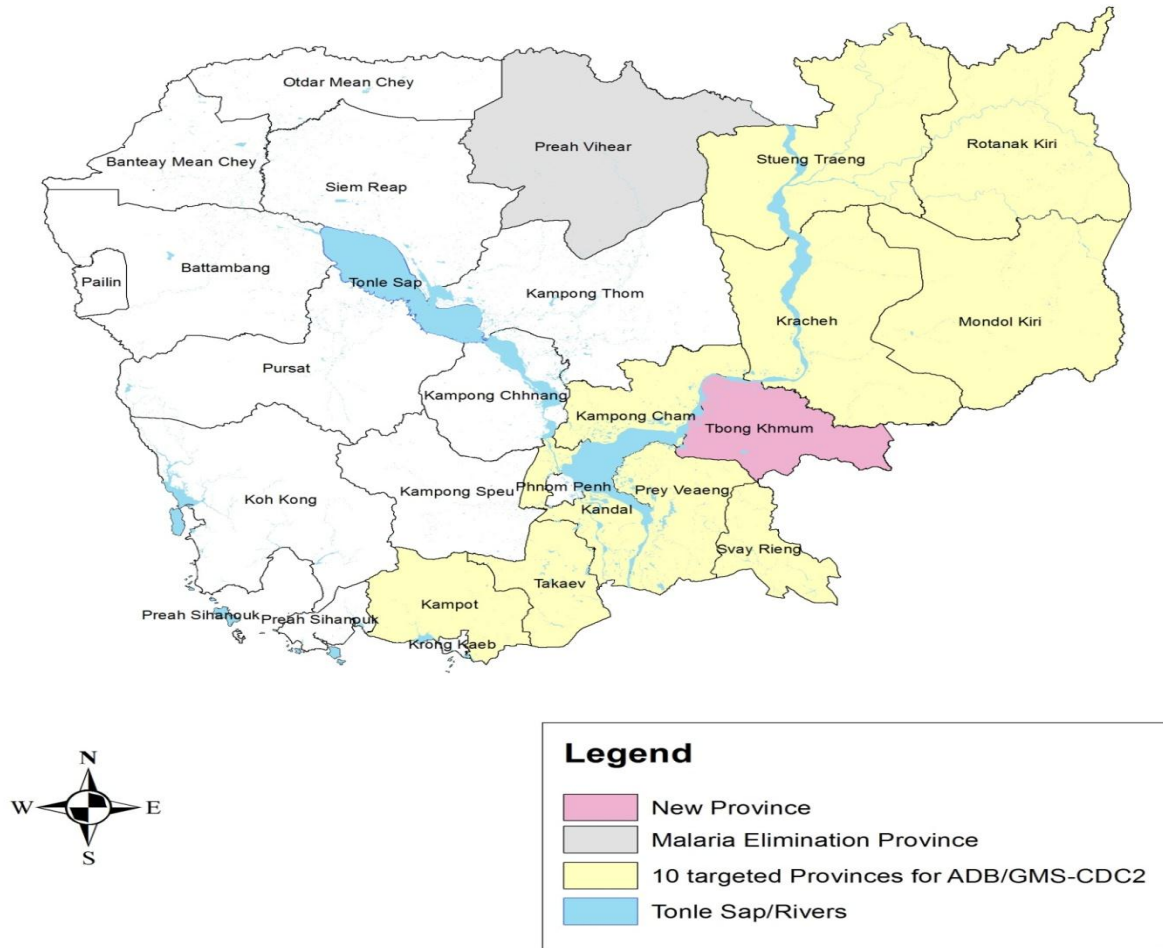
Activities under the Project are pro-poor, focusing on rural and remote populations in the project districts of Cambodia-Laos-Vietnam (CLV) border areas where many ethnic groups and the poorest reside. Women and children will be the major beneficiaries of the PHC and

² Stung Treng, Ratanakiri, Mondulakiri & Kratie (1st Phase)
Kampong Cham, Prey Veng, Svey Rieng, Kandal, Takeo, Kampot (2nd Phase)

community-based interventions, including community based CDC surveillance and response in these border districts.

Fig 1: Map of Cambodia showing CDC2 Project target Provinces

Overall 12 Target Provinces of ADB/GMS-CDC2



The CDC2 project is currently being implemented by four central Implementing Agencies (IAs) of the Ministry of Health (MoH), namely, Communicable Disease Control Department, National Center for Parasitology, Entomology and Malaria Control, National Institute of Public Health and National Center for HIV/AIDS, Dermatology and Sexually Transmitted Diseases in collaboration with 10 project provinces (identified as Project Implementing Units or PIUs).

The review of Design Monitoring Framework matrices for CDC2 revealed that Project Impact is: **Improved health of the population in the Greater Mekong Sub-region.**

The outcomes of CDC2 are to increase **the Proportion of population in targeted villages that conduct proper CDC prevention and care.** (Annex 1: Design and Monitoring Framework CDC2).

II. PURPOSE, OBJECTIVES & METHODOLOGY

2.1 Purpose and outcome of the survey

The purpose of the survey was to establish baseline values on health status and care practices related to CDC in a representative sample of households in each village (180 project targeted villages) targeted by the project.

The major outcome of the survey is to apply findings to inform project interventions and to serve as a benchmark for measuring impact of project activities on changes in health status and CDC practices. A complementary outcome is validation of baseline measurements in the GMS-CDC2 Performance Monitoring and Evaluation Reporting Matrix (PMERM) for key project indicators.

2.2 Objectives of the survey

The objective of the survey was to measure proportion of population in targeted villages that conduct proper CDC prevention and care. Both quantitative and qualitative components of the survey were used to collect required data.

Findings of the household survey are to be used by the MOH to: *(i) provide baseline information on health status and care practices related to local communicable diseases; (ii) inform the targeting of health interventions; (iii) provide end-line information on impact of project interventions on health status and care practices, and also, (iv) serve as a reference for other MOH initiatives, and for possible scale-up of GMS-CDC2 interventions after 2015 or in 2016.*³

The quantitative components provided information on proportion of the population in target village that have: i) knowledge on communicable diseases control; ii) practices to prevent the spread of the diseases; iii) care seeking behaviors and utilization of health services. The household survey focused on KAP of general household from 180 project targeted villages.

The qualitative component of the survey examined the impact of the training on communicable diseases surveillance, response and preparedness (behavior change) of VHSGs.

Field Interviews for data collection, data analysis and report preparation was completed within 3 months (20 August to 30 November 2014).

2.3 Methodology

The study populations were the adult women in each sampled household. A descriptive household *survey with quantitative and qualitative approach* was conducted in 180 project target villages/clusters in 10 provinces: MondulKiri, RatanakKiri, Stung Treng, Takeo, Kampot, Kratie, Kampong Cham, Kandal, Prey Veng, and Svay Rieng. All of the villages were within 25 kilometers of the international border and majorities of the surveyed were less than five kilometers away. All villages were located in 56 border communes. These communes are contained within 18 Operational Health Districts (ODs).

³ Ministry of Health, "Greater Mekong Subregion: Second Regional Communicable Diseases Control Project (GMS-CCD2 - Cam: 0231-SF), page 2.

One difference between the provinces was the proportion of indigenous peoples in their populations. While surveyed villages in Kampong Cham, Kandal, Kampot, Takeo Prey Veng and Svay Rieng have relatively very few indigenous peoples (a very small number of villages are exceptions), the villages in the provinces of Kratie, Monduliri, Ratanakiri and Stung Treng had significantly high proportion of indigenous populations and ID Poor1 and 2.

This was one of several considerations that led to the decision to have a large enough sample size that most of the provinces data results could, on their own, have information collected from enough households that statistically significant generalizations were possible at that level (at the provincial, rather than the level of the entire 180 village).

In the 10 provinces and 56 communes that were the focus of survey—in the 180 villages—there were a total of 186,555 residents (Annex 2: List of 180 sampled villages). The statistical population on which the survey was concentrated was made up of 41,815 households (with an average of 4.5 persons per household). The base sampling unit was the household.

2.4 Team Recruitment & Training

The team composed of Team Leader, Deputy Team Leader, Statistician, Quality Controller and Data Analyst to manage the overall survey. SBK recruited a Field Team for each targeted province. Each field team consisted of 1 Supervisor and 4-6 enumerators. In total, 10 Supervisors and 40 Enumerators participated in the survey. Assistant Team Leader and Quality Controller conducted monitoring visits to the survey sites for spot check of the data collection process.

A five -day training course was conducted to train the field team members on how to conduct survey.

2.5 Tools for data collection

The survey instruments mainly in the form of structured questionnaires for household survey was developed as modules for each disease component based on the indicators listed and other required information. A separate set of Focus Group Discussion Guidelines was introduced for VMG/VHSGs. The qualitative part of the research aims to assess the impact of the training on communicable diseases surveillance, response and preparedness by using FGD guidelines with village health support group (VHSG) who had received training in the past from the MOH. The FGDs were conducted in 177 villages

The main objective of the FGD was to examine the contribution of Village Health Support Groups (VHSG) in the Communicable Disease Control Program and aimed to better understand the behavior changes that have taken place among the trained VHSG. (See Annex 3 &4).

III. FINDING OF THE STUDY

3.1 Geographic Coverage of the Survey

The 10 provinces targeted for GMS Second Regional Communicable Diseases Control Project (GMS-CDC2- Cambodia) are located on the border of Vietnam and Laos. These provinces are primarily rural with indigenous communities. The project targets 180 villages within 56 border communes and 10 Operational Health Districts. A total of 3,600 sample households were selected for household interview. An equal number of households were sampled in each of the 180 project target villages. For reasons planning ease, constraints on survey resources and enhanced operational control an equal number of 20 households were identified in each of the 180 villages. In the 180 villages a total of 3,600 households were interviewed. Likewise, 177 FGDs were held with VHSGs covering 177 villages and health facilities. (Pls refer Annex for number of villages and sample HH interviewed for HH survey)

3.2 Background Characteristic of the Survey Respondents

Age and Sex distribution of Respondents

Among the 3,600 respondents 95% (n=3,424) were female and 5% (n=176) were male. Male respondents were quite high in Ratanakiri (19%) as many of the mothers were busy in their farm during interview.

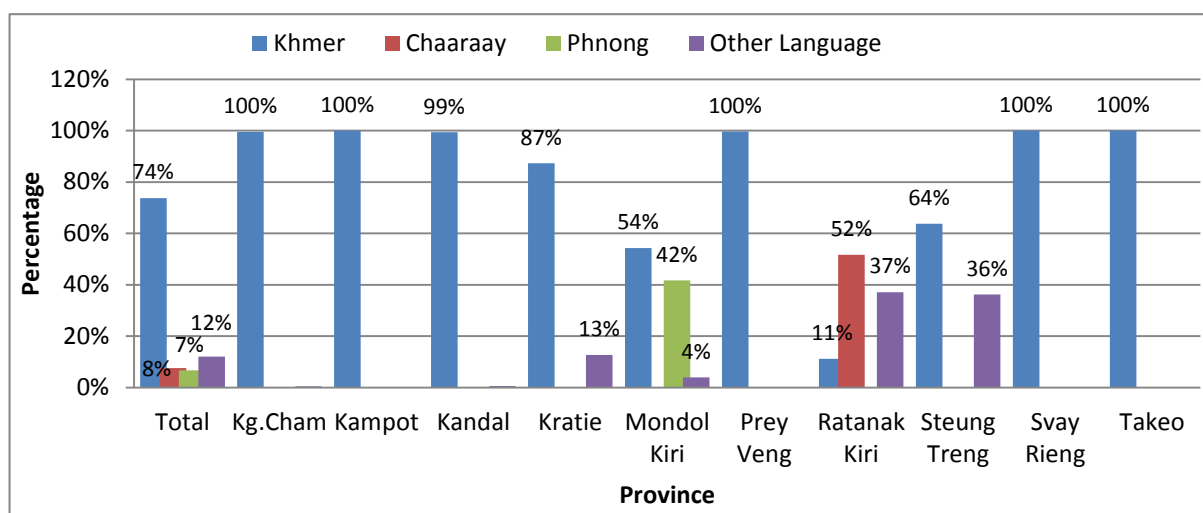
A majority of the HHs respondents were young: 68 % of them being between 18 to 30 years old. Of the 3,600 target respondents who were interviewed, 10.3% of them were in the age category from 18-20, 57.6% were in the age category from 21-30, 26.4% were from 31-40 and only 5.7% were in the age group from 40-49yrs. Almost 20% of respondents in Ratanakiri were in the age group 18-20 years.

Language spoken by respondents and their families

A total of 26% of the respondents spoke another language other than Khmer. In Ratanakiri, Khmer language was spoken by 11% only and 52% of the respondents spoke Chaaray. In Mondulkiri, just little bit more than half (54%) spoke Khmer language and Phnong was spoken by 42%. Lao was spoken by 29% of Stung Treng populations. Likewise, Proav was spoken by 2.1% (Ratanakiri 14.2%), Ka Chok by 1.7% (Ratanakiri 11.5%), Kaaveat by 0.9% (Stung Treng 6.6%), Stieng by 0.5% (Kratie 6.5% and Mondulkiri by 0.2 %), and other minority languages by 1.7% population like Lon, Vietnamese.

There is significant evidence that language and ethnicity create barriers to accessing education and to a lesser extent, health services. Assuming that Health centre providers do not speak the indigenous language, these results demonstrate that quite a significant number of families in Mondulkiri, Ratanakiri, Stung Treng and Kratie may need an interpreter to access health services or any other services.

Fig 2: Language spoken by the surveyed families



Education Status of Respondents

Among the survey respondents 32% were illiterate, 46% had just passed primary school, 18% had lower secondary and 4% had upper secondary education. Significantly higher number (69%) of illiterate respondents were reported in Ratanakiri province, followed by Mondul Kiri (46%) and Stung Treng (43%), whereas the Kandal (6%) and Svay Rieng (9%) reported lowest percentage of illiterate respondents. Higher education and vocational skills training was found in an insignificant percentage among the respondents.

Main occupation of Respondents

Majority (75%) of the respondents in all 10 provinces reported that their main occupation is farming. Other occupations were, house wives, seller, housemaid, labourer, small business owner, teacher, civil servant and animal raiser. More than 80% of respondents from Ratanakiri, Steung Treng and Svay Rieng were farmers.

3.3 Background Characteristic of the Survey Populations

Poverty status

Respondents were asked to show their poverty card based on their socio-economic status measured by the set criteria of the RGC. Of the 3,600 HHs interviewed, 804 household (22.3%) were officially designated as poor (i.e. they hold a poverty card- poor 1 +2), and 78% were non poor based on their ID card.

Table 1: HHs level of poverty based on the poverty card

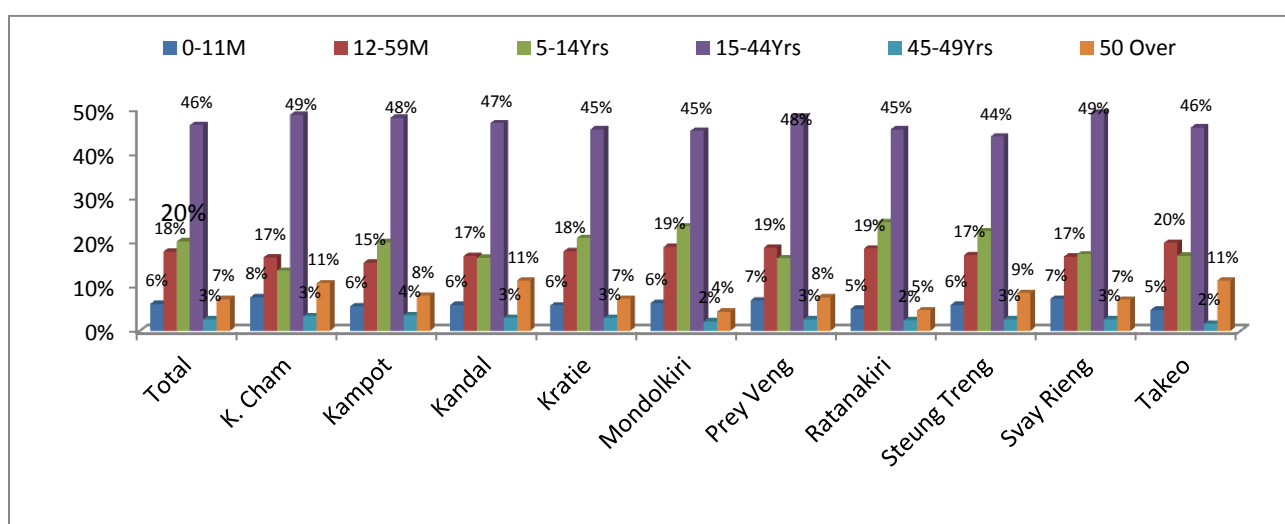
Poverty Level	All	Province									
		Kg.Cham	Kampot	Kandal	Kratie	Mondul Kiri	Prey Veng	Ratanak Kiri	Steung Treng	Svay Rieng	Takeo
Poor 1	8%	11%	10%	4%	5%	9%	7%	10%	12%	8%	5%
Poor 2	14%	20%	9%	15%	10%	15%	8%	19%	15%	14%	18%
None	78%	69%	81%	81%	85%	77%	85%	71%	73%	79%	77%

Highest percentage of poor people was reported in Kampong Cham (31%) followed by Ratanakiri (29%). The lowest percentage of poor HH was reported in Kratie and Prey Veng (15%)

Age and Sex distribution of household members

In the 3,600 households there were 18,404 total populations. The average family size was 5.1. The proportion of male and female was found equal among the survey population. However, in terms of provincial differences Kampot and Kratie had relatively higher percentages of females compared to male (F=52% and Male= 48%). The children under 12 months of age constituted 6%, children from 12-59 months were 18% and children from 5-14 years were 20%. The population from 15-44 years constituted 46% and 3% for the age group 45-49 years and 7% over 50 years of age.

Fig 3: Age and Sex distribution of survey household's members



Number of Children in the Sample by age group and sex

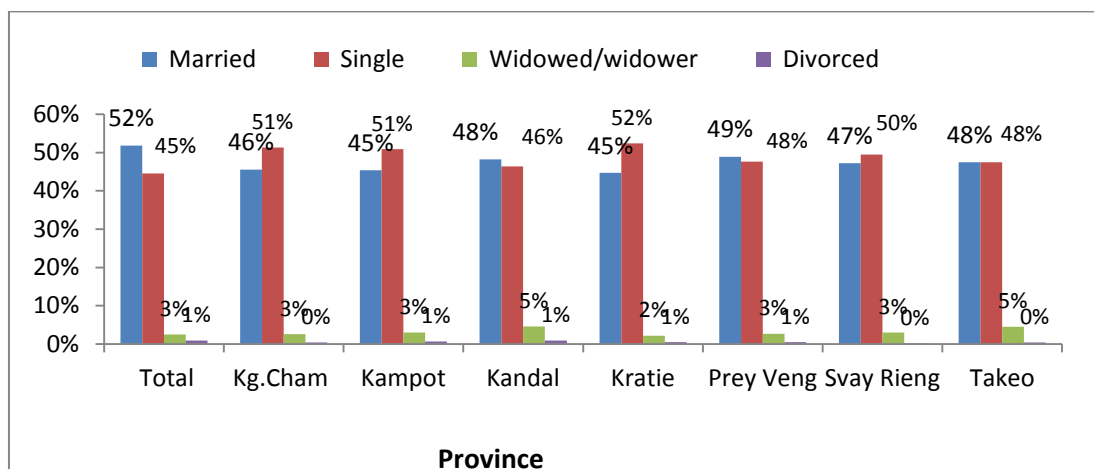
Under 5 years population constituted 24% among the total population. The range across all provinces was almost the same except Kampot where it was only 21%. Majority (33%) of population was between 25 to 49 years age group. There were 7,564 children under 12 months of age (0-12 months= 1,308; 12-24 months=1,024, 24-59 months =2,071 and 5-12 yrs= 3,161 children.

Children below 12 months were higher in K. Cham (7.5%) followed by Svay Rieng compared to other provinces. Children below 2 yrs were higher in Takeo (20%) and in Mondolkiri and low in Kampot (9%). Children below 5 years were higher in both Mondolkiri and Takeo and lowest in Kampot. A higher number of children between the age group of 5-14 yrs were reported in Steung Treng (46%) and Kampot (45%) and lowest in Kampong Cham (34%).

Marital status of the household members

Overall, 52% of population was married, 45% were single, 3% was widowed/widower and 1% had divorced. Kandal and Takeo have higher percentage (5% each) of widowed/widower compared to other province, Kratie had highest percentage of single (52%).

Fig4: Marital status of the household members

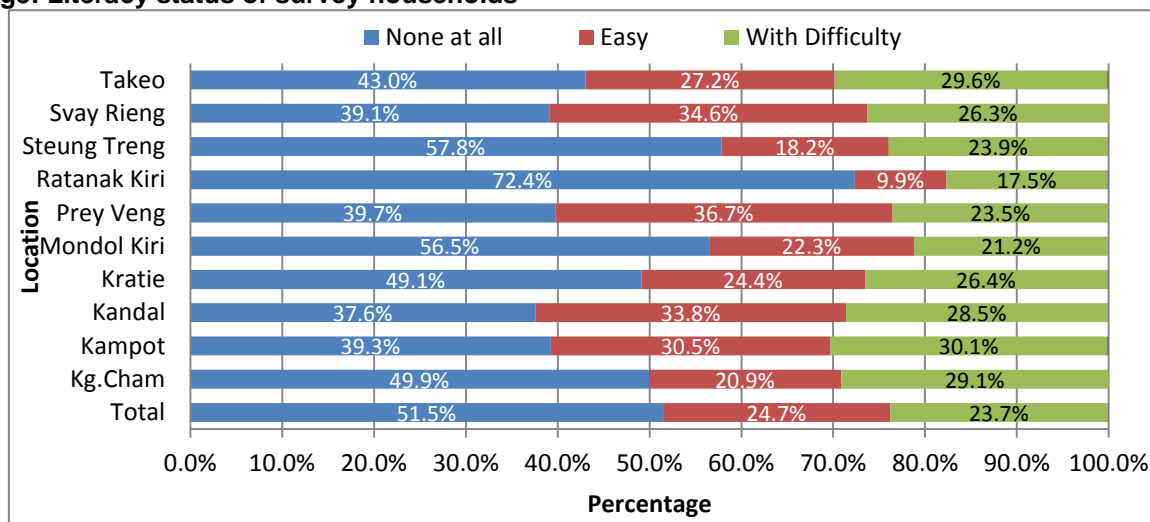


Literacy and Educational status of household members

Literacy Status

Overall level of literacy in survey area was very low (49%) compared to CDHS 2010 (77%). Fifty one percent of population in surveyed area was illiterate. Among the literate population 25% were fully literate and could read and write easily and another 24% could read and write but with difficulty. Highest percentage of illiterate population was found in Ratanakiri (72%), 58% in Steung Treng and 57% in Monduliri. Higher percentage of literate population was reported in Kandal.

Fig5: Literacy status of survey households



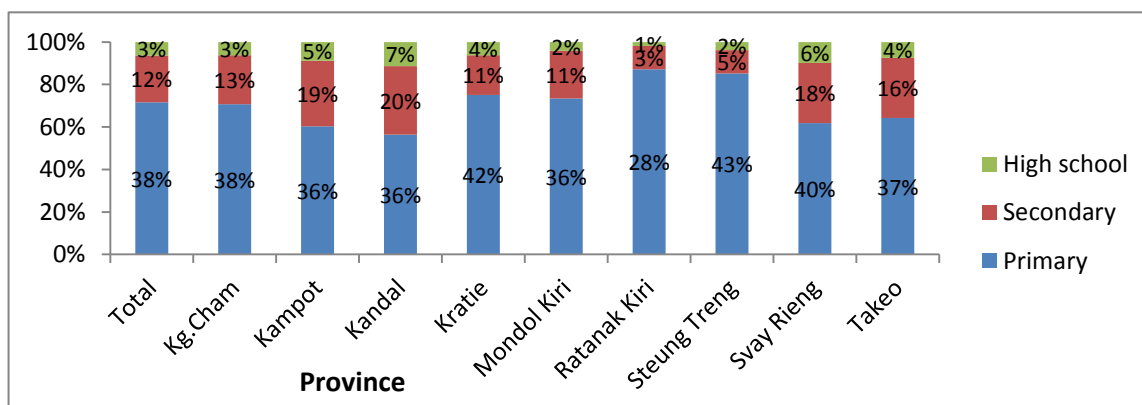
Such a low level of literacy in the project targeted villages poses a challenge in providing services to the population. The situation was further aggravated by high number of poor population with minority groups who are not able to understand Khmer language. The health workers and policy makers have to have special programmes and strategy to work in these communities.

Education Status

Analysis of the education levels of HH members show that the majority of those educated had completed only primary education (38%), with 12% completed secondary school and 3% with high school level. Comparison across the province show Svay Rieng has the highest percentage of educated population (64%), followed by Kandal (63%). While lowest percentage was recorded among Ratanakiri (32%), Mondulkiri (49%) and Steung Treng (50%).

Overall those who completed high school were recorded highest in Kandal (7%) and lowest in Ratanakiri (1%). Those who completed University level education was 1% each in Prey Veng and Svay Rieng and in other provinces no significant proportion who have higher level of education.

Fig 6: Education status among Survey population



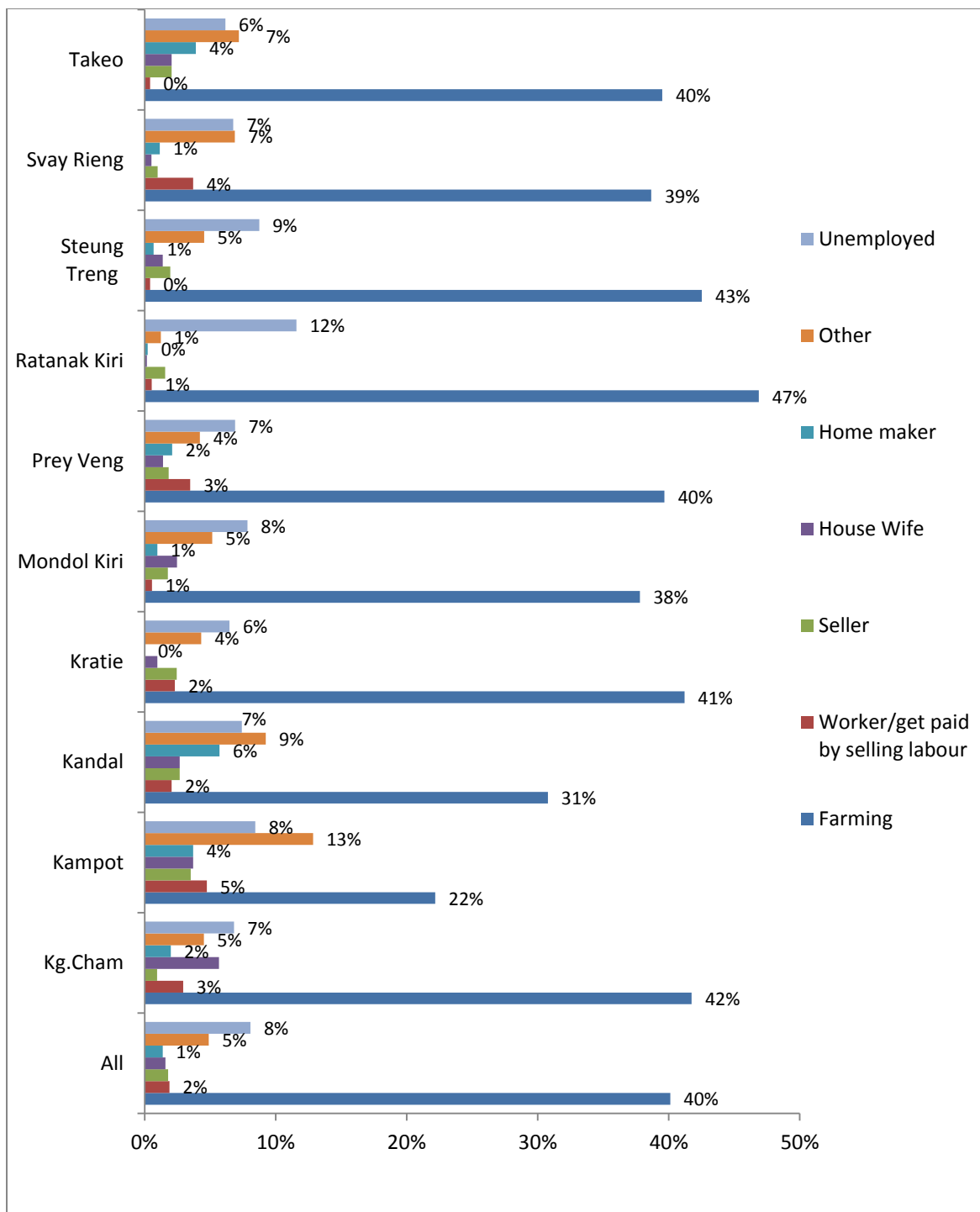
Main occupation of HHs members (above 16 yrs of age)

The HH members are engaged in a variety of occupations. About 35 different jobs were mentioned by the respondents in 10 provinces. Majority of the respondents were farmer (40%). Other major jobs were: paid labourer and seller (2% each), higher percentage in Kampot and Prey Veng), housewife 2%, home maker 2%, fishing (Kampot and Takeo), teacher, private business employee, government employee, village chief etc.

Eight percent of the population had no job. Highest percentage of no job was reported in Ratanakiri (12%) followed by Stung Treng (9%) and lowest percentage of no job was reported by Kratie and Takeo (6%).

Other 15% were student and 24% were under age for employment. Under age children were reported highest percentage in Prey Veng (26%) and lowest in Kampot (21%).

Fig 7: Main occupation of HHH members



Distance of Household (HHs) residence to the International Border

More than half (57%) of the sampled households were within 9 Km from the nearest international boarder (Vietnam & Lao PDR). Among them 41% were even within less than 5 Km from the border. Seventy one percent of the sampled households were in less than 15 Km. Only 19% of the HHs were in more than 20 Km from the border. This demonstrates that all project target villages were situated very close to the international border (Vietnam, Thailand and Laos). Any health and social issues arising in these neighbouring countries border villages/town will have a direct and immediate effects to the bordering villages and town of Cambodian side and vice versa.

Table2: Distance of surveyed HHs to the International Border

Distance from Border	Province										
	All	K. Cham	Kampot	Kandal	Kratie	Mondulkir	Prey Veng	Ratanakiri	Stung Treng	Svay Rieng	Takeo
Less than 5Km	41%	80%	69%	67%	5%	7%	54%	6%	36%	79%	97%
6-9Km	16%	9%	29%	31%	8%	18%	25%	10%	12%	16%	3%
10-14Km	14%	11%	2%	3%	23%	22%	15%	19%	14%	5%	0%
15-19Km	11%	1%	0%	0%	18%	14%	4%	29%	14%	0%	0%
Over 20Km	19%	0%	0%	0%	46%	40%	2%	37%	24%	0%	0%

Migration

The majority of HHs (90%) has lived in the same place for many years. Of the 3,600 HHs interviewed, only 10% HHs have moved into their current location in the last year. Highest percentage of HHs moved to the current location in the last year was in Kampot (25%), Prey Veng, Svay Rieng and Takeo 18% each. In Mondulkiri and Ratanakiri less than 2% population moved.

Table 3: HHs migrated in the last 12 months

Status	Total	K. Cham	Kampot	Kandal	Kratie	Mondulkiri	Prey Veng	Ratanakiri	Stung Treng	Svay Rieng	Takeo
Yes	10%	3%	25%	10%	6%	2%	18%	1%	6%	18%	18%
No	90%	97%	75%	90%	94%	98%	82%	99%	94%	82%	82%

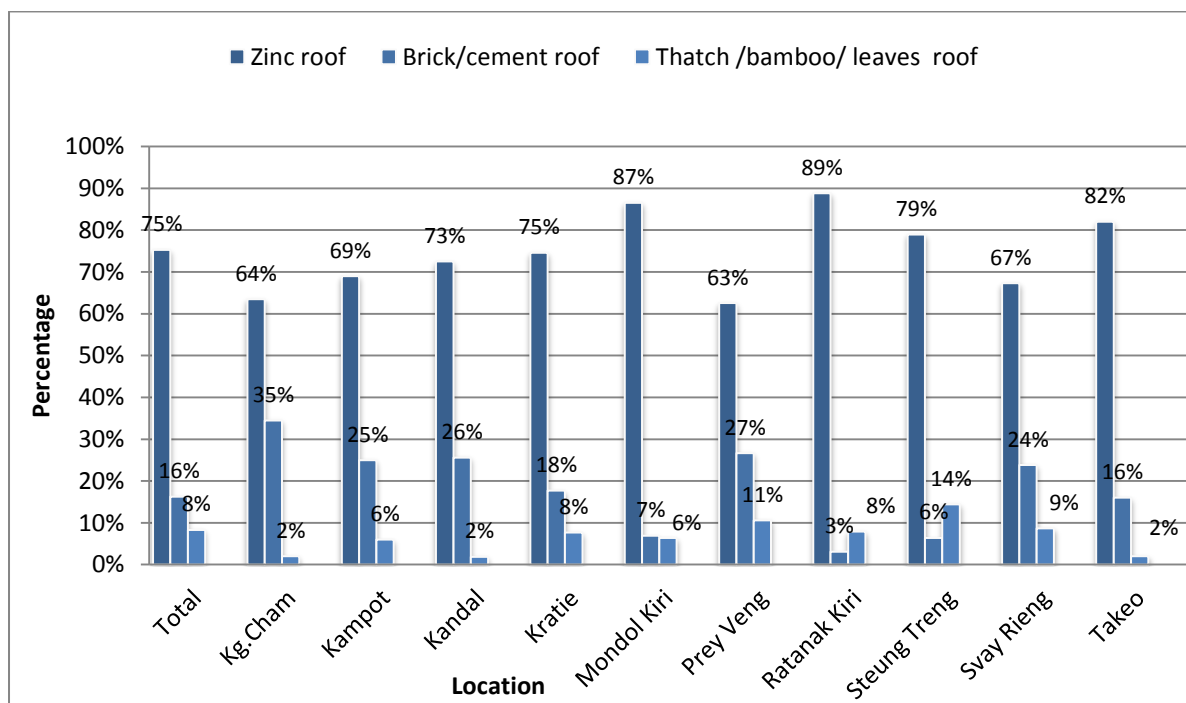
3.4 Housing and Assets Owned

Regarding house status, the majority (96%) of HHs owned their own house; almost the same percentage to all provinces. Some others stay with relatives or stay rent free, with only few HHs paying rent for their premises.

Data on the types of roofing of the respondent HHs shows that most houses have some form of "permanent" roof, with the majority (75%) using zinc or GI sheeting. More expensive forms of roofing such as brick/tiles or asbestos were less commonly observed (16%), and

8% of all HHs still use a “traditional” roof made from local materials such as thatch, straw or bamboo. However, within these overall statistics, we can see some differences between provinces, with kampong Cham, Kandal, Takeo having a higher percentage (99%) of “poorer” type roofing and even Kampong Cham with a higher than average percentage of brick/tiled/cement roofs. Traditional forms of roof made from thatch, straw or bamboo was more common in Svay Rieng (14%) and Prey Veng (11%).

Fig 8: Types of House Roofing ((% of HHs – per province)



House walls show overall averages of 57% using wood/timber wall, 21% using more traditional materials such as thatch, straw or bamboo, 17% using zinc, and 4% using bricks/cement wall. Forms of permanent walls (Brick/cement walls) were found in much higher percentage in Kampot (27%) compared to other provinces, and Mondul Kiri and Stung Treng reported only by 1% of having such wall. Thatch/bamboo walls was found much higher in Prey Veng (39%) compared to other provinces; e.g Mondul Kiri and Ratanakiri had only 11% of such wall.

Table 4: Types of House Wall

Types of Wall	All	K. Cham	Kampot	Kandal	Kratie	Mondul Kiri	Prey Veng	Ratanakiri	Steung Treng	Svay Rieng	Takeo
Wood walls	57%	66%	19%	38%	83%	86%	25%	88%	81%	13%	14%
Thatch/bamboo/leaves wall	21%	26%	24%	13%	13%	11%	39%	11%	17%	29%	18%
Zinc wall	17%	7%	30%	38%	3%	1%	32%	0%	0%	47%	52%
Brick/cement wall	4%	2%	27%	11%	2%	1%	3%	0%	1%	7%	16%
Tent/Plastic tent	1%					1%	0%	1%	1%	1%	
Soil/Clay	0%									3%	

Other Assets owned by the surveyed HHs

House was owned by 96% and land by 86% surveyed HHs. Other items common to most HHs are: mobile phones (78%), motorcycles (71%), Chicken (66%), Cattle (38%), TV (37%), bicycles (33%) etc. Motor boat was reported highest in Stung Treng (44%) followed by Takeo (25%).

Other details are shown on table below. Land ownership was highest in Ratanakiri (95%) followed by Takeo (91%). Items like telephone, motorcycles, television and radio were owned by less percentages of HHs in Ratanakiri, Mondul Kiri and Prey Veng compared to other provinces. This shows that many of the remote and indigenous populations have less access to modern communication system affecting their access to right for information on health and social awareness programs broadcast by different media.

Table 5: Assets own by households

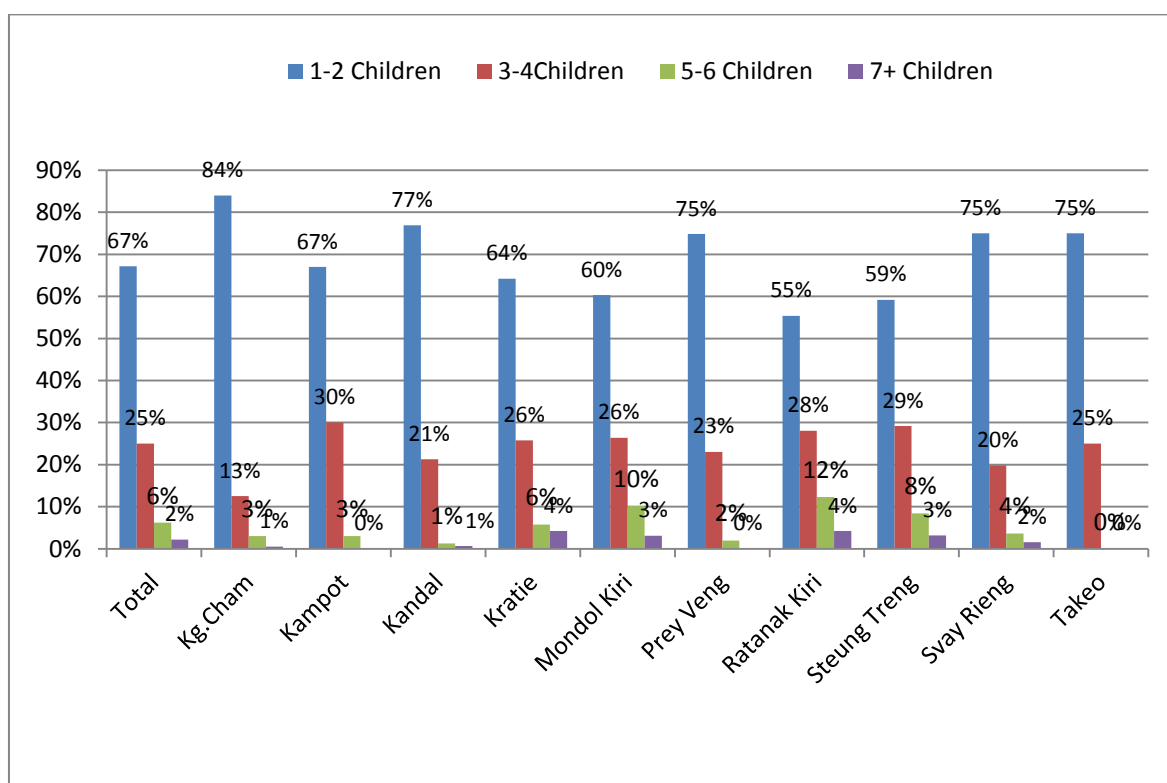
Assets	All	K. Cham	Kampot	Kandal	Kratie	Mondul Kiri	Prey Veng	Ratanakiri	Stung Treng	Svay Rieng	Takeo
House	96%	100%	100%	99%	89%	97%	98%	94%	97%	96%	98%
Land	86%	86%	78%	78%	71%	89%	81%	95%	82%	92%	91%
Telephone	78%	79%	90%	90%	79%	78%	78%	64%	78%	82%	85%
Motorcycle	71%	88%	64%	81%	85%	77%	61%	75%	58%	74%	65%
Chickens	66%	37%	80%	66%	60%	58%	72%	55%	71%	82%	73%
Cattle	38%	12%	51%	37%	14%	27%	50%	28%	44%	59%	46%
Television	37%	44%	41%	80%	28%	31%	42%	17%	32%	48%	53%
Bicycle	33%	28%	76%	61%	20%	18%	41%	22%	18%	55%	40%
Pigs	32%	4%	48%	10%	6%	37%	33%	53%	40%	30%	13%
Radio	19%	24%	16%	23%	17%	15%	17%	16%	32%	13%	17%
Car or motor boat	15%	4%	5%	10%	4%	6%	10%	11%	44%	16%	25%
Oxcart/ horse cart or boat	7%	2%	13%	9%	7%	2%	7%	2%	14%	5%	20%
Hand Tractor/4-wheel Tractor	6%	8%	0%	0%	4%	10%	7%	0%	15%	1%	3%
Other	4%	1%	0%	0%	11%	1%	5%	1%	1%	13%	1%

3.5 Maternal and New Born Health

Birth Trends

Sixty seven percent couples had 1-2 children, 24% had 3-4 children, 6% had 5-6 children and another 2% had 7 or more children. Highest number of children (7 or more) was found among the indigenous and minority population of Ratanakiri, Kratie, Mondulkiri and Steung Treng (3% each). Household with only 1-2 children was recorded highest in Kampong Cham (84%), followed by Kandal (77%). Households with more than 5 was highest in Ratanakiri (16%) followed by Mondulkiri (13%) and Steung Treng (11%). This higher percentage of children was reported among ethnic minority groups of those three provinces. Our results are close to the findings of the CDHS 2010 where the Cambodian women want about three children, on average. In our survey 73% of women had only 3 children.

Fig9: Trends of giving birth by women aged 15- 49 years



In the sampled population only 19 infant deaths were recorded (0.5% in the total sample).

The trend to have more children among the Cambodian family seems still quite high and this might go for a couple of years. However, the positive side is that the total fertility rate in Cambodia goes on decreasing trend since 2000.

Antenatal care (ANC) services

The result shows that 88% of pregnant women had received at least one or more ANC services during their last pregnancy. Women who received recommended 4 times ANC check-up were 52% which is slightly lower than the CDHS 2010.

CDHS 2010 shows 59% of pregnant women had received recommended four or more antenatal care visits. In our survey mothers of age between 15- 49 years were asked about their ANC services received during their last pregnancy.

Table 6: Status of ANC services received by women aged 15- 49 years

ANC Received	All	K. Cham	Kampot	Kandal	Kratie	Mondulki ri	Prey Veng	Ratanakiri	Stueng Treng	Svay Rieng	Takeo
One time	6%	1%	3%	6%	10%	6%	7%	8%	7%	1%	3%
Two times	11%	2%	17%	9%	14%	12%	13%	12%	12%	7%	8%
Two times or more	82%	98%	91%	89%	76%	77%	86%	58%	82%	98%	96%
Three times	19%	7%	23%	18%	16%	22%	22%	17%	23%	16%	14%
Four or more times	52%	90%	51%	63%	46%	43%	50%	29%	47%	75%	74%
Never	12%	2%	6%	4%	13%	17%	7%	33%	11%	1%	1%

Women who did not receive any ANC services in their last pregnancy accounted for 12%. Almost all women (99%) in Takeo and Svay Rieng had received ANC services ranging from only one time to four times. Lowest percentage of women who seek one or more time ANC services was reported from Ratanakiri (67%) followed by Monduliri (83%).

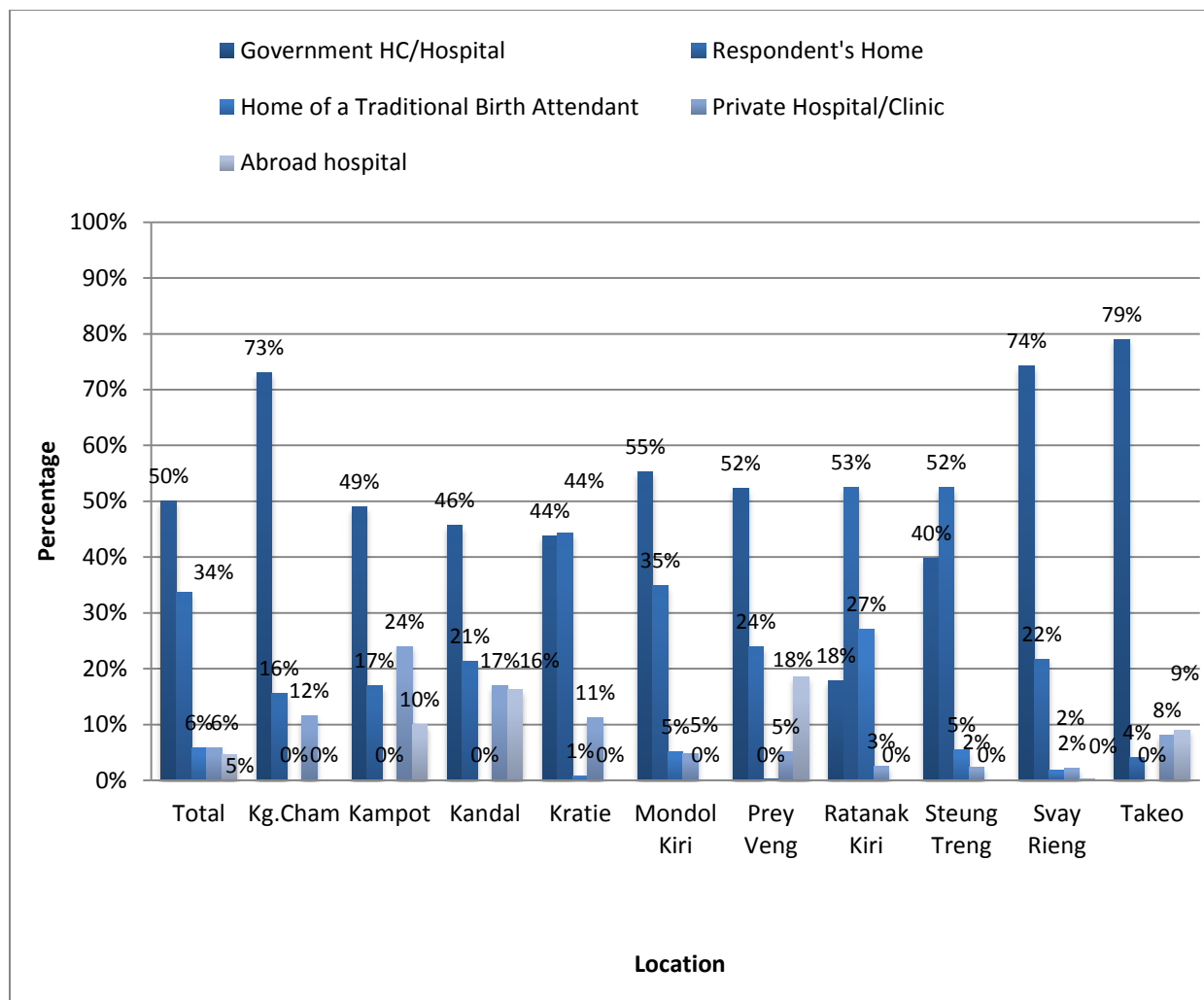
Pregnant women who received recommended two or more antenatal care services (ANC2+) were highest in Kampong Cham and Svay Rieng (98%), and lowest was reported in Ratanakiri (58%). This shows that MOH needs to have special focus as well as extension program to reach to north-eastern areas of some villages to motivate mothers for ANC services.

Place for Child Delivery

CDHS 2010 shows that 54% of births in Cambodia occurred in health facilities, 44% in the public sector, and 10% in private sectors. Another 45% took place at home.

In our survey 61% of births occurred in health facilities, 50% in the public sector, 6% in private hospital/clinic and another 5% in hospitals outside Cambodia (mainly in Vietnam). Another 34% took place at respondent's home and 6% at TBA's home. Prey Veng, Kandal and Kratie reported highest number of delivery outside Cambodia; 18%, 17% and 11% respectively. Women from Takeo, Svay Rieng and Kampong Cham reported highest number of delivery at government hospital or health centre- 79%, 74% and 73% respectively. Higher percentage of delivery in Ratanakiri and Steung Treng was conducted at respondents home (Ratanakiri- 53% and Steung Treng (52%) or at TBAs residence.

Fig 10: Place for Child Delivery



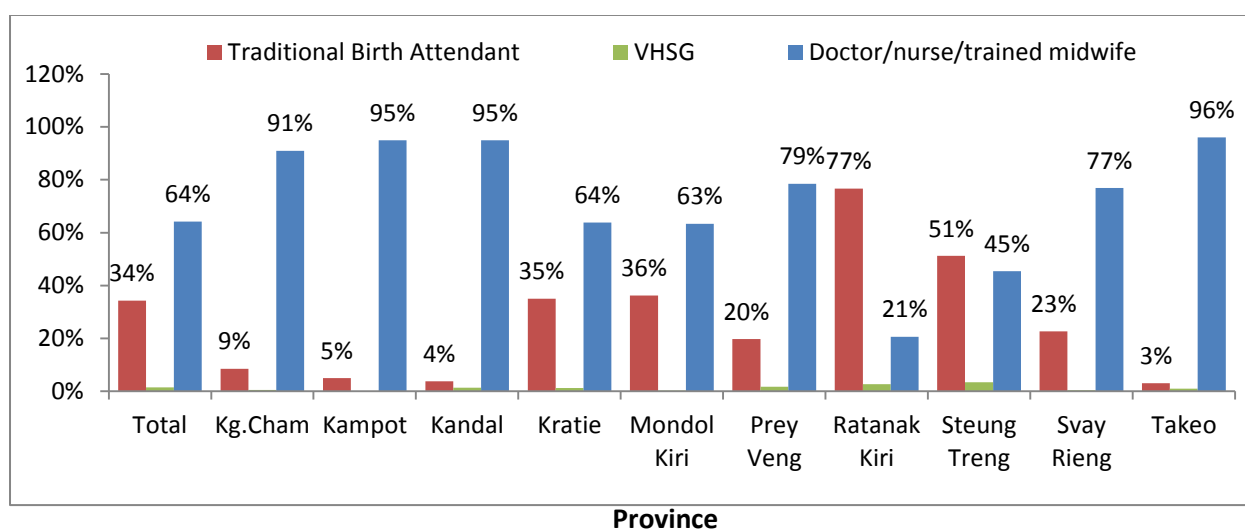
Our result shows positive trends to an increased in proportion of deliveries conducted in health facilities compared to CDHS 2010.

Assistance for Delivery

The findings show that 64% births are assisted by skilled providers and 34% by TBAs. The percentages on the following graphs are more than 100% this shows that some of the births are assisted by TBAs at the beginning and later they were referred and handled by the skilled providers. Highest percentage of delivery assisted by trained health professional was found in Takeo (96%) followed by Kandal and Kampot (95%). Lowest percentage assisted by trained health professional was found in Ratanakiri (21%) followed by Steung Treng (45%).

CDHS 2010 shows that 71% births are assisted by a skilled provider (doctor, nurse, or midwife). Another 28% are assisted by a traditional birth attendant.

Fig 11: Assistance for child delivery



Maternal Tetanus Toxoid (TT) Injection Coverage

More than three fourth or 77% (n= 2,754) of women interviewed received Tetanus Toxoid injection before the last pregnancy(whose last birth was protected against neonatal tetanus), with the highest at SvayRieng (89%) and the lowest at Ratanakiri (58%). More than half or 59% of women have received the injection during their last pregnancy, with the highest rate being seen at Kampong Cham and Kratie provinces with 73% and the lowest at Mondolkiri with 47%.

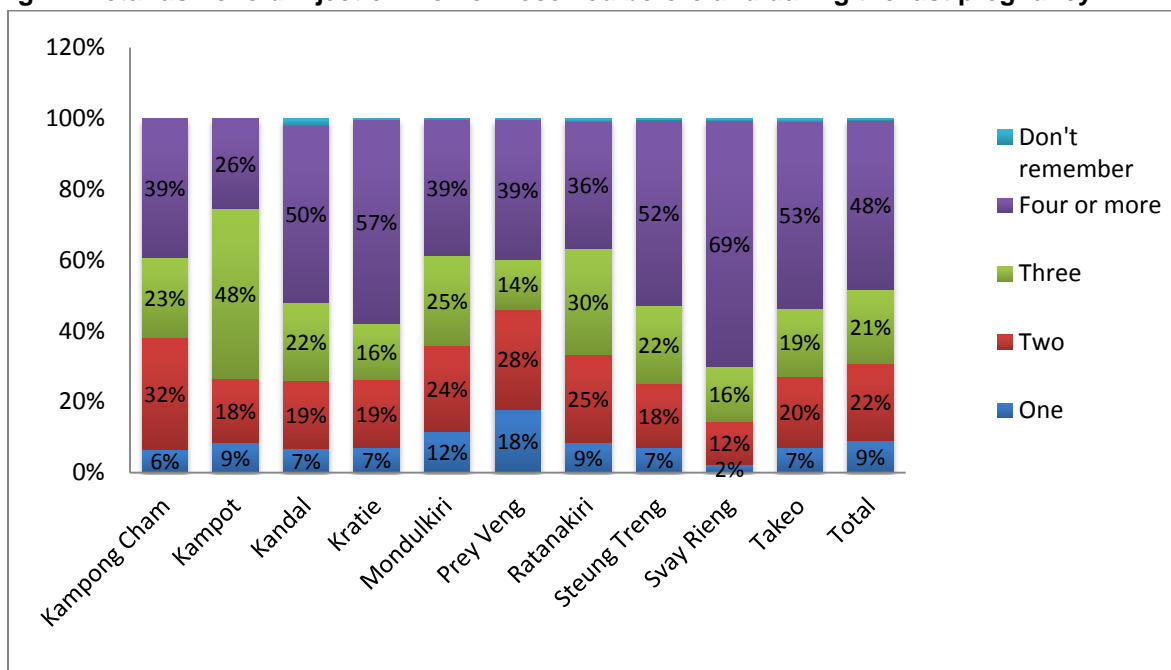
Our finding is slightly lower than the CDHS 2010. According to the 2010 CDHS results, 86% of last-born children during the five-year period before the survey were fully protected against neonatal tetanus. There were provincial differences in the percentage of last born children who were fully protected against neonatal tetanus. For example, 97% of births in Phnom Penh were fully protected, as compared with 62% of births in MondolKiri/RattanakKiri.

Table 7: Coverage of TT Injection among women received Tetanus Toxoid injection

Province	Women received Tetanus Toxoid Injection before last pregnancy		Women received Tetanus Toxoid Injection during pregnancy		
	Count	Percentage	Count	Percentage	Women reported receiving TT 2 times during last pregnancy
Kg.Cham	168	84%	146	73%	70%
Kampot	81	81%	70	70%	65%
Kandal	128	80%	102	64%	59%
Kratie	223	86%	191	73%	71%
Mondulkiri	372	64%	274	47%	43%
Prey Veng	525	80%	363	55%	50%
Ratanakiri	301	58%	273	53%	50%
SteungTreng	407	81%	286	57%	55%
SvayRieng	462	89%	329	63%	62%
Takeo	87	87%	72	72%	67%
Total	2,754	77%	2,106	59%	55%

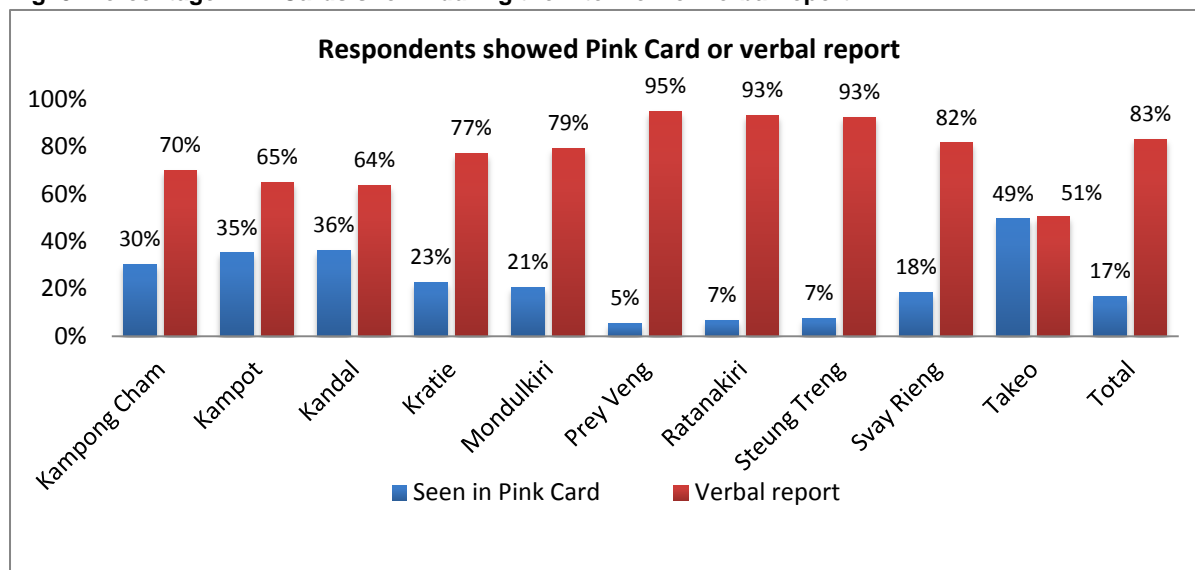
Among the interviewed women who received TT injection before and during the last pregnancy, nearly half of them (48%) received TT injection at least four times, with the highest rate (69%) was seen in SvayRieng and the lowest rate being at Kampot province (26%). More than one fifth (22% and 21%) of the respondents have received the injection two and three times, respectively.

Fig 12: Tetanus Toxoid Injection women received before and during the last pregnancy



Among 2,754 women who received TT injection, only 17% of them were able to show pink card during the survey, while the majority of them (83%) just verbally reported that they have injection. However, almost half (49% in Takeo and 36% in Kandal) were able to show pink card. A very small percentage or only 7% at Ratanakiri and SteungTreng, and 5% of respondents at Prey Veng were able to show the pink card.

Fig13: Percentage Pink Cards shown during the interview or verbal report

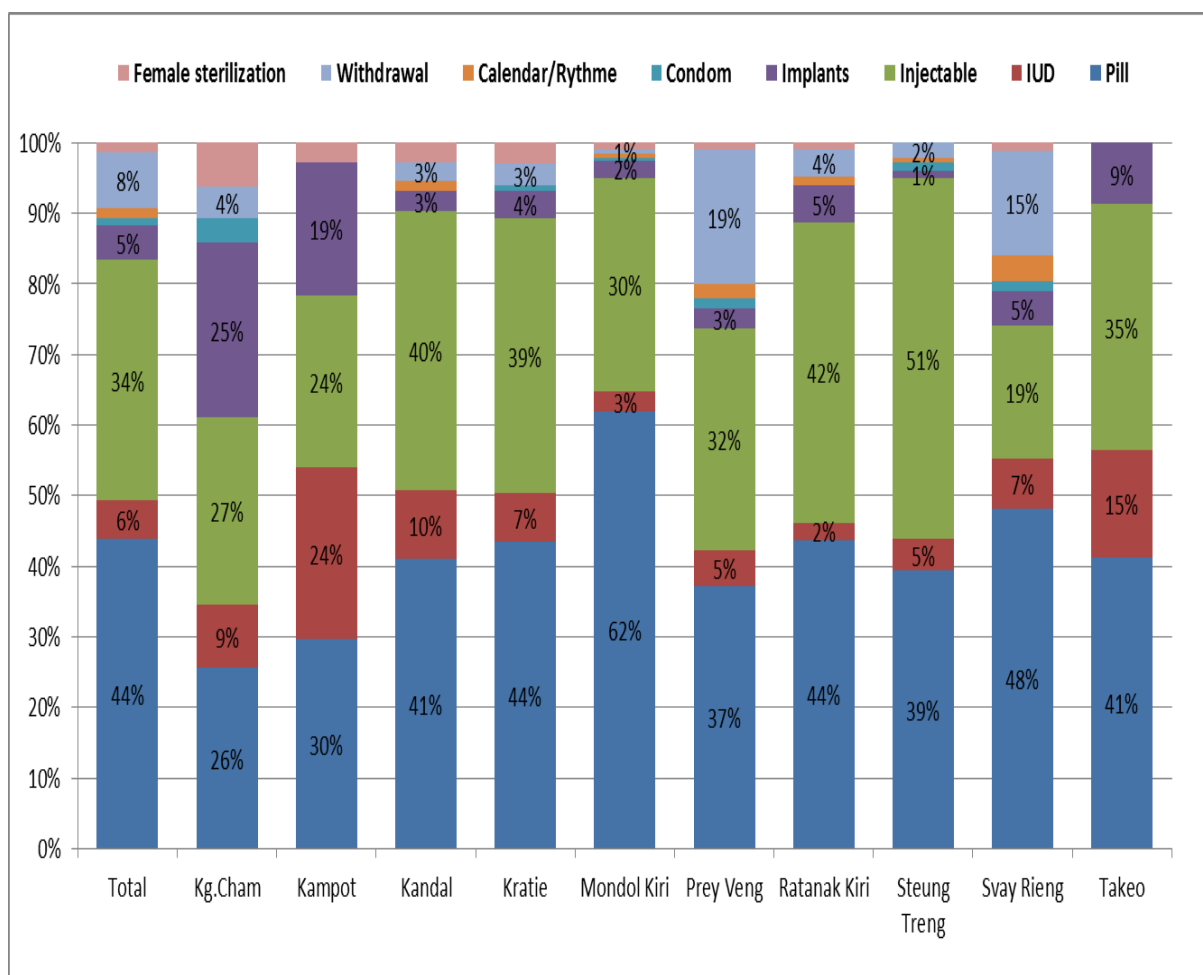


Family Planning

Pill was the most commonly-used contraceptive method being taken by almost half or 44% of women interviewed, followed by the injectable, which was used by about one third (34%) of the respondents. When compared with the CDHS 2010 our result is significantly higher. The CDHS showed only 16% Pill users.

Mondulkiri province had the highest rate of women using pill with 62% and the lowest rate being in Kampong Cham at 26%. Condom, calendar method, male or female sterilizations were not popular among population living along the border, with relatively low rate (only around 1% or less) of respondents have been using any of these methods. Withdrawal method was reported 8% in total, relatively a quite high percentage in Prey Veng (19%) and SvayRieng (15%).

Fig14: Contraceptive methods used by couple

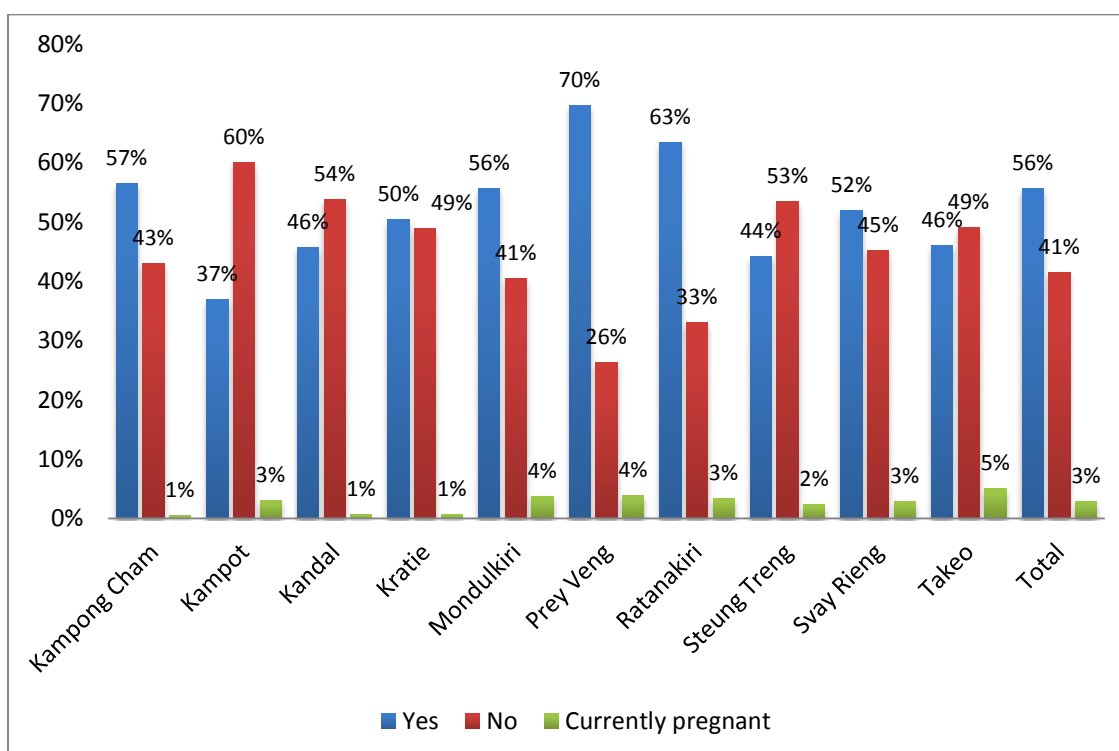


Contraceptive Prevalence Rate

More than half or 56% of the couples were using any kinds of contraceptive methods to delay their pregnancy, while 3% of the respondents were pregnant during the field data collection. Prey Veng province has the highest rate with 70% of women or their partner/husband using contraceptive methods, while Kampot province has the lowest percentage with only 37%.

This finding is slightly higher than the CDHS 2010, in which the proportion of married women who were using any method was only 51%.

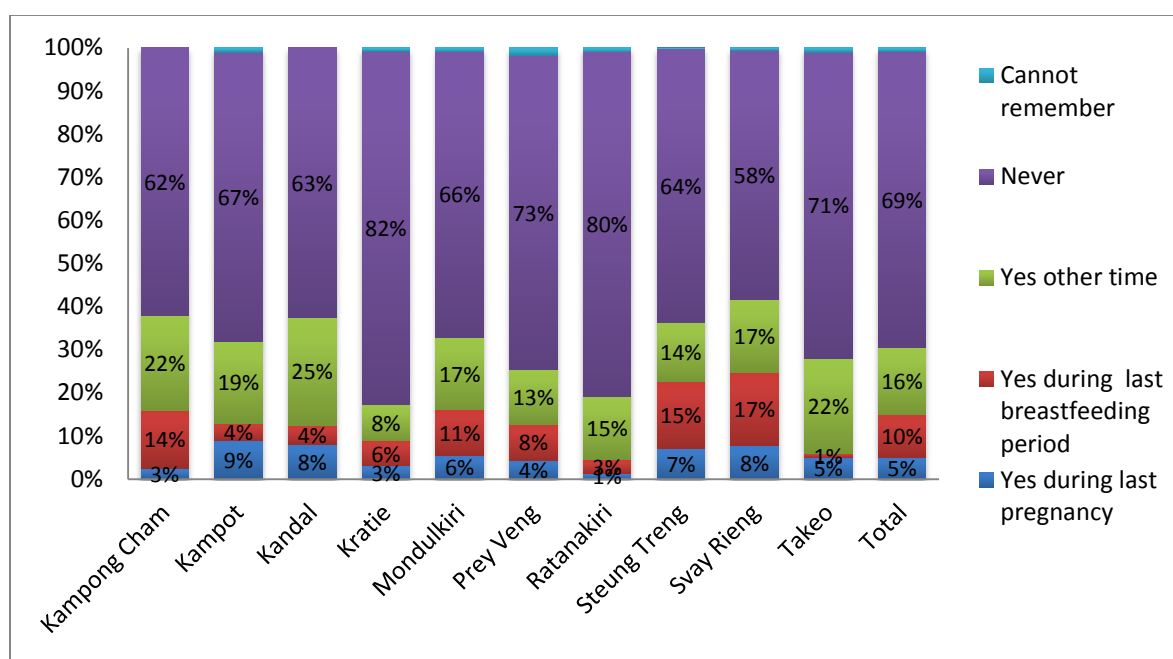
Fig 15: Contraceptive Prevalence Rate



Anti-helminthes treatment coverage among women of child bearing age

Only 31% of women of child bearing age reported that they were treated with de-worming tablets in the last six months. The rate was found high in Kratie and Ratanakiri with majority or 82% and 80% of women had never been treated. Only 5% of women had received the tablets during the last pregnancy, with the highest rate at Kampot (9%) and the lowest at Ratanakiri province (1%). Similarly, 10% of women received the treatment during the last breastfeeding, while 16% received in other time.

Fig 16: Percentage of women treated with Mebendazole/ de-worming tablets



3.6 Child Immunization

Universal immunization of children against 6 vaccine-preventable diseases (namely, tuberculosis, diphtheria, whooping cough, tetanus, polio, and measles) is crucial to reducing infant and child mortality. Guidelines developed by the WHO define children as fully vaccinated when they have received a vaccination against tuberculosis (BCG); three doses each of the diphtheria, pertussis, and tetanus (DPT) and polio vaccines; and a measles vaccination by the age of 12 months. In 2006, the Cambodian National Immunization Program replaced the DPT vaccine with a tetravalent vaccine that includes DPT and Haemophilus influenza type b vaccine (Hib) and a pentavalent vaccine that includes DPT, Hib, and hepatitis B vaccine (HepB).

Immunization coverage among children below 2 years of age (0 -23 months)

The majority (86%) of children under 2 years old received BCG vaccination against tuberculosis, while 10% of respondents reported that their children had never received the vaccination or could not remember. The difference of children receiving BCG vaccination by province was not significantly different. Almost all children in Kandal province (99%) were vaccinated with BCG, while only 69% of children in Ratanakiri were vaccinated for the same.

More than three fourth or 79% of children received Polio drop1, while 63% and 53% received polio drop 2 and 3 respectively. A similar pattern was observed on vaccination against Diphtheria, Pertussis and Tetanus, in which more than three fourth or 77% of children had received DPT 1, while 63% and 53% of children received DPT 2 and 3 respectively. Measles coverage among children from 0-23 months was 34%. The measles immunization rate is seen lower than Polio 3 and DTC3 because children receive Measles vaccination in a later

stage at the age of 9 months. There is a possibility that parents might forget or be busy making a living, rather than to bring their children for measles vaccination

Table 8: Proportion of children from 0 - 23 months old who received different vaccination

Province	BCG	Polio1	Polio2	Polio3	DTC1	DTC2	DTC3	Measles	None	Not Remember
Kampong Cham	97%	93%	84%	77%	92%	84%	77%	38%	1%	
Kampot	92%	85%	71%	62%	85%	73%	65%	37%	6%	
Kandal	99%	96%	90%	81%	95%	88%	77%	51%	1%	
Kratie	84%	78%	64%	48%	76%	62%	50%	35%	7%	4%
Mondulkiri	92%	79%	52%	37%	79%	54%	41%	30%	5%	2%
Prey Veng	83%	70%	54%	44%	68%	54%	43%	25%	8%	5%
Ratanakiri	69%	67%	51%	44%	65%	49%	43%	32%	26%	2%
Steung Treng	84%	79%	64%	48%	76%	63%	47%	35%	11%	2%
Svay Rieng	91%	83%	75%	70%	81%	71%	67%	41%	3%	2%
Takeo	98%	89%	85%	76%	93%	87%	84%	60%		
Total	86%	79%	63%	53%	77%	63%	53%	34%	8%	2%

Immunization coverage among children from 0 - 11 months

The majority (83%) of children aged from 0 - 11 months old received BCG vaccination against tuberculosis, while 12% of respondents reported that their children had never received the vaccination. Almost all children in Kampong Cham province (99%) and Kandal province (98%) were vaccinated with BCG, while only 59% of children in Ratanakiri were vaccinated for the same.

Almost three fourth or 72% of children received Polio drop1, while 52% and 39% received polio drop 2 and 3 respectively. 69% of children had received DPT 1, while half of the children received DPT 2 and 38% received DPT 3. Measles coverage among children from 0 to 11 months was only 10%.

Table 9: Proportion of children from 0 - 11 months old who received different vaccination

Province	BCG	Polio1	Polio2	Polio3	DTC1	DTC2	DTC3	Measles	None	Not Remember
Kampong Cham	99%	89%	76%	64%	87%	76%	64%	16%	1%	
Kampot	90%	77%	58%	42%	77%	61%	48%	16%	6%	
Kandal	98%	92%	83%	69%	90%	79%	60%	21%	2%	
Kratie	84%	74%	55%	40%	74%	55%	42%	6%	10%	3%
Mondulkiri	89%	72%	39%	25%	70%	40%	28%	7%	7%	2%
Prey Veng	81%	66%	44%	32%	63%	43%	30%	8%	11%	4%
Ratanakiri	59%	53%	35%	24%	51%	33%	22%	8%	36%	1%
Steung Treng	80%	75%	52%	32%	70%	51%	32%	8%	15%	1%
Svay Rieng	86%	76%	63%	55%	72%	57%	50%	15%	4%	2%
Takeo	96%	91%	78%	70%	87%	78%	70%	4%		
Total	83%	72%	52%	39%	69%	50%	38%	10%	12%	2%

Immunization coverage among children from 12 - 23 months

The majority (91%) of children aged from 12- 23 months old received BCG vaccination against tuberculosis, while only 7% of respondents reported that their children had never received the vaccination or could not remember. All children in Kandal province and Takeo province were vaccinated with BCG, while the lowest rate was seen in Ratanakiri (82%).

The majority of children (87%) of children received Polio drop1, while more than three fourth or 78% received Polio drop 2 and 70% received polio drop 3. Similarly, 86% of children had received DPT 1, 78% received DPT 2 and 72% received DPT 3. Measles coverage among children from 12 to 23 months was higher compared to other age groups with 65%, but still lower than the rates of children received polio 1, 2 and 3 and DPT 1, 2 and 3.

Table 10: Proportion of children from 12 - 23 months old who received different vaccination

Province	BCG	Polio1	Polio2	Polio3	DTC1	DTC2	DTC3	Measles	Fully immunized	None	Not Remember
Kampong Cham	93%	100%	98%	96%	100%	98%	98%	73%	64.4%		
Kampot	95%	95%	90%	90%	95%	90%	90%	67%	66.7%	5%	
Kandal	100%	100%	98%	95%	100%	98%	95%	84%	83.7%		
Kratie	84%	83%	75%	56%	78%	72%	61%	69%	50.0%	3%	5%
Mondulakiri	95%	88%	67%	50%	89%	69%	57%	56%	38.6%	2%	1%
Prey Veng	87%	75%	67%	62%	74%	68%	61%	48%	43.3%	5%	6%
Ratanakiri	82%	83%	72%	71%	82%	71%	71%	61%	59.3%	12%	4%
Steung Treng	89%	85%	80%	67%	84%	77%	65%	68%	54.7%	7%	3%
Svay Rieng	96%	93%	91%	90%	94%	89%	88%	76%	74.8%	1%	3%
Takeo	100%	88%	91%	81%	97%	94%	94%	100%	81.3%		
Total	91%	87%	78%	70%	86%	78%	72%	65%	56.5%	4%	3%

Fully Immunized Child Coverage, age 12-23 months

Fully immunized children has been calculated by the total number of children between the age group of 12 -23 months who received BCG, Polio3, DPT3 and Measles divided by the total number of children in the same age group. Based on the baseline survey data sets fully immunized coverage in this age group is 56.5% whereas CDHS 2010 reported 74% for the same age group.

3.7 Prevention of Communicable Diseases

Survey respondents were aware that adopting good practices and preventive measures could prevent spreading communicable diseases. Nearly two third (64%) of the respondents mentioned that using bed net to sleep could prevent diseases. The level of this knowledge was significantly different between provinces. More than 80% of respondents in PreyVeng and Kampong Cham reported they know the importance of bed net, while only 24% in Takeo and 26% Kandal had such knowledge. Only 5% of respondents mentioned that using toilet, using abate in water jar and covering water jar are methods to prevent disease in the house.

Knowledge on various measures that prevent spread of communicable diseases

Use of bed net was mentioned by 64% respondents as one of the preventive measures to control vector born diseases. More than half of respondents (56% and 54%) could describe that washing hand with soap and cleaning outside and inside the house respectively were methods to prevent diseases. Only few respondents were able to mention some simple methods to prevent disease such as spraying insecticide/bonfire to expel mosquitoes, properly wearing clothes, staying away from patients and wearing mask.

Table 11: Knowledge of respondents on prevention of communicable diseases in household

Province	Wash hand with soap	Use safe feces disposable	Use toilet	Bury unused water containers	Use abate in water jar	Cover water jar	Use bed net	Clean water jar weekly	Clean outside and inside of house	Spraying insecticide/ bonfire	Hygienic living/eating
Kampong Cham	26%	34%	-	15%	-	5%	80%	3%	41%	-	-
Kampot	47%	50%	3%	16%	2%	10%	31%	2%	77%	-	2%
Kandal	54%	64%	8%	11%	8%	7%	26%	3%	63%	-	1%
Kratie	64%	65%	2%	19%	23%	0%	72%	3%	52%	2%	3%
Mondulkiri	53%	28%	2%	3%	0%	1%	68%	1%	36%	0%	1%
Prey Veng	62%	47%	3%	26%	9%	6%	82%	6%	54%	2%	7%
Ratanakiri	50%	32%	4%	13%	-	1%	57%	2%	48%	-	2%
SteungTreng	59%	50%	2%	13%	1%	5%	65%	4%	58%	1%	19%
SvayRieng	63%	54%	15%	37%	7%	12%	57%	7%	70%	0%	3%
Takeo	55%	69%	6%	19%	3%	5%	24%	2%	64%	-	2%
Total	56%	45%	5%	18%	5%	5%	64%	4%	54%	1%	5%

When we looked into to what proportion of people are aware and practice the 8 Cleans methods as categorized by the Ministry of Health. The survey found that overall 21.3% are aware on such preventive measures. In the above table one of the 8th Cleans i.e proper animals raising by HHs was missing. The overall percentage of HHs who practices proper animal raising techniques was found 29% which is shown below under another chapter.

Knowledge and practice about danger signs among children

A majority of respondents (90%) were able to mention high fever as a danger sign of the illness that indicates a child needs treatment. The level of knowledge was almost the same between the provinces, in which Kampong Cham has the highest percentage (98%), while the lowest rate with at least 86% were found in Prey Veng, SteungTreng and SvayRieng. Cough and fast or difficult breathing were raised by almost half or 47% of respondents, while

45% of the respondents said that they had to bring their children to get treatment if they found their child looks unwell or not playing normally. Another 9% of respondents said that watery stools or diarrhea was a sign indicates that the child needs a treatment. Only 7% or less of respondents could mention having lethargic or difficult to wake up, vomiting out everything eaten, runny nose/flu/red eyes/cough, stomachache, convulsion or headache as danger signs.

Table 12: Knowledge on the signs of illness

Province	High fever	Cough and fast or difficult breathing	Looks unwell or not playing normal	Fever for more than two days	Not eating or drinking	Diarrhea/Watery stool	Lethargic or difficult to wake up	Vomits out everything eaten	Runny nose/Flu/Red eyes/Cough	Stomachache	Convulsion	Headache
Kampong Cham	98%	41%	4%	4%	2%	6%	3%	4%	19%	1%	1%	
Kampot	94%	46%	26%	3%	10%	2%	10%	2%	2%			1%
Kandal	94%	45%	35%	7%	14%	8%	11%	5%			1%	
Kratie	94%	23%	17%	5%	12%	4%	8%	2%	8%	5%	5%	7%
Mondulkiri	88%	28%	25%	10%	4%	4%	4%	7%	3%	1%	3%	1%
Prey Veng	86%	54%	44%	17%	13%	15%	10%	7%	12%	3%	1%	1%
Ratanakiri	95%	32%	24%	20%	6%	10%	2%	6%	0%	4%	2%	4%
Steung Treng	86%	36%	13%	13%	12%	17%	4%	8%	7%	7%	2%	2%
Svay Rieng	86%	39%	41%	20%	27%	0%	13%	11%	0%	1%	3%	0%
Takeo	96%	47%	45%	2%	12%	9%	11%	2%		1%		
Total	90%	38%	28%	13%	12%	9%	7%	7%	5%	3%	2%	2%

Drinking water

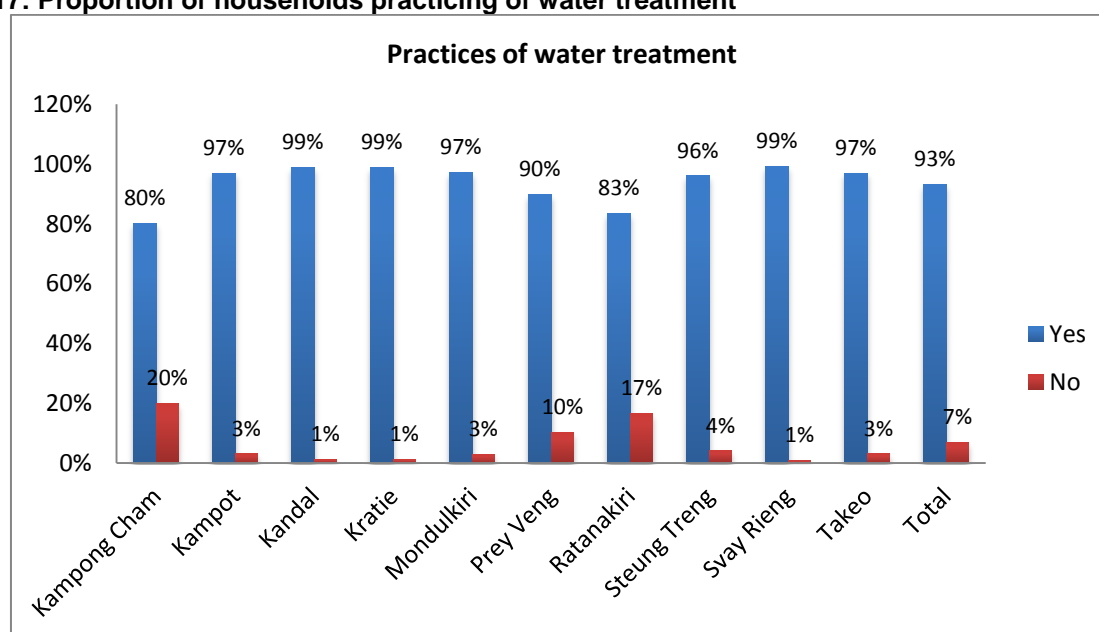
A majority or 92% of respondents stated that boiling water would make water safer for drinking. The knowledge was not significantly different from one province to another. Only more than one third or 39% of the respondents mentioned the use of water filter. Only 2% respondents mentioned methods such as straining water through clothes and adding bleach/chlorine, while only 1% knew solar disinfection as a method to make the water safe.

Table 13: Knowledge on methods to make water safer

Province	Boil	Water filter (ceramic, sand, composite)	Let it stand and settle	None of the above methods	Strain it through cloth	Add bleach/chlorine	Solar disinfection
Kampong Cham	87%	12%	13%	9%	1%		1%
Kampot	99%	22%	21%		3%		
Kandal	93%	21%	4%	4%			
Kratie	83%	41%	14%	12%	0%	0%	
Mondulhiri	95%	35%	4%	2%	2%	1%	
Prey Veng	91%	51%	25%	3%	1%	5%	6%
Ratanakiri	83%	16%	19%	5%	2%	1%	1%
Steung Treng	95%	28%	8%	3%	3%	3%	0%
Svay Rieng	96%	73%	29%	0%	7%	3%	0%
Takeo	98%	62%	5%	1%	1%	2%	
Total	92%	39%	16%	4%	2%	2%	1%

A majority or 93% of households said (yes) that they treat their water before drinking by using any kinds of methods to make water safer for drinking, while 7% did not treat (no) water for drinking. Almost all households (99%) in Kandal, Kratie and Svay Rieng treated water before drinking, while Kampong Cham and Ratanakiri have the lowest rate (80% and 83%) of households treating water.

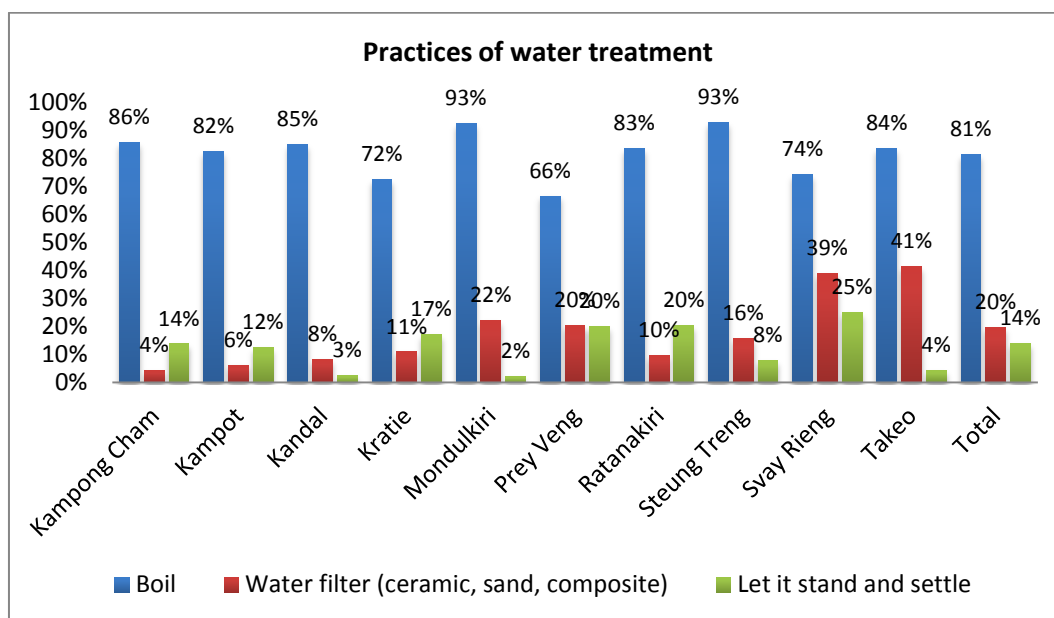
Fig17: Proportion of households practicing of water treatment



Boiling water was the common method used by many households (81%) to treat water for drinking, followed by water filter which using by one fifth of the households (20%). Mondulkiri and SteungTreng provinces had the highest percentages of households (93%) boiling water, while Takeo has the highest rate of households with 41% using water filters.

According to CDHS 2010, 65 percent of rural households boiled their water prior to drinking. Overall, a quarter of households do nothing to treat their water prior to drinking. Eleven percent of households use a ceramic, sand, or other type of filter to filter their water prior to drinking.

Fig18: Methods used for water treatment



Denque fever

Measures to control Dengue fever

Majority of respondents (76% and 75%) believed that using bed net and cleaning up outside and inside of the houses are the best methods to keep themselves away from mosquitoes, while more than half or 53% of them mentioned that burying unused water containers would stop mosquito's breeding. Small percentage respondents (13%, 8% and 6%) said that using Abate in the water jar, covering water jar and cleaning water jar weekly could prevent mosquito in their houses.

Table 14: Methods for prevention of mosquitoes

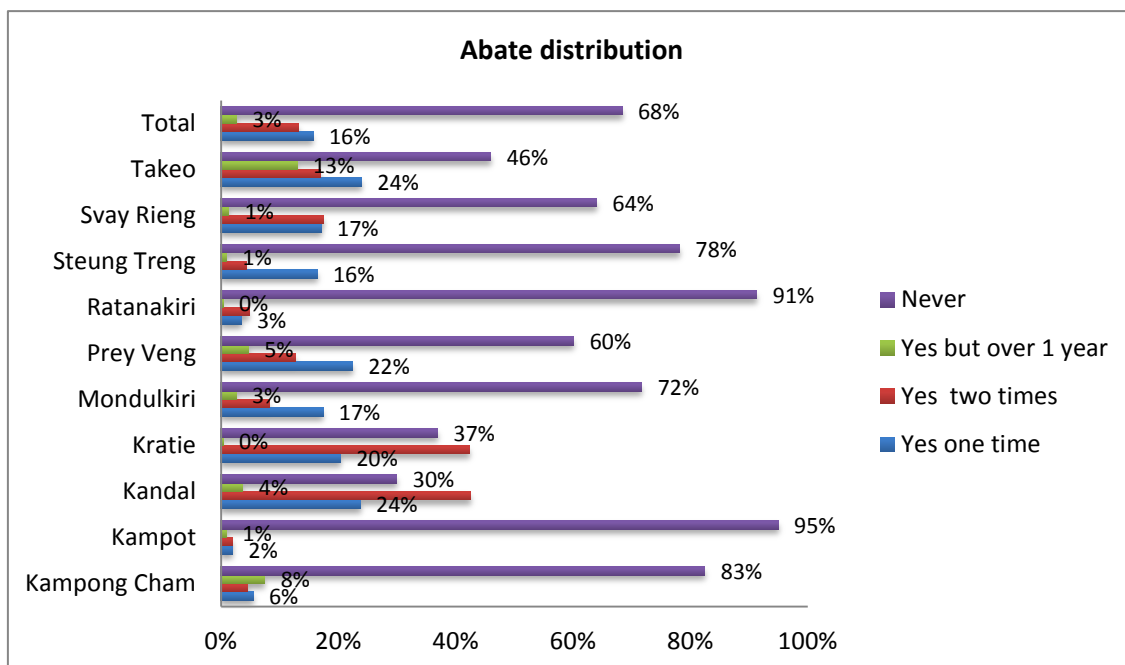
Province	Use bed net	Clean up outside and inside of the house	Bury unused water container	Use Abate in water jar	Cover water jar	Clean water jar weekly
Kampong Cham	69%	71%	49%	5%	5%	2%
Kampot	54%	71%	56%	13%	17%	2%
Kandal	38%	86%	64%	19%	8%	8%
Kratie	83%	77%	47%	36%	3%	6%
Mondulkiri	85%	75%	39%	6%	1%	3%
Prey Veng	81%	79%	70%	21%	9%	8%
Ratanakiri	82%	56%	33%	2%	1%	2%
SteungTreng	77%	80%	44%	5%	10%	6%
SvayRieng	73%	80%	72%	18%	18%	9%
Takeo	48%	81%	71%	21%	11%	8%
Total	76%	75%	53%	13%	8%	6%

Table 14.1: Quality of community-dengue control measures in candidate MHV

Province	Covered water jar	Cleaning jar every 1-2 weeks	Cleaned compound	Slept in Mosquitos net
Kampong Cham	21%	73%	9%	99%
Kampot	78%	75%	5%	99%
Kandal	60%	77%	11%	100%
Kratie	27%	91%	7%	99%
Mondul Kiri	14%	80%	6%	99%
Prey Veng	53%	75%	11%	98%
Ratanak Kiri	14%	82%	0%	99%
Stung Treng	32%	71%	11%	99%
Svay Rieng	37%	82%	15%	99%
Takeo	59%	80%	3%	100%
Total	33%	78%	9%	99%

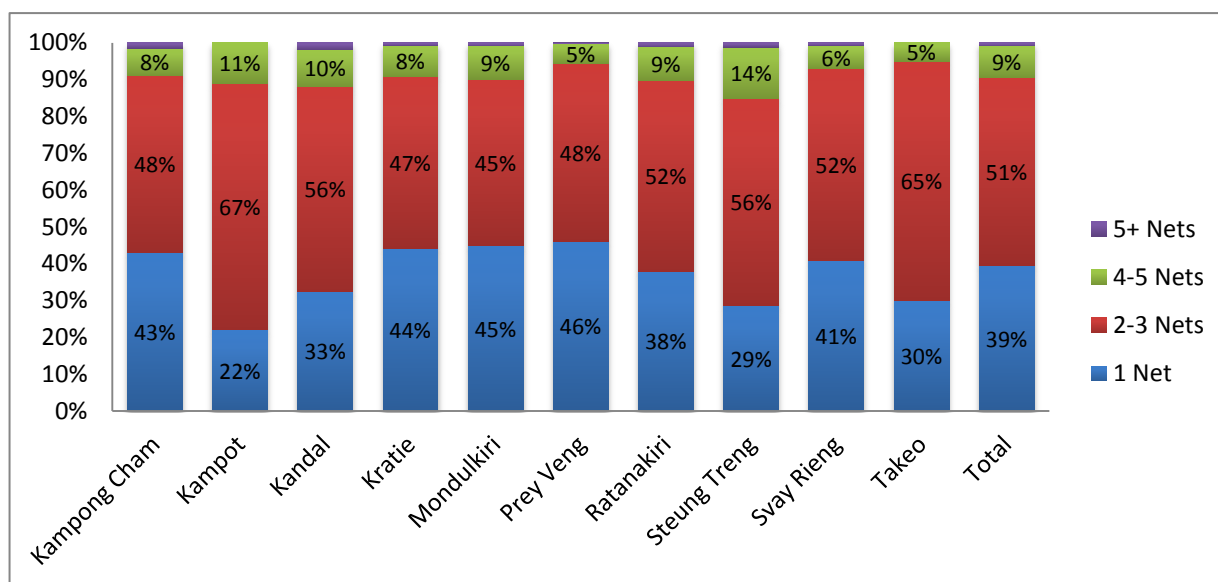
More than two third or 68% of respondents reported that their households have never received Abate during the last 12 months, while 16% of households reported receiving one time and 13% received two times. Kampot and Ratanakiri provinces had the highest rate (95% and 91%) of households have not received Abate.

Fig19: Frequency household received Abate distribution



All households visited during the field data collection had mosquito net that can be used for sleeping. More than half of them (51%) had two to three nets and 39% had one net. Only 9% of households had four to 5 nets, while only few households (1%) had more than 5 nets.

Fig20: Proportion of mosquito nets households have



3.8 Knowledge and Practices on Common Childhood Illness

Nearly one third or 32% (or 1,392) of children under five years olds experienced fever, while only 13% got diarrhea and almost one fourth (23%) had ARI/pneumonia during the last two weeks of data collection day. Prey Veng has the highest rate of children having both fever and acute respiratory infection or pneumonia (45% and 32%) respectively, while Mondulkiri has the highest percentages of children having diarrhea (19%).

Table 15: Number and percentage of children experienced fever, diarrhea and ARI

Province	Fever		Diarrhea		ARI/Pneumonia	
	Number	Percentage	Number	Percentage	Number	Percentage
Kampong Cham	71	31%	24	11%	54	24%
Kampot	28	23%	19	16%	34	28%
Kandal	56	30%	19	10%	56	30%
Kratie	40	13%	18	6%	40	13%
Mondulkiri	318	44%	134	19%	198	28%
Prey Veng	349	45%	122	16%	251	32%
Ratanakiri	139	20%	34	5%	61	9%
SteungTreng	202	31%	107	16%	151	23%
SvayRieng	166	28%	92	15%	145	24%
Takeo	23	19%	13	11%	32	27%
Total	1,392	32%	582	13%	1,022	23%

Among the total 4,410 under 5 children in the survey villages 1,953 children were found sick with different illnesses in the past 2 weeks of the survey. Out of them 1,022 (23%) were having pneumonia and other 582 (13%) were having diarrhea. This means 36% of under 5 years children in the past 2 weeks were suffering only from Pneumonia and Diarrhea illnesses.

Table 15b: Combined Children age 0-59 months, experienced with diarrhea and Pneumonia in the past 2 weeks

Disease		K. Cham	Kampot	Kandal	Kratie	Mondol Kiri	Prey Veng	Ratana Kiri	Steung Treng	Svay Rieng	Takeo	Total
Diarrhea	Count	24	19	19	18	134	122	34	107	92	13	582
	%	11%	16%	10%	6%	19%	16%	5%	16%	15%	11%	13%
Pneumonia	Count	54	34	56	40	198	251	61	151	145	32	1,022
	%	24%	28%	30%	13%	28%	32%	9%	23%	24%	27%	23%

One quarter (25%) of children under five had high fever in the past two weeks, while 13% had fever for more than two days. More than one fifth (22%) of them had cough, 13% had diarrhea, while 6% of them had breathing problem, such as difficult or fast/short breathing. Highest percentages of fever and cough were reported in Prey veng (34% and 31%), diarrhoea was highest in Mondolkiri (19%), and difficulty in breathing was highest in Kampong Cham and Kampot (17%).

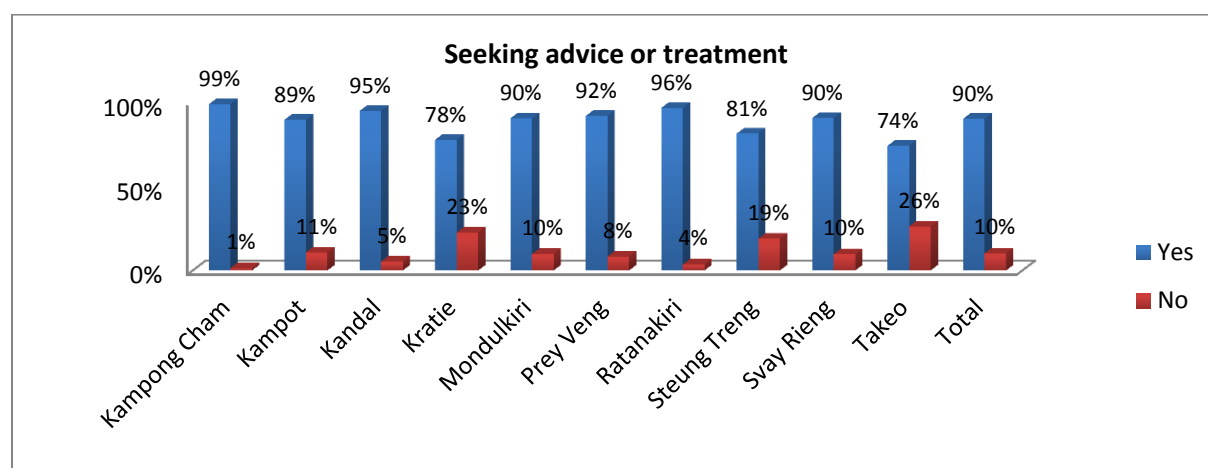
Table 16: Type of Illnesses children experienced in the past two weeks

Province	None		High fever		Cough		Fever for more than two days		Diarrhea		Difficult or fast/short breathing	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Kampong Cham	121	53%	66	29%	40	18%	31	14%	23	10%	38	17%
Kampot	70	58%	18	15%	33	27%	20	17%	19	16%	20	17%
Kandal	96	52%	40	22%	53	29%	31	17%	18	10%	10	5%
Kratie	250	79%	38	12%	37	12%	7	2%	18	6%	26	8%
Monduliri	335	47%	200	28%	185	26%	214	30%	134	19%	48	7%
Prey Veng	329	43%	264	34%	240	31%	132	17%	121	16%	39	5%
Ratanakiri	504	74%	128	19%	56	8%	22	3%	34	5.5%	12	2%
Steung Treng	364	55%	172	26%	138	21%	89	13%	106	16.6%	62	9%
Svay Rieng	320	53%	152	25%	138	23%	17	3%	90	15%	14	2%
Takeo	68	57%	15	13%	30	25%	13	11%	13	11%	11	9%
Total	2,457	56%	1,093	25%	950	22%	576	13%	576	13%	280	6%

Care seeking behavior and practices of HHs for fever among children

A large majority of respondents (90%) sought for medical advice or treatment after their children got fever, with the highest rate in Kampong Cham (99%) and the lowest in Takeo (74%). According to CDHS 2010, 63% of all children under five with fever were taken to a health facility or provider to seek treatment or advice.

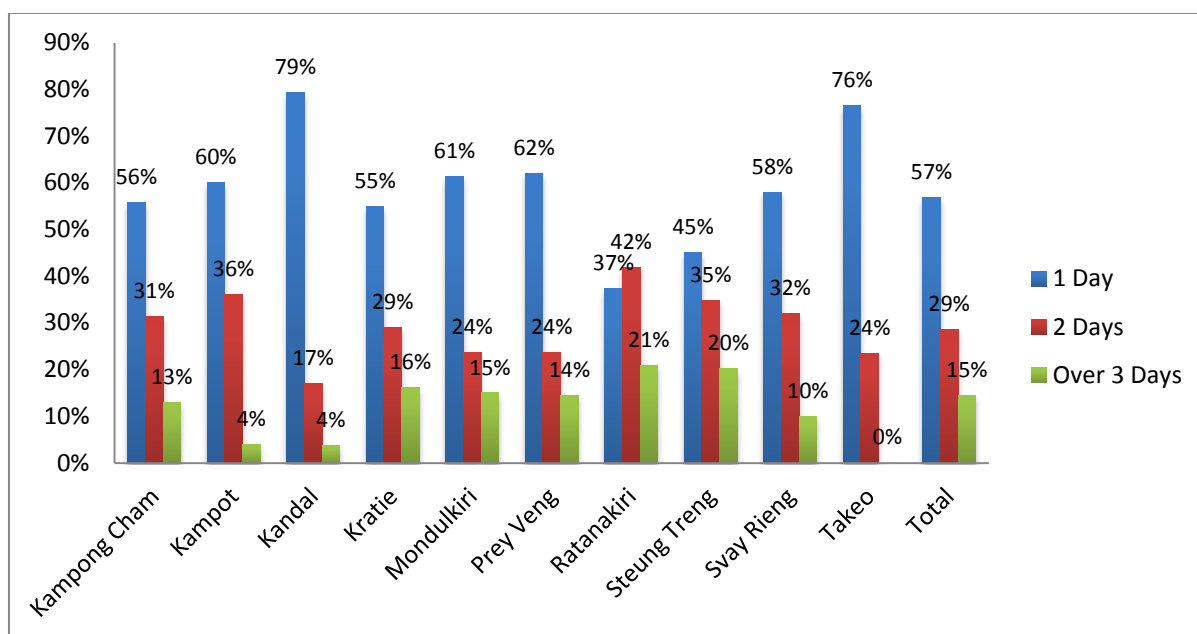
Fig 21: Proportion of seeking advice or treatment for fever



Duration for seeking first treatment

More than half or 57% respondents reported seeking first treatment for their child one day after the fever began, while 29% spent two days and 15% spent more than three days before taking action. Kandal has the highest rate (79%) of respondents taking their children for the first treatment in one day after the fever began, followed by Takeo with 76%, while Ratanakiri has the lowest rate (37%) of such behavior.

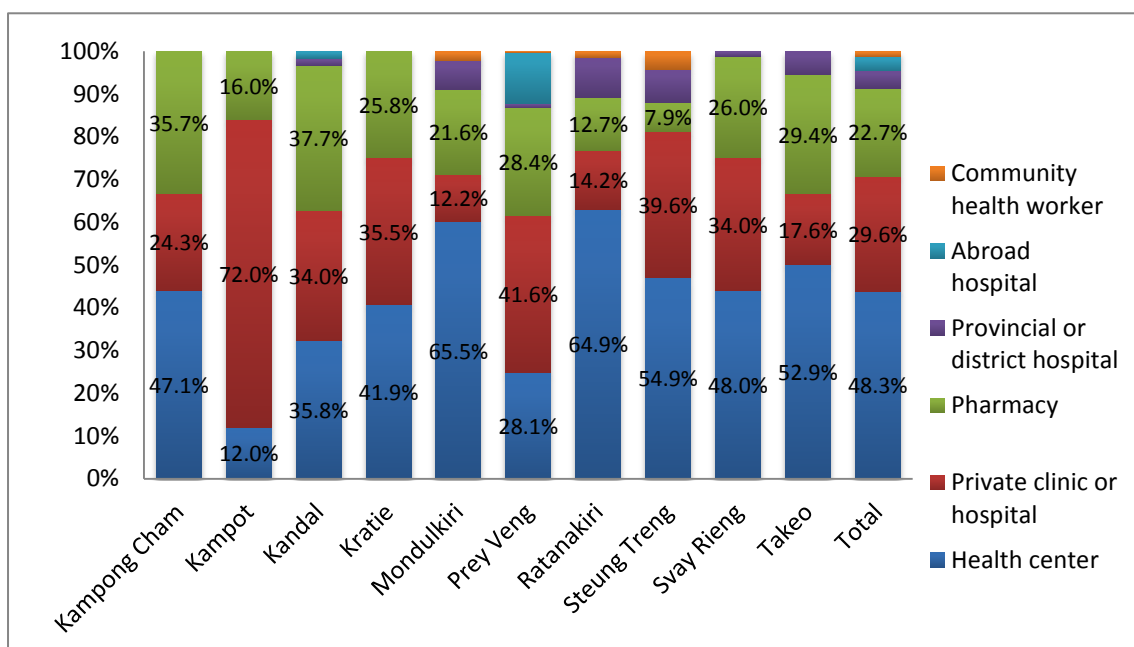
Fig 22: Duration for seeking for first treatment



Places for consultation and treatment

Health Center played a major role in providing treatment service in some provinces, followed by private clinic/hospital and pharmacy or drugstore. Almost half (48%) of respondents sought advice or treatment at health center when their child got fever, with the highest rate at Mondulakiri and Ratanakirir with almost two third (66% and 65%), however, only 12% of respondents in Kampot used the health center. Up to 72% of respondents in Kampot said that they preferred going to private clinic or hospital. Some respondents (4%) said that they sought medical treatment with hospital at neighboring countries, while only few people (1%) consulted with community health workers for treating the fever.

Fig 23: Places where sick child received advice/treatment

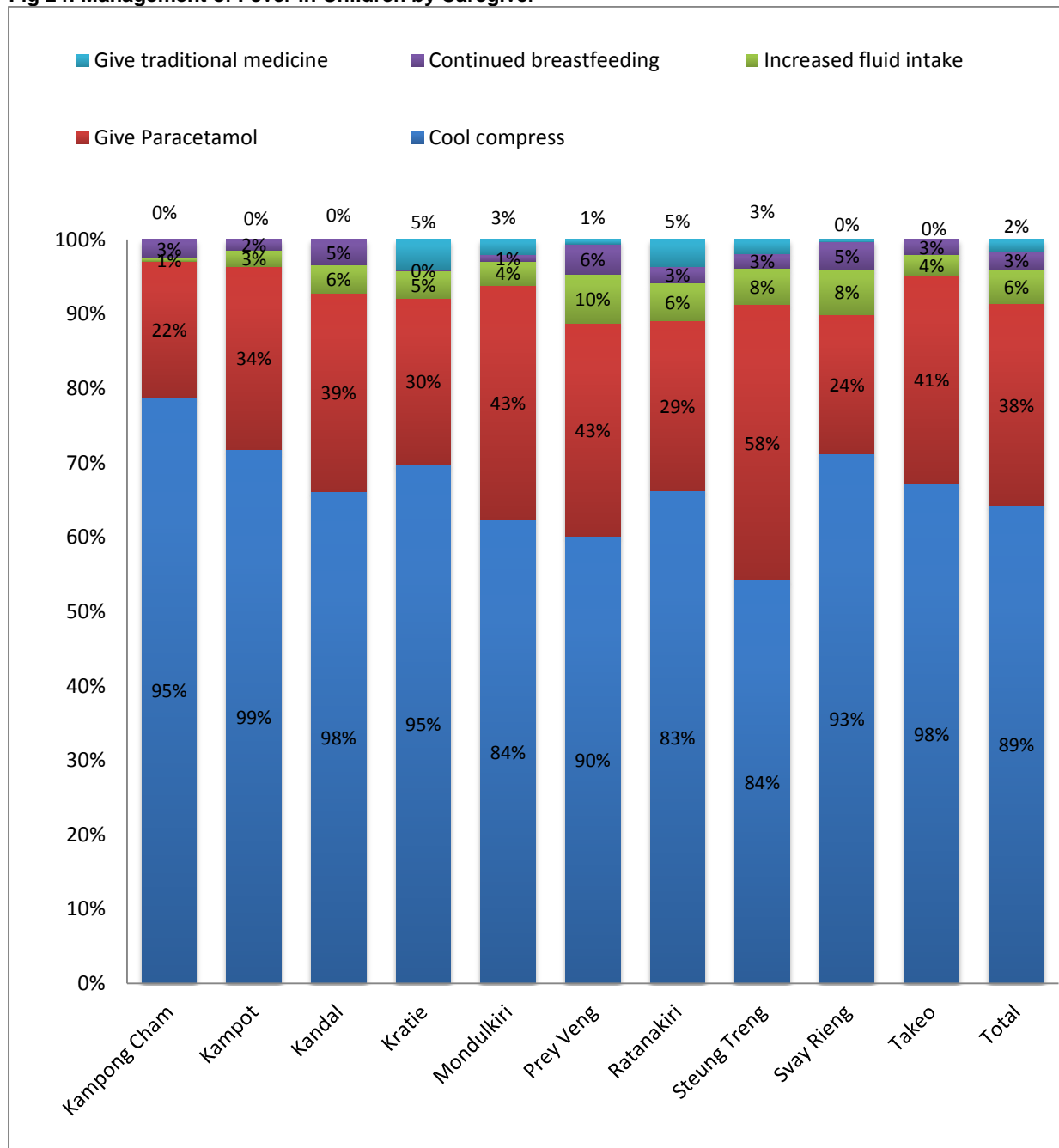


Care and treatment given for children during fever

A majority or 89% of respondents said that they normally give cold compression for their children when they got fever, while 38% of the respondents said that they gave Paracetamol to reduce the fever as prescribed by physician. Interestingly, only 2% of respondents mentioned that they gave traditional medicine, such as boiled water with bark or leave of trees, while only 1% of them said that they would do coin to reduce the temperature of the child when they got fever.

CDHS 2010 shows that 44% of children were given antibiotics while they had fever. Mothers in Prey Veng (85 percent) were most likely to use antibiotics to treat fever.

Fig 24: Management of Fever in Children by Caregiver



3.9 Prevention and Management of Diarrheal Diseases in Children

Knowledge on danger signs

Majority of respondents (74%) reported that a watery stool many times a day was a danger sign of diarrheal disease that indicates the child needs immediate care and treatment. The level of knowledge varied from one province to another. Up to 82% of respondents in Kratie and 80% in SteungTren and SvayRieng knew this danger sign, while only 39% of respondents in Kandal were able to state it. Less than half of respondents (47%) could mention lethargic as a danger sign, while only 14% could say vomiting and sunken eyes. Relatively low rates of respondents (7%, 6%, 4%, 2% and 2%) could count blood in stool, unable to suck breast milk, dry lips and mouth, pale skin and abdominal bloating as danger signs.

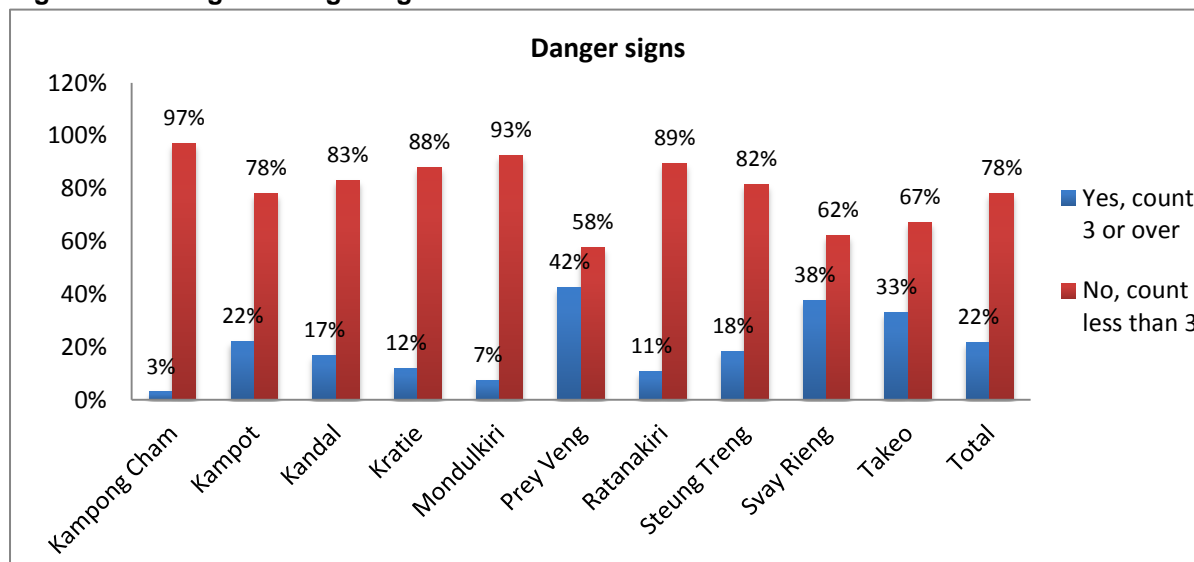
Table 17: Knowledge of danger signs of diarrheal disease

Province	Watery stool many times	Lethargic	Vomiting	Sunken eyes	Abdominal pain	Unable to eat or drink	Fever	Blood in stool	Unable to suck breast milk	Dry lips and mouth	Pale skin	Abdominal bloating
Kampong Cham	75%	38%	8%	4%	16%	3%	6%	3%	5%	2%	1%	2%
Kampot	53%	71%	12%	23%		13%	5%	5%	1%	5%		
Kandal	39%	57%	16%	20%	1%	19%	8%	1%	8%	6%		
Kratie	82%	36%	14%	4%	35%	8%	13%	2%	2%	2%	5%	10%
Monduliri	76%	35%	15%	7%	8%	2%	3%	8%	3%	2%	1%	1%
Prey Veng	75%	69%	12%	32%	15%	12%	8%	13%	9%	8%	5%	2%
Ratanakiri	72%	22%	13%	4%	9%	4%	6%	2%	2%	5%	2%	1%
SteungTren	80%	39%	19%	6%	13%	11%	16%	7%	5%	2%	6%	4%
SvayRieng	80%	57%	15%	19%	5%	22%	7%	12%	13%	2%		3%
Takeo	57%	81%	18%	27%	1%	17%	6%	5%	5%	4%		
Total	74%	47%	14%	14%	11%	10%	8%	7%	6%	4%	2%	2%

Among danger signs of diarrheal diseases, many respondents (78%) were able to count only less than 3 points, while only 22% of respondents could state at least three danger signs. The level of knowledge significantly varied depending on the location. Prey Veng province

has the highest rate of respondents (42%) reported knowing 3 or more danger signs while only 7% in Mondulkiri and even 3% in Kampong Chan reported knowing so.

Fig25: Knowledge of danger signs of diarrheal disease



Knowledge on care and treatment for Diarrhoea

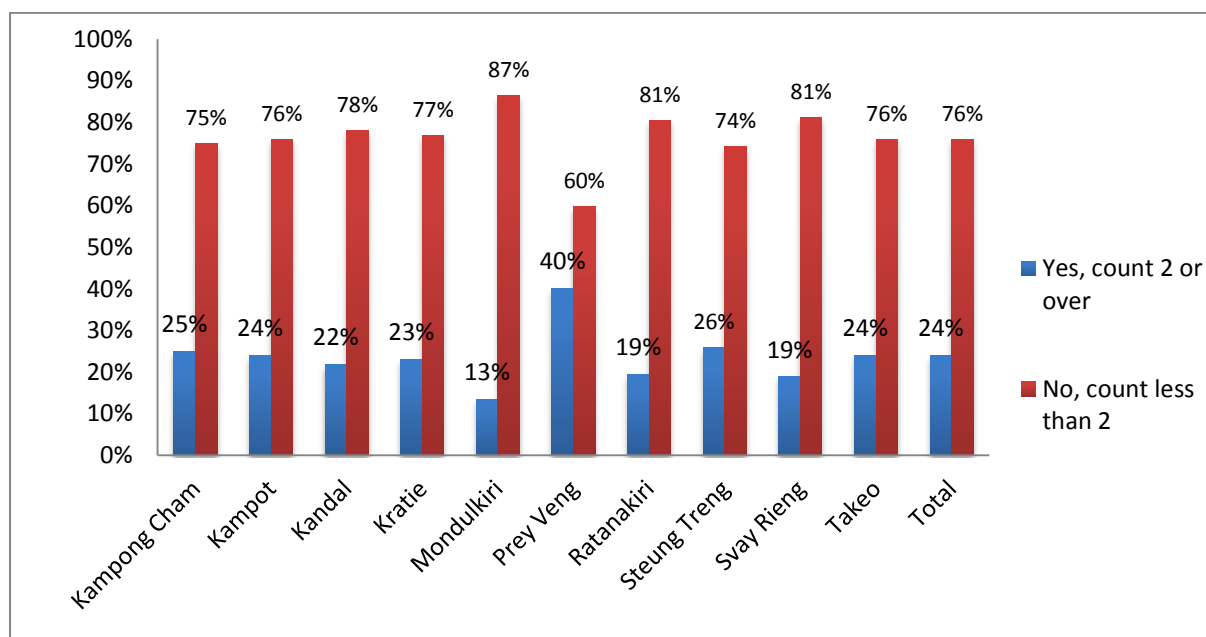
More than half or 62% of the respondents reported that increased fluid intake was a home care practice they should use when a child gets diarrhea, while 14% were not able to tell anything. Nearly one fifth or 18% said that they would continue breastfeeding and 12% even emphasized that they would continue feeding the child until the diarrhea stopped. Only 11% of respondents mentioned oral rehydration solution (ORS) as a home care practice, while 9% would use traditional medicine and 2% stated giving rice juice.

Table 18: Knowledge on homecare practices when a child gets diarrhea

Province	Increased fluid intake	Continued breastfeeding	Don't know	Continued feeding until diarrhea Stopped	Oral rehydration solution	Traditional medicine	Drink rice juice	Apply medicine at home
Kampong Cham	49%	17%	13%	14%	28%	7%		
Kampot	82%	19%	10%	8%	10%		3%	
Kandal	87%	11%	8%	8%	9%		1%	
Kratie	68%	11%	6%	5%	17%	25%	7%	1%
Mondulkiri	44%	14%	21%	14%	9%	13%		3%
Prey Veng	79%	25%	1%	14%	19%	5%	1%	4%
Ratanakiri	42%	16%	30%	22%	2%	13%	0%	
Steung Treng	67%	24%	13%	10%	7%	11%	2%	2%
Svay Rieng	64%	18%	18%	6%	7%	4%	4%	0%
Takeo	90%	16%	2%	12%	7%		2%	
Total	62%	18%	14%	12%	11%	9%	2%	2%

Majority of respondents (76%) were able to count only less than two home care practices, while only 24% of them could count at least two practices. The rates were different from one province to another. Prey Veng has the highest rate of respondents being able to count at least two methods, while Mondulakiri has the lowest rate at 13%.

Fig 26: Knowledge on homecare practices when a child gets diarrhea



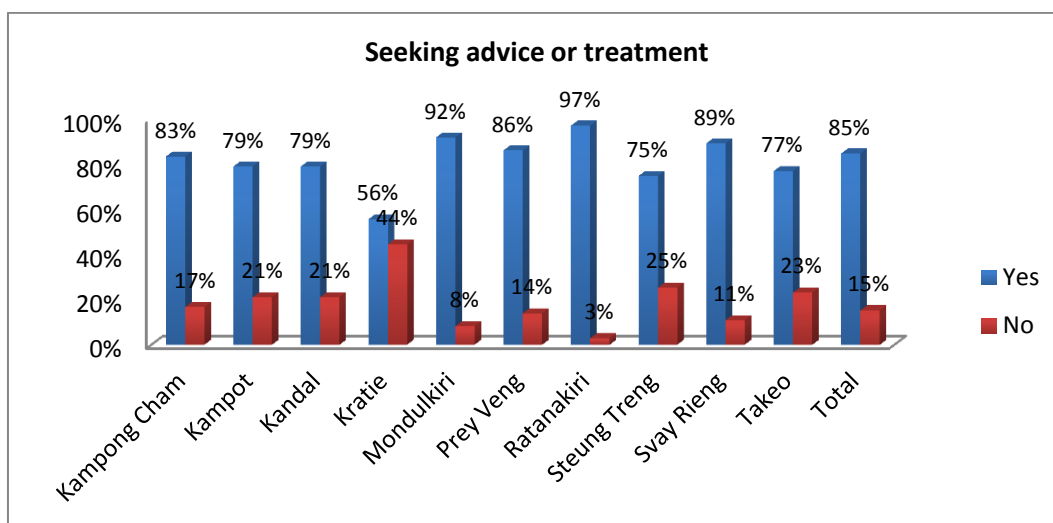
More than three fourth or 79% of children who had diarrhea during the last two weeks reported having many times of watery stool, while 6% said having blood in stool. Almost three fourth or 74% of children said to be accompanied by fever. 14% reported being unable to breastfeed or eat or drink during the diarrheal period, while 7% reported having abdominal pain or abdominal bloating and 6% reported that their child was not better in three days.

Table 19: Proportion of children experienced different symptoms of diarrhea

Province	Many TIMES watery stool	Fever	Unable to breastfeed/Unable to eat/ drink	Abdominal pain/ bloating	Blood in stool	child not better in 3 days	Tired/ exhausted
Kampong Cham	67%	92%	13%	-	4%	-	-
Kampot	58%	79%	-	-	-	16%	-
Kandal	74%	53%	5%	5%	5%	-	-
Kratie	83%	61%	11%	11%	11%	6%	11%
Mondulakiri	78%	72%	7%	5%	1%	3%	-
Prey Veng	77%	82%	25%	4%	12%	7%	3%
Ratanakiri	77%	88%	-	-	6%	6%	-
Steung Treng	83%	60%	13%	17%	8%	5%	8%
Svay Rieng	86%	84%	25%	10%	9%	5%	8%
Takeo	92%	54%	8%	-	-	23%	-
Total	79%	74%	14%	7%	6%	6%	3%

A large majority of respondents (85%) sought for medical advice or treatment after their children get diarrhea, with the highest rate in Ratanakiri (97%) and the lowest in Kratie (56%). Our finding is much higher than CDHS 2010 where only 59% of children with diarrhea were taken to a health provider.

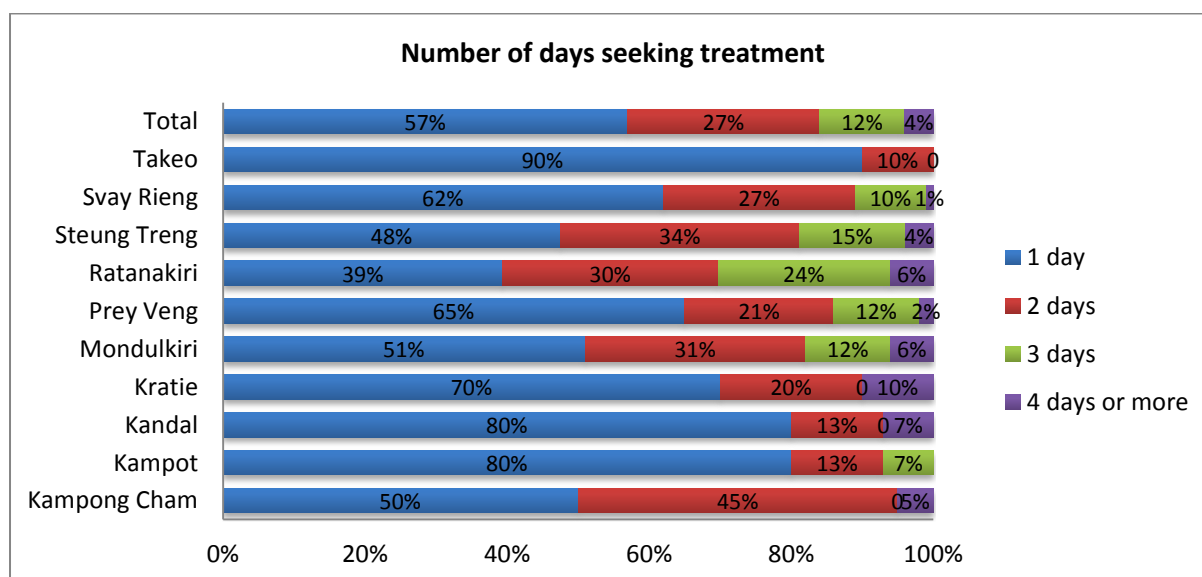
Fig 27: Proportion of children seeking advice or treatment for diarrhea



Treatment seeking practice (first treatment) after the child had diarrhea

Out of 493 of respondents interviewed more than half (57%), with highest in Takeo (90%) said they sought for treatment for their children within one day, one fourth or 27% of them said that they sought treatment within two days after the child had diarrhea, with the highest rate in Kampong Cham at 45%, and the lowest rate being in Takeo at 10%. Four per cent of respondents sought for treatment for their children until 4 days or more, with up to 10% in Kratie and 6% at Ratanakiri and Mondulakiri. However, none of respondents in Takeo and Kampot reported seeking treatment after four days or more.

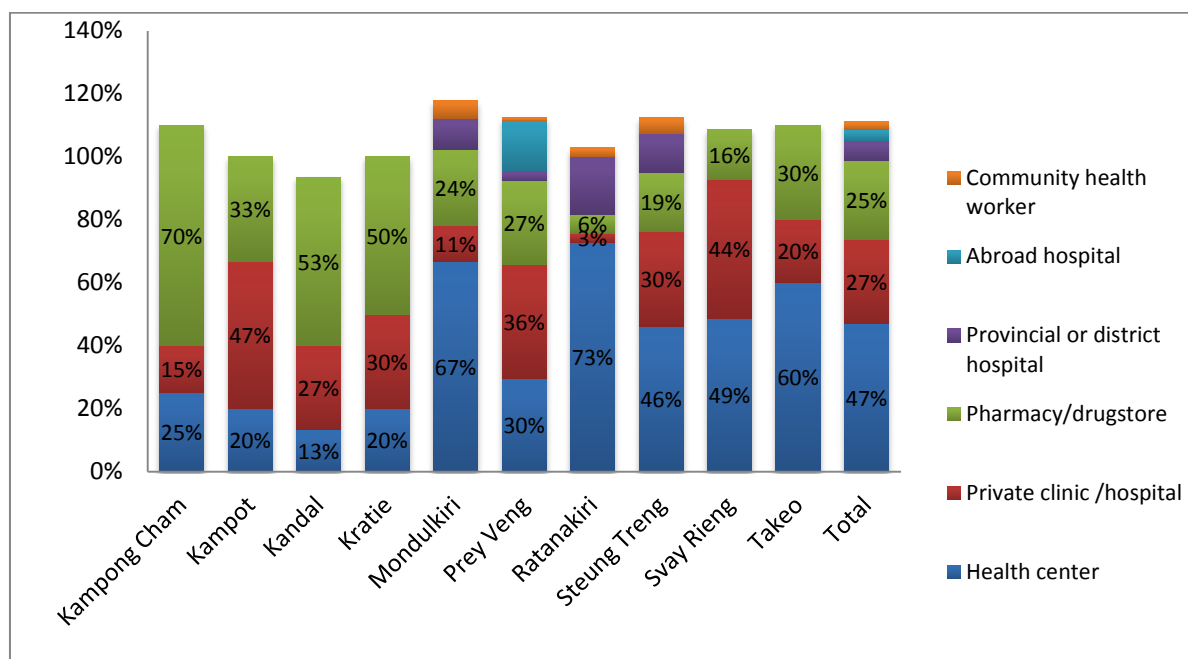
Fig28: Period seeking first treatment after the child had diarrhea



Places for advice/treatment for diarrhoea

In some provinces, health center plays a very important role in providing treatment service for children who got diarrhea, however, pharmacy or drugstore were the places where they went to seek for treatment. Almost half (47%) of children under five of age were brought for medical advice or treatment at health center when they got diarrhea, with the highest rates in Ratanakiri, Mondulkiri and Takeo with 73%, 67% and 60% respectively, but relatively low rates of respondents reported seeking treatment at the health center at Kandal with 13% and Kampot and Kratie with 20%.

Fig29: Places to get advice/treatment for diarrhea



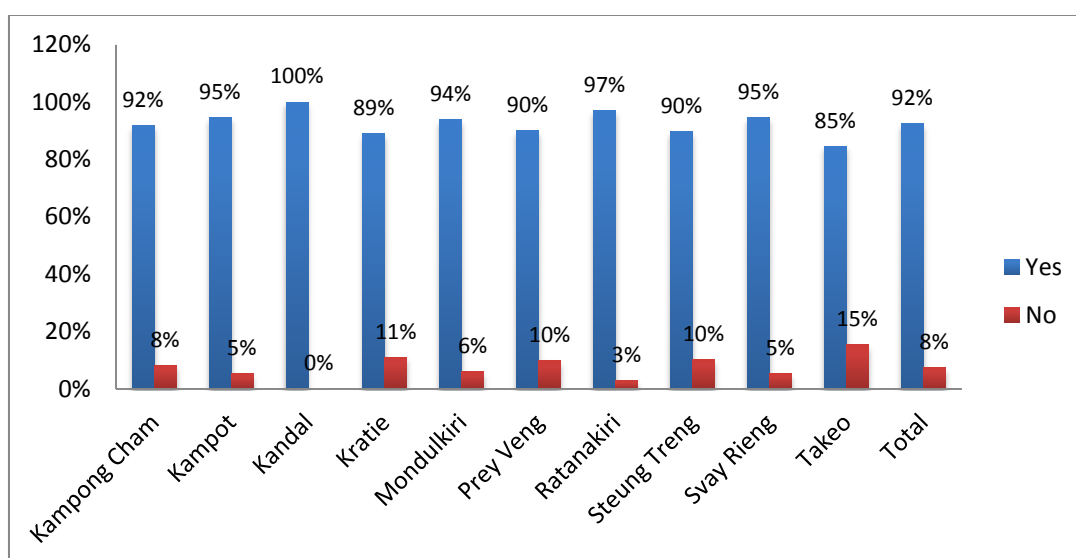
Private clinic/hospital were visited by 27%, with the highest rates in Kampot and SvayRieng with 47% and 44%, while one quarter (25%) of respondents sought service from pharmacy or drugstore, with the highest rates at Kampong Cham, Kandal and Kratie with 70%, 53% and 50%. 6% of respondents went to provincial or district hospital, while 3% sought medical treatment at hospital in neighboring countries. Another 3% of respondents consulted with community health workers.

Treatment sought for Diarrhea(Practice)

A large percentage of children (92%) took any kind of drug to stop diarrhea, with no significant difference from one province to another. The highest rate (100%) was found in Kandal and the lowest Takeo with at least 85% being at Takeo.

CDHS 2010 shows that 53% of children with diarrhea were treated with some kind of oral rehydration therapy, 34 percent were treated with a solution prepared from an ORS packet or prepackaged liquid, and the same percentage were given recommended home fluids. However, about one in five children (19%) with diarrhea did not receive any treatment at all.

Fig 30: Proportion of children taking drug during diarrhea



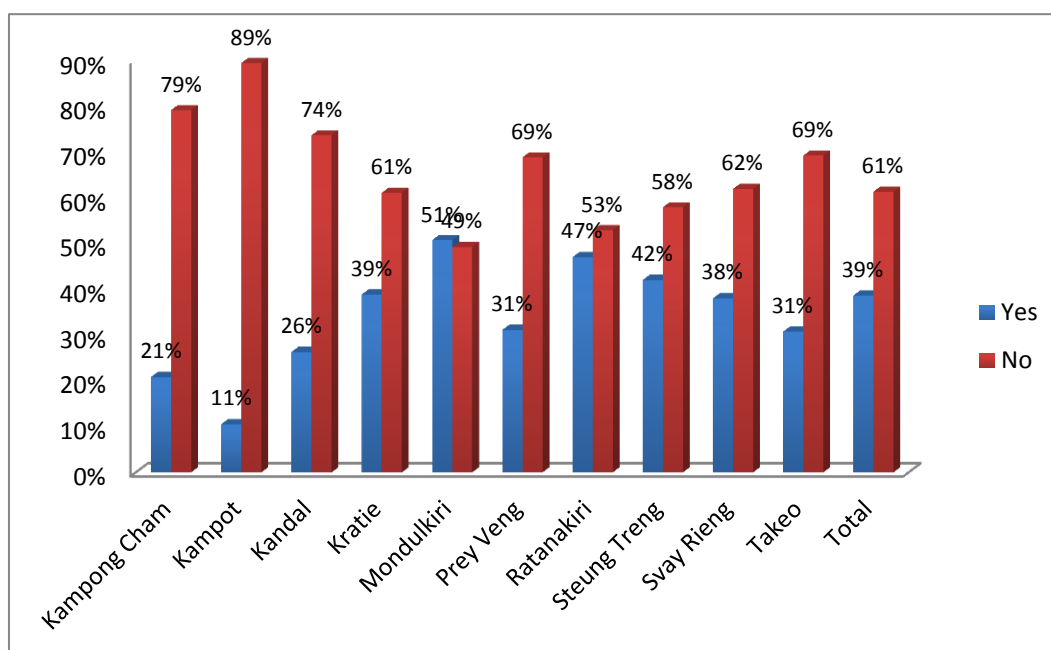
Almost three fourth or 74% of children received mixed tablets to stop diarrhea, while 23% received packet ORS solution. Around 4% got IV fluid, while another 4% were provided with coconut juice or rice water during diarrhea.

Table 20: Types of treatment that children got for diarrhea

Province	Mixed tablets	Packet ORS solution	Paracetamol	IV Fluid	Coconut juice/rice water	Syrup	Antibiotic	Not remember	Traditional herbal medicine	Multi-vitamine	Injections	Powder-like medicine
Kampong Cham	91%	23%	5%	-	-	-	-	-	-	-	-	-
Kampot	83%	6%	6%	6%	-	-	-	-	-	-	6%	-
Kandal	53%	11%	21%	11%	-	-	11%	-	-	11%	-	11%
Kratie	75%	25%	6%	19%	6%	6%	-	6%	-	-	6%	-
Mondulkiri	75%	40%	24%	3%	3%	2%	4%	2%	2%	1%	1%	-
Prey Veng	89%	14%	12%	5%	6%	3%	2%	-	2%	-	2%	1%
Ratanakiri	58%	24%	30%	-	6%	-	-	12%	6%	6%	-	-
Steung Treng	56%	28%	21%	2%	3%	9%	3%	1%	5%	1%	3%	3%
Svay Rieng	79%	12%	3%	6%	5%	-	1%	6%	-	5%	-	-
Takeo	64%	27%	27%	-	9%	-	9%	-	-	-	-	-
Total	74%	23%	16%	4%	4%	3%	3%	2%	2%	2%	2%	1%

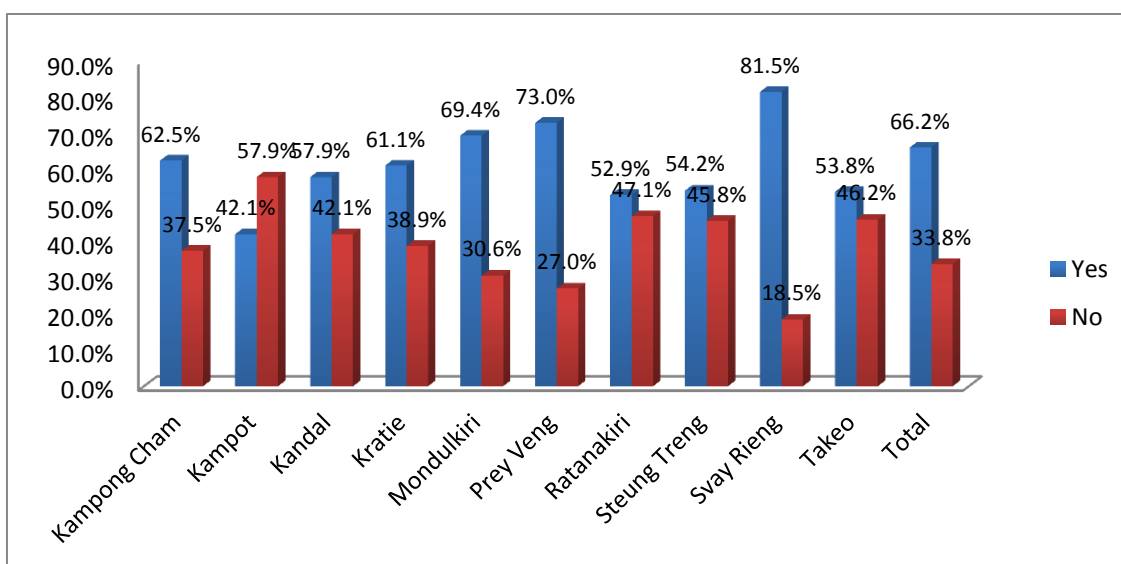
Only 39% of respondents reported that they gave a pre-packaged ORS liquid to their child to drink after the child started having diarrhea. Mondulkiri has the highest percentage (51%) of respondents reported giving their child the liquid and Kampot has the lowest rate (11%).

Fig 31: Proportion of children given a pre-packaged ORS liquid



Two third or 66% of respondents reported that their children were given any kinds of homemade fluids to drink at any time after they started having diarrhea, with the highest rate (82%) in SvayRieng and the lowest (42%) in Kampot.

Fig32: Proportion children given recommended homemade fluids



Rice porridge was chosen by two third (66%) of the respondents as homemade fluid given to children below five years old when they got diarrhea, followed by fresh coconut juice (28%). Unclean water was reported giving to children by 15% of respondents, while another 8% gave rice water and 2% of respondents reported giving water boiled from bark or leaves of some trees. Breastfeeding was considered a homemade fluid by only less than 1% of respondents

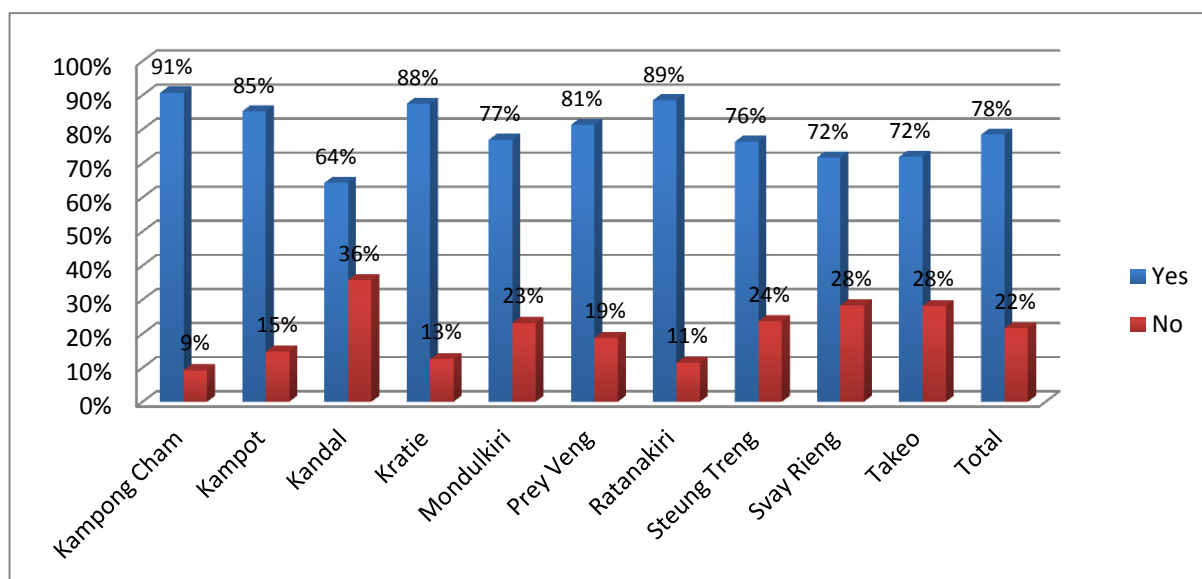
Table 21: Homemade therapy given to children

Province	Porridge	Fresh coconut Juice	Give unclean water	Rice water	Give water (boiled from bark/leaves of trees)	Breast-feeding
Kampong Cham	60%	47%	-	-	-	-
Kampot	50%	75%	-	-	-	-
Kandal	55%	55%	9%	-	-	-
Kratie	55%	46%	9%	-	-	-
Mondulkiri	71%	15%	19%	1%	1%	1%
Prey Veng	72%	32%	11%	12%	3%	1%
Ratanakiri	72%	11%	6%	17%	6%	-
Steung Treng	52%	17%	36%	10%	7%	-
Svay Rieng	65%	39%	5%	1%	-	-
Takeo	71%	-	43%	-	-	14%
Total	66%	28%	15%	6%	2%	1%

3.10 Management of Pneumonia/Acute Respiratory Infection (ARI) in Children

A majority of respondents (78%) reported that when their children under five years old had cough during the last two weeks, they had breathing problem, such as difficult breathing or breath faster than usual with short or fast breaths. This case was very high (91%) at Kampong Cham, with the lowest (64%) at Kandal.

Fig33: Proportion of children who breathing problem



A majority of respondents (86%) reported seeking medical advice or treatment for their child when they had cough or fast breathing in the last two weeks. Proportion of seeking treatment was not significantly different in the target locations. SvayRieng has the highest rate (94%) of seeking advice/treatment, while Takeo has the lowest rate (66%).

Knowledge on danger signs of Acute Respiratory Infection

More than a quarter or 26% of respondents were not able to mention any danger signs of acute respiratory infection. The highest rates were found in Ratanakiri and Mondulkiri provinces with 55% and 44% respectively. Fast breathing was the most common sign raised by more than half or 60% of respondents, followed by chest drawing (40%) and fever/convulsion (39%) respectively. Only 10% of respondents mentioned cough as a danger sign. Lethargy, being unable to drink or suck or being easily tired was only raised by few respondents at 7%, 2% and 1%, respectively.

Table 22: Knowledge of the danger signs of ARI

Province	Fast breathing	Chest indrawing	Fever/Convulsion	Don't know	cough/dry throat	Lethargy	Unable to drink or suck	Easily tired
Kampong Cham	48%	24%	38%	28%	14%	1%	1%	
Kampot	72%	35%	25%	24%	8%	2%	4%	
Kandal	79%	49%	23%	17%	1%	2%	2%	
Kratie	65%	37%	47%	17%	22%	6%	2%	11%
Mondulkiri	32%	19%	36%	44%	4%	3%	1%	
Prey Veng	86%	69%	53%	5%	22%	14%	2%	2%
Ratanakiri	31%	13%	24%	55%	3%	6%	1%	
Steung Treng	60%	33%	31%	31%	10%	8%	1%	1%
SvayRieng	80%	67%	48%	7%	3%	10%	4%	
Takeo	72%	34%	38%	17%	14%	2%	5%	1%
Total	60%	40%	39%	26%	10%	7%	2%	1%

Only less than a quarter or 19% of respondents reported that they know at least three danger signs of ARI, but majority of them (81%) could count only one or two signs. Knowledge of respondents who could count at least three signs varied from province to another. Prey Veng has the highest rate of respondents (42%) who could count 3 or more danger signs, while only 5% at Kampong Cham and 6% at Ratanakiri and Monduliri were able to do so.

Fig34: Knowledge of respondents on at least 3 danger signs of ARI

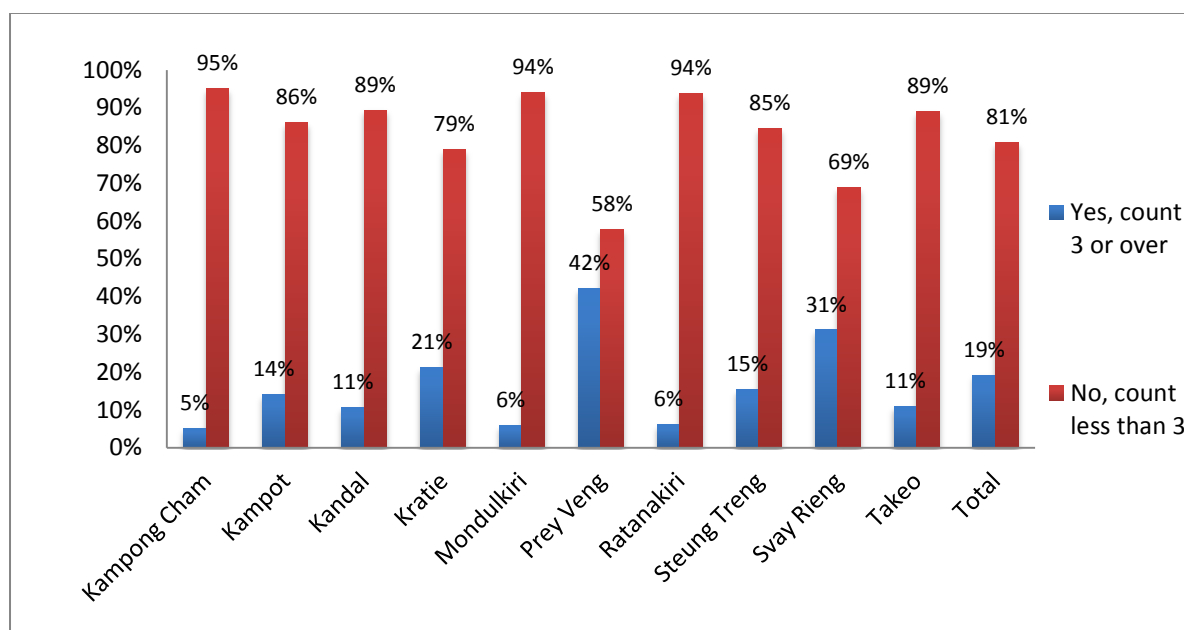
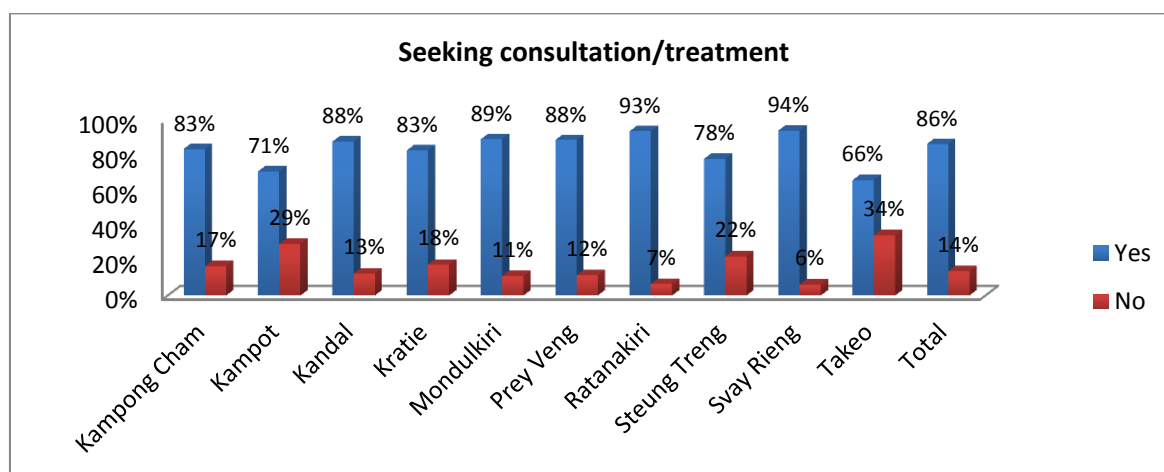


Fig 35: Proportion of seeking consultation/treatment for cough of the children

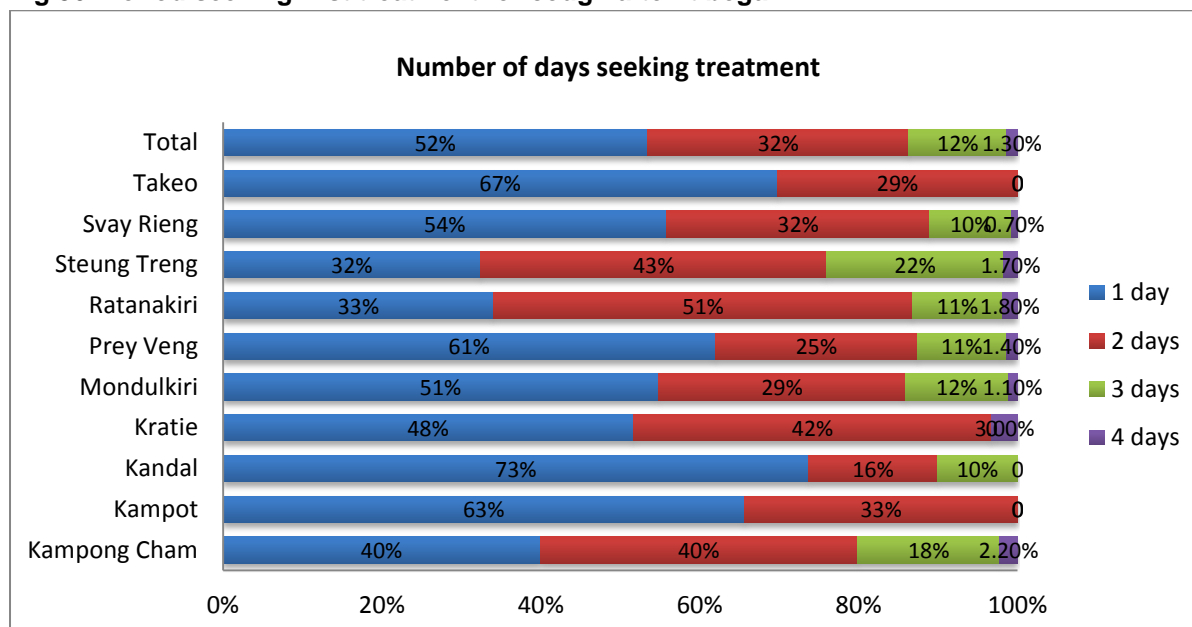


Period seeking first treatment for cough

Out of 879 of respondents interviewed, 52% of them said that they sought for treatment for their children within one day and 32% said within two days after the child had cough, with up to more than half or 51% in Ratanakiri, and the lowest rate being in Kandal at 16%. Only 3% of the respondents responded that they sought for treatment for their children 5 days or more after the children had cough, while only 1% of respondents reported seeking treatment for their children 4 days. However, none of respondents in Kampong Cham, Kandal and SteungTreng reported seeking treatment in five days or more.

According to CDHS 2010, approximately two-thirds (64%) of all children under age 5 with cough and fast breathing were taken to a health facility or provider to seek treatment or consultations.

Fig 36: Period seeking first treatment for cough after it began



Place for advice/ treatment for cough

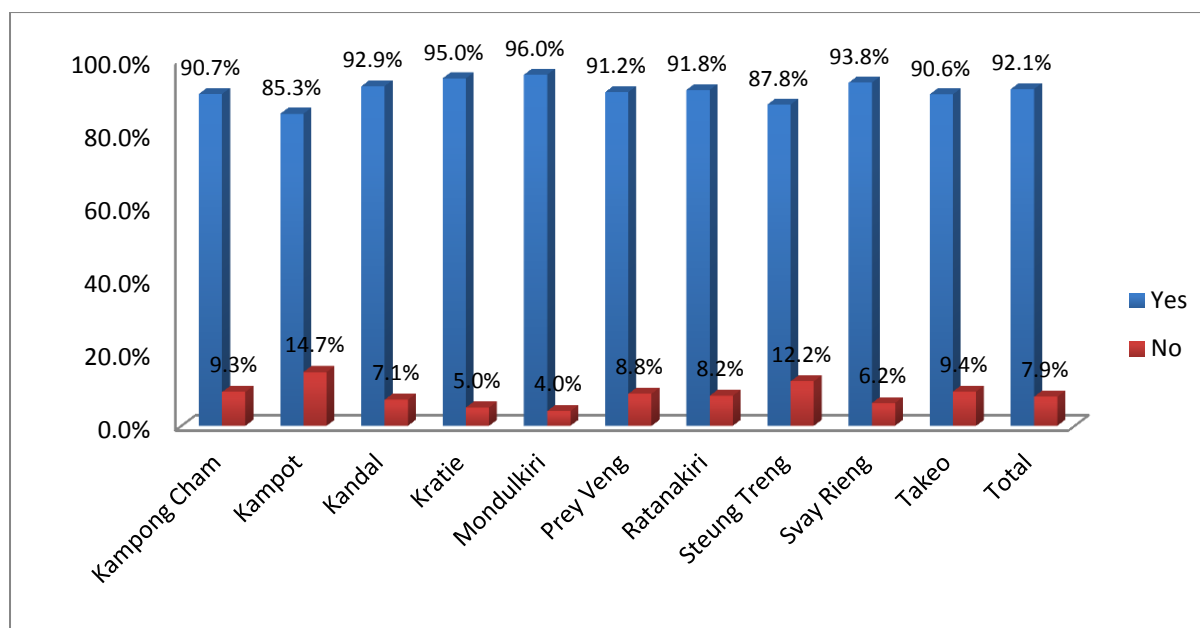
Health center plays a significant role in providing treatment for children with coughing. Nearly half or 47% of respondents reported seeking medical advice or treatment at health center when their children had cough, followed by private clinics/hospital (30%) and pharmacy or drugstore (24%). 6% of respondents said that they sent their children to provincial or district hospital, while another 4% said they went to neighboring countries to get their children treated. KunthaBopha hospital was also mentioned by 1% of the respondents, while about 2% consulted with community health workers.

Table 23: Place where children get advice/treatment for cough

Province	Health center	Private clinic / hospital	Pharmacy/ drugstore	Provincial or district Hospital	Hospital in the neighboring countries	Community health worker	Kanhabopha hospital	Private doctor /nurse
Kampong Cham	38%	22%	51%	-	-	-	-	-
Kampot	29%	67%	17%	4%	-	-	-	-
Kandal	25%	38%	44%	2%	2%	-	2%	2%
Kratie	39%	30%	42%	-	-	-	-	-
Mondulkiri	63%	15%	21%	10%	-	3%	1%	-
Prey Veng	30%	36%	27%	2%	17%	1%	2%	-
Ratanakiri	65%	18%	9%	12%	-	4%	-	-
Steung Treng	60%	29%	13%	11%	-	4%	-	-
Svay Rieng	49%	41%	15%	2%	-	-	-	2%
Takeo	48%	29%	43%	5%	-	-	-	5%
Total	47%	30%	24%	6%	4%	2%	1%	1%

A large majority of children (92%) reported taking any kinds of drug for coughing or fast breathing. The rates were not largely different from one province to another. Mondulkiri has the highest rate with 96%, while the lowest with at least 85% being at Kampot.

Fig 37: Proportion of children taken any drug



Many children (78%) took mixed tablets for their coughing, while more than a quarter (26%) took syrup and 17% took paracetamol. Few children (1%) took traditional herbal medicine. Multivitamins, injections, IV fluid and powder-like drugs were given for around 2% children.

Table24: Treatment given for children for coughing

Province	Mixed Tablets	Syrup	Paracetamol	Antibiotic	Multi-vitamine	Injection	Not remember	IV Fluid	Powder-like drug	Traditional herbal medicine
Kampong Cham	88%	18%	12%	-	-	-	-	2%	-	-
Kampot	62%	35%	10%	7%	-	-	3%	-	-	-
Kandal	81%	27%	21%	2%	2%	2%	2%	-	2%	2%
Kratie	74%	45%	21%	24%	5%	5%	-	11%	8%	-
Mondulkiri	81%	34%	25%	3%	1%	-	1%	1%	-	2%
Prey Veng	88%	26%	12%	5%	0%	4%	-	2%	4%	-
Ratanakiri	73%	21%	29%	-	5%	13%	4%	4%	-	2%
Steung Treng	68%	21%	18%	5%	2%	1%	1%	2%	-	4%
Svay Rieng	71%	13%	4%	2%	9%	1%	12%	3%	1%	2%
Takeo	62%	31%	28%	3%	-	-	-	-	3%	-
Total	78%	26%	17%	4%	2%	2%	2%	2%	2%	1%

3.11 Control of Dengue Fever

The pattern of keeping children under a mosquito net while they sleep was almost the same in all locations. Among 4,371 children, almost all children or 99% of them slept under a mosquito net last night. The highest proportion was found at Kandal and Takeo with all children (100%) slept under the mosquito net, while the lowest proportion with at least 98% being at Prey Veng.

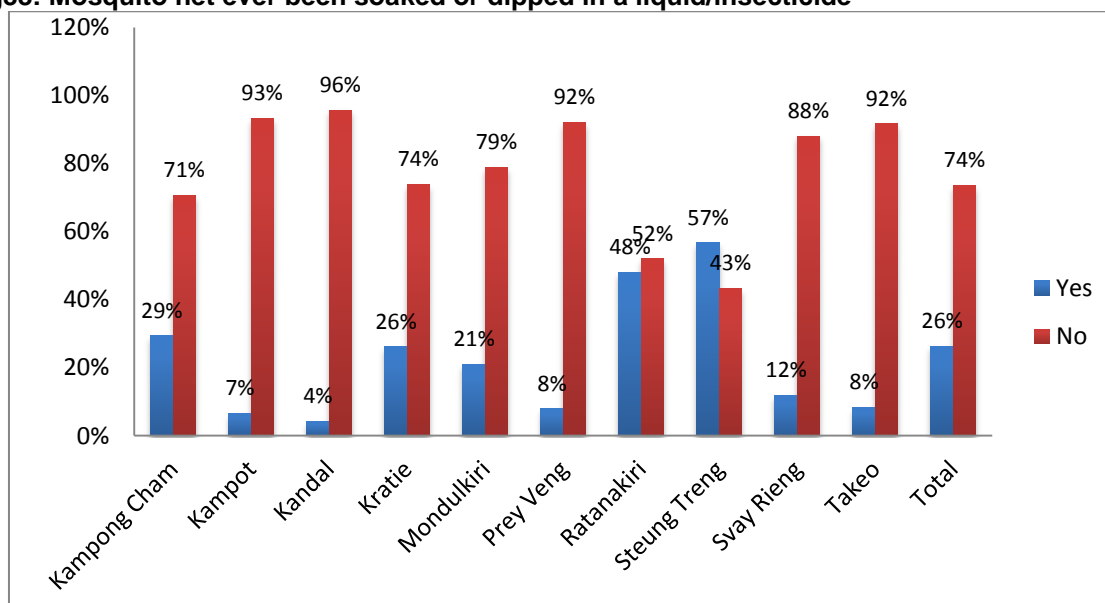
However, only less than half or 46% of the mosquito nets were treated with an insecticide when receiving them, with the highest rates with more than two third in SteungTreng and Ratanakiri(69% and 68%) and the lowest rate in Prey Veng (10%).

Table 25: Mosquito net treated with an insecticide

Province	Count	Percentage
Kampong Cham	91	40%
Kampot	26	22%
Kandal	23	12%
Kratie	181	58%
Mondulkiri	480	67%
Prey Veng	79	10%
Ratanakiri	459	68%
SteungTreng	456	69%
SvayRieng	172	29%
Takeo	26	22%
Total	1,993	46%

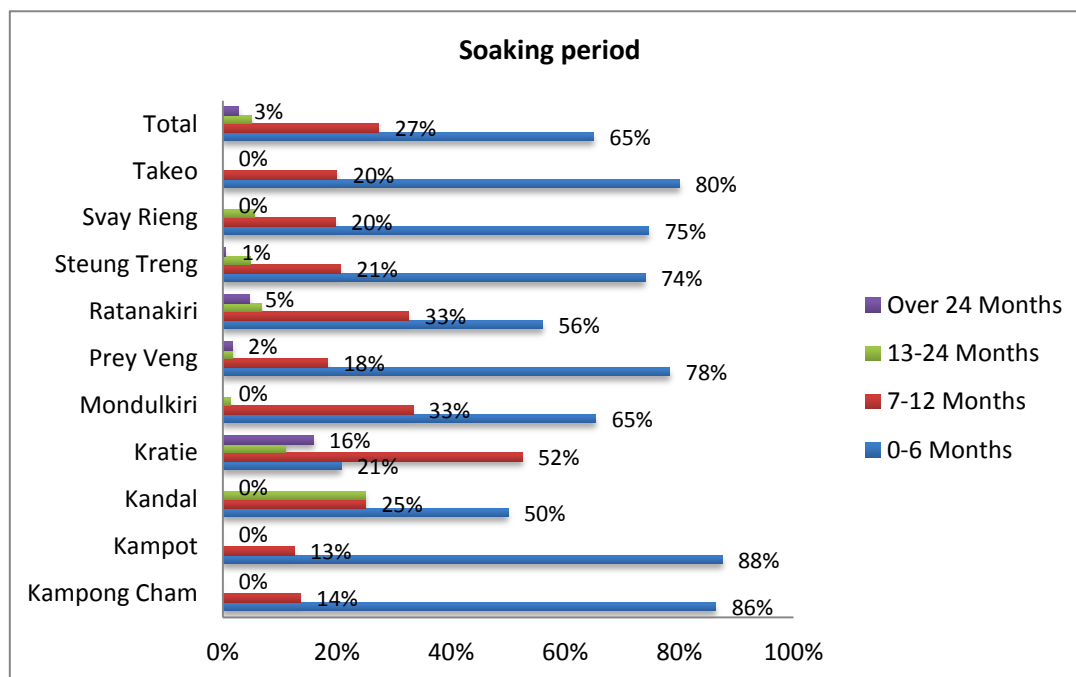
Among the nets, only more than a quarter (26%) of them were re-soaked or dipped in a liquid to kill or expel mosquitoes, with the highest in SteungTreng (57%) and the lowest in Kandal (4%).

Fig38: Mosquito net ever been soaked or dipped in a liquid/insecticide



Among the nets, almost two third (65%) of them have been soaked or dipped with a liquid during a period over the last six months, while more than a quarter of them (27%) have done soaking or dipping over a period from 7 to 12 months.

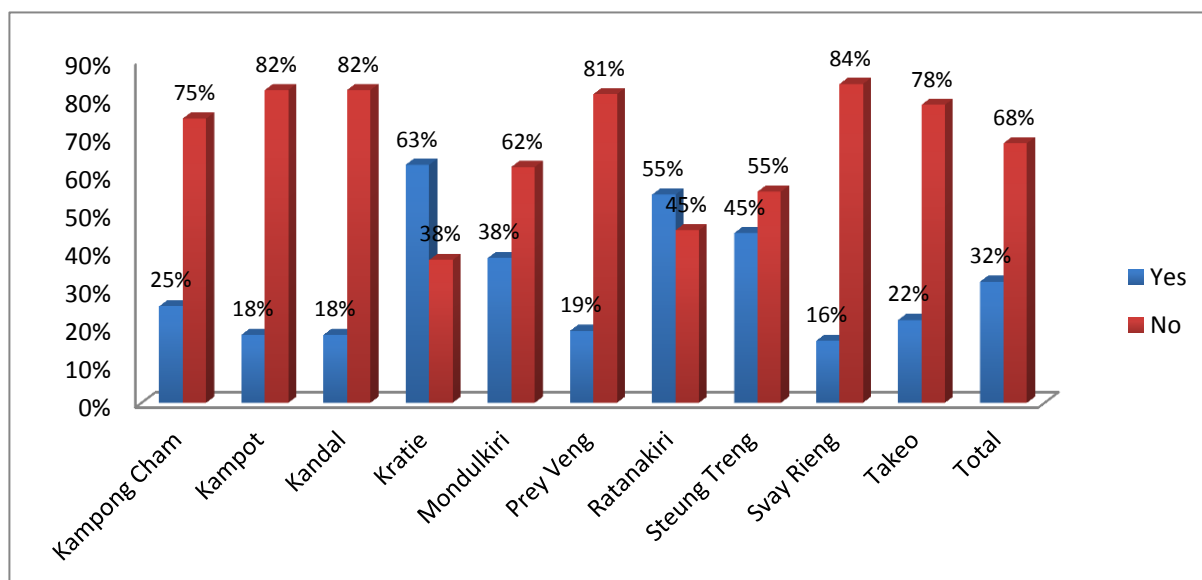
Fig39: Period after the most recent soaking or dipping



Dengue Fever and its management among children

Only less than one third (32%) of children had blood tested for dengue fever when they got fever, with the highest percentage (63%) having blood tested in Kratie and the lowest in SvayRieng (16%).

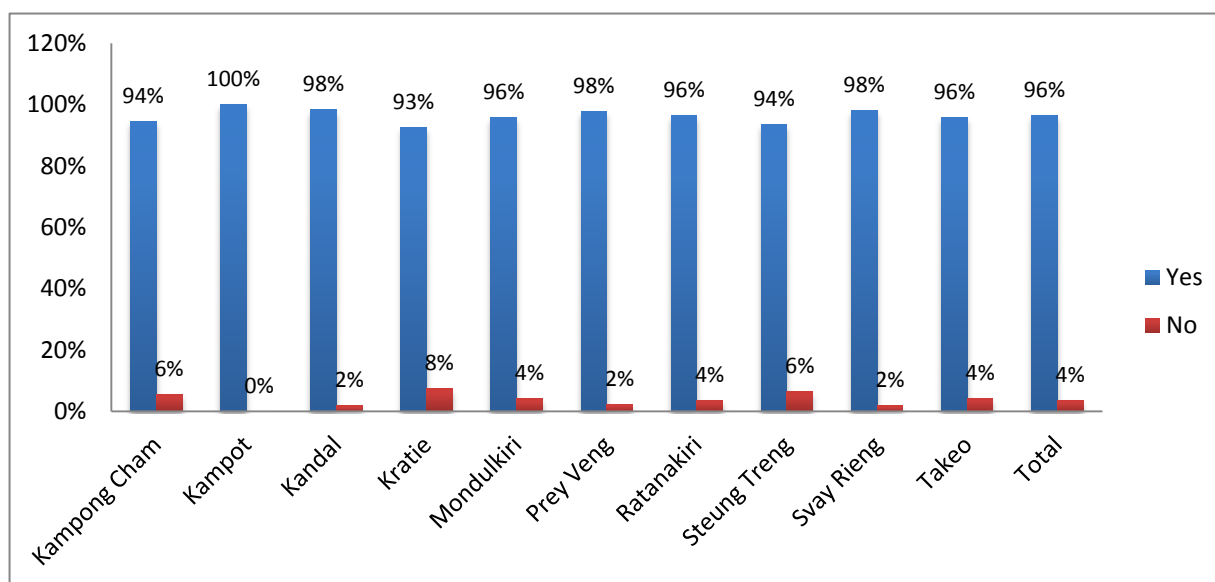
Fig40: Proportion of the children had blood tested for dengue when he/she got fever



Treatment seeking practice for Dengue Fever

A large percentage or 96% of children took any kind of drug during fever, while only 4% did not take any drug for the illness. The rates were not significantly different from one province to another. All children in Kampot took drug while at least 93% of children in Kratie got treatment with drug.

Fig 41: Proportion of children taking drug during illness



Almost half or respondents (49%) reported that their children took paracetamol when they had fever, while 42% said their children got syrup or tablet and one fifth of respondents (20%) said their children got drug cocktail. Only 1% of respondents reported that their children took traditional herbal medicine, while 5% and 5% got IV fluid and antibiotic respectively.

Table 26: Types of drugs children were given during Dengue fever

Province	Paracetamol	Syrup or tablet	Drug cocktail	Multi-vitamine	Don't know	Antibiotic	IV fluid	Injections	Powder-like medicine	Traditional herbal medicine
Kampong Cham	33%	57%	19%	2%	9%	2%	10%	-	-	-
Kampot	29%	29%	57%	-	4%	-	-	-	-	4%
Kandal	40%	38%	33%	9%		9%	4%	4%	11%	2%
Kratie	19%	38%	35%	19%	3%	19%	22%	5%	3%	-
Mondulakiri	69%	40%	12%	5%	3%	6%	2%	-	-	2%
Prey Veng	33%	61%	32%	2%	1%	4%	3%	4%	4%	1%
Ratanakiri	45%	16%	17%	20%	20%	3%	5%	5%	-	1%
Steung Treng	59%	49%	13%	4%	1%	7%	4%	2%	3%	2%
Svay Rieng	50%	17%	4%	33%	12%	3%	3%	-	1%	-
Takeo	68%	32%	36%	-	-	-	-	-	5%	-
Total	49%	42%	20%	9%	5%	5%	4%	2%	2%	1%

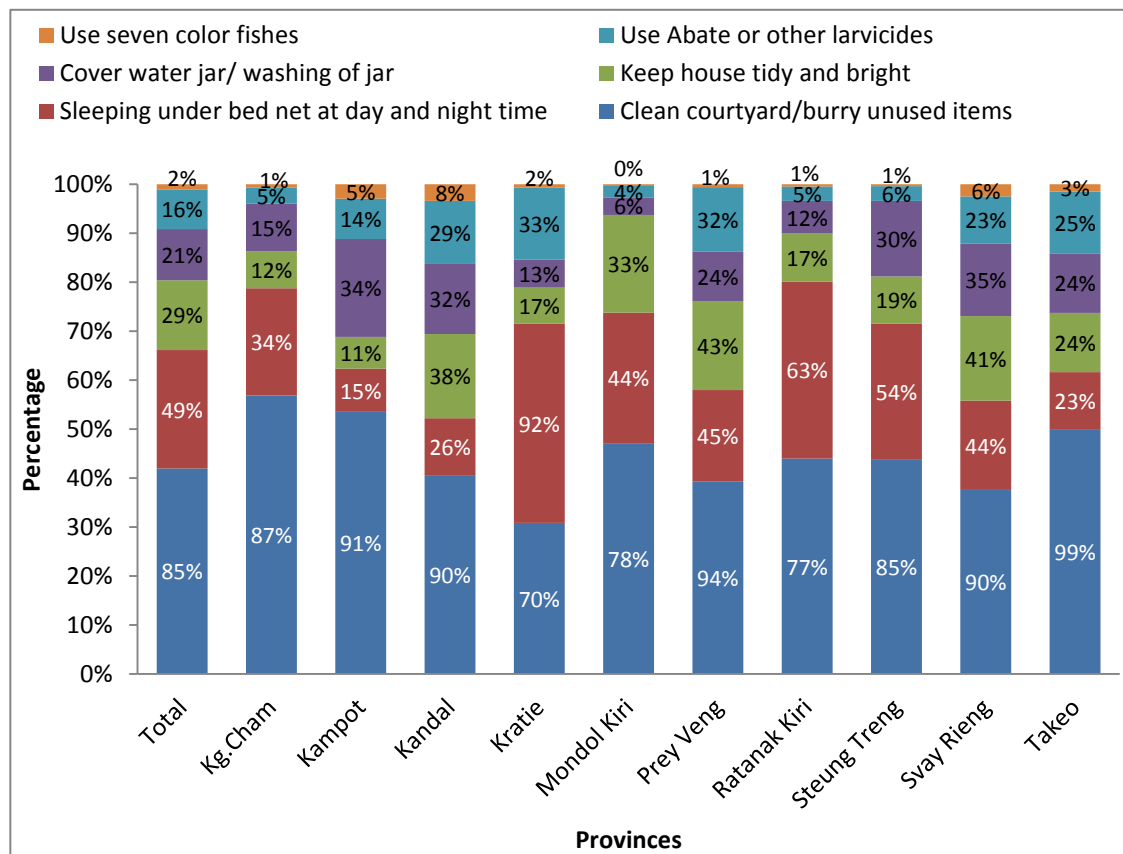
Denque Control measures

Household adopted various preventive measures to control breeding sites of mosquitoes so that they can control dengue infection.

One of the most common measures mentioned by HH was regular cleaning of courtyard and burry unused items (85%). Takeo, Svay Rieng, Prey Veng Kandal and Kampot were on higher side (more than 90%) in adopting such measure, whereas, Kratie, Mondulkiri and Ratanakiri scored less than 80%. Other measures adopted by HHs were sleeping under bed net at day and night time (49%), keep house clean and tidy (29%), cover water jar/washing of water jar (21%), use of Abate or other larvicides (16%) and use seven color fishes (2%).

Abate application coverage was higher in Kratie (33%) followed by Prey Veng (32%) and lowest in Poor HHs had slightly less coverage at 27.2% with Non-Poor having 35%. The highest coverage rate was in Svay Rieng (50%) and lowest in Mondulkiri, Ratanakiri and Kampong Cham (4-5% only).

Fig 42: Proportion of households using various preventive measures for Dengue Control



Households Knowledge on danger sign of Dengue

Household members were aware on various kinds of danger sign of Danguge fever. A total of 16 different signs were mentioned by respondents. Almost half (45%) of respondents mentioned that red spots or patches on skin was one of the serious danger signs followed by high fever (31%), pale, cold or clammy skin (29%), drowsiness or irritability (27%). Other signs mentioned were severe abdominal pain or persistent vomiting, bleeding from nose or

gums. Difficulty in breathing, vomiting blood etc (Please refer below table for other details). Households from Prey Veng, Kratie Svay Rieng and Kandal were more aware on most common danger signs compared to Ratanakiri, Mondulkin and Steung Treng.

Table 27: Percentage of HHs who know the danger sign of Dengue Fever

Danger signs of Dengue	All	K. Cham	Kampot	Kandal	Kratie	Mondulki	Prey Veng	Ratanakiri	Steung Treng	Svay Rieng	Takeo
Red spots or patches on the skin	45%	31%	25%	54%	67%	41%	68%	17%	26%	62%	38%
High fever	31%	35%	75%	69%	52%	11%	39%	12%	26%	21%	90%
Pale, cold, or clammy skin	29%	29%	23%	15%	19%	15%	61%	12%	19%	45%	30%
Drowsiness or irritability	27%	25%	20%	28%	20%	14%	48%	9%	13%	52%	29%
Severe abdominal pain or persistent vomiting	6%	5%	2%	5%	6%	3%	5%	7%	4%	12%	5%
Bleeding from nose or gums	5%	1%	2%	16%	2%	5%	7%	2%	3%	8%	12%
Other	12%	6%	4%	13%	10%	3%	20%	8%	18%	13%	6%
Difficulty breathing	5%	3%	1%		2%	1%	11%	3%	9%	3%	1%
Vomiting blood	3%	2%	2%	8%	3%	1%	3%	3%	2%	6%	3%
Fever more than two to three days	1%	1%		4%	0%		3%	0%	1%	1%	1%
Black, tarry stools	1%			1%		0%	2%	1%	0%	1%	
Lips turned red	1%				4%		0%	1%	0%	2%	
Headache	1%	1%			0%	0%	0%	0%	2%	0%	
Muscle pain	0%		1%			0%	1%	0%	1%	0%	1%
Convulsion	0%						0%		1%		
Do not eat/Can't eat	0%			1%			0%		1%		
Don't know	29%	25%	16%	8%	16%	44%	3%	65%	51%	10%	2%

When asked on HHs knowledge and practice for timing for referral for the dengue patient to hospital or HC, 36% said that they refer when the patient has red spots or patches on the skin, fever more than two to three days (28%), pale, cold, or clammy skin (26%) and drowsiness or irritability (24%). Takeo, Kampot and Kratie respondents were more aware on timely referral than Ratanakiri and Steung Treng provinces.

Table 28: Respondents knowledge and practice about referral for dengue cases

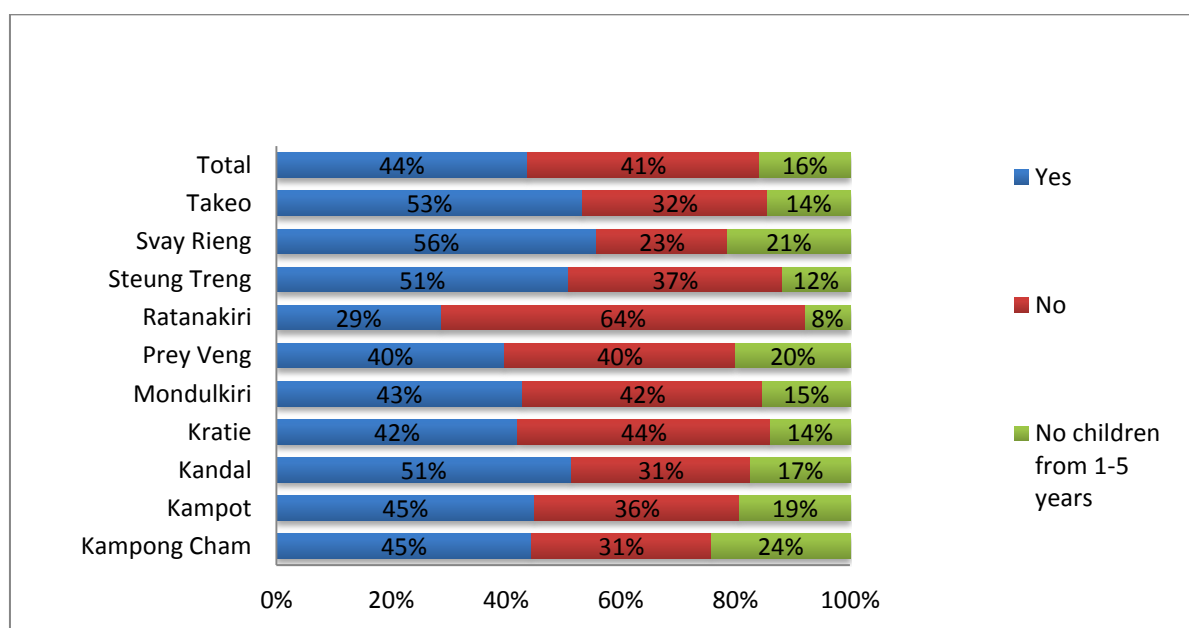
Danger signs	All	K. Cham	Kampot	Kandal	Kratie	Mondulki	Prey Veng	Ratanakiri	Steung Treng	Svay Rieng	Takeo
Red spots or patches on the skin	36%	29%	15%	34%	59%	39%	54%	15%	21%	40%	23%
Fever more than two to three days	28%	37%	72%	50%	38%	13%	35%	7%	27%	20%	86%
Pale, cold, or clammy skin	26%	32%	9%	8%	14%	15%	56%	11%	19%	37%	13%
Drowsiness or irritability	24%	21%	6%	20%	17%	15%	44%	6%	13%	48%	16%
Severe abdominal pain	5%	7%	1%	2%	9%	3%	1%	8%	3%	12%	3%
Frequent vomiting	5%	2%	-	7%	7%	3%	7%	4%	3%	10%	4%
Difficulty in breathing	4%	2%	-	1%	2%	1%	7%	2%	7%	7%	1%
Bleeding from nose or gums	4%	2%	4%	9%	3%	4%	4%	1%	2%	4%	7%
High fever	3%	2%	9%	21%	2%	1%	2%	1%	1%	2%	11%
Vomiting blood	2%	1%		2%	2%	2%	3%	2%	1%	6%	1%
Other	7%	1%	3%	2%	6%	4%	7%	5%	9%	10%	-
Don't know	28%	19%	12%	8%	16%	40%	3%	67%	48%	9%	1%

Other: convulsion, headache, bloody/black stool

3.12 Control of Worm Infection (Soil Transmitted Helminthes)

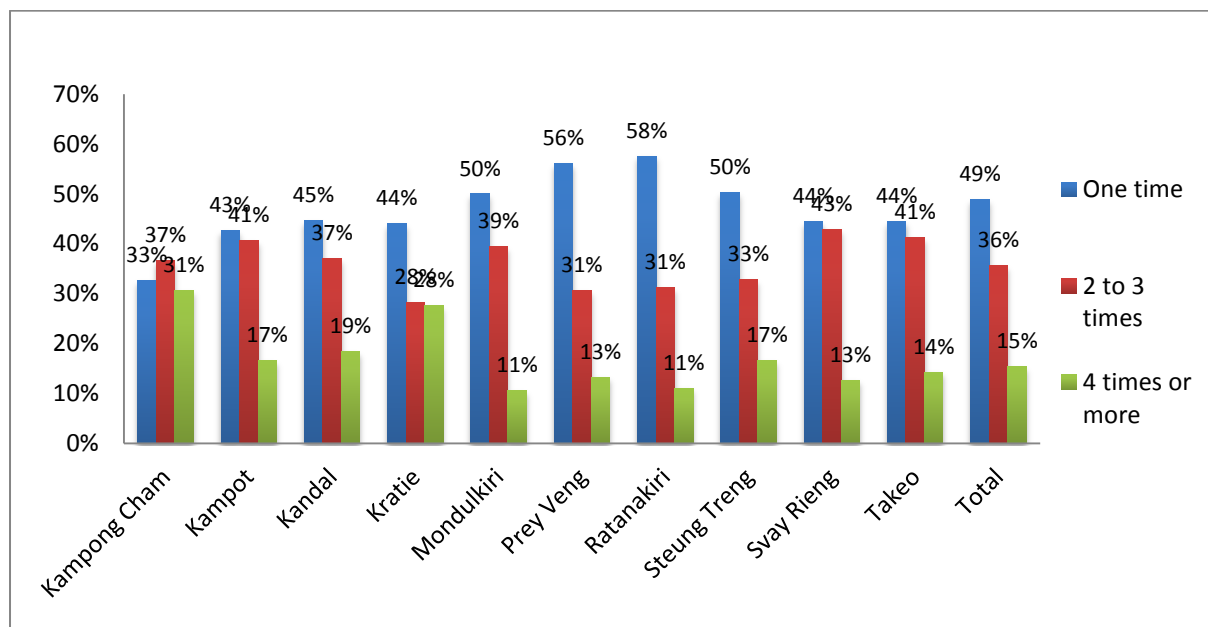
Less than half or 44% of children aged from 1 to 5 years old were treated with de-worming tablets, while 41% of children had never received the tablets. SvayRieng had the highest percentage of children receiving de-worming tablets, while Ratanakiri had the lowest rate (29%).

Fig 43: Proportion of children aged from 1 - 5 years old treated with de-worming tablets



Almost half of respondents (49%) said that they have received the de-worming tablets one time for their children from 1 to 5 years old during the last year, with the highest rate in Ratanakiri(58%) and lowest rate (only one third or 33%) in Kampong Cham. 36% of respondents reported receiving the tablets two or three times, while 15% received four times or more, with the highest being at Kamong Cham with 31%.

Fig 44: Frequency of de-worming treatment children received



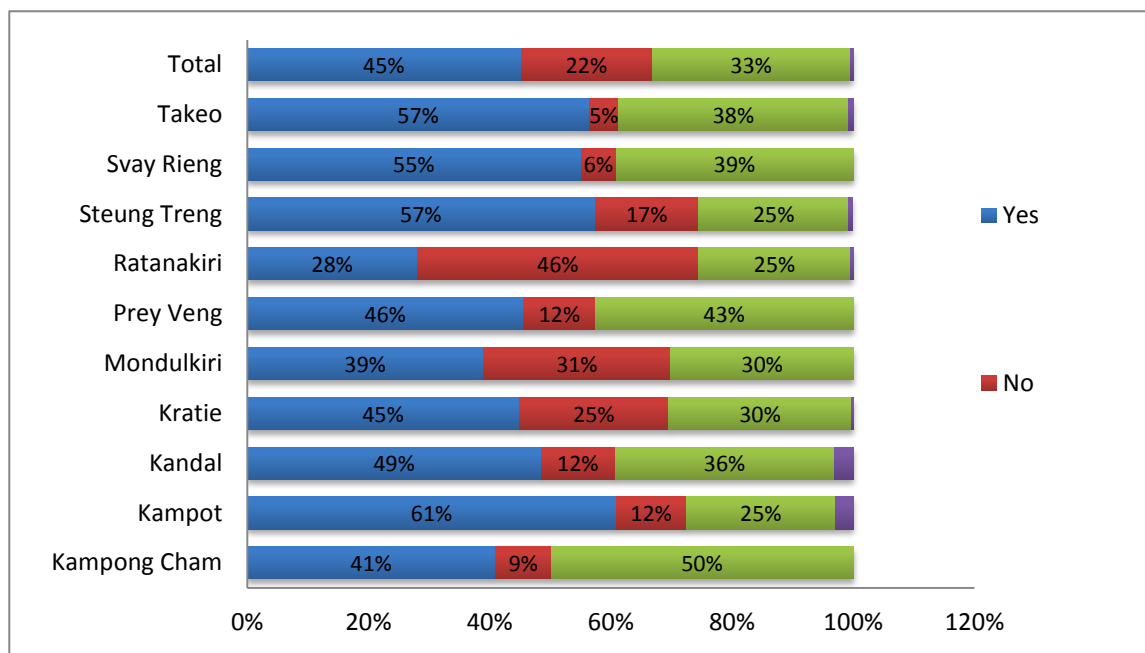
Health center was the place where two third of the respondents received the deworming tablets from, and followed by community health workers at 18%. Only 5% of respondents said that they have received the tablets from schools for their children from 1 to 5 years old.

Table 29: Places from where treatment was received in the last six months

Province	Health center	Provincial or district hospital	Private clinic or hospital	Pharmacy	Private doctor or nurse	Community health worker	At school
Kampong Cham	72%	-	2%	22%	-	13%	2%
Kampot	54%	-	9%	24%	-	19%	6%
Kandal	70%	-	3%	17%	-	20%	2%
Kratie	49%	2%	2%	35%	-	12%	4%
Mondulakiri	82%	2%	1%	8%	0%	13%	-
Prey Veng	59%	1%	5%	17%	0%	22%	4%
Ratanakiri	59%	2%	4%	17%	-	14%	11%
Steung Treng	55%	10%	2%	5%	0%	23%	10%
Svay Rieng	79%	1%	4%	3%	-	23%	3%
Takeo	83%	5%	5%	2%	-	10%	3%
Total	66%	3%	3%	12%	0%	18%	5%

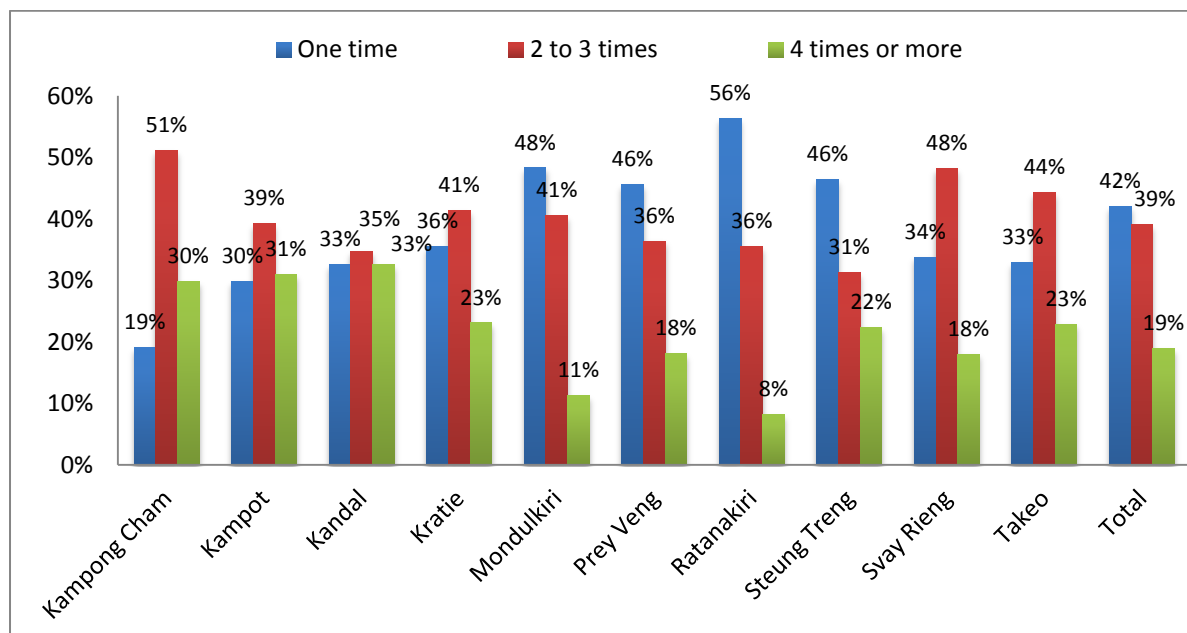
Only less than half or 45% of respondents reported receiving deworming tablets for treatment their children age from 6 to 14 years old last year, with the highest rate (61%) in Kampot and the lowest (28%) in Ratanakiri.

Fig 45: Proportion of children aged from 6 to 14 years old treated with de-worming tablets



42% of respondents said that they have received deworming tablets one time last year for their children whose aged from 6 to 14 years old, while 39% of said that they have received from 2 to 3 times, with the highest (up to more than half or 51%) in Kampong Cham. Almost one fifth (19%) of respondents reported received the tablets at least four times last year, with the highest (up to one third or 33%) in Kandal.

Fig 46: Frequency of treatment children received Mebendazol



School plays an important role for providing de-worming tablets for children aged from 6 to 14 years old. It was a place where half of children (50%) reported receiving deworming tablets during the last six months, followed by health center with 38% and community health workers by 13%.

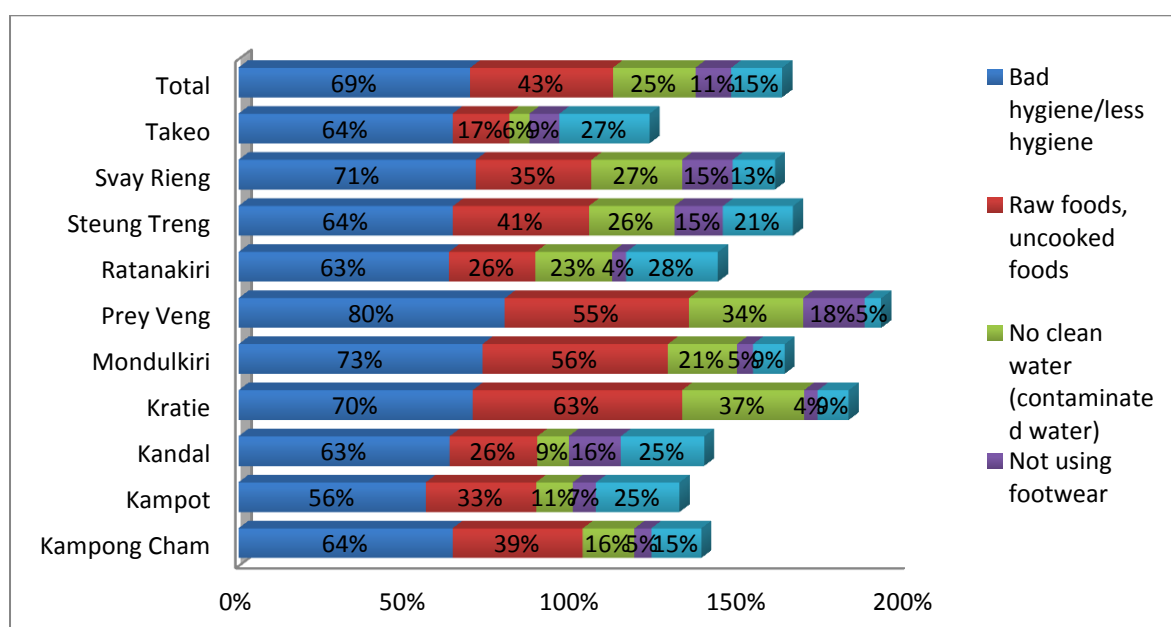
Table 30: Places where treatment was received in the last 6 months (6-14yrs children)

Province	At school	Health center	Community health worker	Pharmacy	Private clinic or hospital	Provincial or district hospital	Private doctor or nurse
Kampong Cham	44%	55%	12%	13%	3%	-	-
Kampot	81%	27%	4%	10%	2%	-	-
Kandal	66%	39%	3%	11%	3%	-	
Kratie	50%	24%	10%	22%	2%	2%	-
Mondulkiri	19%	66%	12%	6%	1%	2%	1%
Prey Veng	75%	19%	8%	4%	2%	0%	-
Ratanakiri	18%	39%	28%	9%	5%	3%	-
Steung Treng	49%	34%	17%	2%	2%	5%	1%
Svay Rieng	63%	40%	12%	3%	1%	0%	1%
Takeo	71%	49%	4%	1%	-	-	-
Total	50%	38%	13%	6%	2%	2%	0%

Household Knowledge on causes and effects of worm infection

Poor hygiene was pointed out by many respondents (69%) as the main cause of worm infection. This knowledge was even higher in Prey Veng which indicated by 80% of respondents, and at least more than half (56%) in Kampot. 43% of respondents considered eating raw or uncooked foods as a cause of the infection, while a quarter (25%) of respondents indicated drinking unclean or contaminated water would lead to worm infection. Moreover, 11% of respondents also mentioned that not using footwear would cause the infection.

Fig 47: Knowledge on the causes of worm infection



Knowledge of respondents on the effect of the worm infection varies from province to another. Many respondents (64%) indicated that worm infection would lead to a slowness of body grow, with up to 86% could say so at Takeo, while only less than half (45%) of respondents in Kampong Cham. Anemia was pointed out by 43% of respondents as a consequence of worm infection, followed by abdominal pain and itchy or rash skin, by 35% and 14% of respondents respectively. 9% of respondents couldn't say anything about the effect of the infection, while 3% said that the infection would cause obstruction of the bowel.

Table 31: Knowledge on the effect of worm infection

Province	Slow/Poor body growth	Pale (Anaemia)	Malnutrition	Abdominal pain	Itch, rash (allergy)	Don't know	Obstruction of bowel	Vomiting	Easily hungry/tired
Kampong Cham	45%	54%	43%	35%	19%	5%	8%	-	-
Kampot	74%	31%	42%	21%	11%	6%	-	1%	-
Kandal	71%	29%	33%	15%	9%	16%	2%	-	-
Kratie	63%	28%	56%	24%	19%	6%	1%	1%	-
Mondulkiri	47%	31%	20%	42%	19%	13%	4%	0%	2%
Prey Veng	67%	57%	60%	51%	22%	1%	2%	2%	2%
Ratanakiri	61%	38%	19%	35%	8%	18%	1%	1%	2%
SteungTreng	69%	38%	38%	23%	6%	14%	4%	3%	2%
SvayRieng	77%	59%	39%	35%	9%	4%	5%	3%	-
Takeo	86%	43%	36%	23%	14%	2%	-	-	1%
Total	64%	43%	38%	35%	14%	9%	3%	2%	1%

Knowledge on prevention of worm infection

More than half or 62% of the respondents knew that good hygiene practice would prevent them from worm infection, while 38% of them believed that drinking clean water would help preventing the disease. Less than one third or 32% of them knew that deworming was a method to prevent the infection, while 28% of them said washing hands with soap before eating, followed by 18% of wearing shoes and 14% of washing hands with soap before preparing food. Only around 2% of respondents knew that using toilet or washing hands with soaps after using toilet would prevent them from the infection, and 4% believed that the infection caused by eating raw or not well cooked foods.

Table 32: Knowledge on prevention of worm infection

Province	Good Hygiene practice	Clean water	De-worming	Wash hands with soap before eating	Wearing shoes	Wash hands with soap before preparing food	Maintaining hygiene for food and drinks	Don't know	Do not eat raw foods/unwell cooked foods	Wash hands with soap after using latrine	Using latrine
Kampong Cham	48%	36%	40%	27%	13%	10%	23%	3%	1%	1%	-
Kampot	64%	18%	27%	21%	18%	14%	9%	10%	-	-	1%
Kandal	56%	20%	22%	24%	26%	21%	6%	15%	-	6%	4%
Kratie	60%	54%	39%	29%	5%	10%	14%	5%	6%	1%	-
Mondulkiri	62%	37%	32%	22%	14%	9%	11%	7%	2%	1%	0%
Prey Veng	66%	47%	37%	42%	21%	14%	20%	2%	7%	3%	1%
Ratanakiri	59%	26%	25%	17%	9%	16%	3%	24%	1%	2%	1%
SteungTreng	59%	36%	31%	31%	20%	12%	8%	14%	13%	2%	2%
SvayRieng	67%	41%	30%	32%	29%	18%	15%	9%	1%	6%	7%
Takeo	65%	27%	27%	20%	18%	25%	5%	9%	1%	1%	-
Total	62%	37%	32%	28%	18%	14%	12%	10%	4%	3%	2%

3.13 Water, Hygiene and Sanitation

Good hands washing practice of household members promotes better hygiene and reduces water and vector borne disease burden at household and community.

Hand washing practices

Knowledge of the villagers on the importance of hand washing before eating was high. A large majority or 95% of respondents reported washing their hands before eating. The proportion was not significantly different from one province to another. However, only more than one third or 35% of respondents practiced washing their hands after defecation and only less than one third or 30% washed their hand before preparing foods. More than a quarter or 22% of them reported washing their hand before feeding children, while only 8% of them said that they washed their hands after helping the child defecating.

Table 33: Hand Washing Practices

Province	Before eating	After defecation	Before preparing food	Before feeding child	After helping child defecating	Wash hands after working	Before going to bed	Anytime when the hands are dirty
Kampong Cham	94%	14%	19%	17%	2%	-	-	-
Kampot	93%	28%	20%	27%	1%	3%	10%	-
Kandal	83%	33%	32%	37%	2%	6%	6%	-
Kratie	99%	32%	25%	19%	17%	14%	7%	1%
Mondulkiri	95%	32%	34%	10%	1%	2%	0%	0%
Prey Veng	96%	41%	30%	31%	6%	4%	3%	2%
Ratanakiri	93%	30%	41%	17%	14%	0%	-	-
SteungTreng	97%	32%	29%	19%	8%	11%	6%	5%
SvayRieng	94%	50%	27%	28%	12%	5%	4%	0%
Takeo	92%	29%	31%	23%	2%	-	10%	-
Total	95%	35%	30%	22%	8%	5%	3%	1%

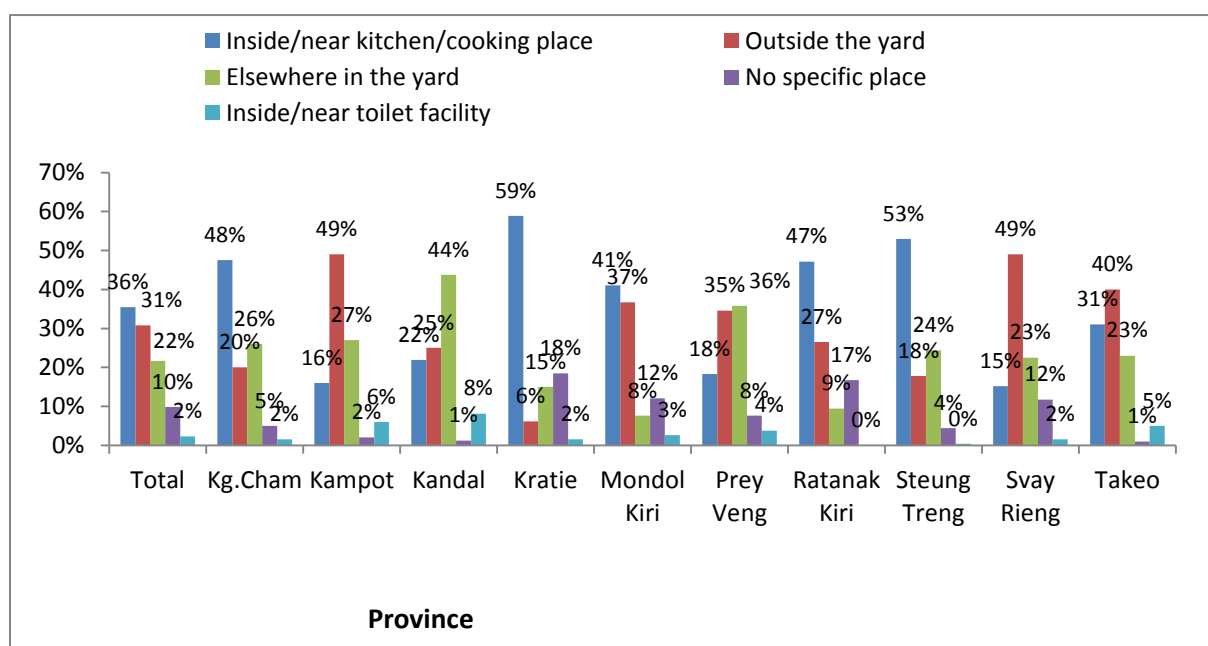
Water from wells was commonly used by villagers, except at Kandal and SteungTreng. Up to more than three fourths or 79% of respondents reported washing their vegetables with well water, however, the rate was quiet low (9%) at Kandal and only half or 50% at SteungTreng. More than one fifth or 23% of them used rainwater to wash their vegetables, while 4% used pond water. River water was used by 13% of the respondents while brook/canal/stream water was used by 5%. SteungTreng and Kandal had the highest rates (57% and 52%) of people using river water to wash their vegetable, while Kandal and Kampot had the highest percentage or 38% and 29%, respectively using tap water to wash their vegetables.

Table 34: Places where people wash their vegetables

Province	Wash with wells water	Rain water	Wash with river water	Wash with salt water	River/ Canal/ water	Wash with pond water	Wash with tap-water	Wash with boiled water
Kampong Cham	93%	8%	-	6%	-	-	-	
Kampot	62%	48%	-	5%	-	1%	29%	1%
Kandal	9%	9%	52%	38%	-	1%	38%	9%
Kratie	98%	42%	1%	11%	2%	1%		4%
Mondulkiri	84%	22%	6%	5%	11%	3%	1%	0%
Prey Veng	88%	15%	4%	22%	0%	4%	4%	1%
Ratanakiri	93%	19%	16%	1%	18%	0%	0%	0%
SteungTreng	50%	50%	57%	7%	3%	3%	-	2%
SvayRieng	85%	8%	0%	26%		14%	0%	1%
Takeo	75%	30%	20%	18%	1%	2%	-	4%
Total	79%	23%	15%	13%	5%	4%	3%	2%

In the project villages 36% of HHs washes their hands inside/near kitchen or cooking place, 31% wash outside the yard, 22% anywhere in the yard, 10% had no specific place, and another 2% mentioned inside or near toilet facility.

Fig 48: Places where people wash their hands



Household members use varieties of product to wash hands and utensils. The survey team was allowed to observe in each HH of availability of soap, detergent or locally available cleaning stuff in household. Most commonly used cleaning stuff was detergent or liquid (71%), followed by soap (20%). Other 9% mentioned “none”. Almost 100% HHs in Kratie and Svay Rieng used either detergent or soap as their cleaning stuffs. About 3% of HHs in Ratanakiri and other 26% from the same province mentioned they use anything.

Table 35: Use of different cleaning materials by HH members

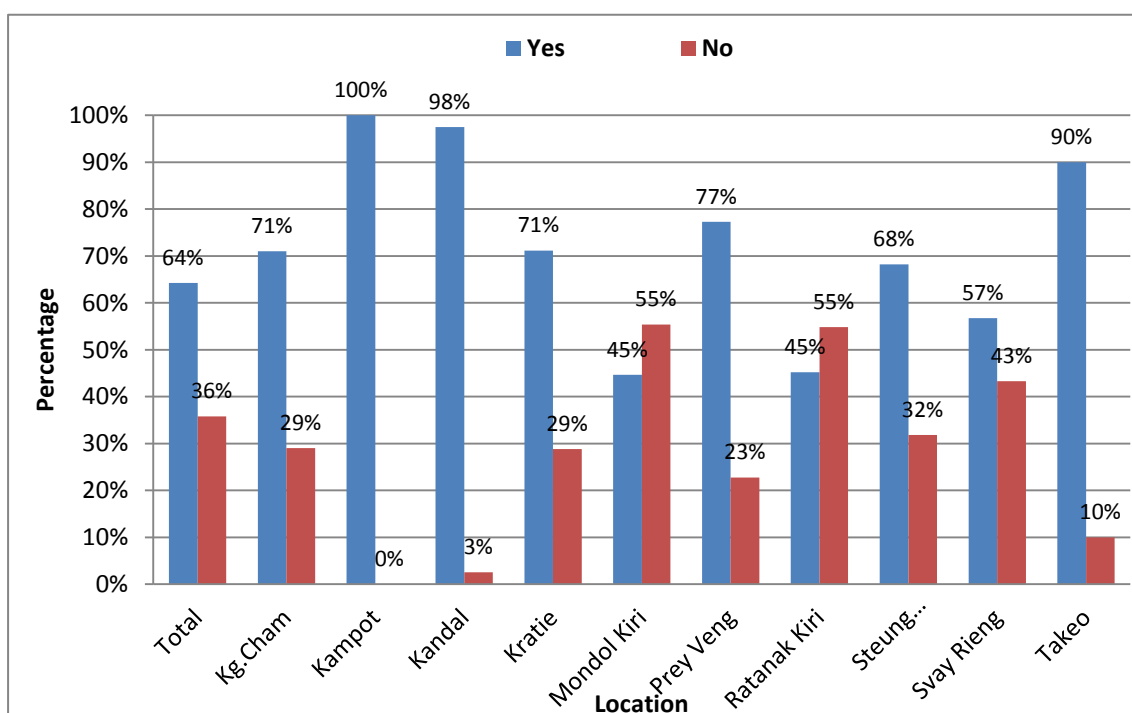
Cleaning materials	All	K. Cham	Kampot	Kandal	Kratie	Mondul Kiri	Prey Veng	Ratanak Kiri	Steung Treng	Svay Rieng	Takeo
Detergent or liquid	71%	82%	84%	70%	85%	64%	74%	59%	69%	75%	72%
Soap	20%	16%	9%	26%	14%	32%	13%	12%	23%	23%	23%
Ash	0%					0%	0%	3%		0%	
None	9%	2%	7%	4%	0%	4%	12%	26%	8%	1%	5%

Drinking water

Of the 3,600 HHs surveyed only 64% of the HHs owned a water jar with the highest being in Kampot (100%) and Kandal (98%), and lowest being in Ratanakiri and Mondulkiri(45%). A slightly lower rate was reported in poor HHs when compared to non-poor HHs.

Among those who owned water jar 30% of HH said they have one jar, another 30% said they have 2-4 jars and only 4 % said they owned more than 5 jars.

Fig 49: Possession of water jars by the HHs



Protection of the water jar

Percentage of Households who cover all water Jar: Just one third or 33% of the households who owned water jars had *all* of them covered. The lowest was in Mondulkiri and Ratanakiri (14%) and highest was in Kampot (78%)

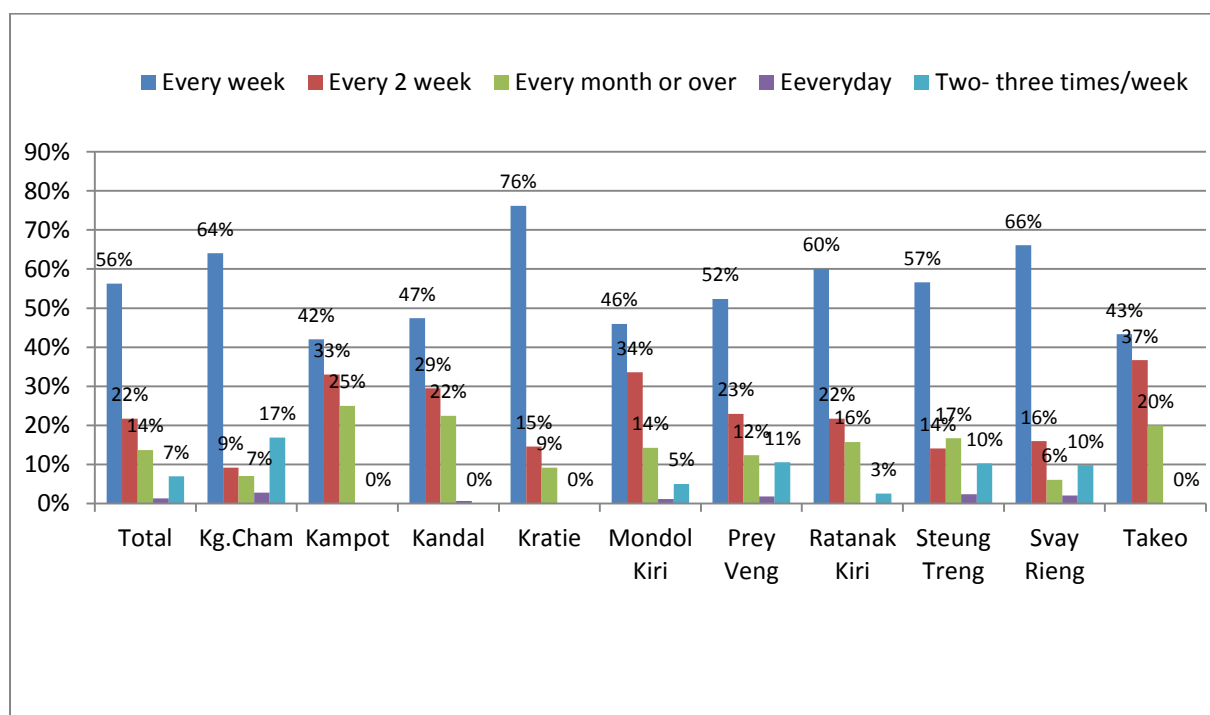
Likewise the numbers of HHs who have 2-4 water jars was highest in Kampot (51%) and lowest in Mondulkiri and Ratanakiri; 4% and 2% respectively.

Table 36: Percentage of HH who have water jar without cover

No. of water jar without cover	All	K.Cham	Kampot	Kandal	Kratie	Mondulki ri	Prey Veng	Ratanaki ri	Stung Treng	Svay Rieng	Takeo
None	67%	79%	22%	40%	74%	86%	47%	86%	68%	63%	41%
1	18%	17%	14%	26%	14%	10%	27%	12%	19%	20%	36%
2-4	14%	4%	51%	31%	12%	4%	24%	2%	12%	15%	21%
5+	2%	-	13%	3%	1%	0%	2%	-	1%	2%	2%

Percentage of Households who cleaned their water containers every week: Out of the total who claimed they have water jars only 1.3% claimed that they clean every day, 7% of said they clean 2-3 times in a week, 56% claimed to have cleaned their Water Jar on a weekly basis; 22% every 2 weeks and 14% once a month. Once a week cleaning practice was observed highest in Kratie (76%) followed by Svay Rieng (66%) and Kampong Cham (64%). The lowest percentage was recorded in Kampot and Takeo 42 % and 43% respectively who cleaned their water jars every week.

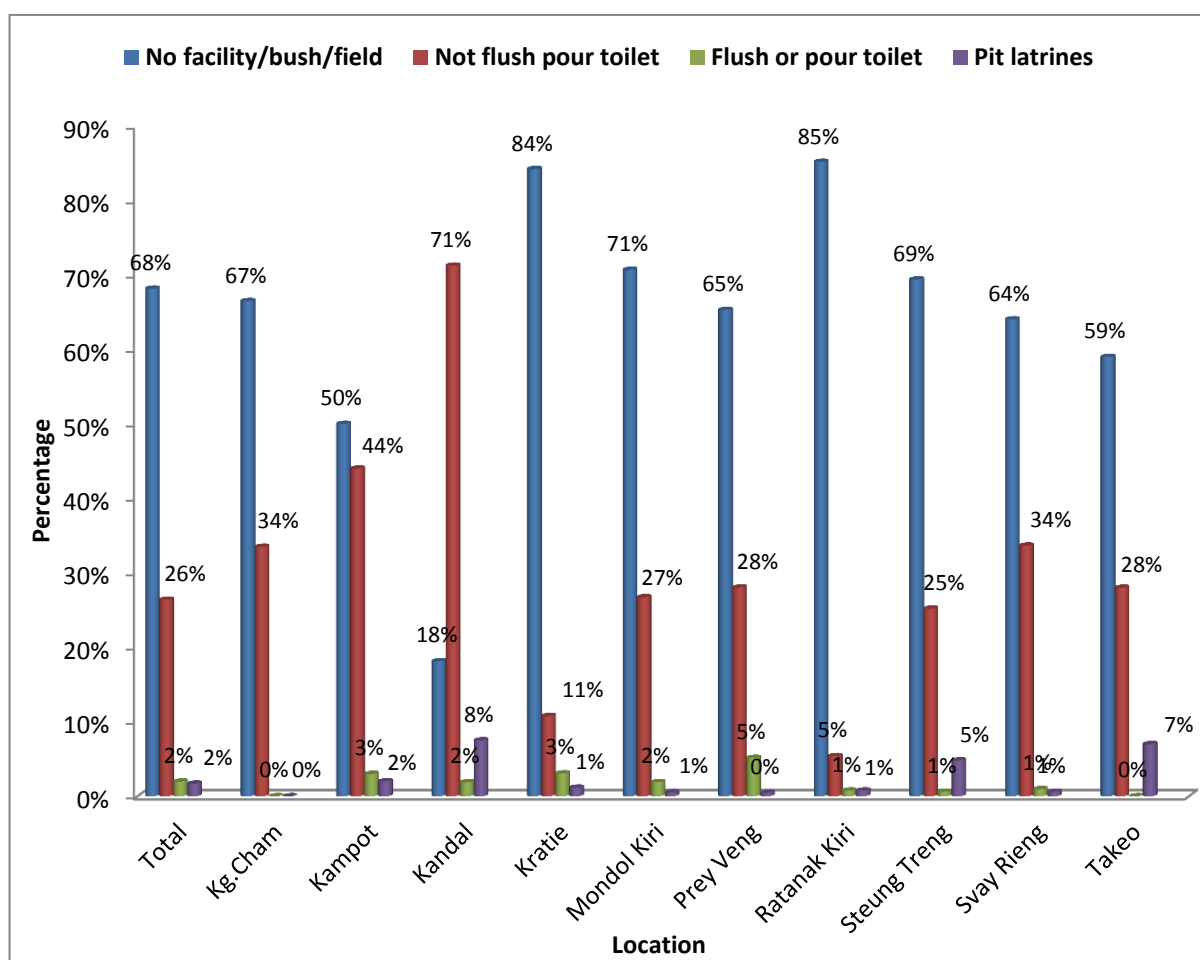
Fig 50: Percentage of Households who cleaned their Water Containers



Toilet Facilities

Only 32% of families in project villages had access to toilet facilities. Other 68% of families had no toilet facilities and practice open defecation (bush/field). The highest rate of open defecation was found in Ratanakiri (85%) followed by Kratie (84%). Of those owning a latrine facility 26% use non-flush-pour toilet, 2% used pour flush or piped/sewerage toilet and another 2% used pit latrine. Latrine like composting was practiced by 8% HHs in Ratanakiri, 1% each by Kandal, Kratie and Prey Veng. Hanging toilet was mentioned by 6% households in Takeo and 1% each from Kandal and Kampot. Highest rate of latrine usage was reported in Kampot (50%) followed by Takeo (41%) and lowest in Ratanakiri (15%) followed by Kratie (84%).

Fig 51: Percentage of Household who have latrine facilities



When asked about the practice of wearing shoes by children, cent percent respondents mentioned that their children wear shoes. Quite a higher number (73%) of HH mentioned that their children wear shoes whole day and 27% say only sometimes. Kampong Cham and Kandal had the highest percentage (93%) of HHs children who wear shoes whole day and the lowest percentage was reported from Kratie (15%).

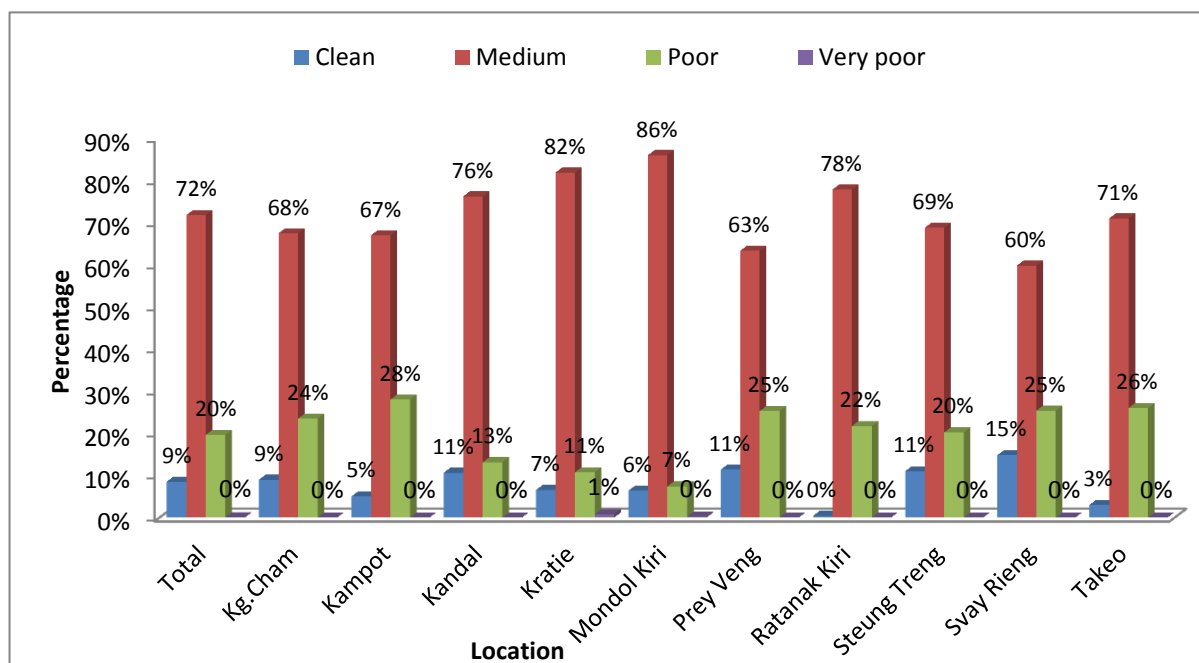
Table 37: How often children wear shoes?

Time	All	K.Cham	Kampot	Kandal	Kratie	Mondulki ri	Prey Veng	Ratanakiri	Steung Treng	Svay rieng	Takeo
Whole day	73%	93%	75%	93%	15%	86%	84%	81%	76%	52%	66%
Sometime	27%	8%	25%	8%	84%	14%	16%	19%	24%	48%	34%
Never use	0%				0%		0%		0%		

Observation of HH Compound

Observation of household environment was performed during household interview of each household. Only 9% of the HHs was found clean however a significantly higher proportion (72%) of HHs were rated medium clean. Another 20% were rated poor and a very few HHs were rated very poor. Though the criteria used to classify the condition of household compound were somehow subjective and depend upon the perception of the interviewers, however, this still gives some indication about the household environment and cleanliness. Highest percentage of clean HHs were observed in Svay Rieng (15%) followed by Prey Veng and Kandal (11%). Likewise, highest percentage of medium clean HHs were reported in Mondulki (86%) followed by Kratie (82%). Higher percentage of poor and very poor household compound was observed in Kampot (28%), followed by Takeo (26%) and Prey Veng and Svay Rieng (25%).

Fig 52: Observation of household environment



Animal raising practices by the surveyed HHs

Proper animal raising practice of the family helps to keep the surrounding and house environment clean and hygienic and promote for healthy living of the household. Proper knowledge and practices of animal raising by household in the project areas was considered by CDC2 as one of the 8th criteria in controlling communicable diseases.

Overall, only 29% of household were aware and practicing proper animal raising technique in the project villages. Almost half (49%) of HHs in Kampot followed by Svay Rieng (46%) mentioned that they have proper knowledge, and currently practicing such techniques. However, other border provinces like Ratanakiri and Kratie had such knowledge and practices only 8% and 10% respectively

Fig 53: Animal raising practices by the surveyed HHs

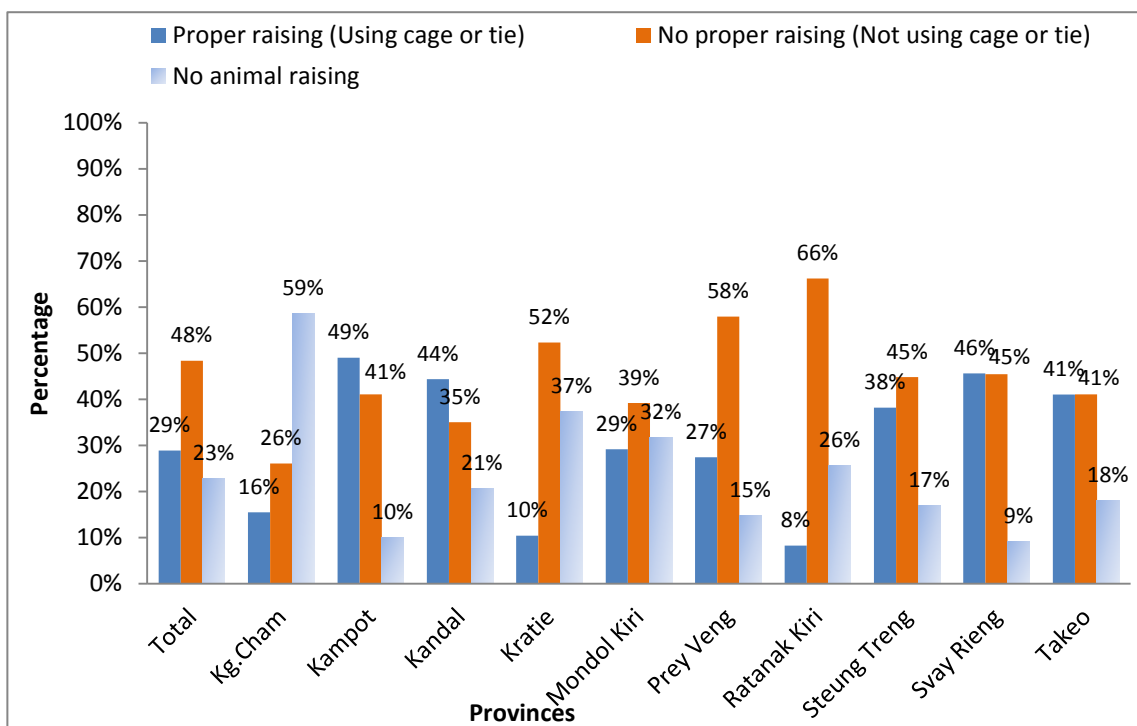


Table 37.1 Proportion of household applied 8 cleans

Province		Frequency	Percent	Valid Percent	Cumulative Percent
Kg.Cham	Yes	27	13.5	100.0	100.0
	No	173	86.5		
		200	100.0		
Kampot	Yes	28	28.0	100.0	100.0
	No	72	72.0		
		100	100.0		
Kandal	Yes	80	50.0	100.0	100.0
	No	80	50.0		
		160	100.0		
Kratie	Yes	16	6.2	100.0	100.0
	No	244	93.8		
		260	100.0		
Mondol Kiri	Yes	52	9.0	100.0	100.0
	No	528	91.0		
		580	100.0		
Prey Veng	Yes	99	15.0	100.0	100.0
	No	561	85.0		
		660	100.0		
Ratanak Kiri	Yes	18	3.5	100.0	100.0
	No	502	96.5		
		520	100.0		
Steung Treng	Yes	70	14.0	100.0	100.0
	No	430	86.0		
		500	100.0		
Svay Rieng	Yes	86	16.5	100.0	100.0
	No	434	83.5		
		520	100.0		
Takeo	Yes	18	18.0	100.0	100.0
	No	82	82.0		
		100	100.0		

Proportion of overall households applied 8 cleans

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	494	13.7	100.0	100.0
	No	3106	86.3		
Total		3600	100.0		

3.14 Disease Surveillance and Emerging Illnesses

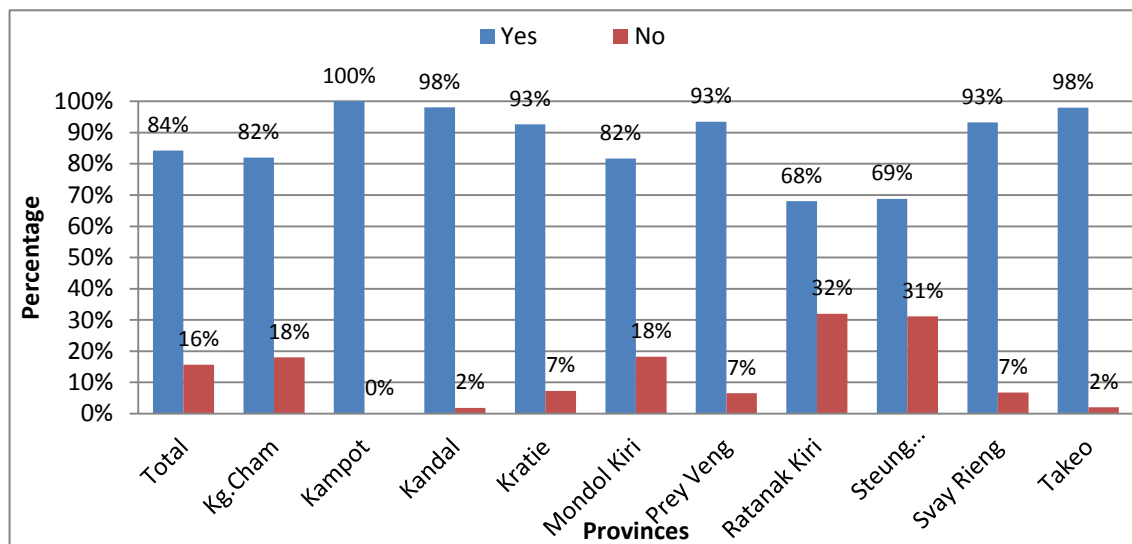
Disease surveillance is an epidemiological practice by which the spread of disease is monitored by MOH in order to establish patterns of progression. The main objective of disease surveillance is to predict, observe, and minimize the harm caused by outbreak, epidemic, and pandemic situations, as well as increase knowledge about which factors contribute to such circumstances. A key part of modern disease surveillance is the practice of disease case reporting. In modern times, reporting incidences of disease outbreaks has been transformed from manual record keeping to instant world-wide internet communication.

An emerging disease is one that has appeared in a population for the first time, or that may have existed previously but is rapidly increasing in incidence or geographic range. Examples of emerging infectious diseases include: Ebola virus, Bird Flu (H5N1), HIV/AIDS etc.

Bird Flu (H5N1)

Eighty four percent of respondents said that they have heard about Bird Flu. More than 90% of respondents in Kampot, Kandal, Kratie, Prey Veng, Svay Rieng and Takeo reported that they have heard about it. Ratanakiri and Steung Treng reported less than 70%.

Fig 54: Respondents' knowledge on Bird Flu



Out of those who said they have heard about Bird Flu, they were further asked to tell about the sign and symptoms of Bird Flu. Respondents listed almost 9 different signs and symptoms of Bird Flu. Most common ones were fever (46%), cough (28%) headache (12%), difficulty in breathing (9%) etc. Majority of Kampong Cham and Takeo people were not aware on sign and symptoms of Bird Flu. Forty six percent of Kampong Cham and 45% of Takeo respondents answered “Don't know”.

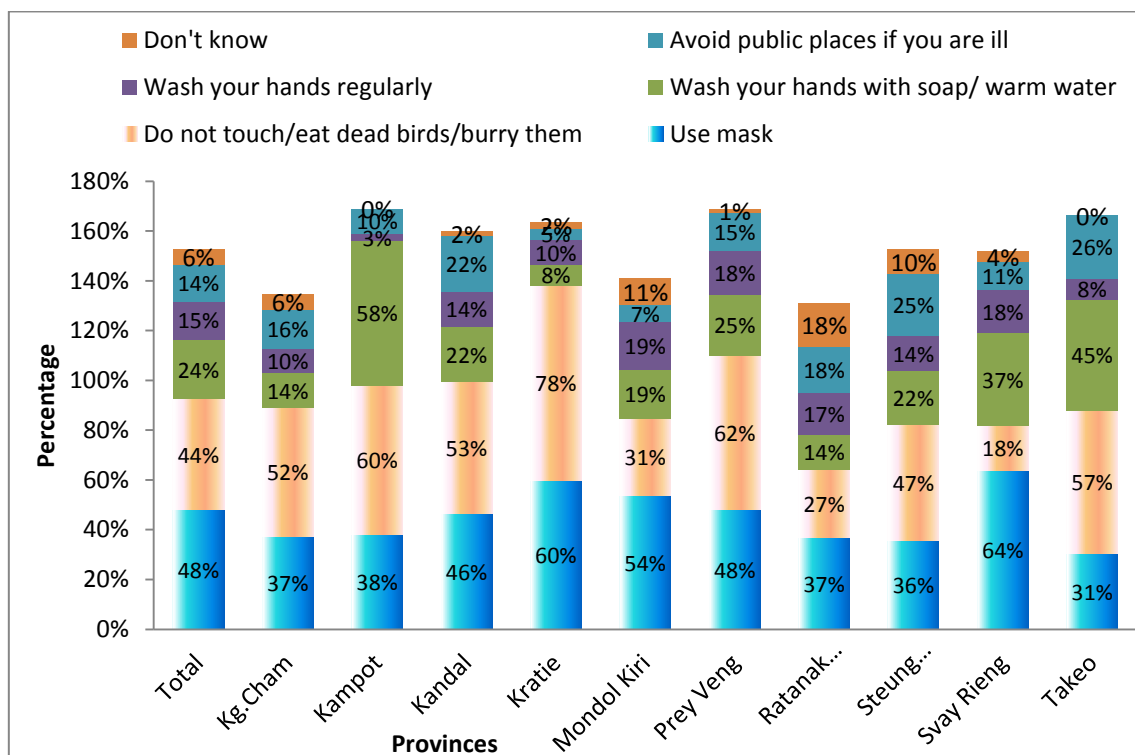
Table 38: Percentage of HH members who know about signs and symptoms of Bird Flu

Sign & Symptoms	46%	36%	35%	45%	39%	47%	49%	52%	41%	51%	36%
Fever	46%	36%	35%	45%	39%	47%	49%	52%	41%	51%	36%
Cough	28%	28%	33%	27%	33%	17%	31%	36%	30%	28%	23%
Headaches	12%	5%	3%	2%	9%	7%	12%	30%	14%	13%	5%
Difficulty in breathing	9%	4%	10%	10%	5%	4%	16%	9%	15%	6%	9%
Fatigue	8%	9%	2%	9%	7%	4%	9%	7%	6%	13%	9%
Flu/runny nose	3%	4%			0%	0%	9%	2%	5%	2%	
Sore throat	3%	1%		2%	2%	1%	2%	5%	5%	5%	
Eye infection/ conjunctivitis	2%	4%	1%	1%	0%	2%	3%	3%	3%	4%	2%
Muscle aches	1%	1%	4%	1%	0%	0%	1%	1%	2%	3%	
Don't know	31%	46%	44%	38%	30%	43%	25%	29%	30%	19%	45%

****Others:** Convulsion Pale Vomit Swelling face bloody nose

Respondents were aware to the various preventive measures for Bird Flu. Most common measures mentioned was use of mask (48%), do not touch/eat dead birds/burly them (44%), wash hands with soap/warm water (24%), avoid public places if one is ill (14%). Six percent of respondents say they don't know. A high percentage of respondents (18%) from Ratanakiri were not aware to preventive measures. Whereas, all respondents from Takeo and Kampot were aware on preventive measures.

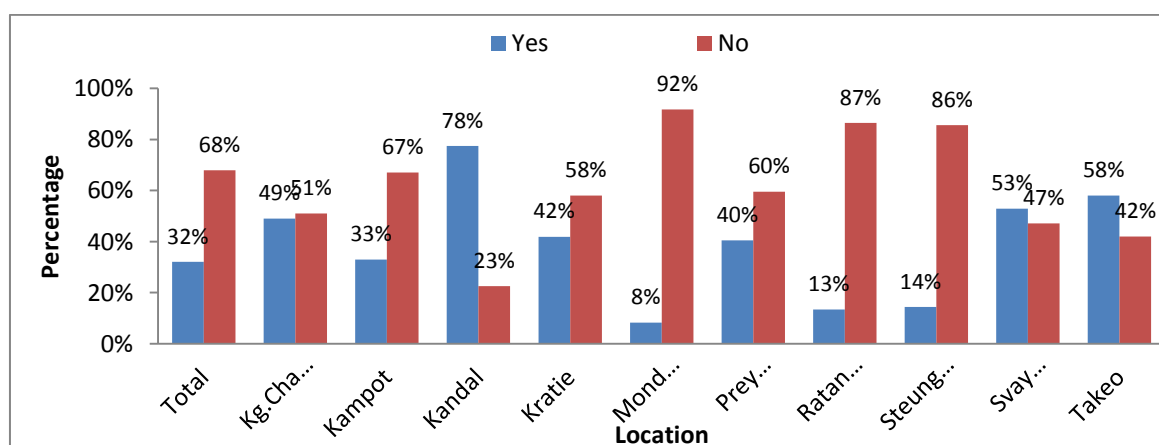
Fig 55: Knowledge about various preventive measures for Bird Flu



Hand-foot- and mouth disease

Only 32% of respondents said that they have heard about Hand-foot- and mouth disease. Highest percentage of respondents who have heard about the disease was recorded in Kandal (78%) and lowest percentage was recorded in Mondulkiri (8%).

Fig 56: Knowledge on Hand-foot- and mouth disease



Out of those who said they have heard about hand- foot and mouth disease, they were further asked to tell about the sign and symptoms of the disease. Respondents listed 6 different signs and symptoms. Most common ones were Papules on palm and foot (71%), high fever (54%), Red spot on tongue, internal organ (39%), poor appetite (9%) etc. Quite high percentage (27%) Kampot and Ratanakiri (26%) population were not aware on signs and symptoms, whereas more than 85% of Kratie population was aware about common sign and symptoms.

Table 39: Respondents knowledge on sign/symptoms of hand- foot & mouth disease

Sign & Symptoms	All	K. Cham	Kampot	Kandal	Kratie	Mondulki	Prey Veng	Ratanakiri	Steung Treng	Svay Rieng	Takeo
Papules on palm and foot	71%	65%	55%	79%	85%	33%	79%	69%	76%	64%	76%
High fever	54%	67%	21%	52%	37%	71%	43%	46%	61%	72%	43%
Red spot on tongue, internal	39%	50%	24%	22%	41%	29%	44%	11%	29%	53%	24%
Poor appetite	9%	5%		5%	5%	4%	9%	3%	11%	17%	3%
Sore throat	8%	2%	15%	10%	5%	4%	4%	7%	24%	7%	10%
Muscle pain	1%				3%	4%		1%	10%	1%	
Don't know	12%	6%	27%	12%	10%	19%	16%	26%	14%	5%	17%

Respondents were aware to various preventive measures for Hand-foot and mouth disease. Most common measures mentioned was Wash and hand soap/water (39%), isolate contagious people (16%), Avoid close contact such as kissing (7%). More than half (52%) were not aware on any preventive measures.

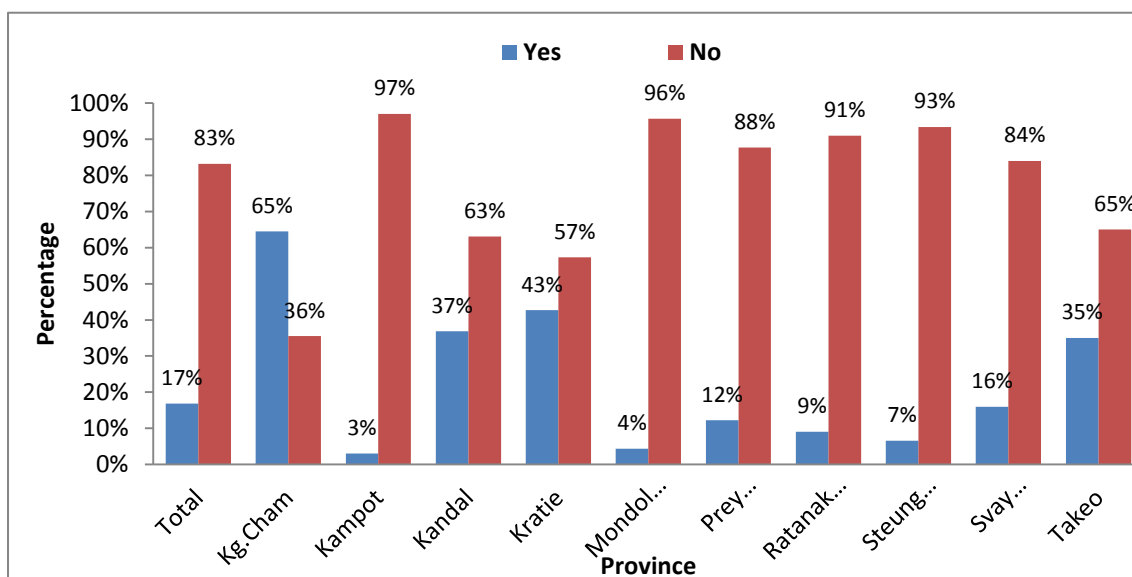
Table 40: Knowledge on prevention measure for Hand-foot and mouth disease

Preventive measures	All	K. Cham	Kampot	Kandal	Kratie	Mondulki	Prey Veng	Ratanakiri	Steung Treng	Svay Rieng	Takeo
Wash and hand soap/water	39%	30%	21%	48%	28%	42%	35%	49%	54%	39%	43%
Isolate contagious people	16%	16%		7%	23%	6%	18%	9%	28%	22%	5%
Avoid close contact such as kissing	7%		3%	9%	10%	2%	6%	6%	19%	8%	2%
Hygienic living/eating	2%			4%	2%	2%	1%		3%	2%	
Disinfect common areas	1%	2%			1%		1%	1%	1%	1%	
Don't know	52%	62%	76%	40%	56%	56%	57%	46%	35%	48%	52%

Chikungunya

Only 17% respondents said that they have heard about Chikungunya. Highest percentage of respondents who have heard about the disease was recorded in Kampong Cham (65%) and lowest percentage who has heard about the disease was recorded in Kampot (3%).

Fig 57: Respondents who have heard about Chikungunya



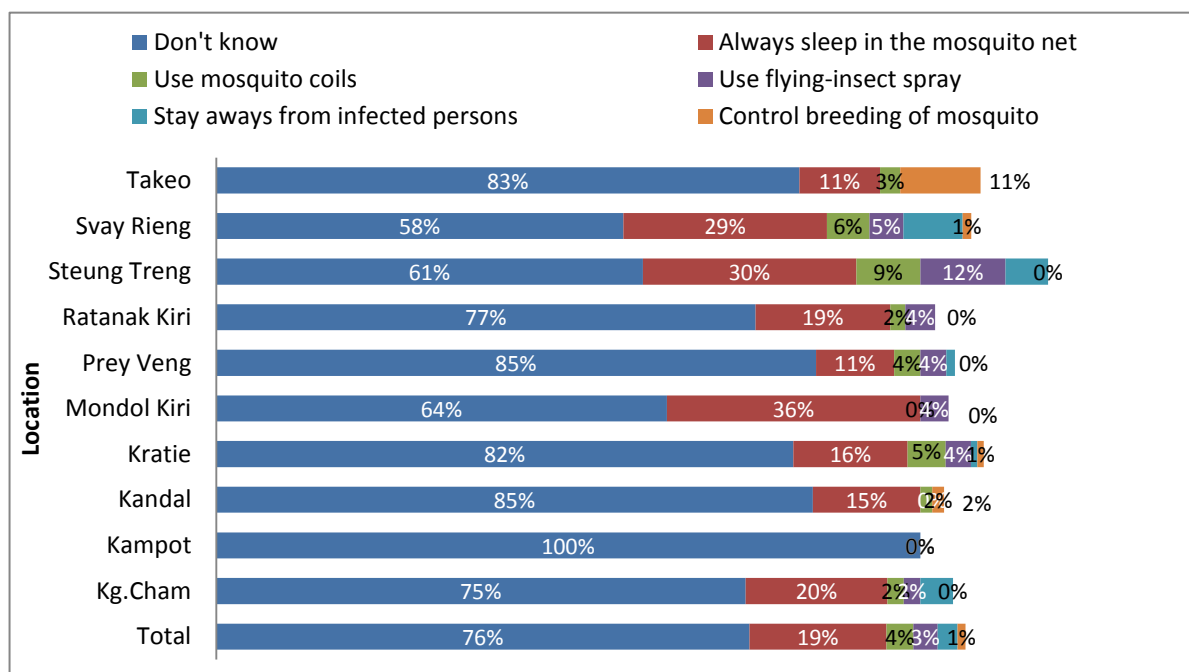
Out of those who said they have heard about Chikungunya disease, they were further asked to tell about the sign and symptoms of the disease. Respondents mentioned 9 different signs and symptoms. Most common ones were fever (52%), fatigue (29%), muscle pain (26%), rash on body (18%) and headache (12%) and others. Fever was mentioned by quite a high percentage of respondents in Kampong Cham (64%). Surprisingly 100% of Kampot respondents say they have no idea about the signs and symptoms of this illness.

Table 41: Respondents knowledge on sign/symptoms of Chikungunya disease

Sign & Symptoms	All	K. Cham	Kampot	Kandal	Kratie	Mondulir	Prey Veng	Ratanakiri	Steung Treng	Svay Rieng	Takeo
High fever	52%	64%		47%	58%	48%	28%	49%	55%	58%	43%
Fatigue	29%	57%		19%	27%	16%	11%	38%	21%	23%	17%
Muscle pain	26%	56%		5%	39%	4%	7%	23%	21%	12%	6%
Rash	18%	22%		15%	24%	16%	16%	9%	21%	19%	6%
Headache	12%	19%		2%	11%	8%	4%	19%	21%	18%	3%
Nausea	3%	4%		2%	2%	4%	4%	4%	6%	4%	
Joint swelling	3%	2%		5%	3%		4%	4%	6%	2%	
Frequently sneezing/cough	1%	1%		2%	3%		1%				3%
Other	8%	7%	0%	8%	7%	4%	14%	9%	12%	6%	3%
Don't know	35%	7%	100%	47%	36%	40%	64%	30%	33%	31%	51%

Majority of respondents (76%) were not aware to any preventive measures for Chikungunya disease. All respondents from Kampot said they don't know. Most common measures mentioned were: always sleep under mosquito net (19%), use mosquito coils (4%), use of insect spray (3%), stay away from infected person (3%). Other measures mentioned were control breeding of mosquitoes (11% respondents from Takeo), adopt hygienic living condition, close windows in evening, wear full sleeve shirt and trouser etc.

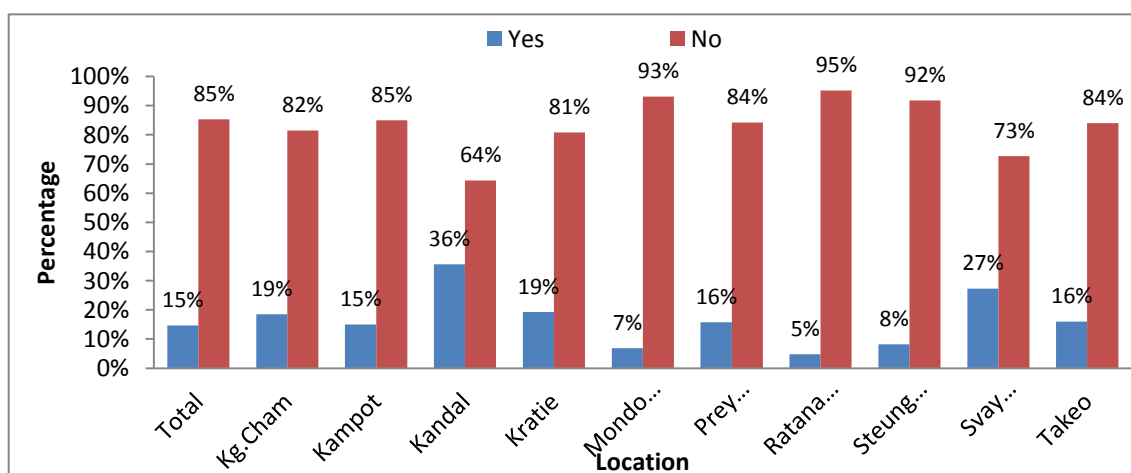
Fig 58: Knowledge on preventive measures for Chikungunya disease



Ebola Virus

Only 15% respondents said that they have heard about Ebola and its illness. Highest percentage who has heard about the disease was recorded in Kandal (36%) and lowest percentage who has heard about the disease was recorded in Ratanakiri (5%).

Fig 59: Respondents who have heard about Ebola



Out of those who said they have heard about Ebola disease, they were further asked to tell about the sign and symptoms of the disease. Respondents mentioned 9 different signs and symptoms. Most common ones were high fever (20%), blisters on skin like burning (14%), severe weakness (6%), sudden onset of fever (5%), headache (4%) and others. About 64% respondents say they don't know about the signs and symptoms of this illness. Highest percentage of respondents who were aware to the sign and symptoms were from Kampong Cham (62%) and highest percentage of those who were unaware to sign and symptoms were reported from Ratanakiri (80%) followed by Prey Veng (78%).

Table 42: Respondents knowledge on sign/symptoms of Ebola disease

Sign and symptoms	All	K. Cham	Kampot	Kandal	Kratie	Mondulkiri	Prey Veng	Ratanakiri	Steung Treng	Svay Rieng	Takeo
High fever	20%	38%	20%	14%	14%	18%	14%	12%	27%	26%	19%
Blisters on the skin like burning	14%	30%	20%	9%	22%	33%	10%	8%	15%	9%	
Severe weakness	6%	3%					4%	8%	12%	11%	6%
Sudden onset of fever	5%	5%	7%	2%	2%	3%	1%		10%	11%	
Headache	4%	3%		2%			2%	4%	2%	8%	13%
Sore throat	3%	3%		5%				4%	7%	5%	6%
Muscle pain	2%		7%		4%		1%		2%	4%	
Bruising skin	1%	3%				3%				1%	
Difficult breathing	0%						1%				
Don't know	64%	38%	60%	77%	70%	58%	78%	80%	54%	55%	75%

Majority of respondents (70%) were not aware to any preventive measures for Ebola illness. Most common measures mentioned were: use of mask (14%), hand washing with soap & water (11%), don't touch corpse (10%), avoid patient's urine, blood, stool, saliva, and semen (8%), do not touch/eat dead body (1%). Highest percentage of population who were unaware to preventive measures was recorded in Mondulkiri (85%) and lowest percentage was recorded in Kampong Cham ((59%).

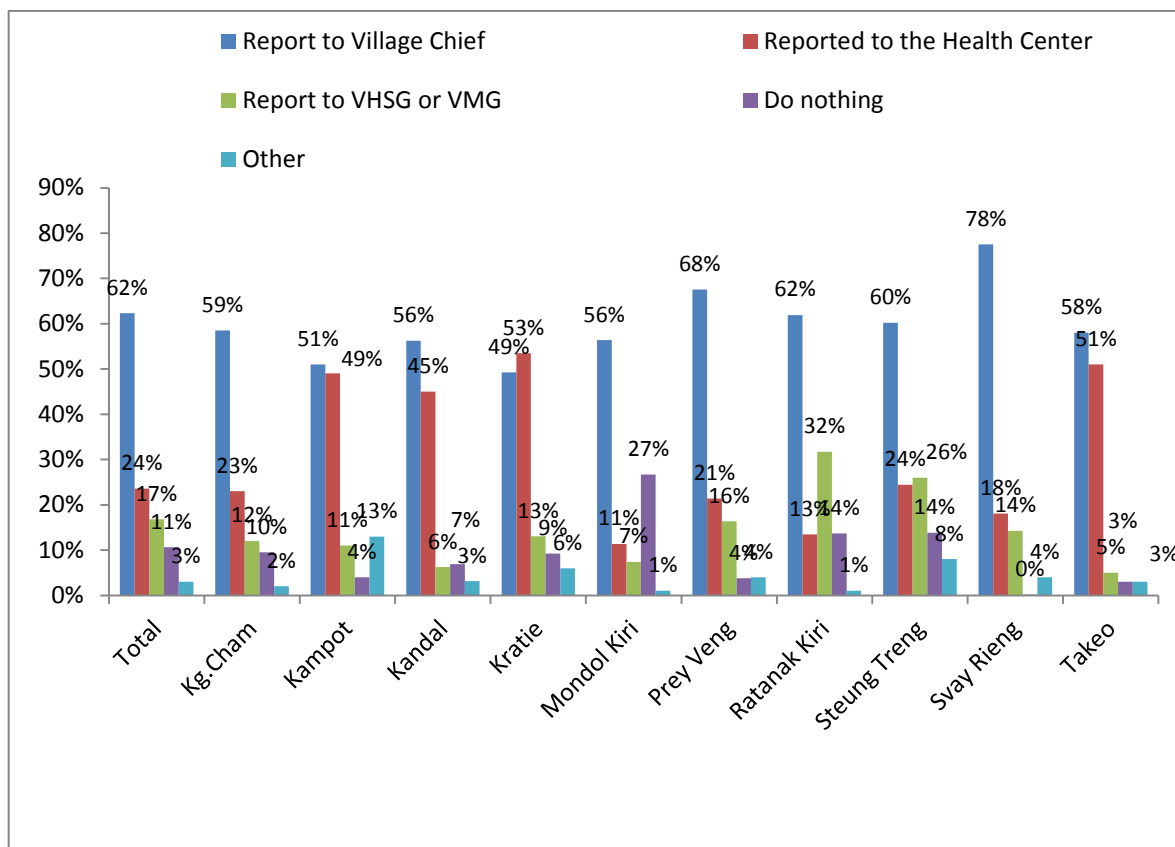
Table 43: Knowledge on preventive measures for Ebola disease

Preventive Measures	All	K. Cham	Kampot	Kandal	Kratie	Mondulkiri	Prey Veng	Ratanakiri	Steung Treng	Svay Rieng	Takeo
Use mask	14%	11%	7%	7%	20%	8%	3%	8%	22%	25%	19%
Hand washing with soap & water	11%	11%	-	12%	4%	10%	11%	16%	17%	13%	-
Don't touch corpse	10%	5%	7%	4%	12%	-	9%	8%	2%	19%	25%
Avoid patient's Urine, Blood, stool, saliva, semen	8%	22%	7%	7%	6%	-	5%	8%	12%	11%	-
Do not eat/touch dead body	1%	3%	-	-	-		1%	-	-	1%	-
Don't know	70%	59%	80%	75%	76%	85%	80%	72%	63%	58%	63%

Reporting mechanism for any new illness in the community

Household members were asked when there appear any new illnesses or symptoms in their community what do they do?

Fig 60: Household member’s common reporting mechanism for new illnesses



Majority (62% of respondents said they report to village chief when there appear any new illnesses or symptoms in their community. Other 24% mention they report to the health centre, 17% said report to VHSG/VMG, 3% said reporting to commune chief, tell to villagers/neighbours and 11% said do nothing. Highest percentage of reporting to Village chief was mentioned by Svay Rieng (78%) and lowest was in Kampot. Reporting to Health Centre was reported by 53% in Kratie followed by Takeo (51%). “Do nothing” was mentioned highest by Ratanakiri (32%) and Steung Treng 26%.

Hotline Numbers used for reporting disease outbreaks

Household respondents were asked whether they were aware of common Hotline Numbers for reporting disease outbreak/events. The finding shows that very few people in all provinces and villages are aware of such phone numbers set by MOH.

Table 44: Knowledge of HHs on Hotline Numbers for reporting disease outbreaks

Hotline Numbers	No. of Response	Comments
115 (MOH-CDCD)	2 people (Ratanakiri 1, Svay Rieng-1)	Out of 3,600 Household respondents only 24 were able to mention some important hotline numbers. Higher number of people mentioned Health Centre and Village Chief's number than others. Interestingly remote provinces like Ratanakiri, Mondulkiri, Stueng Treng were able to mention such numbers rather than other provinces closer to the Capital like Kandal, Kampong Cham.
012 488 981 (MOH-CDCD)	3 people (Mondulkiri-1; Ratanakiri- 2)	
012 833 795 (Animal Department)	4 people (Mandolkiri-1, Ratanakir -1, Prey Veng-2)	
Police hotline	3 people (Prey Veng 1; Svay Rieng- 2),	
Health Center's phone:	6 people (Prey Veng - 1,Stung Treng- 1, Svay Rieng- 1, Takeo-3)	
Village chief's phone number	6 people (Kampot-1, Kratie- 1, Prey Veng- 3, Svay Rieng- 1)	
Don't know	3,576 (out of 3,600)	

When asked about the most preferred place/institutions for reporting disease outbreak, majority of the respondents mentioned reporting to village chief was more convenient (60%). Report to health centre staff was (36%), report to VHSG was 36%. Reporting to MOH/hospital and police was mentioned least preferred places. Eight percent of respondents said they don't know where to report. Highest percentage of respondents who were not aware where to report was from Mondulkiri (24%) followed by Ratanakiri (10%).

Table 45: Most preferred place/institutions for reporting disease outbreak

Preferred reporting places/institutions by villagers	Total	Kg.Cham	Kampot	Kandal	Kratie	Mondulkiri	Prey Veng	Ratanak Kiri	Steung Treng	Svay Rieng	Takeo
Village chief	60%	59%	46%	55%	47%	57%	68%	66%	58%	65%	47%
Health Center staff	36%	23%	54%	56%	67%	16%	35%	32%	34%	42%	68%
VMG/VHSG	12%	11%	4%	1%	11%	7%	12%	27%	17%	6%	5%
Don't know	8%	9%	5%	4%	7%	24%	2%	10%	8%	1%	2%
Commune council	7%	3%	21%	16%	5%	4%	8%	2%	7%	13%	18%
Call to number 115	0%				0%	0%	1%	1%		1%	
Vet	0%		2%		1%	0%			0%	1%	3%
MOH/Hospitals	0%		1%		2%		1%				
Police	0%	1%					0%	0%	1%	1%	

3.15 Health Talk and Sources of Information

With the objective of understanding the health seeking behavior of respondents we asked the question: “ Inthe last month, how many times did you come in contact (meeting, consultation, health talk, and visit) with each of the following individuals?”. Respondents were asked to respond to each of the service providers whom they usually contact for illness. In general health seeking practice with qualified service providers was found very low in all project provinces. In total, Nurse/Midwives were consulted by 13%, community health works by 13%, Doctors by 10%, TBAs by 3% and traditional healers by 2%. Services from Doctor was sought highest by the population of Svay Rieng (25%) followed by Prey Veng (18%). Services from Nurse/midwives were sought highest by Steung Treng (25%) followed by Prey Veng (19%). Services sought from Community health Workers was highest from Steung Treng (21%) followed by Ratanakiti (18%), and services sought from TBAs were highest in Stung Treng (13%) followed by Ratanakir (4%). In general majority of the poor and bordering provinces sought more care from health providers than affluent families and provinces.

Table 46: Health seeking behavior of respondents - Sources and frequency

Contact with		All	K. Cham	Kampot	Kandal	Kratie	Mondulkir	Prey Veng	Ratanakiri	Stung Treng	Svay Rieng	Takeo
Doctor	Never	89 %	97 %	94%	98%	99%	96 %	81 %	91 %	91 %	75 %	95%
	Sometimes (1-2 times)	10 %	3%	6%	3%	1%	4%	15 %	9%	8%	22 %	5%
	Frequently (3 or more times)	1%	1%				1%	3%	0%	1%	3%	
Nurse/ Midwives	Never	87 %	85 %	98%	94%	100 %	91 %	81 %	93 %	76 %	84 %	94%
	Sometimes (1-2 times)	12 %	15 %	2%	6%		8%	18 %	8%	22 %	13 %	6%
	Frequently (3 or more times)	1%			1%		1%	1%		2%	3%	
Comm HW	Never)	87 %	94 %	84%	88%	96%	96 %	84 %	82 %	79 %	85 %	89%
	Sometimes (1-2 times)	12 %	6%	16%	12%	3%	3%	14 %	18 %	18 %	13 %	11%
	Frequently (3 or more times)	1%			1%	1%	0%	1%		3%	2%	
TBAs	Never	97 %	99 %	100 %	98%	100 %	99 %	98 %	96 %	87 %	98 %	99%
	Sometimes (1-2 times)	3%	1%		3%	0%	1%	2%	4%	11 %	2%	1%
	Frequently (3 or more times)	0%	1%				0%			2%		
Traditional Healer	Never	97 %	99 %	100 %	100 %	100 %	98 %	99 %	99 %	93 %	94 %	100 %
	Sometimes (1-2 times)	2%	1%				2%	1%	1%	5%	6%	
	Frequently (3 or more times)	0%					0.2 %	0%		2%	1%	

Source of health messages

Over 90% of the surveyed respondent reported that they received health messages by one or the other sources in the last 6 months. Major source of information were reported as: health centre/staff, community health workers, television, radio, neighbors/villagers and newspaper. Forty percent of the interviewed respondent said that the health center/staff was their primary source of information. Community Health Workers (28%) and television (28%) played an important role in disseminating health information. Health Centre staff were reported with the highest being in Prey Veng at 68 % and Takeo 52%. Newspaper was listed as the least effective source of information in all provinces.

Table 47: Percentage of respondents who received health message in the last 6 month by Source*

Source of Information		All	K. Cham	Kampot	Kandal	Kratie	Mondulkiri	Prey Veng	Ratanakiri	Steung Treng	Svay Rieng	Takeo
Radio	Yes	24%	18%	4%	16%	42%	22%	40%	12%	29%	15%	9%
	No	76%	82%	96%	84%	58%	78%	60%	88%	71%	85%	91%
Newspaper	Yes	1%	1%		2%	0%		2%		0%	1%	
	No	99%	99%	100%	98%	100%	100%	98%	100%	100%	99%	100%
Television	Yes	28%	20%	25%	64%	29%	12%	58%	6%	19%	33%	25%
	No	72%	80%	75%	36%	71%	88%	42%	94%	81%	67%	75%
HC Staff	Yes	40%	38%	30%	32%	40%	16%	68%	33%	39%	46%	52%
	No	60%	63%	70%	68%	60%	84%	32%	68%	61%	54%	48%
Community HW	Yes	28%	21%	32%	20%	8%	8%	45%	42%	33%	23%	15%
	No	72%	80%	68%	80%	92%	92%	55%	58%	67%	77%	85%
Neighbors/villagers	Yes	9%	1%	6%	4%	57%	4%	14%	0%	7%	3%	2%
	No	91%	100%	94%	96%	43%	96%	86%	100%	93%	97%	98%

Content of health messages

The most common messages recalled by respondents were on: Dengue fever (31%), Bird Flu (28%), Malaria (26%), birth spacing (23%), child health (21%), child immunization (19%), hygiene, environmental health and sanitation and other specific diseases including emerging and new diseases. About 28% of respondents said they don't remember any topics.

Fig 61: Main Messages/Topics recalled by respondents (All combined)

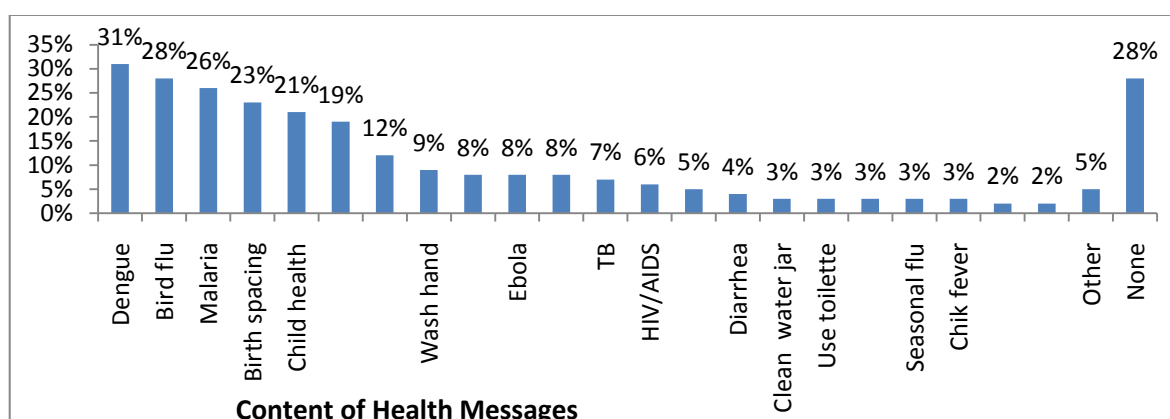


Table 48: Details of main messages/topics recalled by respondents(by province)

Content of message	Province										
	All	K. Cham	Kampot	Kandal	Kratie	Mondulki ri	Prey Veng	Ratanaki ri	Steung Treng	Svay Rieng	Takeo
Dengue	31%	35%	27%	42%	72%	8%	53%	14%	29%	25%	21%
Bird flu	28%	19%	25%	45%	83%	23%	45%	6%	20%	15%	26%
Malaria	26%	16%	9%	18%	54%	15%	27%	39%	40%	12%	3%
Birth spacing	23%	18%	14%	14%	19%	12%	59%	12%	11%	19%	14%
Child health	21%	16%	7%	15%	9%	10%	34%	19%	9%	41%	16%
Child immunization	19%	33%	9%	20%	1%	4%	49%	10%	13%	15%	26%
Clean inside outside of the house	12%	16%	3%	7%	6%	6%	11%	23%	12%	15%	5%
Wash hand	9%	9%	8%	6%	5%	5%	8%	9%	13%	14%	16%
Cover water jar drink clean water	8%	7%	10%	6%	2%	2%	9%	7%	7%	20%	15%
Ebola	8%	8%	13%	20%	15%	4%	6%	0%	5%	18%	10%
Don't touch sick or dead chicken use mask, spray	8%	1%		1%	22%	4%	19%	4%	3%	4%	
TB	7%	3%	8%	8%	14%	1%	18%	4%	3%	4%	1%
HIV/AIDS	6%	4%	8%	3%	20%	9%	10%	1%	4%	2%	2%
Hand –foot- mouth disease	5%	11%	3%	13%	19%	0%	8%	1%	1%	1%	9%
Diarrhea	4%	2%	5%	3%	2%	2%	5%	4%	5%	4%	4%
Clean water jar	3%	3%	2%	3%	2%	1%	5%	2%	2%	7%	1%
Use toilette	3%	1%	4%	4%	1%	1%	3%	2%	1%	8%	10%
Causes & prevention of diarrhea	3%	3%	3%	3%	1%	2%	3%	3%	2%	3%	10%
Seasonal flu	3%	7%			2%	1%	1%	8%	3%	3%	3%
Chik fever	3%	2%		2%	24%	0%	2%		1%		
Mother health/gynecology	2%	5%	2%		0%	1%	6%	0%	3%	1%	1%
Be aware of dengue, it can kill you	2%	1%			2%	1%	3%	2%	2%	3%	1%
Other	5%	3%	7%	2%	12%	0%	5%	5%	10%	3%	5%
None (Can't recall)	28%	36%	33%	16%	5%	54%	2%	38%	32%	28%	22%
Total (%)	265	265	200	249	390	168	390	213	232	265	221

* The percentage rate for this table exceeds 100% because respondents could provide up to three answers to be recorded

3.16 Findings from Focus Group Discussion with VMG/VHSGs

1. Introduction

Focus Group Discussions (FGDs) with Village Management Group (VMG)/ Village Health Support Groups (VHSGs) were included as part of additional tool for the Baseline Survey to collect some qualitative information on knowledge, attitude and practices of VMG/VHSG members. A total of 177 FGDs were conducted out of 180 existing VHSGs. Three VHSGs (2 villages from Mondulkiri and 1 village from Ratanakiri) were not available for FGDs during the survey even after repeated attempt by the survey team.

The key subjects selected for discussions were: types of training they received, their performance before and after training, reporting mechanism for disease outbreak and decision making mechanism within the committees.

Table 49: Profile of VMG/VHSG/ members who participated in FGDs (177 VHSGs)

Province	Total No. of FGD	Position/VHSG												Total participants		
		Village Chief			Dep. village Chief			Member			Volunteer					
		M	F	T	M	F	T	M	F	T	M	F	T	M	F	Total
Kampong Cham	9	0	0	0	0	0	0	0	0	0	10	11	21	10	11	21
Svay Rieng	25	12	0	12	5	2	7	45	64	109	1	2	3	63	68	131
Prey Veng	34	26	3	29	18	4	22	30	55	85	0	0	0	74	62	136
Kandal	8	0	0	0	0	0	0	1	1	2	7	10	17	8	11	19
Kampot	5	2	1	3	1	1	2	5	1	6	2	1	3	10	4	14
Kratie	13	0	0	0	0	0	0	21	15	36	8	8	16	29	23	52
Mondul Kiri	28	4	2	6	3	0	3	10	22	32	8	12	20	25	36	61
Stung Treng	25	11	3	14	1	1	2	8	22	30	0	1	1	20	27	47
Ratana Kiri	25	5	1	6	0	0	0	16	7	23	0	1	1	21	9	30
Takeo	5	1	2	3	2	0	2	1	5	6	2	3	5	6	10	16
Total	177	61	12	73	30	8	38	137	192	329	38	49	87	266	261	527

From 177 VHSG a total of 527 members (female- 261; male- 266) participated in FGDs. Village chiefs and Deputy Village Chiefs accounted for 21% while 79% were members and volunteers.

Prey Veng had the highest number of FGD participants (36) and Takeo had the least number of FGD participants.

When examined with the project indicator regarding the proportion of male and female in the committee: “*Percent of newly selected Village Health Support Group (VHSG) in target villages who are female at least 50%*”, the baseline survey result shows exactly 50% of women’s participation in surveyed VMG/VHSGs. However, taking into account the project objectives and slow progress on other CDC targets the project should encourage more women members to join in decision making process and simultaneously increasing number of female participation in VHSGs.

2. Description of VMG/VHSG's

2.1 Years of Establishment

It was found that all interviewed VMG/VHSGs were formed in between 1979 and 2014. Majority of them were formed in between 2012 and 2014 (60 VHSG).

Table 50: Years of Establishment of VMG/VHSG's

Year of Estab.	Province										Total
	Svay Rieng	Prey Veng	Kandal	Takeo	Kam-pot	K. Cham	Kratie	Mondul Kiri	Stung Treng	Ratan a Kkiri	
2012-2014	26	3	2	2	0	1	1	5	7	13	60
2009-2011	0	4	3	1	2	2	0	6	3	3	24
2006-2008		4						10	3	4	21
2003-2005		5	0	1	1	2	2	6	6	3	26
2000-2002			3		2	4	8	1	6	2	26
1997-1979	1	4	0	0	0	0	1	0	1	0	7
Don't remember	0	12	0	1	0	0	0	0	0	0	13
Total	27	32	8	5	5	9	12	28	26	25	177

2.2 Size of VMG/VHSGs

Among the participating VMG/VHSG we asked about their exact number of members in their committee. A VMG member ranges from maximum 9 members in Takeo to only one member in Kandal and Mondulkiri in some of their Committees. Majority (41%) of VMGs have only 2 members (in 73 VMGs). Maximum number of VHSGs from Mondulkiri, Ratanakiri and Stung Treng has only 2 members.

Table 51: Actual Size of VMG/VHSGs

Province	Size of VMG/VHSG							
	9 members	7 members	6 members	5 members	4 members	3 members	2 members	1 member
SvayRieng	0	14	20	1	0	1	1	0
Prey Veng	0	0	6	3	5	1	7	0
Kandal	0	3	0	0	0	2	2	1
Takeo	2	1	1	1	0	0	0	0
Kampot	0	1	0	3	0	1	0	0
Kampong Cham	0	1	0	0	1	1	6	0
Kratie	0	0	1	3	2	5	2	0
Mondulkiri	0	1	1	2	0	3	20	1
Stung Treng	0	0	2	3	1	1	18	0
Ratanakiri	0	0	0	1	2	2	17	3
Total # of FGDs	2	21	31	17	11	17	73	5
Percentage	1%	12%	18%	10%	6%	10%	41%	3%

2.3 Selection process of members in VMG/VHSG

Six different criteria or processes were used to select members in VMG/VHSG. These processes include: nomination by HC/Local authorities, village election, time devotion & Volunteerism, literacy level, good communication skills, related experience. Majority (65%) of VHSG members were nominated either by HC or local authorities. Other 24% were selected by village election, 18% were on the basis of candidate's time devotion and willingness for volunteerism, 10% on related experiences, 7% on the basis of literacy level, 4% on communication skills.

Fig 62: Selection Criteria of members in VMG/VHSG (all provinces)

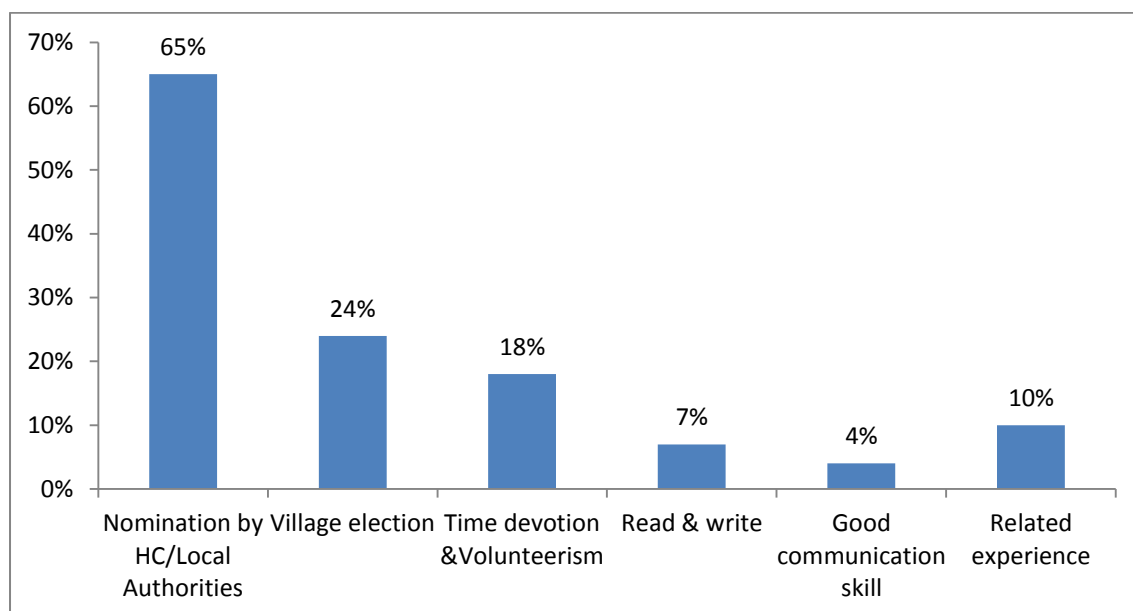


Table 52: Selection process of members in VMG/VHSG (by Provinces)

Province	Selection processes of VMG/VHSG members					
	Nomination by HC/local Authorities	Village election	Time devotion & Volunteerism	Read & write	Good communication skill	Related experience
SvayRieng	25	1	0	0	0	0
Prey Veng	33	1	3	0	0	0
Kandal	6	3	1	0	0	0
Takeo	5	0	1	0	0	0
Kampot	4	0	1	0	0	1
Kampong Cham	4	3	7	5	4	5
Kratie	1	6	8	2	0	2
Mondulkiri	18	5	9	5	2	2
Stung Treng	10	11	1	1	1	3
Ratanakiri	9	13	0	0	0	4
Total FGDs	115	43	31	13	7	17
Percentage	65%	24%	18%	7%	4%	10%

Table 53: Major roles and responsibilities of VHSG members

Position	Roles and responsibilities	Comments
Village Chief	Collect information and reports from the village, share related issues with HC and relevant authorities. S/he is also responsible for coordinating and training activities with HCs	It was found that all members were well aware on their role and responsibilities at village level. They shared their roles as follows.
Dep. Village chief		
Members	Get involved in dissemination of health related issues and educating villagers about what they have learned from trainings provided by HCs, referral hospitals and NGOs	
Volunteers		

3. Capacity Development of VHSG members

All Village Management Groups (VMG) including Village Health Support Group (VHSG) in targeted villages of border districts were trained in core community CDC topics comprising of Bird Flu/AI, Diarrhea, ARI, malaria, dengue, helminthes control and Health facility management by MOH and its supporting I/NGOs and bilateral development partners.

Table 54: Types of training received by VMG/VHSG and major service providers

Province	Major training providers	Training topics covered in all provinces
SvayRieng	RHAC, VSO, HC, RACHA, Marie Stopes	Major community CDC topics covered during the training were: ARI, dengue, typhoid, bird flu (Avian Influenza), diarrhea, measles, Malaria HIV/AIDS, immunization, birth spacing, maternity care, nutrition, Tuberculosis, hand, foot and mouth diseases, and health facility management issues.
Prey Veng		
Kandal	WVC, OD, HC, Kean Svay Referral hospital	
Takeo	OD, HC, Referral hospital	
Kampot	OD, HC, Referral hospital	
Kampong Cham	RHAC, VSO, HC, RED CROSS, UNICEF, DoH, Org promote Indigenous people, Caritas; Oxfam, Memot OD, MoH officials, MII, Medical, Washed, DoE, PhumYeung Health org, OD, CD organization, New world org, DPA org, ADB, MVI, ICC, HPA, CARE, WCS	
Mondulkiri		
Kratie	OD, HC, Referral hospital	
Stung Treng	OD, HC, Referral hospital	
Ratanakiri	OD, HC, CARE, IU, Marie Stopes, IPH, Referral Hospital	

VHSG members were trained on different topics by different development and NGOs partners, who are implementing their programmes in communities, based on VHSG's needs, expected additional roles and status of emergency or disease outbreaks. Therefore, each VHSG had different priority issues of health and diseases and they were dealt accordingly during training. Maximum number of supporting partners for training and capacity building pf VHSGs were found in Kampong Cham and Mondulkiri. Kratie, Steung Treng and Takeo have no mention of development and NGO partners besides MOH support.

3.1 Knowledge and practice of VMG/VHSG on 11 competencies

When examined against the project target “Proportion of VMG including VHSG trained in target villages achieving 80% of 11 competencies”, there are mix results. Most of the competencies are far behind the average. As shown on the below table, knowledge of each VHSG member is relatively higher than practice. Some of the competencies slightly better in terms of practices are in the areas of: environmental cleanliness (20%), personal hygiene (20%), iii) use of safe water (20%) and vector control (20%). However for other competencies like: use of clean pit latrine referral arrangement , danger sign of childhood illness, basic treatment of fever, diarrhea and worms and vaccination the project has extensively work with the VHSGs to achieve expected target by the end of the project period.

The findings also show that more remote provinces and ethnic minority villages’ VHSGs have poor competencies than the ones which are more near or better off provinces.

Table 55: Knowledge and practice of VMG/VHSG on 11 competencies

Competencies/ Training Topics	Knowledge & Practice	Total score	Percentage (Scoring against 11 Competences) by Province									
			SRG	PVG	KND	TKO	KMT	KMC	KRT	MDK	STG	RAK
1.Vector control	Knowledge	26% n=136	5% n=25	4% n=23	1% n=6	0% n=2	1% n=3	1% n=5	2% n=13	4% n=22	5% n=24	2% n=13
	Practice	20% n=105	4% n=21	9% n=7	1% n=6	0% n=2	1% n=3	1% n=5	2% n=9	4% n=22	4% n=22	2% n=8
2.Environmental cleanliness	Knowledge	28% n=149	5% n=25	6% n=31	1% n=4	1% n=5	1% n=5	2% n=8	2% n=9	4% n=21	4% n=21	4% n=20
	Practice	20% n=105	4% n=21	2% n=9	1% n=4	1% n=5	1% n=5	2% n=8	1% n=6	4% n=20	3% n=18	2% n=9
3.Personal Hygiene	Knowledge	29% n=151	5% n=25	6% n=29	1% n=7	1% n=5	1% n=5	2% n=8	1% n=6	5% n=24	4% n=20	4% n=22
	Practice	20% n=107	4% n=21	2% n=8	1% n=7	1% n=5	1% n=5	2% n=8	0% n=2	5% n=24	3% n=18	2% n=9
4.Use of safe water	Knowledge	30% n=156	5% n=25	6% n=33	1% n=6	1% n=3	1% n=5	1% n=7	2% n=11	5% n=25	4% n=22	4% n=19
	Practice	20% n=108	4% n=21	2% n=8	1% n=6	1% n=3	1% n=5	1% n=7	1% n=6	5% n=25	3% n=18	2% n=9
5.Use of pit latrine	Knowledge	12% n=61	4% n=20	2% n=8	0% n=0	0% n=0	0% n=1	1% n=4	1% n=5	0% n=1	3% n=15	9% n=7
	Practice	11% n=58	4% n=20	1% n=7	0% n=0	0% n=0	0% n=1	1% n=4	1% n=4	0% n=1	3% n=14	1% n=7
6.Vaccination	Knowledge	16% n=83	4% n=20	2% n=8	0% n=2	0% n=1	0% n=2	1% n=3	1% n=6	4% n=20	3% n=16	1% n=5
	Practice	16% n=82	4% n=20	1% n=7	0% n=2	0% n=1	0% n=2	1% n=3	1% n=6	4% n=20	3% n=16	1% n=5
7.Danger sign of childhood illness	Knowledge	14% n=75	4% n=21	1% n=7	0% n=1	0% n=0	0% n=0	1% n=7	1% n=4	4% n=21	2% n=10	1% n=4
	Practice	14% n=72	4% n=21	1% n=6	0% n=1	0% n=0	0% n=0	1% n=6	1% n=3	4% n=21	2% n=10	1% n=4
8.Danger sign of maternal complications	Knowledge	17% n=89	4% n=21	1% n=7	0% n=1	0% n=2	0% n=1	1% n=6	1% n=6	4% n=22	3% n=16	1% n=7
	Practice	16% n=84	4% n=21	1% n=7	0% n=1	0% n=2	0% n=1	1% n=5	1% n=5	4% n=20	3% n=15	1% n=7
9.Basic treatment of fever	Knowledge	14% n=75	4% n=21	1% n=7	0% n=1	0% n=2	0% n=1	1% n=3	1% n=4	3% n=18	2% n=13	1% n=5
	Practice	14% n=72	4% n=21	1% n=6	0% n=1	0% n=2	0% n=1	0% n=2	1% n=4	3% n=18	2% n=12	1% n=5
10.Diarrhoea and worms	Knowledge	15% n=81	4% n=20	1% n=7	0% n=1	0% n=2	0% n=1	1% n=5	1% n=5	4% n=20	3% n=15	1% n=5
	Practice	15% n=79	4% n=20	1% n=6	0% n=1	0% n=2	0% n=1	1% n=5	1% n=4	4% n=20	3% n=15	1% n=5
11.Referral arrangement	Knowledge	12% n=63	4% n=19	1% n=7	0% n=0	0% n=0	0% n=1	0% n=2	1% n=5	2% n=13	2% n=11	1% n=5
	Practice	10% n=51	3% n=14	1% n=6	0% n=0	0% n=0	0% n=1	0% n=2	0% n=2	2% n=13	2% n=8	1% n=5

4. Performance of the VHSG after training

The members were asked whether they were better in performing their role and responsibilities as members of VMG/VHSG after training.

Table 56: Performance of the VHSG after training

Province	No. of FGDs	Performance status		
		Better	Same	Not sure
SvayRieng	25	24	0	1
Prey Veng	34	32	2	0
Kandal	8	8	0	0
Takeo	5	4	1	0
Kampot	5	5	0	0
Kampong Cham	9	9	0	0
Kratie	13	9	4	0
Mondulkiri	28	28	0	0
Stung Treng	25	24	1	0
Ratanakiri	25	22	2	1
Total	177	165	10	2

Out of 177 VHSGs interviewed, 165 said they have improved their performance after their training on specific topics because they could conduct awareness raising campaign in the village or could apply their knowledge.

10 VHSGs said there is no changes in their performance as they did not understand well the topics or did not have enough time to disseminate the information to villagers.

2 VHSGs were not sure whether they have improved or not their performance.

5. Additional training that VMG/VHSG members would like to receive

When asked about what other training and support that VHSG members would like to learn or receive so that they could better perform their roles and responsibilities? VHSG members who were newly selected/elected, they need more training on new topics than what they have learned and applied within their community. However, for those who have been trained several times with various topics, they need refresher trainings or something new such as prevention measures of transmission of diseases such as Ebola. To recommend an effective training in the future, TNA should be conducted within each VHSGs and conduct training accordingly.

Table 57: List of training topics requested by interviewed VHSGs

VHSGs/Provinces	List of training topics requested
Mondulkiri and Kampong Cham	Malaria, Birdflu, Child nutrition, Maternity care, Birth spacing, HIV/AIDS, Gender, Child diseases Reproductive health Water and Sanitation
Savy Rieng and Prey Veng	Communicable diseases, environment and sanitation, Water, Sanitation and Hygiene Fever Diarrhea First Aid Referral arrangements Dengue fever worms

6. Frequency of VHSG committees meeting

Out of 177 interviewed VMG/VHSGs, 64 VHSGs (36%) had organized monthly meeting, 26 VHSGs (15%) had organized their meeting every three months, 12 VHSGs (7%) had organized their meeting every 2 months. Almost one third (32%) VMG/VHSGs said they never had any meeting, Majority into this group were from Ratanakiri, Steung Treang and Svay Rieng.

Table 58: Frequency of VHSG committees meeting

Province	Frequency of meeting							
	Never	Once a year	Every month	Every 5 month	Every 4 month	Every 3 month	Every 2 month	Once a month
SvayRieng	7	0	0	0	0	2	3	13
Prey Veng	9	0	0	0	3	8	5	9
Kandal	3	0	1	0	0	0	0	4
Takeo	3	0	0	1	0	1	0	0
Kampot	2	0	0	0	0	1	0	2
K. Cham	1	0	2	0	1	0	0	5
Kratie	2	0	0	0	1	4	0	6
Mondulkiri	8	2	0	1	1	5	2	9
Stung Treng	10	1	2	0	1	1	2	8
Ratanakiri	11	1	1	0	0	4	0	8
Total	56	4	6	2	7	26	12	64
Percent	32%	2%	3%	1%	4%	15%	7%	36%

Agenda of the VMG/VHSG meeting

The agenda for the meeting varies from one VHSG to another. However the focus was always around DC and its reporting mechanism, improving health and sanitation in the communities etc. The members discuss on activities and prepared plan to conduct dissemination of key messages within their target village. Their plan and activities were based on their knowledge acquired from the trainings and requirements of HCs, NGOs's programs or of department of health. Therefore, contents of discussion varied from one VHSG to another depending on their needs and situation within their areas.

VHSGs Meeting Minutes

Table 59: No of VHSG who keep their meeting minutes

Province	No. of VHSGs who claim they prepare meeting minutes	No. of VHSGs whose meeting minutes were seen during the survey
SvayRieng	6	4
Prey Veng	27	12
Kandal	3	1
Takeo	1	0
Kampot	0	0
Kampong Cham	2	0
Kratie	3	1
Mondulkiri	12	9
Stung Treng	1	0
Ratanakiri	7	7
Total # of FGDs	62	34

7. VHSGs reporting mechanism on disease outbreak

VHSGs report to mainly 4 different places/institutions for disease outbreaks. Among the four places Health Centre was the most common reporting place (111 VHSGs), hospital by 4, village chief by 9 VHSGs, 8 VHSG reported to Commune Chief. Other 62 VHSG did not report to any places. No reporting was mentioned by high number of Prey Veng (21) and Svay Rieng (16) VHSGs.

Table 60: Institutions/places that VHSG report on disease outbreak

Province	Places of outbreak report				
	Health centre	Ref Hospital	Village chief	Commune office	No report
SvayRieng	9	2			16
Prey Veng	12	2	1	2	21
Kandal	5				2
Takeo	5				0
Kampot	3				2
Kampong Cham	8		1		0
Kratie	13		2		1
Mondulkiri	21		2	1	5
Stung Treng	13		3	5	12
Ratanakiri	22				3
Total	111	4	9	8	62

There was no regular schedule of reporting among surveyed VHSGs, some said they report on weekly basis, other say monthly or six monthly or only annually. However, majority said they report on monthly basis (27%) followed by six monthly (17%). Little bit more than one third (38%) said they could not remember when they reported.

Table 61: Frequency of reporting of disease outbreak by VHSGs

Province	No. of VHSG/ timeline report				
	Weekly	Monthly	Six month	Annual	Do not remember
SvayRieng	1	6	0	0	18
Prey Veng	11	1	1	0	21
Kandal	0	2	2	2	2
Takeo	0	3	1	1	0
Kampot	0	1	3	0	1
Kampong Cham	0	4	4	1	0
Kratie	0	8	1	4	0
Mondulkiri	0	7	10	5	6
Stung Treng	0	5	3	3	14
Ratanakiri	0	11	5	4	5
Total	12	48	30	20	67
Percentage	7%	27%	17%	11%	38%

Two main ways of reporting were mentioned by the respondents: reporting by phone call/verbally or in writing. The table below shows that 44% of VHSG members reported by telephone call or verbally for any new illness or for the emergency illnesses in their villages, 42% said they send written report and other 18% say they did not do any reporting.

Table 62: Means of reporting by VHSG

Province	Means of report		
	Phone call/Verbal	Written	No report
SvayRieng	6	8	12
Prey Veng	21	14	0
Kandal	1	8	0
Takeo	4	1	0
Kampot	5	0	0
Kampong Cham	6	4	0
Kratie	10	3	0
Monduliri	14	9	5
Stung Treng	4	11	12
Ratanakiri	6	17	2
Total	77	75	31
Percentage	44%	42%	18%

VHSGs reported various content either verbally or by writing brief report. The contents were slightly different by provinces depending upon the issues they would think important to report. Most common issues all VHSG report includes: Dengue fever, Bird Flu, TB, hand-foot-mouth disease, diarrhea, ARI, maternal and child health related issues including immunization. In the below table the contents of the reporting by VHSG (by province) is shown. First 5 priority issues the VHSGs report are listed on priority order in the below.

Table 63: Reporting Priority Issues

<p><u>Mondulkiri</u></p> <p><u>Contents of reporting:</u></p> <ol style="list-style-type: none"> 1. Malaria 2. Dengue 3. Bird Flu 4. Tuberculosis 5. Diarrhea 6. Hand, foot and mouth diseases 7. Tetanus vaccination for women 	<p><u>Kampong Cham</u></p> <p><u>Contents of reporting:</u></p> <ol style="list-style-type: none"> 1. Bird flu 2. Tuberculosis 3. hand, foot and mouth diseases 4. Diarrhea 5. Flu 	<p><u>SvayRieng</u></p> <p><u>Contents of reporting:</u></p> <ol style="list-style-type: none"> 1. Hand, foot and mouth diseases 2. Dengue 3. Bird Flu 4. Tuberculosis 5. Tetanus 6. Vaccination
<p><u>Prey Veng</u></p> <p><u>Contents of reporting:</u></p> <ol style="list-style-type: none"> 1. Birth flu, 2. Dengue 3. Diarrhea 4. Tuberculosis 5. Hand, foot and mouth diseases 6. Malaria 	<p><u>Kandal</u></p> <p><u>Contents of reporting:</u></p> <ol style="list-style-type: none"> 1. Tuberculosis 2. Fever 3. Nutrition 4. Maternity care 5. Vaccination for pregnant and children 6. Water and sanitation 	<p><u>Takeo</u></p> <p><u>Contents of reporting:</u></p> <ol style="list-style-type: none"> 1. Tuberculosis 2. Dengue 3. Typhoid 4. Fever 5. Diarrhea
<p><u>Kampot</u></p> <p><u>Contents of reporting:</u></p> <ol style="list-style-type: none"> 1. Tuberculosis 2. Dengue 3. Typhoid 4. Fever 5. Diarrhea <p><u>Ratanakiri</u></p> <p><u>Contents of reporting:</u></p> <ol style="list-style-type: none"> 1. Tuberculosis 2. Diarrhea 3. ARI 4. Malaria 5. Dengue 6. Fever 	<p><u>Kratie</u></p> <p><u>Contents of reporting:</u></p> <ol style="list-style-type: none"> 1. Malaria 2. Bird flu 3. Chickenpox 4. hand, foot and mouth disease 5. transmission diseases 6. Delivery of women 	<p><u>Stung Treng</u></p> <p><u>Contents of reporting:</u></p> <ol style="list-style-type: none"> 1. Malaria 2. Diarrhea 3. Dengue 4. Respiratory infection 5. Tuberculosis 6. Medicine provision 7. Vaccination

Discussions

From 177 VHSGs, a total of 527 members (female- 261; male- 266) participated in FGDs. When examined with the project indicator regarding the proportion of male and female in the committee, result shows exactly 50% of women's participation in surveyed VMG/VHSGs. However, taking into account the project objectives and slow progress on other CDC targets, the project should encourage more women members to join in decision making process and simultaneously increasing number of female participation in VHSGs.

Six different criteria or processes were used to select members in VMG/VHSG. These processes include: nomination by HC/Local authorities, village election, time devotion & Volunteerism, literacy level, good communication skills, and related experience. Majority (65%) of VHSG members were nominated either by HC or local authorities. Other 24% were selected by village election, 18% were on the basis of candidate's time devotion and willingness for volunteerism, 10% on related experiences, 7% on the basis of literacy level, 4% on communication skills.

Knowledge and practice of VMG/VHSG on 11 competencies was found quite poor in all VHSGs. Though all VHMGs are trained on 11 competencies their level of knowledge and practice was very different. When examined against the project target "Proportion of VMG including VHSG trained in target villages achieving 80% of 11 competencies", there are mix results. Only few of the competencies have just achieved 20% and rests are far behind the average. Knowledge was relatively higher than practice of each VHSG. Some of the competencies which have better achievements of the targets are in the areas of: i) environmental cleanliness, ii) Personal Hygiene, Use of safe water. However for other competencies like: use of clean pit latrine referral arrangement, danger sign of childhood illness, basic treatment of fever, diarrhea and worms and vaccination the project has extensively work with the VHSGs to achieve expected target by the end of the project period.

VHSG members have requested for additional training so that they can better perform their roles and responsibilities. VHSG members who were newly selected/elected, they need more training on new topics than what they have learned and applied within their community. However, for those who have been trained several times with various topics, they need refresher trainings or something new such as prevention measures of transmission of diseases such as Ebola. To recommend an effective training in the future, TNA should be conducted within each VHSGs and conduct training accordingly.

The findings also show that more remote provinces and ethnic minority villages' VHSGs have poor competencies than the ones which are more near or better off provinces.

In general all VMG/VHSGs are formed in all villages and performing as per MOH guidelines and mandate. Some of the VHSGs are quite well aware on their roles and responsibilities and others are yet to learn. MOH needs to focus to those weaker VHSGs and provide more coaching and support so that they can organize regular meeting, produce meeting minutes, report regularly to the MOH and relevant places for any disease out breaks.

VHSGs send their report to mainly 4 different places/institutions for disease outbreaks. Among the four places Health Centre was the most common reporting place (111 VHSGs), hospital by 4, village chief by 9 VHSGs, 8 VHSG reported to Commune Chief. Other 62 VHSG did not report to any places. No reporting was mentioned by high number of Prey Veng (21) and Svay Rieng (16) VHSGs.

Reporting was either verbally/phone call or by writing brief report. The contents were slightly different by provinces depending upon the issues they would think important to report. Most common issues all VHSG report includes: Dengue fever, Bird Flu, TB, hand-foot -mouth disease, diarrhea, ARI, maternal and child health related issues including immunization.

It is recommended that weaker VHSGs from some provinces should have the chance to visit and exchange their experiences with the better performing VHSGs from other province or even within the same province so that both can learn from each other's experiences.

IV. CONCLUSIONS AND RECOMMENDATIONS

4.1 CONCLUSIONS

GMS-CDC2 is designed to assist improve the health of the population in the GMS. Specifically, to improve the health of women, children and indigenous people living in 180 poor villages of 56 communes close by GMS economic corridors in 18 selected border operational districts (ODs) of 10 Cambodian provinces that border with the Lao PDR and/or with Viet Nam.

The infrastructures in terms of road, transportation and service facilities are still very poor across the 180 project villages. This will pose a big challenge to the project to improve the health of the population in a relatively short period of the project span. Though there are some signs of improvement in health and social indicators in the project villages, most of the service indicators are still below the national figures or below to the CDHS 210 findings. Even though the survey result shows 61% of births occurred in health facilities compared to 54% in CDHS 2010, the distribution of achievement by provinces is very different and more remote and poor villages have very poor percentage of births delivered by trained health professionals. The survey shows 65% births are assisted by skilled providers whereas CDHS 2010 shows that 71% births are assisted by a skilled provider. Contraceptive prevalence rate is still low compared to the national rate and family size is very large especially among the ethnic minority groups.

The project villages have poor coverage of vaccination in terms of 6 vaccine preventable diseases among under one year, 2 years and 5 years of age.

In terms of prevention and control of communicable diseases the majority of respondents had high level of knowledge, however when it comes to preventive and treatment practices it was found poor. Though poor hygiene was pointed out by many respondents as the main cause of worm infection, the survey found that only 21% of respondents were aware on 8 Cleans methods.

Hygiene and sanitation is one of the key components of Communicable Disease Control programme. While the vast majority of the respondents claimed to boil their water before drinking and had soap at the place for hand washing, only 32% of families in project villages had access to toilet facilities and 68% practice open defecation (bush/field). Open defecation increases the risk of diarrheal disease in children which is a major cause of infant mortality in Cambodia.

Poverty, ethnicity, illiteracy and lack of education among the project beneficiaries adversely impacted their understanding and knowledge regarding Communicable Disease Control. More than half of the respondents were not aware of danger signs for pneumonia nor of danger signs of other childhood illness. Respondents have good knowledge of controlling mosquito and Dengue fever. Use of bed net was found quite high in the project villages. Quite a high proportion of respondents reported that their households had never received Abate during the last 12 months.

There was high prevalence of communicable diseases in the project areas. Fever, ARI/pneumonia and diarrhea were common illness reported during the survey. Majority of respondents sought for medical advice or treatment after their children got fever, diarrhea or pneumonia.

Regarding the knowledge and practice of emerging diseases Bird Flu was mentioned by majority of respondents but hand-foot- and mouth disease, Chikungunya and Ebola virus was known by very small proportion of population. Over 90% of the surveyed respondents reported that they received health messages by one or the other sources in the last 6 months. A majority of the respondents mentioned they had received health messages from health center staff or community health workers.

4.2 RECOMMENDATIONS

Following recommendations are made based on the findings of the HH baseline survey and FGD discussion with VMG/VHSGs to improve the health of women, children, ethnic minorities and general public of the project villages. Most of the recommendations are for the community levels. It is expected that adopting following recommendation by the project team, local health facility staffs, village health workers, VHSGs and caregivers will help to improve health seeking behaviour and practices of the populations and contribute to achieve the project objectives and targets. As MOH has planned to do the follow-up survey to measure the current level of knowledge, attitude and practice of project target population by the end of the project phase in 2015/2016, more coordinated and increased efforts in implementing the following recommendation will enable to achieve better results.

1. The fully immunized coverage in the age group 12-23 months old was found 65% whereas CDHS 2010 reported 74% for the same age group. The coverage of BCG was recorded 91% however; Polio3 was only 70% and DTC3 72% and Measles coverage only 65%. It is recommended that CDC2 project work with better strategy of targeting to the unreached/ethnic minority communities and population groups with participation of local communities and NGO partners to achieve the national goal of universal coverage.
2. There is need to conduct awareness campaign in increasing knowledge and practices of couples in adopting appropriate family planning methods to control family size and reducing unwanted pregnancy. Health Centre staffs and Village Health workers should work closely with the non-state partners and communities to identify the gaps and execute appropriate strategy on increasing awareness and making available of contraceptives as per the choice of the couples.
3. Recommended four times ANC coverage during pregnancy is low in project area compared to CDHS 2010. Couples should be counseled with locally appropriate and proven IEC/BCC materials by village health workers, health centre staffs and VHSGs for importance of routine ANC services. Such efforts will reduce maternal and child mortality and contribute to improved economy and livelihoods of the family.
4. Project villages have high prevalence of communicable and childhood illnesses: 71% of children under five years old experienced fever, 30% got diarrhea and 52% had ARI/pneumonia during the last two weeks of data collection. Mondulkiri has the highest rate (83%) of children having fever. Project has to work more closely,

especially with the poor and minority populations and launch special awareness campaign mobilizing VHW, VHSGs and NGOs with proven BCC strategy to improve the KAP of households on prevention and treatment of communicable diseases.

5. Only 62% of the respondents reported that increased fluid intake was a home care practice they should use when a child gets diarrhea. Further efforts must be given to increase the level of knowledge and practices in using ORS and any type of fluids when child gets diarrhea. Such measures would reduce unnecessary use of drugs and treatment for simple cases of diarrhea.
6. Recognizing the danger signs of Pneumonia/Acute Respiratory Infection (ARI) and adopting appropriate preventive and curative measures are still low in the project villages. Health centre staffs and VHWs have to give additional efforts to improve the knowledge and practices of caregivers of under five years children using appropriate BCC materials.
7. Only 32% of families in project villages had access to toilet facilities and 68% practice open defecation (bush/field). The highest rate of open defecation was found in Ratanakiri (85%). There is urgent need to improve the knowledge and practices of the population on effects of open defecation so that the project areas would have improved hygiene and sanitation contributing to reduce communicable and helminthes diseases. The CDC2 project is recommended to explore for giving some sort of incentives to the villagers to motivate for constructing low cost simple pit latrine.
8. Anti-helminthes programme in schools and communities need to be scaled up with appropriate approach and strategies. Only 44% children below 5 yrs and 31% of women of child bearing age were treated with deworming tablets in the last six months.
9. Though there is relatively higher knowledge of community members on preventive measures for dengue fever, recognizing danger sign and referral practice is low in the project areas. Increased efforts should be given by community health workers and health centre to educate the people on danger signs and timely referral of suspected fever cases to nearest health institutions where diagnostic facilities such as blood testing is available.
10. Hand washing practice before feeding children and after defecation is low in the project areas. Continuous education and awareness by using appropriate visual aids and BCC materials by village health works and NGO partners will help to improve the attitude and practice of the caregivers and general populations in the project areas.
11. Though all respondents said that they let their children sleep at night and day time under a mosquito net, however, only less than half or 46% of the mosquito nets were treated with an insecticide. There is need to scaling-up of providing treated nets, or villagers have to be oriented on treating their nets with insecticide on regular basis.
12. Current level of knowledge on emerging diseases and illness such as Bird Flu, Hand-foot- and mouth disease, Chikungunya, Ebola virus is very low in the project areas. Health centre and NOGs should conduct regular awareness programs in the project villages to improve the knowledge of population in those emerging diseases.

13. Very few people in project villages were aware of hotline phone numbers set by MOH. Out of 3,600 household respondents only 24 were able to mention some important hotline numbers. The majority preferred reporting to village chief (60%). Report to health centre staff was (36%) and report to VHSG was 36%. There is need to educate general public as well as to the VHSGs on these hotlines numbers for improved surveillances of emergency and emerging diseases.
14. Health Center played a major role in providing preventive, promotive and curative services in the project villages. It is recommended that HC staffs and VHWs are further oriented on conducting health education and BCC sessions using locally appropriated materials at HC when the mother and children visit health facility. Health Centre staff are advised to conduct regular extension program in the community in various emerging health related topics.

V. ANNEXES

Annex 1: Design and Monitoring Framework

Annex 2: List of Survey Villages with Detail Population

Annex 3: HH Survey Questionnaires in English and Khmer

Annex 4: FGD/Semi-structured Questionnaires for VHSG

Annex 5: Survey Schedule

Annex 6: Baseline Survey Results by province for MHV Core Indicators

Annex 7: Results Summary for MHV Core Indicators