



LILONGWE DISTRICT HEALTH OFFICE

DENGUE FEVER SUSPECTED CASE INVESTIGATION  
REPORT

REPORT PREPARED BY DISTRICT RAPID RESPONSE  
TEAM

LILONGWE DISTRICT DENGUE FEVER INVESTIGATION REPORT			
<b>Outbreak Name</b>	Dengue Fever	<b>District affected</b>	Lilongwe
<b>Date of report</b>	February 27, 2025	<b>Investigation start date</b>	February 27, 2025

## 1. INTRODUCTION

On February 26, 2025, Partners in Hope (PIH) in Lilongwe District recorded its first suspected case of Dengue Fever. The patient is a 40-year-old female from the Virgin Islands, United States, who arrived in Malawi via Kamuzu International Airport on February 24, 2025.

After her presentation and laboratory tests, PIH notified the Integrated Disease Surveillance and Response (IDSR) focal person on February 26, 2025. The focal person then alerted the District Rapid Response Team (DRRT) and the Public Health Institute of Malawi (PHIM). A presentation on dengue fever was given to the DRRT members to inform them about the new disease and to ensure they could conduct the investigation properly.

Patient interviews were conducted, the patient file was reviewed, and blood samples were collected and sent to the National Microbiology Reference Laboratory (NMRL) at PHIM on February 27, 2025 for confirmation.

## 2. BROAD OBJECTIVE

- To investigate the suspected Dengue fever case in Lilongwe district to inform the District Health Management Team (DHMT) and the PHIM

### 2.1 Specific Objective

- To collect samples of the patient to confirm the dengue virus through NMRL
- To establish epidemiological links and risk factors
- To devise and implement targeted Dengue fever containment measures

## 3. METHODOLOGY

- The DRRT reviewed the patient records together with PIH medical doctors, including laboratory results

- The DRRT interviewed the patient at the Ufulu Garden Hotel where she was lodging
- The DRRT collected a blood sample from the patient and referred it to NMRL for confirmation

## 4. FINDINGS

### 4.1 Case Management

- A patient presented on February 24, 2025, with persistent headaches, joint pains, and muscle aches. She later developed a fever accompanied by chills, fatigue, generalized weakness, nausea, and numbness in her fingertips.
- The patient's blood pressure measured 90/60 mmHg, and a full blood count revealed lymphopenia and neutropenia. A malaria test returned negative, while the Dengue Rapid Diagnostic Test (RDT) was positive
- Patient received management that included intravenous fluids, antiemetic medication, and paracetamol. She was also advised to use a mosquito net and repellent. Currently, the patient is stable
- The investigation team was not granted full access to the medical file due to confidentiality regulations; however, the attending medical officers answered all questions from the investigation team.

### 4.2 Laboratory

- Blood samples for molecular tests (RT-PCR) have been collected and sent to NMRL for confirmation on February 27, 2025

### 4.3 Surveillance

- The patient traveled from Washington, D.C., USA, to the Virgin Islands two weeks ago to visit her father, who had been diagnosed with dengue fever a week before her visit.
- On February 24th, she flew from Washington, D.C., with a layover at Addis Ababa Airport in Ethiopia before continuing to Malawi. She arrived at Kamuzu International Airport at 3 PM on the same day.
- After arriving in Malawi, the patient visited Nkhoma Hospital for sightseeing on February 25th.
- Recently, she learned that her 5 & 7-year-old sons, who is currently in the USA, are exhibiting symptoms like dengue fever and were taken to the hospital for evaluation. She has promised to share the results of his medical tests with the surveillance team.

## 5. RISK FACTORS

After interviewing the suspected case, the DRRT identified the following potential risk factor

- Recent travel to a dengue-prone area in the Virgin Islands, where her father was being treated for a confirmed dengue virus infection

### Local transmission risk assessment

The dengue virus is mainly transmitted by *Aedes aegypti* and *Aedes albopictus* mosquitoes, which are found in certain regions of Malawi. This creates a risk of potential transmission from a suspected case to the mosquitoes after they ingest a blood meal. Stagnant water in containers, tires, flower pots, and gutters provides breeding grounds for *Aedes* mosquitoes. Additionally, a lack of mosquito control measures, such as the limited use of mosquito nets or repellents, can increase the risk of exposure.

The suspected case is currently staying at Ufulu Garden Hotel, where she is using a mosquito net and repellents provided for her outdoor activities. She is scheduled to depart on March 1, 2025. Strict adherence to these protective measures are essential to minimize risk of mosquitoes getting infected which could lead to local transmission.

## 6. DISCUSSION AND RECOMMENDATIONS

The team was unable to identify direct contacts related to the case, as the mode of transmission is through mosquito bites. Workers at Ufulu Garden and guests at the lodge during the time of the case are at risk of infection from mosquitoes that may have bitten the suspected case

The DRRT has construed that the case being investigated is an imported case of dengue based on standard case definition, as the individual has not been in Malawi for a period equal to or greater than the incubation period of 4 to 10 days before developing symptoms. Additionally, the suspected case visited a dengue-prone area, where there was a confirmed case, just 7 days before developing symptoms.

The DRRT therefore recommends the following as a response to the potential Dengue outbreak

### Immediate Response

- Implement individual-level vector control measures by ensuring the index case sleeps under a mosquito net and uses mosquito repellent whenever she goes outside until her departure
- Enhance surveillance systems for the early detection and reporting of dengue cases to optimize prompt case management
- Train clinicians, nurses, and surveillance officers on the case definitions and diagnostic criteria for dengue fever to improve identification and treatment.

## Community Engagement

- Once the case is confirmed, the staff of Ufulu Garden Hotel will receive education on dengue prevention, symptoms, and when to seek medical care.

## 7. CONCLUSION

The investigation team has concluded that the suspect is a probable case of dengue fever, as the symptoms align with the standard case definition in the IDSR Technical Guidelines (TG) 3. However, a confirmatory test is still necessary to verify the diagnosis, even though the rapid diagnostic test (RDT) has returned a positive result. This could potentially be the first confirmed case in the country.

<b>Investigation members</b>	<b>team</b>	Dr. Mackson Zephaniah —District Medical Officer Chisomo Kankhwali – IDSR Coordinator Dr Dorice Chimbeleko – Zone Epidemiologist, Eric Finta – Clinical Officer Nyembezi Gausi – IPC Coordinator Benjamin Kalongosola – Laboratory Technologist,
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### Annex 3: Mosquito control measures in place



Figure 1 Bed net in use at Ufulu garden guest rooms



Figure 2 Doom spray being used in guest rooms



Figure 3 Repellant being used by index case