

An innovative approach to improve malaria outcomes among mobile and migrant workers in Cambodia:

The “Positive Deviance” Process



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ACRONYMS

BCC	Behaviour Change Communication
BVBD	Bureau of Vector Borne Disease Control
BMGF	Bill & Melinda Gates Foundation
CNM	Centre for Parasitology, Entomology and Malaria Control, Cambodia
FGD	Focus Group Discussion
HC	Health center
IDI	In-depth Interview
IEC	Information Education and Communication
ITN	Insecticide Treated (Bed) Net
LLIN	Long Lasting Insecticide Treated Mosquito Net
PD	Positive Deviance
USAID	United States Agency for International Development
VMW	Village Malaria Worker
VHV	Village Health Volunteer
WHO	World Health Organization

1. SUMMARY

Positive Deviance (PD) is an asset based behaviour change approach that identifies, appreciates and builds on the strengths (positive behaviours) of the communities. PD helps identify existing model behaviours from within the community that a PD informed programme can share and amplify. PD has been used in various health issues including malnutrition, family planning, maternal and newborn health, female genital mutilation, preventing trafficking of women, and HIV/AIDS. To our knowledge, this is first application of positive deviance on malaria with a focus on mobile and migrant workers in Cambodia.

In 2009, Cambodia's National Centre for Parasitology, Entomology and Malaria Control (CNM), with the technical support of Malaria Consortium and funding from the Bill and Melinda Gates Foundation's 'A Strategy for the Containment of Artemisinin Resistant Malaria Parasites in South East Asia' also referred to as the Containment Project, decided to conduct a PD approach as part of its behaviour change communication strategy in three villages targeted by the project. The PD approach was selected as an option for innovative tools for BCC as recommended by the Technical Workshop on Cross-Border IEC/BCC¹ held in August 2009 at Siem Reap, Cambodia. The three communities where PD is being piloted are located in Sampov Loun District, Battambang province, covering a total population about 6, 000, which include migrant workers and resident communities.



Community orientation session

The PD process encompassed a pre-orientation session with stakeholders, a community orientation, a situation analysis, PD inquiries, a participatory analysis, and a community feedback session. A small-scale household assessment was conducted prior to implementation to establish a baseline to properly evaluate the outcome of the project. The qualitative methods i.e. focus group discussions and in-depth interviews were used to identify uncommon but positive behaviors among mobile and migrant workers and resident community members.

This report describes the PD process and qualitative findings in detail.

The following conclusions are drawn from the focus group discussions and in-depth interviews with the migrants and resident community members. As these findings are based on the qualitative study i.e. in-depth Interviews and focus group discussions (FGDs) in three villages, therefore cannot be generalized.

- Most of the migrant workers and community members were aware of malaria signs and symptoms
- Both migrant workers and community members demonstrated a lack of understanding about malaria transmission. Although most of them mentioned that mosquito bite causes malaria, yet, they linked it with ingestion of un-clean/un-boiled water, eating not enough food, forest spirit (*Chanh Nakta*) and changing of land (*Chanh Teuk Chanh Dei*)

- Both migrant workers and community members demonstrated good preventive behaviours i.e. use of insecticide-treated bed-nets
- The practices of both groups for early diagnosis and prompt treatment were weak. Delayed care seeking and self medication is a norm in both groups.

The PD (role model) individuals and families modeled good preventive and treatment seeking behaviors. Communities enthusiastically participated in one-week PD process. The community members and volunteers promised to share the PD practices with other community members during the 6-month follow on programme for behaviour change.

2. BACKGROUND

There is growing evidence for the emergence of artemisinin resistance along the Cambodia-Thailand border area. In recognition of this critical situation, the World Health Organization (WHO) and partners have taken steps to verify, characterize and contain artemisinin resistance, while defining optimal strategies and support the preparation of plans of action in Cambodia and Thailand. This initiative called ‘A Strategy for the Containment of Artemisinin Resistant Malaria Parasites in South East Asia’ is funded by the Bill & Melinda Gates Foundation (BMGF) with supportive contributions from USAID and Global Fund.

Malaria Consortium, a key partner in the Containment Project facilitated a workshop on Information Education Communication (IEC/Behaviour Change Communication (BCC) in Siem Reap to develop a harmonized cross-border BCC strategy in order to deliver effective prevention and treatment of malaria in the Containment Project. One of the key recommendations of the workshop was to foster and implement innovative IEC/BCC strategies, and materials for the mobile and migrant populations. As a follow-up step of the workshop, the positive deviance approach was proposed to be piloted in the selected villages of the Containment Project, targeting communities and mobile and migrant populations.

3. INTRODUCTION

Positive deviance (PD) is a strength-based, innovative approach for behaviour change. The premise of the approach is that solutions to the most health problems lie within the communities. In most communities, the uncommon behaviours of a few successful positive deviant (PD) individuals enable them and their families to find more effective solutions to health problems than their neighbours with whom they share the same resources². A one-week PD process with the community identifies, those uncommon beneficial practices that a PD informed program can help spread at large in the community.



Positive Deviance has been extensively used within community nutrition programmes in a range of countries³⁻⁷ including Vietnam, Bolivia, Mali, Nepal, India and Mozambique. PD has also been used to identify positive behaviours associated with education, family planning, maternal and newborn health, female genital mutilation, preventing trafficking of women, and HIV/AIDS².

To our knowledge, this is first time that this approach is being applied on malaria to identify uncommon, model behaviours associated with malaria prevention and control among mobile and migrant workers and resident communities in Simpov Loun, Cambodia.

Three villages, Kampong Chamlang Leu, Ploav Praim Muy and Samsep, were selected for the study from Sampov Loun, a district of Battambang province in the north- west of Cambodia.

The Sampov Loun district consists of 17 commune, and 121 villages. The estimated population of the district is 138,878. There are 8 health centres in the district which provide malaria diagnosis and treatment facilities to the population. The villages were selected based on the following criteria:

- Presence of mobile and migrant workers
- Location of villages in the high risk area
- Easy accessibility to monitor the quality of project implementation

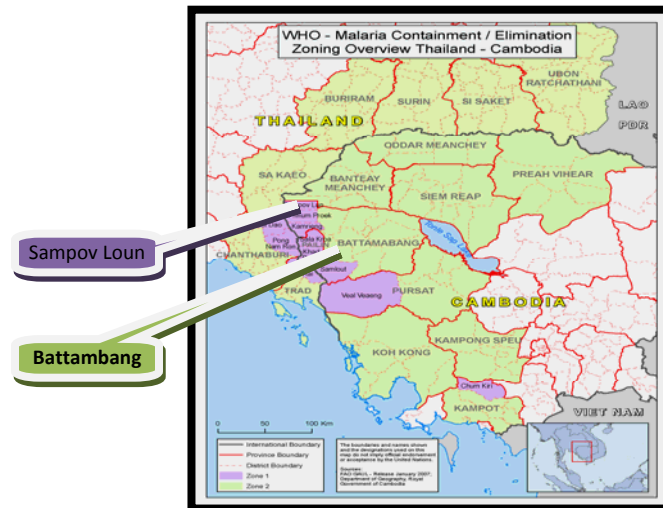


Figure 1, Map of Cambodia showing location of PD pilot

4. OBJECTIVES

The pilot will:

- Describe the practical application of a positive deviance (PD) informed programme on resident community members and mobile and migrant workers on malaria
- Contribute to an effective communications strategy based on the success stories and strategies of role models (positive deviants) to capitalize on their role model effect
- Inform CNM, BVBD and partners to the potential of the PD approach

5. METHODOLOGY

The Positive Deviance process applied both qualitative and quantitative methods of data collection. This report will describe the one-week PD process and qualitative findings of PD inquiry. During the one-week PD process (3-8 August 2010), a variety of qualitative methods i.e. in-depth interviews (IDIs), focus group discussions (FGDs), transect walk (a walk through the



Focus group discussion with landowners

village to observe and triangulate the information coming from IDIs and FGDs) and seasonal calendar were applied to get in-depth information and to permit the triangulation of findings. The qualitative methods helped establish the normative behaviours of the communities and identified the role models (positive deviants). A separate quantitative survey was conducted to establish the baseline of knowledge and behaviours of the communities to evaluate the impact of the project and the results are being currently analyzed.

5.1. Training of qualitative data collectors

The field team was comprised of 4 experienced members from CNM, University Research Committee (URC), and Malaria Consortium, all of whom had relevant experience and skills in community mobilization and qualitative methods. As the data collectors had sufficient experience in qualitative research, a one-day training was sufficient to refresh their interviewing techniques, data collection and handling methods, informed consent, and research ethics.

5.2. Topic guides

The topic guides were initially developed in English. After the discussions with the team, guides were modified and translated in Khmer language.

5.3. Respondents

Adult men and women (aged 18 years and above) were interviewed during the PD process. A gender-balanced approach was adopted in order to take into account the perspectives of both men and women. Interviews and FGDs were conducted with mobile and migrant workers, landlords, and community members of both genders.

5.4. Sampling Methodology

Purposive & convenience sampling techniques were used to collect the information from the key respondents. A total of 6 focus group discussions and 13 in-depth interviews were carried out in the selected villages (Table 1).



In-depth interview with community member

Table1. Detail of qualitative methods

Target Group	FGDs	IDIs	Total
Mobile & migrant workers	- 2 FGD with male - 1 FGD with female	- 3 IDIs with male - 3 IDIs with female	3 FGDs 6 IDIs
Land owners	- 1 FGD	- 2 IDIs	1 FGD 2 IDIs
Community members/village leaders	- 1 FGD with male - 1 FGD with female	- 3 IDIs with male - 2 IDIs with female	2 FGDs 5 IDIs
Total			6 FGDs 13 IDIs

5.5. Data analysis

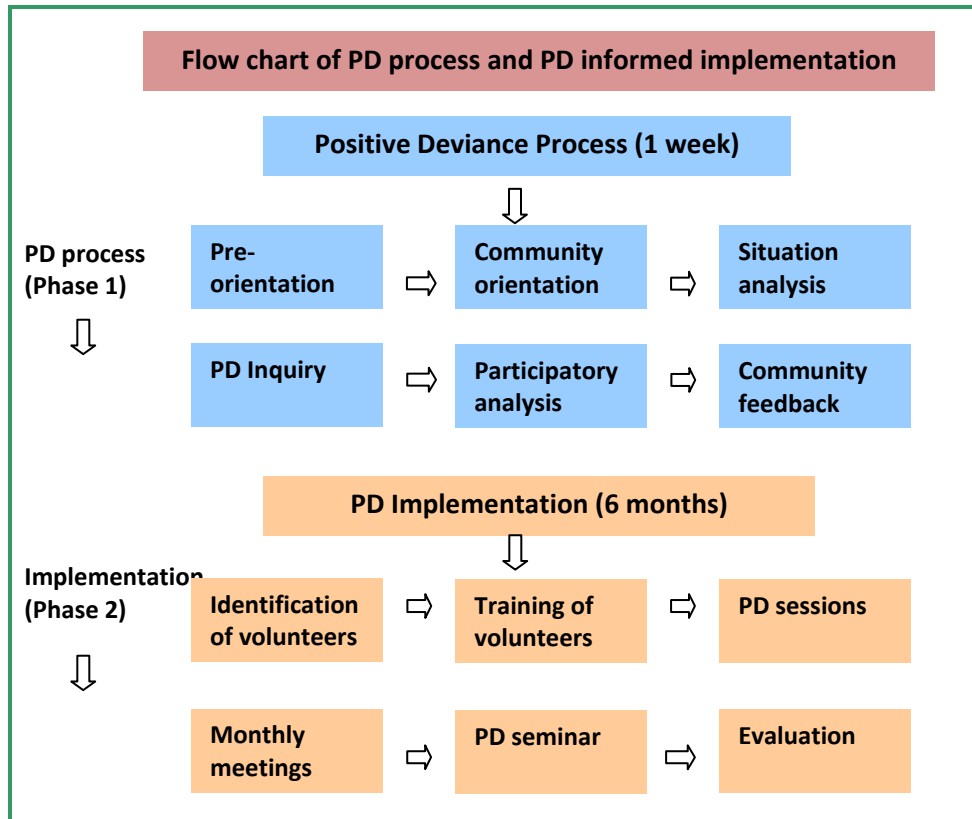


Comprehensive notes were taken during the in-depth interviews and focus group discussions by two experienced note takers. All focus groups and in-depth interviews were also recorded using a cassette recorder. The field notes were transcribed verbatim, i.e. in the real words used by the informants and translated in English the same evening to reduce the recall bias. All the responses organized under main topics and themes used in data collection. The data was triangulated with different methods and respondents and analyzed by hand. Relevant

quotations were identified and included in the report to reflect the voices and experiences of the participants. The findings were properly reviewed and validated with the field team involved in the data collection.

6. PD PROCESS

The one-week PD process is an integral part of the approach. It was conducted to mobilize and sensitizes communities for malaria prevention and control. PD process enabled communities to discover uncommon beneficial behaviours and strategies already being practiced in the community. As the term positive deviance has some negative connotation, we are using the term 'role models' for positive deviants to be culturally appropriate.



Following activities were conducted during the PD process:

6.1. Pre-orientation meeting:

The BCC team organized a pre-orientation meeting with the key community, district and provincial level stakeholders. Provincial Malaria Supervisor, Operation District staff, Health Centre staff, CNM team and village chiefs participated in the orientation meeting. Main purpose of the orientation meeting was to inform the key community leaders and gatekeepers to ensure their support in the upcoming PD activities.

6.2. Community orientation meeting:



The PD team conducted a large community orientation meeting with the key stakeholders, village leaders, volunteers, teachers and mobile and migrant population. Main purpose of the community orientation meeting was to introduce the PD concept through different interactive activities. During the meeting, PD team discussed and sensitized the communities regarding malaria problem and explained, with the help of different conceptual games, how this approach helps identify solutions from within

the community. The PD team planned the situation analysis and identified interested volunteers to participate/help in the situation analysis.

6.3. Situation analysis:

The situation analysis was conducted to establish the normative behaviours around malaria prevention and control. As explained above, a total of 6 focus group discussions and 13 in-depth interviews were carried out with community members, farmers/landlords and mobile and migrant workers. Bed-nets and hammock nets were used to animate the focus group discussions and in-depth interviews to get the quality information.



In-depth interview with a migrant worker

6.4. Positive Deviance Inquiry:

The positive deviance inquiry helped identify the community members and migrants who despite sharing the same resources and living/working in the same community have shown healthy behaviours and outcomes. During the FGDs, the team identified potential role models who were further explored through in-depth interviews. On the discovery of uncommon positive practices, the teams explored the strategies which enabled them to practice these behaviours. The team conducted 6 in-depth interviews with mobile and migrant workers, 2 in-depth interviews with the landlords and 5 in-depth interviews with community members to identify the potential role models.

6.5. Participatory Analysis:



Participatory analysis of finding

Analysis of PD finding was carried out with the community stakeholders. All the role model behaviours identified during the situation analysis were written on the flip charts and displayed on the walls in a local school building. The key community stakeholders were invited to go through the findings and identify/encircle the uncommon practices (PD behaviors). The purpose of the joint analysis was to validate and triangulate the PD findings with the community members.

6.6. Community feedback session and action planning:

After the PD behaviors have been identified, the PD team organized a community feedback and action plan meeting. The purpose of this meeting was to review the PD process with community members (large audience), share the PD findings, mobilize and motivate the community members, migrants and landlords to devise strategies to enable other community members to adopt these positive behaviors. Around 50 participants including health centre staff, migrants,

landlords, volunteers and community members from 3 villages participated in the meeting. The PD team reviewed the PD concept using interactive games.

Some PD behaviours were shared with the audience, asking three couples from community to do the role plays on identified behaviours. The community members enjoyed the role plays and promised to follow the behaviours highlighted in the role plays. In another activity, the PD behaviours were written, by topic, on flip chart and were placed in a cardboard box decorated as a PD house. Participants were asked to take out a flip chart paper through the door and read the behaviour. Each behaviour led to a general discussion among the participants. At the end, an action plan was prepared to explore ways to enable more families to adopt these behaviors.



7. SITUATION ANALYSIS FINDINGS

The following are the preliminary findings from the focus group discussions and in-depth interviews conducted with the migrants and resident community members which though not formally evaluated and cannot be generalized, however, certainly can be used to provide useful insights.

7.1. Migration patterns

The focus groups discussions and in-depth interviews with both communities revealed that majority of migrants come from Siem Reap, Battambang, Takeo, Pursat, Kampot and Kampong Speu provinces to find seasonal work in the area. The migrants and landowners maintain contact during planting or harvesting seasons. The majority of the migrant workers stay around 15 to 30 days in the area and most of them go back to their hometown after completing the harvesting or planting work, however, few migrants mentioned that they stay for 3-4 month in the village. Most of the migrants come with their families and stay with landlords in the village or at the silom (*Chung Ruk*). Some migrant workers come in groups to find work in this area.



On average, a landowner needs 20-30 workers for planting or harvesting activity at his/her farm in a season. Most of the landowners use same migrant workers who rotate from one farm to another farm within the village. The landowners hire both male and female migrant workers between the ages of 15-50 year. Most of the landowners mentioned that they prefer mature and older workers as they are experienced and good at work. Some also prefer young migrants especially for hard jobs such as tilling of lands

and loading of the corn bags. Many landowners mentioned that they prefer men migrants to

women migrants as men are stronger than the women and can do heavy tasks. During the hiring process, the landowners ensure that the migrants are honest, hard working and are not involved in criminal activities. Migrant workers can easily earn between 300,000 to 400,000 Riel per season.

“I visit this area twice a year. In July-August, I come to harvest the corns. In November-December, I visit to harvest the soyabeans. I usually earn 300,000 to 400,000 Riel (USD 75-100) for the corn harvesting season”. IDI-female-migrant-Kampong Cham Lang Leu



Female migrant worker packing corns

7.1.1. Migrant registration

The majority of migrants are not registered in these villages. The landowners reported that they usually inform the chief of village or chief of group about the arrival of new migrants in the village. In each village, there are 10 to 12 groups which are managed by a chief. Each chief of group is responsible for 10-12 houses. The chief of group reports to the chief of village about the arrival of new migrant workers. The chief of village then informs the local authorities.

7.1.2. Gender based division of labour

Men are usually involved in hard jobs such as digging or tilling of land, cutting the grass, spraying the insecticide, planting and harvesting of corn, soya bean and carrying/loading corn bags. They are also involved in catching grass hoppers (One person can catch 3-5 KG grass hopper per night which can be sold at the rate of 13,500-17,000 Riel).



Migrant workers

Women are involved in the planting of beans, harvesting/picking of corns, planting of rice and cassava, chopping of cassava and packing of corn in bags for transportation.

The wages depend on the nature and type of work. The landowners pay 11,000 Riel per day for hard jobs such as digging of the land. They pay 10,000 Riel a day for plantation of the crop. The workers get 4,000 Riel for harvesting and packing a bag of corn. These are the standardized rates for both men and women in these communities.

7.2. Knowledge of malaria symptoms

The focus group discussions and in-depth interviews with resident community members and migrant workers revealed that malaria is one of the most common illnesses in the area. Most of the community members used local term ‘*Krung Jianh*’ for malaria. Some community members also mentioned ‘*Krun Ngak*’ and ‘*Krun gadow*’, (pain in the joints) for malaria. Majority of the respondents mentioned correct signs and symptoms of malaria and noted that fever, chills,

headache, sweating and body ache are the main signs and symptoms of malaria. Most of the respondents mentioned that malaria is a dangerous disease which can kill if not treated in time.

“Malaria is a very dangerous disease. If we don’t seek treatment in time it can be complicated and can kill”. IDI-male community member-Samsep

“It is very serious, because it can cause anemia and comma which can kill”. FGD-female community members-Kampong Chamlong Leu



A migrant worker selling fish

“Malaria can kill a person within 7 days, as it destroys the red blood cells. I know because I have lost my niece with malaria a couple of years ago”. IDI- female migrant worker-Ploav Praitm Muy

The migrant workers view malaria as a health as well as an economic problem which can affect their livelihood and wellbeing. *“I am afraid of losing job and money if I get malaria”. IDI-male migrant-Kampong Chamlong Leu*

Many community members noted during the FGDs that there is a significant decrease in malaria cases this year compare to the last 2-3 years. They mentioned that Dengue fever is now quite common in these communities.

7.3. Beliefs, perceptions and causes of malaria

Both migrant workers’ and community members’ focus groups and in-depth interviews demonstrated a lack of understanding about malaria transmission. Although most of the respondents from both communities mentioned that mosquito bite causes malaria, yet, they also linked it with ingestion of un-clean/un-boiled water (*hop teuk chhav*), drinking lime water, eating non-hygienic food, eating not enough food, lack of proper sleep, changing of land (*Chanh Teuk Chanh Dei*), bad talk and forest spirit (*Chanh Nakta*).

“I got malaria because I did not have enough food to eat. I worked very hard and did not sleep well for many days”. IDI-male migrant-Kampong Chamlang Leu

“If you work hard, do not eat enough food and drink un-clean water, you may get malaria”. FGD-male migrant worker- Samsep

Many respondents noted that if they get sick in the forest, it is due to the curse cast by the forest spirit. They believe that anger or curse cast by the forest spirit *“Chanh Nakta”* can cause malaria. *“If you visit forest and forget to pray to “Chanh Nakta”, he will be angry with you and curse you. My wife died of Chanh Nakta many years ago”. IDI-community member-Samsep*

Many community members revealed that changing of area, land, or climate *‘Chanh Teuk, Chanh Dei’* may also causes malaria. *“For the resident community members mosquito bite, but for the mobile and migrant workers, changing of land (chanh teuk chanh dei) is the main cause of malaria”. IDI- female community member-Ploav Praitm Muy*

“When a person gets sick because of changing of land, ‘Chanh Teuk Chanh Dei’, we usually put some soil of the new land in a glass of water, boil it and give it to the patient. This helps him get acquainted with the new environment”. FGD-female community member-Samsep

Many mentioned that mosquito bite is the only cause of malaria. A few even mentioned the name of vector that transmits malaria. “Bite of a female anopheles mosquito transmits malaria”. IDI- female migrant worker- Samsep

Table 2. Perceived causes of malaria

Community members	Migrant workers
<ul style="list-style-type: none"> - Drinking un-clean water/un-boiled water - Mosquito bite - Sleep without mosquito net - No hygiene - Working in the farm or forest - Socializing with friends and staying up late in the night - Forest spirits - Changing of land - Bad talk 	<ul style="list-style-type: none"> - Drinking un-clean /un-boiled water - Mosquito bite - Sleep without mosquito net - Drinking lime water - Not eating enough food - Not drinking enough water - Working hard/tired - Change of lands - Lack of sleep - Lack of health staff’ advice - Lack of nets

7.4. Malaria season

The respondents mentioned that malaria is widespread during the rainy season (June to October). Many of the respondents perceived that mosquito breeds in ponds, dirty standing water and ditches.

Table 3. Seasonal calendar developed with the community members

Activities	Jan	Feb	Mar	Apr	May	Jun	July	Aug	Sep	Oct	Nov	Dec
Presence of malaria												
Presence of heavy rains												
Planting period		Cassava, bean	Cassava, corn	Cassava, corn			Bean corn	Bean corn				
Harvesting period	Cassava, corn	Cassava,					Bean corn	Bean corn		Bean corn	Bean corn	Cassava, corn
Rice planting							Rice	Rice			Rice Harvest	
Forest activities												
Men’s agriculture activities												
Women agriculture activities												

7.5. Vulnerable or high risk group

Most of the community members and migrant workers believed that men especially mobile and migrant workers, 'kamakor and kachport', (corn collectors) are the high risk group for malaria. The female mobile workers also noted that men are most vulnerable to get malaria as they work at night in the farm or forest.

"Men always get malaria because they work at night time. They pack and carry corn bags and catch grass hopper and get bitten by the mosquito". FGD-male migrant-Ploav Prain Muy

"Mostly men get malaria because they go to the farm or forest. Women are less likely to get malaria as they mostly stay at home". FGD-female community members-Kampong Chamlong



"Men get malaria because they do not wear long sleeves. They are involved in catching grass hopper from late evening till the early morning. They get too tired that they forget to use bed net". IDI-female migrant-Samsep

A few respondents mentioned that children and people who work or live near the border area are also vulnerable to get malaria. Some community members mentioned that socializing with friends in the evening is also a reason to get malaria for the male migrant/community members.

"Men always stay up late, get drunk and sleep without net and get malaria". FGD-male community members- Kampong Chamlong Leu

7.6. Health seeking behaviors

Delayed care seeking is a norm in both community members and migrant workers. Most of the community members and migrant workers start with self medication and adopt a 'wait-and-see' strategy to differentiate malaria from other fevers. Majority of the community members and migrant workers mentioned that when they get fever, they consult a shopkeeper or a drug seller and purchase medicines based on their knowledge. If the symptoms persist or get worse after self medication, they then visit the health centre for proper diagnosis and treatment. The majority waits 1-2 days before they go to health centre for proper diagnosis and treatment.

"If I get fever, I go to drug shop first to buy medicine. If there is no improvement then I go to health centre". IDI- male migrant-Ploav Prain Muy

"When I had fever last month, I bought drugs from the pharmacy. I paid 4500 Riel for 3 doses of the drug. I did not get better. I went to pharmacy again to change the medicine but no improvement. Third day I went to health centre for the treatment". IDI-male community member -Samsep

“When I get fever, I go to the nearby drug shop to get the paracetamol tablet. I wait for 1-2 days, if not relieved then I go to the VMW or health centre for blood test and treatment”. IDI-male community member- Kampong Chamlong Leu

Many of the community members and migrants revealed that when they get fever, they do a



Traditional practice, 'Kook ka chal'

traditional practice called 'Kook Ka chal'. In 'Kook Ka Chal' they rub the body with a coin or with a bottle's cap dipped in oil. They rub the body hard to make it red, hot and sweat. They believe that this relieve them from pain, fever and malaria.

“Whenever I get fever, I do 'kook ka chal' first. If not relieved then I take medicine from the drug shop, but if still no improvement, then I go to the VMW or health centre for blood test and treatment”. FGD-male community members-Samsep

Most community members and migrant workers mentioned that if they get malaria they prefer to go to the health centre as they do not have enough money to visit the private sector. Health centre costs are much less expensive compared to the private sector for the malaria treatment. Many mentioned that they go to the VMW for blood test. A few people mentioned that they do not go to VMW, as the VMWs are usually busy in their domestic work. In case of negative result, VMWs do not give any other medicine and refer the patient to the health centre or private clinic. *“It is very frustrating that if our blood test is negative, the VMW refers us to the health centre or private clinic as she does not have other medicine besides malaria”. FGD-female migrant worker*

Affordability, availability and reliability of services are also determining factors to seek malaria treatment from public or private sector. Many of the landowners mentioned that they prefer private sector for malaria treatment. They do not like to go to the health centre due to the long distance to health facility, non availability of staff during weekends and sometime non availability of medicines. They mentioned that travel cost to access health facility is 10,000 Riel which is equal to the consultation fee at the private clinic. Sometimes when they visit the health centre, the drugs are out of stock and health staff gives them a prescription to buy the medicine from the private pharmacy. They said that if they have to buy the medicine from private sector then there is no reason to not go directly to the private clinic at Sampov Loun, where they can get all services in one place and save time. The landowners mentioned that the complete cost of malaria treatment (check-up plus medicine) from a private clinic is around 70,000-80,000 Riel (USD 20).



PD community seminar

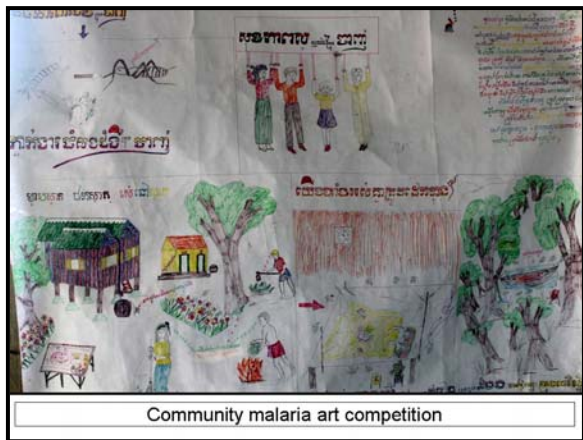
“The health centre charges 1000 Riel for malaria treatment which is very cheap, but the health centre is sometimes out of stock. They give me prescription to buy the medicine from pharmacy which is a waste of our time”. IDI-male landlord-Samsep

“When I go to health center, I have to hire a transport which costs 10,000 Riel which is equal to the consultation fee of a private health care provider where the medicine is also available. Therefore I always prefer private clinic”. FGD-landowner-Kampong Chamlong Leu

Nevertheless, the landlords mentioned that they always advise their migrant workers to go to VMWs to take the blood test which is free of cost. When the result is negative, however, the VMW does not have any other medicine and refers the patient to health centre or private sector.

Some community members mentioned that despite the high cost, they prefer the treatment in the private clinic. They said that quality of treatment in private clinic is much better than the health centre.

“I spent 100,000 riel when I received treatment from the private clinic at Simpov Loun. After this treatment I never get malaria again. I believe in the quality of medicine of the private sector”. FGD- female community member-Ploav Priam Muy



A very few community members mentioned that they use traditional medicines to treat malaria. With the increased knowledge and available malaria services at the community level, majority of community members and migrant go to the VMWs or health centre to receive malaria treatment.

“10 years ago I used to take traditional medicine i.e. dark coffee with lemon juice three times a day to cure malaria. But now I go to health centre for diagnosis and treatment as soon as possible”. IDI-female

community member-Samsep

“When I get sick, I take traditional medicine and drink rain water to cure malaria”. FGD-male migrant worker- Kampong Chanlang Leu

Many of the community members were aware of the risks of self medication and importance of drug compliance. They noted that non compliance with the medicines can complicate malaria.

“When I get sick, instead of buying medicine and wasting time at home, I straight away go to health centre. Delay and taking improper medicine can make the disease worse. Therefore I always go to health centre which is the right place”. IDI-male community member-Samsep

“It is very important to complete the malaria course. If you do not complete the medicines, it will not work again”. FGD-landlord-Ploav Pream Muy

“If you do not complete the medicines prescribed by the doctor, the disease will get worse”. IDI- female community member-Samsep

7.6.1. Decision making for treatment

Husband, wife and family members usually decide about the treatment seeking for fever. Landowners have great influence on the migrants on their health seeking behaviours. Many of the migrant workers mentioned that their landlords decide where to seek the treatment.

“When a migrant get sick, I take them to VMW for blood test. If no parasite found, I take them to the other place for treatment”. FGD-male landlord- Ploav Praitm Muy

7.7. Prevention of malaria

Responses given during the focus group discussions and in depth interviews suggest that insecticide-treated bed net ownership and use is high among both migrants and community members.



The community members mentioned that they have received the long lasting insecticide-treated (LLIN) bed-nets from the national malaria programme last year. Majority of the community members were pleased with the adequate distribution of the bed net by the health centre (CNM). Most of the community members were convinced with the importance and effectiveness of the long lasting insecticide treated bed-nets. Most of the respondents mentioned that mosquito nets prevent mosquito bites and protect against malaria.

Many mentioned that they wear long sleeved clothes, burn coil, and clean the environment to prevent malaria. They also mentioned that cleaning the surrounding environment, burning the rubbish, and cleaning the bed before sleep can also prevent malaria. *“Sleeping under net, burying the ditches and clearing the bushes/plants can also prevent malaria”. IDI- female migrant worker- Ploav Praitm Muy*

The landowners mentioned that they advise the migrant workers to use insecticide-treated bed-nets. Some landowners keep extra insecticide-treated bed nets and lend to their migrants for use. They suggested that if they are given some extra nets, they can lend to their migrant workers on regular basis. They also requested that they should be provided with *abat* (a chemical to kill larva in the water) to get rid of breeding places.

“I advise my migrant workers to sleep in the properly prepared insecticide-treated bed-net, drink boiled water and wear the long sleeves. I insist them to keep bed sheets and all clothes tidy so that no mosquito can hide in the clothes”. IDI-female landlord-Kampong Chamlang Leu

Some landlords mentioned that they provide malaria information to the migrant workers regarding bed net use and other precautionary measures to prevent malaria.

"I advise my migrant workers to sleep early to avoid mosquito bites. I also insist them to wear long sleeve clothes and long boot when they catch grass hoppers at the night time". IDI-Male landlord-Samsep

7.7.1. LLIN bed-net distribution to migrants

Most of the migrant workers mentioned that they have not received any long lasting insecticide-treated bed-net from the health centre (CNM). Most of the migrant have conventional bed nets which they purchased from the market. Many of the migrants were not even aware of the LLINs. *"I never use the impregnated (LLIN) bed net as I don't know where the impregnated bed nets are sold". IDI-male migrant workers-Samsep*

7.7.2. Issues with long lasting insecticide-treated bed nets

The majority of the community members complained about the size, fabric and structure of the distributed LLIN bed nets. They mentioned that the LLIN bed nets have big holes which allow mosquitoes to enter and bite. They also mentioned that LLIN bed nets are bit hard and small in length. *"I have stopped using the long lasting insecticide-treated bed-net as it has big holes which cannot stop mosquitoes. Now I use ordinary bed net instead". FGD- male community member-Kampong Chamlang Leu*

Many of the respondents mentioned that though the mosquito get into the big holes of the bed net and bite, they cannot transmit malaria. Most of the landlords also mentioned that mosquito can enter into the nets because of big holes and bite; however, they believe that they cannot spread malaria. *"The mosquitoes enter into the net through big holes and bite me but I never got sick since I am using the bed net". IDI-male landowner-Samsep*

7.8. Communication channels

Radio and television are the most popular and effective channels of communication for both communities. Most of the respondents mentioned that they heard messages from radio and television. *"I heard the malaria message from television. I still remember the message as it was given by 'Khat Sokhim', a famous singer and joker". FGD-female migrant- Ploav Praim Muy*

"I can sing the malaria song which was telecast on the television". FGD- female migrant

Many mentioned that health centre staff, village health volunteers and billboards are also effective channels of communication.



"I see the picture of husband, wife and daughter (family) sleeping under the bed-net on the billboard daily; they remind me to sleep under the bed net". FGD-female migrant-Samsep

"I have heard and seen the messages from the radio, TV and billboards. However, I have more trust in TV. I like the joker sharing malaria messages on TV". IDI-male landlord

8. IDENTIFICATION OF ROLE MODELS (POSITIVE DEVIANTS)

PD field team conducted 6 FGDs and 13 in-depth interviews with community members, landlords and migrant workers. Total 5 role models were found from both communities including 2 female migrants, 2 community members (1 male and 1 female) and 1 male landowner.

It was not easy to find uncommon role model (positive deviant) cases for the insecticide-treated bed net use as it was already a norm in the community. However, through demonstration of use of insecticide-treated bed nets during the interviews, it was found that the proper bed net use (cleaning the bed, warding off mosquitoes from the net especially from conventional nets and properly tucking the net in the bed sheet/mat to avoid mosquito entrance) was quite uncommon. Therefore the people who demonstrated a proper use of insecticide-treated bed-net were considered role models. The use of insecticide-treated bed or hammock net in the farm or forest was quite uncommon and consequently considered model behaviour. As the delayed treatment was a norm, people who sought prompt diagnosis and treatment from

VMWs or health centre and completed the treatment course were also considered role models. However, a strong need for a proper case definition or criteria for role models on malaria prevention and control was realized during the PD process.



As it is difficult to find a PD role model demonstrating all the positive malaria prevention and health seeking practices, we came up with key positive behaviours from different individuals/role models which are mentioned below:

8.1. Malaria prevention behaviours

- A female migrant worker, who never experienced malaria, always sleeps under insecticide treated net. She prepares her dinner early and hurries to go to bed net at dusk between 7:00 and 7:30 pm to protect her from mosquito bite. She wears long-sleeved clothes in the evening and keeps her house and bed tidy to avoid mosquitoes. During watching TV in the evening, she always covers her legs and feet with *Krama* (checked scarf) to prevent mosquito bites
- A migrant mother bought a bed net, treated it with insecticide and gifted it to her young migrant daughter. She emphasized her daughter to sleep under the bed-net every day to stay healthy from malaria
- A migrant worker's wife always pack an insecticide-treated hammock net in her husband's luggage, whenever he goes to the farm and reminds him, "Eing eing mon chol dek kom plech chang mong" Darling! Do not forget to use bed-net before you sleep to avoid malaria
- A community member sleeps under the properly prepared insecticide-treated bed-net every day. He cleans and properly prepares the bed sheet and net by tucking it under the bed

sheets. He cleans and prepares bed net everyday even if he is exhausted after work. He never leaves a way for mosquito to enter into his bed net

- A migrant worker always sleeps under the insecticide-treated hammock net in the farm. He has been visiting farm for many years but never got sick with malaria
- A farm owner keeps 10 extra insecticide-treated bed-nets in his farm house. He lends these nets to the migrant workers who come to work on his farm. He ensures that his workers sleep under the insecticide-treated bed nets to avoid malaria. He considers that this is his responsibility to take care of the workers. He thinks that if the workers are healthy, they will work well and earn well which is good for his work and for their wellbeing.

8.2. Malaria treatment behaviours

- A farm-owner provided money to his sick migrant worker (who got malaria) to hire a transport to go to the health centre for the early diagnosis and quick treatment for malaria. *He believes that malaria is dangerous, and if we are late in seeking treatment it may get worse and can be complicated.*
- A community member got malaria 3 years ago. He went to the health centre on the same day to seek treatment. He completed the malaria treatment as prescribed by the doctors. Afterwards, he always used the bed-net and never got sick with malaria again.
- A female migrant worker got fever and suspected malaria. She did not buy any medicine by herself and rushed to VMW for blood test. She completed the malaria course as prescribed by the VMW because she did not want the disease to get worse and difficult to cure.
- A migrant worker who never got malaria, whenever she got fever or suspected malaria, she always rushed to VMW to get blood test. She never bought any medicine without blood test. After the blood test result was negative, she went to the health centre to get the treatment.

A role model migrant worker:

A young female migrant worker Ms. Hun Srey Pao has been visiting this area for the past five years, she had never fallen ill from malaria, unlike many of her fellow farm workers. She always sleeps under an insecticide-treated net (ITN). She believes that only mosquito bite causes malaria. She strongly believes that the correct use of ITN will protect her from malaria. She tries to sleep early to avoid mosquito bites in the evenings. When she watches TV after dusk, she wears long sleeved clothes and wraps a 'krama' or traditional scarf around her feet to avoid mosquito bites. Whenever she gets fever and suspect malaria, she goes to the village malaria worker immediately for a blood test. During the community feedback session she said to a large audience "If you all follow these practices you will never get malaria".

9. COMMUNITY PARTICIPATION AND MOBILIZATION

The PD process encourages community participation which creates acceptance and ownership. The one-week PD process established a community dialogue on malaria and identified the existing positive behaviours from within the community. It helped identify the positive uncommon practices and the successful strategies i.e. family support provided by mother, wife and enabling environment created by landowners at the workplace that facilitated the community members /migrants to follow these positive behaviours and overcome the malaria problems better than their neighbors with whom they share similar resources.

10. DISCUSSION

The PD process was conducted in three villages with high mobility of mobile and migrant workers. The behaviours identified from both migrant workers and resident community members were quite similar. Knowledge of malaria signs and symptoms were high in both



migrant and resident communities. This can be attributed to the successful and targeted health education campaigns CNM and its partners have launched. The communities also demonstrated good preventive behaviours i.e. use of insecticide-treated bed-nets. This can be credited to the enabling environment created by the Containment Project through free distribution of LLIN to the community members. However, the practices of both groups for early diagnosis and prompt treatment were weak. Interestingly, the majority perceived malaria

as a dangerous disease, however, they still waste many days on self medication and home based practices which put them on risk. The PD approach will address the health seeking behaviours through disseminating the successful examples of the identified role models from the community.

The rationale for this pilot test was to gain experience in a new behaviour change approach on both migrants as well as resident communities of district Sampov Loun. As this approach was first time applied on malaria, it yielded important lessons for future PD applications on malaria prevention and control. We learned that the initial focus should be at a small scale in a community with a better community based structure i.e. presence of volunteers. One of the major lessons learned was that community involvement is a key in the success of the project. The community should be involved at each and every step to establish a successful community dialogue on malaria prevention and control. The pilot also highlighted the need for a criteria or standard PD case definitions to find the role models on malaria prevention and control. Besides the behaviour changes, the pilot will definitely help refine the tools and processes on the malaria prevention and control.

The PD approach initiates community dialogue, respects local wisdom and provides social proof by identifying positive practices from within the community which ensure acceptance and expedite the process of behavior change. It allows community members to be active beneficiaries, engaged as full partners to play a role in their own health and protection from malaria.

PD is a human and time intensive approach which requires skilled facilitators with sufficient experience in communication and community mobilization. PD project also requires intensive monitoring and supervision of the volunteers. PD is a cost effective approach if it is implemented by the trained provincial or local health facility staff and volunteers. However, in the PD pilot, the involvement and intensive traveling of the central level staff may increase the project cost. Capacity building of provincial and local health facility staff will be very helpful in the future replication or scaling up of this approach. During the six month PD implementation, no special intervention such as distribution of additional beds nets or repellent will be carried out in the PD villages.

The PD project will be evaluated on scientific grounds. A quantitative baseline has been completed in three villages. A total of 300 interviews have been conducted with migrants and community members. Beyond the pre and post quantitative evaluation, a qualitative evaluation will also be conducted based on the community mobilization indicators suggested by the Rockefeller Foundation's and John Hopkins's model of communication for social change. The indicator will assess the leadership, degree and equity of participation, information equity, individual and collective self efficacy and sense of ownership stimulated by the project.



Focus group discussion with female migrants

After one year, an end line survey will be conducted to measure the outcome of the intervention. This pilot project will provide more learning and if successful can be scaled up at larger scale.

11. KEY FINDINGS AND RECOMMENDATIONS

- The knowledge on malaria signs and symptoms is high among both community members and migrant workers. In future, the BCC programme should focus on how this knowledge can be translated into action (behaviour change). The messages should be developed based on the stages of behaviour change. The motivational messages should be develop to encourage the people to adopt these behaviours
- Misconceptions regarding malaria transmission are still prevalent among both communities. They still believe that ingestion of un-clean/un-boiled water, eating not enough food, forest spirit (*Chanh Nakta*) and changing of land (*Chanh Teuk Chanh Dei*) cause malaria. The misconceptions regarding drinking of un-oiled water is actually not harmful as drinking boiled water leads to healthy outcomes. However the perceptions about forest spirit and changing of land are harmful as they lead to various traditional home-based practices which delay the healthcare seeking. These misconceptions should be addressed through religious leaders and teachers
- The insecticide-treated bed net use in both migrant workers and community members is quite high. However, there is a need to increase self efficacy of the community

members in how to use the bed net correctly. Practical demonstrations and role play can address this issue

- The practices for early diagnosis and prompt treatment are weak. Delayed care seeking and self medication is a norm among both communities. This area needs to be focused in the future BCC campaigns
- The village malaria workers treat only malaria positive cases and refer the negative cases to public or private health facilities. This creates frustration and mistrust among the community members. This can be solved by providing VMWs with paracetamol to treat the fever cases and maintain the community trust
- TV and radio are the most commonly mentioned and trusted sources of information in these communities. TV and radio should be given priority in the future IEC/BCC interventions for the mobile and migrants. This will help reinforce the messages given by the volunteers at the community level
- Landowners have great influence on prevention and treatment seeking behaviours of the migrant workers. They should be involved and sensitized in malaria prevention and control to play an effective role in reaching out to the mobile and migrants workers
- The provincial and local health facility staff should be trained to replicate or scale up the PD approach at provincial level
- The community must be involved in each step of the PD process to get their ownership
- The PD role models should be used as advocates to share their success stories (social proof) to other community members to encourage behaviour change
- PD approach can be applied on various areas such as public health facilities to improve the utilization of malaria services
- PD case definitions should be developed to help identify the PD role models on malaria prevention and control in future PD projects
- Simple tools such as story telling, cultural games, local songs and role plays should be used during the PD sessions to encourage participation

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Annex 1.

Positive Deviance, Timeline

Activities	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	April	May	June	July	Aug	Sep
PD baseline survey														
Pre-orientation meeting														
Community orientation meeting														
Situation analysis														
PD inquiry														
Participatory analysis														
PD feedback session														
Training of PD volunteers														
Sharing of PD behaviours														
Monthly meeting with volunteers														
PD healthy families seminar														
PD end line surveys (evaluation)														
Documentation														

Annex 2.

FGD Topic Guide for Mobile and Migrant Workers

FGD facilitator _____ FGD Note taker _____ Date _____

No. of participants _____ Time _____ Village _____

- Diagram of participants (seating arrangements)
- Introduction yourself and organization.
- Introduce topic (length of FGD approx 1.5 hours, confidentiality, and informed consent)

FGD Participant: (8-10)

General question	<ol style="list-style-type: none"> 1. What are the most common health problems in this community? <ul style="list-style-type: none"> • Probe for all disease and malaria
<p>Malaria</p> <p>Signs and Symptom of Malaria</p> <p>Causes of Malaria</p> <p>Healthcare Seeking Behaviour:</p>	<ol style="list-style-type: none"> 2. What do people call malaria in this community? Probe for all local terminologies 3. What are the common signs and symptoms of malaria? 4. Is malaria considered a serious health problem in this community? Why? Why not? 5. According to your opinion how do people get malaria? Causes of malaria? (Explore all existing beliefs i.e. bad spirit, bathing in the stream etc.) 6. In which months of the year are people most likely to get malaria? 7. Which groups of people are most likely to get malaria? Why? 8. When a person gets malaria, what do they, family members/land owners do for treatment? <ul style="list-style-type: none"> • Probe for home treatment, herbal medicines • Where they go first for the treatment? Probe for all types of health care providers including private practitioners, drugs shops, traditional healers, and faith healers and who is visited first. 9. How long after fever starts do you seek care? 10. Who decides in the family or workplace (landlord, farm owners) where to seek treatment? Who influences

<p>Preventive Measures</p> <p>Work related questions</p>	<p>patient to seek effective treatment for malaria?</p> <p>11. What are the barriers to receive effective treatment of malaria?</p> <p>12. What kinds of things do people in this community usually do to protect themselves from malaria? Probes for mosquito nets: Which type (treated/untreated)? Who provides?</p> <p>13. What do you do when you sleep outside in the forest or farm to protect yourself from malaria? Probe for hammock nets and repellents etc.</p> <p>14. If no preventive behaviour, why no preventive measures taken? Probe: expensive, not available, hot? etc.</p> <p>15. How do people usually learn about job opportunities around here? Do they learn from relatives, friends, or word of mouth?</p> <p>16. Which parts of the country do people who work/live here usually come from? Probe: Do they usually migrate alone or together with their families? How long do they usually stay? Where do they usually reside while they are here?</p> <p>17. What kinds of jobs do men do to earn a living in this community/around here? What kinds of jobs do women do to earn a living in this community/around here?</p> <p>18. Do migrants have to officially register with the community? What is the registration process?</p> <p>19. What do you suggest to reduce the malaria cases from mobile and migrant workers</p>
<p>Communication Channels</p>	<p>20. What are the main sources of information/communication about health for people in the community? (Probe: VHVs, Facility staff, village leaders, and teachers etc.). Which sources of information do they trust most?</p> <p>21. What are the common social places where community members meet during free times? Probe for all social places for both men and women?</p>

Annex 3.

FGD Topic Guide for Landlords/Farm Owners

FGD facilitator _____ FGD Note taker _____ Date _____

No. of participants _____ Time _____ Village _____

Diagram of participants (seating arrangements)

- Identify respondent according to selection criteria
- Introduction yourself and organization.
- Introduce topic (length of FGD approx 1.5 hours, confidentiality, and informed consent)

<p>General (rapport building questions)</p>	<ol style="list-style-type: none"> 1. Greetings! First of all I would like to ask some questions about your farm/land/business 2. What do you cultivate/grow in your land/farm? Probe for the cropping patterns, planting and harvesting seasons etc 3. How many mobile/migrants are working or usually work on your land/farm? 4. What activities do they do at your farm or field? 5. Where do these workers or newcomers originally come from? What are the reasons for their relocation? 6. Where do they live in the community? In which kind of places do they usually hang out? 7. How long the migrants stay with you during the course of their work? Probe for the length of their stay? 8. How do you contact these migrants? Do you call same people every time or call different people? 9. How would you describe these migrant/temporary workers in terms of age? Gender?
<p>Malaria Healthcare Seeking Behaviour:</p>	<ol style="list-style-type: none"> 10. What are the most common health problems that migrants experience in this community/area? 11. Is malaria a common health problem in this community/around here? Which groups of people are most likely to get it? 12. Where do migrants usually get treatment for malaria? 13. What kinds of difficulties do migrants face when trying to get treatment for malaria? Probe for area distance,

<p>Preventive Measures</p> <p>Work related questions</p>	<p>cost, health worker attitudes, or legal issues factors?</p> <p>14. When your worker gets malaria, what do you - land owners do for the patient/treatment?</p> <p>15. How long after fever starts do you suggest him/her to seek care? Or take him for the treatment?</p> <p>16. What kinds of things do you do to protect your workers from the malaria?</p> <p>Probe: If not mentioned, ask about the following:</p> <ul style="list-style-type: none"> - Provide mosquito nets: Which type (treated/untreated)? Insecticide-treated hammock: Who provides? - Indoor spraying: How often? Who provides? - Mosquito repellent: Which type? Who uses and how? Who provides? <p>17. What kinds of jobs do men do to earn a living in this community/around here? What kinds of jobs do women do to earn a living in this community/around here?</p> <p>18. How do people usually learn about job opportunities around here? Do they learn from relatives, friends, or word of mouth?</p> <p>19. Which parts of the country do people who work/live here usually come from? Probe: Do they usually migrate alone or together with their families? How long do they usually stay? Where do they usually reside while they are here?</p> <p>20. Do migrants have to officially register with the community? What is the registration process?</p>
<p>Communication Channels</p>	<p>21. What are the main sources of information/communication about health for people in the community? (Probe: VHV, Facility staff, village leaders, teachers). Which sources of information do they trust most?</p> <p>22. What are the common social places where community members meet during free times? Probe for all social places for both men and women?</p>

Annex 4.

FGD Topic Guide for Adults community members

FGD facilitator _____ FGD Note taker _____ Date _____

No. of participants _____ Time _____ Village _____

Diagram of participants (seating arrangements)

- Identify respondent according to selection criteria
- Introduction yourself and organization.
- Introduce topic (length of FGD approx 1.5 hours, confidentiality, and informed consent)

FGD Participant: (8-10)

General (rapport building question)	1. What are the most common health problems in this community? <ul style="list-style-type: none"> • Probe for all disease and malaria
Malaria Signs and Symptom of Malaria Causes of Malaria	2. What do people call malaria in this community? Probe for all local terminologies 3. What are the common signs and symptoms of malaria? 4. Is malaria considered a serious health problem in this community? Why? Why not? 5. According to your opinion how do people get malaria? Causes of malaria? (Explore all existing beliefs i.e. bad spirit, bathing in the stream etc.) 6. In which months of the year are people most likely to get malaria? 7. Which groups of people are most likely to get malaria? Why? 8. When people move to this area for the first time, how soon after are they likely to get malaria?

<p>Healthcare Seeking Behaviour:</p>	<p>9. When a person gets malaria in your community what do the family members do for treatment?</p> <ul style="list-style-type: none"> • Probe for home treatment, herbal medicines • Probe for all types of health care providers including private practitioners, drugs shops, traditional healers, and faith healers and who is visited first. • Why do they use that type of provider? <p>10. How long after fever starts do you seek care?</p> <p>11. Who decides in the family where to seek treatment? Who influences patient to seek effective treatment for malaria?</p> <ul style="list-style-type: none"> • Probe for decision makers at family and/or community level. <p>12. What are the barriers to receive effective treatment of malaria?</p> <p>13. What kinds of things do people in this community usually do to protect themselves from malaria?</p> <p>Probes: If not mentioned, ask about the following:</p> <ul style="list-style-type: none"> • Mosquito nets: Which type (treated/untreated)? Who provides? Insecticide-treated hammock: Who provides? • Mosquito repellent: Which type? Who uses and how? Who provides?
<p>Preventive Measures</p>	<p>14. What do you do when you sleep outside in the forest or farm to protect yourself from malaria? Probe for hammock nets and repellents etc.</p> <p>15. If no preventive behaviour, why no preventive measures taken? Probe: expensive, not available, hot? etc.</p> <p>16. How do people usually learn about job opportunities around here? Do they learn from relatives, friends, or word of mouth?</p> <p>17. Which parts of the country do people who work/live here usually come from? Probe: Do they usually migrate</p>

<p>Work related questions</p>	<p>alone or together with their families? How long do they usually stay? Where do they usually reside while they are here?</p> <p>18. Do migrants have to officially register with the community? What is the registration process?</p> <p>19. What kinds of jobs do men do to earn a living in this community/around here? What kinds of jobs do women do to earn a living in this community/around here?</p> <p>20. What do you suggest to reduce the malaria cases from mobile and migrant workers.</p>
<p>Communication Channels</p>	<p>21. What are the main sources of information/communication about health for people in the community? (Probe: VHVs, Facility staff, village leaders, and teachers etc.). Which sources of information do they trust most?</p> <p>22. What are the common social places where community members meet during free times? Probe for all social places for both men and women?</p>