

Breakthrough ACTION Guyana

# Insights Report

**Using human-centered design to strengthen  
Guyana's malaria testing and treatment adherence  
program**

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# Acronym list

<b>CHW</b>	Community Health Worker	<b>MoPH</b>	Ministry of Public Health
<b>GFATM</b>	Global Fund to Fight AIDS, Tuberculosis and Malaria	<b>PAHO</b>	Pan American Health Organization
<b>GGDMA</b>	Guyana Gold and Diamond Miners Association	<b>PR/HPU</b>	Public Relations/Health Promotion Unit
<b>GGMC</b>	Guyana Geology and Mines Commission	<b>RDT</b>	Rapid Diagnostic Test
<b>GWMO</b>	Guyana Women's Miners Organization	<b>SBC</b>	Social and Behavior Change
<b>HCD</b>	Human-centered Design	<b>USAID</b>	United States Agency for International Development
<b>HMW</b>	How might we question	<b>VCS</b>	Vector Control Services
<b>LLIN</b>	Long-lasting Insecticidal Nets		

# Executive summary

Breakthrough ACTION Guyana is USAID's flagship social and behavior change (SBC) project designed to improve malaria outcomes among priority populations. The project uses innovative SBC approaches to address key behaviors related to malaria testing and treatment.

In Guyana, malaria is an issue in Regions 1, 7, 8, and 9, particularly among gold mining populations. In response, the Ministry of Public Health (MoPH), the Pan American Health Organization, and the Global Fund to Fight AIDS, Tuberculosis and Malaria have introduced malaria rapid diagnostic tests (RDTs) to provide services in hard to reach areas. To support this initiative, Breakthrough ACTION is collaborating with the MoPH to respond to the following motivating question: How might we improve malaria outcomes in these regions?

Guided by Breakthrough ACTION's SBC Flowchart, two teams of researchers from the MoPH Vector Control Services and Public Relations/Health Promotion Unit along with Breakthrough ACTION staff conducted qualitative research in Regions 7 and 8. These research teams interviewed miners, camp managers, trained malaria testers, community health workers, pharmacists, regional administrative officers, and other vital stakeholders to understand the nature of current malaria services, behaviors around malaria testing, use of recommended and alternative treatments, and the broader malaria context that miners work in.

A total of 108 participants were interviewed. Based on these interviews, the research teams identified key findings and quotes and clustered them into sub-themes. Together, both teams identified larger themes and organized the sub-themes accordingly. Eleven insights were developed. In addition to these insights, audience segments, personas, and journey maps were created to summarize stakeholders interviewed and experiences shared. Breakthrough ACTION will use these insights to develop salient solutions and prototypes to encourage greater use of malaria testing services and recommended treatment regimens.

## Insights

1

### **Risk perception**

Malaria is seen as routine and commonplace; it is not considered a major health risk for many communities.

2

### **Malaria knowledge and preventive behaviors**

There are many contradictions between what people know about malaria and how they behave.

3

### **Adherence and non-adherence to correct treatment**

Undesirable medication side effects cause some miners to stop treatment as soon as they feel better, while the need to get back to work and be able to keep working causes other miners to follow the regimen.

4

### **Self- and traditional malaria treatment**

Commonly accepted practical solutions to diagnose and treat malaria, which differ from official recommendations, are often preferred due to convenience and personal experience with these treatments.

5

### **Testing**

The role of volunteer testers in providing free malaria testing and treatment services is not fully understood or appreciated by miners and other clients.

6

### **Job motivation**

Miners and camp workers often prioritize financial/economic gain over their health concerns.

7

### **Mining camp environment**

Miners and their camp managers have strong and respectful relationships because they need each other to be successful at their jobs.

8

### **Health care sources**

Health facilities are a desired option for health care services, but people will access other sources, if necessary, due to transportation, time, distance, and cost constraints.

9

### **RDT training**

The RDT training provided by the MoPH is effective; however, testers would like to be trained to provide additional health services.

10

### **Communication**

Health communication and health promotion activities and materials, including radio programs, exist but are undeveloped and underutilized.

11

### **Coordination and communication gaps**

A lack of coordination and communication between stakeholder groups reduces the effectiveness of the National Malaria Programme.

# 1. Project background

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# Breakthrough ACTION Guyana

## Overview

While malaria remains endemic in the country, Guyana has made significant gains in the fight against the disease, with a 58 percent decrease in the total number of confirmed cases reported in 2000 (24,081) compared to 2017 (13,936). Seventy percent of reported malaria cases come from Regions 1 (Barima/Waini), 7 (Cuyuni/Mazaruni), 8 (Potaro/Siparuni), and 9 (Upper Takatu/Upper Essequibo). This reduction may be attributed to the decreased level of mining activities due to low gold prices in 2014 as well as increased control measures such as the distribution of long-lasting insecticidal nets (LLINs), (WHO, 2016; PAHO, 2016a).

To expand access to testing and treatment in the most affected regions, the Ministry of Public Health (MoPH), the Pan American Health Organization (PAHO), and the Global Fund to Fight AIDS, Tuberculosis and Malaria (GFATM) are working together to introduce rapid diagnostic tests (RDTs) and treatment for malaria into mining camps. Stable workers in and around mining camps (e.g., cooks, security guards, and shopkeepers) volunteer as trained testers who can administer RDTs and provide free medication. With training support and MoPH supervision, these testers help bring free, quality health care services closer to remote mining communities.

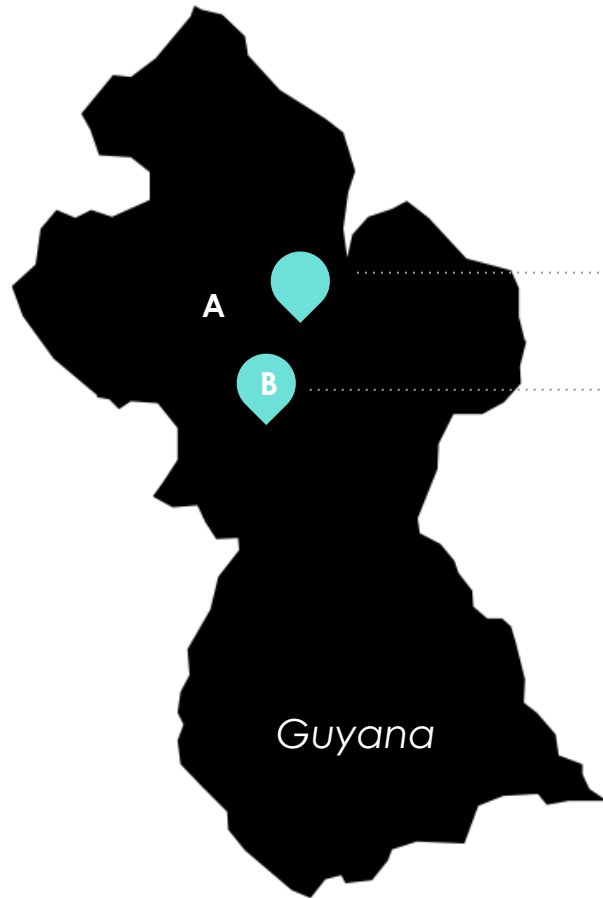
## Project objectives

- 1 Targeted, innovative, and effective solutions to high-priority social and behavioral challenges designed and implemented.
- 2 Increased capacity of Guyanese institutions to coordinate, design, implement, and evaluate high-quality social and behavior change (SBC).

## Breakthrough ACTION Guyana priority behaviors

- Individuals with signs and symptoms of malaria seek prompt and appropriate care
- Trained malaria testers appropriately test, treat, and counsel clients
- Clients adhere to malaria test results and treatment regimen
- Individuals sleep under an LLIN

# Geographic scope

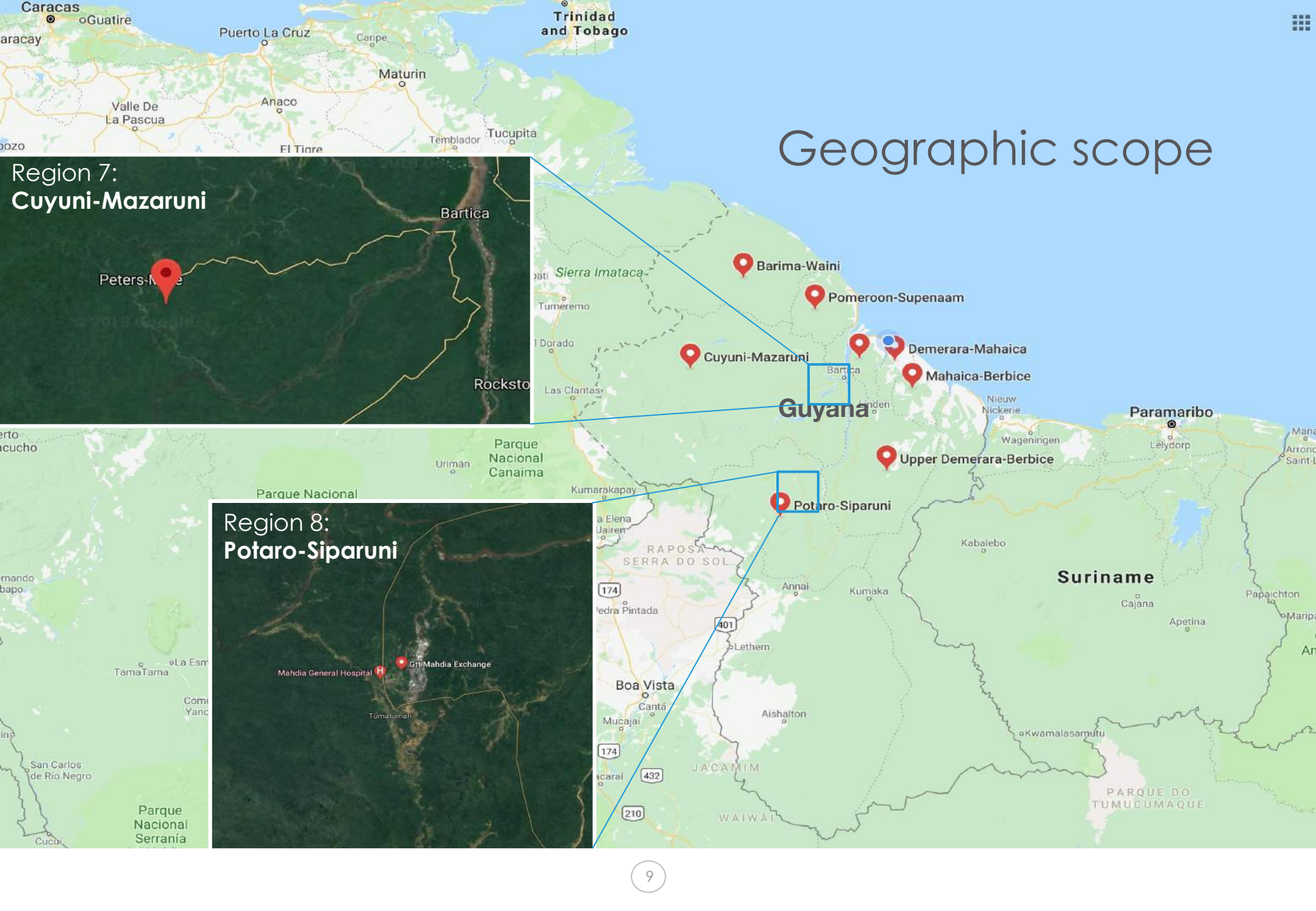


This project focuses on the mining communities in Region 7 (Cuyuni-Mazaruni) and Region 8 (Potaro-Siparuni) of Guyana.

**A** Region 7: Cuyuni-Mazaruni  
**Teams based in Puruni**

**B** Region 8: Potaro-Siparuni  
**Teams based in Mahdia**





# Geographic scope

Region 7:  
Cuyuni-Mazaruni

Region 8:  
Potaro-Siparuni

# Project intent at-a-glance

## DESIGN CHALLENGE

How might we improve malaria outcomes among mining communities in Regions 7 and 8?

### The challenge

Malaria cases are still prevalent among migrant populations, primarily miners, loggers, and stable Amerindian communities in the most highly endemic areas of the hinterlands (known as the “backdam” or “interior” in Guyana).

### Scope

This project focuses on understanding the experiences and perspectives surrounding malaria in mining communities in Regions 7 and 8. Promising behavioral interventions that are prototyped and tested in Regions 7 and 8 will be refined and rolled out in a broader scale throughout these two regions with possible uptake in Regions 1 and 9.

The project will focus on the following behaviors:

- Individuals with signs and symptoms of malaria seek prompt and appropriate care.
- Trained malaria testers appropriately test, treat, and counsel patients.
- Clients adhere to malaria test results and treatment regimens.

# Project intent at-a-glance

## DESIGN CHALLENGE

How might we improve malaria outcomes among mining communities in Regions 7 and 8?

### Our approach

Within the framework of Breakthrough ACTION's SBC Flowchart, this project follows a human-centered design (HCD) approach. The objectives of the Breakthrough ACTION Guyana malaria activity are to:

- Establish a shared vision for the activity's intent, challenges, opportunities, and future success.
- Build the capability of the in-country team to be able to apply HCD principles and activities.
- Develop a deep understanding of the behaviors, attitudes, and beliefs of people belonging to mining communities in Regions 7 and 8.
- Design and implement innovative solutions to SBC challenges.

### Desired future state

*Short-term (1 year):*

- Increased availability of timely and appropriate access to testing and treatment services.
- Improved knowledge and awareness about malaria transmission and management.

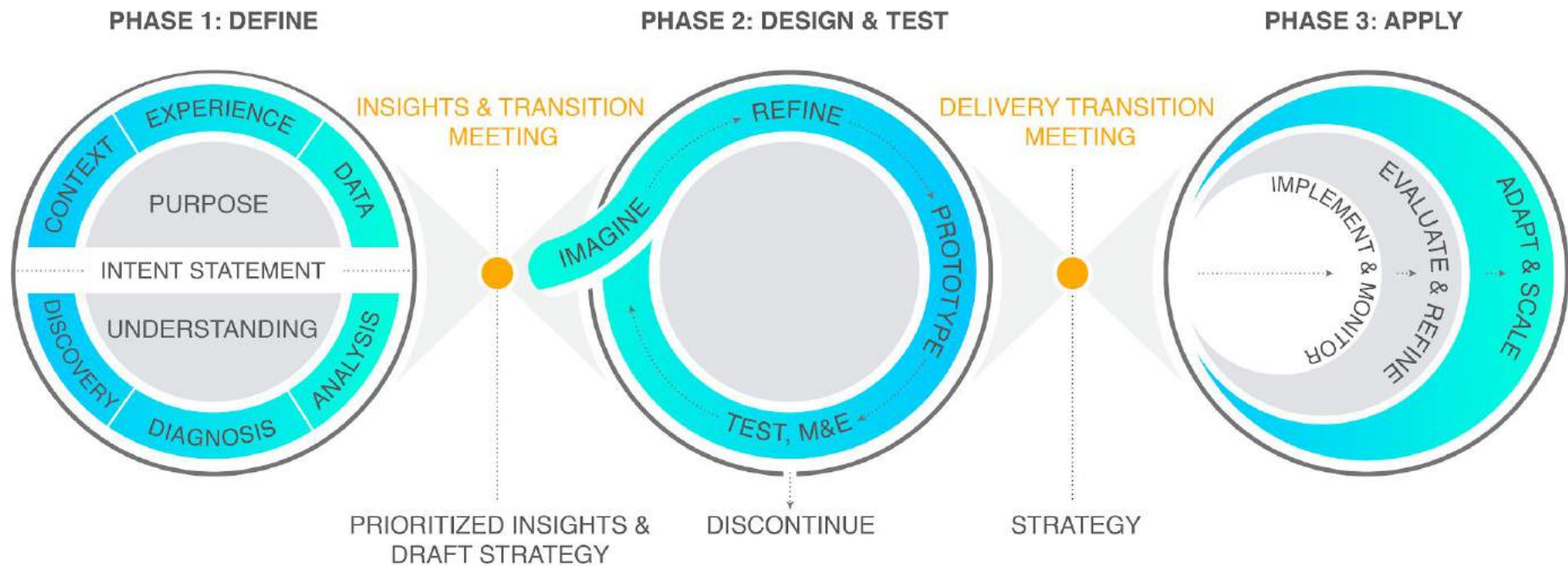
*Medium-term (2–3 years):*

- Reduction in self-treatment and improved adherence to malaria treatment in mining communities.
- Sustained behavior and attitude change in recommended prevention practices.

*Long-term (5 years):*

- Diminished malaria rates to low- or no-risk levels across the country.
- Greater coordinated collaboration between stakeholders.

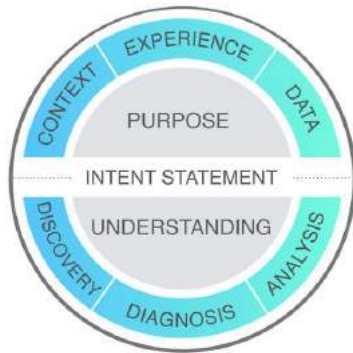
# SBC Flowchart



Breakthrough ACTION's SBC design process integrates research, behavioral sciences and economics, HCD, communication, and community capacity strengthening into a cohesive, flexible approach. In Guyana, Breakthrough ACTION uses the following components: HCD, communication, and community capacity strengthening.

The SBC process is one of divergence and convergence, iteratively exploring broadly, then deciding how to act. There are three key phases in this process: (1) Define, (2) Design and Test, and (3) Apply. These phases are linked by transitional stages where the strategy is developed and refined.

# SBC Flowchart

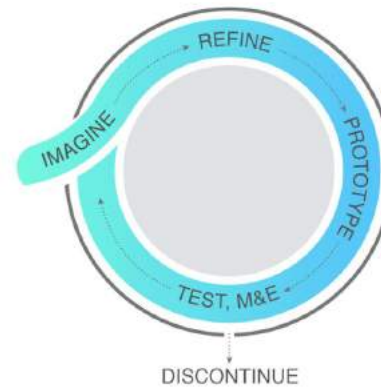


**Phase 1: Define**

During the Define phase, we examine the definition of the problem and all its facets—environmental, structural, behavioral, cognitive, emotional, and social. The process begins by developing a shared understanding of the project intent and engaging the right research team.

Existing data are then examined and the research team is immersed in the context and community to listen and learn from human experience, discover new insights, and diagnose the problem and behavior.

Identifying SBC opportunities from these insights helps to determine if current activities are effective and can continue as they are ("go"); need refinement ("tweak"); need to move in a different direction ("turn"); or if something completely new is needed to generate change ("initiate").



**Phase 2: Design and Test**

In the Design and Test phase, problems are translated into solutions by generating ideas and prototyping, rapidly testing prototypes with key audiences in their contexts, learning, and improving.

Rapidly building and testing concept prototypes helps gather early user feedback that can help to refine or eliminate the design. This saves investing time and money in solutions that do not meet the needs of users or deliver on the intended outcomes.

The Design and Test phase is highly iterative, allowing the designs to be refined and improved based on user feedback. Design prototypes that show the most merit during testing will be considered for implementation in the Apply phase.



**Phase 3: Apply**

The final phase of the process, Apply, is when high-fidelity solutions are developed, implemented, and monitored and evaluated in context.

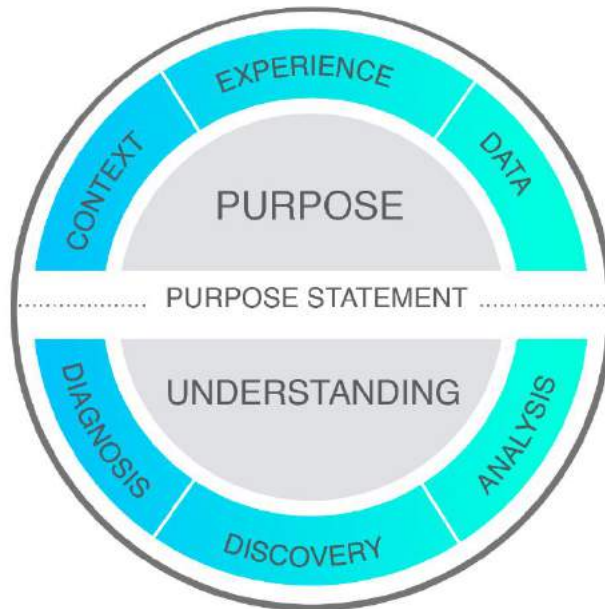
If the application solution effective behavior change, it is scaled and further monitored and evaluated for impact.

## 2. Define phase

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# Define phase: Purpose and objectives

## PHASE 1 | DEFINE



The Define phase aims to establish the project's purpose and develop a deep understanding of the design challenge, with a particular focus on human experiences and perspectives.

**The main objectives of the Breakthrough ACTION Guyana malaria Define phase are to:**

- 1 Establish a shared vision for the activity's intent, a common understanding of the malaria challenges and opportunities, and collective action towards a shared solution.
- 2 Obtain deep insights into social, cultural, and behavioral barriers and facilitators to malaria-related behaviors and apply them to innovative program design.
- 3 Strengthen the capacity of staff and partners to carry out HCD.

# Define phase: Approach and methods

## 1. Literature review and project planning



A comprehensive literature review summarized malaria knowledge, attitudes, practices, behavioral determinants, and the social and cultural context of mining communities in Guyana. The literature review established a strong knowledge base to guide the project.

The MoPH was engaged early and regularly to shape the Define phase and supported mobilization visits to Regions 7 and 8 to identify potential research sites and plan for the discovery fieldwork.

## 2. Intent workshop



An intent workshop brought key stakeholders from the MoPH, United States Agency for International Development (USAID), Breakthrough ACTION, other ministries (e.g., Communities, Indigenous Affairs) and mining organizations (e.g., Guyana Geology and Mines Commission [GGMC], Guyana Womens' Miners Organization [GWMO], Guyana Gold and Diamond Miners Association [GGDMA], National Mining Syndicate), government organizations (e.g., Guyana Forestry Commission and National Tuberculosis Control Programme) and other partner organizations to determine the parameters of the project and align expectations.

## 3. Capacity strengthening



Breakthrough ACTION Guyana facilitated a two-day capacity strengthening workshop to build knowledge, skills, and confidence in qualitative research approaches and techniques. Topics covered all methods and techniques required throughout the Define phase, including research ethics, elements of a good interview, how to conduct observations, empathetic listening, and use of recording and photography equipment.



# Define phase: Approach and methods

## 4. Discovery fieldwork



Two research teams, including Breakthrough ACTION staff, central and regional Vector Control Services (VCS) staff, and MoPH Public Relations and Health Promotion Unit (PR/HPU) staff, conducted research activities in mining communities across Regions 7 and 8. A total of 108 people (miners, camp managers, health testers, regional administration, and hospital staff) from these communities were interviewed.

## 5. Insight harvesting and validation



Insight harvesting initially occurred separately in the regions. The two teams then came together to combine and refine the themes emerging from the research. Next, a validation workshop was held to share the insights with key project stakeholders and obtain their feedback.

## 6. Insights report



Persona and journey maps were developed to summarize who and what was heard during the fieldwork. In this context, a persona is a typical stakeholder, or archetype, and a journey map represents a persona's typical experience.

First, research teams collaboratively developed audience segmentations for major stakeholders. Select personas and accompanying journey maps were developed further, which detailed their stories; challenges and frustrations; goals and values; and needs and requirements.

The insights report provides an overview of all activities completed during the Define phase. Key findings are consolidated and presented alongside opportunities for the Design and Test phase.

# Discovery fieldwork

## Where did we go?

Two research teams of seven people each traveled to Regions 7 and 8 in central Guyana. In each region, the teams visited multiple mining camps, communities, and towns.

### Region 7

- Bartica
- Puruni Landing
- Little Soiree Camp
- Bacchus Camp
- Tiger Creek Camp
- Mikey's Camp
- Kumana Camp
- Takatu Camp

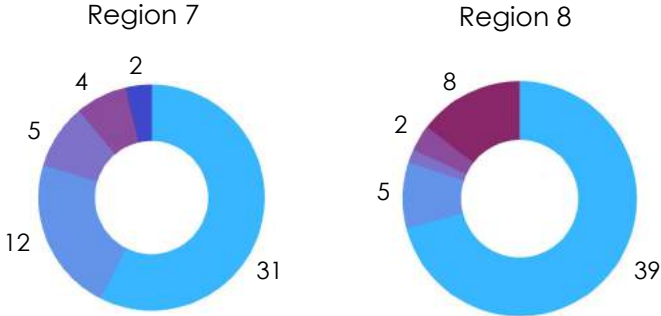
### Region 8

- Mahdia
- Minnehaha Camp
- Eagle Mountain Camp
- Tussurrow Camp
- Mikobi Health Post
- R&V Camp

A breakdown of interview participants across the various locations can be found in Appendix 1 and 2.

## To whom did we speak?

- Miners
- Owners/Managers
- Testers
- Pharmacists
- Community health workers
- Other



A total of **108** participants participated in Discovery fieldwork.

“Other” includes Regional Administration, Regional Health workers at the Hospital, and local radio broadcasters.

# Discovery fieldwork

## What were we trying to understand?

The objective of the qualitative research interviews was to understand the experiences of each stakeholder group around malaria-related behaviors.

A separate line of inquiry (or interview guide) was developed for each stakeholder group so that conversations would be relevant to each context. Lines of inquiry consisting of suggested questions helped the research team build rapport and ask opened-ended questions to understand latent motivations and needs.

## Who was in our research team?

Each research team consisted of the following individuals:

### MoPH, VCS unit

- Central representative
- Two regional staff

### MoPH, PR/HPU

- Health Promotion Unit Officer

### Breakthrough ACTION

- Research or Design Lead
- Two Breakthrough ACTION program staff



Discovery research team members

# Lines of Inquiry

Below are sample topics and questions from the lines of inquiry for three audiences: miners, camp managers, and testers.

## Miners

What does a standard day in their life look like while they are working in the mines?

How do they think about their personal health?

How do they think about and react to malaria?

What is their mindset towards malaria testing?

What is their mindset towards treating malaria?

What are their perceptions towards preventing malaria? How does this influence their behavior?

## Camp managers

What is the context of the camp in which they work?

What are their pain points?

What are the challenges and opportunities of malaria testing and treatment among miners?

What are the challenges and opportunities of malaria prevention among miners?

## Testers

How do they perceive their role as a tester?

What training has been undertaken and what are their perceptions towards the training?

How do they administer the test?

How do they deal with preventive measures?

How do the testers communicate with miners?

What is the relationship between testers, supervisors, and health facilities?

How do they record and report data?

# Lines of Inquiry

Below are sample topics and questions from the lines of inquiry for three audiences: pharmacists, community health workers (CHWs), and others (e.g., regional administrative officers).

## Pharmacists

What are the most common health issues and available medicines in the region?

Do we understand the scope of malaria services provided by pharmacies?

How are malaria testing services accessed at pharmacies?

What is the availability and quality of malaria treatment services at this pharmacy?

What is the context surrounding malaria testing and treatment stock and supply chains from a pharmacist's perspective?

## Community health workers

How do they perceive their role in malaria prevention?

What training have they undertaken in what is their perception towards this training?

How do they administer tests and malaria treatment?

How do they deal with preventive measures?

How do CHWs communicate with miners?

What is the relationship between CHWs and facility-based supervisors?

How do they record and report data?

## Others

What is the context in which they work?

What health challenges, including malaria, exist in the region?

What challenges and opportunities exist for malaria testing and treatment among miners?

What challenges and opportunities for malaria prevention exist among miners?

# Insight harvesting approach



## 1. Identifying research findings

Following interviews, research members were encouraged to review interview notes and recordings. At the regional Insights Harvesting Workshops, the research teams captured their findings on Post-it notes, with one finding per note. This data capture included notable quotations, summaries, and observations. The goal was to document as much data as possible.

Findings were color-coded according to stakeholder group.



# Insight harvesting approach

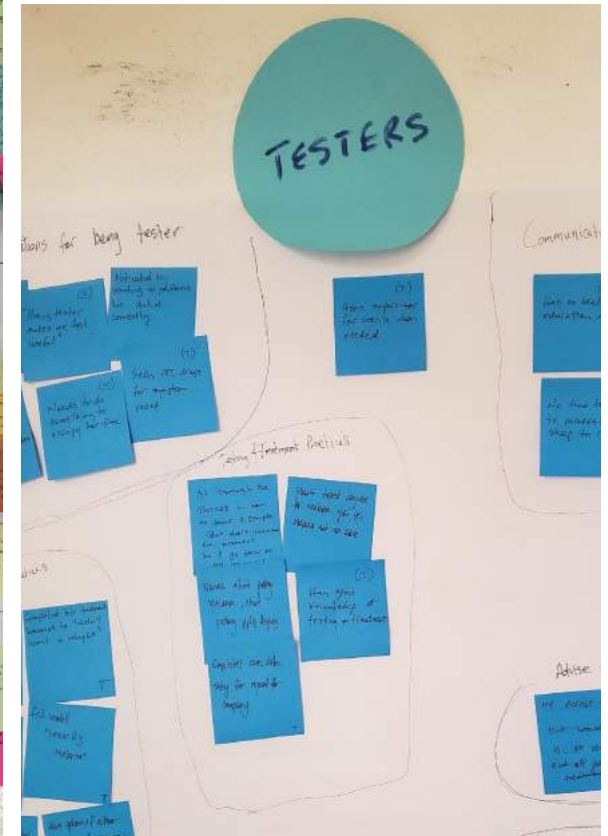


## 2. Clustering and forming sub-themes

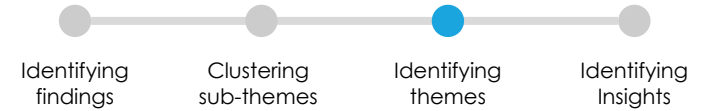
After documenting data, the research teams clustered findings by sub-themes.

Region 7 grouped findings irrespective of stakeholders, while Region 8 grouped findings within stakeholder groups. Sample sub-themes included malaria knowledge, care-seeking behaviors, motivations to enter into mining, misconceptions about malaria, and other health concerns.

A total of 92 sub-themes were generated across the two regions.



# Insight harvesting approach



## 3. Identifying themes of findings

Back in Georgetown, two research teams reviewed the other team's data and collapsed common sub-themes into broader themes. For example, all the sub-themes on malaria knowledge, knowledge about malaria transmission, and malaria symptoms were collapsed into the broader "Malaria Knowledge" theme.

Afterwards, team members focused on one theme and individually reviewed the findings associated with each sub-theme to pull out findings that were representative of the broader theme (e.g., a good quote).

Initially, the research team generated 14 themes. These themes were later consolidated into the 11 themes that correspond to the insights presented in this report.





# Insight harvesting approach



## 4. Identifying insights within each theme

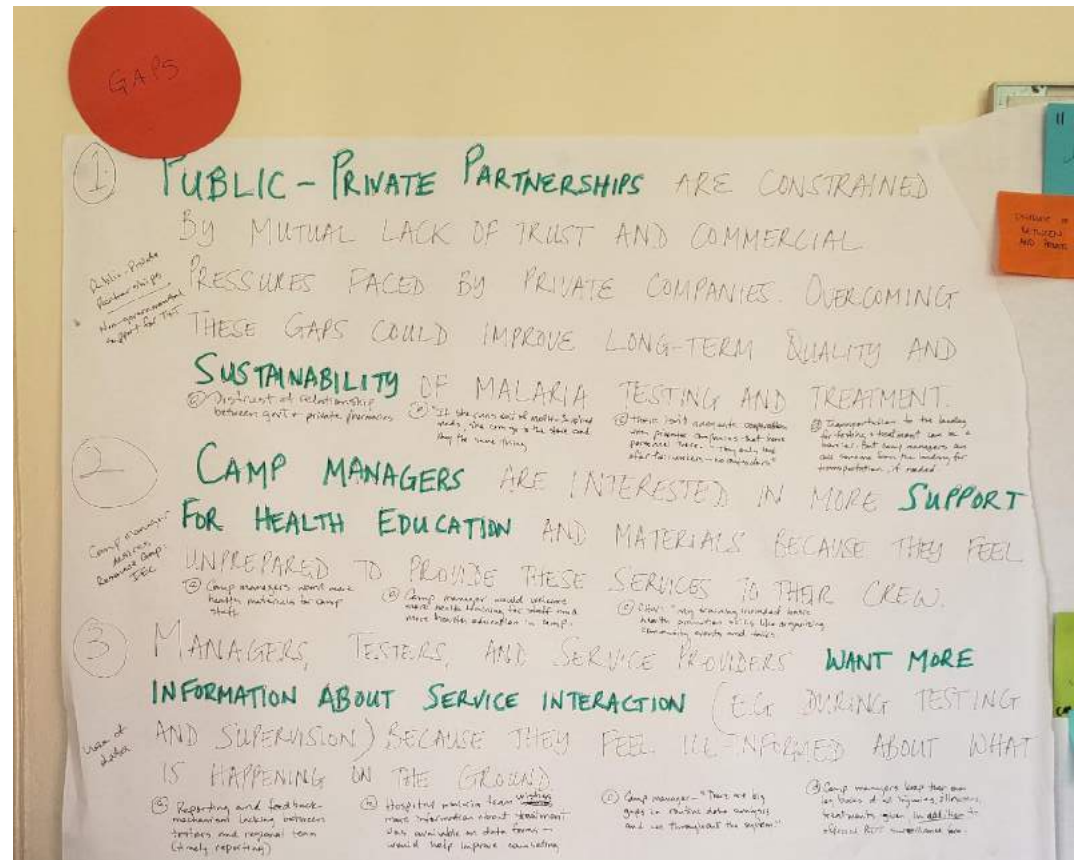
After finalizing themes, researchers (typically from two different regional research teams) worked in pairs to review findings and generate preliminary insights. Supporting quotes for each of the insights were also documented.

An insight has three distinct characteristics:

1. It comprises two or more disparate pieces of information
2. That combine to re-perceive the situation
3. In a way that leads to an opportunity for action

Given there are several sub-themes for each theme, at least two to three insights are generated per theme. Initially, researchers generated a total of 34 insights.

Preliminary insights were reviewed further by the Breakthrough ACTION Guyana team, with final input from the entire research team.

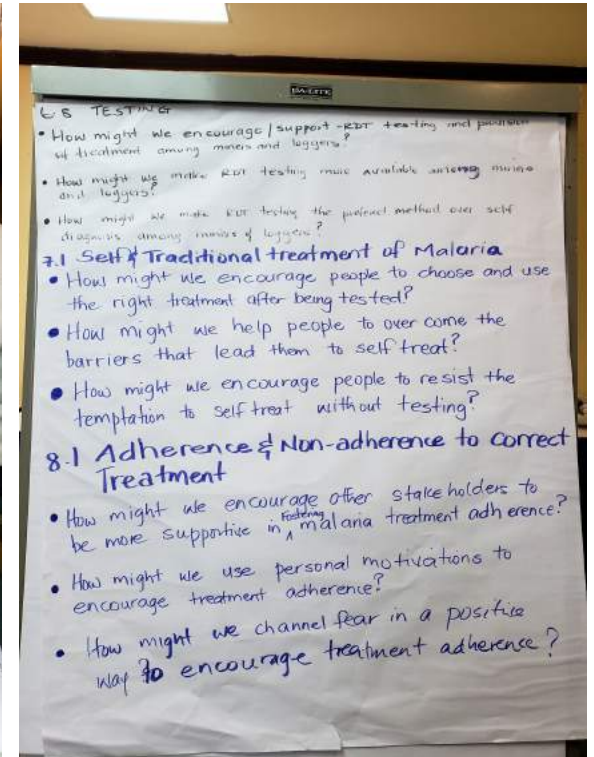


# Emerging design opportunities

After crafting and refining the insights, the Breakthrough ACTION Guyana team reviewed each insight individually to identify one or more “design opportunities”. These opportunities frame the specific challenges proposed in each insight and are presented in the form of a question that starts with, “How might we...”.

“How might we” (HMW) questions help us think about the opportunities and challenges inherent in an insight in a constructive way. A well-crafted HMW question should be aspirational and encourage a broad range of answers that provide a solution to the challenge.

Moving into the Design and Test phase, the HMW questions provide a quick and effective way of translating the insights into ideas, concepts, and solutions that can be prototyped and, ultimately, implemented.



# 3. Research findings

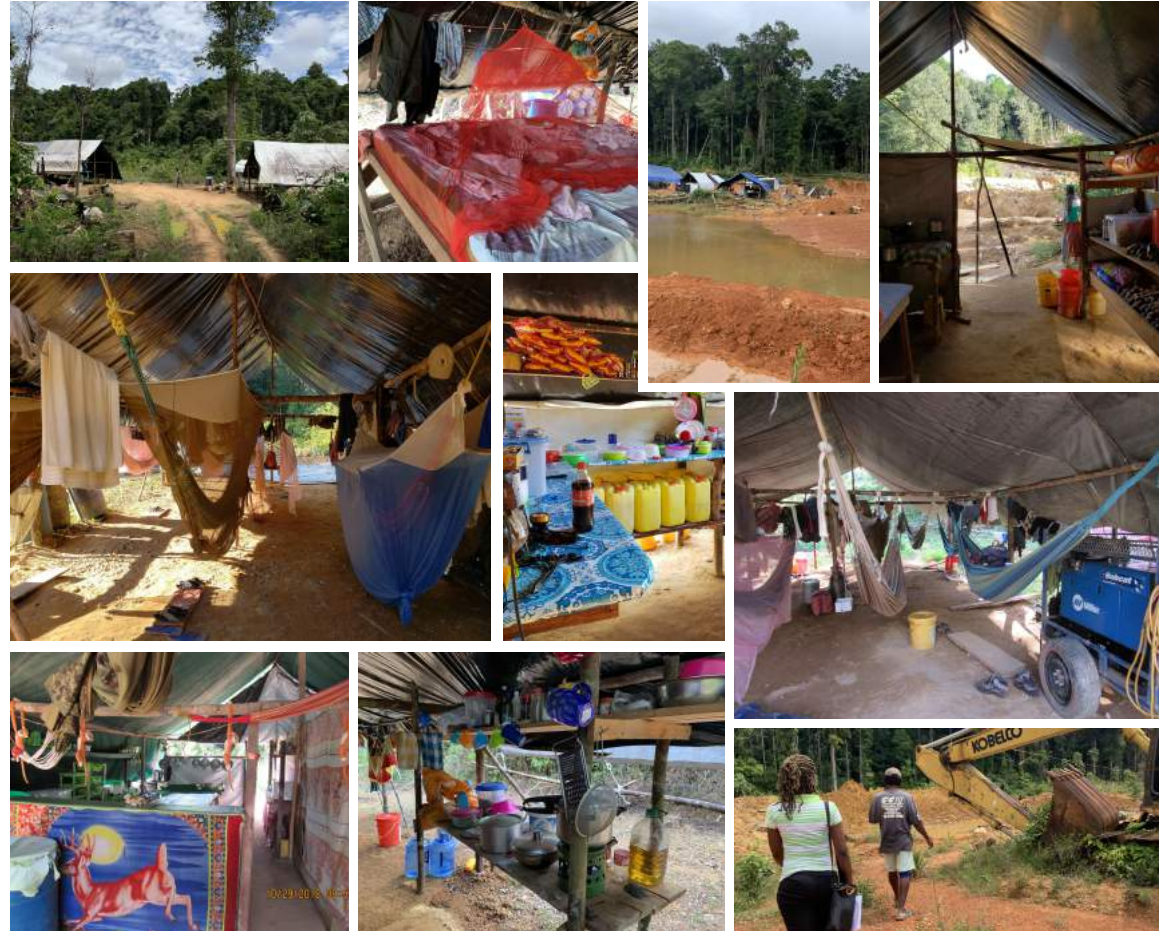
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# Mining camp environment

Mining camps range from being in close proximity to other towns and villages to being located in very remote areas. At times, there is one mining camp on its own; other times, there are clusters of gold mining dredges together. Our team visited several shops that sprang up and around mining activities.

Depending on how formal the camp is, its size, and management, living quarters range from hammocks underneath makeshift tarp tents to cabin-style rooms. Many of the miners we interviewed slept in tents that also served as their common areas. In all camps, cooks would prepare the meals and there were other support staff (e.g., security).

*"It's a home away from home because most of your time is spent here." - Camp manager*



# Mining camp environment



# Key insights overview

1

## **Risk perception**

Malaria is seen as routine and commonplace; it is not considered a major health risk for many communities.

2

## **Malaria knowledge and preventive behaviors**

There are many contradictions around what people know about malaria and how they behave.

3

## **Adherence and non-adherence to correct treatment**

Undesirable medication side effects cause some miners to stop treatment as soon as they feel better; for others, the need to get back to work and be able to keep working causes them to follow the regimen.

4

## **Self- and traditional malaria treatment**

Commonly accepted practical solutions to diagnose and treat malaria, which differ greatly from official recommendations, are preferred due to convenience and personal experience with these treatments.

5

## **Testing**

The role of volunteer testers in providing free malaria testing and treatment services is not fully understood or appreciated by miners and clients.

6

## **Job motivation**

Miners and camp workers often prioritize financial/economic gain over their health concerns.

7

## **Mining camp environment**

There are strong and respectful relationships between miners and their camp managers because they need each other to be successful at their jobs.

8

## **Health care sources**

Health facilities are a desired option for health care services, but people will access other sources if necessary due to transportation, time, distance, and cost limitations.

9

## **RDT training**

The RDT training provided by MoPH is effective; however, testers would like to be trained to provide additional health services.

10

## **Communication**

Health communication and health promotion activities and materials, including radio programs, exist but are undeveloped and underutilized.

11

## **Coordination and communication gaps**

A lack of coordination and communication between stakeholder groups reduces the effectiveness of the National Malaria Programme.

# 1

## Risk perception

Malaria is seen as routine and commonplace; it is not considered a major health risk for many communities.



*"If you want to prevent malaria, don't come to the bush." - Miner*

# 1

## Risk perception

### What did we discover?

#### 1.1

The perceived risk of getting and suffering from malaria is influenced by personal experiences and previous exposure to the disease. Despite many camps reporting that they had not seen any cases of malaria in recent months, some saw the return of the disease as inevitable. Many people in the communities we visited had recovered from malaria multiple times. These personal experiences with the disease created a sense that, although common in the region, malaria is not a major health concern for the community.

#### 1.2

Life in the interior is considered to be inherently risky; miners adopted a comparatively high tolerance for risk in regards to their health. The work in the mines is dangerous and the immediate health risks posed by the job were considered to be more important than malaria. Miners were found to consider other diseases such as typhoid and dengue as more dangerous and of greater concern than malaria.



### Emerging design opportunities

How might we make malaria prevention, testing, and treatment as routine and commonplace as perceptions of the disease?

How might we increase the perceived risk of malaria in endemic areas?

How might we link the perceived risk of malaria with other mosquito-borne diseases such as dengue?



# 2

## Malaria knowledge and preventive behaviors

There are many contradictions around what people know about malaria and how they behave.



*"You could get bitten by a mosquito before you go to bed, the nets aren't going to prevent malaria." - Miner*

# 2

## Malaria knowledge and preventive behaviors

### What did we discover?

#### 2.1

Malaria is a well-known disease in Regions 7 and 8. However, the specifics of the disease, including how it can be prevented and transmitted, are often misunderstood. Miners indicated a vague awareness of the connection between water, mosquitoes, and malaria, although the exact method of transmission was unclear to many. People were willing to admit they do not know much about the disease.

#### 2.2

The severity of the disease is widely understood; people are aware that it can be fatal. Generally, this knowledge was not found to translate into commensurate preventive behaviors. Low perceptions of malaria risk and varied levels of understanding contributed to inconsistent application of preventive measures such as mosquito repellent or long-sleeved clothing despite many people regularly being outdoors and uncovered during prime mosquito biting times. Many people considered fogging to be the best method for vector elimination.

#### 2.3

LLIN distribution and campaigns have been effective and most communities strive to use the LLINs to reduce exposure to mosquito bites. However, there is still more work to be done. Many nets are in need of repair and there is some confusion about how to use the nets properly.



### Emerging design opportunities

How might we make communities in endemic areas experts on malaria modes of transmission?

How might we change social norms so that it is strange to not undertake proactive, preventive behaviors?

# 3

## Adherence and non-adherence to correct treatment

Undesirable side effects of the medication causes some miners to stop treatment as soon as they feel better, while the need to get back to work and be able to keep working causes other miners to follow the regimen.



"I feeling good, so I stop [taking malaria treatment]."  
- Miner

# 3

## Adherence and non-adherence to correct treatment

### What did we discover?

**3.1**  
Miners were reportedly more likely to adhere to malaria treatment for two reasons: fear of the disease and the need or desire to make money. Concerns over the recurrence of malaria was expressed by some miners who believe one could relapse in a matter of weeks if the full course was not taken. The possibility of dying from malaria also emerged as a concern. Both miners and camp managers/owners referred to a connection between miners' well-being and productivity. As such, camp managers/owners were found to be supportive of their workers and often arranged for access to malaria testing and treatment—on and offsite. Though rare, some camps have on-site medics who monitor miners' adherence to treatment.

**3.2**  
Many miners discontinue or discard malaria treatment as soon as they start to feel better. This was reported over and over again by nearly all of the stakeholders (i.e., testers, camp managers, miners, pharmacists) who were interviewed. Some miners said they forget to take their tablets, while others noted they do not like its taste or side effects (e.g., drowsiness, itching). Some threw tablets away once they felt better. Others kept them for when they feel sick again or to share with others. Given limited access to health care and the lengthy treatments for some malaria strains (e.g., up to 14 days for *P. vivax*), miners may cut their treatment short so they feel well enough to return to work quickly and minimize pay loss.

"I don't monitor my workers to see if they use out their treatment."  
- Camp manager

"If I don't drink all the medicine, I throw out the rest."  
- Miner

"People hardly use Vivax treatment."  
- Miner

"You can counsel them, but they still don't drink [the treatment]... because it's too long. They don't have time for that."  
- Pharmacist

"I stopped using my treatment because I forgot it, but I didn't get back malaria."  
- Miner

"I drank all of the tablets because I was scared of getting sick again."  
- Miner

"You gotta use out your malaria treatment or you would get it back fast."  
- Miner

"I don't like the drowsy feeling when taking medication."  
- Miner

### Emerging design opportunities

How might we make taking a full course of malaria treatment enjoyable or rewarding?

How might we make the entire camp accountable for treatment adherence of miners with malaria?

# 4

## Self- and traditional malaria treatment

Commonly accepted practical solutions to diagnose and treat malaria, which differ from official recommendations, are preferred due to convenience and personal experience with these treatments.



*"I use herbal treatments for malaria if there is no access to a health facility." - Miner*

# 4

## Self- and traditional malaria treatment

### What did we discover?

**4.1** Almost everyone interviewed described some self-treatment or alternative treatment they used and, on some occasions, brought from home. This includes using bush medicine; using a combination of alternative items for prevention or treatment; or using over-the-counter (such as Artemether/Lumefantrine) and unregulated medicine. Miners described that they did so, often because of the convenience of self-treatment; inability to access health facilities; recommendations from their peers on rapid treatments; empirical efficacy of these alternatives treatments working before; and adverse side effects to the recommended treatment regimen. In the absence of health facilities, communities affected by malaria still demonstrate health-seeking behaviors through use of bush medicine and other self-treatment medication, influenced by their past experience and peers. Miners do the best they can with the resources available to them. For miners who were close to health facilities, some would defer to public health testing and treatment due to their trustworthiness, while others prioritized convenience of faster solutions (e.g., pharmacies or private clinics).

**4.2** Malaria symptoms and experiences often influence self-treatment behavior more than validation from more scientific tests and treatment. Miners defer to their past experiences to inform their own assessment of malaria and treatment regimens. If a past treatment seemed to work for them, they would likely use and recommend the same to others. Additionally, given that malaria testing is not 100 percent accurate, varying patient plasmodium levels, and overall complexity, malaria testing itself can be inconsistent or produce false results.

**4.3** Malaria testing can help people identify the cause of painful symptoms, providing a strong feeling of validation and confirmation. However, when test results do not confirm malaria, painful symptoms remain, which leaves clients still having to treat the ailment they have.

*"Use coconut oil to prevent mosquitoes from biting."*  
- Miner

*"It depends if you feel you know the treatment. You have the symptoms, take Artecom."*  
- Miner

*"If you are sick, drink a tablet of artifan."*  
- Miner

*"I use herbal treatments for malaria if there is no access to a health facility"*  
- Miner

*"Use Jay's Fluid (disinfectant) in water. It makes me feel better in a few days."*  
- Miner

### Emerging design opportunities

How might we incorporate the benefits of self-treatment or alternative treatment into the recommended testing and treatment regimen?

How might we make the recommended testing and treatment regimen more convenient than self-treatment or alternative treatment?

How might we increase trust in the recommended testing and treatment regimen?

How might we ensure patients always feel a strong sense of validation and confirmation following an RDT, regardless of the test's result?

# 5

## Testing

---

The role of volunteer testers in providing free malaria testing and treatment services is not fully known, understood, or appreciated by miners and clients.



*"I didn't realize that testing and treatment is offered for free." - Miner*

## What did we discover?

### 5.1

The MoPH trains local volunteers to provide free malaria testing and treatment services to miners and others in their communities. Many of these volunteers are shopkeepers or mining camp staff with full-time paid responsibilities. Testers are intrinsically motivated to provide a service to their community, but acknowledged that they sometimes find it challenging to balance their paid responsibilities with their commitment to the RDT program. Some testers reported miners/clients can be demanding and expect them to immediately leave their work to administer RDTs. They noted that there is sometimes client misconception that they are getting paid to offer testing and treatment services.

### 5.2

Most testers said they use word-of-mouth to publicize free testing and treatment services in their communities. This approach was generally considered effective among testers who were interviewed. However, when asked about these services, most miners and camp managers were unaware they were available nearby. Among testers who provide services outside of mining camps, signage was observed at one shop in Region 7 and one in Region 8. Both signs were handwritten on a white sheet of paper.

### 5.3

Trained testers are volunteers in the RDT program. While many testers said they understand and accept the position is unpaid, they noted they do not always feel valued and appreciated by their clients. Several testers suggested that they would feel more appreciated if they received small tokens of support such as gloves, t-shirts, pens, log books, pencils, and vitamins. They said most of these items would help them do their jobs more efficiently.

*"They sometimes don't even thank me."*  
- Tester

*"Testers leave the area if difficulty arise."*  
- Camp Manager

*"I'm not aware of testers in the area."*  
- Miner

*"Clients can be too demanding."*  
- Tester

*"It's challenging when you're trying to do your work and you have to put it on hold to tend to somebody. You want to help, but it's challenging."*  
- Tester

## Emerging design opportunities

How might we achieve 100 percent awareness of free testing and treatment services in mining communities?

How might we facilitate greater appreciation for testers among miners and other clients?





## Job motivation

---

Miners and camp workers often prioritize financial and economic gain over their health concerns.



*"Making money is my first priority."*  
- Miner

# 6

## Job motivation

### What did we discover?

**6.1** Despite the health risks associated with working in the bush, miners and camp workers are motivated to ply their trade in the interior because of the lure of faster financial and economic gains compared with working in other areas of the country. This motivation has caused them to prioritize earning money over their health concerns as evidenced by a tendency for some miners to not complete their malaria treatment course in order to get back to work faster.

**6.2** The main reason posited by miners and camp workers to earn money quickly is their quest to support their families and have greater financial/economic stability. This quest has driven them to compromise their health, an essential asset that is required for them to successfully continue to be able to meaningfully support their families.

*"Like I said if me got malaria, me can't go to puruni, because I'm working with this man here. I got to go to the closest place right by this landing, because remember they can't wait on you to do things. So you try to do things the fastest way as possible"*

- Miner

*"I am driven by financial responsibilities to my family."*

- Miner

*"Sometime you see a man trembling, he don't wanna go home, because money he make. He trying to drink tablets to keep it down until he make the money to go home"*

- Miner

*"Getting gold and money are important."*

- Camp manager

*"Finding plenty gold means more money."*

- Miner

### Emerging design opportunities

How might we help miners and camp workers consider their personal health as important as supporting their families?

How might we support miners to get back to work as quickly as possible while still completing their treatment as prescribed?

# 7

## Mining camp environment

There are strong and respectful relationships between miners and their camp managers; they rely on each other to be successful at their jobs.



*"During work or at the landing you gotta look out for each other because we're from the same country."  
- Camp manager*

# 7

## Mining camp environment

### What did we discover?

#### 7.1

At mining camps, there is a culture of camp managers and miners looking out for each other as the mutually beneficial relationship is realized. After work, miners and camp managers often socialize together around the sleeping and eating areas of the camp or at the landing, which helps to build strong working relationships and a good camp spirit.

#### 7.2

Camp managers' approaches to dealing with malaria were always well-intentioned as they would often take up the responsibility of caring for miners when they are sick with malaria. Some managers buy and keep antimalarials to give to miners with suspected malaria, especially when there is no access to a health facility. Others would make sure to take miners to the closest health facility for testing and treatment often incurring the cost of transportation. Managers even go as far as acting as treatment supporters by ensuring miners adhere to their treatment.

### Emerging design opportunities

How might we leverage the strong relationships between miners and camp managers to improve testing and treatment practices?

How might we make camp managers expert advisors and advocates for malaria testing?

How might we enable managers to ensure 100 percent treatment adherence among their workers?

"So the crew of 6 men and 2 get malaria, it's a lot of pressure on the foremen. The work gets harder in the field if you're short men."  
- Camp manager

"Managers will take workers to health centers or dispense treatment themselves."  
- Miner

"Miners and managers have a good work relationship."  
- Miner

"Be sure to drink all of your treatment or the malaria will come back."  
- Camp manager

"When a worker tells me they not feeling well, I would ask if they have fever and for how long. If they are at work, I would ask them to come out and take them to the hospital myself."  
- Camp manager

# 8

## Health care sources

---

Health facilities are a desired option for health care services, but people will access other sources if necessary due to transportation, time, distance, and cost limitations.

*"Best thing is to go to the hospital."  
- Miner*



# 8

## Health care sources

### What did we discover?

**8.1**  
There was wide use of and trust in public health facilities when these were accessible and a strong desire for a health facility in remote mining communities. In the absence of health facilities, miners would access over-the-counter and unregulated care from a private pharmacy, self-medicate with alternative remedies, or use bush medicine. At mining camps where RDTs and treatment were available, this service was well-accepted and preferred over the use of herbal remedies.

**8.2**  
In some remote mining communities, there is a desire for testers to be more accessible. In these communities, it can be prohibitively expensive and difficult to get to the closest health facility due to the vast distances and treacherous terrain.

*"It is difficult and expensive to go all the way to Bartica for treatment."*  
- Camp manager

*"We rely on Mahdia Hospital for health care."*  
- Miner

*"Sometime they feel if it's a far back dam sometimes transportation may not be available and then they use this here, just to buy time until they can take a smear."*  
- Miner

*"People telling you the right treatment is the hospital treatment. But the treatment from the drug store, or the private doctor, start fallin into the symptoms. Cause every time I go to the hospital, I get the right tablet I feel better. I go to a private doctor, they give me a fancy tablet, but nothing really to [help me]"*  
- Miner

*"That time I didn't take a smear because the interior was far, no hospital."*  
- Miner

*"Go to the hospital for treatment."*  
- Miner

*"Hospital treatment is the best treatment"*  
- Miner

### Emerging design opportunities

How might we make malaria testing and treatment as available to miners as alcohol?

How might we ensure VCS trained testers are seen as an extension of trusted public health facilities?

# 9

## RDT Training

The RDT training provided by MoPH is effective; however, testers would like to be trained to provide additional health services.



*"I want to learn more about malaria and other health care." - Tester*

## What did we discover?

### 9.1

The introduction of RDTs, administered by trained volunteers, provides a trusted, quick, and correct diagnosis of different species of parasite and access to the right treatment. The RDT training was widely reported by volunteer testers to have been very beneficial. Testers were very satisfied with the new knowledge they gained about malaria and felt confident in administering RDTs following the course. In cases where few RDTs had been administered, testers also expressed interest in an RDT refresher training to sharpen their skills—particularly around administering the RDTs and ensuring they are reporting correctly.

### 9.2

The only recommendation for improving the training was that testers would like to know more about other health services, beyond malaria, that they could provide to the community. Many testers were unsure about what to do in the event of a negative result, short of informing the patient that they need to visit a hospital or health center for further testing.

### 9.3

Following the training, testers became a local source of knowledge regarding malaria. With limited malaria and counseling information resources available to distribute, this knowledge was passed from testers to miners verbally.

"We are not given information to share with others."

- Tester

"I have no health education materials."

- Tester

"It feels good that there is someone trained at the camp to do RDTs."

- Miner

"I have doubts about how to number the RDTs, but have never clarified it."

- Tester

"In every area that health is concerned, I want to learn as much as I can."

- Tester

"People ask me about other health issues, but I'm not trained to help them with that."

- Tester

"I didn't know how malaria was spread until I sat in on RDT training."

- Tester

"If they're not tested, they can't be sure of what type of malaria they've got."

- Tester

## Emerging design opportunities

How might we leverage the RDT training content to improve knowledge about malaria more broadly in communities?

How might we help enthusiastic testers to become a "one-stop shop" for health services in their community?

How might we better enable testers to become local experts about malaria?



Communication

Health communication and health promotion activities and materials, including radio programs, exist but are undeveloped and underutilized.

# WHAT IS MALARIA?

MALARIA is a disease caused by the presence of very small parasites in the blood. It is spread by the female 'anopheles' mosquito.

## IN GUYANA THERE ARE 3 TYPES OF MALARIA:

1. FALCIPARUM

2. VIVAX

3. MALARIAE

AND MIXED INFECTIONS - ANY COMBINATION OF THE THREE TYPES

Mosquito bites a miner / logger infected with malaria and takes in the malaria parasite



The infected mosquito bites a healthy miner / logger and infects them with the malaria parasite



"More public awareness is needed about testing in remote areas."  
- Community health worker

### SIGNS & SYMPTOMS

- Ague
- Chills
- Headache
- Body pain
- Fever
- Sweating
- Loss of Appetite



If a sick miner / logger does not seek treatment, drink all of his tablets or takes the wrong tablets, he will PASS THE DISEASE TO OTHERS and may even DIE



A smart miner / logger seeks reliable treatment from a trained "medic" or nearest health facility

The healthy miner / logger becomes ill with malaria

## What did we discover?

### 10.1

Health communication occurs throughout mining regions and includes interpersonal communication between camp managers and miners, communication between testers and miners, health education using pamphlets, and mass communication using local radio stations. However, misinformation is common (as explained in insight 4) and communication is limited in the case of education materials and radio campaigns.

### 10.2

Camp managers have a close relationship with miners (as explained in insight 7), but they lack information to share with their workers. Camp managers expressed that they would like more health education materials for this purpose. They are aware that there are health risks associated with mining and would like their campsite to be better equipped with the right kind of information. Testers expressed a similar desire to have more health information they could share with miners during testing and treatment interactions. Though they work closely with the regional VCS team, they do not necessarily keep or have health education materials they can provide to their clients. Finally, the regional radio station's coverage reaches Regions 7 and 8, including remote areas. However, there are opportunities to increase the use of radio stations to share malaria-related information.

*"I wish I had more pamphlets to give my crew about health issues."*  
- Camp manager

*"We are not given information to share with others."*  
- Tester

*"I have no health education materials."*  
- Tester

*"I don't try to do any health education with miners about malaria."*  
- Tester

*"One main challenge to our radio work is the workload."*  
- Radio broadcaster

*"We have never had anyone on the air to talk about their experience with malaria."*  
- Radio Broadcaster

*"More public awareness is needed about testing in remote areas."*  
- Radio Broadcaster

## Emerging design opportunities

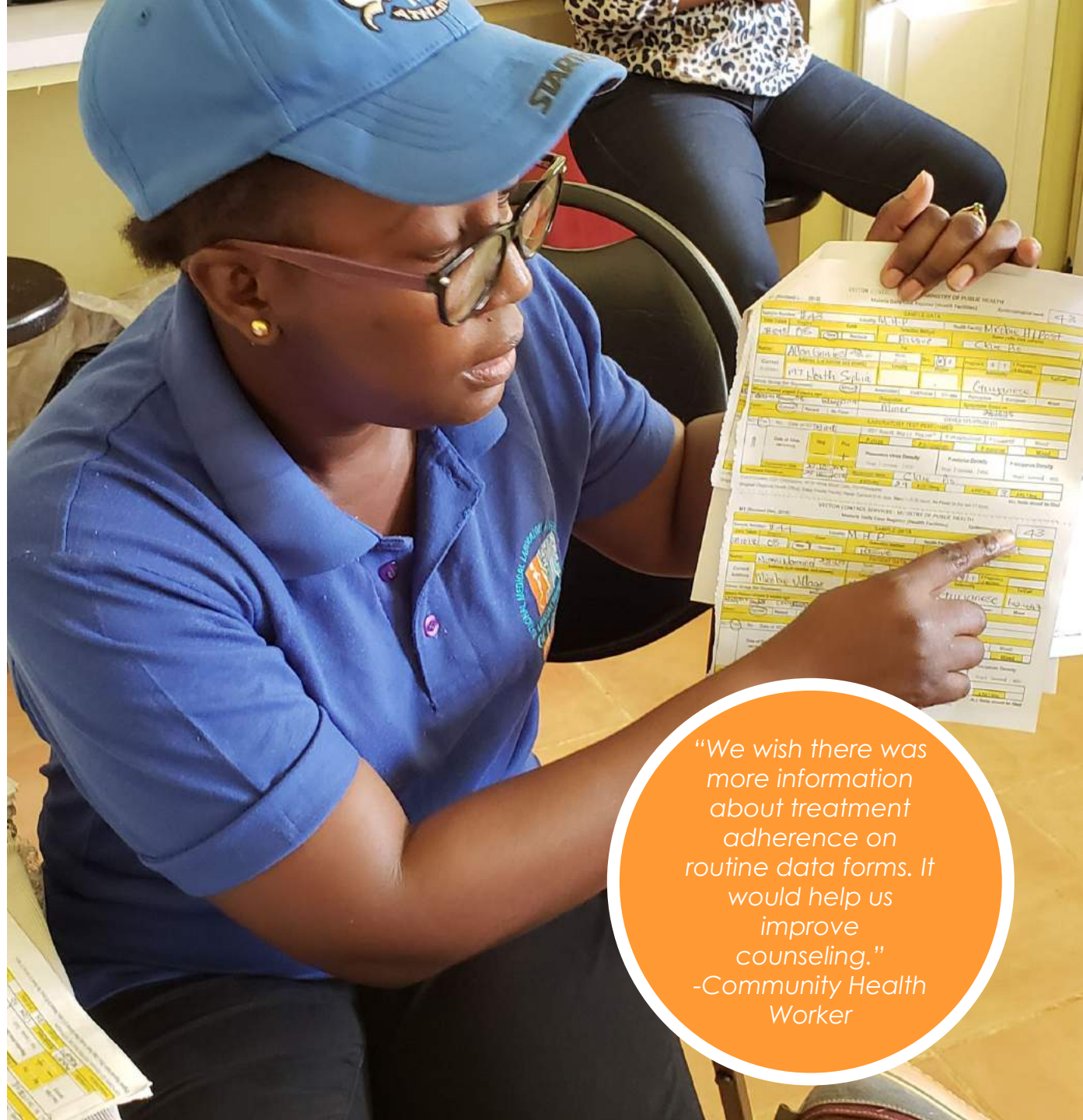
How might we leverage existing relationships and communication to spread information about malaria?

How might we make malaria education materials and communication as ubiquitous as other advertising?

11

## Coordination and communication gaps

A lack of coordination and communication between stakeholder groups reduces the effectiveness of the National Malaria Programme.



"We wish there was more information about treatment adherence on routine data forms. It would help us improve counseling."  
-Community Health Worker

### What did we discover?

#### 11.1

Public-private coordination is constrained by a mutual lack of trust, yet both have resources, infrastructure, and connections the other needs. Commercial pressures faced by private companies make it hard to deal with government bureaucracies, while government authorities do not trust the private sector to follow guidelines for malaria testing and treatment processes and products. Mining camp managers want more support for health education related to malaria and other health issues from public sector services because they do not feel equipped to provide it themselves; at the same time, they do not want government interference in their operations.

#### 11.2

Limited collaboration between private sector stakeholders and other institutions was also mentioned as a bottleneck to the success of the National Malaria Programme. For example, stronger relationships with airline companies was suggested as a means to distribute supplies more effectively to remote locations. Similarly, closer partnerships with *toushos* (leaders within Amerindian villages) in malaria programs was recommended to improve the effectiveness of initiatives. Communication between staff and departments at the Mahdia hospital was specifically identified as a point of contention.

#### 11.3

Consistent, high-quality recordkeeping and data sharing is hard to achieve and sustain due to coordination issues. Data collection that does occur often does not provide the information different stakeholder groups need, while data that is available does not always circulate to relevant stakeholder groups in a timely fashion.

"If I run out of MoPH-supplied meds, I can just go to the store and get the same thing."  
- Camp manager

"There isn't adequate cooperation with private companies...they only care about their own workers—no outsiders."  
- CHW

"We need to have relationships with airline companies to get supplies out to the field."  
- CHW

"We keep a log of all illnesses, injuries, and treatments here in addition to official RDT surveillance forms."  
- Camp manager

"Reporting and feedback mechanisms are lacking between testers and regional teams."  
- Tester

### Emerging design opportunities

How might we improve coordination, flow of information, and provision of supplies between central and regional stakeholders?

How might we leverage private sector resources, infrastructure and connections in the malaria response?

How might we work with non-traditional actors in the malaria response?

How might we simplify high-quality, user-friendly recordkeeping and data sharing for malaria?

How might we strengthen links between stakeholder groups so that they can better understand and support each other's needs?

# 4. Empathy tools

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# Segmentation and empathy tools

## Personas

Personas are key archetypal users that represent the needs, goals, values, and behaviors of larger groups of people. In this case, they allow us to understand our target audiences in a real and human way. Personas allow us to make evidence-based decisions, which means that all persona information is derived directly from our discovery fieldwork.

In short, personas are vehicles for design and not a simple segmentation of the market or a catalog of all the roles within an ecosystem. Acting as stand-ins for real people, personas are tools that help guide design teams in asking the right questions, generating insights, and ultimately making decisions about the functionality of a solution. They also serve an essential function as a tool for the continuation of empathy and allow us to remember the human element of the people with whom we are working.

Multiple personas identified for each of the stakeholder groups are shown here. The most evocative personas for each stakeholder group were further developed and are indicated on the following pages by a **green** circle around the persona.

## Journey Maps

Journey maps illustrate the experience pathway or “journey” of a persona from their individual perspective and allow us to highlight pain points and opportunities for intervention. Journey maps tell the important stories of our personas in a way that places them within a broader ecosystem of interactions between people and systems; they help us to consider our personas within their unique context, rather than in isolation.

The content of a journey map varies depending on the subject matter and context of the project. Most journey maps include a timeline, opportunities for intervention, and elements of the persona such as pain points, thoughts, and feelings.

Journey maps are useful during the Design phase because they help us to keep the experiences and interactions that influence behavior at the forefront. This design tool helps contextualize the situation that each stakeholder faces in their role.



Miners



Camp managers

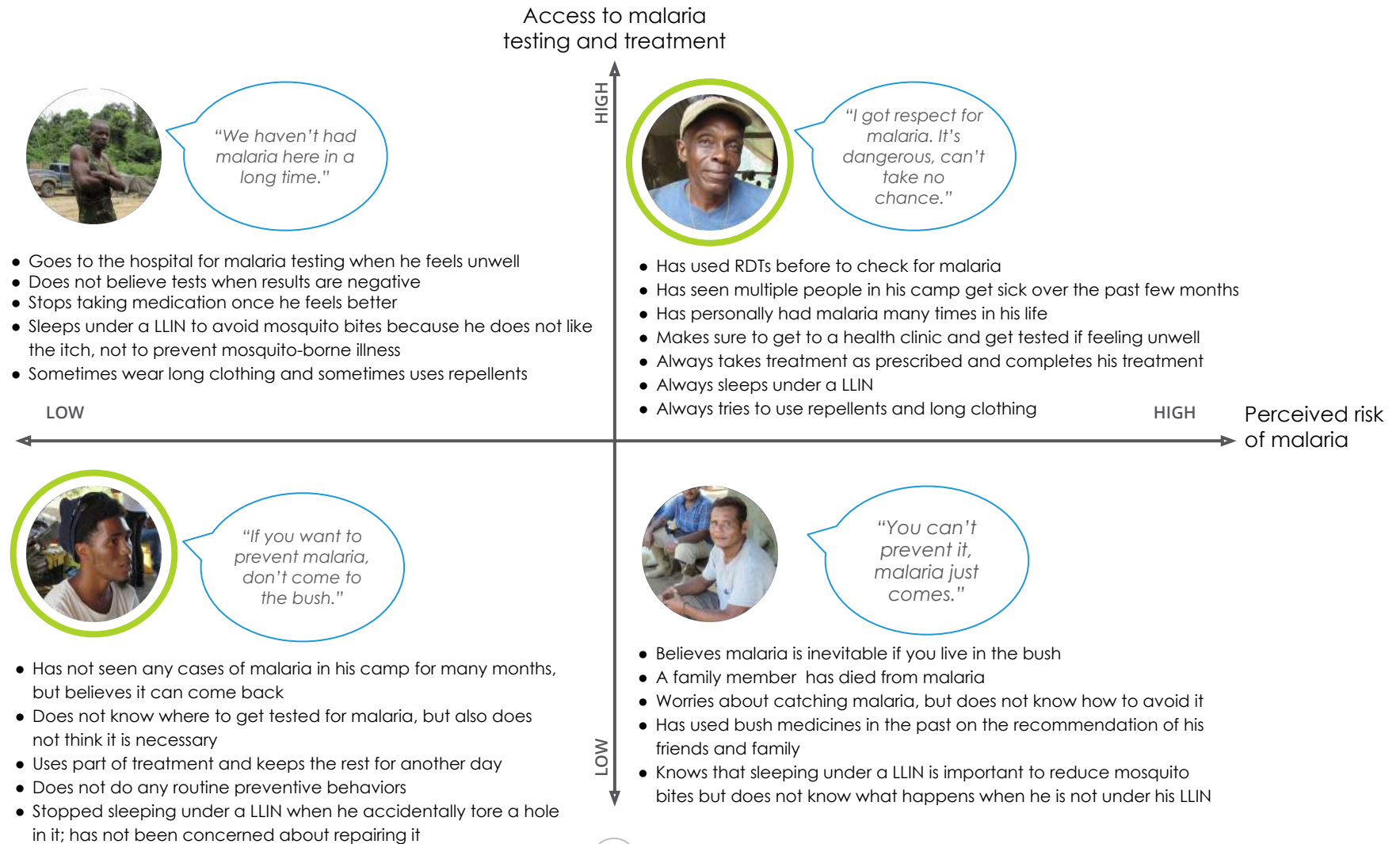


Testers



Community health workers

# Audience segmentation: **Miners**









# Victor Williams

Archetype:  
The model miner



*“I got respect for malaria. It’s dangerous, can’t take no chance.”*

## PERCEIVED RISK OF MALARIA



## ACCESS TO TESTING AND TREATMENT



## BIO

Victor moved to the interior in search of better work opportunities in his early 20s. He enjoys working in the mines and, through extensive experience, has earned the respect of his fellow workers.

Victor does not have a wife or children, but makes a trip back to his family once or twice per year.

He has personally experienced malaria many times throughout his life and he now tries his best to avoid catching it again. He is familiar with the symptoms, but knows that there are different types of malaria, so he always makes sure to get tested if he feels feverish in order to determine the right treatment.

He uses traditional preventive practices to supplement recommended protective behaviors.

There are trained testers at his camp and Victor has gone to them twice in the past year when he felt unwell.

He knows that many of his workmates are not as vigilant about preventing malaria as he is, but Victor does not see anything he can do to change that.

## CHALLENGES AND FRUSTRATIONS

- Observes others in his camp getting sick from malaria due to carelessness in spite of his advice
- Workmates who only believe in alternative, traditional, and bush medicines to prevent and treat illnesses
- Occasionally gets sick with malaria even though he takes the recommended precautions

## GOALS AND VALUES

- Wants to be able to work as much as possible and earn money
- Wants to avoid catching malaria in the future
- Trusts the information he receives about prevention and treatment practices

## NEEDS AND REQUIREMENTS

- Support to continue practicing the recommended prevention and treatment behaviors
- Needs workmates to be more proactive about reducing their risk of catching malaria

AGE 28

OCCUPATION Miner

EDUCATION LEVEL Primary

LOCATION Bacchus Camp, Region 7

## RELEVANT INSIGHTS

1.1

3.1

7.1



# Journey map: Victor Williams

Archetype: **The model miner**

STAGES

## SELF-PROTECTION

## ONSET OF SYMPTOMS

## NEGATIVE TEST RESULTS

## FOLLOW-UP TEST

## TREATMENT ADHERENCE

When I started working as a miner, I often got malaria. I know how bad it can be and how it keeps me from doing my job and earning a living. I have also seen how dangerous it can be—I know someone who died from malaria, so I don't take chances. I sleep under a bednet every night and try not to go out when the mosquitoes are active. I also make some bitter tea to drink once or twice a week because it can help your body fight off the malaria if you are bitten by an infected mosquito.

Last week I got a headache and started to feel feverish. Those are signs that you might have malaria, but it could be something else. You can't be sure without a test. Even if it is malaria, I can't tell what kind just from the symptoms, so I go get a test to be sure and to get the right kind of treatment. Our camp doesn't have anyone who can give the test, but there is a shop down the road, so I went there. There is also a health post in town where I can get a test, but it takes longer to get there. But wherever I have to go, I always get a test.

The tester at the shop told me that the test was negative, but that sometimes the tests can be wrong. She asked me if I ever had malaria before, when the symptoms started, and if I had been taking any self-treatment that could affect the results of the test. I told her that I drank bitter tea about a week ago. She gave me a dose of Panadol for the headache, but asked me to come back for another test if I wasn't feeling better in 24 hours.

The next day, I still had a headache and fever, so I went back to the shop. The test that day was positive. The tester explained that there are two types of malaria and that each requires a different treatment. She said that the kind I had required 14 days of medication and that it was important to follow the treatment all the way to be sure I was cured.

I had to take the long treatment before and I don't like it. You feel worse before you feel better, but you have to do it or the malaria doesn't really go away. When I got back to the camp I told my friend that I had to take the medicine every day. We are busy in the camp and sometimes I am lazy or forgetful, so I asked him to remind me to take my dose every day until it was gone, even after I started to feel better.

THOUGHTS

- I'm scared of malaria; I've seen what it can do.
- I'm pretty confident that I can take care of myself.

- Uh-oh...here we go again.
- I wonder what kind of malaria it is...or if it's malaria at all.

- I don't always trust the test results.
- It's complicated to get the answers you need.

- I feel good that the tester can explain what is really happening.

- I don't like the taste of the medicine.
- I don't like how the medicine makes me feel
- I have to stick with it if I want to be healthy

PAIN POINTS

- I like this job and I need the money; I don't want to risk losing it.

- I can't afford to lose time on the job; I need to take care of this right away.

- How long will it take to figure out what's wrong with me?
- Can I afford another day off the job?

- Ten days is a long time to have to take medicine...I need to get back on the job right away.

- Ten days is a long time.
- What if I forget to take a dose?

OPPORTUNITIES

How might we help more miners feel confident in their ability to prevent and treat malaria?

How might we make it easier for miners to get tested right away at the first sign of fever?

How might we ensure that the relationship between miners and testers is strong in order to build confidence in testing and treatment?

How might we help all testers be this good at explaining things to their clients?

How might we reinforce treatment adherence in the camps, especially for the longer *P. vivax* regimen?

# Kevin Hopkinson

Archetype:  
The uninformed miner



*“If you want to prevent malaria, don’t come to the bush.”*

## PERCEIVED RISK OF MALARIA



## ACCESS TO TESTING AND TREATMENT



## BIO

Kevin dropped out of high school at the age of 14 and went to the interior in search of employment so that he would be able to provide for his family.

He has had malaria numerous times in the past although not in recent years. He currently does not use any measures to prevent malaria even though he believes he can get it again.

Kevin generally does not complete his malaria treatment. He uses the medication until he feels better then keeps the rest for another time. If he does feel ill, Kevin does not know where to access malaria testing and treatment.

## CHALLENGES AND FRUSTRATIONS

- Kevin does not know what he can do to prevent malaria
- He does not think it is necessary to get tested for malaria; he self diagnoses and buys treatment from a pharmacy or gets it from a colleague
- Once he is feeling better, he does not think it is necessary to complete the required course of treatment

## GOALS AND VALUES

- Wants to be able to work and earn as much money as is possible
- Does not like being ill and is willing to learn how to prevent malaria

## NEEDS AND REQUIREMENTS

- Knowledge and confidence in malaria prevention
- Access to malaria testing and treatment services
- Support and guidance for completing his malaria treatment

## RELEVANT INSIGHTS

AGE 35

OCCUPATION Miner

1.1

2.3

3.2

4.1

5.2

6.1

EDUCATION LEVEL Primary

LOCATION Mahdia



# Journey map: Kevin Hopkinson

Archetype: **The uninformed miner**

STAGES

## SYMPTOMS

## RESPONSE

## SEEKING FURTHER HELP

## TREATMENT

## RETURN TO WORK

During work yesterday I started to feel unwell with aches in my joints and a headache. I took some herbal medicines that have been used in my family to treat illnesses for years, so I thought it would go away overnight. However, I've woken up feeling much worse today. I went to my camp manager to tell him I need the day off work to get better.

My camp manager asked me about the symptoms I've been experiencing and gave me some malaria medicine, Artefan. The medicine made me feel better by the following day and I returned to work as quickly as possible. I was told to take all the medicine, but I don't like the taste and I'm already feeling better.

I stopped taking the medicine once I felt better, but now the illness has come back even worse. My camp manager says I need to go to a health center in Bartica, which is several hours away. My condition has continued to worsen with a serious fever.

I finally reached the Bartica hospital after a full day of unpleasant travel. At the hospital, I was tested for different types of malaria. The original medicine I took was not the right type and now I have to take a different type of medicine. The hospital staff have been very insistent that I complete the full course of my treatment or else the malaria will come back.

I finished the treatment from the hospital as prescribed, and took a few days off work to recover fully. I'm now feeling much better and I don't want to get sick like that again.

When I had malaria when I was younger, it went away quite quickly, so I'm not very worried.

THOUGHTS

- I don't want to take the day off but I'm too sick to work
- I don't understand how I could be sick because I always eat well and I'm strong

- I haven't heard of anyone catching malaria around here in a long time
- I feel much better after starting the medicine
- I'm glad to be working again

- Isn't there somewhere closer I can get help?
- Why didn't my treatment work?

- What is the difference between this new medicine and the medicine my camp manager gave me?
- How will I know what to take if I catch malaria again?

- How do I prevent catching malaria again?

PAIN POINTS

- I can't work but I need the money
- I don't know what is wrong with me

- I don't like the taste of the medicine

- The trip is long, difficult, and expensive
- I feel very unwell throughout the whole trip

- I have to wait for a long time at the hospital to get tested
- I have to take more time off work to recover from malaria

OPPORTUNITIES

How can we catch and treat malaria at the earliest signs of symptoms?

How can we make sure that full treatment schedules are adhered to?

How can we promote and raise awareness of local malaria testers?

How can we eliminate the need for people with malaria to visit hospitals and health centers for treatment?

How can we ensure that future preventive measures are undertaken following the successful treatment of malaria?



## “Be sure to take all your treatment or the malaria will come back.”

### UNDERSTANDING OF MALARIA



### BIO

Ron used to work as a pharmacist, but transitioned to mining because the pay was much better. He's been a camp manager for three years for a mid-sized mining operation.

Having had malaria more times than he can count, he knows the importance of prevention, testing, and treatment. Malaria is part of working in the backdam, but he thinks that as a camp manager he can lessen the impact. He knows a lot and tries to tell his workers, but he knows this is not enough.

At the camp, they manage their own supply of malaria medication and keep a log of who is given what to track miner's treatment.

### CHALLENGES AND FRUSTRATIONS

- As a camp manager, there is only so much that he can do to help his workers. What else can he do to support his workers?
- Being so far away from health centers makes it difficult for Ron to figure out how to help his sick workers
- Having enough money to take care of the needs of the camp

### GOALS AND VALUES

- Ron wants his workers to prosper and work to their full potential
- He knows that healthy workers are productive workers
- In addition to providing a safe workplace, Ron wants to figure out other health services that can be integrated into his mining camp

### NEEDS AND REQUIREMENTS

- Additional ways to help his workers test, treat, and prevent malaria
- Access to health services and up-to-date information
- Reliable and affordable access to transportation so his workers can access hospital and health services when needed

### RELEVANT INSIGHTS

AGE	49
OCCUPATION	Camp Manager
EDUCATION LEVEL	Primary
LOCATION	Bartica

- 7.1
- 8.1
- 8.2
- 10.1



# Journey map: Ron Went

Archetype: Knowledgeable, caring camp manager

STAGES

## PREVENTION

## SYMPTOMS

## RESPONSE

## FURTHER HELP

## RETURN TO WORK

## ADHERENCE TO TREATMENT

I have had malaria multiple times before. I am so happy that I could combine my experiences with having malaria and my training and experience as a pharmacist to emphasize the importance of malaria prevention, testing, and treatment to my workers.

Several of my workers became sick. Some of them had fever and vomited while others had fever, headache, and loss of appetite. Based on the symptoms, I suspected that it could be malaria, although nobody had the disease in the camp for a long time.

I arranged for my sick workers to go to a nearby testing site to get tested for malaria. The tests results confirmed that several of them had different types of malaria or a combination of different types. However, for some, the results were negative, but they were still unwell.

I sent the workers who tested negative for malaria but were still unwell to the Bartica hospital.

My workers with malaria fully recovered. I also arranged for them to be retested to ensure that they were well. My other workers who went to the Bartica hospital tested positive for dengue. After getting the treatment at the hospital, they recovered and were able to return to work.

I insist that my workers who tested positive for malaria or any other health condition, complete their course of treatment. I monitor them to ensure that they adhere to the treatment regimen.

THOUGHTS

Having our own supply of malaria medication was a wise decision

I sure hope it is not malaria or any other disease.  
  
Since my workers are ill, it has affected their ability to work

I'm so happy that we have malaria medication at our camp so I could treat my workers who tested positive.

I am relieved that my workers who tested positive for malaria are responding well to the treatment.  
  
I am worried though about the ones I sent to Bartica. I hope it is nothing too serious

I'm so grateful that all my workers are healthy again and they are back on the job.  
  
They can continue to take care of themselves and support their families.

I am so happy that my workers adhered to the treatment regimen.  
  
Adhering to the treatment regimen wasn't always easy for my workers, but they are now seeing the benefits of adherence.

PAIN POINTS

With all my experience, I still feel that I am not doing enough.  
  
What more can I do to prevent my workers from becoming infected?

Not working at their full potential will affect production and, hence, the amount of money they can earn.  
  
I hope their conditions don't worsen since we are so far away from health facilities.

I am really worried though, about those who tested negative for malaria but are still unwell.  
  
It is going to be expensive to get them to the nearest health facility since we are so far away, but I will have to try my best

I don't know how long they will be off the job.  
  
I do hope they get the correct diagnosis at Bartica hospital

I shudder to think about the fate of my workers if I couldn't get the transportation to take them to Bartica or if I didn't have the money to pay for transportation.

If my workers didn't adhere to their treatment regimens they could have died or relapsed.

OPPORTUNITIES

How can we implement other measures, such as having a tester and LLINs to prevent malaria?

How might we integrate other health services at campsites?  
How might we create access to other health services for miners at the campsites?

How might we provide additional and updated information about malaria and other types of diseases that can affect miners?

How might we encourage proactive behaviors, such as periodic health checkups, among miners?

How might we strengthen the relationship between camp managers and health facilities to improve access to health services for miners?

How might we help camp managers/owners encourage and reinforce adherence to treatment regimens by their workers?

# Lebron Jenkins

Archetype:  
**Worker-centered camp manager**



*“Sometimes the money you make is barely enough to pay for fuel, spares, food, and to pay workers.”*

## UNDERSTANDING OF MALARIA



## BIO

Lebron has been working in the mining industry for 20 years. He started off as a pit man and worked his way up as a camp manager of a 10-person large dredge operation. Having worked in mining so long, he knows that he has to look out for his crew in the backdam—it's the only support they each have.

He manages a lot of the logistical components of the operation (e.g., cooking, licenses, worker healths). Having had malaria several times, he knows how big of a problem it is, but as a small operation, he is not equipped to help workers when they are sick. The best he can do is provide medication when the workers show malaria symptoms.

Lebron always has good intentions, but may not be offering the best treatment for his miners when they have malaria symptoms.

## CHALLENGES AND FRUSTRATIONS

- Lebron is often strapped for cash to manage his operation, but knows that he should prioritize his workers' health
- He does not understand that much about malaria, but knows that it is a serious health risk
- He wants to minimize the symptoms of malaria for his workers because he knows firsthand how debilitating it can be

## GOALS AND VALUES

- Wants to keep his miners strong, health, happy, and productive
- Believes that a strong immune system will prevent malaria

## NEEDS AND REQUIREMENTS

- As a small operation, Lebron needs additional resources to help his miners who have malaria and other health issues
- Aside from using LLINs, Lebron does not know what else he needs to tell his workers about malaria
- Needs accurate information about how malaria is transmitted and treated
- Needs support to direct his workers to qualified testers when they are sick, rather than making assumptions about what medications are required

## RELEVANT INSIGHTS

AGE : 43  
OCCUPATION : Camp Manager  
EDUCATION LEVEL : Secondary  
LOCATION : Mahdia

2.1  
2.3  
4.2  
7.1  
7.2





# Journey map: **Lebron Jenkins**

Archetype: **Worker-centered camp manager**

STAGES



I make sure to keep my workers happy and healthy by feeding them big meals every day. As long as they are healthy, we won't have any issues with illness and everyone will be able to work to the best of their ability. I make sure the campsite is always clean because mosquitoes like bushy areas and garbage. If you're not careful with these things, mosquitoes can make you sick.

One of my workers came to me, saying that he feels unwell. I asked him what symptoms he was experiencing and it sounded like what happened to me when I had malaria a few years ago. We haven't had malaria at our campsite in a while, so I don't know for sure what he had, but it does look a lot like malaria.

I have a leftover supply of Artefan, which is used for treating malaria. I gave some my worker who is feeling unwell and he started to feel better after just a few hours. After another couple of days, the same worker came back to me saying that he is feeling very unwell now. I'm worried about him and decided it's time to send him to a hospital.

I sent my worker off to Mahdia hospital. I hope he is able to get some treatment and feels better on his return.

After several days, my worker returned looking much better. He was given a course of medication and he says it's very important that he takes all of the treatment, even once he is feeling better. The health workers tested him, which determined he was ill with a type of malaria.

THOUGHTS

- I enjoy making sure all of my workers are eating well and seem to be fit and healthy
- The campsite is always clean

- I'm worried about the health of my worker
- I hope it's not contagious
- I'm surprised that he got sick even though he eats so well

- I'm glad I could relieve his symptoms for a couple of days
- I'm not sure what to do; he needs a health professional
- Maybe he doesn't have malaria?

- I hope the travel is bearable for my worker
- Thankfully, everyone else seems to be healthy

- I wish I could have helped him without having to send him to Mahdia hospital

PAIN POINTS

- If we have low gold production, it can be hard to afford to feed all my workers properly

- I'm not certain what is making him sick and I'm not sure what to do to make him better

- It's going to be very expensive for my worker to get to the hospital; I will pay for him

- I don't know how long he will be gone
- I don't know what is wrong with him or how long it will take him to get better

- This has been a difficult situation. What do I do next time one of my workers feels unwell?

OPPORTUNITIES

How might we encourage proactive preventive behaviors such as wearing long-sleeved clothing, sleeping under LLINs, and using repellent?

How might we make malaria testing and treatment readily accessible to all miners?

How might we make the recommended testing and treatment regimen more convenient than self-treatment or alternative treatment?

How might we encourage proactive behaviors, such as periodic health checkups, among miners?

How might we utilize the strong relationships between miners and camp managers to improve testing and treatment practices?

# Tejan Michaels

Archetype:  
Business-centered camp  
manager



*“The purity of gold brings out the impurity in men.”*

## UNDERSTANDING OF MALARIA



## BIO

Tejan has been a camp manager for five years, after being a miner for seven. He runs a tight operation. His focus is on maximizing gold production as much as possible.

He has had malaria several times, but it has not been a major health concern for him. In his camp, they have not had malaria in a long time, so when a miner does occasionally have malaria, he gives them medication and assumes the miner will manage. His main focus is improving the gold production of his camp.

He tells his miners that they are free to leave his camp and return home to their families whenever they wish; however, their job is not guaranteed on their return.

## CHALLENGES AND FRUSTRATIONS

- Based on his own experience, he does not think that malaria is a huge challenge. There is trust that miners will be able to figure out things on their own if it is serious enough
- When gold production is high, Tejan has to be careful that all gold is accounted for. He has had bad experiences in the past of workers being dishonest

## GOALS AND VALUES

- He wants to make as much money as possible to not only take care of his workers, but also his family back on the coasts
- He values his workers' loyalty, trust, and honesty

## NEEDS AND REQUIREMENTS

- Without having seen or experienced the harsh effects of malaria, it is unlikely Tejan will make health services available to his workers
- Needs to get the most out of his workers
- Needs to perceive miner's health as a key input to productivity

## RELEVANT INSIGHTS

AGE: 35  
OCCUPATION: Camp Manager  
EDUCATION LEVEL: University  
LOCATION: Bartica

4.2  
6.2  
7.1  
7.2



# Journey map: **Tejan Michaels**

Archetype: **Business-centered camp manager**

STAGES

## PRIORITIES

When I started managing this camp, I got malaria but I took some treatment and got over it in a couple of days. Some of our workers get malaria, but I don't think many do. I really don't know. Men—and some women—come to the gold mines to make money. That's why we're here, whether you run the business or cook or work in the pits. My job is to find as much gold as possible.

## CAMP RESPONSIBILITY

I don't monitor the health of my workers. That's their responsibility. Everyone knows you have to be careful out here. Last week, one of the pit workers told me he was sick and thought he had malaria. I told him, "If you get sick and can't work, you either take care of it or you quit. It's no big deal. This is a business."

## CARE IN THE CAMP

We aren't a big operation, but we have what it takes to get our jobs done. We have a first aid kit and some medicines from the drug shop in town. If workers get injured or sick, I let them use that stuff, so I told the sick guy he could have some painkiller if he wanted it.

## PERSONAL RESPONSIBILITY

He was still feeling sick the next day. I expect my workers to take care of themselves, so I told him that if he was worried he could go somewhere to get a test or some medicine as long as it didn't take too long. I'm pretty sure there is somewhere he can go if he wants to.

## BOTTOM-LINE THINKING

I run a tight operation here and everyone has to pull their weight. The guy who was sick left for town—I think he got a ride out at the road. He didn't come back until noon the next day. Said his malaria test was positive and that he needed a couple days to recover with the medicine they gave him. I can't afford to have people sitting around not working, so I fired him. Lots of people want to work here. I can always find someone to replace him.

THOUGHTS

- I have to keep an eye on the bottom line
- I don't know why malaria is such a big deal

- I look out for myself; why can't they?

- I have to find the quickest solution
- We have everything we need here

- Testing and treatment aren't my responsibility; that's what health services and drug shops are for

- I don't know why these things take so long
- He must be slacking off

PAIN POINTS

- Time off is productivity lost

- I don't have the time to look out for each of my workers

- I've got to keep them here at camp so we don't lose any work hours

- If they have to go off camp, I need them back as soon as possible

- The cost of idle labor is too high

OPPORTUNITIES

How might we help managers appreciate the relationship between timely testing, proper treatment, and productivity?

How might we strengthen the bond between miners and managers to create a win-win situation?

How might we convince managers that self-treatment is insufficient to treat malaria?

How might we improve access to testing at or near the camp?

How might we shift the manager's cost-benefit calculations?

# Marie Simpson

Archetype:  
Experienced tester



*“Being a tester gives me a sense of purpose.”*

## OPPORTUNITY TO PROVIDE TESTING

## WILLINGNESS AND MOTIVATION

### BIO

Originally from Mabaruma in Region 1, Marie joined Quality Mining Company as a cook three years ago. This is her third position in a mining company. The pay is good and steady, and she can send at least half of it back each month for her family.

Marie has a good relationships with everyone in the camp. The fact that she is a cook, and sees everyone on the shift, also helps.

A few months ago, the camp manager told Marie that she was going to learn how to provide RDTs and treatment for malaria. While there was a learning curve, she has done about 10 tests a week and now feels like she wants to learn to do more.

## CHALLENGES AND FRUSTRATIONS

- Even though malaria testing has helped a lot of the miners, it's challenging when results are negative, but debilitating symptoms are still present
- Miners have started to come to Marie for other health issues, but Marie does not know how to respond
- She keeps seeing some of the same miners come back again and again for testing

## GOALS AND VALUES

- She has seen the positive effects of having testing for malaria in her camp, and wants to provide the same for other health issues
- Would like to help miners adopt more preventive practices against malaria

## NEEDS AND REQUIREMENTS

- Support from local VCS team and regional hospital to provide health services for other health issues
- Support in communicating or providing information on preventive behaviors for malaria. Marie would be interested in learning what she can say to her co-workers so they do not keep getting malaria.
- Needs to feel acknowledged, valued, and appreciated by clients and the community

## RELEVANT INSIGHTS

AGE 29

OCCUPATION Cook

EDUCATION LEVEL Secondary

LOCATION Bartica

5.1

5.3

9.1

9.2



# Journey map: Marie Simpson

Archetype: **Experienced tester**

STAGES

## INITIAL CONSULTATION

## ADMINISTERING RDT

## DETERMINING RESULT

## PROVIDING TREATMENT AND ADVICE

## REPORTING AND FILING

When I was working in the kitchen, one of the miners at my camp came to me feeling unwell. I asked him about his symptoms and, particularly, if he had a fever. After talking for a few minutes, the miner admitted that he had taken some medicine a few days ago when he started to feel unwell on the advice of his friends. He didn't know what he had already taken, but it had made him feel a little better for a couple of days.

I administered the RDT and instructed the miner to wait for 20 minutes while the result was determined. While he waited, he started to ask me about another health issue he had been experiencing—a toothache. I explained to him that I'm not a medical professional and only able to test for malaria.

The result that appeared on the test indicated that the miner was positive for *falciparum* malaria. His initial reaction was to be concerned and worried. He did not know how long he would need to take off work or if he would be able to get better.

I explained to the miner that he needs to take a course of Coartem to treat his malaria. I explained how important it is to complete the course of medicine or else the malaria will come back. I also told the miner about how to avoid catching malaria in the future and what preventive measures he should be taking. The medicine that I gave to the miner was the last of my supply.

After the miner had left, I started filling out the necessary reports that I do each time I perform a test. There are three copies of the same report—one for MoPH, one for the health center, and one for my records. I'll send the reports to the health center with the next person traveling into Bartica from our camp.

THOUGHTS

- There is a lot of misinformation about how to treat illness in the camps

- People think of me as a medical professional

- Is this accurate given the other unknown medication the miner has recently taken?
- Some miners are very unaware when it comes to malaria

- I'm not sure if the miner will remember everything I'm telling him
- Hopefully he takes this information back to his friends

- I'm not entirely sure that my reports get to where they need to go

PAIN POINTS

- I don't know what the miner has already taken and this may affect the outcome of the RDT

- I'm not able to help with any other health issues, even if I would like to

- If the test had come back negative, I would not be able to help this person

- I don't have any Coartem left now
- I have no way of making sure the miner takes all of his medicine

- I never hear anything back from the Ministry about my reports.
- I don't know when the Ministry will visit me next

OPPORTUNITIES

How can we make trained testers a more desirable "first point of call" than self-treatment?

How might we help enthusiastic testers to become a "one-stop shop" for health services in their community?

How might we leverage the RDT training content to improve knowledge about malaria more broadly in communities?

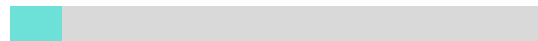
How might we ensure that testers always have a reliable and constant supply of the right medication on hand?

How might we enable the MoPH and VCS workers to better support trained local testers?



## “People in surrounding communities don’t know that I’m a trained tester.”

### OPPORTUNITY TO PROVIDE TESTING



### WILLINGNESS AND MOTIVATION



### BIO

Claire moved to the backdam in pursuit of a better income. She did not want to become a miner, but knew that there were other ways for her to benefit from the mining industry.

She is married to a dredge owner and manages a small shop that sells basic supplies, food, and drinks just two kilometers from the mining site.

Claire signed on to become a volunteer tester because she knows how important it is to identify malaria quickly and wanted to do something in her spare time.

### CHALLENGES AND FRUSTRATIONS

- Not many people come to her for testing, even though she knows malaria is a challenge. It's possible that people do not know that she provides free testing
- Willing to provide more tests, but is worried she is forgetting how to do it properly due to lack of practice

### GOALS AND VALUES

- She wants to feel like she is contributing to the health and wellness of the community through testing services

### NEEDS AND REQUIREMENTS

- Additional training and support from regional VCS team to refresh what she initially learned
- Greater opportunities to administer RDTs and complete supporting documentation
- Increased awareness of her role as a trained tester in the local community
- Needs to feel acknowledged, valued, and appreciated by clients and the community

### RELEVANT INSIGHTS

AGE	37
OCCUPATION	Shop owner
EDUCATION LEVEL	Secondary
LOCATION	Mahdia

5.2  
5.3  
9.1  
9.2



# Journey map: Claire Thomas

Archetype: **Eager tester**

STAGES

## BEFORE TRAINING

I heard about the RDT training program and seized the opportunity to provide the service since I know the importance. I don't have experience in doing RDTs or other testing. I wanted to do something in my spare time.

## ADMINISTERING RDT

A miner who works for my husband's dredge came to see me a few weeks ago. It was the first time I was seeing someone since being trained eight months ago. I didn't ask him many questions just if he had a fever and for how long he was sick.

## DETERMINING THE RESULT

I was nervous to prick his finger since I had only done it once during the training. It seemed like the miner sensed my nervousness because he asked me if I was sure about what I was doing.

## PROVIDING TREATMENT & ADVICE

The test was negative, but the miner did not believe it. He was certain that he had malaria and he asked me to give him treatment anyway.

## PROVIDING TREATMENT & ADVICE

I told him to come back the next day to repeat the test or that he should go to the hospital. He was frustrated and insisted that I give him malaria treatment; however, I told him I could only sell him medication for his fever and pain. When he returned the next day to repeat the test, it was still negative so I told him to go to the hospital.

## REPORTING & FILING

I tried to fill out the necessary report, but I wasn't sure if I was doing it correctly.

THOUGHTS

• I don't know why I was selected to become a tester

• This is my first client in eight months  
• He only knows that I'm a tester because he works for my husband

• I'm scared I pricked his finger too deeply  
• I hope I remember everything that I have to do

• I don't know why the test was negative  
• I hope I didn't do anything wrong

• I don't know what else I can tell the miner  
• I can't remember what I learned in the training about what to do with negative results

• I hope I filled out this report correctly

PAIN POINTS

• I have no experience with RDTs or any related medical field

• People aren't aware that I can provide free malaria testing and treatment  
• I don't often get to practice/improve my skills since being trained

• I don't feel confident conducting the RDT yet  
• I may not remember everything I have to do  
• Suppose more people come for testing, what will I do?

• The miner did not believe his negative result  
• What else can I say to him about his negative result?

• I unable to provide any other tests for miners  
• How can I give him medication with a negative result?

• I don't feel confident filling out the report either  
• I can't find the contact information for the VCS staff who conducted the RDT training

OPPORTUNITIES

How might we improve the selection criteria for trained testers?

How might we make miners aware of testers in their surrounding communities?

How might we help testers feel confident in their skills when they have few opportunities to test?

How might we encourage miners to accept negative RDT results?

How might we better enable testers to advise and support persons with a negative RDT result?

How might we help testers keep their skills when they have few opportunities to test?  
How might we provide more effective monitoring for testers?

*“I am only doing testing because my family has business here.”*

#### OPPORTUNITY TO PROVIDE TESTING



#### WILLINGNESS AND MOTIVATION



#### BIO

Adam is originally from Linden. He decided to go into the interior with his family in hopes of establishing a better standard of living for himself, his wife, and their two children. He manages a shop that is in close proximity to many dredges.

Adam was selected to be a malaria tester because he runs a shop. However, he says that the testing can interfere with him managing the shop since persons are sometimes unwilling to wait to be tested. He is also not interested in a RDT fresher training or learning any new health-related skills.

Adam has sometimes run out of test kits when he has gotten more clients than anticipated. He also is not in regular contact with the regional VCS team so he sends his reports out when someone is traveling to Bartica.

#### CHALLENGES AND FRUSTRATIONS

- Prioritizes his shopkeeping duties over his testing responsibilities when these conflict with each other due to client demands/impatience
- Sometimes not having sufficient tests for clients
- Not having regular communication and supervision from VCS

#### GOALS AND VALUES

- To provide a better standard of life for his family
- To ensure the well-being of his family

#### NEEDS AND REQUIREMENTS

- Improved supervision and support from regional VCS
- Needs to feel acknowledged, valued, and appreciated by clients and the community



#### RELEVANT INSIGHTS

AGE 38

OCCUPATION Shop owner

EDUCATION LEVEL Secondary

LOCATION Puruni





# Journey map: Adam Anthony

Archetype: **Unwilling tester**

STAGES

## INITIAL CONSULTATION

## ADMINISTERING RDT

## DETERMINING THE RESULT

## PROVIDING TREATMENT & ADVICE

## REPORTING & FILING

Weekend nights are usually busy for me at the shop, especially Friday and Saturday nights when the gold has been "washed down". One Friday night when things were really busy, a miner came and said that he was feeling very unwell and asked to be tested.

I told him to have a seat while I continued attending to my customers and then I would be able to assist him. The miner started to raise his voice, demanding that I attend to him right away. He also offered money thinking that would make me serve him faster. I attended to another customer and then went to him.

I went to get the RDT kit and my papers together and remembered that I only had one test kit remaining. I used that last kit to do his test.

I was able to perform the test for the miner quickly since I have done many tests before.

While I waited for the result of the test, I returned to serving my customers.

The result was positive for Vivax malaria. The miner felt vindicated and said to me, "I told you I was very sick."

I gave him the two-week treatment for Vivax malaria and explained to him how to drink the medication.

I didn't say anything more to him because I wanted to continue attending to the other customers at the shop. Besides, I'm not really trained to deal with difficult clients. The miner left without saying thank you.

I filled out the report form as I always do and made a note to call the regional VCS team on Monday to inform them that I had run out of RDT kits.

THOUGHTS

- Weekends are when I make the most money
- My shop is my first priority
- Offering me money will not make me attend to you faster

- I will not be able to assist anyone else this weekend or until I get more RDT kits from VCS
- I was told that the other tester did not have test kits either

- He is lucky that the kit was not damaged and he got the correct reading since that was my last test kit
- At least I can conduct my shopkeeper duties without having to stop to do tests

- I have many customers waiting to be attended to
- I don't monitor anyone to ensure they use out their medication

- I have not heard from the regional VCS team for a while now

PAIN POINTS

- Some miners need to understand that I am a volunteer and I'm not being paid for this RDT work
- If you don't want to wait, then you can go

- Suppose my family members or I need to be tested before I get additional kits...what will happen to us?

- If it were not malaria, you would have had to go to Bartica since I am not trained to test for other health-related illnesses

- I don't like to keep my paying customers waiting for too long
- Some miners don't appreciate the work that I'm doing

- I'm not sure I will see VCS soon, especially since the roads are in terrible condition

OPPORTUNITIES

How might we help persons to understand the role of the malaria testers?

How might we enable regional VCS to work with trained testers to prevent stock outs?

How might we motivate malaria testers?

How might we help testers feel appreciated for the RDT work they are doing?

How might we improve the regional VCS supervision and communication with testers?



## “I became a CHW because I wanted to be somebody.”

### OPPORTUNITY TO PROVIDE TESTING



### WILLINGNESS AND MOTIVATION



### BIO

Tina is from a neighboring Amerindian village and works at a local health post. She was first inspired to work in health from a cousin who was a microscopist and also because she “wanted to be somebody.”

She’s worked as a CHW for two years, and has to manage everything from general health check-ups to appointments for diseases. Her favorite duties are antenatal and neonatal clinics. Due to health worker shortages, she is sometimes moved to cover at other health posts but she is always willing since she knows the communities are in need.

Her work in the field of malaria involves providing testing using RDTs and treatment for malaria, mostly to villagers who have malaria-like symptoms. She is also responsible for the distribution of LLINs to the community, which she states she completely distributed.

### CHALLENGES AND FRUSTRATIONS

- As the only health worker, she is pulled in a lot of directions. To focus on any one health area more means that she has to take her focus away from something else
- Not necessarily focused on malaria testing and treatment
- Has little oversight into what the VCS teams are doing and does not feel like there is a coordinated approach to tackling malaria

### GOALS AND VALUES

- Tina wants to try and serve her community as much as possible through her CHW post
- She sees her role as a CHW as one that earns respect in the community

### NEEDS AND REQUIREMENTS

- She needs additional personnel support if she has to contribute towards other health areas
- Need to be more connected with VCS teams and coordinate on malaria activities

### RELEVANT INSIGHTS

AGE | 33

OCCUPATION | CHW

EDUCATION LEVEL | Secondary

LOCATION | Mahdia

10.1

11.1

11.3



# Journey map: Tina Marks

Archetype: **Community health worker**

STAGES

## INITIAL CONSULTATION

## ADMINISTERING RDT

## DETERMINING THE RESULT

## PROVIDING TREATMENT AND ADVICE

## REPORTING AND FILING

I rarely see any miners because this health post is far from any mining camps, but I remember once a villager returned to the community from a camp because he was sick. He had been sick for about four days with headache, fever, nausea, and abdominal pain.

He said he was drinking bush medicine, which alleviated the symptoms for a little while, but then they returned.

He said he knew it was malaria because he had it many times before.

I performed an RDT on him. Even though I had done the test numerous times, I'm not quite sure about how to label the RDT cassette and I have never clarified it with the Regional Malaria Department.

While waiting for the results, I asked him to have a seat in the waiting area and I attended to another patient.

The result showed that he had both *Falciparum* and *Vivax* malaria. He was surprised because he never had a mixed infection before.

It was also the first time he had an RDT done. On previous occasions, when he had sought testing for his symptoms, he went to Mahdia hospital and microscopy was done. He inquired if the RDT was reliable and I told him it was.

I immediately gave the miner the first dose of Coartem and I explained how he should take the remaining treatment.

After the miner left, I filled out the necessary reports. I send the reports to Mahdia hospital with a school bus.

THOUGHTS

- Why did the miner wait so long before leaving the mining camp?
- Lots of people still prefer to use bush medicine over pharmaceuticals

- I hope I get the chance to clarify how to label the RDT cassette
- I have many patients waiting to be seen

- This miner may not believe his result
- Do people trust what I tell them as a medical professional?

- Hopefully he takes the treatment on time

- I hope I remember to send out the report with the school bus
- I hope the report is delivered to the right place

PAIN POINTS

- I do not have the knowledge to deal with complicated malaria cases

- I have only been visited by the Regional VCS staff once for the year

- I'm not confident that I can answer all questions patients may have around RDT testing

- I'm not not sure if he will complete his treatment

- I have no other way to send out my reports other than with the school bus

OPPORTUNITIES

How might we encourage miners to seek prompt testing for malaria?

How might we make malaria testing more accessible to miners?

How might we enable the Regional VCS staff to better support CHWs trained in RDT?

How might we make malaria testing more accessible to miners?

How might we guarantee 100 percent adherence by all clients who test positive for malaria?

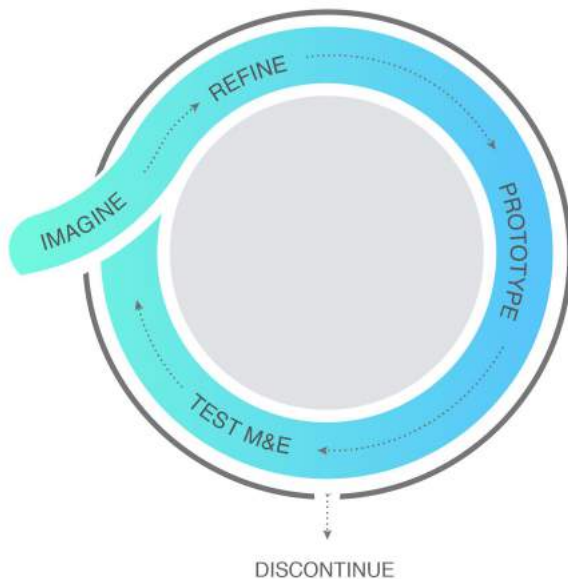
How might we enable the Regional Malaria Department to better support CHWs trained in RDT?

# 5. Next steps

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# Design and Test phase overview

## PHASE 2 | DESIGN & TEST



The Design and Test phase builds on the opportunities and design strategy identified during the Define phase to generate ideas and test early prototypes with target audiences. This is an iterative and fast-paced process to develop and test multiple designs to address the opportunity areas. Key activities to be undertaken during the Design and Test phase are described below.

### **Imagine and Prototyping workshops**

Imagine and Prototyping workshops will be held in Georgetown to generate multiple ideas to address the insights and opportunities. This will be an interactive and collaborative workshop with stakeholders, partners, and target audiences. The workshops will refine their ideas and select the most promising to prototype and test.

### **Capacity strengthening**

Capacity strengthening sessions will be built in to the Imagine and Prototyping workshops for the Design and Test fieldwork teams.

### **Rapid prototyping**

After the Imagine and Prototyping workshop, rapid low-fidelity prototypes of the selected ideas will be developed to test with target audiences.

### **Prototype and test sprints**

A four-day prototype and test sprint will be held in Regions 7 and 8. This will include one day of capacity strengthening and three days of testing prototypes with target audiences. At the end of each day, the prototypes will be refined based on the feedback received.

### **Consolidation workshop**

After testing, the Design and Test fieldwork teams will converge in Georgetown to share their findings and consolidate the refined prototypes.

### **Prototype prioritization**

Prototypes will be prioritized based on their feasibility, usability, and desirability. The prioritized prototypes will then be considered for transition to the Apply phase.

# 6. Appendices

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# Appendix 1: Region 7 interview locations and distribution

Location	Miners	Owners/Managers	Testers	Pharmacists	Other*	Total
Puruni (across river) camp	5	2				7
Little Soiree Camps		4				4
Bacchus Camp	7	2				9
Tiger Creek			1			1
Mikey's Camp	8	2				10
Kumang Camp			1			1
Takatu	8	2	1(1)**			11
Puruni (Landing)	3		2	2		7
Bartica				2	2	4
<b>TOTAL</b>	<b>31</b>	<b>12</b>	<b>5</b>	<b>4</b>	<b>2</b>	<b>54</b>

\*Other: 1 Regional Chairman (RC) , 1 Regional Health Officer (RHO)

\*\*One of the interviewees is a tester and also a camp manager. He/she is not counted in the tester total, but is captured in the owner/manager total.

## Appendix 2: Region 8 interview locations and distribution

Location	Miners	Owners/Managers	Testers	CHWs	Other*	Total
Salabora Camp	7	1				8
Minnehaha Camp	5	1	1			7
Eagle Mountain Camp	9	1				10
Tussurrow Camp	9	1				10
Mikobi Health Post			(1)**	1		1
R&V Camp	9	1	(1)**			10
Madhia			(1)**	1	8	9
<b>TOTAL</b>	<b>39</b>	<b>5</b>	<b>1</b>	<b>2</b>	<b>8</b>	<b>55</b>

\*Other: 1 pharmacist, 2 broadcasters, 2 microscopists/M&E, 1 RC, 2 RHOs

\*\*This interviewee is a tester, but is counted in another category, i.e., CHW, miner, camp owner/manager, or other.



# Get in touch!

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