Indoor Residual Spraying (IRS) Operation in Pakistan

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Establishment of Malaria Control Program – Pakistan

- Global Eradication Program
- IRS Major Intervention (DDT)
- Eradication Program was EXTREMELY successful
- Resistance against DDT
- Paradigm Shifted in IRS Policy
- Blanket Spray to Focal Spray
- DDT was banned in Pakistan due to resistance Issue
  BHC was introduced for IRS
- Organophosphate (OP) was introduced for IRS
  Shortest time of effectiveness
- Resistance in malaria vectors reported in 1988-89
  Pyrethroids was launched in country for IRS
- Still in use for last 2 decades !!!!!!
- Pakistan became the signatory of Global RBM initiative
- Govt allocated Rs. 272 for implementation of RBM
- IRS remained key intervention
- Revision of national guidelines for IRS
- Mainly focusing “System Strengthening & capacity building
- ONLY WHOPES-recommended insecticides will be allowed in Pakistan
IRS Run through Government Resources
Highly Endemic: API: >5
Districts: 34
Pop: 19.9 M (9.5%)

Low Endemic: API: <1
Districts: 61
Pop: 121 M (72.1%)

No Malaria
Districts: 5
Pop: 7.2 M (3.8%)

Mod. Endemic: API: 1-5
Districts: 41
Pop: 31.2 M (18.7%)
IRS in National Malaria Control Strategy

• *Malaria Control* is one of top priority areas in National Health Policy (2009)

• *National Malaria Control Strategy (NMCS)* based on;
  - Early Diagnosis & Prompt Treatment
  - Multiple Prevention (IRS, LNs, LSM etc)
  - Epidemic Preparedness
  - Behavior Change Communication (BCC)
  - Partnership Building

• Goal: Reduction of malaria burden by 60% in till 2020 using the baseline of 2010 (API: 0.88)
IRS in National Malaria Control Strategy (Cont…..)

• Since WHO’s Global Eradication Era 1960’s, VC is an essential element of National Strategy, mainly relaying upon;
  - Time & Target-specific IRS
  - LLINs/ITNs (Universal Coverage)
  - LSM (Larviciding, EM &EM)
  - Biological agents

• Only WHOPES-Recomd. insecticides/LLINs of recommended manufacturers.

• Technical Assistance (TA)
  - Technical Working Groups (TWGs)
  - Tech. Advisory Committee on Malaria (TACOM)
  - Inter-Provincial Coordination Committee (IPCC)
  - National Decision-making body for IRM (2015)
National IRS Operation Guidelines

- Country has well defined guidelines for IRS since 1960’s
- Updated 2007 and 2014 to ensure quality, reliability and sustainability in IRS campaign
Transmission Patterns & IRS in Pakistan
Transmission Patterns & IRS in Pakistan

Year around transmission

Season (Short & high transmission)

Seasonal

Roll Back Malaria

IRS (Rd-II)

Transmission Patterns & IRS in Pakistan

Seasonal
IRS Coverage in Pakistan
IRS Coverage Models of Target Areas

- Two Models to determine the coverage of IRS
  - Health Facility-Based coverage (GFATM)
  - Whole District coverage (Govt Funding)
IRS Coverage of Target Areas (within District: 2013 & 2014)
IRS Coverage of Target District (2013 & 2014)
IRS Coverage of Target Areas (within District: 2013 & 2014)
IRS Coverage of Target District (Govt. Funding 2013 & 2014)
IRS Coverage of & Impact on Disease Transmission

No notable Decline in Malaria Caseload
Lesson Learnt: Capacity Building for IRS in Pakistan

- Low Coverage
  - Human Capacities
  - Logistic constrains
- Implementation of guidelines (selection of areas)
- Low political commitment
- Security issues in bordering areas
- Use of sub-standard insecticides (Non-WHOPES recommended)
- National IRM Plan ??
- Sub-optimal M&E mechanism
- No funds in District Implementation Plan (DIP)
Capacity Building in IRS in Pakistan
Quality Assurance (QA) in IRS Operation in Pakistan
Quality Assurance Protocol and Tools for IRS in Pakistan

Comprised of following sections:

• SECTION 1: Epidemiology of Malaria in Pakistan
• SECTION 2: Role of QA in IRS operation (Basic concept of QA in IRS)
• SECTION 3: Roles & Responsibilities of various stakeholders for planning, Implementation & Management of IRS
• SECTION 4: Development of QA system for IRS
• SECTION 5: Implementation of QA system for IRS (SOPs)
  ➢ SOP 1: Selection of Insecticides
  ➢ SOP 2: Selection of Appropriate Areas (Target Areas)
  ➢ SOP 3: Determination of Appropriate Time and Number of rounds
  ➢ SOP 4: Measuring Total Sprayable Structures and Surfaces
  ➢ SOP 5: Estimating Total insecticides, Equipments and Human Resource requirements
Quality Assurance Protocol and Tools for IRS in Pak (Cont..)

- **SOP 6:** Conduction of IRS
- **SOP 7:** Selection of Spraying Equipments and Their Maintenance
- **SOP 8:** Advocacy and Sensitization

**SECTION 6: Handling of Insecticides**

- **SOP 9:** Procurement of Insecticides
- **SOP 10:** Storage and Stock Management
- **SOP 11:** Transportaion of Insecticides
- **SOP 12:** Waste management including PPEs
- **SOP 13:** Spill Response Including Major Emergencies
- **SOP 14:** Monitoring and Evaluation (M&E) Framework
- **SOP 15:** Reporting on progress and performance of IRS
Tools for Quality Assurance in IRS in Pakistan

1). Preparation of workplan

2). Recording & Reporting tools
   - Daily Spray reports (U/C or village level)
   - Monthly/Quarterly reports (district level)
   - Yearly report (Provincial/national level)
   - Monitoring of densities
   - Resistance

3). Gap analysis or Need Assessment for IRS
   - Annual
   - Long Term (5-Year)

4). M&E Framework & Impact Assessment

5). Checklists
Tools for Quality Assurance in IRS in Pakistan (Cont....)

6). **Training** plan and curriculum for each tier
8). Training module for maintenance of **sprayers**
9). Reporting **mechanism** for IRS activities
Challenges in IRS Operation in Pakistan

- Security Issues in bordering areas
- Insufficient and delay in release of available funds
- Political influence for procurement, selection of areas
- Technical and managerial capacities of program at all levels
- Authority conflicts
Acknowledgment
Thank you All

Healthy Pakistan is Our Prime Mission