

Malaria Epidemic Detection Initiative in Oromia, Ethiopia



President's Malaria Initiative

A partnership between Addis Continental Institute of Public Health, Tulane University, the

Malaria Epidemic Detection Begins at 10 Sites in Oromia



Highlights:

- The President's Malaria Initiative (PMI) has funded an epidemic detection initiative for the Oromia region
- Ten sites were selected, five with high priority
- Initial trainings in data reporting were conducted for all sites
- Roll out of surveillance activities has begun at five high priority sites

The malaria epidemic detection project is a health facility based sentinel surveillance system. The project, funded by the U.S. President's Malaria Initiative and carried out in collaboration with Tulane University, Oromia Regional Health Bureau and Addis Continental Institute of Public Health, began in January 2010 at 10 health centers within the Oromia region. The sites are divided into primary and secondary health centers, with initial emphasis given to the five primary sites. This prioritization is being done to test strategies for supervising, reporting, transferring data, and quality control protocols before rolling out supervision at the 5 secondary sites. However, although no supervision is currently being done at the secondary sites, it is planned and will begin soon. The project is designed to provide data on trends in malaria-related morbidity and mortality, as well as for detecting malaria epidemics early; identifying hot-spots for infection will increase the likelihood of providing support in a timely fashion to areas in need. While currently focused on health centers providing malaria related services, the project plans to expand ac-



Training of health center staff - Addis Ababa, International Red Cross training facility, April 2010.

tivities to the health post level to facilitate the identification of micro-clusters of infection associated with specific areas within the sentinel Woredas.

Project activities also focus on tracking malaria related commodities at the 10 epidemic detection sites, including drugs, RDTs, insecticide, and preventative tools such as LLINs; conducting annual data quality assurance (DQA) checks to verify data is of high quality and consistency and is utilized; and tracking improvements in data quality over the life of the project. Overall, this project should demonstrate the usefulness of health facility surveillance data for decision-making

around malaria control and prevention strategies at the local level.

The Criteria for epidemic detection site selection

were developed during the malaria monitoring and evaluation plan dissemination meeting conducted from October 26-27/2009, which was attended by colleagues at many of the partner organizations engaged in malaria activities in Ethiopia; smaller sessions over the following month were held to narrow down the most important characteristics of health centers and catchment areas. The main criteria included local malaria epidemiology, altitude, availability of ma-

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Kersa Health Center—a primary site.

laria diagnostic facilities and geographic accessibility.

Using these criteria as a guide, a preliminary assessment of potential sites was carried out. After completing a needs assessment, 10

health centers were selected to be part of the network. The following 5 sites were designated as primary: Kersa, Metehara, Bulbula, Tulu bolo and Asendabo health centers. The remaining five sites were designated as secondary sites for roll-out in the upcoming months: Asebot, Wolenchiti, Dhera, Guangua and Dembi health centers.

While these health facilities cannot be considered representative of the Oromia region or the nation, they do

represent diverse ecological and epidemiological areas where malaria transmission exists in Oromia.

The Oromia Regional Health Bureau (ORHB) considers this project a test platform for establishing a comprehensive epidemic detection surveillance system in the region. Thus, the collaborating academic institutions have signed a memorandum of understanding with ORHB to streamline this initiative.

Why Epidemic Detection is Important for Malaria Control

Surveillance is Information for Action

Public health surveillance is grossly defined as “information for action” involving the ongoing systematic collection, analysis, interpretation, and dissemination of health data for the purpose of preventing and controlling infection and disease. Surveillance data are used to detect new epidemics, to study the natural history of disease within small areas, and to provide contextual information for impact evaluation. However, surveillance data only serve this purpose if they are complete, timely and linked to public health action. Thus, this project tries to collect relevant data on malaria at the facility level and promote its use for monitoring the implementation of services and early detection of epidemics. This project also trains health

workers at selected sites on data entry, reporting and data quality assurance techniques to maximize buy-in and facilitate data use at the health center level.

There are several different public health surveillance approaches including, routine or passive surveillance, active surveillance and sentinel surveillance. All are useful depending on the purpose of data collection. The Oromia Epidemic Detection Initiative utilizes sentinel surveillance—which refers to intensive data collection efforts in only a small number of selected sites. The main advantage of such a system is that it allows for greater control of activities on-site through interaction between colleagues at ACIPH and health workers at sites; this interaction should result in the pro-

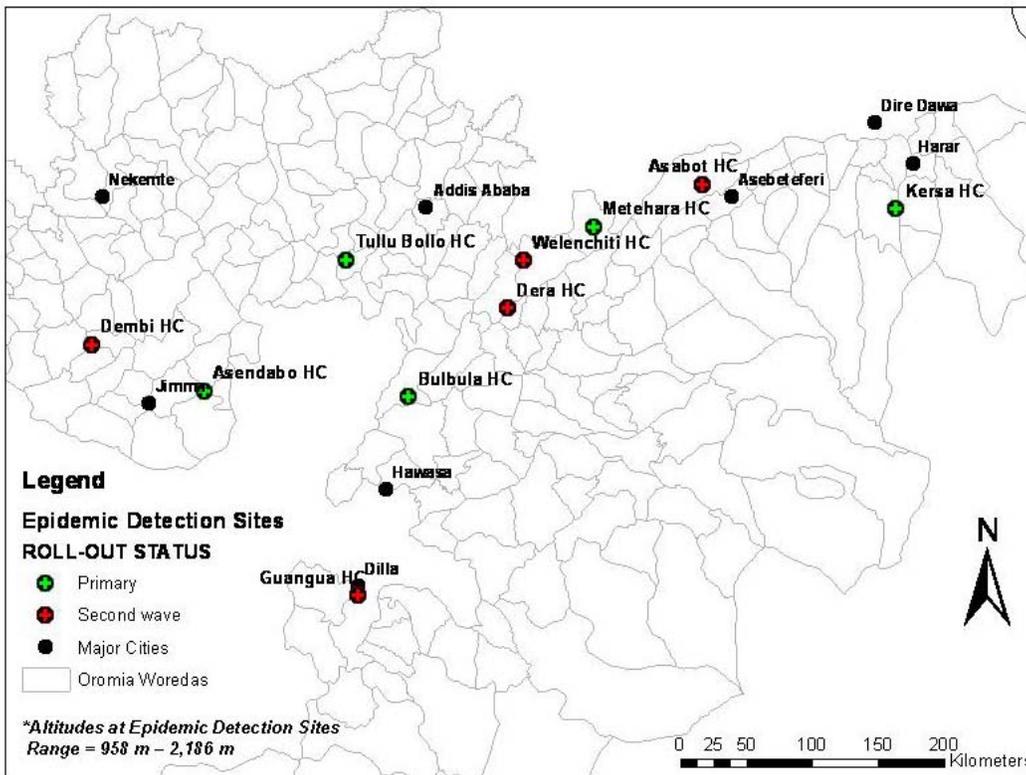
duction of higher quality and more detailed data at the micro-level. Its main disadvantage is that it is not representative of the region and may not be widely generalizable beyond the epidemic detection sites selected.

Malaria transmission in Ethiopia is highly unstable and seasonal. It is known for the repeated occurrence of epidemics. Major malaria epidemics historically occur with intervals of approximately 5-8 years, however in recent years the occurrence of both small and large-scale epidemics has become more frequent and wide-spread. Thus there is a need for improved epidemic monitoring and surveillance to facilitate rapid responses. One component of the epidemic monitoring and surveillance system is early detection of epi-



Register booklets at Kersa Health Center (above); all reporting books produce individual data in triplicate, to be aggregated and reported to partners.

Malaria Epidemic Detection Sites in Oromia Region



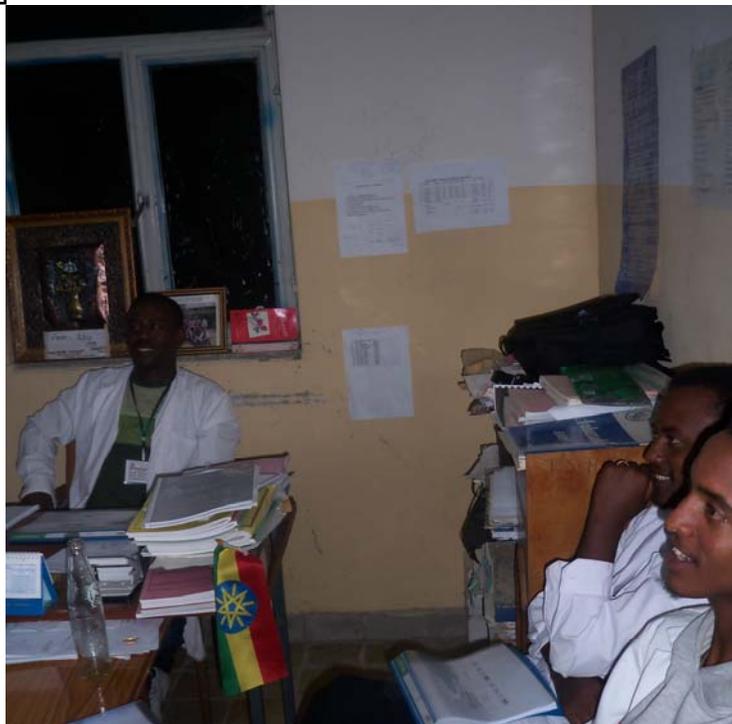
The sites cover a large geographic area and most eco-epidemiologic settings in Oromia region. Each site has a minimum of one health center which provides primary care services for uncomplicated malaria cases.

The five primary sites include Tullu Bollo HC, located in an area of low malaria incidence at a high altitude near Addis Ababa, with predominately *P. vivax* malaria present. Bulbula HC, another primary site is situated near the Rift Valley lakes and experiences high seasonal transmission with large amounts of *P. falciparum* malaria. The remaining three primary sites cover a range of malaria species distributions, transmission conditions and altitudes.

The map above shows the geographic locations of the 10 sites included in the Malaria Epidemic Detection Initiative.

Malaria Surveillance con't

demics; using health facility morbidity data, epidemics can be detected and appropriate and timely responses initiated. However, this system is only useful if the primary information generated at health facilities is timely, complete and paired with prompt analysis and accurate interpretation. This project is working towards establishing a system where accurate, complete, and timely malaria morbidity and mortality related data is communicated to all partners to facilitate immediate action. The experience and lessons learned from these 10 sites can be used to optimize efforts to eliminate malaria in the future.



Training at Tulu Bolo

Most initial training activities were conducted centrally, however, some such as the training in this image (left) were conducted on site. Initial trainings focused on Monitoring and Evaluation methods, sentinel surveillance, the uses of surveillance data, and the proper data recording methods.

A Partnership Approach Affords Opportunities: Limitations and Challenges Must Be Overcome

The collection of data from a small set of health facilities will offer weekly/monthly data for tracking a small set of malaria morbidity- and mortality-related indicators. These data are useful when interpreted alongside other data to assess the relative impact of PMI-supported activities, as well as the general potential for malaria epidemics. This project will work with all partners in Ethiopia conducting malaria related work. Data sharing and coordination with respect to training, tracking commodities, and improving data quality area issues numerous partners are already working to address. As such, this project will tap into the expertise already in place to increase stakeholder buy-in and improve efficiency and standardization of already existing systems and protocols. Although numerous synergistic opportunities exist among partners, there are also opportunities for improving current practices related to malaria prevention and control. The following areas are important to address to ensure the success of epidemic detection:



Although the road to this epidemic detection site is passable (above), heavy rains may slow down supervision and data reporting

- Differential diagnostic procedures within health facilities may exist
- Internet connectivity and/or band-width may limit the transfer of data:
- Limited electricity, stock-outs of drugs and supplies, and variation in diagnostic capacity within selected sites may hinder the collection of high quality data
- Staff turnover at the local level could influence the level of consistent supervision and reporting
- A potential for a lack of motivation within participating health centers

**For Further Information, please contact either
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