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| **Section 1: Introduction**  Strengthening surveillance activities towards accurate and comprehensive data and reporting is central in achieving malaria elimination. Apart from enhancing monitoring and planning activities, improving the quality of malaria surveillance immensely helps in prioritisation of resources. The 2016 – 2030 WHO strategy recommends surveillance to be adopted in the health system as a core intervention. Programmes need to focus resources in training their surveillance teams to be able to keep up with current requirements and the use of new technologies such as tablets and GPS machines. Coupled with the knowledge of the work flow of data through different health information systems such as DHIS2 (District Health Information Systems II) surveillance personnel with supervisory roles are gate-keepers and provide a major link between field data collection and programme management.  This training is therefore aiming at empowering surveillance case investigators in good and well-informed practice to perform case investigation using GPS devices.  This training should be carried out in three parts. A theoretical part should be completed in class first, with the aim of achieving the learning goals below and the second part should be a supervised field practical. The third part is for visualisation of the coordinates collected during the field practical, discussion and feedback sharing. This last part should also address the transcription and copying errors. |
| **Tasks for the trainers/supervisors**  This training manual assumes the environment health officers and information officers to be fluent with case investigation, data flow and reporting, therefore be able to train the case investigators regularly to ensure high quality of data. |
| **Learning goals**   1. Each case investigator to understand the basic concepts in describing location and direction. 2. Each case investigator to understand the minimum requirements of case/household identifiers to be able to find a case’s household. 3. Each case investigator to be fully knowledgeable in understanding how to calibrate a GPS device, obtain coordinates and troubleshoot frequent location queries. 4. Each case investigator to be fluent in the information required, and be able to complete location information, in the case investigation form and the rationale of each input. 5. Each case investigator to be able to independently capture and copy down location correctly and understand how coordinates are visualised. |
| **Materials**  Functioning and powered GPS devices and/or tablets, scratch book, pens and papers.  Standard Operating Procedures for GPS and/or tablets.  Flip card or PowerPoint (PPT) presentation (attached) can be used to summarise the important information. |
| **Procedure**  **Part 1 – Basic concepts in telling and capturing location using GPS devices or tablets (15 – 20 mins)**  Identify the level of knowledge:  You can assess the knowledge gap by asking the team to respond to a prepared survey to understand how to customise your training. However, if that is time consuming you can use a consensus approach as below.  Begin by allowing case investigators to explain to you their role and field activities. Ask one or two to fully describe the procedure and ask if there any other alternatives to performing case investigation. Building on their view and addressing the gaps, use the PPT to guide you through the process.  Allow time for a discussion by asking few questions or responding to questions after every 2-3 slides.  Go through the PPT and discuss on the basics of describing location and direction. Use relevant examples to probe participants to describe and give directions of arriving at a place e.g. the training venue, nearby hospital or any famous structure or farm.  The next part will be going through the SOPs, spending between 20 – 30 mins for Garmin eTrex SOP reading, operating the device and discussion. Use the icons listed in each instruction to help guide the participants to arrive at the right setting. In groups of 2 -3 participants, allow 5 – 10 minutes for each group to individually go through the process again and discuss any challenges.  Use similar time for the chosen android application (e.g. *‘GPS Essentials’)* and follow the same procedure as above.  **Part 2A - Writing coordinates (10 mins discussion)**  By using the case investigation fields, discuss with case investigators on how the coordinates, direction and address information should be completed.  **Part 2B - Field data collection (30 mins exercise)**  Ask case investigators to go to the nearby well-known structures and record the addresses and coordinates on a paper.    **Part 3 – Coordinates’ recording and visualisation (30 mins)**  Ask case investigators to swap their copied locations  Create an excel sheet and list the places as below.    Use Google Maps to visualise these coordinates;   * Open Google Maps on your computer * Select ‘your locations’ * Select ‘maps’ * Select ‘create maps’ * Select ‘add layer’ * Select ‘upload file’ (here you will upload your excel sheet) and your coordinates will appear on the Google Maps * Zoom in to show the participants and probe if their locations have been captured correctly |
| **Assessment method**  You can send a post training survey (paper- or online based tool) to assess the previous identified knowledge gap and see if the learning goals have been achieved. You can also ask the participants the degree of satisfaction with the training and obtain their feedback for future use.  Alternatively, you can use the consensus approach for a general feedback to see if they have understood. Project the learning objectives slide and see how much they agree by show of hands to each learning goal. |
| **Other supportive information** |

