

JOB DESCRIPTION OF MOBILE APP AND MALARIA INFORMATION SYSTEM DEVELOPER

Background

The National Center for Parasitology, Entomology and Malaria Control (CNM) has been implementing a strengthened and comprehensive malaria program since 2004 through a series of grants received from the Global Fund for HIV/AIDS, TB, and Malaria (GFATM). The UNOPS as the Principal Recipient for the Regional Artemisinin Initiative 4 Elimination (RAI4E) Grant received funding from the Global Fund to collaborate closely with CNM in the malaria fight. CNM is designated as the Principal Implementing Partner (PIP) for the program of Regional Artemisinin Initiative 4 Elimination in Cambodia. CNM in collaboration with UNOPS and other partners, endeavors to ensure more effective decentralized malaria control operations at provincial and operational district levels and bring down malaria-related morbidity and mortality in the country.

Goal

1. Update the village malaria worker (VMW) mobile app, health facility (HF) mobile app, and malaria information system (MIS) platform following the recommendation of mid-term review (MTR). For instance, provide the notification of all malaria tests, update case investigation tools with new classification criteria and data collection fields, Reactive Case Detection (Case-based response for all species), DoT and Case Follow-up and Foci investigation, standardized data collection forms for VMWs and HFs aligned with the surveillance for malaria elimination guidelines and refine data entry interfaces on the mobile apps to ensure accuracy and ease of use.
2. Develop the tool for getting the data from neighboring country in Malaria Elimination Database (MEDB, WHO) to see malaria situation along the border and this tool also can be used for sharing the malaria data from MIS to MEDB. In addition, tool will include the feature for civil society organization (CSO)'s need in terms of data analysis, visualization or reports
3. Develop a mechanism to automatically synchronize relevant data between MIS and Health Management Information System (HMIS), ensuring consistency and accuracy across both platforms. Reduce data redundancy and manual data entry by leveraging the combined data pool from both platforms. Through integrated data access, foster improved collaboration and information sharing between different healthcare programs and stakeholders.

Scope of Work

The selected consultant will be responsible for ten main tasks as below,

1. Conducting a comprehensive review of existing systems and identifying specific areas for improvement based on the MTR recommendations.
2. Work closely with the MIS team, the WHO, and the Ministry of Health staff in charge of MEDB and HMIS to ensure MIS with those two systems is fully integrated, operates efficiently, and delivers reliable data.
3. Develop the tool or mechanism to link between MIS and MEDB in order to integrate the data for both platforms

4. Develop the tool or mechanism to link between MIS and HMIS in order to integrate the data for both platforms
5. Develop and update the features in Malaria Information System ensuring functionalities align with the MRT.
6. Develop and update the VMW mobile application following the MRT and feedback from the users
7. Develop and update the HF mobile application following the MRT and feedback from the users
8. Develop and update the VMW Quality Assessment mobile application following the MRT and feedback from the users
9. Update the Cambodia Malaria Info mobile app (Android and iOS)
10. Conduct comprehensive testing of the developed systems
11. Prepare detailed documentation of the system design, development process, and user manuals

Specific Tasks

- 1. Conducting a comprehensive review of existing systems and identifying specific areas for improvement based on the MTR recommendations**
 - Review existing system documentation, including architecture diagrams, user manuals, and code repositories of MIS
 - Examine MTR recommendations thoroughly to understand areas of focus.
- 2. Work closely with the MIS team, the WHO, and the Ministry of Health staff in charge of MEDB and HMIS to ensure MIS with those two systems is fully integrated, operates efficiently, and delivers reliable data.**
 - Collaborate with the MIS team to understand current system architecture and integration points.
 - Establish effective communication channels with WHO and Ministry of Health staff responsible for MEDB and HMIS.
 - Conduct regular meetings to discuss integration requirements and address any challenges.
 - Coordinate data sharing protocols between MIS, MEDB, and HMIS for seamless information flow.
 - Identify and resolve any compatibility issues to ensure smooth operation and reliability.
- 3. Develop the tool or mechanism to link between MIS and MEDB in order to integrate the data for both platforms**
 - Assess the data structures and formats of MIS and MEDB to understand integration requirements.
 - Design and develop an efficient and robust tool or mechanism for data integration between MIS and MEDB.
 - Develop a user-friendly interface for the integration tool to facilitate ease of use.
 - Implement robust data validation processes to maintain data accuracy during integration.
 - Address any technical challenges or compatibility issues during the development and testing phases.

4. Develop the tool or mechanism to link between MIS and HMIS in order to integrate the data for both platforms

- Assess the data structures and formats of MIS and HMIS to understand integration requirements.
- Design and develop an efficient and robust tool or mechanism for data integration between MIS and HMIS.
- Develop a user-friendly interface for the integration tool to facilitate ease of use.
- Implement robust data validation processes to maintain data accuracy during integration.
- Address any technical challenges or compatibility issues during the development and testing phases.

5. Develop and update the features in Malaria Information System ensuring functionalities align with the MRT and user feedbacks

- Update the following features as below
 - o Cases detection by HF and VMW
 - o Proactive case detection by VMW, MMW and HF
 - o Alert or notify for all points of care
 - o DoT and case follow-up
 - o Reactive case detection
 - o Foci investigation, classification and management
 - o Foci
 - o Stock management
 - o Indicator reports
- Build the user interface for the user to be able to use the Malaria Transmission-Classification's calculator
- Update VMW and HC data collection forms to store data from the Malaria Transmission-Classification's calculator feature in VMW and HC mobile applications
- Build the tracking and alert system for foci activities
- Develop tool for Patient ID (Unique identification number)

6. Develop and update the VMW mobile application following the MRT and feedback from the users

- Update the following features as below
 - o Cases detection
 - o Patient ID (Unique identification number)
 - o Pv radical cure follow-up
 - o E-training
- Build the VMW malaria commodity stock's management
- Build the interactive user interface to make it easy for users to understand the epidemiological concepts, malaria case classifications and appropriate timely responses when they detected the positive case.
- To let VMW to know possible exposure time by infective mosquito, the data of Onset of fever, date of appearance of gametocyte in humans, the interval of earliest onward transmission from the first index case and the interval of other onward transmission cases from the first index case.

7. Develop and update the HF mobile application following the MRT and feedback from the users

- Update the following features as below
 - o Cases detection
 - o Patient ID (Unique identification number)
 - o Pv radical cure follow-up
 - o Stock management
 - o Reactive case detection
 - o Integrated drug efficacy surveillance (iDES)
 - o E-training
- Build the interactive user interface to make it easy for users to understand the epidemiological concepts, malaria case classifications and appropriate timely responses when they detected the positive case.
- To let HF staff to know possible exposure time by infective mosquito, the data of Onset of fever, date of appearance of gametocyte in humans, the interval of earliest onward transmission from the first index case and the interval of other onward transmission cases from the first index case.

8. Develop and update the VMW Quality Assessment mobile application following the MRT and feedback from the users

- o Update the questionnaire for VMW
- o Develop the questionnaire for MMW
- o Develop the questionnaire for integrated VMW

9. Update the Cambodia Malaria Info mobile app (Android and iOS)

- Develop the tracking feature and alert system for foci activities

10. Conduct comprehensive testing of the developed systems

- Conduct testing on the developed tool to ensure the proper functionality of all updated and newly developed features and tools.

11. Prepare detailed documentation of user manuals

- MIS and MEDB integration
- MIS and HMIS integration
- Updated features in MIS
- VMW mobile app
- HF mobile app

Expected outputs

The consultant shall deliver the updated malaria information system and mobile applications following the above tasks. In addition, user guides on using the techniques are developed, and the CNM staff are trained to manage the systems.

Timetable and Schedule of deliveries

Tasks	Deliverables	Number of Days	Estimated timing
1. Conducting a comprehensive review of existing systems and identifying specific areas for improvement based on the MTR recommendations	Understand the MIS structure and MTR requirement	3	01 st Apr – 03 th Apr 2024
2. Work closely with the MIS team, the WHO, and the Ministry of Health staff in charge of MEDB and HMIS to ensure MIS with those two systems is fully integrated, operates efficiently, and delivers reliable data.	Understand the requirement of integration for each system (MIS, HMIS and MEDB)	11	04 th Apr - 17 th Apr 2024
3. Develop the tool or mechanism to link between MIS and MEDB in order to integrate the data for both platforms	Integration tool between MIS and MEDB	33	18 th Apr – 20 th May 2024
4. Develop the tool or mechanism to link between MIS and HMIS in order to integrate the data for both platforms	Integration tool between MIS and HMIS	51	21 th May -18 th Jul 2024
5. Develop and update the features in Malaria Information System ensuring functionalities align with the MRT and user feedbacks	Features in MIS are updated with well-functioning	48	19 th Jul – 12 th Sep 2024
6. Develop and update the VMW mobile application following the MRT and feedback from the users	Features in VMW mobile app are updated with well-functioning	20	13 th Sep -10 th Oct 2024
7. Develop and update the HF mobile application following the MRT and feedback from the users	Features in HF mobile app is updated with well-functioning	31	11 th Oct – 18 th Nov 2024
8. Develop and update the VMW Quality Assessment mobile	VMW QA mobile	12	19 th Nov – 2 nd

application following the MRT and feedback from the users	app is updated with well-functioning		Dec 2024
9. Update the Cambodia Malaria Info mobile app (Android and iOS)	Cambodia Malaria Info mobile app is updated	11	3 th Dec -15 th Dec 2024
10. Conduct comprehensive testing of the developed systems	All developed and updated tools are tested.	3	16 th Dec – 18 th Dec 2024
11. Prepare detailed documentation of user manuals	User guides for developed tools	5	19 th Dec-24 th Dec 2024

Qualification

- Bachelor or Master Degree in information technology, computer science, or other relevant fields
- Strong Android mobile application development skills
- Strong database development skills using MySQL and Ms SQL server
- A minimum of 5-10 years' experience in computer programming like PHP, Java, Ruby or similar
- Ability to think analytically, synthesize and clearly present complex processes and issues related to the development of malaria surveillance
- Experience in Malaria or public health is desired
- Experience in Malaria Information System (MIS) is desired
- Experience of using SMS technology for data collection is desired
- Familiarity with the health system in Cambodia is desired
- Proven experience in leading consultative processes; ability to conduct/facilitate sessions related to the development of the consultation meetings.

Reporting:

The Consultant shall be expected to submit activity reports in line with the set deliverables and these reports shall be submitted for review and acceptance by the National Malaria Program before any payment is made.

LANGUAGES

English: Fluent (Speaking & Writing); **Khmer:** Working (optional)

Period: The work is to be concluded within 33 weeks from the signing of 01st April 2024 with a total of 228 working days between 01st Apr 2024 to 24th Dec 2024.

Submission guidelines: Please submit your CV with the word "Malaria Mobile Application Consultant" in the subject and a cover letter to cnm.recruitment@gmail.com

CONTACT INFORMATION

Email: cnm.recruitment@gmail.com