



# M&E Strategies for a Community IRS Program

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# An Outline of a Successful IRS Program

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- Set clear and measurable objectives
- Standardize the approach across all sites
- Continuously build the business case
- Measure, measure, measure!



# Standard Methods of Measuring IRS Success

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- Most measurements are outcome measurements, e.g.
  - Number of illnesses/deaths prevented
  - Reduction in anemia
- Key measurements also include process indicators
  - Intervention processes
    - IRS, RDT, ACT coverage
  - Biological markers
    - Malaria prevalence, malaria case load, vector population
  - Economic Benefit



# Key M&E Indicators for an IRS Program

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- Number/Percentage of structures sprayed
  - Number of insecticide sachets used
  - Number of people trained in IRS
  - Number of IRS commodities (hand-cans ...)
- Number of people residing in structures sprayed
  - Total
  - Children < 5 years and pregnant women
- Cost per person protected by IRS

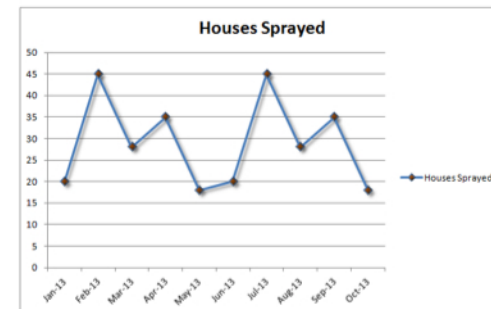


# Entomological Surveillance as a Means of Evaluating an IRS Program

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- Thinking of malaria as a mosquito transmitted disease
  - Measuring reduction in the vector population is a leading indicator
  - Early warning of a failing program
    - Monthly data requirement (or more often)
    - Consistent techniques
    - Requires good data tracking

Cross-Period Spraying Analysis  
Houses Sprayed



# Before Spraying – vector information

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- Identify the vector species
  - Key characteristics (feeding and resting behavior)
- Estimating population size
  - Landing counts
  - Window traps
  - Light traps
  - Baited traps (CO<sub>2</sub>, octenol, human lure...)



# Before Spraying – data management

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- How will data be collected and stored
  - Defining the data to be collected and how it will be collected
    - Related to the M&E indicators
  - Defining data flow
    - How does the data get recorded in the field
    - Data integrity (manual and database driven)
    - Report content and format
    - Review process



# Monitoring and Evaluating an IRS Program – *moderate to high malaria*

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## Characteristics:

- Low expenditure per capita and poor access to medical care
- Health data are often aggregated at a district level (low resolution)
- IRS impact on transmission e.g., reduction in infective mosquito bites may be unknown

\*\*\* Focus on reduction in mortality and morbidity





# Monitoring and Evaluating an IRS Program – *low transmission zone*

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## Characteristics:

- Increased access to medical care and diagnostic tests
- Malaria transmission often localized in an area of the district, often in poor and marginalized populations
- Data collection that allows identification of geographic and seasonal risks

\*\*\*Focus on hotspots, rapid response, entomological vigilance (resistance, change), and tracking cases back to geographical areas.



# Monitoring and Evaluating an IRS Program – *elimination* phase

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## Characteristics:

- Accurate diagnosis and effective treatment is normal and expected
- Clear distinction between imported and locally acquired cases

\*\*\*Focus on maintaining support for IRS in the face of success, and root cause investigations of every case.



# WHO Certified Malaria Free

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## Data intensive

- Robust surveillance system in place
- Identification of country hot-spots
  - Areas where transmission last noted
  - Areas susceptible to imported disease
- Trained staff that can carry out case investigations
  - Distinction between imported and locally acquired cases
  - Focus investigations that identify risk factors



# Summary: The Take-Home Messages

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- Define clear objectives
  - Depends upon the stage of the project – each stage expands the number of goals
- Commit to Robust Surveillance as Standard Operating Procedure
  - Document success and use data to improve on existing strategies
  - Keep robust records – use a dedicated database
  - Must include case data e.g., reduction in number of missed work days, treatment costs...
- Start with the business case and keep building it



# Private – Public Opportunities

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- Shared resources/expertise
  - Expansion of control beyond the camp fence
- Recognizing malaria is a regional problem
- Regional fund-raising
- Standardized malaria control measures and resourcing across the country
- Coordinated and standardized monitoring, evaluation and planning



# Our Expert – Cole Church, Ph.D.

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- A medical entomologist adept at mobilizing diverse resources to protect public health, Cole served 21 years in the U.S. Navy and then directed a mosquito abatement district in Louisiana for 5 years.
- Cole currently supervises all the MosquitoZone activities in Southeast Asia, particularly the LNG project on Papua New Guinea, one of the largest natural gas projects in the world.
- Cole teaches a class in Tropical Medicine at the Baylor College of Medicine. His MS is in Medical Entomology from Iowa State University and his Ph.D. is in Toxicology of Insecticides from the University of Missouri.

