Building a broader approach to mosquito management across the built environment

Michael Macdonald, Sc.D.
Policy Frameworks
3: Establish institutional training and technical support networks; Establish devolved vector control services, with intersectoral support.

5: Improve methods for generating evidence from combined interventions (e.g., vector control) for which “gold standard” RCTs cannot be conducted.
Strategic Engagement with Private Pest Management Associations
Greater Chennai Municipal Corporation vector control services for dengue, malaria, JEV

fines for mosquito breeding on property
Urban Agriculture and Farmer Field Schools

Larval recognition and control; pesticide and resistance management
Microfinance/remittance for incremental housing improvements

Snetselaar (2017)

Odufuwa (2022)

Lindsay (2019)
Space Spray

Everyone does it; most poorly

• Currently not recommended for malaria, poor cost-effective evidence for Aedes

• Urgent need to improve Quality Assurance:
  • Pesticide choice, droplet size calibration, time and route of application
  • Post-spray mosquito monitoring
Technology for larval surveillance and control

- Citizen science
- Info management (ZZAPP)
- Wide Area Larviciding
- UAS for remote sensing and larvicide delivery
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**Strategic Opportunities**

- Breaking down silos between NTD and Malaria
- Private Pest Control Associations
- Tax-base municipal programs
- Farmer Field Schools
- Microfinance and remittance for housing improvements

**Tactical Opportunities**

- Improved QA for Space Spay to make less cost-inefficient
- Technology improvements for larval source management
  - Citizen science and ICT
  - Wide Area Larviciding
  - UAV for targeting and delivery