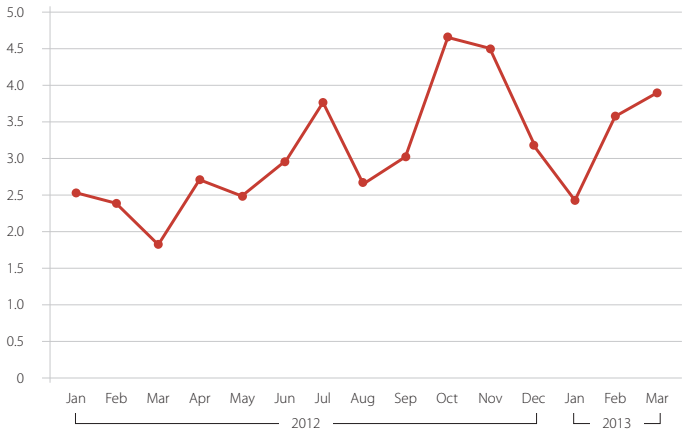
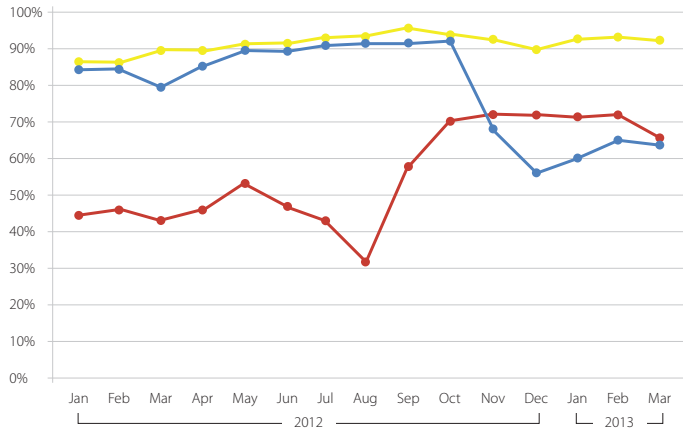
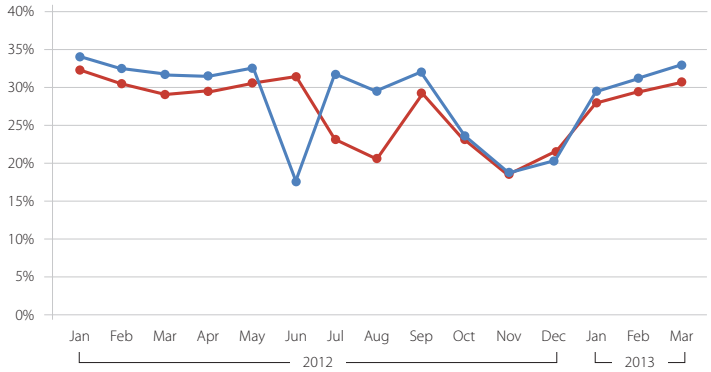
MINISTRY OF HEALTH

MALARIA SURVEILLANCE AND RESPONSE: A COMPREHENSIVE CURRICULUM AND IMPLEMENTATION GUIDE







Trainer's Manual

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List of Contributors

Dr. Ahmeddin H. Omar	Division of Malaria Control
Ms. Beatrice Machini	Division of Malaria Control
Ms. Jacinta O. Omariba	Division of Malaria Control
Ms. Jacinta Opondo	Division of Malaria Control
Mr. James Kiare	Division of Malaria Control
Mr. John O. Nyamuni	Division of Malaria Control
Dr. Kiambo Njagi	Division of Malaria Control
Mr. Maurice K'Omollo	Division of Malaria Control
Dr. Rebecca Kiptui	Division of Malaria Control
Mr. Urbanus Kioko	Division of Malaria Control
Ms. Caroline Maina	Division of Disease Surveillance and Response
Dr. Samuel Muiruri	Division of Vector-Borne and Neglected Tropical Diseases
Mr. Patrick Warutere	Division of Health Information System
Dr. Evan Mathenge	Kenya Medical Research Institute
Prof. Simon Kang'ethe	Kenya Methodist University
Dr. Geoffrey Lairumbi	MEASURE Evaluation
Mr. Peter Nasokho	MEASURE Evaluation
Dr. Ann Buff	CDC/PMI
Mr. Paul Malusi	National Public Health Laboratory Services
Mr. Charles Njuguna	World Health Organization

List of Reviewers

Dr. David Soti	DOMC
Dr. Nabie Bayoh	KEMRI/CDC—Kisumu
Dr. Abdisalan Noor	KEMRI Wellcome Trust—Nairobi
Dr. Charles Mbogo	KEMRI Wellcome Trust—Kilifi
Dr. Abdinasir Amin	MEASURE Evaluation
Dr. Daniel Wacira	USAID/PMI
Dr. Dunstan Mukoko	DVBNTD
Dr. Ayub Manya	HMIS
Dr. Elizabeth Juma	KEMRI
Dr. Akpaka Kalu	WHO
Dr. Gausi Khoti	WHO
Dr. Daniel Langat	DDSR
Steve Yoon	CDC/PMI
Christine Hershy	CDC/PMI
Dr. Villegas Leopoldo	ICF International
Dr. Yazoume Ye	ICF International
Raphael Pudo	Abt Associates

List of Editors

MEASURE Evaluation
Division of Malaria Control

Foreword

Strengthening of malaria surveillance, monitoring and evaluation systems with the aim of routinely monitoring and evaluating key malaria indicators at all levels of health service delivery is a key objective of the National Malaria Strategy (NMS) 2009–2017, which aims to achieve our ultimate vision of a malaria-free Kenya.

Data from a variety of surveys and operational research show declines in malaria parasite prevalence, malaria trends, vector densities and other entomological indices over the last ten years and the Division of Malaria Control (DOMC) plans to ensure that further reductions are achieved by strengthening surveillance and response. It is anticipated that the generation of focused, timely, scientifically sound information through robust surveillance systems will provide evidence to counties/sub counties and the DOMC to make decisions on interventions for sustaining control of and eventually eliminating malaria.

This curriculum on *Malaria Surveillance and Response—A Comprehensive Curriculum and Implementation Guide* will facilitate attainment of a key malaria control objective of reducing malaria incidence and mortality by equipping health care workers with the knowledge, skills and attitude to effectively undertake and implement a robust malaria surveillance system. This curriculum will be used in the roll out of national malaria surveillance systems to the whole country.

This curriculum will be reviewed periodically in response to expressed need to improve the surveillance systems in the country. I am confident that this curriculum and implementation guide will be found extremely useful.

Dr. S. K. Sharif MBS MBChB, MMED, DLSHTM, MSc
Director Public Health

Acknowledgments

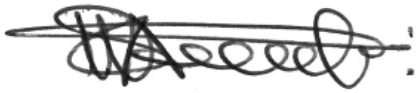
The development of the *Malaria Surveillance and Response—A Comprehensive Curriculum and Implementation Guide* involved an elaborate consultative process involving several key stakeholders in malaria control. The Department of Disease Prevention and Control would like to thank the Director Public Health Dr. S. K. Sharif for providing policy guidance and technical directions to the development of this curriculum.

The commitment, technical support and overall stewardship from the members of the Malaria Inter-agency Coordinating Committee and the United States President's Malaria Initiative (USAID/CDC) through MEASURE Evaluation is highly appreciated. I acknowledge the contribution and technical support from the World Health Organization (WHO–Kenya country office), Division of Disease Surveillance and Response (DDSR), Division of Health Information System (DHIS), the National Public Health Laboratory Services (NPHLS) and Division of Vector Borne & Neglected Tropical Diseases (DVBNTD) to the finalization of this malaria surveillance curriculum.

My sincere gratitude to the United States President's Malaria Initiative (USAID/CDC) through MEASURE Evaluation for financing the development of the malaria surveillance curriculum.

I also like to acknowledge and appreciate both the internal and external reviewers for their valuable contributions and critical review without which this curriculum would not have been realized.

I would like to thank the staff of the Division of Malaria Control for coordinating the development of the malaria surveillance curriculum.



Dr. Willis S. Akhwale MBS
Head of Department of Disease Prevention and Control

Acronyms

ACSM	Advocacy, Communication and Social Mobilization
ACT	Artemisinin-based Combination Therapy
AL	Artemether-Lumefantrine
ANC	Ante-Natal Clinic
CDC	Centers for Disease Control and Prevention
CFR	Case Fatality Rate
CHW	Community Health Worker
CM	Case Management
DDSC	District Disease Surveillance Coordinator
DDSR	Division of Disease Surveillance and Response
DHIS	Division of Health Information Systems
DMCC	District Malaria Control Coordinator
DOMC	Division of Malaria Control
DOMT	Disease Outbreak Management Teams
DVBNTD	Division of Vector-Borne and Neglected Tropical Diseases
DPH	Dihydro-artemesinin Piperaquine
eIDSR	Electronic Integrated Disease Surveillance and Response
ELISA	Enzyme Linked Immunosorbent Assay
EPR	Epidemic Preparedness and Response
EWS	Early Warning Systems
GIS	Geographic Information System
GoK	Government of Kenya
HMIS	Health Management and Information Systems
IDSR	Integrated Disease Surveillance and Response
IEC	Information, Education and Communication
IP	In-Patient
IPTp	Intermittent Preventive Treatment in Pregnancy
IRS	Indoor Residual Spraying
ITN	Insecticide Treated Nets
IV	Intravenous
LLIN	Long Lasting Insecticidal Nets
M&E	Monitoring and Evaluation
MIS	Malaria Indicator Survey
MoH	Ministry of Health
NMS	National Malaria Strategy
OJT	On-Job Training
OP	Out-Patient
OPD	Out-Patient Department
PC	Personal Computer
PCR	Polymerase Chain Reaction
PSI	Population Services International
PSCM	Procurement and Supply Chain Management
QA	Quality Assurance
QBC	Qualitative Buffy Coat
QC	Quality Control

Acronyms

RBC	Red Blood Cell
RDT	Rapid Diagnostic Test
SD	Standard Deviation
SOP	Standard Operation Procedure
SP	Sulfadoxine Pyrimethamine
TPR	Test Positivity Rate
WBC	White Blood Cells
WHO	World Health Organization

Part A: How to Use This Curriculum and Implementation Guide

This Curriculum is designed in a simple, easy to use format. It is divided into three parts, A, B, C.

PART A Presents the foundation of The Curriculum and Implementation Guide showing detailed front matter, the module titles, objectives, and content.

PART B Presents the sample pretest and post test questions for the course.

PART C Presents power-points used for all modules of the course.

The facilitators will need to use teaching methods that are appropriate for adult learners, including brainstorming, group discussions, overview lectures and participant presentations.

Malaria Surveillance Course Objectives

The main broad objectives or outcomes of the Malaria Surveillance and Response course are that, at the end of the training, the health care workers will be able to effectively:

1. Explain and articulate the importance of DISEASE SURVEILLANCE
2. Participate in MALARIA IDENTIFICATION, CONFIRMATION AND REPORTING
3. Carry out tasks specified under MALARIA SURVEILLANCE DATA MANAGEMENT
4. Generate and explain CORE MALARIA SURVEILLANCE GRAPHS
5. Illustrate the significance of MALARIA ENTOMOLOGICAL SURVEILLANCE
6. Undertake MALARIA EPIDEMIC PREPAREDNESS AND RESPONSE activities.
7. Participate in and undertake activities pertaining to malaria surveillance SUPERVISION AND FEEDBACK.

Content

1. Introduction
2. Purpose of Course
3. Target Group
4. Course Duration
5. Certification
6. Course Organization

Module 1 **Introduction and Overview of Disease Surveillance**
- Unit 1: Introduction and Overview to Disease Surveillance
- Unit 2: Basic malaria epidemiology
- Unit 3: Overview of the National Malaria strategy
- Unit 4: Malaria control interventions

Module 2 **Malaria Identification, Confirmation, and Reporting**
- Unit 1: Identification of malaria cases
- Unit 2: Case confirmation
- Unit 3: Reporting

Module 3 **Malaria Surveillance Data Management**
- Unit 1: Data collection, processing and flow
- Unit 2: Data quality
- Unit 3: Data analysis, presentation and interpretation
- Unit 4: Data demand and use for policy and program management

Module 4 **Core Malaria Surveillance Graphs**
- Unit 1: Malaria surveillance indicators, targets and data sources
- Unit 2: Introduction to WHO core malaria surveillance graphs
- Unit 3: Malaria surveillance graphs and interpretations
- Unit 4: Malaria surveillance summary tool

Module 5 **Malaria Entomological Surveillance**
- Unit 1: Introduction to malaria entomology
- Unit 2: Surveillance of malaria vectors
- Unit 3: Mapping of malaria vectors
- Unit 4: Insecticide susceptibility and cone bioassay tests

Module 6 **Malaria Epidemic Preparedness and Response**
- Unit 1: Introduction to malaria epidemics
- Unit 2: Malaria epidemics thresholds setting in Kenya
- Unit 3: Methods of malaria epidemic prevention
- Unit 4: EPR Planning, and response to malaria epidemics
- Unit 5: Post epidemic assessment

Module 7 Supervision and Feedback

Unit 1: Introduction to malaria supervision
Unit 2: Planning for malaria supervision
Unit 3: Conducting the malaria support supervision
Unit 4: Report writing and feedback

7. Training and Facilitation
8. Performance Assessment
9. Curriculum Implementation
10. Curriculum Review and Change
11. References and Recommended Readings

1. Introduction

Division of Malaria Control in Kenya has been in the process of operationalizing the WHO Manual for Surveillance in endemic settings. The Division of Malaria Control has so far realized the adoption of common indicators and dashboards for malaria program monitoring. With the aim of determining whether the data required for malaria surveillance indicators exists at the national, sub-national (district and health facility) level a series of international and national consultative workshops were held, a gap analysis of the existing systems carried out and a pilot of malaria surveillance data collection tool conducted in selected districts.

In this regard, the DOMC has developed the curriculum to train health workers on how to carry out an effective malaria surveillance at all service levels in the awareness that surveillance systems consists of tools procedures, people and structures which are required to generate information for planning, monitoring and evaluating malaria programs.

2. Purpose of the Course

The purpose of this course is to equip health care workers across the health care delivery system with the necessary knowledge, skills and attitudes that will enable them to effectively carry out malaria surveillance activities.

3. Target Group

The course is designed for all health care workers at all service levels who in the course of their duty participate in carrying out the malaria surveillance activities. The target group includes, but not limited to the following; disease surveillance teams, malaria control coordinators, medical practitioners, clinical officers, nurses, laboratory technologists, public health officers, health records information officers and pharmaceutical technologists.

4. Course Duration

The course is designed in a modular format which allows for very flexible implementation. It can be implemented in a period of 5 days as an intensive course.

However for busy working health professionals several modules can be covered at a time with subsequent coverage of the remaining modules as planned by organizers.

5. Certification

Upon successfully attending all the modules of the course as outlined in this curriculum, participants will be awarded a certificate.

6. Course Organization

Course organization is the comprehensive description of all the modules of the course, and is as indicated below (See EXAMPLE MODULE 1)

Module 1 **Introduction and Overview of Disease Surveillance**
- Unit 1: Introduction and Overview to Disease Surveillance
- Unit 2: Basic malaria epidemiology
- Unit 3: Overview of the National Malaria strategy
- Unit 4: Malaria control interventions

Module 2 **Malaria Identification, Confirmation, and Reporting**
- Unit 1: Identification of malaria cases
- Unit 2: Case confirmation
- Unit 3: Reporting

Module 3 **Malaria Surveillance Data Management**
- Unit 1: Data collection, processing and flow
- Unit 2: Data quality
- Unit 3: Data analysis, presentation and interpretation
- Unit 4: Data demand and use for policy and program management

Module 4 **Core Malaria Surveillance Graphs**
- Unit 1: Malaria surveillance indicators, targets and data sources
- Unit 2: Introduction to WHO core malaria surveillance graphs
- Unit 3: Malaria surveillance graphs and interpretations
- Unit 4: Malaria surveillance summary tool

Module 5 **Malaria Entomological Surveillance**
- Unit 1: Introduction to malaria entomology
- Unit 2: Surveillance of malaria vectors
- Unit 3: Mapping of malaria vectors
- Unit 4: Insecticide susceptibility and cone bioassay tests

Module 6 **Malaria Epidemic Preparedness and Response**
- Unit 1: Introduction to malaria epidemics
- Unit 2: Malaria epidemics thresholds setting in Kenya
- Unit 3: Methods of malaria epidemic prevention
- Unit 4: EPR Planning, and response to malaria epidemics
- Unit 5: Post epidemic assessment

Module 7 **Supervision and Feedback**
- Unit 1: Introduction to malaria supervision
- Unit 2: Planning for malaria supervision
- Unit 3: Conducting the malaria support supervision
- Unit 4: Report writing and feedback

7. Training and Facilitation

Trainers and facilitators for the course will be drawn from among various experts in the areas of malaria case management, laboratory, entomology, epidemiology and monitoring and evaluation.

8. Performance Assessment

The learners will be assessed through pre-tests and post-tests. Continuous assessments will also be used through question and answer sessions, practicum and attendance for all the modules will be mandatory. Assignments and group activities will also be assessed and feedback given.

9. Implementation

This is a 5 day course for health care workers. Ideally, the course ought to begin at 8.00 am on a Monday and stretch through to 5.00 pm every day. This implies that participants travelling from far–out districts will have to arrive at the workshop venue by Sunday preceding the week of training to be in time for the starting of the course on Monday morning.

Various teaching/learning methods, appropriate for adult learners will be applied including, overview lectures, brainstorming, demonstrations, small group discussions, case studies, role plays, assignments, practicum, and attendance at all sessions. This course will emphasize innovative methods, appropriate for adult learners.

10. Curriculum Review and Change

Each course will be evaluated by the participants and the facilitators, and the observations recorded. A workshop to review the curriculum will be held after the first five trainings are implemented to incorporate changes and recommendations made, and there after every 2 years.

11. Reference and Recommended Readings

These are appended at the back of each module.

Module 1: Introduction and Overview of Disease Surveillance

OBJECTIVES

By the end of this module participants will be able to:

1. Describe basic disease surveillance concepts
2. Explain basic concepts of malaria epidemiology
3. Explain the objectives and pillars of the National Malaria Strategy (NMS) (2009–2017)
4. Describe main malaria control interventions

CONTENT

- Definition of surveillance, methods/types of surveillance, functions and systems of surveillance (IDSR and HMIS)
- Describe malaria, parasite and vector, prevalence and endemicity in Kenya
- NMS goal, vision, mission, objectives and pillars
- Case management including malaria in pregnancy, vector control, epidemic preparedness and response, surveillance monitoring and evaluation , advocacy communication and social mobilization

LESSON PLAN GUIDE: MODULE 1 (2 ½ hours)

Unit	Content	Activity	Time
Unit 1	Definition of surveillance, methods/types of surveillance, functions and systems of surveillance (IDSR and HMIS)	Lecture and discussion	45 min
Unit 2	Describe malaria, parasite and vector, prevalence and endemicity in Kenya	Lecture and discussion	30 min
Unit 3	NMS goal, vision, mission, objectives and pillars	Lecture and discussion	30 min
Unit 4	Case management including malaria in pregnancy, vector control, epidemic preparedness and response, surveillance monitoring and evaluation , advocacy communication and social mobilization	Lecture and discussion	45 min

REFERENCES AND RECCOMMENDED READINGS

1. Ministry of Public Health & Sanitation, Kenya. *Integrated Disease Surveillance and Response in Kenya*. Technical guidelines 2011.
2. WHO 2012. *Disease surveillance for malaria control, operational manual.*
3. WHO 2012. *World Malaria Report*
4. Division of Malaria Control 2009. *National Malaria Strategy 2009–2017.* Ministry of Public Health & Sanitation, Kenya.
5. Division of Malaria Control 2010. *National Malaria Policy*. Ministry of Public Health & Sanitation, Kenya.
6. Division of Malaria Control 2010. *National Malaria Indicator Survey 2010*. Ministry of Public Health & Sanitation, Kenya.
7. Ministry of Public Health & Sanitation, Kenya 2011. *Integrated Vector Management policy guideline*.
8. Noor et al. *The risks of malaria infection in Kenya , BMC Infectious disease 2009*

Module 2: Malaria Identification, Confirmation, and Reporting

OBJECTIVES

By the end of this session, participants should be able to:

1. Identify/detect cases of malaria using the standard case definition
2. Describe malaria parasitological diagnostic methods
3. Demonstrate malaria recording and reporting format using appropriate tools

CONTENT

- Clinical presentation of malaria, standard case definition, differential diagnosis
- Test procedures of performing malaria microscopy and rapid diagnostic testing
- Case recording, reporting tools, reporting requirements,

LESSON PLAN GUIDE: MODULE 2 (2 hrs 45 mins)

Unit	Content	Activity	Time
Unit 1	Clinical presentation of malaria, standard case definition, differential diagnosis	Lecture	30 min
Unit 2	Test procedures of performing malaria microscopy and rapid diagnostic testing	Lecture and demonstration	1hr 30 min
Unit 3	Case recording, reporting tools, reporting requirements	Demonstration and group work	45 min

REFERENCES AND RECOMMENDED READINGS

1. Ministry of Public Health & Sanitation, Kenya. *Integrated Disease Surveillance and Response in Kenya*. Technical guidelines 2011.
2. Ministry of Public Health & Sanitation, Kenya. *Quality manual for laboratory diagnosis in Kenya 2013*.
3. Division of Malaria Control 2010. *National Malaria Policy.* Ministry of Public Health & Sanitation, Kenya.
4. Ministry of Public Health & Sanitation, Kenya. *Health information systems manual 2003.*
5. WHO 2012. *Disease surveillance for malaria control, operational manual*.
6. WHO 2011. *Universal access to malaria diagnostic testing, Operational Manua*l

Module 3: Malaria Surveillance Data Management

OBJECTIVES

At the end of the module, the participants will be able to:

1. Identify different types of data sources, and describe the process involved in the malaria surveillance data collection, processing and flow using the existing MOH tools
2. Perform data quality checks to review the reports.
3. Perform simple data analysis tasks, present, interpret and share the results
4. Promote data demand and use for policy and program management

CONTENT

- Types of data sources, the process of data collection, processing, storage and data flow.
- Elements of data quality (accuracy, completeness timeliness, precision, validity, reliability and integrity)
- Definition of statistical measures (mean, median, mode, variance, ratio, proportion, percentage, rate).
- Methods of data analysis and presentation.
- The role of data in decision making, challenges faced in data demand and use

LESSON PLAN GUIDE: MODULE 3 (3 hrs)

Unit	Content	Activity	Time
Unit 1	Types of data sources, the process of data collection, processing, storage and data flow	Overview lecture	45 min
Unit 2	Data quality improvement	Overview lecture	30 min
Unit 3	Data analysis and interpretation, routine and non-routine data	Overview lecture and exercise	1hr 15 min
Unit 4	Data demand and use	Overview lecture	30 min

REFERENCES AND RECCOMMENDED READINGS

1. Laurie Liskin. “Dissemination and Data Use Tools”. MEASURE DHS. PowerPoint Presentation. 17 June 2009.
2. MEASURE DHS. “Module 7: Disseminating and Using Data for Change”. PowerPoint Presentation. Kenya, June 2010.
3. Statistical Service Centre. (1998, March). Retrieved February 2013, from www.reading.ac.uk/ssc.
4. MoH 2010. *HIS training manual for health workers.*
5. MoH 2010. *DHIS training manual.*

Module 4: Core Malaria Surveillance Graphs

OBJECTIVES

By the end of this module, participants will be able to:

1. Define the malaria surveillance indicators, data sources and targets
2. Identify the Core Malaria Surveillance Graphs adapted from WHO
3. Explain malaria surveillance graphs/dashboards
4. Demonstrate how the malaria core surveillance graphs are generated and update the summary tools

CONTENT

- Malaria surveillance indicator data sources and targets
- Introduction to WHO core malaria surveillance graphs
- Malaria surveillance graphs and interpretation
- Use of malaria surveillance summary tool in excel

LESSON PLAN GUIDE: MODULE 4 (3hrs)

Unit	Content	Activity	Time
Unit 1	Malaria surveillance indicators and targets	Overview lecture	30 min
Unit 2	Introduction to WHO core malaria surveillance graphs	Overview lecture	30 min
Unit 3	Malaria surveillance graphs and interpretation	Overview lecture	60 min
Unit 4	Malaria surveillance summary tool	Overview lecture, demonstration, and exercise	60 min

REFERENCES AND RECCOMMENDED READINGS

1. Division of Malaria Control. (2009b) *National Malaria Strategy 2009–2017*. Ministry of Public Health & Sanitation, Republic of Kenya, November.
2. Division of Malaria Control. (2009c). *Kenya Monitoring & Evaluation Plan 2009–2017*. Ministry of Public Health & Sanitation, Nairobi, June.
3. MEASURE and EVALUATION (2012). *Operationalizing WHO Malaria Surveillance Guidelines in Kenya.*
4. World Health Organization. (2009). *Programme management: Guidelines for countries with moderate to high transmission of malaria*.
5. WHO 2012. *Disease Surveillance for Malaria control: An Operation manual.*

Module 5: Malaria Entomological Surveillance

OBJECTIVES

At the end of the module, the participants will be able to:

1. Describe the role of mosquitoes in malaria transmission
2. Describe different types of mosquito surveys and their roles in malaria vector surveillance
3. To stratify the distribution, density, behavior of vectors in relation to malaria transmission and control options
4. Describe how to conduct insecticide susceptibility and cone bioassay tests

CONTENT

- Life-cycle of the Anopheles mosquito; main bio-ecological traits of medical importance; vector incrimination and differentiation between other non-vector mosquitoes; interactions between mosquito, parasite and man
- Importance of mosquito sampling; types of mosquito surveys; methods of mosquito sampling;
- Importance of vector maps, key vector parameters in maps, generation of entomological profile maps and their use in selection of vector control options.
- Reasons for determining susceptibility of vectors and residual efficacy of insecticides on sprayed surfaces and insecticide treated materials; WHO tests: susceptibility of adult and larval mosquitoes to insecticides; cone bioassay tests; data interpretation and use

LESSON PLAN GUIDE: MODULE 5 (6hrs 30 min)

Unit	Content	Activity	Time
Unit 1	The role of mosquitoes in malaria transmission	Overview Lecture	1 hr 30 min
Unit 2	Different types of mosquito surveys and their roles in malaria vector surveillance	Lecture, discussions, and demonstrations	1 hr 30 min
Unit 3	Stratifying the distribution, density, behavior of vectors in relation to malaria transmission and control options	Lecture, discussions, and demonstrations	1 hr 30 min
Unit 4	Bioassays for determining the insecticide susceptibility of mosquito populations and residual efficacy of insecticides on sprayed surfaces and insecticide treated materials	Discussions, demonstrations	2hr

REFERENCES AND RECCOMMENDED READINGS

1. WHO (2003). *Malaria Entomology and Vector Control: Learners and Facilitators Guide.*
2. RTI International (2012). *Training Manual on Malaria Entomology.*
3. Bruce Chawatt (2000). *Essential Malariology.*
4. Mbogo, C; et al (2012). *Entomological Manual for use by the Technical Teams within the Context of Integrated Disease Surveillance and Integrated Vector Management at the District Level*. Kenya Medical Research Institute, Centre for Geographic Medicine Research Coast, P.O. Box 428, 80108 Kilifi, Kenya.
5. WHO (2005). *Guidelines on Testing Residual Efficacy of Insecticide on Sprayed Surfaces and Insecticide Treated Materials.*
6. WHO 2012. *Global Plan for Insecticide Resistance Management in Malaria Vectors.*

Module 6: Malaria Epidemic Preparedness and Response

OBJECTIVES

By the end of this session, participants should be able to:

1. Describe malaria epidemics
2. Demonstrate malaria threshold setting
3. Describe methods of malaria epidemic prevention
4. Develop malaria epidemic preparedness and response plans
5. Describe post malaria epidemic evaluation

CONTENT

- Definition of epidemics, types of epidemics, contributing/predisposing/triggering factors and consequences of epidemics
- Definition of threshold, scientific methods of setting malaria threshold (constant count, third quartile, Cullen method and cumulative sum methods), thresholds proposed for Kenya
- Strategies of malaria epidemics prevention (surveillance—early detection system, vector control—LLINs, IPTp, ACSM), epidemic cycle
- County/district/facility EPR plans (personnel, referral services, diagnostics, commodity supplies, resource mobilization, ACSM, surveillance), rapid assessments
- Assessments (what went wrong, lessons learnt and what can be done better) and preparedness

LESSON PLAN GUIDE: MODULE 6 (5 hrs)

Unit	Content	Activity	Time
Unit 1	Definition of epidemics, types of epidemics, contributing/ predisposing/triggering factors and consequences of epidemics	Lecture and discussion	40 min
Unit 2	Definition of threshold, scientific methods of setting malaria threshold (constant count, third quartile, Cullen method and cumulative sum methods), thresholds proposed for Kenya	Lecture and group work	2 hr
Unit 3	Strategies of malaria epidemics prevention (surveillance—early detection system, vector control—LLINs, IPTp, ACSM), epidemic cycle	Lecture and discussion	30 min
Unit 4	County/district/facility EPR plans (personnel, referral services, diagnostics, commodity supplies, resource mobilization, ACSM, surveillance), rapid assessments	Lecture and group work	1 hr 30 min
Unit 5	Assessments (what went wrong, lessons learned and what can be done better) and preparedness	Lecture and group work	20 min

REFERENCES AND RECCOMMENDED READINGS

1. Division of Malaria Control 2011. *Epidemic preparedness and response guidelines*. Ministry of Public Health & Sanitation, Kenya.
2. Ministry of Public Health & Sanitation, Kenya. *Integrated Disease Surveillance and Response in Kenya*. Technical guidelines 2011.
3. Division of Malaria Control 2009. *National Malaria Strategy 2009–2017*. Ministry of Public Health & Sanitation, Kenya.
4. WHO 2003. *Prevention and control of malaria epidemics*.
5. WHO 2006. *Systems for early detection of malaria epidemics in Africa*.
6. WHO 2012. *Disease surveillance for malaria control, operational manual.*

Module 7: Supervision and Feedback

OBJECTIVES

At the end of the module the health care workers will be able to:

1. Describe malaria support supervision
2. Develop a plan for Malaria supervision and use the planning tools
3. Perform malaria supervision using the supervisory checklists
4. Write a supervision report and give feedback using the reporting and feedback template

CONTENT

- Define supervision, characteristics of support supervisors, roles of a supervisor, roles of a supervisee, frequency of supervisory visits, supervision approaches.
- Developing a contact list, advance scheduling of the visit, supervisory team, role of the malaria coordinators and disease surveillance coordinators(including introduction to planning tools
- Conducting supervision (including introduction to supervision checklists), Tracking supervision visits
- Analyzing the supervision visits results, report writing, reporting templates, submission of reports, feedback, incentives and other follow up actions (including introduction to reporting and feedback templates)

LESSON PLAN GUIDE MODULE 7 (4 hrs)

Unit	Content	Activity	Time
Unit 1	Introduction to malaria support supervision	Overview lecture	45 min
Unit 2	Planning for malaria supervision	Lecture, practicals on filling the planning tools based on a case study(small group discussion)	45 min
Unit 3	Conducting the malaria support supervision	Lecture, role play ,practicals on filling the supervisory checklist based on a case study(small group discussion)	1hr
Unit 4	Report writing and feedback	Lecture, role play, practical on calculating scores and report writing based on a case study(small group discussion)	1hr 30 min

REFERENCES AND RECCOMMENDED READINGS

1. MOPHS (2012) Manual for malaria supervision Nairobi Kenya
2. MOPHS (2012) Integrated disease surveillance technical guidelines

Malaria Surveillance System Training Course Schedule

Venue:

Dates:

Time	Monday	Tuesday	Wednesday	Thursday	Friday
8:30–9:30 am	Climate Setting Introductions Group Norms Expectations	Recap of Day 1 (15 minutes) Module 2: Malaria Identification, Confirmation and Reporting	Recap of Day 2 (15 minutes) Module 4: Malaria Surveillance Graphs	Recap of Day 3 (15 minutes) Module 5: Malaria Entomological Surveillance	Recap of Day 4 (15 minutes) Module 6: Epidemic Preparedness and Response (EPR)
9:30–10:30 am	Malaria Surveillance course objectives by: Opening Remarks Pre-test	Module 2: Malaria Identification, Confirmation and Reporting	Module 4: Malaria Surveillance Graphs	Module 5: Malaria Entomological Surveillance	Module 7: Supervision and Feedback
10:30–11:00 am	Module 1: Introduction and Overview of Disease Surveillance	Module 3: Malaria Surveillance Data Management	Module 5: Malaria Entomological Surveillance	Module 5: Malaria Entomological Surveillance	Module 7: Supervision and Feedback
11:00–11:30 am	TEA & COFFEE BREAK				
11:30–12:00 pm	Module 1: Introduction and Overview of Disease Surveillance	Module 3: Malaria Surveillance Data Management	Module 5: Malaria Entomological Surveillance	Module 6: Epidemic Preparedness and Response (EPR)	Module 7: Supervision and Feedback
12:00–1:00 pm	Module 1: Introduction and Overview of Disease Surveillance	Module 3: Malaria Surveillance Data Management	Module 5: Malaria Entomological Surveillance	Module 6: Epidemic Preparedness and Response (EPR)	Module 7: Supervision and Feedback
1:00–2:00 pm	LUNCH BREAK				
2:00–3:00 pm	Module 1: Introduction and Overview of Disease Surveillance	Module 3: Malaria Surveillance Data Management	Module 5: Malaria Entomological Surveillance	Module 6: Epidemic Preparedness and Response (EPR)	Module 7: Supervision and Feedback
3:00–4:00 pm	Module 2: Malaria Identification, Confirmation and Reporting	Module 4: Malaria Surveillance Graphs	Module 5: Malaria Entomological Surveillance	Module 6: Epidemic Preparedness and Response (EPR)	Post test Course Evaluation Certification Vote of Thanks Final Remarks & Closure
4:00–4:30 pm	TEA & COFFEE BREAK				
4:30–5:00 pm	Module 2: Malaria Identification, Confirmation and Reporting	Module 4: Malaria Surveillance Graphs	Module 5: Malaria Entomological Surveillance	Module 6: Epidemic Preparedness and Response (EPR)	Departure

Part B: Sample Pretest/Post-Test Questions

Module 1: Introduction and Overview of Disease Surveillance

Instructions—Answer True or False in the boxes provided indicating T if true and F if false

1. Disease surveillance is useful only during outbreak investigation.	
2. Case management, including use of diagnostic tests and artemisinin-based combination therapy (ACTs), is an appropriate malaria control strategy for all epidemiological zones in Kenya.	

Module 1: Answers

1. False
2. True

Module 2: Malaria Identification, Confirmation, and Reporting

Instructions—Answer True or False in the boxes provided indicating T if true and F if False

1. Malaria cases and deaths should be reported both weekly and quarterly.	
2. Malaria case confirmation is done using clinical diagnosis.	

Module 2: Answers

1. False
2. False

Module 3: Malaria Surveillance Data Management

Instructions—Answer True or False in the boxes provided indicating T if True and F if False.

1. Data presentation is the process of turning raw data into useful information.	
2. Lack of quality data is one of the barriers to data demand and use.	

Module 3: Answers

1. False
2. True

Module 4: Core Malaria Surveillance Graphs

Instructions—Answer True or False in the boxes provided indicating T if True and F if False.

1. The core surveillance graphs are grouped into two categories.	
2. Completeness of monthly reports is not one of the malaria surveillance indicators.	

Module 4: Answers

1. True
2. False

Module 5: Malaria Entomological Surveillance

Instructions—Answer True or False in the boxes provided indicating T if True and F if False.

1. Anopheles mosquitoes are the most efficient vectors of malaria transmission even though all mosquitoes are potential vectors.	
2. The WHO cone bioassay tests are used to determine mosquito susceptibility to insecticides.	

Module 5: Answers

1. False
2. False

Module 6: Malaria Epidemic preparedness and Response

Instructions—Answer True or False in the boxes provided indicating T if true and F if false

1. Indoor residual spraying is one of the Malaria epidemic preventive intervention(s) in Kenya.	
2. Increase in reported malaria cases is not necessarily an indicator of an impending epidemic.	

Module 6: Answers

1. False
2. True

Module 7: Support Supervision and Feedback

Instructions—Answer True or False in the boxes provided indicating T if true and F if false

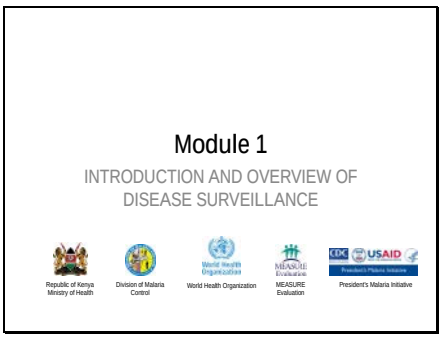
1. A good supervisor ensures that those who have not performed well are reprimanded.	
2. In order to get a true picture of what is happening on the ground health workers should not be informed of an intended supervisory visits.	

Module 7 ANSWERS

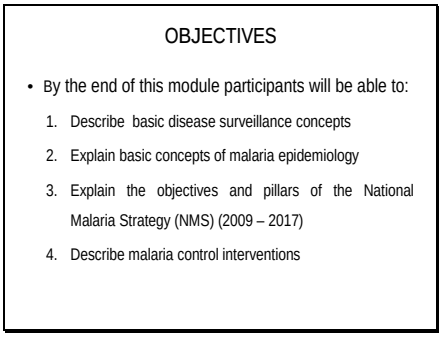
1. False
2. False

Part C: Power Point Presentations Slides

Slide 1

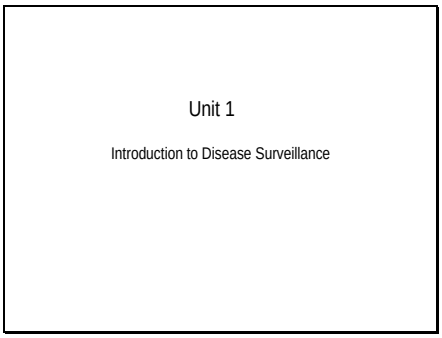


Slide 2

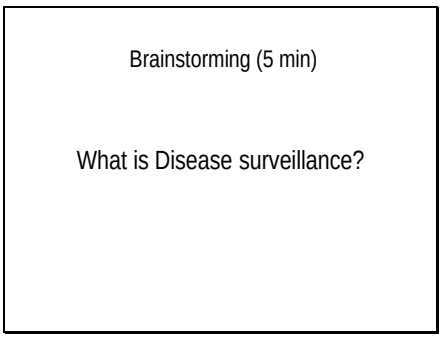


Main message
Outline all the objectives with emphasis on objective 3 as it guides all the malaria control strategies in Kenya.

Slide 3



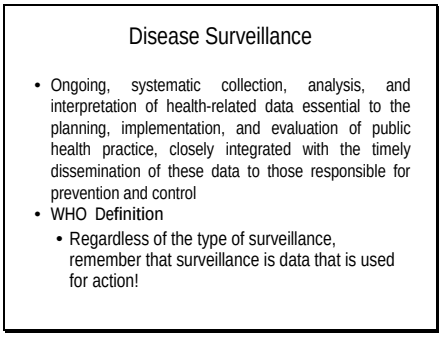
Slide 4



Main message
Allow the participants to define surveillance in their own words

Write the key words from participant's definitions on a flip chart/white board

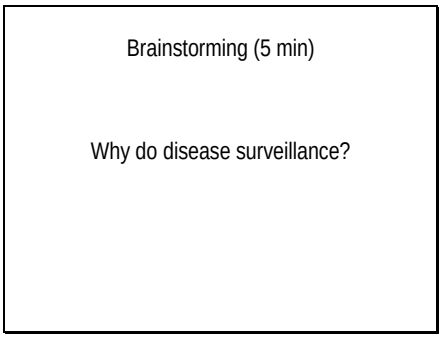
Slide 5



Main message
Ask one of the participants to read out the definition (WHO definition)

Emphasis on the key words of surveillance: Ongoing, systemic collection, analysis, interpretation of data for action

Slide 6



Main message
Let the participants brainstorm on functions and their experiences in disease surveillance

Write key words (from their definitions) on a flip chart/white board

Slide 7

Functions of Disease Surveillance

1. Monitor trends, patterns and estimate magnitude of health problem
2. Detect sudden changes in disease occurrence and distribution (Epidemics/outbreaks)
3. Portray the natural history of a disease
4. Monitor changes in infectious agents
5. Detect changes in health practices
6. Evaluate control measures
7. Generate hypotheses, stimulate research
8. Facilitate planning

Main message
Explain each function and enrich by paraphrasing using the suggested keys words

Emphasize on function 1, 2 and 8 to show the continuity and importance of surveillance

Slide 8

Surveillance link to action

- Disease control
  - Interruption of transmission
  - Vaccination / prophylaxis
  - Elimination of cause
- Outbreak investigation
- Development and targeting of programs (education, risk reduction, etc.)
- Development of policies, regulations

Main message
Make the participants understand that a good surveillance system is needed to effectively carry out these actions.

Emphasize on malaria outbreak investigation and control.

Slide 9

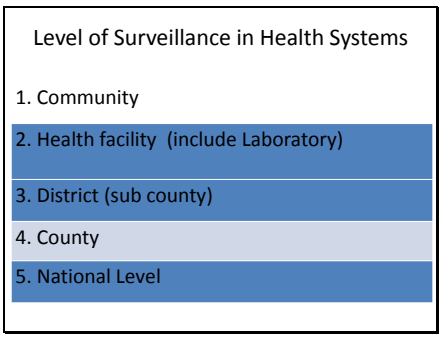
Components of Surveillance System

- Surveillance systems consists of tools, procedures, people and structures required to generate information for planning, monitoring and evaluating malaria programmes.
  - Tools: report forms, tally sheets, registers, patient records
  - Procedures: case definitions, reporting frequency, information flow, data analysis, dissemination
  - People: health workers, community, decision makers
  - Structures: health systems

Main message
The participants should understand the interdependence of different components for an effective surveillance system

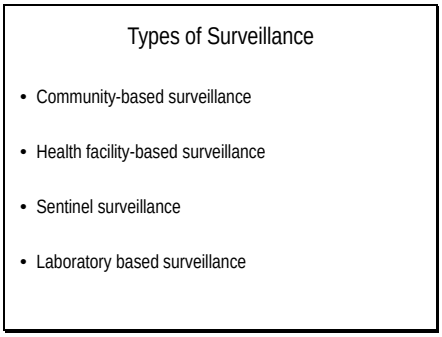
Give examples of how these components interrelate (Person-tool-procedure-structure)

Slide 10



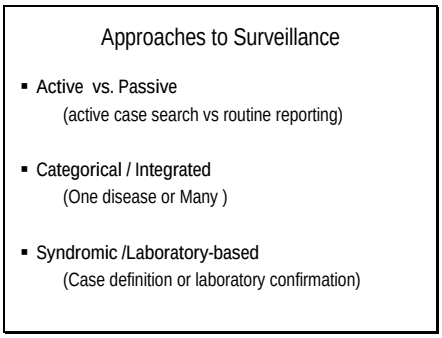
Main message
Ask the participants to explain the role of each level in disease surveillance
Emphasize that all levels have a clear role in a good surveillance system

Slide 11



Main message
Explain the different types of surveillance and give examples
Link the types of surveillance to the role each level plays in disease surveillance
Note: that a sentinel surveillance site is also a health facility and laboratory based surveillance site

Slide 12



Main message
Explain the difference between the approaches and ask participants to give examples

Slide 13

Brainstorming (5 min)

What are the systems & tools used for malaria surveillance in Kenya?

Main message
Ask participants to explain how malaria surveillance is carried out in the country (from their experiences)

Note the key points suggested by participants

Slide 14

Malaria Surveillance in Kenya

1. Health Management and information systems (HMIS)
   - Routine malaria surveillance in all epidemiological zones (monthly facility reporting-DHIS2)
2. Integrated Disease Surveillance and Response (IDSR)
   - Weekly reporting for priority diseases (e-idsr) for early detection
3. Sentinel Surveillance
   - Weekly threshold data from 45 epidemic prone sub-counties (districts)of western Kenya highlands

Main message
Explain the three different reporting systems used in malaria system in Kenya.
Mention the four Epidemiological zones in Kenya

Enrich your explanation using the key words from the participants

Slide 15

Malaria Surveillance in Kenya Cont'd

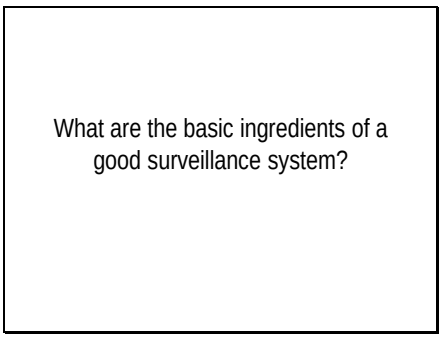
HMIS (monthly)
- OPD clinical & confirmed malaria cases
- Laboratory tested and positive cases
- Inpatient (malaria admissions) & Deaths

IDSR (weekly)
- OPD clinical malaria cases
- Laboratory tested and positive cases
- Malaria related Deaths

Sentinel Surveillance
- Weekly threshold data from 45 epidemic prone districts in western highlands

Main message
Explain the different tools used for reporting in each of the three systems

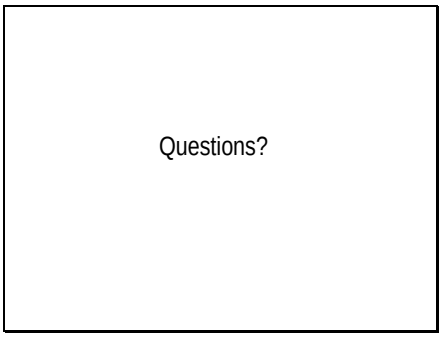
Slide 16



Main Message:
A good surveillance system should have:

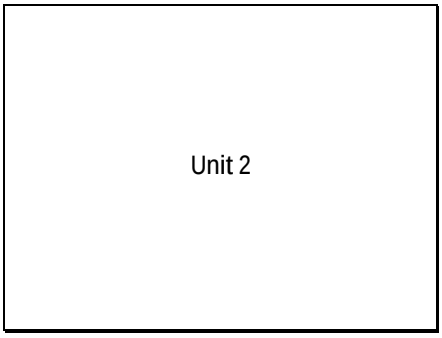
- A good network of motivated people
- Clear case definition and reporting mechanism
- Efficient communication system
- Basic but sound epidemiology
- Laboratory support
- Good feedback and rapid response

Slide 17



Main message
Encourage the participants to ask any questions or clarification regarding the unit.
Engage other participants as you answer questions.
Thank the participants for their active participation and attention.

Slide 18



Slide 19

Basic Malaria Epidemiology

Slide 20

Brainstorm (5 min)

What is Malaria?

Main message
Engage the participants to define malaria, cause, burden in the world and in Kenya and the persons most affected by the disease.

Write down the key answers on a flip chart/white board

Slide 21

Background

- Malaria is an acute febrile infection caused by protozoan parasites of the genus *Plasmodium*.
  - *Plasmodium falciparum, P. vivax, P. ovale, P. malariae and (P. knowlesi).*
- Vector: Female Anopheles
- Susceptible persons: Children < 5 years, Pregnant women & non-immune individuals

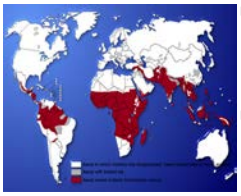
Agent Vector Host

Main message
Define malaria and remind the participants that P. falciparum is the main species that is responsible for more than 90% of severe malaria. *P knowlesi* was previously found in monkeys but now has been confirmed to also infect humans prevalent in South East Asia.

Emphasize the main person at risks as being young children and pregnant women.

Slide 22

Disease Burden



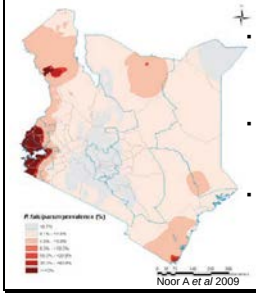
World Malaria Report 2012, WHO

- An estimated 1.1 billion people are at high risk for malaria in 2011 (>1 case per 1000 population) in the world.
- There were also an estimated malaria cases and deaths of 219 million and 660,000, respectively, worldwide in 2010 (WHO, 2012).

Main message
Emphasize the burden of malaria in the world.
Explain that ~80 to 90% of malaria related cases and deaths are from Sub-Saharan Africa.

Slide 23

Malaria in Kenya



Noor A *et al* 2009

- All the four plasmodium species cause malaria infection in Kenya, However, *Plasmodium falciparum* is the predominant species.
- The major malaria vector in Kenya are members of the *anopheles gambiae* complex and *anopheles funestus.*
- In Kenya, malaria accounts for 30% of OPD and 19% of Inpatients cases and 3-5% of inpatient deaths.

KNMS 2009 -2017

Main message
Emphasize to the participants the great economical loss, suffering and deaths caused by the disease.

Explain the distribution of malaria prevalence in the country by using the map

Slide 24

Malaria Endemicity in Kenya

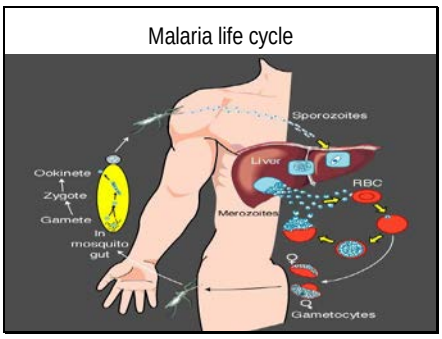
Kenya has four malaria epidemiological zones:

1. **Endemic:** High malaria risk areas with high perennial malaria transmission (stable transmission)
   - Areas around Lake Victoria and in the coastal regions
2. **Seasonal transmission:** Intense malaria transmission during the rainfall seasons.
   - Arid and semi-arid areas
3. **Epidemic prone areas:**
   - Western Kenyan highlands
4. **Low risk areas**
   - Central highlands of Kenya and Nairobi province.

Main message
Outline the four main epidemiological transmission zone.

Emphasize on the risks of outbreaks in the EPR and seasonal transmission zones following the rainy seasons and floods
Mention that different malaria control strategizes are used in different regions.

Slide 25



Main message
Mention the parasite, vector and the host of the disease.

Remind the participants that it's the erythrocytic stage of the life cycle that is symptomatic.
Note that *P. vivax* and *P. ovale* have hypnotic stage in the liver and thus may remain dormant for a long time.

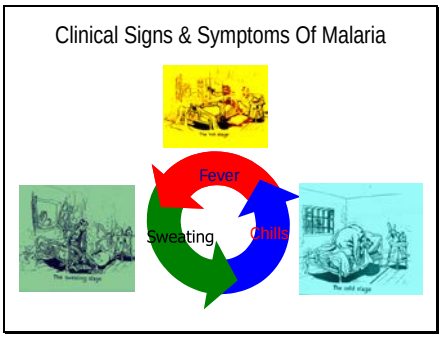
Slide 26

Incubation period

- The time between the infective bite and the appearance of clinical symptoms is approximately
  - 10-14 days for *P. falciparum*,
  - 10-17 days for *P. Vivax & P. Ovale*
  - 18-40 days for *P. malariae*
  - 10-14 days for *P. Knowlesi*
  - Some strains of *P. Vivax & P. Ovale* mostly from temperate areas may have an incubation period of 8-10 months and even longer.

Main message
Explain to the participants the importance of incubation period when taking history from their patients.

Slide 27



Main message
Explain the cyclic nature of malaria symptoms (Fever-chill) and correlate these symptoms to the shizont rupture during the erythrocytic blood stage.

Remind the participants that the cyclic nature of the symptoms get lost as the disease progresses.

Slide 28

WHO recommendation on malaria diagnosis

- **Parasitological confirmation before treatment**

1. Microscopy
2. Rapid diagnostic tests

Main message
Mention the two main parasitological confirmation methods current recommended by WHO and the division of malaria control, Kenya.
Mention the T3 policy (Test, treat and track)

Slide 29

Treatment of Uncomplicated Malaria

- First line treatment
  - Artemether-Lumefantrine (AL)
  - 6 doses given over 3 days
- Second Line Treatment
  - Dihydroartemisinin-Piperaquine (DHP)
- In absence of DHA-PPQ oral quinine should be used

Main message
Mention the 1st line and 2nd line recommended treatment in Kenya.

Slide 30

Questions?

Main message

Encourage the participants to ask any questions or clarification regarding the unit.
Engage other participants as you answer questions.
Thank the participants for their active participation and attention.

Slide 31

UNIT 3

Slide 32

An overview of the National malaria Strategy (NMS) 2009-2017

Slide 33

Introduction

- The first National Malaria Strategy in Kenya was developed and operationalized in 2001.
  - Covered the periods between 2001-2010.
- Kenya first developed and launched a malaria policy in April 2010.
- The current NMS was developed after a malaria program review in 2009
  - Covers the periods from 2009 to 2017

Main message
Emphasize to the participants the importance of having a national malaria strategy

Slide 34

NMS 2009 - 2017

- Vision: Malaria free Kenya
- Mission: To direct and coordinate efforts towards a malaria free Kenya through effective partnerships
- Goal: By 2017, to have reduced morbidity and mortality caused by malaria in the various epidemiological zones by 2/3 of the 2007/2008 levels

Main message
Outline the NMS vision, mission and goal.

Slide 35

Brainstorm (5 min)

What are the Objectives of NMS 2009-2017?

Main message
Encourage participants to list the NMS objectives?
Ask the participants, in their opinion, what is the most ideal approach towards malaria control for Kenya.

Slide 36

Objective 1

- To have at least 80% of people living in malaria risk areas using appropriate malaria preventive interventions by 2013 through:
  1. Universal LLIN coverage for populations at risk
  2. Indoor Residual Spraying in targeted areas
  3. Prevention of malaria in Pregnancy

Main message
Universal access to preventive interventions by people living in high malaria risk areas

Mention the main strategies in place to achieve the universal LLIN coverage of 2 LLINs per household: Mass net distribution, Routine distribution of LLINs and social marketing.
Also emphasize the importance of IPTp in endemic areas

Slide 37

Objective 2

- To have 80% of all self-managed fever cases receive prompt and effective treatment and 100% of all fever cases who present to health facilities receive parasitological diagnosis and effective treatment by 2013 by:
  1. Strengthening capacity for malaria diagnosis & treatment
  2. Increase access to affordable malaria medicines
  3. Strengthening home management of malaria

Main message
Explain the T3 policy (Test, treat and track) with emphasizes on parasitological diagnosis and treatment with ACTs.

Slide 38

Objective 3

- To ensure that all malaria epidemic prone districts have the capacity to detect and the preparedness to respond to malaria epidemics annually by 2010 through:
  1. Capacity strengthening for epidemic preparedness and response
  2. Strengthen disease surveillance at district level
     - ✓ Surveillance sites
     - ✓ Analysis and interpretation of data
     - ✓ Planning for activities

Main message
Explain the importance of EPR capacity building and active surveillance in epidemic prone districts for epidemic prediction and response.

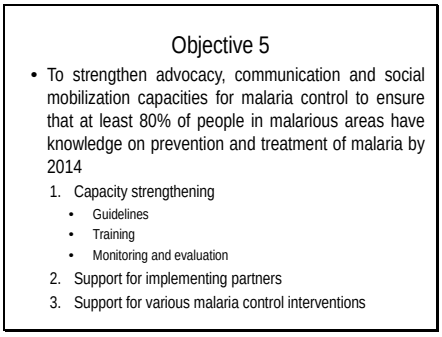
Slide 39

Objective 4

- To strengthen surveillance, monitoring and evaluation systems so that key malaria indicators are routinely monitored and evaluated in all malarious districts by 2011 through:
  1. Malaria surveillance in all districts
  2. Health facility and school based sentinel surveillance
  3. Malaria data management
  4. Community surveys
  5. Monitoring
  6. Operations Research and Translation
  7. Capacity building

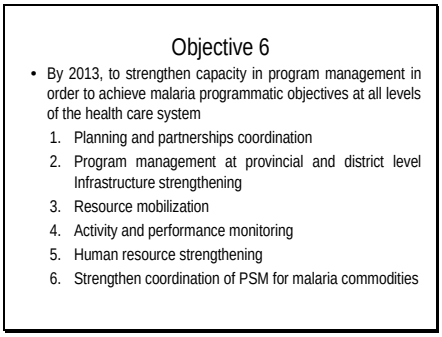
Main message
Guide the participants to understand the importance of routine surveillance to achieve effective malaria control in the country
Ask participants to give examples of how surveillance can be used to improve malaria control
Explain with examples each of the strategy to strengthen malaria surveillance systes

Slide 40



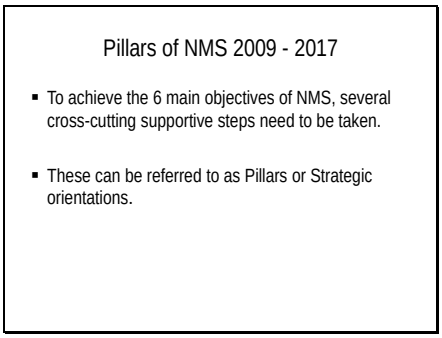
Main message
Mention the importance of ACSM in malaria control
Ask participants to give examples of how ACSM can be used to improve malaria control

Slide 41



Main message
Ask participants to give examples of how strengthening of program management can be used to improve malaria control

Slide 42



Slide 43

Pillars of NMS 2009 - 2017

1. Adopting multi-sector approach to malaria control
2. Decentralizing malaria control operations
3. Basing malaria control interventions on prevailing epidemiology
4. Strengthening the malaria control performance monitoring systems

Main message
Make the participants understand that to achieve the NMS vision of malaria free Kenya, it needs multi-sector approach.
Thank the participants for their active participation and attention.

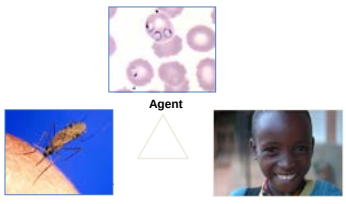
Slide 44

Unit 4

Malaria Control Interventions

Slide 45

Epidemiological Triad



CDC Stock photos

Main message: The epidemiological triad has three parts: the vector = Anopheles mosquito, the parasite = Plasmodium species and the host = people. All three parts of the epidemiological triad have to be present for malaria transmission. If one of the parts of the triad is missing, no malaria transmission will occur. Therefore, malaria control interventions are focused on different parts of the epidemiological triad.

Slide 46

Brainstorming (5 min)

What are the main malaria control interventions?

Brainstorming activity for 5 minutes. Ask the class to develop a list of malaria control interventions. Have one person write malaria control interventions on the white board or flip chart for the class.

Slide 47

Malaria Control Interventions

- Seven primary malaria control interventions
  1. Case management (CM)
  2. Intermittent preventive treatment in pregnancy (IPTp)
  3. Long-lasting insecticidal Nets (LLIN)
  4. Indoor residual spraying of insecticide (IRS)
  5. Monitoring and Evaluation
  6. Epidemic preparedness and response (EPR)
  7. Advocacy, communication and social mobilization (ACSM)

Main message: There are seven primary malaria control interventions supported by the national malaria control strategy including (see list). Although there are other malaria control interventions such as larviciding or personal protective measures like repellents, these are the seven key interventions supported by the national strategy.

Slide 48

Activity (3 min)
What malaria control intervention is shown in each photo?

#1 

#2 

PSI

#3 

CDC Stock Photos

#4 

CDC Stock Photos

48

Activity for 3 minutes to be completed individually. Ask the class to write down which malaria control intervention is shown in each photo.
The answers are given on the following slide.

Slide 49

Answers

#1 Case management (ACTs)

#2 Long-lasting insecticide-treated bed nets (LLINs)

PSI

#3 Indoor residual spraying (IRS)

CDC Stock Photos

#4 Intermittent preventive treatment in pregnancy (IPTp)

CDC Stock Photos

49

The answers are listed above each photo. Ask if the class has any questions. Address any questions that arise.

Slide 50

Malaria Case Management (1)

- Early recognition of malaria
- Diagnostic testing
- Use of effective antimalarial medication
- Prompt treatment of uncomplicated illness
- Recognition and treatment of severe / complicated illness
- Appropriate in all epidemiological zones

Main message: Malaria case management relies on early recognition of symptoms by community members to seek prompt care for fever, availability of diagnostic tests to determine if the fever / illness is caused by malaria and availability of effective and affordable medications. Malaria cases should be diagnosed and treated within 24 hours. All severe cases should be referred for full evaluation and IV treatment.

Slide 51

Malaria Case Management (2)

Consists of two primary components

1.All suspected malaria cases should be tested

- Microscopy or
- Rapid diagnostic test (RDT)

2.All confirmed malaria cases should be treated with artemisinin-based combination therapy (ACT)

- Artememther-lumefantrine (AL) – 1st line
- Dihydroartemisinin-piperaquine – 2nd line

❖Except women in 1st trimester of pregnancy

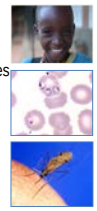
- Quinine – recommended

Main message: Malaria case management includes two key components: diagnosis with either microscopy or rapid diagnostic test and treatment with an artemisinin-based combination therapy (ACT) for all positive or confirmed cases. AL is the first-line therapy for all adults and children. The exception is women in the first trimester of pregnancy, who should be given quinine for uncomplicated malaria.

Slide 52

Malaria Case Management (3)

- A full 3-day course with an ACT is required
  - Ensures >90% reduction in parasitemia
- Decreases the "pool" of persons with parasites who can transmit to mosquitos
- Therefore, case management prevents secondary cases of malaria



CDC Stock photos

Main message: Treatment of malaria patients with a 3-day course of ACT ensures that the malaria parasites are killed in the patient's blood. Therefore, patients will NOT transmit the malaria parasite to mosquitos. ACTs interrupt the epidemiological triad and decrease transmission of malaria.

Slide 53

Intermittent Preventive Treatment in Pregnancy (IPTp)

- Appropriate only in endemic areas
- All pregnant women should receive sulfadoxine-pyrimethamine (SP)
  - At each antenatal care visit after quickening (doses at least 4 weeks apart)
  - Prevents maternal anemia, placental malaria
  - Prevents infant low-birth weight, premature delivery and deaths

Main message: Intermittent Preventive Treatment in Pregnancy (IPTp) is used in endemic areas to prevent complications from malaria during pregnancy including maternal anemia, placental malaria and in infants, low birth weight, premature delivery and death. SP is only used for IPTp; there is no role for SP in treatment of malaria.

Slide 54

Long-lasting Insecticidal Nets (LLINs)

- In endemic and epidemic-prone areas
- Initially, all pregnant women & children <5 years
- Now, all persons in household
- Universal coverage = 1 net per 2 persons in household via mass net distributions
- Protects persons sleeping under the LLIN
  - Decreases number of persons infected with malaria parasites
- Kills mosquitos and thus reduces transmission intensity

Main message: LLINs have been distributed by mass campaigns. Every household in endemic and epidemic-prone areas should have at least 1 LLIN per 2 persons in the house. LLINs decrease malaria transmission by preventing mosquitos from biting people and by killing mosquitos.

Slide 55

Indoor Residual Spraying with Insecticide (IRS)

- In endemic and epidemic-prone areas
- Optimal IRS application is before the rainy season
- Augments LLIN usage
- Prevents malaria infections in persons in sprayed households
- Kills mosquitos and thus reduces transmission intensity

Abt Associates

Main message: IRS is used in endemic and epidemic-prone areas to augment LLIN usage. IRS prevents transmission of malaria by killing mosquitos in sprayed houses.

Slide 56

Surveillance

- Appropriate for all epidemiological zones
- Accurate diagnosis and confirmation via testing will improve malaria surveillance data
- Malaria case reporting via health information systems (IDSR and DHIS2)
- Detects changes in malaria cases over time
- Provides data to evaluate malaria control interventions

Maggie Hallahan

Main message: With the national roll out of malaria rapid diagnostic tests, malaria cases can now be confirmed at all levels of the health system. Tracking confirmed malaria cases through surveillance is now possible. Implementing a functional national malaria surveillance system is the main reason for this training.

Slide 57

Epidemic Preparedness and Response (EPR)

- Appropriate in epidemic-prone and seasonal epidemiological zones
- Requires accurate and timely surveillance data
- Allows prompt implementation of control measures
- Prevents or minimizes malaria morbidity and mortality during epidemics

Main message: Epidemic preparedness and response (EPR) is a key malaria control intervention in epidemic-prone and seasonal epidemiological zones. The ability to confirm malaria cases via RDTs and to report confirmed malaria cases promptly via the surveillance system are important components to identifying malaria epidemics and responding with malaria control measures to limit morbidity and mortality.

Slide 58

Advocacy, Communication and Social Mobilization (ACSM)

- Appropriate in all epidemiological zones
- Community awareness of malaria prevention and treatment
  - Decreases testing and treatment delays
  - Increases community utilization of malaria control interventions (CM, LLINs, IRS)
- Prevents or minimizes malaria morbidity and mortality in communities

Main message: ACSM is an important but often undervalued malaria control intervention. Community awareness of malaria control interventions such as LLINs and the importance of prompt diagnosis and treatment of fever can prevent malaria transmission.

Slide 59

Summary of Malaria Control Interventions

Epidemiological Zone	CM	IPTp	LLINs	IRS	Surveillance	EPR	ACSM
Endemic - Lake - Coast	X	X	X	X	X		X
Epidemic-prone - Highland	X		X	X	X	X	X
Seasonal, low transmission - Semi-arid - Arid	X				X	X	X
Low risk	X				X		X

Main message: Not all malaria control interventions are appropriate in all epidemiological areas. This table presents a summary of the malaria control interventions that the DOMC supports in each area. Note that surveillance, case management and ACSM are key malaria control interventions that are appropriate everywhere.

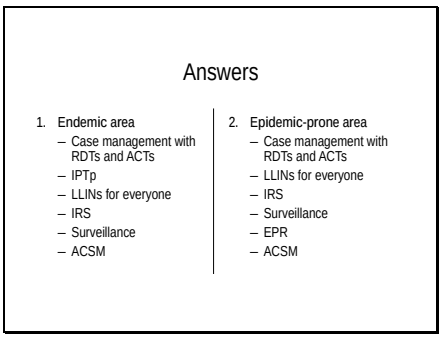
Slide 60

Activity: Name at least four malaria control interventions appropriate for each area

1. Endemic areas
   - High transmission
   - Affects children, pregnant women
   - Many asymptomatic carriers
2. Epidemic-prone areas
   - Low transmission
   - All age groups
   - Few asymptomatic carriers

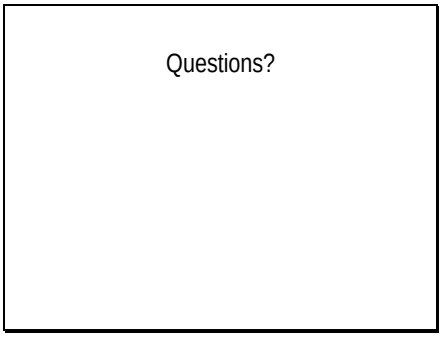
Answers to activity. Note that IPTp is only appropriate in endemic areas.

Slide 61



Answers to activity. Note that IPTp is only appropriate in endemic areas.

Slide 62

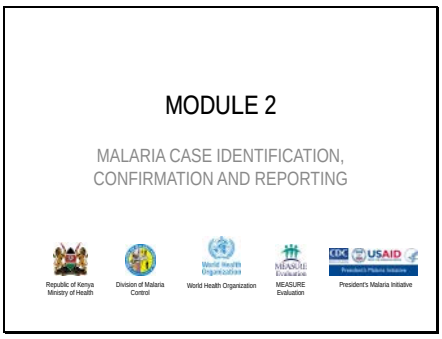


Ask the class if there are any questions or comments from Module 1 before ending this module. Answer / discuss any questions raised. Remember to thank the participants for their active participation and attention.

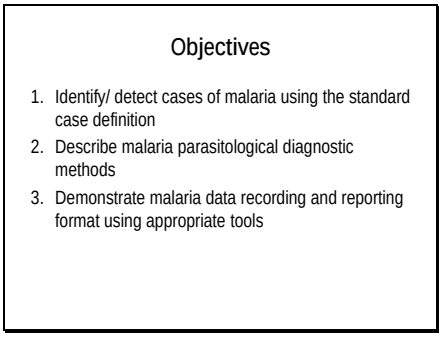
End of Module 1.

Slide 63

Slide 1

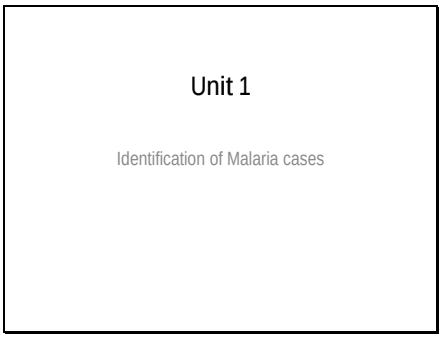


Slide 2



The main message of this slide is to outline the objectives of the module

Slide 3



Slide 4

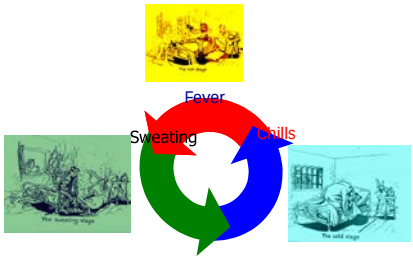
Brain storm (5 mins)

What is the clinical presentation of malaria?

Main message
The aim of this slide is to engage the participants to find out their level of knowledge on the clinical presentation of Malaria

Slide 5

Clinical Signs and Symptoms of Malaria



Main message
The facilitator should then discuss the main symptoms of malaria

Slide 6

Common Signs and Symptoms of Uncomplicated Malaria

- Fever
- Chills
- Profuse sweating
- Muscle pains
- Joint pains
- Abdominal pain
- Diarrhoea
- Nausea
- Vomiting
- Irritability
- Refusal to feed
- (Sometimes the symptoms may be non-specific)

Main message
The slide is meant to emphasis the signs and symptoms of malaria

Slide 7

Standard Case Definition

- Standard description of a disease
- Or standard set of criteria used to describe if a person has a particular disease
- Standard case definitions are used for reporting by all health workers
- Importance:
  - Easier to follow trends in diseases and recognize outbreaks
  - Data can be compared more accurately from one area to the other
  - Increase the specificity of reporting

Main message
This slide gives the definition of a standard case definition as well as its uses and importance

Slide 8

Types of Case Definitions

- Surveillance case definition for health staff (Standard Case Definition)
- Case definition for Community Health Workers (Lay Case Definition)

Main message
The slide explains the two types of standard case definition. The standard case definition that is used by health workers and the lay case definitions that are used for the community health workers as well as the community

Slide 9

How to use the standard case definition

- Patient comes to consulting room
- Ask about symptoms and duration
- Conduct physical examination and record findings on OPD card
- Make diagnosis based on signs and symptoms

Main message
The slide aims at showing the procedure used in determining if the patient fits the standard case definition

Slide 10

How to use the standard case definition

- Match signs and symptoms with that of case definition
- Record Information about suspected cases in the health facility register and patients card
- Report case based information for immediate notifiable diseases using the IDSR reporting tools
- N/B use the local Lab capacity to diagnose suspected cases

Main message
This is a continuation on the procedure used in determining if the patient fits the standard case definition

Slide 11

Malaria standard case definition

- *Uncomplicated malaria:* Any person living in area at risk of malaria with fever or history of fever within 24 hours; without signs of severe disease (vital organ dysfunction) is diagnosed clinically as malaria.
- *Confirmed uncomplicated malaria:* Any person with fever or history of fever within 24 hours; and with laboratory confirmation of diagnosis by malaria blood film or other diagnostic test for malaria parasites.

Main message
This slide gives the standard case definitions of uncomplicated (suspected) malaria as well as confirmed uncomplicated malaria. It aims at helping participants understand cases that fit into these two categories

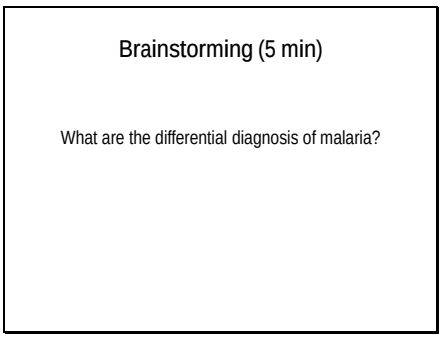
Slide 12

Malaria standard case definition Cont'd

- *Unconfirmed severe malaria:* Any patient living in area at risk of malaria hospitalized with severe febrile disease with accompanying vital organ dysfunction diagnosed clinically
- *Confirmed Severe malaria:* Any patient hospitalized with *P. falciparum* asexual parasitaemia as confirmed by laboratory tests with accompanying symptoms and signs of severe disease (vital organ dysfunction) diagnosed through laboratory.

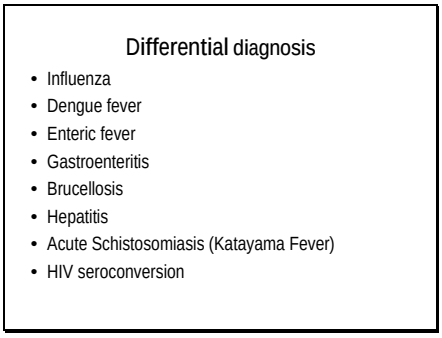
Main message
This slide gives the standard case definitions of unconfirmed severe malaria as well as confirmed severe malaria. It aims at helping participants understand cases that fit into these two categories

Slide 13



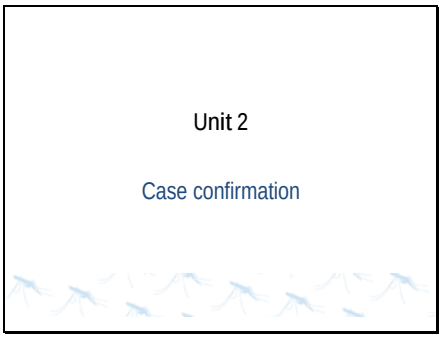
Main message
The slide aims at engaging the participants in a discussion on the various differential diagnosis of malaria

Slide 14



Main message
This slide gives various differential diagnosis of malaria
Thank the participants for their active participation and attention.

Slide 15



Use this slide to introduce participants to confirmatory diagnosis as part of case confirmation.

Slide 16

Brain storm (5 mins)

1. Rationale of malaria parasitological diagnosis
2. Challenges of confirmatory diagnosis and how to address them.
3. Do clinicians always use lab results to make clinical decision

Main message
Generate discussion between clinicians and laboratory staff on complexity of malaria symptoms and their influence on making clinical diagnosis.

Slide 17

Rationale for malaria parasitological diagnosis

1. To differentiate malaria cases from other diseases with similar presentations
2. To monitor response to malaria treatment
3. To confirm/ or predict out breaks

Main message
To target malaria positive patients, minimize irrational use of antimalarials, target other fever causing illness. Emphasize the role of parasitological diagnosis in detecting and confirming malaria out breaks.

Slide 18

Methods of malaria parasitological diagnosis

- Visualization
  - Microscopy
  - Qualitative Buffy Coat (QBC)
- Rapid Diagnostic Tests (RDTs)
- Detection of parasite products
  - Enzyme linked immunosorbent assay (ELISA)
  - Polymerase Chain Reaction (PCR)

Main message
The facilitator to use this slide to briefly outline various parasitological diagnostic methods, of which Microscopy and RDT shall be discussed. The facilitator to use this slide to briefly outline various parasitological diagnostic methods, of which Microscopy and RDT shall be discussed.

Slide 19

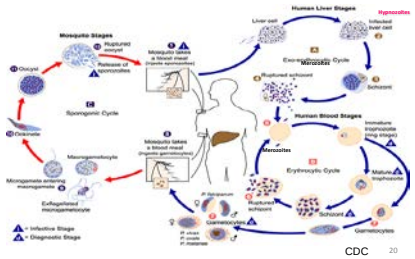
Microscopic Diagnosis of Malaria

- It is the 'Gold standard' for detection of malaria parasitaemia
- Has sensitivity >90% if performed well
- Used to confirm diagnosis, monitor treatment outcome, confirm epidemics and in clinical trials of drugs and vaccines

Main message
Microscopy is the gold standard. Requires skilled manpower, Quality assured reagents & Equipments. Has >90 sensitivity if performed well and cost effective. Supervision is necessary

Slide 20

Malaria Life Cycle



Main message
The life cycle should enable the participants understand infection cycle versus disease and diagnostic features of the parasite and possibility of positivity of tests with time and some control implications. Note: Highlight the blood stage of the cycle as it is relevant for diagnostic.

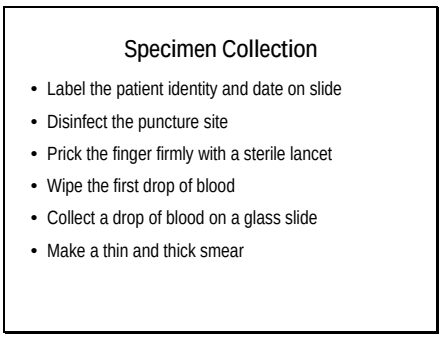
Slide 21

Procedure

i. Specimen collection
ii. Specimen processing
iii. Blood slide examination
iv. Blood slide reporting
v. Results interpretation

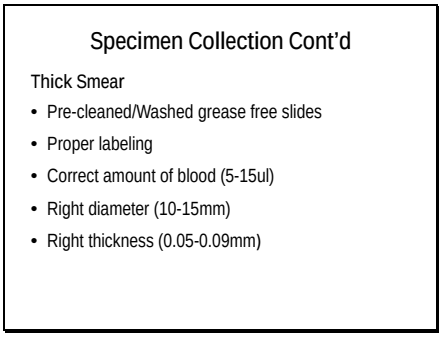
Main message
Use this slide to outline the entire Microscopy procedures.

Slide 22



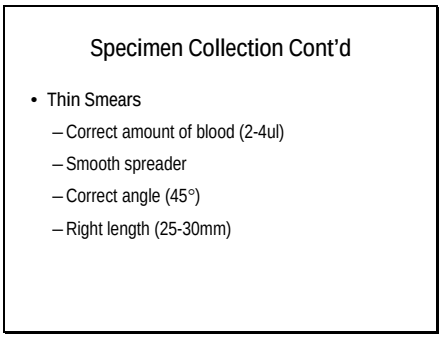
Main message
Use the slide to emphasize key steps for quality control as part of the SOP.

Slide 23



Main message
Use the slide to emphasize the purpose of the thick smear and the best techniques to do it for reliable results.

Slide 24



Main message
Explain the purpose and best technique to make a thin smear.

Slide 25

Specimen Processing

i. Fix thin film with methanol
ii. Allow to air dry
iii. stain appropriately
iv. Wash, let dry and examine

Main message
Use the slide to explain the steps of processing after collection as outlined in the SOP for better results.

Slide 26

Examination and Reporting

- Examine using the x100, oil immersion objective
  - Thick film: if parasites present, count trophozoites against WBCs until 200 WBCs are counted
  - If no parasites are seen, examine 100 high power fields
  - Thin film: Species identification

Main message
Use the slide to emphasize the standard examination and reporting format.

Slide 27

Reporting/ Interpretation

- *Report on parasite seen, developmental stage and species*
- Parasite density (parasites/200 WBC or per microlitre of blood)
- No of parasites countedx8000/WBC counted=parasites/ µl
  - e.g. 35/200 x 8000 per µl gives you 1400 parasites per microlitre of blood

Main message
This is an example of Malaria Microscopy standard reporting format.

Slide 28

Quality Assurance for Microscopy

Quality Assurance (QA)

is a broad spectrum of plans, policies and procedures which together ensure that a system conforms to established technical requirements

Quality Control (QC)

deals with the techniques and procedures that monitor performance

Main message

Use this slide to emphasize the need for quality control to minimize technical errors. Emphasize the need for quality assured reagents and known positives and negative slides as reference standards.

Slide 29

Malaria Rapid Diagnostic Tests (mRDT)

- Test Principle
  - The test contains a strip with antibodies against malaria parasites
  - If malaria parasite antigens are present two bands are formed: a control band and a positive band
  - In the absence of malaria parasite antigens, only the control band is formed

Main message

Use the slide to explain the RDT principle and how it works.

Slide 30

Kit Format

- Dipsticks
- Cassettes
- Card

Main message

Use this slide to inform participants that several formats exist but cassette formats are preferred.

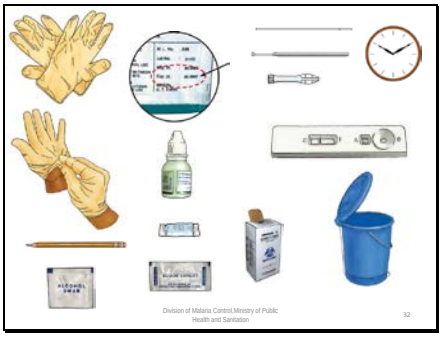
Slide 31

Materials required to Perform RDTs

- RDT kit. (Test cassette, Buffer, Blood collecting device)
- Sterile Lancet
- Alcohol Swab
- Pencil/ Pen for Labeling
- Gloves
- Sharps Container
- Waste Disposal container
- Timer/ Clock
- Instruction Manual for the specific RDT/SOP
- Dry cotton wool.

Main message
Prompt the participants to mention the requirements for performing an RDT test. Use this slide to explain to the participants all the requirements for performing an RDT test.

Slide 32



Main message
Use the slide to show the participants all the requirements needed before starting to collect the blood sample.

Slide 33

Preparing to Perform the Tests

1. Gather the necessary materials in the testing area.
2. Check the expiry date at the back of the test package. If the test kit has expired use another test.
3. Ensure the RDT packaging is not damaged by squeezing gently and feel/listen for air leakage.
   NOTE: If the foil packaging is damaged, use another test kit.
4. Explain to the patient what the test is for and procedure

Main message
Use this slide to explain to the participants what they need to know as they prepare to start performing the test.

Slide 34

Preparing to Perform the Tests Cont'd

5. Open the package tearing along the nick and look for the following : - a.) Desiccant b). Cassette and c). Dropper
6 Remove the cassette from the foil packaging and label it with patient particulars and reading time
7. Wear Gloves
8. Disinfect the puncture site with an alcohol swab or appropriate disinfectant.

Main message
Use this slide to explain to the participants what they need to know as they prepare to start performing the test.

Slide 35

Finger Prick

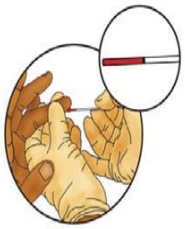
- Make a gentle prick with a sterile lancet at the disinfected site.
- By applying gentle pressure to the finger express the first drop of blood and wipe it away with a dry piece of cotton wool. Make sure no strands of cotton remain on the finger to contaminate blood.
- Apply gentle pressure to the finger until a new blood drop appears.

Main message
Facilitator refer to previous procedure for blood collection.Ephasize the need for the right skills to ensure adequate blood and selection of a ppropriate puncture site.

Slide 36

RDT Test Procedure

1. Using the blood collection device (Pipette or Capillary tube) provided in the RDT kit, gently immerse the open end in the blood drop. Collect the required volume of blood as per manufacturer's instructions.



Main message
The facilitator should emphasize the need for good blood collection skills and adequate amount of blood to ensure good results.

Slide 37

RDT Test Procedure

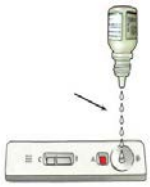
2. Transfer the collected blood to the sample well (as indicated on the RDT cassette).

Main message
Emphasize the correct mount of blood at the correct well of test device.

Slide 38

RDT Test Procedure

3. Place dry cotton wool over the puncture site to stop the bleeding.
4. Holding the buffer bottle vertically, add the recommended number of drops of buffer into the buffer well.



Main message
Emphasize the correct amount of buffer at the correct well of the test device and not using any other buffer apart from the one provided and specified eg HIV buffer in Malaria test.

Slide 39

Results of the RDT

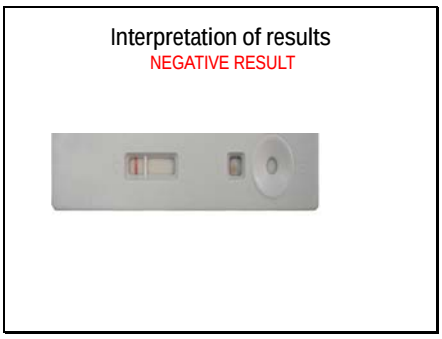
Time the test as recommended by the manufacturer.

NOTE: Do not read the results before or after the set time.

- One band (control) – negative
- Two bands – positive
- No control line – invalid test

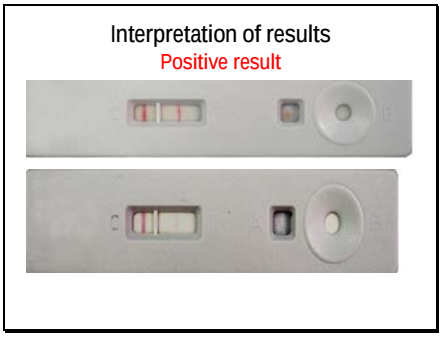
Main message
Use this slide to emphasize the need for correct timing as per manufacturers instruction.

Slide 40



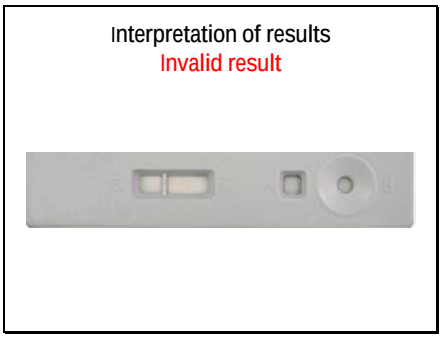
Main message
Gauge the participants understanding of the Result interpretation

Slide 41



Main message
Gauge the participants understanding of the Result interpretation

Slide 42



Main message
Gauge the participants understanding of the Result interpretation

Slide 43

Reporting

- Report the results as “RDT Negative” or “RDT Positive” or “RDT Invalid” (in which case the RDT should be repeated).

Clinic/OPD Reporting

- If the RDT is performed in the clinic, outpatient department or in the wards, the result, even if it is negative, should be reported on
  - The appropriate patient card/form
  - As well as in the OPD register, RDT Daily activity register and any other register.

Main message
The facilitator should use this slide to explain the need to repeat invalid test results and report the other results as they appear.

Slide 44

Advantages of RDTs

- Simple and fast
- Can be performed anywhere
- Portable
- Kit components easily packed

Main message
Emphasize the ease of use for this kit as opposed to Microscopy. Mention the disadvantages of RDTs

Slide 45

Discussion (5 min)

What are the strengths of each parasitological method as we scale up Testing? Microscopy vs. RDTs

Stress the importance of RDT in places where there is no Microscopy services to scale up confirmatory diagnosis. Mention

Slide 46

Microscopy vs. mRDT

Microscopy	RDT
Technical	Simple and fast
Needs longer training	Shorter training
Needs Equipment	No equipment
Used in Epidemic confirmation	Used in epidemic confirmation
Used in treatment treatment monitoring	Can not be used for treatment monitoring

Main message:
Microscopy is the gold standard for malaria diagnosis. In situations where microscopy is not accessible, RDTs should used.

Slide 47

Quality Assurance & Sources of Common Error

- Read the manufacturer's instructions prior to performing the test.
- Follow the test procedure, precautions and interpretation of results for this test. (Use of SOPs and Job aids)
- Use the correct amount of blood and buffer. (Incorrect amount of Buffer and blood may lead to inaccurate results)
- Read the test at the recommended time.

Main message
The facilitator should use this slide to emphasize all the necessary key points relating to quality assurance which may compromise the results of the Test.

Slide 48

Quality Assurance & Sources of Common Error

- Check expiry date of the test kit before use.
- Only open the foil packaging and remove the RDT immediately before performing the test. If preparation is delayed after opening the packaging, the RDT may be damaged by humidity and results may not be accurate.
- Label correctly the patient details on the test cassette to avoid mix ups.
- Proper storage conditions as per manufacturer's instructions

Main message
The facilitator should use this slide to emphasize all the necessary key points relating to quality assurance which may compromise the results of the Test.

Slide 49

Biohazard, Safety and Waste Management

- Protect yourself and others
  - Laboratory coat
  - Gloves
  - Wash hands
  - Disinfect working bench

Main message
Involve the participants to re-emphasis the need for Good Clinical and Good Laboratory Practice and safety precautions.

Slide 50

Biohazard, Safety and Waste Management Cont'd

- Segregate waste material as follows
  - Sharps
    - Collect in puncture-proof container
  - Pathological hazardous waste
    - Collect in hazardous waste bags (Red bag)
  - Non-pathological waste (Black)
    - Pour in sink, latrine, or waste pit
- All bio-hazardous waste should be incinerated

Main message
Ask the participants how they manage waste generated in their facilities

Slide 51

Practicum (30 min)

Practical session by carrying out RDT test performance

Main message
Use this session to ensure correct skills of RDT performance is imparted to the participants. Remember to thank your participants for having given you their attention.

Slide 52

UNIT 3

Reporting

Slide 53

Background on Reporting

- Every level of the health system has a role in carrying out ongoing surveillance for priority diseases, conditions and events.
- If a disease is identified at a local level, for example, but the information is not reported to the next level, an opportunity for timely response is lost.

Main message
This slide aims at introducing the levels of reporting and showing the importance of reporting

Slide 54

Background on Reporting

- What is reported to each level and how often is usually guided by national policy .It can be immediately, weekly, monthly, or quarterly.
- How the information is reported depends on the capacity in your area. For example, reporting may be done by electronic methods such as email or other electronic transmission, or cell phone SMS reporting.

Main message
The slide gives an introduction on the various frequencies of reporting and the modes in which this reports are transmitted

Slide 55

Brainstorm (5 mins)

1. Which tools are used for recording malaria cases?
2. How often are malaria cases reported?
3. Which tools are used in malaria reporting?

Main message

The slide aims at engaging the participants in a discussion on the tools used for recording and reporting malaria as well the reporting requirements for malaria.

Slide 56

Case recording

- Tools for recording
  - OPD cards
  - Registers (MOH 705A, MOH 705B, Lab registers)
  - Tally sheets
- In many health facilities, more than one person is responsible for recording information about patients seen in the facility.
- Example
  - The clinician records the patient's name and diagnosis in a clinic register.
  - Later in the day, a nurse tallies the number of cases and deaths seen in an outpatient service.
  - A ward nurse tallies the number of hospitalized cases.
- Then: Each week and month
  - A data clerk will calculate summaries for all the diseases and records the totals in a standard form.

Main message

The slide gives an overview of some of the tools used for recording malaria cases at the facility level. It also shows the number of people who are involved in case recording. The facilitator should discuss the possibility of errors being introduced due to the number involved in recording.

Slide 57

Reporting tools

- Health Facility Line listing Form (MOH 503)
- Monthly Surveillance Report Form (MOH 504)
- Epidemic Monitoring Form (MOH 505)
- Outpatient monthly summary for <5 years (MOH 705A)
- Outpatient monthly summary for >5 years (MOH 705B)
- Lab test data summary report form (MOH 706)

Main message

The slide shows of the various tools used in reporting malaria both through the IDSR as well as the HMIS system. The facilitator should discuss at which point each tool is used. MOH 503,504 and 505 are tools used for IDSR during outbreaks, monthly and weekly reporting respectively. MOH 705A, 705B and 706 are used in the HMIS system.

Slide 58

Reporting requirements for malaria

- Weekly (IDSR)
  - Epidemiological week starts on Monday and ends on Sunday
  - The total number of cases both clinical and confirmed and deaths seen in a particular week are reported
  - The cases are summarized in the facility and sent to district by Monday which are then collated and entered on the e-idsr system by Wednesday

Main message
The slide explains the reporting requirement for malaria through the IDSR system, what is reported and the deadline for reporting

Slide 59

Reporting requirements for malaria

- Monthly reporting (HMIS)
  - the total number of cases and deaths seen in a particular month are reported through the DHIS 2 system

Main message
The slide explains the reporting requirement for malaria cases and deaths through the DHIS system

Slide 60

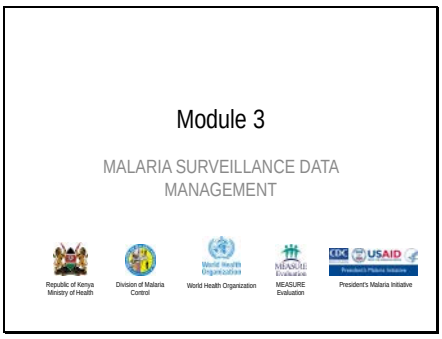
Group Work (30 min)

- Demonstration of how to fill and upload malaria data on the e-IDSR & DHIS2 systems

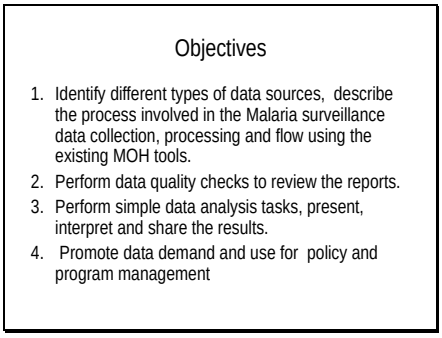
Main message
This is a thirty minute demonstration on filling and uploading the forms that are on e-IDSR and DHIS system
Thank participants for their active participation and attention.
End of module 2

Slide 61

Slide 1

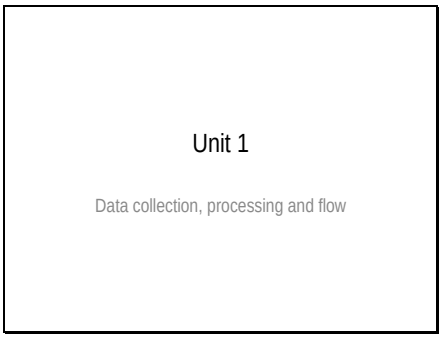


Slide 2



Review the objectives

Slide 3



Slide 4

Definitions

- What is:
  - Data collection?
  - Data Source?
  - Data processing?
  - Data flow?

Main Message

The participant will define the data collection, source, processing and flow.
Emphasis on: Objective 1

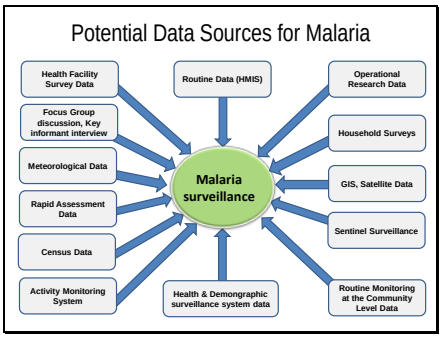
Slide 5

Types of data

- Survey data
- Surveillance data
- Service data
- Routine data
- Primary data
- Secondary data

Ask the participants to brainstorm on the various types of data. **Summarize** the explanations given on a flip chart

Slide 6

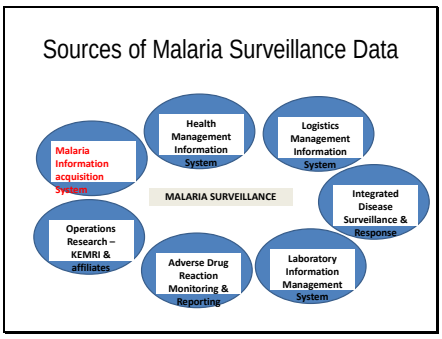


Main Message
Ask participants to brainstorm on potential data sources
Show animation

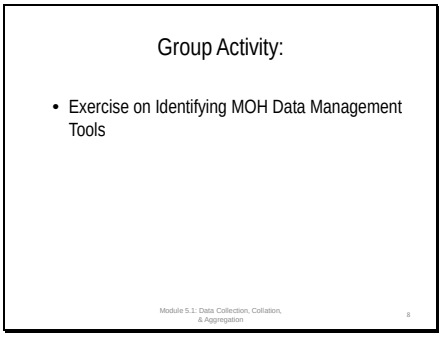
Here you can see many of the data sources used for this purpose, some of which you have already mentioned. This is not an exhaustive list, but it does include most of the main sources used. These will also vary by setting.

Briefly describe each data source

Slide 7



Slide 8



Divide the participants into groups.

Allow them 10 minutes to

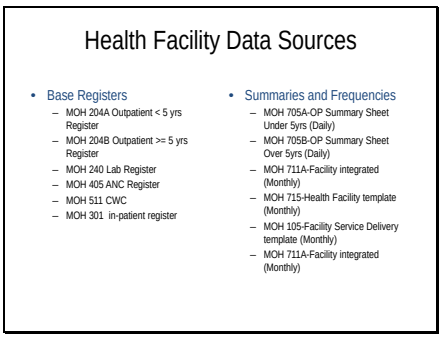
- List the various data management tools
- Group the listed tools
  - Cards (e.g., patient-held or facility-retained)
  - Register (e.g., cross-sectional, longitudinal)
  - Collation
  - Aggregation

Let a representative from each group present their findings in the plenary.

Click to display content on the slide.

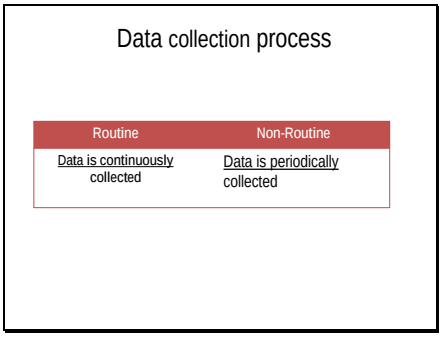
Describe the relevance of each category of tool (e.g., patient-held or facility-retained).

Slide 9



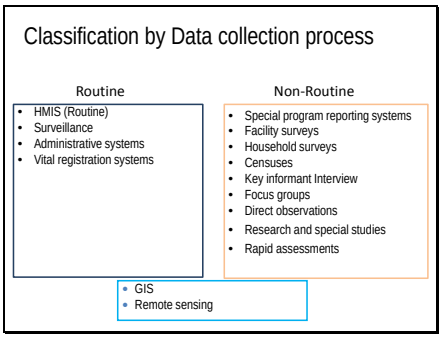
Main Message
MoH registers and summary reporting forms

Slide 10



Main Message
Types of data collection process
The data collection process is routine or non routine. Routine data is collected continuously and non-routine data is periodically collected.

Slide 11

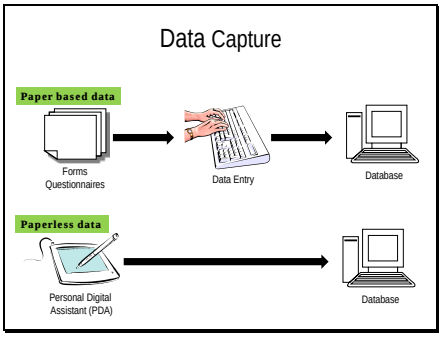


Main Message
Method of collecting each type of data
Which data sources can you think of that would be considered routine? (let participants respond before showing answers)

Which data sources can you think of that would be considered routine? (let participants respond before showing answers)

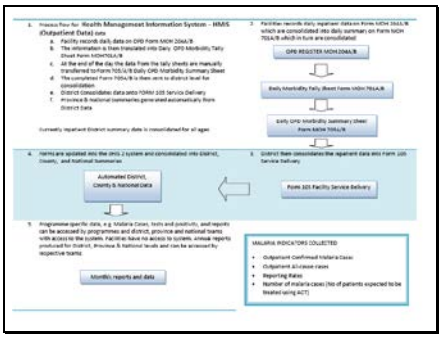
Can you think of any sources that can be both routine or non-routine?

Slide 12



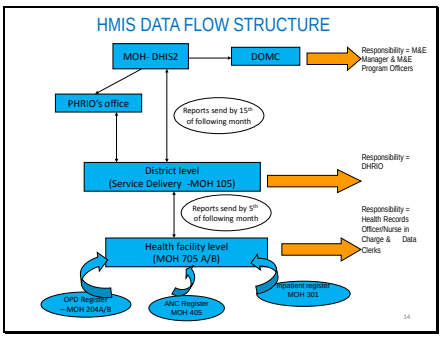
Main Message
Data capture process
Emphasis on Paper based and paperless data capture approaches

Slide 13



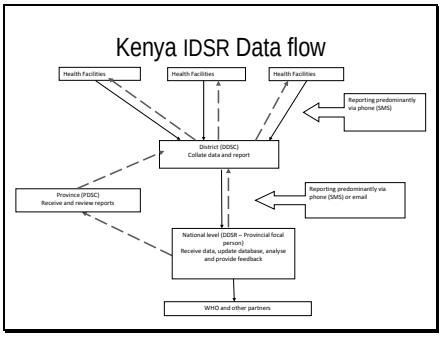
Main Message
Data flow

Slide 14



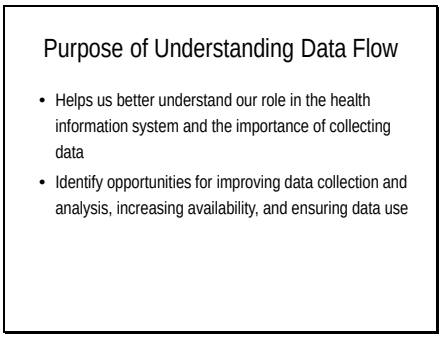
Review the data flow structure illustrated on this slide. **Refer** to Handout Facility Reporting Form (705 A/B) and District Reporting Form (MOH 105). **Ask** participants to familiarise themselves with data reporting requirements at each level. HMIS data is collected on a monthly basis

Slide 15



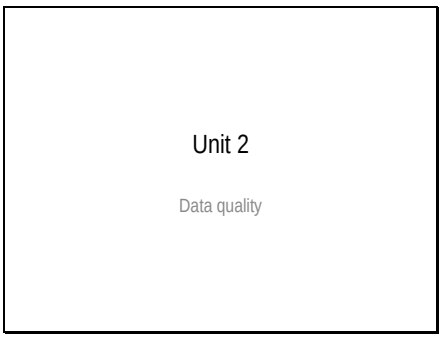
Main message
IDSR data flow. IDSR data is collected on a weekly basis.

Slide 16

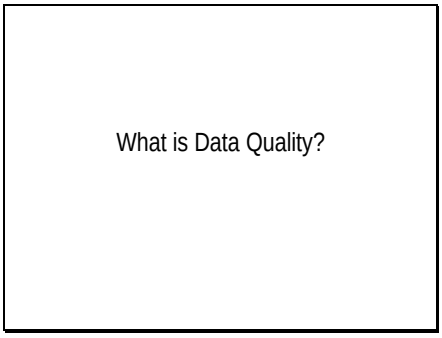


Main message
Importance of understanding how data flows

Slide 17

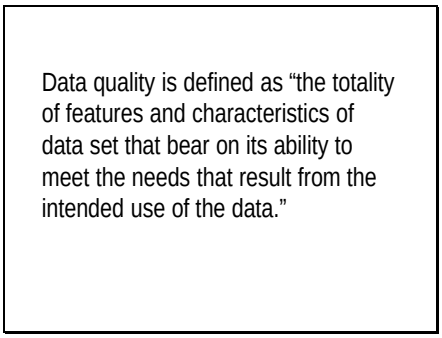


Slide 18



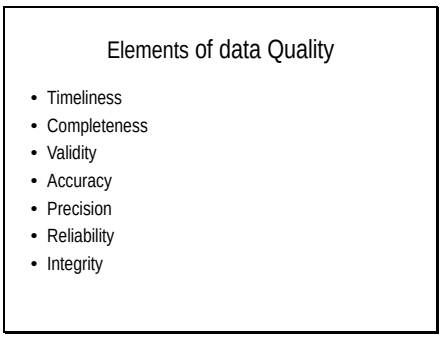
Main message
Let the participant define data quality and elements therein
Emphasis on data quality checks

Slide 19



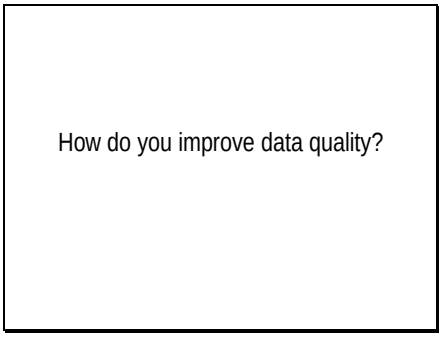
Main message
Definition of data quality

Slide 20



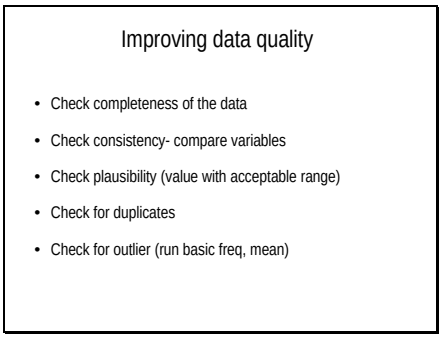
Main Message
Description of the data quality elements

Slide 21



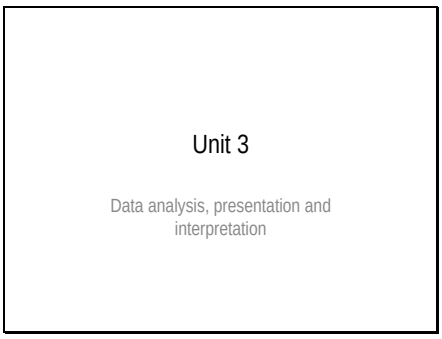
Main message
Participants to brainstorm on data quality improvement

Slide 22



Main Message
Participants to perform data quality checks

Slide 23

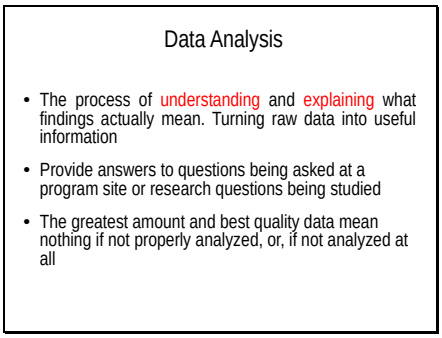


In your own words, **explain** that this module imparts the knowledge and reinforces the skills necessary for conducting data analysis and for interpreting data to make decisions.

Slide 24

Main Message
Participants to brainstorm on data analysis definition

Slide 25

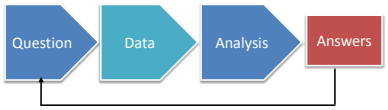


Main message
This is slide explains the concept of data analysis

Slide 26

What is Data Analysis? *Cont'd*

Analysis is looking at the data in light of the questions you need to answer



How would you analyze data to determine, "Is my program meeting it's objectives?"

Slide 27

Data Analysis Tools

- Examples of data analysis tools include:
  - Pen, pencil
  - Paper
  - Calculators
  - Spreadsheet (e.g., Excel®)
  - Database (e.g., Access®)
  - Epidemiological information
  - Statistical software (e.g., SPSS, STATA)

Demonstrate the use of some of the tools highlighted on this slide. **Let** the participants know that you are going to discuss data analysis using excel in greater detail in the rest of this module.

Slide 28

What is the importance of Data Analysis and interpretation?

- Know the size of the health problem
- Monitor trends and take prompt action
- Identify the cause of the problem
- Monitor progress of public health programs

28

Ask participants to give reasons why data is analyzed.

Slide 29

Statistical Measures

- Measure of central tendency
  - Mean
  - Median
  - Mode
- Measure of variation
  - Range
  - Variance and standard deviation
  - Inter-quartile range
  - Proportion, Percentage

Main Message
This slide lists various statistical measures

Slide 30

Mean

Sum of the values divided by the number of cases

Also called *average*

Very sensitive to variation

Average number of confirmed malaria cases per month

Month	Cases 2008
Jan	30
Feb	45
Mar	38
April	41
May	37
Jun	40
Jul	70
Aug	270
Sep	280
Oct	200
Nov	100
Dec	29

Total number of cases: 1,180

Number of observations: 12

Mean number of cases: $\frac{1,180}{12} = 98.2$

Main Message
Calculation of various statistical measures

Slide 31

Median

- Represents the middle of the ordered sample data
- For odd sample size, the median is the middle value
- For even sample size, the median is the midpoint/mean of the two middle values

Not sensitive to variation

Median number of confirmed malaria cases

Month	Cases 2008	Cases 2009
Dec	29	24
Jan	30	29
May	37	32
Mar	38	35
Jun	40	39
April	41	49
Feb	45	42
Jul	70	65
Nov	100	80
Oct	200	150
Aug	270	200
Sep	280	-

Median for 2008: $median = \frac{41+45}{2} = 43$

Median for 2009

Slide 32

Mode

- Value that occurs most frequently
- It is the least useful (and least used) of the three measures of central tendency

Not sensitive to variation

Mode number of confirmed malaria cases

Month	Cases 2008	Cases 2009
Dec	29	24
Jan	30	29
May	37	32
Mar	38	35
Jun	40	39
April	41	39
Feb	45	42
Jul	70	65
Nov	100	80
Oct	200	150
Aug	270	200
Sep	280	-

Mode for 2008

mode = none

Mode for 2009

median = 39

Slide 33

Practice Calculations

- What is the mode, mean and median Hb for the following set of observations?
  11.5, 10.8, 12.5, 14.1, 8.3, 9.2, 7.9, 10.6
- Answers:
  - Mean = 10.61
  - Median = 10.7
  - Would you use Mean or Median?
  - Answer: Median
  - Use Median when you have a large variation between high and low numbers
  - Use Mean when there is not a huge variation between the values

Main message:
The variation is how far the outliers are from the mid points.

Slide 34

Proportion

- A ratio in which all individuals in the numerator are also in the denominator
- Example: If a clinic has 12 female clients and 8 males clients, then the proportion of male clients is 8/20 or 2/5

M M M M
M M M M

F F F F
F F F F
F F F F

Slide 35

Percentage

- A way to express a proportion
- Proportion multiplied by 100
- Example: Males comprise 2/5 of the clients or, 40% of the clients are male (0.40 x 100)

Important to know: What is the whole? An orange? An apple? All clients? All clients on with a fever?

Helps us standardize so that we are able to compare data across facilities, regions, countries

Slide 36

Rate

- A quantity measured with respect to another measured quantity
- Number of cases that occur over a given time period divided population at risk in the same time period

(Under five mortality rate)

Probability of Dying Under Age Five per 1,000 Live Births

Nation	Under five mortality rate per 1,000 live births in 2008
France	4
Ghana	76
Sierra Leone	194
Afghanistan	257

Source: UNICEF: Statistics and Monitoring by Country

Slide 37

Data presentation

Slide 38

Effective presentation

- Clear
- Concise
- Practical
- Actionable
- Attractive

Main Message
This slide highlights on the characteristics of an effective presentation

Slide 39

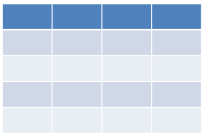
Effective presentation

- For all communication formats it is important to ensure that there is:
  - Consistency
    - Font, Colors, Punctuation, Terminology, Line/ Paragraph Spacing
  - An appropriate amount of information
    - Less is more

Slide 40

Data Presentation

- Tables
  - Rows
  - Columns



- Figures

40

Explain that data can be presented as tables or figures. Tables provide numbers that are either raw or have been processed to represent a particular data element. **State** that figures presentations can be in the form of maps, pictures, videos, ArcMAP GIS, tables, line graphs, bar charts, pie charts, scatter plots, pyramids, flow charts, histograms, etc.

Slide 41

Summarizing data

- Tables
  - Simplest way to summarize data
  - Data is presented as absolute numbers or percentages
- Charts, maps and graphs
  - Visual representation of data
  - Usually data is presented using percentages

Main Message
This slide depicts the various methods of data presentation

Slide 42

Tables and graphs

- Have titles and axis labels
- Tables and graphs are used to:
  - Convey a message
  - Stimulate thinking
  - Portray trends, relationships and comparisons
- The most informative graphs are simple and self-explanatory

Main Message
explaining tables and graphs as a data presentation method

Slide 43

Choosing a Title

- A title should express
  - Who
  - What
  - When
  - Where

Main Message
This slide explains the contents of a Title for a table or graph

Slide 44

Tables: Frequency distribution

Year	Number of cases
2005	4 216 531
2006	3 262 931
2007	3 319 339
2008	5 338 008
2009	7 545 541
2010	9 181 224
2011	8 926 058
2012	9 610 691

Main Message
Hypothetical examples of a table.
Identify the information missing on this table

Slide 45

Tables: Relative frequency

Percent contribution of reported malaria cases by year between 2005 and 2012

Year	Number of malaria cases (n)	Relative frequency (%)
2005	4 216 531	8
2006	3 262 931	6
2007	3 319 339	7
2008	5 338 008	10
2009	7 545 541	15
2010	9 181 224	18
2011	8 926 058	17
2012	9 610 691	19
Total	51 400 323	100.0

Main message:
When presenting data in a table format, include title and source of data

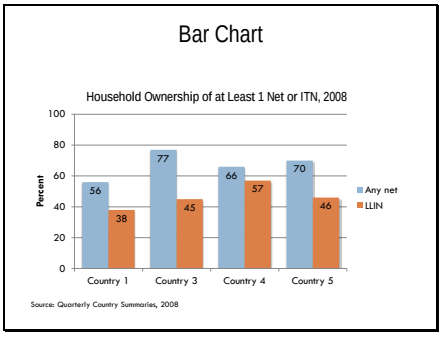
Slide 46

Use the right type of graphic

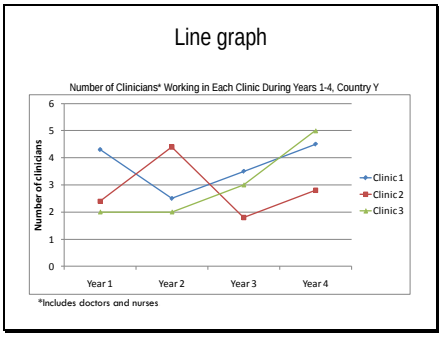
- Charts and graphs
  - Bar chart: comparisons, categories of data
  - Histogram: represents relative frequency of continuous data
  - Line graph: display trends over time, continuous data (ex. cases per month)
  - Pie chart: show percentages or proportional share

Main message
This slide explains different types of charts and graphs

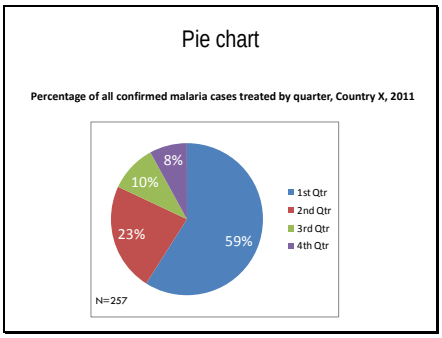
Slide 47



Slide 48



Slide 49



Slide 50

Exercise:
How should you present...

1. Prevalence of malaria in 3 countries over a 30 year period?
2. Data comparing prevalence of malaria in 10 different countries?
3. Data on reasons why individuals not using ITNs (out of all individuals surveyed who own an ITN and are not using it)?
4. Distribution of patients tested for malaria by parasite density

Main message
Participants are assessed on data presentation skills

Slide 51

Data Interpretation

Explain that each participant is responsible for explaining and interpreting the data and then testing whether the conclusions are true.

Slide 52

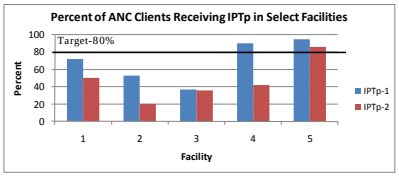
Analysis vs. Interpretation

- Analysis: describing data with tables, graphs, or narrative; transforming data into information
- Interpretation: adding meaning to information by making connections and comparisons and by exploring causes and consequences

Main message
This slide differentiates Analysis and Interpretation

Slide 53

Are facilities reaching coverage targets?



* National coverage target for pregnant women receiving IPTp-2 is 80%.

Main Message
Sample demo

Slide 54

Interpreting Data

- Does the indicator meet the target?
- What is the programmatic relevance of the finding?
- What are the potential reasons for the finding?
- What other data should be reviewed to understand the finding (triangulation)?
- How does it compare? (trends, group differences)
- Conduct further analysis

Main message
This slide examines participants knowledge on data interpretation

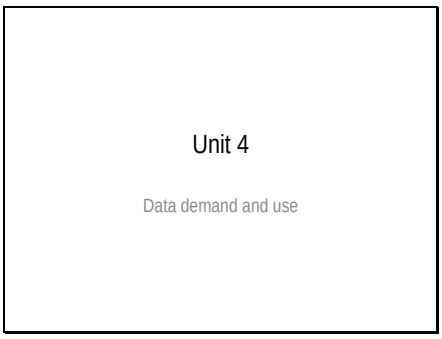
Slide 55

Additional Questions

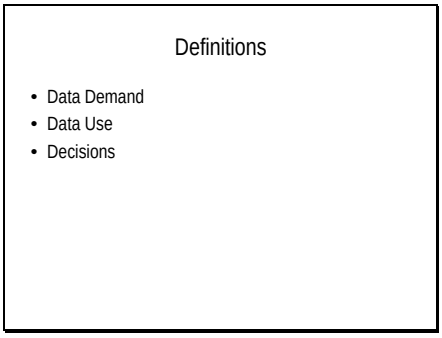
- Which facility is performing better/worse than expected?
- What is the trend over time for these facilities?
- How would you assess each facility's performance based on the data?
- What other data or information should you consider in providing recommendations or guidance to the facilities?

Main Message
This slide provides additional questions on data interpretation

Slide 56

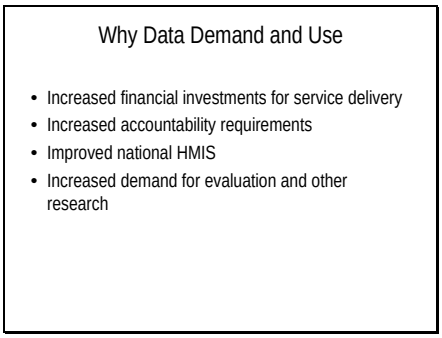


Slide 57



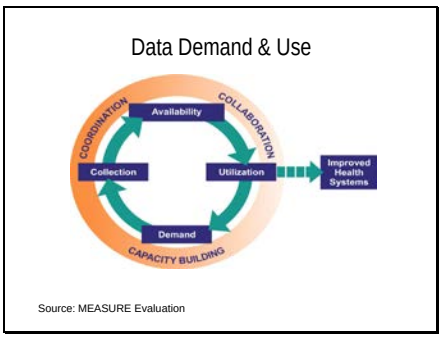
Main Message
Participants to brainstorm concepts of data demand and use in decision making

Slide 58



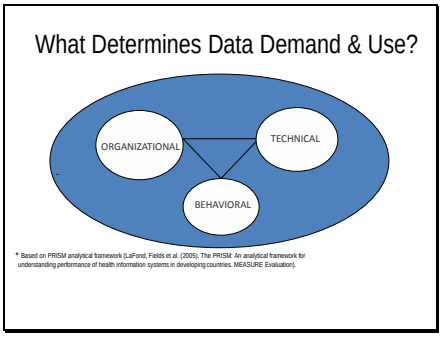
Main Message:
This slide is about importance of data demand and use
Emphasis on promotion of data use

Slide 59

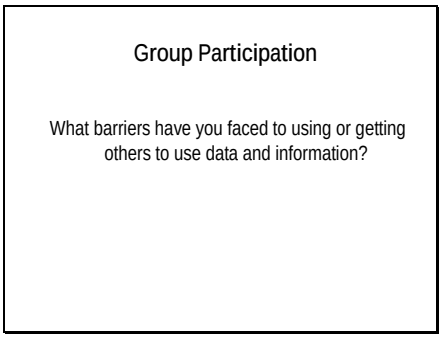


Main message
This slide is about data demand and use cycle

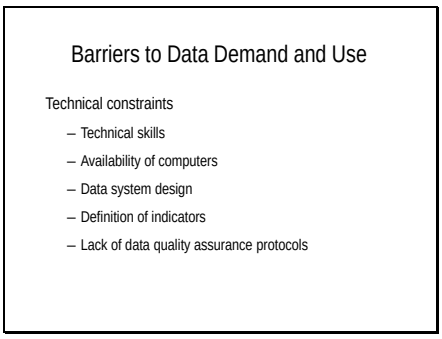
Slide 60



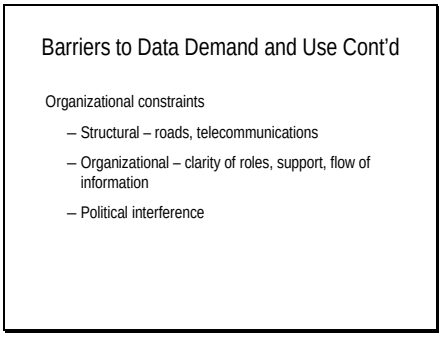
Slide 61



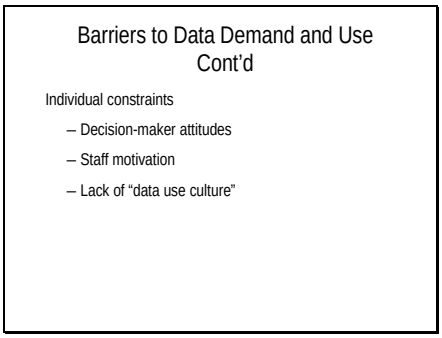
Slide 62



Slide 63



Slide 64



Main message:
Data use culture is practices associated with use of data in decision making

Slide 65

Group Participation

What challenges have you faced trying to use data and information?

Slide 66

Challenges

- Integrated HMIS still not fully functioning
- Little or no communication between data producers and data users
- Low capacity to collect, analyze, & interpret data
- Limited or no culture of data use
- Data collection and use not a priority

Slide 67

Importance of Feedback

- Information needs to be shared:
  - At timely and regular intervals
  - Within, between, up, and down
- Paves path between data collectors and users at all levels of the health system

Slide 68

Importance of Feedback Cont'd

- Leads to greater appreciation of data:
  - Improved data quality
  - Influences collection of appropriate data
- Important element of management and supervision:
  - Creates opportunity to monitor & improve program services
  - Incentive for staff

Slide 69

Types of Feedback

Type of Feedback	Example	Audience
Written	Tables of monthly reports	Staff, Managers
	Short program reports	Staff, Managers
	Comparison tables by facility	Staff, Managers
	Graphs	Staff
	Quarterly, biannual, and annual reports	Staff, Managers, Community, NGOs
	Standard reports	Staff, Managers
	Special reports	Policymakers, NGOs
Oral	Staff assessments	Staff
	Staff appraisals	Staff

69

In your own words, **review** the contents of this slide.

Slide 70

Examples of Feedback

- Sharing information within a facility or organization
- Sharing aggregated service provision data from facilities within a district or between provinces
- Meetings between facility and supervising agency to review and discuss information
- Meetings between donor and NGO to review information and discuss challenges and opportunities

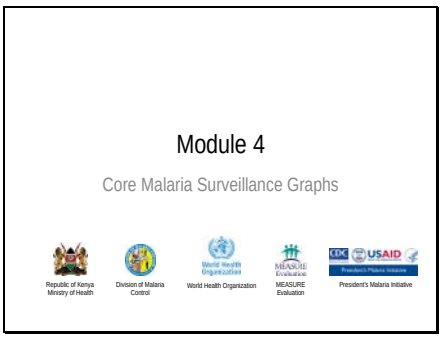
Slide 71

Beware of information overload!

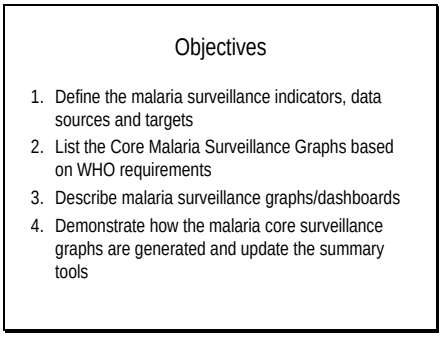
Slide 72

THANK YOU!

Slide 1



Slide 2

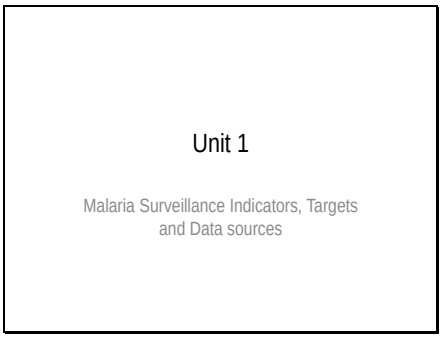


Main message

By the end of this session, the learner will be able to:

NOTE to facilitator: Read slide.

Slide 3



Main Message:

Ask the participants if they know what indicators and targets mean.

- Indicator: is **variable** that **measures one aspect** of a program/project or health outcome
- Target: a goal to be achieved
- Data Sources: are records from which data is obtained

Slide 4

Review of surveillance indicators

- Indicators measured monthly
  - OP confirmed malaria cases
  - Clinical Malaria cases
  - OP malaria TPR
  - IP malaria cases
  - IP malaria deaths
  - Diagnostics: %OP suspected tested
  - ITN routine distribution
  - IPTp
  - Stockouts
  - Completeness of reports

Main message:

Facilitator to read: Surveillance is the ongoing, systematic collection, analysis and interpretation of health data and the malaria surveillance indicators are: Read the slide.

Slide 5

Review of surveillance indicators

- Indicators measured annually
  - IRS coverage (population)
  - IRS coverage (households)

Slide 6

Surveillance Indicators

Indicator	Numerator, denominator	Targets	Comments
Indicators measured monthly			
1. Outpatient confirmed malaria cases	*Numerator* – Number of outpatient confirmed malaria cases (by microscopy or RDT) reported by health facilities per year *Denominator* for rate – Resident population by age (<5 years, all ages) per 1000 people resident in areas at risk of malaria	Case rate trend: • >50% reduction by 2010 • >75% reduction by 2015 Rate: • <1 confirmed case per 1000 people indicates excellent control	Rate of <1 confirmed case per 1000 people indicates readiness for elimination phase
2. Outpatient malaria TPR	*Numerator* – Number of outpatient laboratory- confirmed malaria cases *Denominator* – Total number of outpatient suspected malaria cases tested × 100	TPR trend: • >50% reduction by 2010 • >75% reduction by 2015 Annual TPR: • 10–20% – intermediate control • 5–9% – good control • <5% – excellent control	Annual rate should be used, not just the rate during the peak season. • <5% in peak season indicates readiness for elimination phase
3. Inpatient malaria cases	*Numerator* – Cases (confirmed and unconfirmed) with a primary diagnosis of malaria at discharge (and not admission) *Denominator* for rate – Resident population by age (<5, all ages) per 1000 people resident in areas at risk of malaria	Trend: • >50% reduction by 2010 • >75% reduction by 2015	

Note to Facilitator: Ask the participants to refer to the participants manual appendix XX: Surveillance indicators Emphasis the numerator and denominator for each indicator and the targets

Slide 7

Surveillance Indicators Cont'd

4. Inpatient malaria deaths	*Numerator* – Deaths with a primary diagnosis of malaria at discharge *Denominator for rate* – Mid-year resident population by age (<5, all ages) per 1000 people resident in areas at risk of malaria	Trend: • >50% reduction by 2010 • >75% reduction by 2015 Elimination of malaria deaths by 2015	
5. Diagnostics – percentage of outpatient suspected malaria cases that undergo laboratory diagnosis	*Numerator* – Number of outpatient suspected malaria cases that received laboratory examination for malaria (microscopy or RDT) *Denominator* – Number of outpatient suspected malaria cases × 100	≥60%	
6. Treatment (ACT) – percentage of outpatient malaria cases that received appropriate antimalarial treatment according to national policy	*Numerator* – Number of malaria cases receiving appropriate antimalarial treatment at health facility *Denominator* – Number of outpatient malaria cases expected to be treated at health facility with appropriate antimalarial medicine (all those with a diagnosis of malaria) × 100 [1]	100%	

Main message
Emphasis the numerator and denominator for each indicator and the targets

Slide 8

Surveillance Indicators Cont'd

Indicator	Numerator, denominator	Targets	Comments
Indicators measured monthly			
7. ITN – routine ITN distribution to populations at high risk (pregnant women)	*Numerator* – Number of ITNs distributed or delivered to target populations—pregnant women attending ANCs *Denominator* – Total number of pregnant women attending an ANC for the first time	≥80%	
8. IPT – IPT in pregnant women	*Numerator* – Number of pregnant women receiving second dose of IPT *Denominator* – Number of pregnant women with at least one ANC visit	≥80%	
9. Stock-outs – percentage of health facilities without stock-outs of first-line antimalarial medicines, mosquito nets and diagnostics, by month[1]	*Numerator* – Number of health facilities, in areas at risk of malaria, without stock-outs of first-line antimalarial medicine (according to national policy), ITNs and RDT in a month *Denominator* – Number of reporting health facilities in the same areas at risk of malaria × 100	100%	

Main Message
Emphasis the numerator and denominator for each indicator and the targets

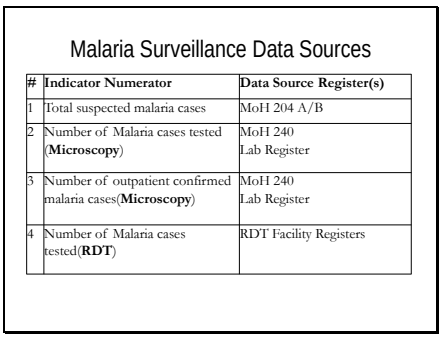
Slide 9

Surveillance Indicators Cont'd

10. Completeness of monthly health-facility reports on surveillance and logistics[2]	*Numerator* – Number of health facility monthly reports received on surveillance and logistics, by month *Denominator* – Number of health facility reports expected each month	100%	

Main Message
Emphasis the numerator and denominator for each indicator and the targets

Slide 10



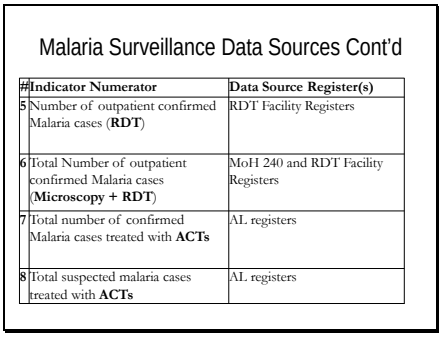
Malaria Surveillance Data Sources

#	Indicator Numerator	Data Source Register(s)
1	Total suspected malaria cases	MoH 204 A/B
2	Number of Malaria cases tested (**Microscopy**)	MoH 240 Lab Register
3	Number of outpatient confirmed malaria cases(**Microscopy**)	MoH 240 Lab Register
4	Number of Malaria cases tested(**RDT**)	RDT Facility Registers

Main message
Ask the participants if they are familiar with the health facilities registers and list all the possible facility registers

Mention to the participants that registers highlighted are sources for the facility data for malaria surveillance.

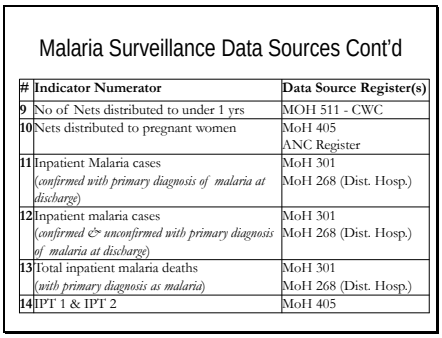
Slide 11



Malaria Surveillance Data Sources Cont'd

#	Indicator Numerator	Data Source Register(s)
5	Number of outpatient confirmed Malaria cases (**RDT**)	RDT Facility Registers
6	Total Number of outpatient confirmed Malaria cases (**Microscopy + RDT**)	MoH 240 and RDT Facility Registers
7	Total number of confirmed Malaria cases treated with **ACTs**	AL registers
8	Total suspected malaria cases treated with **ACTs**	AL registers

Slide 12



Malaria Surveillance Data Sources Cont'd

#	Indicator Numerator	Data Source Register(s)
9	No of Nets distributed to under 1 yrs	MOH 511 - CWC
10	Nets distributed to pregnant women	MoH 405 ANC Register
11	Inpatient Malaria cases (*confirmed with primary diagnosis of malaria at discharge*)	MoH 301 MoH 268 (Dist. Hosp.)
12	Inpatient malaria cases (*confirmed & unconfirmed with primary diagnosis of malaria at discharge*)	MoH 301 MoH 268 (Dist. Hosp.)
13	Total inpatient malaria deaths (*with primary diagnosis as malaria*)	MoH 301 MoH 268 (Dist. Hosp.)
14	IPT 1 & IPT 2	MoH 405

Main message:

Highlight the importance of keeping good patient records at the health facility to inform malaria surveillance activities and decisions

Slide 13

Unit 2

Introduction to WHO core Malaria Surveillance graphs

Ask they participants if they are familiar with the WHO core malaria surveillance graphs and let them list the graphs.

Slide 14

WHO Core Malaria Surveillance Graphs

- The core graphs are grouped into two categories – surveillance (four graphs) and logistics (three graphs), as follows:
- Surveillance graphs:
  - outpatient malaria TPR in children under 5 years of age and all ages;
  - Inpatient malaria cases and deaths in children under 5 years of age (double-axis graph);
  - outpatient confirmed malaria cases and percentage of suspected malaria cases tested with parasite-based test (double-axis graph); and
  - outpatient all-cause cases and suspected malaria cases, all ages (double-axis graph).

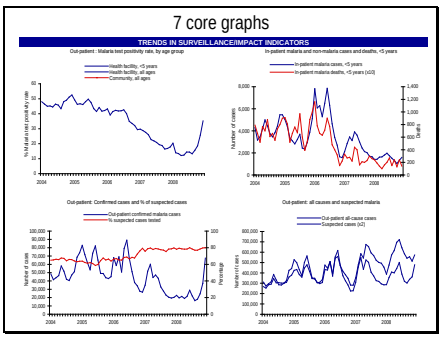
Emphasize on the two categories and read all the graphs.
Engage the participants by asking them the definitions and refer them to the annex XX.

Slide 15

WHO Core Malaria Surveillance Graphs Cont'd

- Logistics and completeness of reporting graphs:
  - percentage coverage with patients treated with ACT (of number expected to be
  - treated according to national policy), and of ANC clients receiving ITN or IPT2 (i.e. second dose of IPT)
  - percentage of health facilities without stock-outs of ACT, RDT and LLIN; and
  - percentage of health facilities and districts that reported

Slide 16

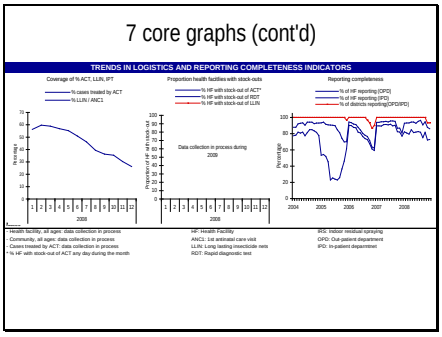


Main Message:

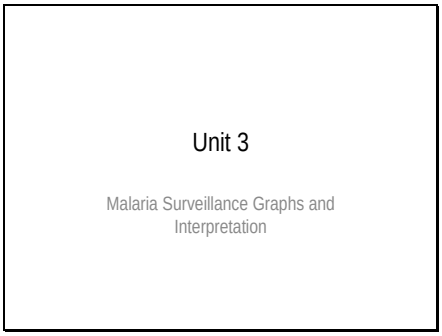
Kenya adopted the 7 core malaria surveillance graphs and double axis graphs were subdivided further to have 9 core graphs which will be presented in the next slides.

The graphs that were divided to single axis are: Percentage of suspected malaria cases tested with parasite-based test and Inpatient malaria deaths for children under age 5

Slide 17



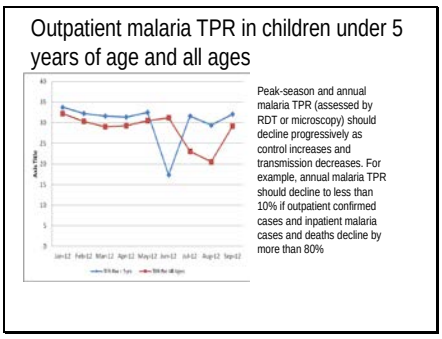
Slide 18



Main message:

Ask the participants to refer to appendix X for the malaria surveillance graphs and take them through each graph and its interpretation.

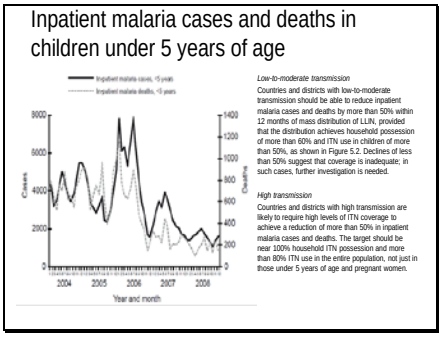
Slide 19



Main message:
This graphs shows the outpatient test positivity rates for under fives and all ages.

Emphasis: The graph demonstrates the trends with regard to the percentage of the malaria cases that tested positive against the total number of cases tested

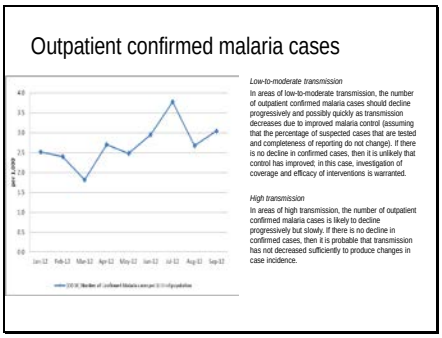
Slide 20



Main message:

This graph will be split into two once the inpatient malaria deaths is well defined and the in-patient registers are revised to include the diagnosis at exit.

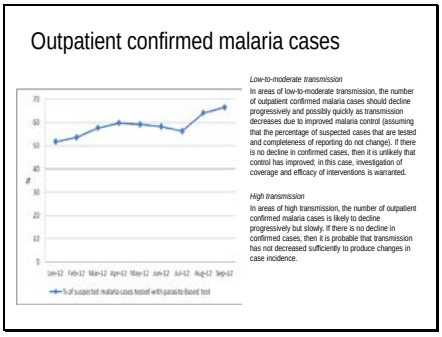
Slide 21



Main Message:

This graph defines the percentage of outpatient suspected malaria cases that are confirmed to have malaria parasite by microscopy or RDT per 1000 people resident in Kenya. The rate of less than 1 case per 1000 people indicates readiness for elimination phase.

Slide 22

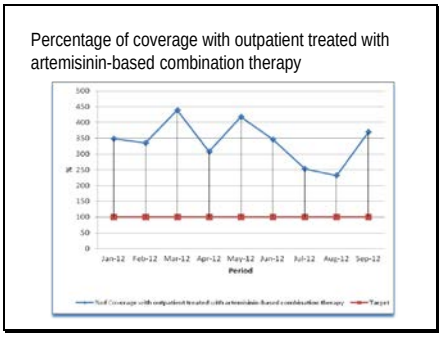


Main Message:

The diagnostic capability of health facilities in the country is illustrated through the data presented

This graph defines the percentage of the suspected malaria cases among the outpatient that underwent a laboratory diagnosis over the reporting period.

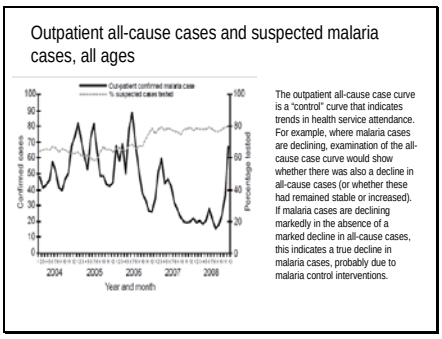
Slide 23



Main Message:

Kenya has adopted the policy of test before treatment and AL should only be administered to patients who are tested for malaria parasites using a parasitic laboratory test, and the results are positive. The ability of health facilities to achieve this has in the past been hampered by low coverage of the rapid diagnostic test kits (RDTs) or microscopy.
This graph demonstrates the percentage of outpatient cases that were treated using artemisinin-based combination therapy over the reporting period. Note that in this scenario there is general over treatment according to the T3 guide focusing on the target line in red.

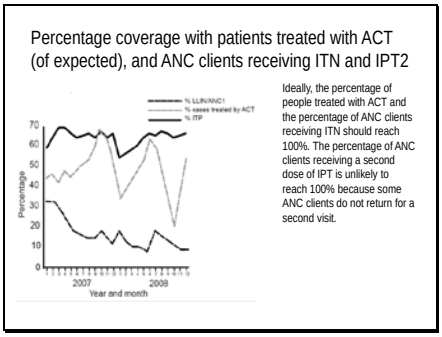
Slide 24



Main message:

This graph indicates trends in health service attendance in comparison to the malaria cases that are being reported at the health facilities.

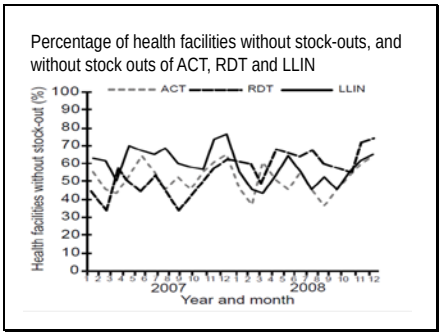
Slide 25



Main Message:

The prevention of malaria in pregnancy involves combination strategies that together are aimed at reducing maternal and perinatal morbidity and mortality occasioned by malaria. The strategies comprise the antenatal care (ANC) package that comprise at least two doses of intermittent preventive treatment for expectant (IPT2), Provision of Long Lasting Insecticide Nets(LLINs) and the provision of prompt diagnosis and treatment of fever.

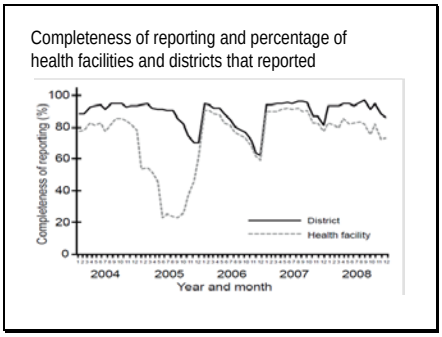
Slide 26



Main Message:

This graph refers to the percentage of health facilities without stock-outs, rather than the percentage with stock-outs. Ideally, the percentage of health facilities without stock-outs should reach 100% each month.

Slide 27



Mean message:

The Division of Malaria Control (DOMC) derives surveillance monitoring and evaluation (SM&E) data from various routine data reporting systems that includes the Division of Health Information Systems (DHIS), Integrated Disease Surveillance and Response (IDSR), the Logistics Management Information System, and Laboratory Information Management System (LIMS).

The reporting rates help determine how complete the reports from the health facilities are the plausibility of the data being reported.

The percentage of districts with complete reporting should reach 100%. The percentage of health facilities with complete reporting should reach more than 95%. Supervision should be targeted at health facilities and districts with incomplete reporting.

Slide 28

Unit 4

Malaria Surveillance Summary Tool

Slide 29

Filling the Electronic Tool

The Electronic DMCC Tool is an excel workbook with 14 worksheets containing:

- Facility List
- Jan-Dec worksheets with the indicators for each facility
- District Indicator Summary worksheet

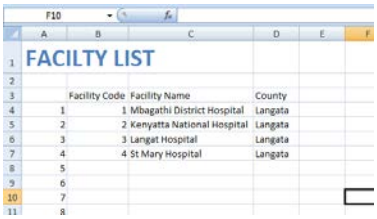
Some parts of the worksheet are protected to avoid accidental deletions

Main message:

Open the excel indicator summary sheet and take the participant through each sheet to the dashboards that are created.

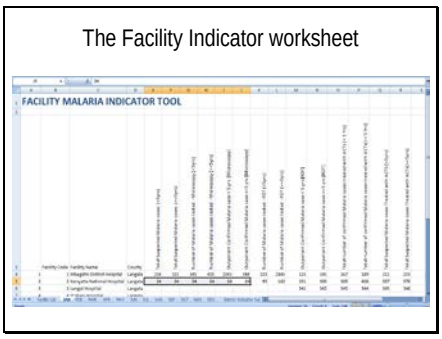
Slide 30

The Facility List worksheet



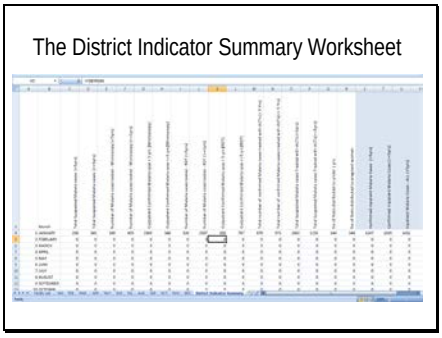
Provide the participants with the excel worksheet
Ask the participants to open the excel worksheet provided

Slide 31



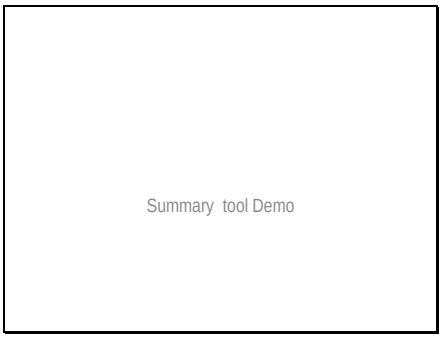
Provide the participants with the excel worksheet
Ask the participants to open the excel worksheet provided

Slide 32



Provide the participants with the excel worksheet
Ask the participants to open the excel worksheet provided

Slide 33

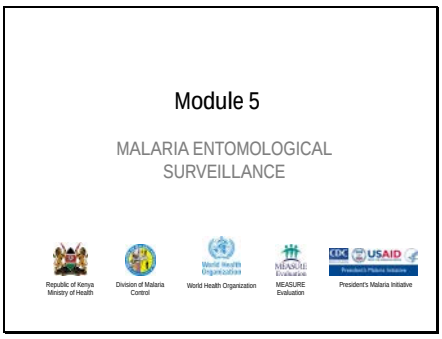


Main message

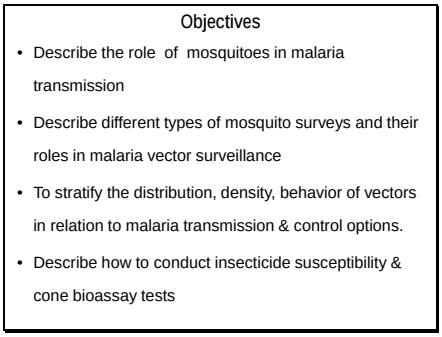
Open the excel indicator summary sheet and demonstrate to the participants how the summary sheet works by keying in sample data. Show the participants the sample dashboards that are generated by the electronic summary sheet.

Slide 34

Slide 1

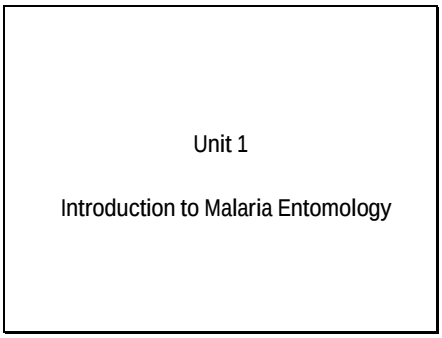


Slide 2



Outline the objectives for the participants

Slide 3



Slide 4

Activity (10 mins)

Question and Answer Session

- What is malaria entomology?
- How is malaria transmitted?
- Do all mosquitoes transmit malaria?

Main message of this slide
Use this slide to articulate the correct definition of malaria entomology
Enrich the definition by involving the participants
Underscore the role of mosquitoes in malaria transmission

Slide 5

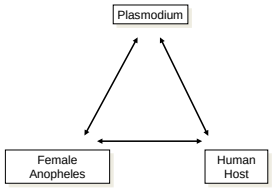
Definition

- Malaria is a parasitic disease caused by a protozoan parasite of the genus *Plasmodium* transmitted by an infective female *Anopheles* mosquito
  - Only female mosquitoes feed on blood as a requirement for their eggs maturation
  - In Kenya only *Anopheles gambiae* and *funestus* are known malaria vectors

Main message of this slide
Give a concise definition of malaria
Underscore the fact that only female *Anopheles* mosquitoes transmit malaria
Emphasize that even within the *Anopheles,* not all of them are vectors

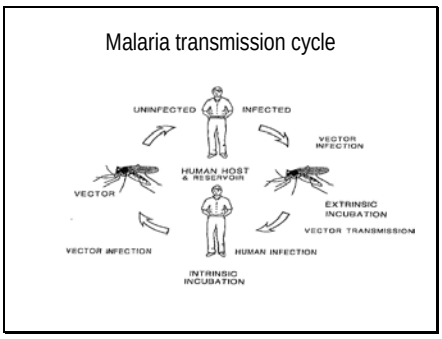
Slide 6

Malaria Transmission Triangle



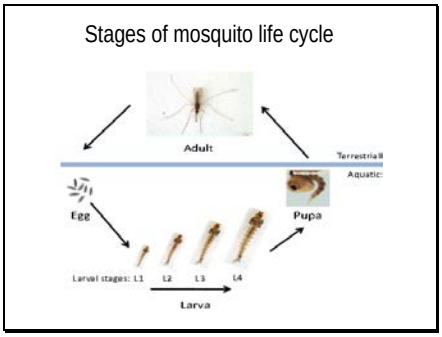
Main message of this slide
For transmission to take place, human reservoirs and infective vectors must be present

Slide 7



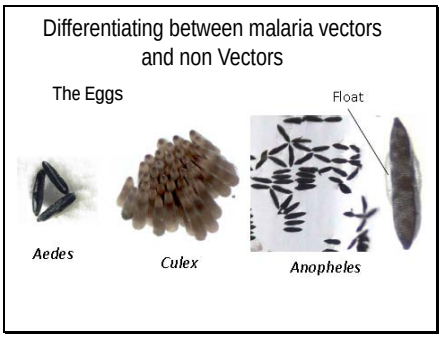
Main message of this slide
Emphasize the parasite incubation periods in both the human and the vectors

Slide 8



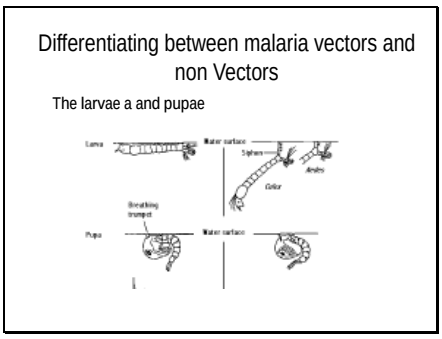
Main message of this slide
Highlight the aquatic and terrestrial stages which are influenced by environmental factors (temperature, humidity, precipitation)

Slide 9



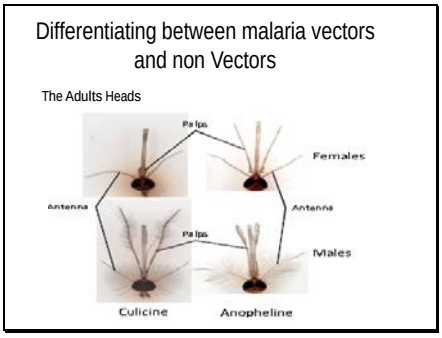
Main message of this slide
Emphasize the differentiating features of potential malaria vectors and non vectors at the egg stage

Slide 10



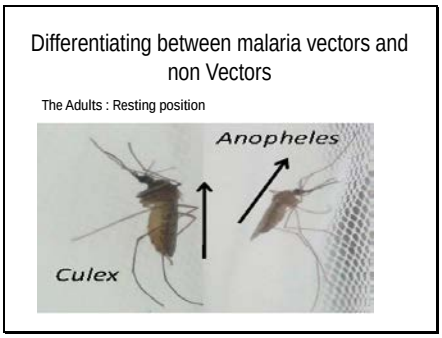
Main message of this slide
Emphasize the differentiating features of potential malaria vectors and non vectors at the larval and pupa stages

Slide 11



Main message of this slide
Emphasize the differentiating features of potential malaria vectors and non vectors at the adult stage based on the features on their heads

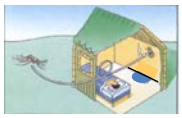
Slide 12



Main message of this slide
Emphasize the differentiating features of potential malaria vectors and non vectors at adult stage based on the resting position

Slide 13

Bio-ecological traits of malaria vectors



- A female mosquito enters a house in search of a blood meal – sits on the wall to orientate
  stop mosquitoes from entering into houses (Target = Adults)
- After biting, the mosquitoes usually rest on the wall to digest the blood meal
  stop mosquitoes from biting people to get a blood meal (Target = Adults)
- Becomes gravid, searches for suitable water body to lay eggs on
  stop gravid mosquitoes from laying eggs on water (Target = Adults)

Main message of this slide
Emphasizes some of the life-cycle behaviors of efficient malaria vectors and possible areas of interventions. Currently there are no tools that target gravid adult anopheles mosquitoes.

Slide 14

Bio-ecological traits of malaria vectors

- Feeding preferences (Host choice): Man or other animals?
- Time of feeding: Early evening or late at night?
- Place of feeding (Indoors or outdoor)
- Resting behavior (Indoor or outdoors)
- Effects of bio-ecological traits on choice of vector control methods and their effectiveness

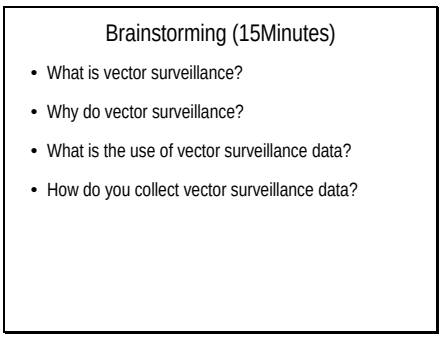
Main message of this slide
Underscore the key behavioral traits of efficient malaria vectors

Slide 15

Unit 2

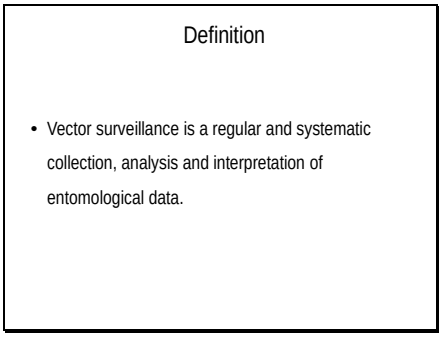
Surveillance of Malaria Vectors

Slide 16



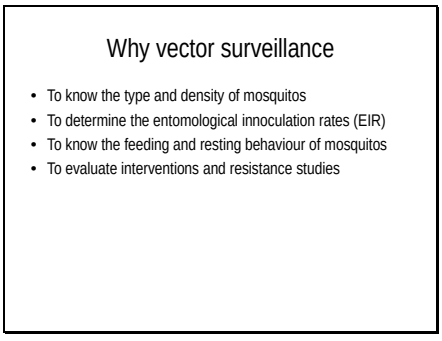
Main message of this slide
Use this slide evaluate participants understanding of the meaning of surveillance
Bring vector surveillance into the context of IDSR
Highlight that vector surveillance data can and should be collected

Slide 17



Main message of this slide
Use this slide to articulate the correct definition vector surveillance
Enrich the definition by involving the participants

Slide 18



Slide 19

Usefulness of vector surveillance data

- Planning, implementation and evaluation of vector control interventions
- Early detection, prediction and prevention of vector borne disease outbreaks through a systematic data collection, analysis and evidence based decision making procedures.
- Early resistance detection and management
- Timely dissemination of the data to those responsible for vector control interventions.
- Development of malaria entomological profile

Main message of this slide
Use this slide to underscore the usefulness of vector surveillance data
Emphasize the role of data in appropriate targeting of vector control interventions

Slide 20

Types of entomological surveys

There are four main types of mosquito surveys:

- Preliminary surveys:
  - original, basic and short-term.
  - used to gather baseline data usually for the purpose of planning a vector control intervention.
  - Emphasis on vector species, density, resting & feeding behavior, larval habitats, longevity, infection rates & insecticide susceptibility.
- Regular or trend observations:
  - routine or long-term observations (longitudinal or operational surveys of monitoring).
  - carried out regularly (e.g. weekly, monthly) in order to evaluate the impact of control measures.

Main message of this slide
Highlight the different types of mosquito surveys and their applications.
For regular or trend observations several sentinel sites to represent different epidemiological zones may be used.

Slide 21

Types of entomological surveys cont'd

- Spot checks:
  - carried out in randomly chosen localities other than the fixed monitoring stations
  - provide supplementary information from areas otherwise not represented in routine monitoring.
- Foci investigations:
  - carried out in areas of new or persistent malaria transmission to investigate reasons for disease transmission, or why implemented interventions are ineffective in reducing disease burden.

Main message of this slide
This slide emphasis the two methods of rapid assessment of malaria vectors during malaria epidemics.

Slide 22

Methods of mosquito sampling

- The choice of method for mosquito sampling depends on the purpose and the desired outcome.
- The following are the main methods of sampling
  - Pyrethrum Spray Catches (PSC);
  - Hand collections
  - Light traps
  - Human Landing Catches
  - Window (entry/exit) trap
  - Larval collection

Main message of this slide
This side gives a summary of the most common methods of mosquito sampling.
Collected specimens will be recorded using the annexed reporting and recording tools (show the participants the tools)

Slide 23

Pyrethrum Spray Catches (PSC)

- Method used to collect indoor resting mosquitoes to establish densities, species composition, physiological status, human blood index and infection rates
- Resting mosquitoes are knocked down using aerosols and collected on white calico sheets as shown in the photo.

Main message of this slide
This slide highlights one of the methods commonly used in assessing the efficacy of a vector control intervention especially Indoor Residual Spaying

Slide 24

Pyrethrum spray collection

Main message of this slide
Emphasizes the practical bit of Pyrethrum Spray Collection
Samples collected are preserved for further processing

Slide 25

Hand collections

- Method used to collect resting mosquitoes to establish densities, species composition, physiological status, resting behavior, human blood index and infection rates or rearing for insecticide resistance monitoring
- Resting mosquitoes are picked using a sucking tube (aspirator) & placed in mosquito cages or paper cups.
- This method picks live mosquitoes

Main message of this slide
This is one of the method for collecting live mosquitoes which can be used for various purposes especially testing for resistance.

Slide 26

Hand collections and main materials used

1. mouth aspirator, 2. mechanical aspirator, 3. flashlight, 4. spare batteries, 5. adhesive tape, 6. rubber bands, 7. paper-cups with netting, 8. cotton wool.

Main message of this slide
Highlight the materials and methods used for hand collection of mosquitoes. Where possible, participants should be shown the actual materials.

Slide 27

Light traps

- Method used to collect mosquitoes to establish densities, species composition, resting behaviour, physiological status, human blood index and infection rates
- Light trap is a battery powered devise fitted with a motor, a fan and light source.
- Mosquitoes are collected either dead or alive

Main message of this slide
This slide highlights one of the most useful methods of mosquito collection for either evaluating vector control interventions or baseline mosquito densities

Slide 28

Light trap

Main message of this slide
This slide give a visual presentation of a light trap. If possible, the actual light trap should be shown to the participants. Light traps are used to collect mosquitos either indoor or outdoor.

Slide 29

Window (exit/entry) trap

- Method used to collect mosquitoes to establish densities, species composition, physiological status, human blood index, infection rates , resting and exit behaviors
- Exit trap is devise fitted to a window such that all exiting/entering mosquitoes are trapped within it
- Mosquitoes are collected either dead or alive

Main message of this slide
This slide highlights one of the methods of mosquito collection that is particularly useful for determining their resting and feeding behaviors

Slide 30

Window (exit/entry) trap

Main message of this slide
Visual representation of an exit trap fitted on a window

Slide 31

Human landing Catches

- Method used to collect mosquitoes to establish densities, species composition, association between man and mosquito, biting patterns, infection rates , feeding behavior and transmission intensities.
- This method of collection act as a bait and any mosquitoes landing are picked before they bite
- Mosquitoes are collected alive

Main message of this slide
This slide highlights one of the most useful methods of mosquito collection especially for determining malaria transmission intensity

Slide 32

Human Landing Catch

Main message of this slide
This slide highlights the techniques used in the human landing catch

Slide 33

Larval sampling

- Larval sampling is important for
  - Determination of the vector species present in the study area.
  - Identification of preferred active breeding sites for each species.
  - Determination of the geographical distribution of vectors.
  - Evaluation of anti-larval measures on larval density.
  - Collecting samples for rearing to adults in the for insecticide susceptibility studies

Main message of this slide
This slide underscores the importance of larval sampling

Slide 34

Larval Sampling

Main message of this slide
This slide highlights how larval sampling is done using a standard dipper. The facilitator should demonstrate how to use a standard larval dipper

Slide 35

Unit 3

Mapping of Malaria Vectors

Slide 36

Discussions (20mins)

- Are the malaria vectors distributed equally within a given geographical area?
- Do some areas have more than one vector species?
- Do vector species show variation in feeding, resting, or host preference?
- Are they infected?
- What are the implications on these factors on choice of vector control intervention?

Main message of this slide
This slide highlights the fact that the distribution of malaria vectors is not homogenous in space and time.
Also underscore that vectors differ in their behaviors and this has a direct bearing on their malaria transmission potentials

Slide 37

Mapping

- A map is a visual *representation* of an area – a symbolic depiction highlighting relationships between elements of that space
- Vector maps depict the distribution, species, relative abundance, vectorial capacity and other parameters related to malaria transmission in space and time.
- A detailed knowledge of the distribution, behaviour, & malaria transmission potentials of the main *Anopheles* malaria vectors guide the choice & targeting of vector control interventions.

Main message of this slide
This slide introduce the concept of maps and their applications in guiding vector control interventions

Slide 38

Mapping of malaria vectors

- Malaria transmission in endemic countries is not uniform thus resulting in differences in its epidemiology
- Climatic conditions such as temperature, humidity & precipitation have a direct bearing on vector breeding, density, distribution, longevity, feeding frequency, resting behavior and the rate at which the parasites develop in the vector

Main message of this slide
This underscores the role of climatic factors in determination spatial and temporal variation in malaria transmission.
Emphasizes on mosquito densities and longevity as the most important parameters

Slide 39

Mapping of malaria vectors Cont'd

- These vector traits have direct impact on malaria transmission potentials and the choice of vector control interventions
- Thus it is important to map the spatial and temporal variation of the key vector parameters and reviewing them from time to time as vector control interventions are scaled up

Main message of this slide
Emphasize the importance of spatial and temporal maps in informing the choice of vector control interventions.
Nedd to regularly update vector maps

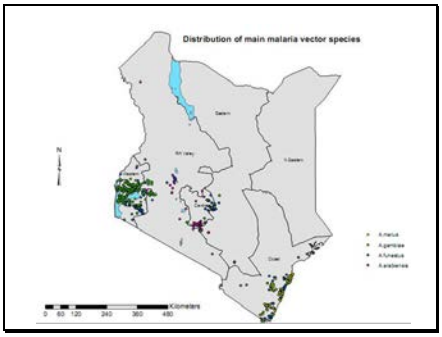
Slide 40

Development of vector maps

- Data for development of vector maps can be obtained by actively conducting vector surveillance or retrospective records
- These data are geo-referenced using GIS and other techniques (Google maps)
- The key parameters are keyed in into a data base
- Maps with specific area generated by using a mapping software (e.g. ArCview GIS)

Main message of this slide
This slide outlines the methods for production of vector maps. In the absence of this tools individuals can sketch their local maps and plot and indicate relevant areas like vector breeding sites.

Slide 41



Main message of this slide
This underscores the role of climatic factors in determination spatial and temporal variation in malaria transmission.
This slide gives and example of a developed vector map.
Participants should review species of vectors found within their localities

Slide 42

Unit 4

Insecticide Susceptibility and Cone Bioassay Tests

Slide 43

Why determine the susceptibility of malaria vectors to insecticides?

- If a vector is susceptible to an insecticide, then it means that the vector will be killed when it comes into contact with the insecticide used for the particular intervention (indoor residual spray, insecticide-treated bed net or larvicide).
- Decreasing susceptibility means that the vector becomes increasingly tolerant to the insecticide, up to a point where it becomes resistant.

Main message of this slide
This slide underscores the importance of insectide resistance monitoring and monitoring efficacy of insecticides used in vector control

Slide 44

Why determine the susceptibility of malaria vectors to insecticides? Cont'd

- If a vector develops resistance to an insecticide, it means it can withstand the dose that normally would have killed it and this may undermine the effectiveness of the intervention.
- It is therefore important to know the susceptibility level of the local vector to the insecticides to be used in the intervention.

Main message of this slide
This slide underscores the importance of insectide resistance monitoring and monitoring efficacy of insecticides used in vector control

Slide 45

Preparation of test vectors for susceptibility and cone bioassay evaluations

Two general methods are used to prepare/obtain test vectors for bioassays:

- Larvae may be collected from a range of local breeding sites and reared to adults
- Alternatively, blood fed & gravid local mosquito species are hand collected using adult sampling techniques and kept to lay eggs. The eggs are then reared to adults

This slide outlines the step used to obtain samples for insecticide resistance monitoring

Slide 46

Determining the susceptibility of adult mosquitoes

- There are standardized methods for determining vector susceptibility to insecticides in adult mosquitoes.

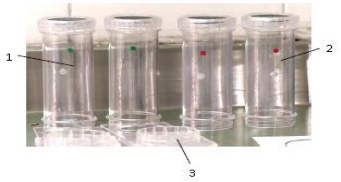
WHO Tube Assay:

- The standardized methodology is provided by the World Health Organization (WHO) for assessing the susceptibility of female *Anopheles*
- Mosquito vectors of a known species are exposed in special test tubes containing filter papers, impregnated with a lethal concentration (discriminating dose) of a given insecticide dissolved in oil.

This slide outlines of WHO method of testing insecticides resistance among the malaria vectors

Slide 47

WHO test tubes for susceptibility testing



1. Control/holding tubes (green dot), 2. exposure tubes (red dot), 3. slide units

This slide demonstrate WHO susceptibility testing kit, where possible participants should assemble one kit as demonstration

Slide 48

The WHO kit

- The WHO tube test kit is made up of two plastic tubes
- One of the tubes is marked with a red dot & is used as "exposure tube" as it is lined with insecticide impregnated filter paper
- The other tube, with a green dot, serves as a "holding tube", which has its inner walls lined with plain paper.
- Another exposure tube (also marked with a green dot) is lined with a filter paper impregnated only with the oil used to dissolve the insecticide and serves as a control

This slide describe WHO kit used for testing insecticides resistance Participants should assemble the kit

Slide 49

The bioassay

- 15-20 mosquitoes are exposed to each insecticide for one hour & an equal number kept as control
- Observation for dead mosquitoes is done at 15min intervals
- After the exposure period the mosquitoes are transferred to the holding tubes and mortality recorded after 24 hrs

This slide describes WHO tube bioassay method for testing This slide describe WHO kit used for testing insecticides resistance among the malaria vectors.

Slide 50

Interpretation of the results

WHO classification for insecticide resistance as follows:-

- 98-100% - Susceptible
- 90-97% - Resistance suspect
- < 90% - Resistance

Slide 51

Residual Efficacy of Insecticide on Sprayed Surfaces and insecticide treated materials

- The residual efficacy of an insecticide on a sprayed surface is determined by cone bioassay tests
- Done by checking mortality of the target mosquito vector species exposed to the sprayed surface at intervals of weeks or months after the spraying.
- This technique can be also used to evaluate the quality of a residual spraying operation
- Also used to determine residual efficacy of an insecticide on bed nets.

Main message:
This slide highlights the residual effects of insecticides to determine the frequency of spraying (for IRS) and replacement of LLINs

Slide 52

The WHO Cone Bioassay kit

- The WHO cone bioassay kit includes:
  - plastic cones,
  - adhesive sponge tape,
  - bent aspirator or sucking tube,
  - normal aspirators or sucking tubes,
  - cardboard paper, s
  - mall nails,
  - hammer,
  - cotton
  - wool,
  - paper cups with cover nets,
  - rubber bands, markers,
  - mosquito cage, wooden box with large holes, towels

The slide indicates the composition of WHO cone bioassay kit, participants should assemble a complete kit as a demonstration

Slide 53

The bioassay

- The cones are fixed on the test surface (wall or net)
- Untreated surfaces or materials are used as control
- 10 mosquitoes from a fully susceptible Anopheles strain from an insectary are introduced into each cone & a piece of cotton wool inserted in the opening of the cone
- After the exposure period (usually 30 mins) the mosquitoes are removed and dead ones counted
- Mosquitoes are transferred to holding paper cups and mortality recorded after 24 hours

This slide describes WHO cone bioassay procedure for determining residual efficacy of insecticides on either nets or sprayed surfaces

Slide 54

WHO cone bioassay on a wall

The slide demonstrates WHO cone bioassay on a sprayed surface
Emphasis on regular surveys to determine the insecticide decay rates

Slide 55

WHO cone bioassay on an insecticide treated net

The slide demonstrates WHO cone bioassay on a sprayed surface
Emphasis on regular monitoring of efficacy of insecticide treated materials

Slide 56

Demonstrations

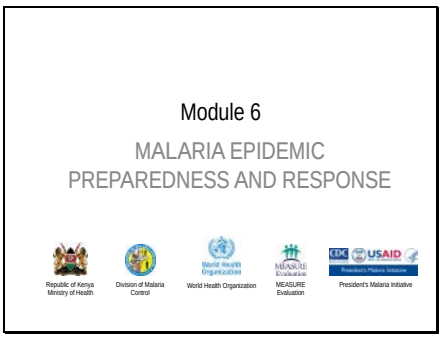
1 Hr

The facilitator should demonstrate the various techniques used for entomological surveillance

Slide 57

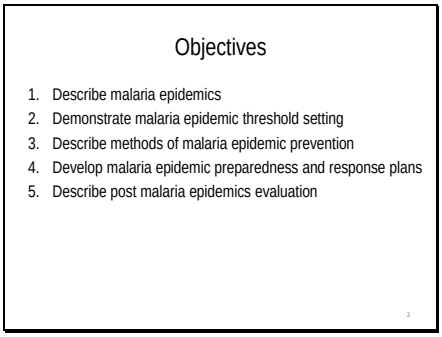
Thank You

Slide 1

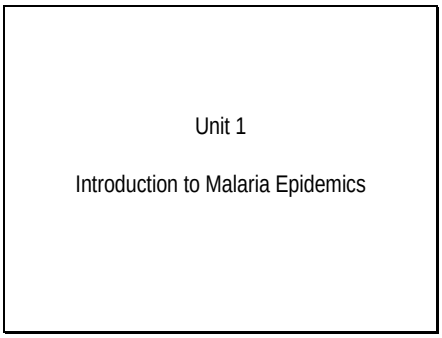


Main message
This slide gives the participants a general overview of module

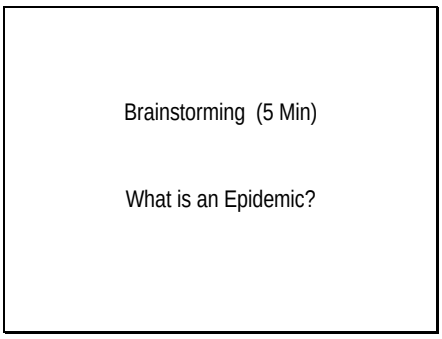
Slide 2



Slide 3



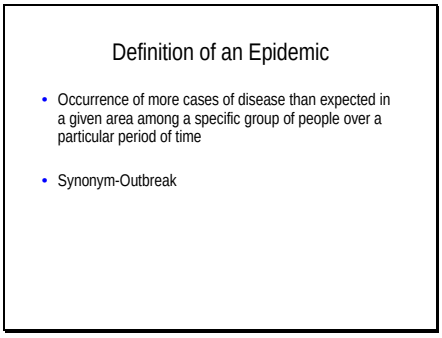
Slide 4



Main message

The facilitator should engage the participants to find out their level of understanding on epidemics

Slide 5

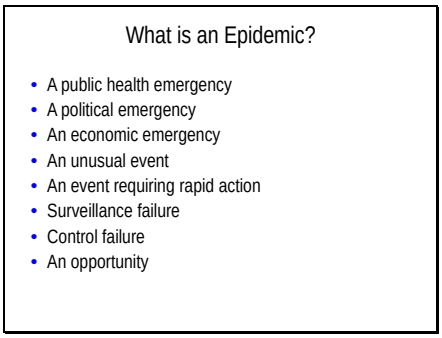


Main message

The facilitator should note that this is the standard definition of epidemics.

The facilitator should stress that Epidemiologically, an epidemic and an outbreak are used interchangeably

Slide 6

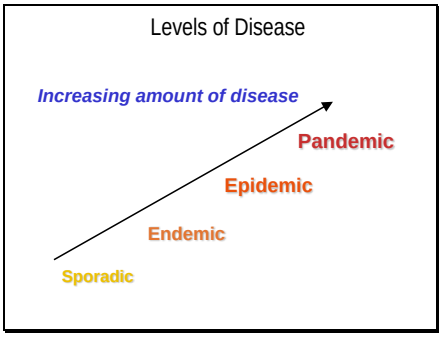


Main message

The facilitator should help the participants to understand that epidemics multi faceted in nature. The effects of epidemics are multi dimensional and beyond the public health perspective.

The facilitator should therefore engage the participants in giving examples of each aspect

Slide 7



Main message:

This slide explains the different levels of disease magnitude subjectively defined as sporadic – pandemic (class interaction to help define)

Sporadic: Occurring at irregular intervals; having no pattern or order in

Endemic: constantly present to greater or lesser extent in a particular locality; "diseases endemic to the tropics"; "endemic malaria

Epidemic*:* Spreading rapidly and extensively by infection and affecting many individuals in an area or a population at the same time:

pandemic epidemic over a wide geographical area e.g HIV AIDs, Influenza

The facilitator should ask the participants to give examples of each disease level.

Slide 8

Malaria epidemic

- An increase in morbidity (cases) beyond what is normal for the area
- Excessive case-fatality rates in P. falciparum malaria (>1% for all cases and >20% for severe cases)
- Malaria caseload exceeding the capacity of the existing health care facilities to handle
- A disturbance of a previously existing epidemiological equilibrium

8

Main message

The facilitator should emphasize that a malaria epidemic can occur within a small catchment area of the health facility and therefore the need to monitor trends at every health facility.

Slide 9

Causes of Malaria epidemics

Human related Factors
- Relative immunity
- Population movement, displacement, resettlement
- Land use practices
- Vulnerability due to other factors – malnutrition, HIV etc

Vector related Factors
- Increased breeding possibilities of vectors due to abnormal heavy rains or flooding downstream
- Changing agricultural practices especially irrigation
- New and more efficient vectors
- Breakdown of vector control program
- Insecticide resistance

Parasite related Factors
- Resistance to anti-malaria drugs

9

Main message

The facilitator should emphasize that malaria epidemics may result from various factors; human, vector and parasite

Slide 10

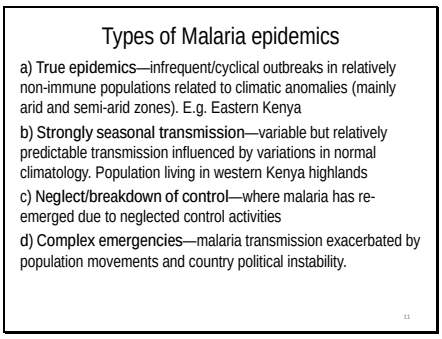
Factors Triggering Malaria epidemics

Determinants (Direct)	Influencing Factors (Indirect)
Vector density	Rainfall, drought, incorrect maintenance of irrigation systems changed in vector breeding habitats
Human biting	Housing, behaviour, disaster, socio-economic factors
Rate of gametocyte carriers	Importation of malaria parasite
Length of sporogony	Temperature
Daily survival rate of vectors	Temperature, humidity

Main message

The facilitator should differentiate between the indirect and indirect triggers of malaria epidemics

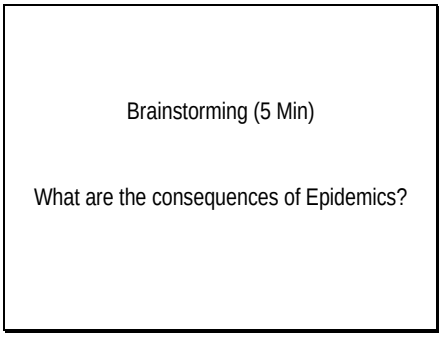
Slide 11



Main message

The facilitator should help the emphasize the role the climate, geography and manmade in differentiating epidemics.

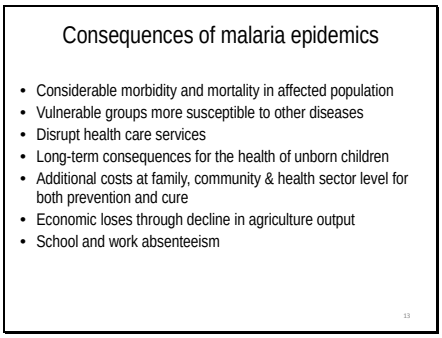
Slide 12



Main message

The facilitator should help participants to understand the broader negative impact.

Slide 13



Main message

The facilitator should emphasize the far reaching consequences of epidemics and therefore stress the inter related nature of the consequences

Slide 14

Malaria Epidemics

Thresholds Setting In Kenya

Unit 2

Slide 15

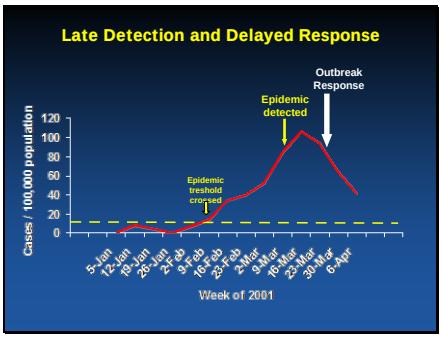
Brainstorming (5 min)

What is a threshold?

Main message

The facilitator should engage participants to establish their understanding on thresholds

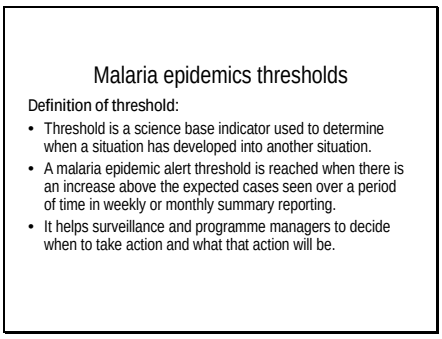
Slide 16



Main message

The facilitator should help participants understand the idea of cases surpassing the established benchmark.

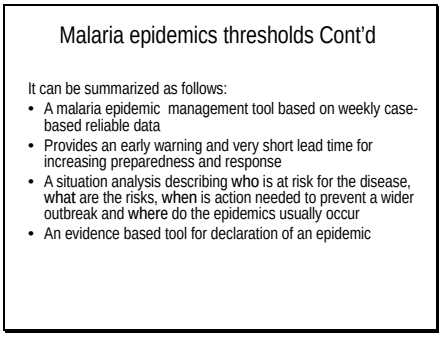
Slide 17



Main message

The facilitator should emphasise the idea of cases exceeding a set benchmark prior to taking action

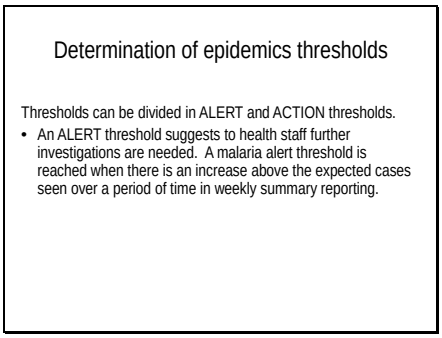
Slide 18



Main message:

Facilitator to emphasize duration is key in early detection of epidemics

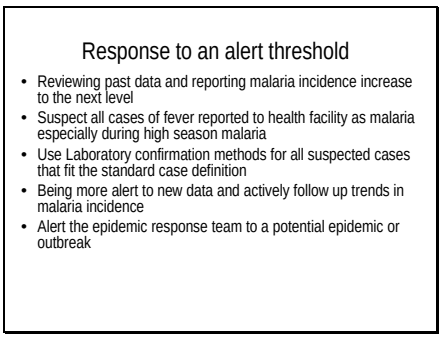
Slide 19



Main message:

The facilitator should differentiate between alert and action, in relation to intervening/response

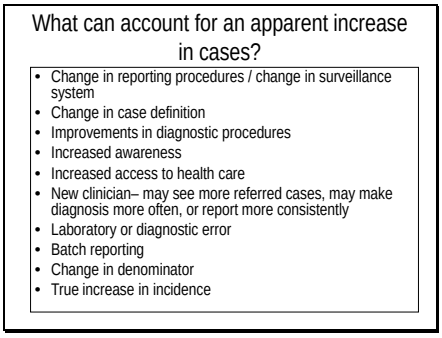
Slide 20



Main message:

The facilitator should highlight key actions to be taken during the alert phase

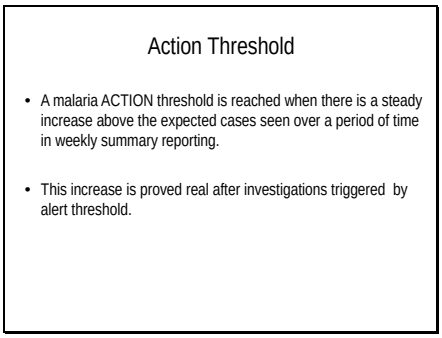
Slide 21



Main message:

The facilitator should emphasize the fact that increase of cases does not necessarily allude to an epidemic. Various other factors can contribute to the increase in cases.

Slide 22



Main message:

The facilitator should emphasize the importance of investigations prior to action.

Slide 23

Response to an Action threshold

This can be

- Net distribution
- Enhancing public awareness
- Improve case detection and management
- Ensuring adequate stocks of reagents, drugs and non pharmaceuticals
- Indoor residual spraying (IRS)
- On the Job training (OJT)
- Enhanced surveillance

Main message:

The facilitator should engage the participants in outlining the response activities to be undertaken after an outbreak.

Slide 24

Types of epidemics thresholds

- Constant case count:
- Third quartile:
- Cullen method:
- C-SUM (Cumulative sum) Method:

Slide 25

Types of epidemics thresholds

Constant case count:

- This is used where there is little or no malaria, or not much variation by season.
- It sets a threshold that is constant all year. (Botswana).
- An epidemic occurs if the number is above threshold.
- 400 cases/week in one district indicates an ALERT which should be acted upon
- 800 cases/week in one district indicates the national authorities should be informed
- 1200 cases/week indicates a national emergency

Main message:
The facilitator should highlight the constant case count, and mention that its not applicable in Kenya

Slide 26

Types of epidemics thresholds

Third quartile:

- It calculates the thresholds as the third or upper quartile value of the number of cases per week for at least the last 5 years.
- This mean that ¾ (75%) of the time, we expected the number of cases to be below the threshold.
- Epidemics years are included in the calculation of this type of threshold.

Main message:

The facilitator should demonstrate how the third quartile method is used and mention that its used in Kenya as the alert threshold

Emphasize that third quartile is used at facility level

Slide 27

Types of epidemics thresholds (cont)

Cullen method:

- It sets a threshold from the mean+2SD of the 5 years or more previous years number of cases for the week or month.
- This mean roughly 97.5% of the time, the number of cases will be below the threshold.
- Epidemic years must not be factored into the calculation of threshold.

Main message:

The facilitator should demonstrate how the cullen method is used and emphasize that it is used in Kenya as the action threshold.

Emphasize that the cullen method is used at the district level

Slide 28

Types of epidemics thresholds Cont'd

C-SUM (Cumulative sum) Method:

- This uses a running total of cases for each year rather than the weekly or monthly average.
- The threshold for each week or month is based on a moving average of that week or month plus the preceding and following weeks or months, to account for yearly variation in onset of the malaria "season".
- This method can give a good picture of whether the number of cases is rising faster than usual in a certain year.

❖ WHO recommends the 3Q method, especially at health facility level. District level aggregates can use mean+2SD threshold.

Main message:

The facilitator should highlight the C sum method and mention that its not applicable in Kenya

It relies on a moving average based on 5 year retrospective data

Slide 29

Thresholds Proposed for Kenya

1. Health Facility Level (level 2-3):
   - **Third quartile** as ALERT threshold and communicate with district for early investigation
2. District aggregates and District Hospitals with large catchment areas:
   - **Third quartile** as ALERT threshold and **Mean** + 1.5 SD Mean threshold as ACTION threshold

3. Provincial/County Aggregates:
   - Long term mean versus Current incidence to follow on trends. It is not a threshold for epidemic detection

Main message:

The facilitator should demonstrate how the third quartile and cullen methods are used in Kenya at various levels.

Slide 30

Calculation of ALERT thresholds

By Hand:

1. Write down the OPD data by week for each health facility from the last 5 years.
2. For each week sort the numbers by ascending order from the lowest to the highest and write them in the table. Week one to week 52
3. The middle number in each group is the median. Take the median for each week and plot the points with a line. This is the median number of cases expected per week.
4. The 4th highest number is each series is the 3Q. Take the 3Q number for each week and plot the on the graph of cases by week and join the points. This is the ALERT threshold level.

Main message:

The facilitator should emphasize the importance of weekly OPD data, ranking in ascending order in deriving the 3rd quartile threshold.

Slide 31

Calculation of ALERT thresholds Cont'd

Using an Excel spreadsheet:

1. Open a file Malaria epidemic threshold and save with the name of district or health facility
2. Save with the name of Health facility or district
3. Click on the sheet and name it "weekly data"
4. Enter weekly or data year 1 to year 5. For 3Q include all years for Cullen we should exclude epidemic years.

Slide 32

Steps in setting up Malaria weekly threshold using quartiles

1. Collect weekly Malaria data for 5 or 7 years and the current year.
2. Make a trend graph on Malaria data collected
3. Rank the data in ascending order across the period i.e. week 1 for all the years----week 52 for all the years.
4. Get the median of the distribution. This becomes 2Q (second quartile of the distribution).
5. Identify the median of the distribution below the median (2Q) and this becomes the first quartile (1Q).

Main message:

The facilitator should emphasize that the use of a minimum of five year retrospective data

Slide 33

Steps Continued….

6. Identify the median of the distribution above the median (2Q) and this becomes the third quartile (3Q).
7. Plot a graph using figures in columns 1Q, 2Q, 3Q, and the current years data.
8. Name the zones as follows
   - I. Success zone - The area below the 1Q
   - II. Security zone - The area between lines 1Q and 2Q
   - III. Alarm zone - The area between lines 2Q and 3Q
   - IV. epidemic zone - The area above line 3Q (replaced by mean +1.5 SD)

NB: Health facilities should use data in 3Q to monitor malaria trends.

Main message:

The facilitator should that this particular method (3Q) is particularly used at the facility level

Slide 34

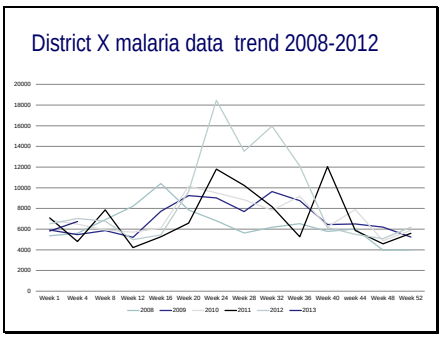
District X Malaria Data, 2008-2013

	2008	2009	2010	2011	2012	2013
Week 1	5357	5913	6877	7085	6514	5824
Week 4	5589	5464	6493	4807	7028	6732
Week 8	6922	5854	5914	7866	6765	
Week 12	8218	5206	5714	4220	4988	
Week 16	10411	7719	6095	5265	5448	
Week 20	7845	9250	10143	6584	9648	
Week 24	6811	9025	9513	11798	18454	
Week 28	5629	7704	8835	10232	13533	
Week 32	6186	9635	7828	8170	15969	
Week 36	6530	8751	9172	5266	12114	
Week 40	5772	6449	6229	12038	6159	
week 44	6012	6503	7890	5880	5500	
Week 48	3972	6201	4865	4583	5077	
Week 52	4001	5231	5885	5589	6177	
Fill data for all weeks (1-52)						

Main message:

The facilitator should emphasize the use of the 52 week data of five retrospective years in calculation and plotting of threshold graphs.

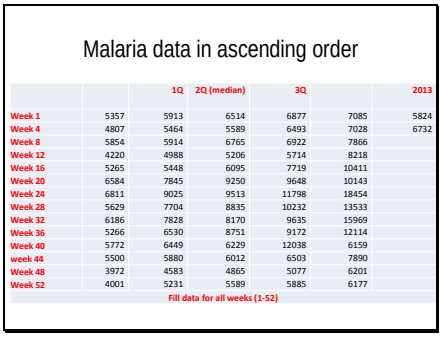
Slide 35



Main message:

The facilitator should highlight the trends in five years for various weeks and emphasize the change of trends depending on various seasons.

Slide 36



		1Q	2Q (median)	3Q		2013
Week 1	5357	5913	6514	6877	7085	5824
Week 4	4807	5464	5589	6493	7028	6732
Week 8	5854	5914	6765	6922	7866	
Week 12	4220	4988	5206	5714	8218	
Week 16	5265	5448	6095	7719	10411	
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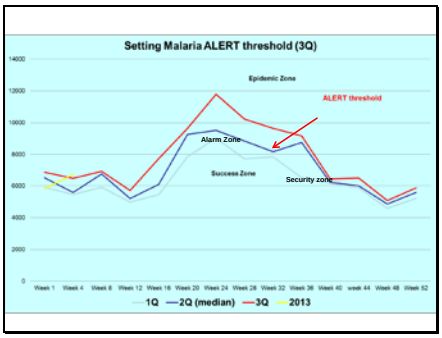
Week 48	3972	4583	4865	5077	6201	
Week 52	4001	5231	5589	5885	6177	
Fill data for all weeks (1-52)						

Main message:

The facilitators should illustrate how to arrange the five year weekly data in ascending order and identification of the quartiles

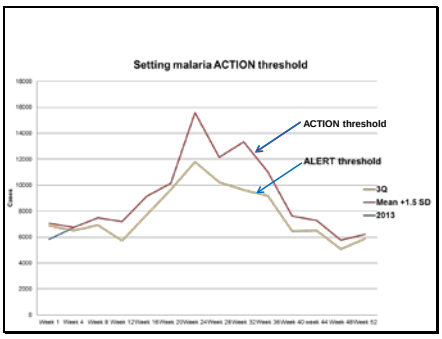
Slide 37



Main message:

The facilitator should emphasize the point at which alerts should be issued (when cases reach the red line)

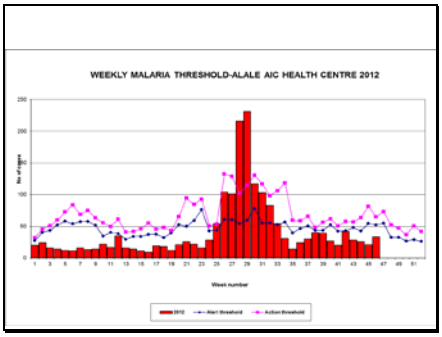
Slide 38



Main message:

The facilitator should demonstrate the point at which response/ action should be taken in combating an epidemic
Emphasize the difference between the alert and action threshold by explaining what each entails
Also emphasize that the two thresholds should not overlap

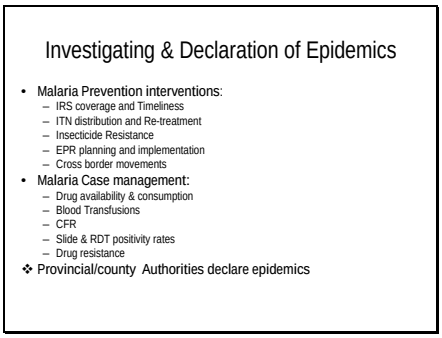
Slide 39



Main message:

The facilitator should demonstrate the point at which an alert is triggered (week 25) and when investigations should start to ascertain whether a true increase in incidence(week 25)

Slide 40



Main message:

The facilitator to emphasize the key investigations and considerations to be checked before declaring an epidemic

Slide 41

Pros & Cons of the Various Systems

Constant Case Count	Mean + 2DS or Mean + 1.5 SD	3rd Quartile
•High sensitivity in season (detects most epidemics) •Ease of calculation (time & process) •Results in high False positives •Based upon Weekly Data •Little early warning	•Based upon weekly data •Appears to give a valid 'epidemic threshold' •Varies throughout the season •Must exclude epidemic year •Difficult to calculate •Requires a PC	•Based upon weekly data •Relatively easy to calculate •Varies throughout the season •Good Early Warning Indicator •Don't need to exclude epidemic year •Perceived as difficult to use •Time consuming

Main message:
Facilitator should clearly articulate the advantages associated with the 3rd Quartile method

Slide 42

Group work (1 hour)

1. Use dummy data to set thresholds
2. Demonstrate using the excel tool to set the threshold.
3. Use data from your health facility or district to set malaria ALERT and ACTION thresholds

Main message:

Facilitator to ensure all key steps are followed while setting thresholds
Emphasize the use of the 3Q method that is commonly used in Kenya, by using own data for establishing thresholds

Slide 43

Unit 3

Methods of Malaria Epidemic Prevention

Slide 44

Malaria epidemic prevention strategies

What are the main malaria epidemic prevention strategies?

44

Main message:

Facilitator to ensure all key steps are followed while setting thresholds
Emphasize the use of the 3Q method that is commonly used in Kenya, by using own data for establishing thresholds

Slide 45

Malaria Epidemic Prevention Strategies

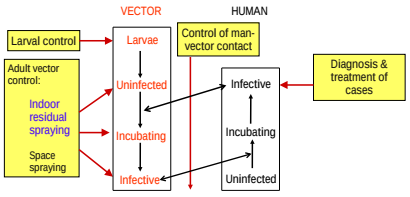
- Vector control
  - LLINs:
  - Environmental management – drainage of stagnant water
- Surveillance
  - Early detection of all cases
- IPTp
  - IPTp for pregnant women residing in malaria endemic regions
- ACSM
  - Awareness creation and reinforcement of preventive strategies

45

Main message:
Facilitator to emphasize the commonly used epidemic prevention methods under each strategy
Stress the importance of early detection to gauge the effectiveness of other strategies in preventing epidemics

Slide 46

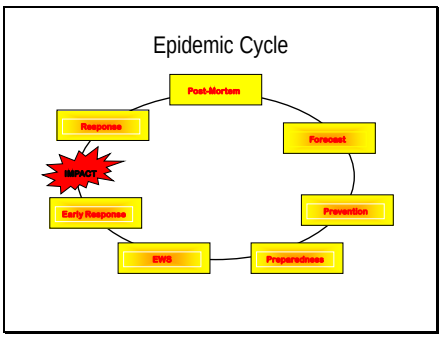
Principles Of Malaria Epidemic Control



46

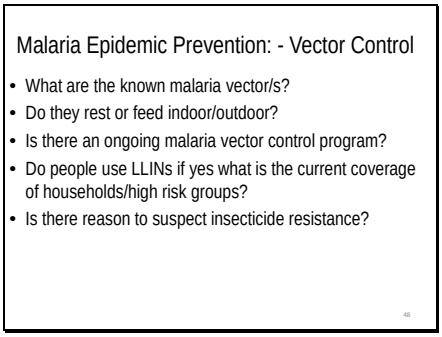
Main message:
Facilitator should explain to participants, the rationale behind epidemic prevention strategies that target the life cycle of the vector, and those that aim to curtail contact between vectors and humans
Emphasise the three stages at which human-vector interaction can be curtailed and link this to specific methods that are used

Slide 47



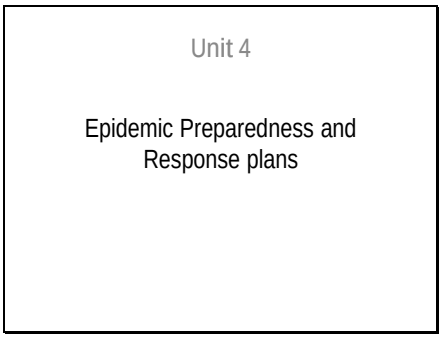
Main message:
The facilitator should help participants to understand the interconnectedness of the various steps in the epidemic cycle and how they inform each other.

Slide 48

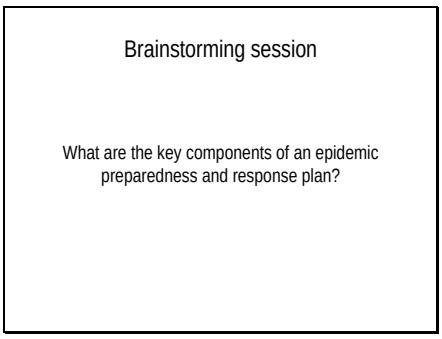


Main message:
The facilitator to help participants understand some of the key considerations to make while contemplating use of vector control methods in epidemic prevention
These considerations should guide the choice of specific methods to be used for vector control

Slide 49

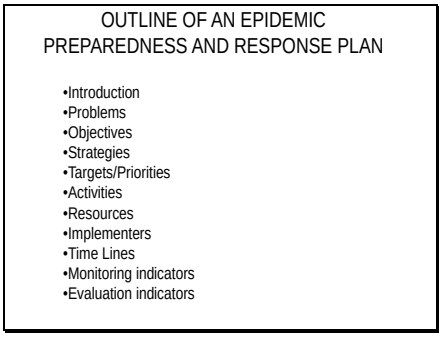


Slide 50



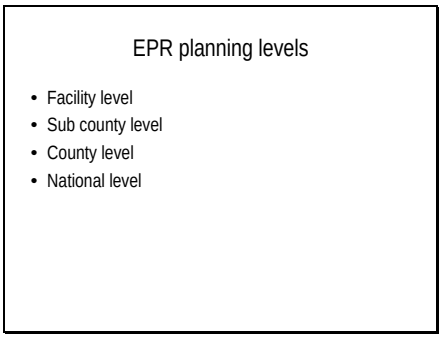
Main message:
Use this slide to gauge participants knowledge of the key components that should be addressed while developing EPR plans

Slide 51



Main message:
Facilitator to explain what issues are addressed under each of the sections of the report

Slide 52



Main message:
Emphasize the importance of every level of the health care system to develop own EPR plans to address the particular concerns of that level.
Note that the plans at the different levels should be harmonized in terms of the broad principles and approaches

Slide 53

Brainstorming (5 min)

What do you take into consideration when making EPR plans?

Main message:
Use this slide to gauge participants knowledge of the key components that should be addressed while developing EPR plans

Slide 54

Considerations for EPR Plans

- Vector control
  - Establish efficacy of existing IRS
  - Train teams for IRS
  - Make insecticide and pumps and logistics available for IRS
  - LLIN coverage and use
- Case management
  - Diagnosis and treatment
- Communication
  - Information campaigns, health education
- Monitoring and evaluation
- Partner mobilisation

54

Slide 55

Logical Framework for Malaria EPR Plan

Problem statement	Strategy/Intervention	Activities	Resources	Responsible person/unit	Timeline	Progress indicators
Situation analysis to inform	Program Management	Training EPR Managers	GOK	National level	Specify timelines	No of teams trained
	Vector Control	Training Purchasing of commodities Spraying	GOK	county	Specify timelines	300 spray personnel trained
	Case Management	Training	GOK	County and sub county	Specify timelines	No of personnel trained on case management
	IEC	Training CHW	GOk	County and sub county	Specify timelines	150 CHW Key issues identified for IEC. Materials printed and distributed
	Surveillance and M&E	Strengthen MIS Dev Database for M&E	GOK	County and sub county	Specify timelines	MIS updated with critical key indicators Computer system updated.

Main message:
The matrix should be used to demonstrate to participants the key considerations to be made while developing EPR plans
Emphasize the linkages between the problem statement, proposed interventions, specific activities and the progress indicators
Stress the importance of articulating the roles and responsibilities for undertaking the specified tasks in the plan

Slide 56

Practicum (1 hr)

- Teams to assemble and come up with epidemic preparedness and response plans

Slide 57

Malaria Epidemic Response

- Introduction
  - Rapid assessment
  - Epidemic notification
  - Resource mobilisation
  - Response activities

Main message:
The focus is on the core components of epidemic response from the rapid assessment to ascertain the nature and magnitude of problem, communicating the onset of the epidemic, mobilization of resources and mounting the response

Slide 58

Malaria Epidemic Response

- Rapid assessment:
  - Determine extent of the problem
  - Define type and size of intervention/s and priority activities
  - Plan the implementation of the activities
  - Pass information to stakeholders, international organizations to mobilize additional resources

58

Main message:
Discuss the key steps and the focus of the assessment, as the first step in planning response to an epidemic
Emphasize the importance of prioritizing activities and link this to the identification of stakeholders and resources

Slide 59

Epidemic Notification

- Upon confirmation, disease outbreak management teams (DOMT) should notify health facilities and in the sub county / county, DDSR and DOMC.
- A team should be sent to confirm the epidemic before notifying WHO and other partners.

Main message:

The idea here is to communicate the importance of timeliness in notifying relevant authorities

Slide 60

Resource Mobilisation

- Personnel
- Equipment (vehicles and fuel)
- Commodities (anti malarial drugs, IV fluids, syringes etc)
- Lab supplies
- Insecticides
- Emergency response funds

Main message:
The facilitator should stress the importance of drawing a compressive list of resources needed to undertake the activities and interventions identified during the assessment

Slide 61

Response activities

- Interventions to be selected according to eco epidemiological zones (Refer to eco epidemiological zonal table)
- Key activities include:
  - Strengthening treatment services & vector control services
  - Strengthen disease surveillance
  - Community mobilisation and health education
  - Coordination and response activities

Main message:
The specific activities/interventions to be chosen in responding to epidemics are chosen in accordance with the epidemic zone concerned
Facilitator should refer to the eco epidemiological zonal table in the EPR guidelines for direction.

Slide 62

Unit 5

Post epidemic assessment

Slide 63

Introduction

- This is the final activity aimed at documenting the preparedness and effectiveness of epidemic response
- It provides experiences and lessons learnt to guide future EPR actions
- All indicators specific to EPR should be assessed. (Refer to national malaria M&E plan)

Main message:
The focus of post epidemic assessment is to take stock in terms of what went well, deviations from the plan, challenges encountered and draw lessons for future response to epidemics

Slide 64

Brainstorming (5 min)

What indicators are used for assessing epidemic preparedness and response?

Main message:
The facilitator should help participants to make linkages between the broader EPR indicators in the national M&E plan and the specific activities to be assessed

Slide 65

EPR indicators

- Malaria death rate among target population
- Proportion of out patient and inpatient malaria cases
- Percentage of health facilities reporting no stock of anti malarial for more than one week in the last three months.
- Percentage of IRS coverage (where implemented)

Main message:
Emphasize what every indicator is intended to measure
The facilitator should help participants to interpret data for each indicator in terms of the effectiveness of the response to epidemic
Indicators should measure the extent of achievement for all activities undertaken as part of epidemic response

Slide 66

Assessment activities and levels

Levels	Assessment Activities			
	Preparedness	**Prevention**	**Early detection**	**Response**
Community	- Availability of community systems, treatment practices	- Availability of bed nets, IRS coverage, timing between IRS & occurrence of epidemics	- Reports of acute deaths in the community	- Involvement of community in dissemination of information
Health facility	- Whether adequate surveillance data was collected		- Whether facilities used surveillance to draw charts the thresholds to detect outbreak	

Main message:
The facilitator should help participants to identify the correct parameter for assessment at the relevant level

Slide 67

Assessment activities and levels Cont'd

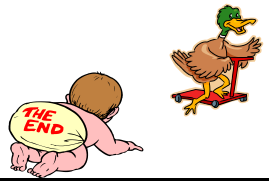
	Preparedness	**Prevention**	**Early detection**	**Response**
Sub county	-Whether health facility teams were trained on EPR. -whether the district has adequate EPR commodities -No of EPR meetings held at the district	-LLIN coverage -No of people protected by indoor residual spraying	-Proportion of health facilities with updated surveillance graphs -Lag time between notification and response	- Whether there were sufficient commodities for rapid response - Whether there were enough personnel to handle the epidemic - Any stock outs No of cases confirmed and treated
County	- Proportion of districts with functional EPR teams and plans - Proportion of districts with adequate commodities Frequency of support supervision	- Whether CHMT s supervise and monitor district preventive activities	- Whether the affected districts sent timely epidemic reports - Whether the county has an updated risk map	- Whether the CHMTs conducted support supervision for epidemic response
National	-W hether resources were allocated for epidemic response - Whether there were adequate buffer stock for EPR - Whether EPR planning meetings were held	-- Whether adequate resources were mobilized for epidemic prevention in high risk areas	- Whether the national level prepared malaria risk maps - Proportion of malaria epidemics detected within two weeks of onset	- Timely communication of epidemic risks btw sub county, and national level -effectiveness of national level in curbing epidemics -whether adequate budget was allocated for epidemic response

Slide 68

Remember

Failing to plan, Means planning to fail!

THANK YOU



Slide 1

Module 7

Supervision and feedback

Republic of Kenya Ministry of Health | Division of Malaria Control | World Health Organization | MEASURE Evaluation | President's Malaria Initiative

Slide 2

Objectives

- Describe malaria support supervision
- Develop a plan for Malaria supervision and use the planning tools
- Perform malaria supervision and use the supervisory checklist
- Write a supervision report and give feedback using the reporting and feedback template

Main message of the slide
Use this message to outline the objectives of the slide

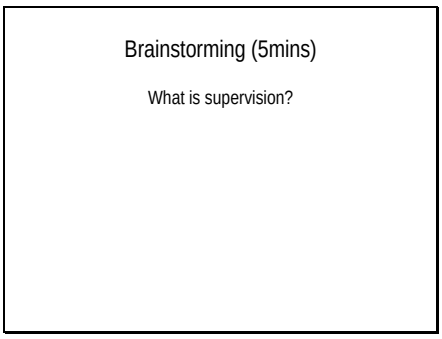
Slide 3

Unit 1

Introduction to Malaria Supervision

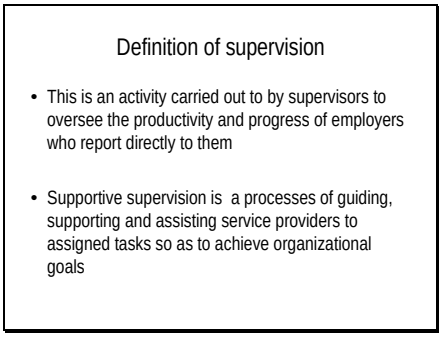
Use this slide to let students know that they are starting unit1

Slide 4



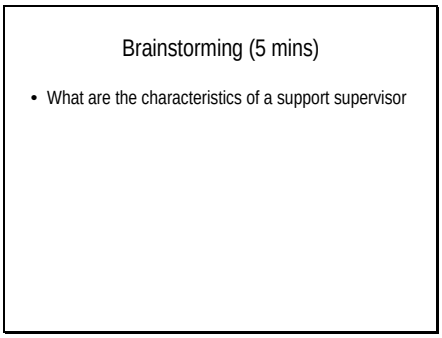
Main Message
Use this slide to brainstorm on the definition of supervision. Let this session take 5mins and let it be participatory

Slide 5



Main Message
Use this slide to define supervision and emphasize what support supervision is

Slide 6



Main Message
Use this slide to brain storm on what are the characteristic of a support supervisor make it participatory

Slide 7

Characteristic of support supervisors

- Supports the staff in a way that helps them develop problem-solving skills.
- Helps workers to think critically, prioritize tasks and to communicate effectively.
- Observes, provides feedback, discusses technical issues with staff, updates staff on policies.

Use this slide to let understand the character of support supervisors emphasize bullet point 1 and 2. Provides constructive criticism and praise good performance

Slide 8

Characteristic of Support Supervisors

- Trains on -job and works with staff to jointly identify problems and develop action plans.
- Ensures that after each encounter, decisions are documented and appropriate follow up is done.

Use this slide to emphasize the support that the supervisor offers to the HW who is being supervised

Slide 9

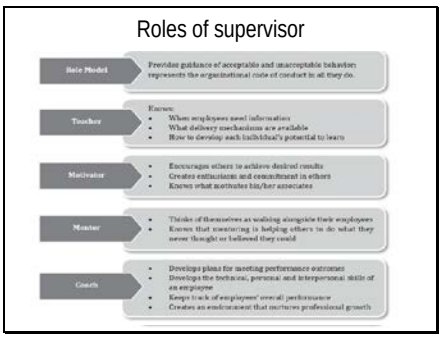
In addition

A support supervisor ensures that:

- Adequate resources are allocated and provided for carrying out the required task
- Facilities have adequate infrastructure and are adequately equipped
- Appropriate written procedures and guidelines are available and understood by staff
- Clients' rights are respected at all times.

Use this slide to let participants know additional characteristics of supervisors

Slide 10



Use this slide to show participants the roles of supervisors. Go through each role depicted

Slide 11

Roles of the supervisee

- Ensure that there is a staff accompanying the supervising team
- Ensure all information needed is available
- Be ready to provide truthful answers to questions asked
- Receptive to new ideas and feedback
- Act on suggested recommendations and follow up plans

Use this slide to let participants learn that supervisee's also have roles

Slide 12

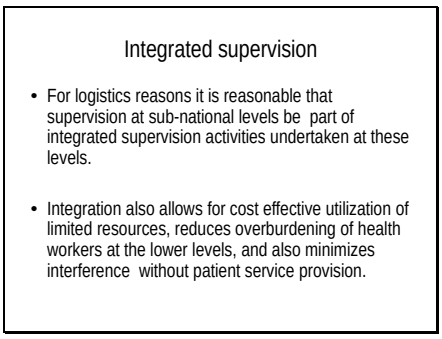
Frequency of supervisory visit

The frequency is dictated by the mandate of the supervision level

- National to regional- quarterly
- Regional to sub regional- quarterly
- Sub regional to facilities-Monthly

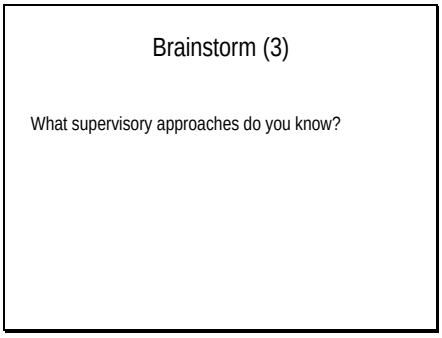
Use this slide to help participants understand the frequency of supervision. Emphasize the supervision frequency for the level that is currently being taught

Slide 13

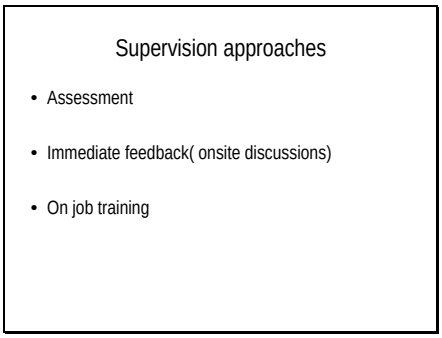


Use this slide to emphasize the advantage of integrated supervision in saving finances. Also emphasize that malaria issues should not be neglected while ding integrated supervision

Slide 14



Slide 15



Slide 16

Unit 2

Planning for Malaria supervision

Slide 17

Brainstorming (5 mins)

How do you usually plan for your supervisory visit?

Slide 18

Introduction to planning

- Effective supportive supervision requires proper planning and coordination. The following steps should assist a supervision team while planning for and undertaking malaria supervisory visits.

- Creation of a contact list
- Advance scheduling of the visit
- Selection of team members

Slide 19

Contact list

- Contains the list of the person(s) at the facilities or districts the teams will communicate with during the supervision
- Should be updated regularly
- Allows the teams quick access to the relevant staff
- Will facilitate organization of the supervision visit logistics.

Slide 20

Advance Scheduling of Visits (1)

To avoid disruption to normal service delivery, the following tasks should be done in scheduling for a supervision visit :

- Plan for the supervision visit in advance, harmonizing the supportive supervision timetable with other programmatic schedules
- Consult with the proposed supervisory team members including the sub county / facility teams to ensure their availability
- Let the supervisory teams jointly select supervision visit dates and facilities/ districts to be visited.

Slide 21

Advance Scheduling of Visits (2)

- Communicate the agreed upon dates to the staff to be supervised well in advance so that they can be prepared for the visits.
- Review the previous reports and schedule the action points as necessary.
- Arrange for the necessary logistics for the visit e.g. transport and accommodation.
- Arrange to take along any supplies that will need to be replenished during the supervision e.g. reporting tools, guidelines, stationary etc.

Slide 22

Selection of supervisory team (1)

To enrich the support supervision experience, the following considerations should be made in composing a supervisory team:

- Allocate team members in a manner that ensures mix of skills, competencies and experience.
- Actively work to maintain team cohesion since no one member is competent in all areas of health care provision.
- Allocate each team member specific tasks beforehand, preferably according to their expertise and training.

Slide 23

Selection of supervisory team(2)

If the visiting team does not usually directly supervise the staff, the team needs to include a team member who is an immediate supervisor because:

- the staff will feel more comfortable to discuss their challenges, problems and needs with their immediate supervisors.
- the immediate supervisor has a better understanding of the staff and would therefore be in a position to give practical recommendations and assist the staff to achieve them.

Slide 24

Role of Malaria Control Coordinators (1)

The following are the supervisory responsibilities of malaria control coordinators:

- to ensure monthly site support supervision of health facilities under their jurisdiction.
- To ensure quality control procedures for data capture and transmission system

Slide 25

Brainstorming (5mins)

What is your role during supervision?

Slide 26

Role of Malaria Control Coordinators (2)

- Coordinate the supervisory visits
- Play a key role in planning the logistics for the visit
- Liaise with all persons to be involved to ensure availability and full participation.

Slide 27

Role of Disease surveillance Coordinator

- To assist Malaria control coordinator in surveillance supervision by:
    1. Conducting record search
    2. Use the health facility surveillance checklist

NB. The epidemic preparedness section must be applied in epidemic prone district and seasonal transmission areas

Slide 28

Introduction to planning tools

Slide 29

Practicals in filling the planning tools (30 mins)

Mavuno county has 5 districts with 5 facilities in each district. The CHMT of Mavuno county is planning to conduct supervisory activities to all their sub counties. How will they ensure that that the supervisory activity is well planned.

Use the planning tools available.

Slide 30

Unit 3

Conducting the Malaria support supervision

Slide 31

Conducting supervision visits

The following tasks should be undertaken during the supervisory visit:

- Meet with the facility/district in-charge and introduce yourselves and explain the purpose of the visit.
- Review the previous supervision report together and discuss the findings/challenges identified during that visit.
- Agree on how to carry out the supervision tasks during this visit and the debriefing afterwards.
- Assign specific supervisory tasks to different members of the team.
- Proceed to carry out tasks using the structured tools.

Slide 32

Debriefing after supervisory Visit (1)

- a. Thank the staff for participation and cooperation during visit
- b. Give feedback on the supervision findings covering:
  - i. what they have done well
  - ii. weak areas
  - iii. problems identified
- c. Congratulate the staff for positive findings
- d. Brainstorm for possible solutions on the identified problem areas e.g.
  - i. better planning
  - ii. better coordination
  - iii. extra training for the staff
  - iv. redeployment of staff

Slide 33

Debriefing after supervisory Visit(2)

e. Give recommendations

f. Agree on the way forward:

- i. action points for the staff
- ii. action points for the supervisors
- iii. identify resources required
- iv. define timelines for the action points
- v. establish monitoring and evaluation mechanism for the agreed action points

g. Update the staff on new knowledge, procedures and policies

h. Thank the staff once again for the positive findings and participation in the supervision.

Slide 34

Tracking supervision visits

Each supervision visit to a health facility should be documented in the supervision logbook, which remains at the health facility. The following details should be included when signing the logbook:

- i. date(s) of the supervision visit
- ii. objective(s) of the visit
- iii. summary of the findings
- iv. recommendations and agreed action points
- v. signatures(s) of at least two members of the supervision team.

This logbook summary should be reviewed during the subsequent visits, before actual supervision is carried out.

Slide 35

Introduction to health facility surveillance checklists

- Health facility surveillance checklist
- Facility supervision checklist
- District supervision checklist
- County supervision checklist

Slide 36

Role play (45mins)

Divide yourself in groups of 5 appoint 4 members of the CHMT and one facility staff. The CHMT of Mavuno county should conduct a facility supervision and , administer the health facility supervision checklists including the health facility surveillance checklist

Slide 37

Unit 4

Report Writing and feedback

Slide 38

Brainstorming (5mins)

- Do you usually write supervision reports?
- How do you do them?
- Do you analyze your findings?

Slide 39

Analyzing the Supervision Visit Results

- The broad aspects looked at during the supervision and whose results should be analyzed include:
  - delivery of malaria services and best practices
  - human resources capacity and training status
  - availability of malaria supplies e.g. anti-malaria medicines
  - data management and reporting
  - availability of relevant malaria documents e.g. guidelines, job aids, etc.
  - Any problems and their priorities

Slide 40

Demonstration on how to score using the supervision checklist

Slide 41

Interpretation of supervisory scores

The performance of the supervisee under each of these categories should be calculated and graded as follows:

1. Excellent (80%-100%)

Interpretation:

a. Performance frequently exceeded standards for the job
b. Supervisee understood all matters and consistently provided high quality service
c. Minimum problems were identified

Slide 42

Interpretation of supervisory scores

2. Good (50%-79%)

- *Interpretation:*

a. Performance met the requirements of the job
b. Supervisee performed these in a competent and satisfactory manner
c. Supervisee is familiar with all the aspects of malaria control

3. Poor (<50%)

- *Interpretation:*

a. Performance falls below average standard
b. Severe constraints were identified
c. Supervisee requires urgent intervention to improve service delivery.

Slide 43

Report writing

- The supervision team should compile detailed report soon after the visit (within 1week)
- The supervision report should be sent to the next supervision/management level, and a feedback report sent to the facility/sub county/county concerned.

Supervision summary forms should be used to give a quick overview of the results of the supervision visit

- These should be filled immediately after the supervision visits are over after several facilities/ sub county/counties are visited. The purpose of these forms is to summarize the findings of the visit before the teams submit the detailed reports.
- A copy will be sent back to the facility/county visited

Slide 44

Reporting Templates

Standardized reporting templates will be used to allow for objective supervision visits.

- These allows comparison of supervision results between Counties/facilities and between different visits.
- The teams should also include an addendum of issues that need to be reported but are not provided for in the template.
- Detailed Supervision Report Format.docx

Slide 45

Submission of the Reports

Supervision reports should be written and sent to the next management level within 1 week of completion of the activity

- The malaria focal is responsible for compiling, completing and ensuring that the report is on time
- The report should be countersigned by the chief health officer

Slide 46

Submission of the Reports (2)

The report should describe in details the following:

i. how the supervision was conducted

ii. the findings after the visit and their implications

iii. immediate actions taken including updates given and on the job training conducted

iv. action plans agreed on, their timelines and the responsible parties.

Slide 47

Brainstorming (5mins)

- How do you motivate service providers that have shown exemplary performance

Slide 48

Incentives and Other Follow up Actions

The supervision team should decide how to recognize staffs/facilities/districts/provinces that show exemplary performance. Some of the forms of recognition and/or incentives could include:

- i. letters of recommendation.
- ii. involving the staff in a mentorship program.
- iii. positively mentioning good performers during important meetings and gatherings.
- iv. certificates of recognition.

Slide 49

Practical on calculating scores and report writing (30 mins)

- The Mavuno CHMT has completed its Supervisory visits to 1 sub-county team and 2 facilities (the filled out supervision checklists have been given to you).
- Fill in the appropriate summary score sheets and summary reports

Slide 50

Thank you

Appendices

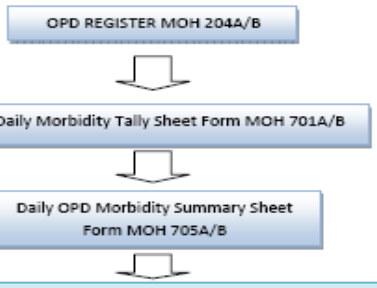
1. HMIS Data Flow
2. DDSR Data Flow
3. Malaria Surveillance Indicators and Targets
4. Core Malaria Surveillance Graphs and Intepretations
5. Checklist for Supervising Surveillance and Response Activities at the Health Facility
6. Field Data Sheet
7. Malaria Facility Supervision Checklist
8. Malaria District Supervision Checklist
9. Facility Contact List
10. DHMT Contact List
11. District Supervision Activity Schedule
12. Facility Score Sheets
13. District Score Sheet
14. Supervision Summary Report
15. Detailed Supervision Report Format
16. IDSR Weekly Summary Reporting Form

Appendix 1: HMIS Data Flow

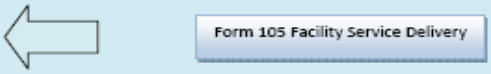
1. Process flow for **Health Management Information System – HMIS (Outpatient Data)** data
   a. Facility records daily data on OPD Form MOH 204A/B
   b. The information is then translated into Daily OPD Morbidity Tally Sheet Form MOH701A/B
   c. At the end of the day the data from the tally sheets are manually transferred to Form 705/A/B Daily OPD Morbidity Summary Sheet
   d. The completed Form 705A/B is then sent to district level for consolidation
   e. District Consolidates data onto FORM 105 Service Delivery
   f. Province & National Summaries generated automatically from District Data

   Currently Inpatient District summary data is consolidated for all ages.

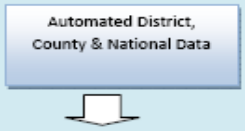
2. Facilities records daily inpatient data on Form MOH 204A/B which are consolidated into daily summary on Form MOH 701A/B which in turn are consolidated



3. District then consolidates the Inpatient data into Form 105 Service Delivery



4. Forms are updated into the dHIS 2 system and consolidated into District, County, and National Summaries

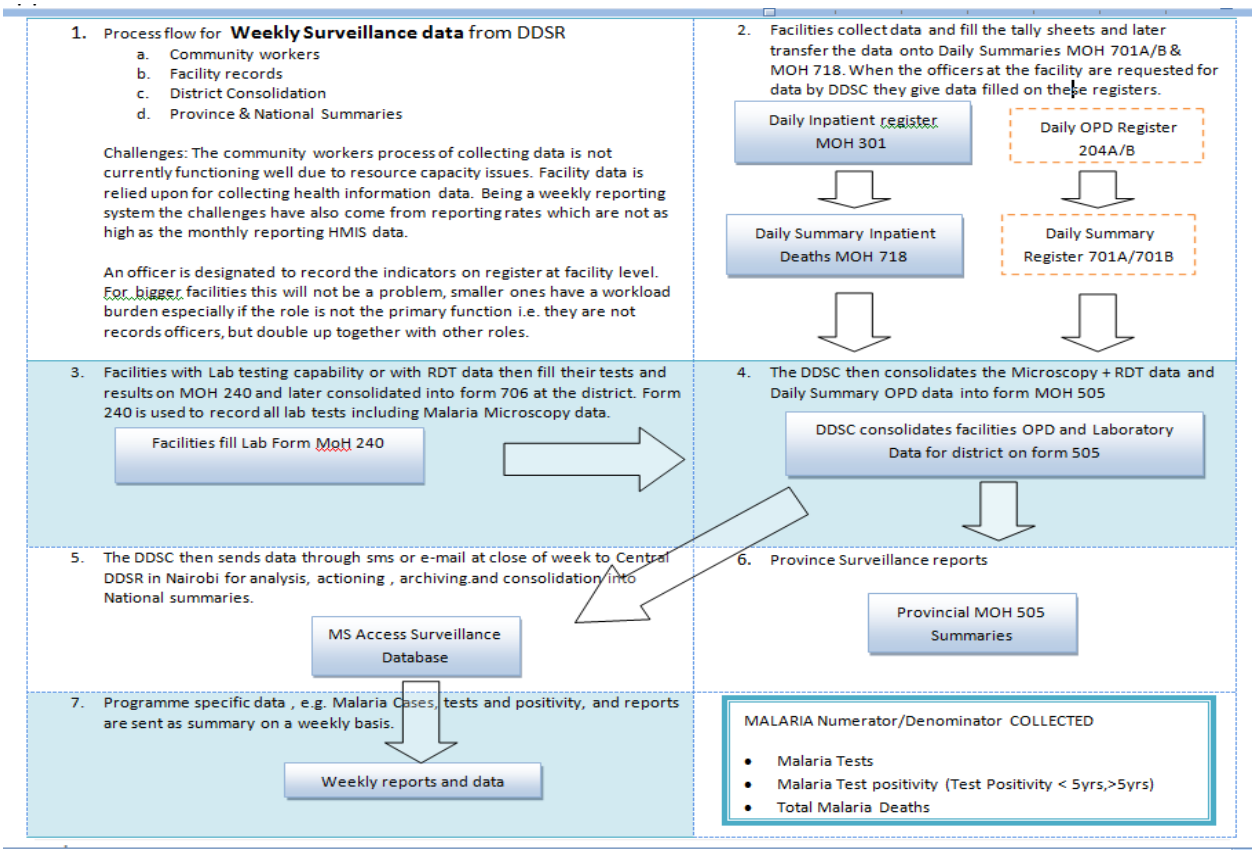


5. Programme specific data, e.g. Malaria Cases, tests and positivity, and reports can be accessed by programmes and district, province and national teams with access to the system. Facilities have no access to system. Annual reports produced for District, Province & National levels and can be accessed by respective teams.

MALARIA INDICATORS COLLECTED

- Outpatient Confirmed Malaria Cases
- Outpatient All-cause cases
- Reporting Rates
- Number of malaria cases (No of patients expected to be treated using ACT)

Appendix 2: DDSR Data Flow



Appendix 3: Malaria Surveillance Indicators and Targets

Most of the targets given here are the same as those published in the World Malaria Report 2008. However, a new indicator for malaria mortality reduction has been included—"near zero preventable deaths in 2015". This indicator comes from the Roll Back Malaria (RBM) Global Malaria Action Plan for 2008–2015, which was published in September 2008.

These guidelines are the first to list preliminary targets for malaria test positivity rate (TPR). The targets are based on observations from five African countries and three recently published studies. These TPR targets may need to be revised once more experience is available.

INDICATORS AND TARGETS FOR MONITORING AND EVALUATING MALARIA PROGRAMMES

Indicator (measured monthly)	Numerator, denominator	Targets	Comments
1. Outpatient confirmed malaria cases[1]	Numerator: Number of outpatient confirmed malaria cases (by microscopy or RDT) reported by health facilities per year Denominator for rate: Resident population by age (<5 years, all ages) per 1000 people resident in areas at risk of malaria[2]	Case/rate trend: • >50% reduction by 2010 • >75% reduction by 2015 Rate: • <1 confirmed case per 1000 people indicates excellent control	Rate of <1 confirmed case per 1000 people indicates readiness for elimination phase
2. Outpatient malaria TPR	Numerator: Number of outpatient laboratory—confirmed malaria cases Denominator: Total number of outpatient suspected malaria cases tested × 100	TPR trend: • >50% reduction by 2010 • >75% reduction by 2015 Annual TPR: • 10–20%—intermediate control • 5–9%—good control • <5%—excellent control	Annual rate should be used, not just the rate during the peak season. • <5% in peak season indicates readiness for elimination phase
3. Inpatient malaria cases	Numerator: Cases (confirmed and unconfirmed) with a primary diagnosis of malaria at discharge (and not admission) Denominator for rate: Resident population by age (<5, all ages) per 1000 people resident in areas at risk of malaria	Trend: • >50% reduction by 2010 • >75% reduction by 2015	
4. Inpatient malaria deaths	Numerator – Deaths with a primary diagnosis of malaria at discharge Denominator for rate – Mid-year resident population by age (<5, all ages) per 1000 people resident in areas at risk of malaria	Trend: • >50% reduction by 2010 • >75% reduction by 2015 Elimination of malaria deaths by 2015	

Indicator (measured monthly)	Numerator, denominator	Targets	Comments
5. Diagnostics: percentage of outpatient suspected malaria cases that undergo laboratory diagnosis	Numerator: Number of outpatient suspected malaria cases that received laboratory examination for malaria (microscopy or RDT) Denominator: Number of outpatient suspected malaria cases × 100	≥90%	
6. Treatment (ACT): percentage of outpatient malaria cases that received appropriate antimalarial treatment according to national policy	Numerator: Number of malaria cases receiving appropriate antimalarial treatment at health facility Denominator: Number of outpatient malaria cases expected to be treated at health facility with appropriate antimalarial medicine (all those with a diagnosis of malaria) × 100[3]	100%	
7. ITN: routine ITN distribution to populations at high risk (pregnant women)	Numerator: Number of ITNs distributed or delivered to target population—pregnant women attending ANCs Denominator: Total number of pregnant women attending an ANC for the first time	≥80%	
8. IPT: IPT in pregnant women	Numerator: Number of pregnant women receiving second dose of IPT Denominator: Number of pregnant women with at least one ANC visit	≥80%	
9. Stock-outs: percentage of health facilities without stock-outs of fi rst-line antimalarial medicines, mosquito nets and diagnostics, by month[1]	Numerator: Number of health facilities, in areas at risk of malaria, without stock-outs of first-line antimalarial medicine (according to national policy), ITN and RDT in a month Denominator: Number of reporting health facilities in the same areas at risk of malaria × 100	100%	

Indicator (measured monthly)	Numerator, denominator	Targets	Comments
10. Completeness of monthly health-facility reports on surveillance and logistics	Numerator: Number of health facility monthly reports received on surveillance and logistics, by month Denominator: Number of health facility reports expected each month	100%	

(Footnotes)

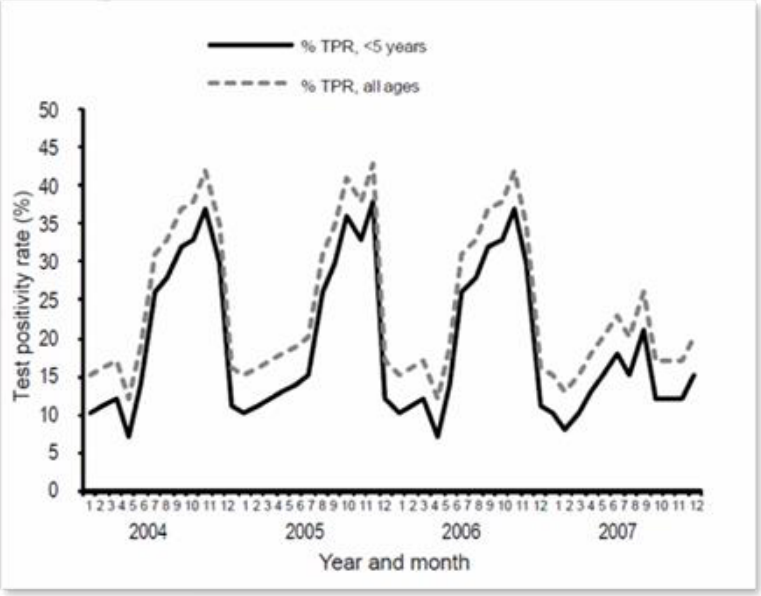
1. Epidemiological trends can be followed for any time interval—weekly, monthly or yearly. Trends of numbers of cases and deaths, without calculating rates, are the easiest to understand. Rates are useful if the trend period is long or comparisons are made, for example, with other countries, districts or provinces.

2. Several indicators use the term "population at risk." In most high-burden African countries, almost everyone is at risk of malaria, except for those living at >2000–2500 m and those near the centre of some large cities.

3. Denominator is composed of those <5 years old and those ≥5 years old. Treatment and policy for those age groups may be different—for example, testing of all suspected malaria cases in those ≥5 years of age and treatment of only confirmed cases, but presumptive treatment of all suspected malaria cases (without regard for testing) for those <5 years old. Denominator comes from surveillance data— either suspected or confirmed malaria cases by age group, depending on treatment policy.

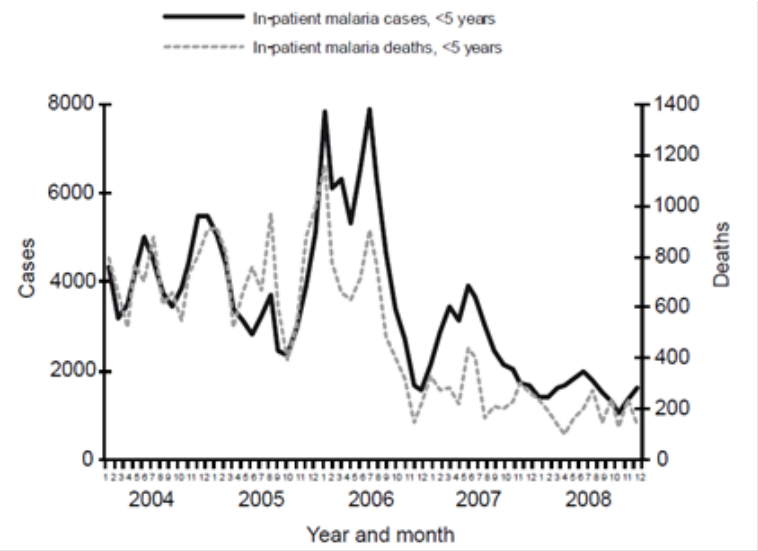
Appendix 4: Core Malaria Surveillance Graphs and Intepretations

Outpatient malaria TPR in children under 5 years of age and all ages



Peak-season and annual malaria TPR (assessed by RDT or microscopy) should decline progressively as control increases and transmission decreases. For example, annual malaria TPR should decline to less than 10% if outpatient confirmed cases and inpatient malaria cases and deaths decline by more than 80%

Inpatient malaria cases and deaths in children under 5 years of age



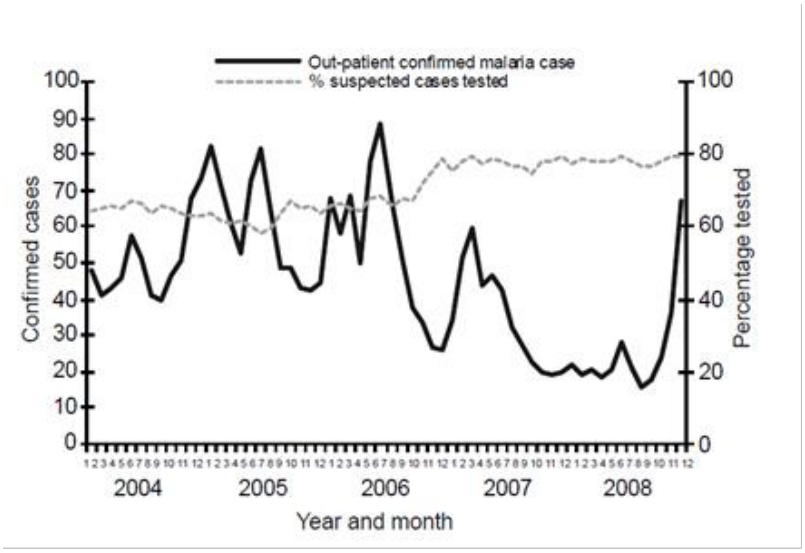
Low-to-moderate transmission

Countries and districts with low-to-moderate transmission should be able to reduce inpatient malaria cases and deaths by more than 50% within 12 months of mass distribution of LLIN, provided that the distribution achieves household possession of more than 60% and ITN use in children of more than 50%, as shown in Figure 5.2. Declines of less than 50% suggest that coverage is inadequate; in such cases, further investigation is needed.

High transmission

Countries and districts with high transmission are likely to require high levels of ITN coverage to achieve a reduction of more than 50% in inpatient malaria cases and deaths. The target should be near 100% household ITN possession and more than 80% ITN use in the entire population, not just in those under 5 years of age and pregnant women.

Outpatient confirmed malaria cases and percentage of suspected malaria cases tested with parasite-based test



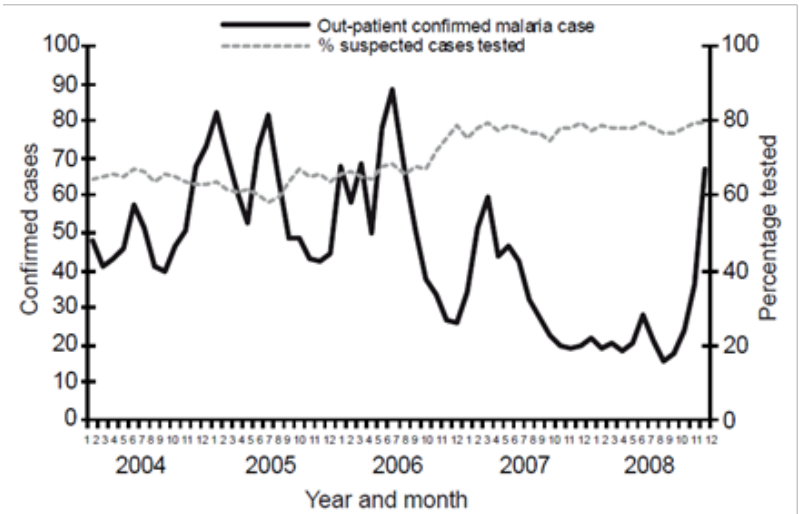
Low-to-moderate transmission

In areas of low-to-moderate transmission, the number of outpatient confirmed malaria cases should decline progressively and possibly quickly as transmission decreases due to improved malaria control (assuming that the percentage of suspected cases that are tested and completeness of reporting do not change). If there is no decline in confirmed cases, then it is unlikely that control has improved; in this case, investigation of coverage and efficacy of interventions is warranted.

High transmission

In areas of high transmission, the number of outpatient confirmed malaria cases is likely to decline progressively but slowly. If there is no decline in confirmed cases, then it is probable that transmission has not decreased sufficiently to produce changes in case incidence.

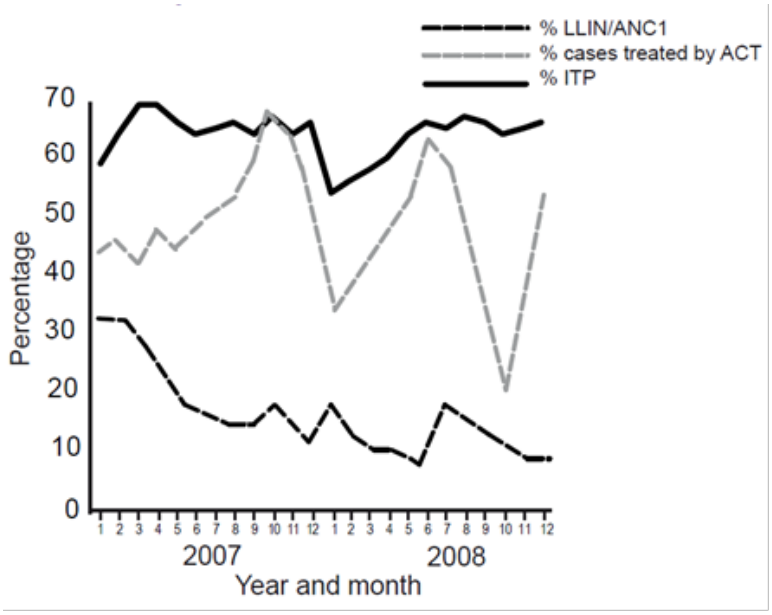
Outpatient all-cause cases and suspected malaria cases, all ages



The outpatient all-cause case curve is a “control” curve that indicates trends in health service attendance. For example, where malaria cases are declining, examination of the all-cause case curve would show whether there was also a decline in all-cause cases (or whether these had remained stable or increased). If malaria cases are declining markedly in the absence of a marked decline in all-cause cases, this indicates a true decline in malaria cases, probably due to malaria control interventions.

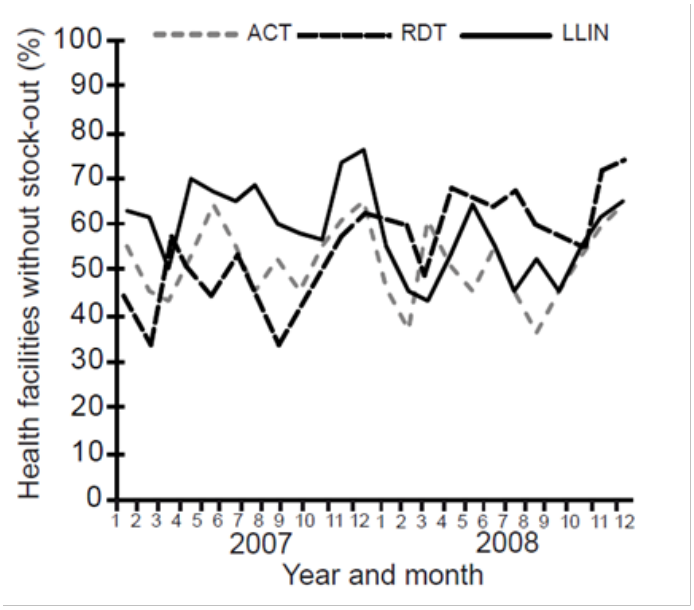
Interpretation of logistics and completeness-of-reporting graphs

Percentage coverage with patients treated with ACT (of expected), and ANC clients receiving ITN and IPT2



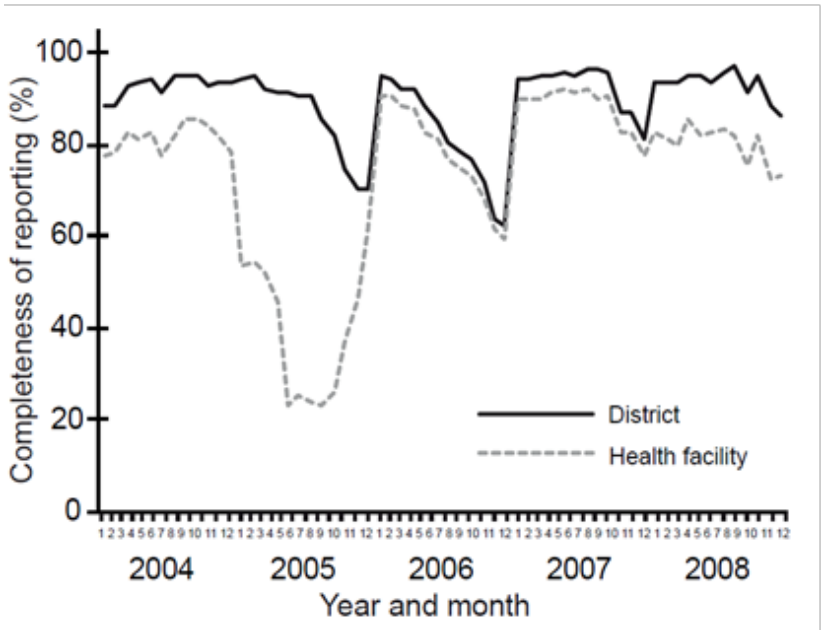
Ideally, the percentage of people treated with ACT and the percentage of ANC clients receiving ITN should reach 100%. The percentage of ANC clients receiving a second dose of IPT is unlikely to reach 100% because some ANC clients do not return for a second visit.

Percentage of health facilities without stock-outs, and without stock outs of ACT, RDT and LLIN



This indicator refers to the percentage of health facilities without stock-outs, rather than the percentage with stock-outs. Ideally, the percentage of health facilities without stock-outs should reach 100% each month.

Completeness of reporting and percentage of health facilities and districts that reported



The percentage of districts with complete reporting should reach 100%. The percentage of health facilities with complete reporting should reach more than 95%. Supervision should be targeted at health facilities and districts with incomplete reporting.

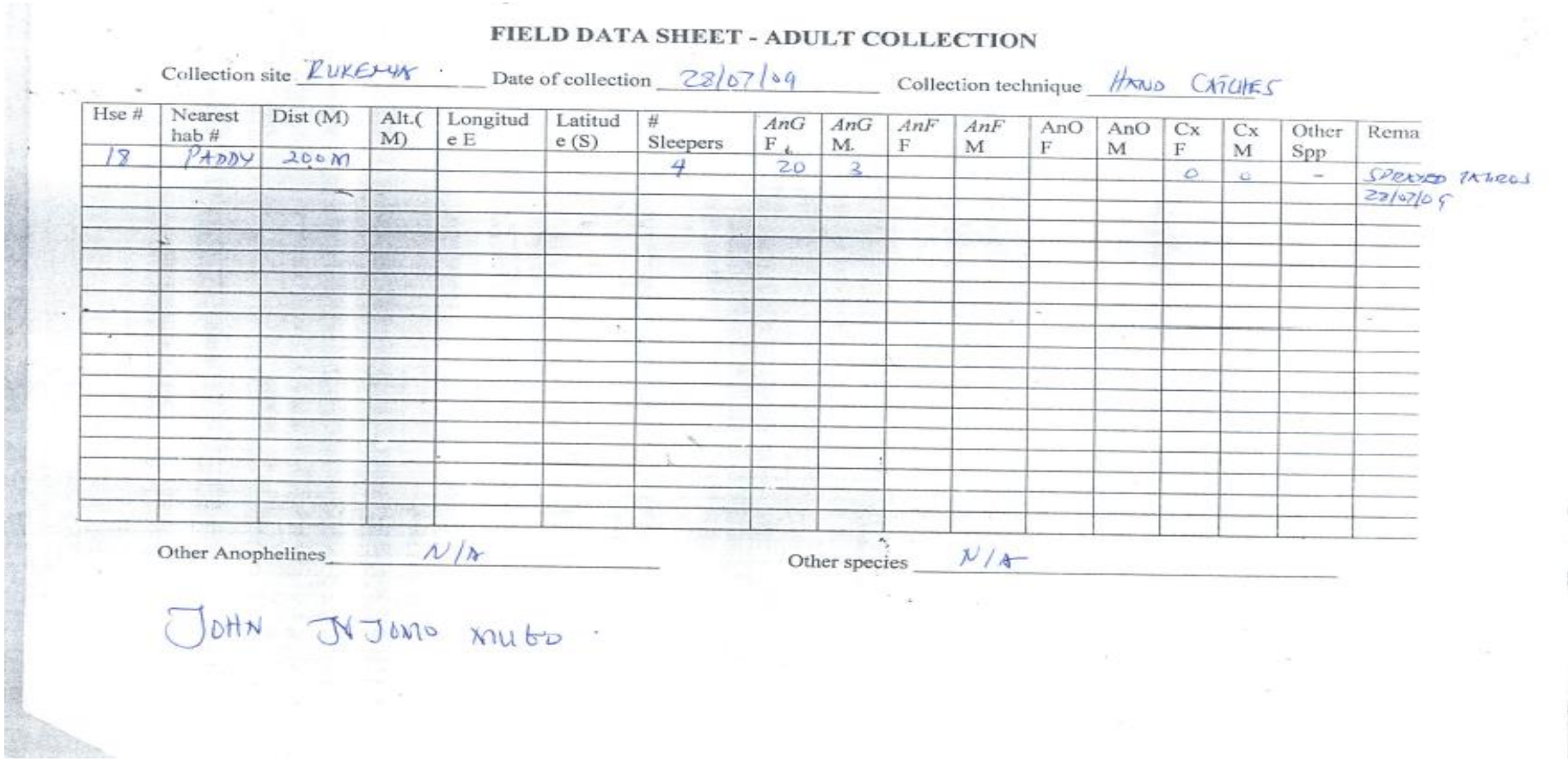
Appendix 5: Checklist for Supervising Surveillance and Response Activities at the Health Facility

District: _____ Health Facility: _____ Date of Supervisory Visit: _____

ACTIVITY	SUPERVISORY QUESTION	ANSWER	COMMENT (What Caused Problem)
Data collection to identify Suspected Cases within health facilities	How often do you collect information from the community about reports of suspected cases or deaths due to a priority disease or condition?		
Register cases	Are diagnoses of cases of priority diseases recorded in the clinic register according to the standard case definition?	Yes No	
Report	Do health staff use a standard case definition to report the suspected cases and outbreaks? Do you record information about immediately notifiable diseases on a case form or line list?	Yes No Yes No	
Analyze and Interpret	Do you plot the numbers of cases and deaths for each priority disease on a graph? Do you plot the distribution of cases on a map?	Yes No Yes No	
Investigate and Confirm Reported Cases and Outbreaks	If an epidemic-prone disease was suspected, was it reported immediately to the district office? For the cases of priority diseases needing laboratory tests seen since the last supervisory visit, how many had laboratory results? Are appropriate supplies available or set aside for collecting laboratory specimens during an urgent situation and show me the supply?	Yes No Number of results obtained:_____ Number of expected cases seen:_____ Yes No	
Respond	Are appropriate supplies available for responding to a confirmed case or outbreak (for example, immunization supplies and vaccine, ORS, antibiotics, and so on)? Please show me the supplies for carrying out a recommended response. Who is the outbreak coordinator for this facility? How often do you provide information and training in outbreak response to the staff of this facility?	Yes No Yes No Name:_____ Designation:_____ Training is done _____	
Provide Feedback	How often do you report information to the community? Do you receive the latest bulletin from the (central, subnational) level?	Report it _____ Yes No	

ACTIVITY	SUPERVISORY QUESTION	ANSWER	COMMENT (What Caused Problem)
Evaluate and Improve the System	Were the last 3 routine monthly reports sent to the district office? Were the last 3 routine monthly reports sent on time?	Yes No Yes No	
Epidemic Preparedness	What precautions do health staff (including laboratory staff) take routinely with all patients regardless of the patients' infection status? How do you estimate the number of supplies to set aside for use during an emergency situation?	Minimum level of standard precautions: _____ How supplies are estimated: _____	

Appendix 6: Field Data Sheet



FIELD DATA SHEET - ADULT COLLECTION

Collection site RUKENYA Date of collection 23/07/09 Collection technique HAND CATCHES

Hse #	Nearest hab #	Dist (M)	Alt.(M)	Longitude E	Latitude (S)	# Sleepers	*AnG F*	*AnG M*	*AnF F*	*AnF M*	AnO F	AnO M	Cx F	Cx M	Other Spp	Rema
18	PADDY	200M				4	20	3					0	0	-	SPRAYED HOUSES 23/07/09

Other Anophelines N/A Other species N/A

JOHN NJOKO MUBO

Appendix 7: Malaria Facility Supervision Checklist

Facility Supervision Checklist *(To be completed in duplicate and copy left at the facility)*
[Indicate N/A where the question is not applicable]

[NOTE: Even when asking YES/NO questions, in addition, kindly observe the practice to confirm the answers provided]

A. General section

1. Name of facility_____ Level of facility_____

2. Facility in charge_____ Contact: Tel. No._____

   Email_____

3. Ownership (GoK, Private, NGO, FBO) _____

4. District_____ Province _____ Date of Supervision_____

5. Supervision Team Members:

	Name	**Organization/Division**	**Designation**
1			
2			
3			
4			
5			

6. Respondents:

	Name	**Designation**
1		
2		
3		

7. Does the facility have inpatient facility ☐ Yes ☐ No

B: Human Resource Capacity [Maximum YES score Available = 9]

8. Technical HR Capacity (where applicable)

CADRE	Available? Y/N	Number in health facility
Medical Officer		
Pharmacist		
Clinical Officer		
Pharmaceutical Technologist		
Nurses		
Lab. Technicians/Technologists		
Health Records Officer		
Public Health Technician/Public Health Officer		
Others (please specify)		

9. Training Details (Where applicable).

CADRE	Number in health facility	Number trained in malaria case management	Number trained in the last 1 year
Medical Officer			
Pharmacist			
Clinical Officer			
Pharmaceutical Technologist			
Nurses			
Lab. Technicians / Technologists			
Proportion trained		=No. trained /No. in health facility	=No. trained in last one year /No. in health facility

C: Delivery of Malaria Services and Best Practices [Maximum YES score available = 33]

The following questions should be asked to the clinicians engaged in malaria clinical management. Observations should be used to confirm the answers.

10. Istesting of ALL suspected malaria cases undertaken at you facility? If **No** skip Q11

☐ Yes ☐ No

11. Which test do you carry out to confirm malaria diagnosis? (Tick all that apply)

Microscopy ☐ Yes ☐ No

RDT ☐ Yes ☐ No

If the facility has RDTs, check the following

12. During the visit observed a health worker performing an RDT for malaria? If none, skip to 14

If observed, has the following been done correctly (As per the RDT Job aid)

a. Blood collection ☐ Yes ☐ No

b. Blood and buffer placed in the correct wells ☐ Yes ☐ No

c. Enough time allowed before reading test results. ☐ Yes ☐ No

d. Were the readings read correctly ☐ Yes ☐ No

13. RDTs storage at facility?

    a. Are RDTs stored in a cool, dry place away from the floor ☐ Yes ☐ No

14. What recommended 1stline anti-malaria medicine is used at your facility for the treatment of uncomplicated Malaria? [Tick YES if answer is given is Artemether- Lumefantrine (AL)]

    ☐ Yes ☐ No

15. What medicine is used at your facility for treatment of malaria in 1st trimester of pregnancy?

    Quinine tablets ☐; AL ☐; SP ☐; Other (Specify)……..

    *(Tick Yes if answer given is **Quinine tablets**)* ☐ Yes ☐ No

16. What AL dosing schedule is used for a 20kg patient visiting your facility?

    *(Tick YES if answer is given is **"6 doses given over 3 days and 1st dose Directly Observed")***

    ☐ Yes ☐ No

17. What is the 2nd line anti-malaria medicine used at your facility for treatment of uncomplicated malaria? *(Tick Yes if DHAP)* ☐ Yes ☐ No

18. Please mention 3 signs of severe malaria that a patient may present with?

    (Correct responses include: Prostration; Altered level of consciousness; Multiple convulsions; Respiratory distress; Circulatory collapse; Pulmonary oedema; Jaundice; Haemoglobinuria; Abnormal bleeding)

    (Tick YES if at least 3 correct signs are named) ☐ Yes ☐ No

19. What anti-malaria medicine is used to treat severe malaria in your facility? _____

    *(Tick YES if answer is given is **IV Quinine**)* ☐ Yes ☐ No

20. In addition to giving the anti-malaria medicine, what other steps do you take in the management of severe malaria in this facility?

*(Tick YES if **any** of the answers below are provided)* ☐ Yes ☐ No

- Organize for referral (apply only to facilities without inpatient facilities)
- Manage complications

21. **Observe** the malaria drug dispensing procedure and state whether the health worker

(i) Directly observed the first dose ☐ Yes ☐ No

(ii) Gave adequate dispensing instructions to the patient which includes

a. Dosage ☐ Yes ☐ No

b. Timing ☐ Yes ☐ No

c. Advice on side effects profile ☐ Yes ☐ No

d. Advice on follow-up ☐ Yes ☐ No

22. Does the facility provide pregnant women with ITNs / LLINs? *(Please check the ANC register to confirm)* ☐ Yes____ ☐ No_____ N/A☐

If not, why not? (specify)

……

LAB Questions

23. **If** the facility has a lab, **examine the Lab Register** to determine how reporting for parasitemia is done. Tick Yes if facility records any of the following:

a. + ++ + ☐ Yes ☐ No

b. Parasites/200WBC ☐ Yes ☐ No

c. Parasites/microlitre of blood) ☐ Yes ☐ No

24. Does the lab report malaria parasite species? ☐ Yes ☐ No

25. Are adequate microscopic fields examined before a negative smear is reported? *(Tick YES if 100 microscopic fields are examined)* ☐ Yes ☐ No

ANC QUESTIONS *(To be asked in Nyanza, Western and Coast provinces only)*

26. Are pregnant women given SP as IPTp when they come for ANC your health facility?

☐ Yes ☐ No (Please check the ANC register to confirm)

27. What procedure is used in giving IPTp at your facility? *[Tick Yes if answer given is DOT and (if possible) you actually observe the IPTp being administered correctly (DOT)]*

☐ Yes ☐ No

Please comment below if incorrect procedure was observed:

……

28. At what times/intervals is IPT administered at your facility? *[Tick Yes if the following two answers are given: (i) 'every four weeks after quickening' or (ii) whenever the mother presents herself if interval between her visits is greater than 4 weeks*

☐ Yes ☐ No

29. If a woman comes to the clinic when her pregnancy is later than 36 weeks, would you still administer IPTp? ☐ Yes ☐ No

30. Is IPTp given to HIV-positive pregnant women who are on daily cotrimoxazole? *(Please check the ANC register to confirm)[The correct answer is **NO**.*

Tick YES if this correct answer is given ☐ Yes_____ ☐ No_____

31. **Observe** for availability of following in the ANC room

SP ☐ Yes ☐ No

Drinking water ☐ Yes ☐ No

Drinking cups ☐ Yes ☐ No

D: Availability of Malaria Commodities / Medicines [Maximum YES score Available = 7]

32. Have you had stockouts of any anti-malaria medicines over the last three months? *(Use the response to this question to complete the table below)*

Malaria Commodity / Medicines	**NO stock out was recorded in the last 3 months (Yes/No)**	**Duration of Stock out, if any**
Sulfadoxine-Pyrimethamine(SP)		
Quinine tablets		
Quinine injection		
Artemether- Lumefantrine [4]		
DHAP		
RDTs		
ANC / CWC Nets		

[4] Stockout for AL implies total stockout of all bands of this medicine

E: Data Management and Reporting [Maximum YES score Available = 25]

33. **Review** the following documents and comment on their status

Document	**Correctly filled and up to date? (Y/N)**	**Other Status****
Artemether- Lumefantrine- dispenser register		
Health Facility Monthly summary form for Malaria Medicines		
Bin card/ stock control card		
Receipt/ issue vouchers		
Laboratory register		
HMIS Inpatient register		
HMIS Outpatient Under 5 register		
HMIS Outpatient over 5 register		
ANC Register (check IPTp1 and IPT2 columns)		
CWC Register		
Facility Supervision Log Book		
ADR reporting Form (Yellow form) [5]		
Poor quality medicine reporting form (pink form) [6]		

**Document status key: *a. Correctly filled but not up to date b. Incorrectly filled c. Not available*

34. **Verify facility data for the previous month** (check the relevant Daily Activity Registers and compare actual figures with those reported to the district)

	Please indicate the previous month's tally obtained below		**Are these the same values contained in the district report?**
Out -patient malaria indicators	<5yrs	>5yrs	Y/N
Total number of outpatient malaria cases			
Number of malaria cases tested (Microscopy)			
Number of outpatient confirmed malaria cases			
(Microscopy)			
Number of malaria cases tested (RDT)			
Number of outpatient confirmed Malaria cases (RDT)			
Total number of outpatient confirmed Malaria cases			
(Microscopy + RDT)			
No of nets distributed to under 1 yrs			
Nets distributed to pregnant women			
In- patient Malaria indicators(<5 and>5)	<5yrs	>5yrs	Y/N
Inpatient malaria cases *(confirmed with primary diagnosis of malaria at discharge)*			
Inpatient malaria cases *(confirmed & unconfirmed with primary diagnosis of malaria at discharge)*			

[5] The health worker to give a scenario where the form may be used

[6] The health worker to give a scenario where the form may be used.

Total inpatient malaria deaths *(with primary diagnosis as malaria)*			

35. When did you last send your malaria medicines consumption summary report to the District? (Ask to see copy at the facility - Tick YES if the last month's report was sent to district by the 5th day of the subsequent month) ☐ Yes ☐ No

F: Availability of Relevant Malaria Documents

[Maximum YES score Available = 15]

36. Check for the availability of the following documents.

	Document	**Document Available (Y/N)**	**Comments**
i.	Abridged NMS 2009 - 2017		
ii.	The National Guidelines for Diagnosis, Treatment and Prevention of Malaria in Kenya 3rd Edition		
iii.	2010 Diagnostics, Treatment and Drug Management set of Job Aids		
iv.	MIP orientation package **(in MCH/FP clinic)**		
v.	MIP Job Aids **(in MCH/FP clinic)**		
vi.	Pharmacovigilance guidelines		
vii.	Bench aides for microscopy **(in the Laboratory)**		
viii.	SOP or Job aid for performing RDT test procedure		
ix.	Laboratory diagnosis of malaria user's guide **(in the Laboratory)**		
x.	Inventory of ACSM materials		

37. Has the facility displayed health promotion materials covering the following areas:

a. Need to seek prompt treatment for fevers ☐ Yes ☐ No

b. Recognition of symptoms and signs of severe malaria ☐ Yes ☐ No

c. Adherence to malaria treatment plan ☐ Yes ☐ No

d. Use of appropriate malaria prevention measures:

IPTp poster/brochures ☐ Yes ☐ No

LLINs posters/brochures ☐ Yes ☐ No

38. Overall achievements and challenges

……

……

……

……

G: List at Most Three Gaps Identified and Actions Needed

No	Problems/ gaps	Action needed	Person to take action	By when action to be taken
1				
2				
3				

Name of Facility in charge: ………………………………………………… Signature: ……………………………

Date: ……………………………………………………… Rubber stamp: ………………………………………………

Name of Leader of Supervision team:…………………………………………………………………………

Signature…………………………………………………………… Date:…………………………………………………

Appendix 8: Malaria District Supervision Checklist

District Supervision Checklist *(To be completed in duplicate and copy left at the District)*
[Indicate N/A where the question is not applicable]

A. General section

1. District_____ Province/County _____

1. District in charge_____ Contact: Tel_____ Email_____

2. Date of Supervision_____

4. Supervision Team Members:

	Name	**Organization/Division**	**Designation**
I			
2			
3			
4			
5			

5. Respondents:

	Name	**Designation**
1		
2		
3		

6. How many facilities does the district have?
   a. GoK ____
   b. Private ____
   c. NGO ____
   d. Faith–Based ____
   e. Municipal ____
   f. Others ____

B. Planning and Management [Maximum YES score Available = 4]

7. Does the district have a dedicated malarial focal person? ☐ Yes ☐ No

8. Are malaria control activities included in the district annual operational plan (AOP)? (***Asks for a copy of AOP***) ☐ Yes ☐ No

9. Does the district hold review meetings during which malaria control activities are discussed?

☐ Yes ☐ No

If yes, what is the frequency of holding such meetings? ☐ Monthly ☐ Quarterly

☐ Biannual ☐ Other (specify)_____

10. Has the district updated the partners' database detailing their contribution to malaria control in the district? (***Obtain the updated copy***) ☐ Yes ☐ No

C. Data Reporting and Analysis [Maximum YES score Available = 16]

11. Does the district have a Health Records Information Officer? ☐ Yes ☐ No

12. Has at least 1 district staff been trained on malaria medicines data management?

☐ Yes ☐ No

13. Review the following data reporting documents and comment on their status

Document	**Correctly filled and up to date? (Y/N)**	**Other Status****
District Monthly Aggregation forms for malaria medicines		
District Monthly Summary Tool for malaria medicines		
HMIS Summary Reports		
DDSR Weekly Reports		
Malaria Partners' Database		

***Document status key:* a. Correctly filled but not up to date *b. Incorrectly filled c. Not available*

14. Review last quarter's reporting pattern for malaria medicines and calculate the average reporting rate.

(a) Is the overall reporting rate ≥70%? (*i.e. number of facilities reporting out of the total facilities in the district*) ? ☐ Yes ☐ No

(b) If <70%, what are the reasons for the low reporting rate?

_____

_____

15. Has the district been sending its malaria medicines consumption summary report to the national level in a timely manner? *(**Ask to see copy** at the district- Tick YES if the last month's report was sent to national level by the 20th day of the subsequent month)*

☐ Yes ☐ No

16. Does the district analyze its malaria data? ☐ Yes ☐ No

17. Are the following data elements calculated and up to date?

Analysis	**Analysis done (Y/N)**	**Status**
Annual trends of outpatient malaria cases (over 5yrs & under 5yrs) over the last 5 years		
Annual trends of confirmed malaria cases over the last 5 years		
Annual trends of confirmed malaria admissions over the last 5 years		
Annual trends of inpatient malaria deaths over the last 5 years		
Trends of the average facility monthly reporting rate for malaria medicines (for all facilities in the district)		
Trends for IPTp 1 and IPT 2 provision		

Status Key 1-Complete and up to date. 2-Avaialable but not up to date 3-Not available

D. Training and Supervision [Maximum YES score Available = 12]

18. What malaria-related trainings have been undertaken in your district over the last 12 months? [Please insert details in the table below]

Course Name	**Course Provider/Training Organization**	**Month of training**

19. Is there an updated Facilities Contact List for all facilities in the district?
Yes ☐ No ☐

20. Does the district have a documented facilities supervision schedule? ☐ Yes ☐ No

21. How often is the integrated supervision conducted?
☐ Monthly ☐ Quarterly ☐ Not regular

- Tick Yes, if supervision done at least once every quarter. ☐ Yes ☐ No

22. (a). How many facilities has the district supervised in the last 3 months? Is the percentage of facilities supervised ≥70%? (compared with total facilities in district)
☐ Yes ☐ No

(b). If <70%, what are the reasons for the low supervision coverage?
_____
_____

23. Does the district document supervision visits? ☐ Yes ☐ No (a***sk to see the documentation***)

24. (a). Does the district give written feedback to the facilities after supportive supervision?
☐ Yes ☐ No

(b). If yes, what is the date of the last report (***ask to see a copy***)_____

(c). If no, what is the reason?_____

25. Did the district send a timely supervision report to the province and national level after completion of last supervision visits? (i.e. within 2 week of completing the supervision)
☐ Yes ☐ No

26. Has any team from the province level come for integrated supportive supervision in the last 6 months? ☐ Yes ☐ No

27. IF YES, did the supervisors perform any of the following activities?

(a) Record Reviews ☐ Yes ☐ No

(b) Review of the malaria data analysis done by district 0 Yes 0 No

(c) Discuss problems associated with supervision and other malaria control activities in the district and provided recommendations? ☐ Yes ☐ No

28. Has the district received any written feedback from the supervisor after a supervisory visit in the last 6 months? (***ask to see report or documentation***) ☐ Yes ☐ No

E. Availability of Relevant Malaria Documents [Maximum YES score Available = 13]

29. Indicate availability of the following malaria documents.

Document	**Available? (Y/N)**	**Comments**
NHSSP II		
National Malaria Policy 2010		
National Malaria Strategy 2009-2017		
(i). Complete version		
(ii). Abridged version		
Malaria Monitoring and Evaluation Plan 2009- 2017		
Inventory of ACSM Material		
Global Fund Operations Manual		
The National Guidelines for Diagnosis, Treatment and Prevention of Malaria in Kenya (3rd edition)		
IRS training manual (where applicable)		

Support Supervision Manual and Tools for supervision of Malaria Control Activities		
IVM guidelines		
EPR guidelines(where applicable)		
Malaria Communication strategy		
Others specify		

F. Advocacy, Communication and Social Mobilization (ACSM) [Maximum YES score Available = 6]

30. Does the district hold stakeholders forums? ☐Yes ☐No
    - How often are such forums held? _____

31. Are malaria issues discussed during these forums? ☐ Yes ☐ No

32. What are the channels that the district uses for health promotion/social mobilization?

Barazas	☐ Yes	☐ No
Religious groups	☐ Yes	☐ No
Road shows/theatre groups	☐ Yes	☐ No
Print media	☐ Yes	☐ No

Others ***(Please note them down)***

G. Emergency Preparedness [Maximum YES score Available = 5]

33. Check the district's DDSR reporting rate for the last four weeks – is the average rate ≥70%?
    ☐Yes ☐No

34. Is this weekly information shared by the following week with the following:
    i. DOMC ☐ Yes ☐ No
    ii. DDSR ☐ Yes ☐ No

(Questions 35 – 37 are for epidemic prone districts only)

35. Does the district have a written plan of epidemic preparedness and response?
    ☐ Yes ☐ No

36. Has the district had adequate emergency stocks of malaria drugs and supplies (that would last at least4 weeks) at all times in the past 3 months? ☐ Yes ☐ No

37. How many malaria sentinel surveillances sites exist in the district?
    _____

38 Overall achievements and challenges

……
……
……
……
……
……
……
……

I: List at Most Three Gaps Identified and Actions Needed

No	Problems/ gaps	Action needed	Person to take action	By when action to be taken
1				
2				
3				

Name of District Medical Officer of Health: ……Signature: ……

Date: …….. Rubber stamp: ……

Name of Leader of Supervision team: ……

Signature……. Date:……

Appendix 9: Facility Contact List

District: _____ Province: _____ Year: _____

	Facility Name	Address	Office Phone No.	Contact Person	Designation	Mobile Phone No.	Email address
1							
2							
3							
4							
5							
6							
7							
8							
9							
10							
11							
12							
13							
14							
15							
16							
17							
18							
19							
20							
21							

Date last updated: _____

Appendix 10: DHMT Contact List

Province: _____ Year: _____

	District Name	Address	Office Phone No.	Contact Persons	Designation	Mobile Phone No.	Email address
1							
2							
3							
4							
5							
6							
7							
8							
9							
10							
11							
12							
13							
14							
15							

Appendix 11: District Supervision Activity Schedule

District: _____ Province: _____ Schedule for Period from: _____to_____

	Health Facility	Contact Person	Phone Number	SUPERVISION SCHEDULE											
				Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1															
2															
3															
4															
5															
6															
7															
8															
9															
10															

Appendix 12: Facility Score Sheets

Supervision Aspect	Maximum YES score Available	Total YES Recorded	Total N/A Recorded	Calculated % SCORE	COMMENTS
HR Capacity and Training Status				0.0%	
Delivery of Malaria Services and Best Practices				0.0%	
Availability of Malaria Commodities / Medicines				0.0%	
Data Management and Reporting				0.0%	
Availability of Relevant Malaria Documents				0.0%	
OVERALL SCORE	0	0	0	0.0%	

NOTE:

% Score Obtained = Total "YES" Recorded x 100 / (Max. "YES" Score - Total "N/A" recorded)

Obtain the score for each supervision aspect before calculating the overall score for the supervisee.

Appendix 13: District Score Sheet

Supervision Aspect	Maximum YES score Available	Total YES Recorded	Total N/A Recorded	Calculated % SCORE	COMMENTS
Planning and Management				0.0%	
Data Reporting and Analysis				0.0%	
Supervision				0.0%	
Availability of Relevant Malaria Documents				0.0%	
Advocacy, Communication and Social Mobilization (ACSM)				0.0%	
Emergency Preparedness (for districts)				0.0%	
OVERALL SCORE	**0**	**0**	**0**	**0.0%**	

NOTE:

% Score Obtained = Total "YES" Recorded x 100 / (Max. "YES" Score - Total "N/A" recorded)

Obtain the score for each supervision aspect before calculating the overall score for the supervisee.

Appendix 14: Supervision Summary Report

District: _____ Province: _____ Report for Period: From: _____ To: _____

	Facility Name	Date of supervision	Main findings	Actions taken	Recommendations	Responsible	Required support	Date Actions Due
1								
2								
3								
4								
5								
6								
7								
8								
9								
10								
11								

Report approved by:

Name: _____ Signature: _____ Date: _____

Appendix 15: Detailed Supervision Report Format

[For use by All Levels]
Within two weeks of completing the supervision, the supervision team should compile the detailed report using the report format below:

1. **Introduction**
   a. Report Background, e.g., a brief introduction of the district/province.
   b. Objective(s) of the supervisory visit
   c. Dates of the visit
   d. List of names/designations of members of the supervision team

2. **Methods**
   a. How the supervision was organized and carried out
      i. Courtesy calls
      ii. Review of previous reports
      iii. Allocation of tasks to team members
   b. Tools used
   c. Approaches used
      i. Direct observation
      ii. Interviews
      iii. Review of data
   d. Documents reviewed
   e. Other sources of information

3. **Finding**
   a. Detailed description of the findings
   b. Relating the current findings to the previous reports
      i. Have action plans and recommendations been accomplished
      ii. Are there recurrent issues

4. **Actions taken**
   a. Details of immediate actions taken during supervision
      i. Corrective actions taken
      ii. On the job training
      iii. Facilitation

5. **Recommendations and action plans**
   a. Recommendations given and to whom.
   b. Action plans and the agreed timelines.

6. **Annexes**
   a. Supervision summary
   b. Facility/District/Provincial Score sheet
   c. List of partners (Partners' Database)
   d. Financial statement

Appendix 16: IDSR Weekly Summary Reporting Form

ED2012 **MINISTRY OF PUBLIC HEALTH & SANITATION KENYA** MOH 505

IDSR Weekly Epidemic Monitoring Form

County_____ District_____ Health Facility_____ Epi Week____ Week ending_____ Month_____ Year_____

No. of Health Facilities/Sites that reported _____ No. of Health Facilities/Sites expected to report _____

Diseases, Conditions or Events	< 5 years		≥ 5 years		Total		Diseases, Conditions or Events	< 5 years		≥ 5 years		Total	
	Cases	Deaths	Cases	Deaths	Cases	Deaths		Cases	Deaths	Cases	Deaths	Cases	Deaths
AEFI*							Meningococcal Meningitis						
Acute Jaundice							Neonatal deaths						
Acute Malnutrition							Neonatal Tetanus						
AFP (Poliomyelitis)**							Plague						
Anthrax							Rabies						
Cholera							Rift Valley Fever						
Dengue							SARI (Cluster ≥3 cases)						
Dysentery (Bacillary)							Suspected MDR/XDR TB						
Guinea Worm Disease (Dracunculiasis)							Typhoid						
Malaria							VHF***						
Maternal deaths							Yellow Fever						
Measles							Others (Specify)****						

Laboratory	< 5 years		≥ 5 years		Total	
	Tested	+ve	Tested	+ve	Tested	+ve
Malaria						
Shigella Dysentery						
Tuberculosis (MDR/XDR)						
Typhoid						

Remarks:

*Adverse Events Following Immunization
**Acute Flaccid Paralysis
*** Viral Haemorrhagic Fever: May be due to Ebola, Marburg, Crimean Congo haemorrhagic Fever
****Any public health disease, condition or event of national or international concern (infectious, zoonotic, food borne, chemical, radio nuclear, or due to unknown condition

Reported by: _____ Designation _____ Sign _____ Date _____

Reporting Instructions

Health Facility Level: Send a copy to DMOH or DDSC every Monday and file a copy
District Level: Reviews all health facility reports for correctness then enters the data in the electronic IDSR system. Files the health facility copies
Surveillance week: A week starts on Monday and ends on Sunday

DIVISION OF MALARIA CONTROL
Ministry of Public Health and Sanitation
P.O Box 19982 – 00202 KNH
Nairobi, Kenya
head.domc@domckenya.or.ke