

In2Care[®] EaveTubes

Killing insecticide-resistant mosquitoes & protecting communities against malaria



15th annual VCWG meeting
Geneva, 3 Feb 2020

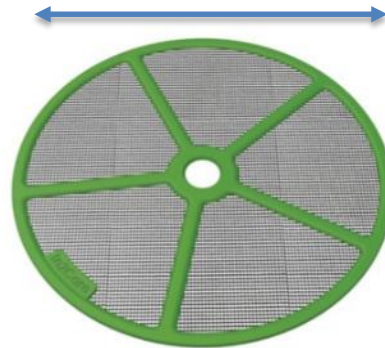


In2Care® EaveTubes for malaria vector control



6 - 10 Tubes per house

14 cm diameter



Ventilation tubes + insecticide-treated static netting discs

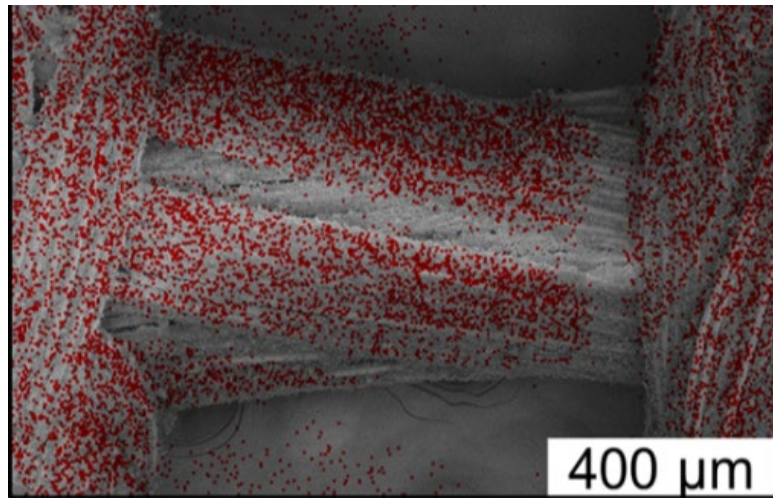
How In2Care® EaveTubes attract malaria mosquitoes



Static coated In2Care[®] EaveTube netting



Static netting → high dose transfer of biocides



Insecticide binds on top of netting fibers → many particles transferred within seconds

Two novel options for insecticide delivery:

1. Resistance-breaking: effective use of PQ-listed insecticides
2. Apply new actives & combinations



Safety benefits In2Care[®] EaveTubes



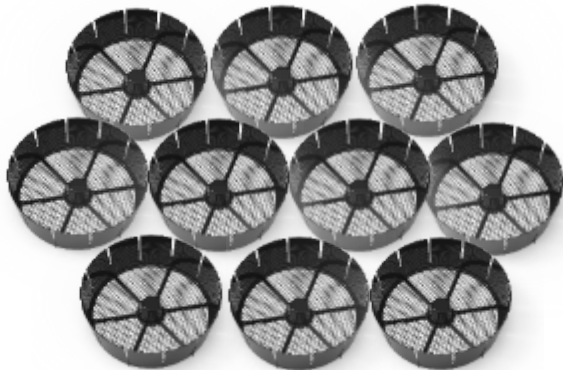
Bednet
~ **10 m²** surface to treat



House walls (IRS)
~ **150 m²** surface to treat

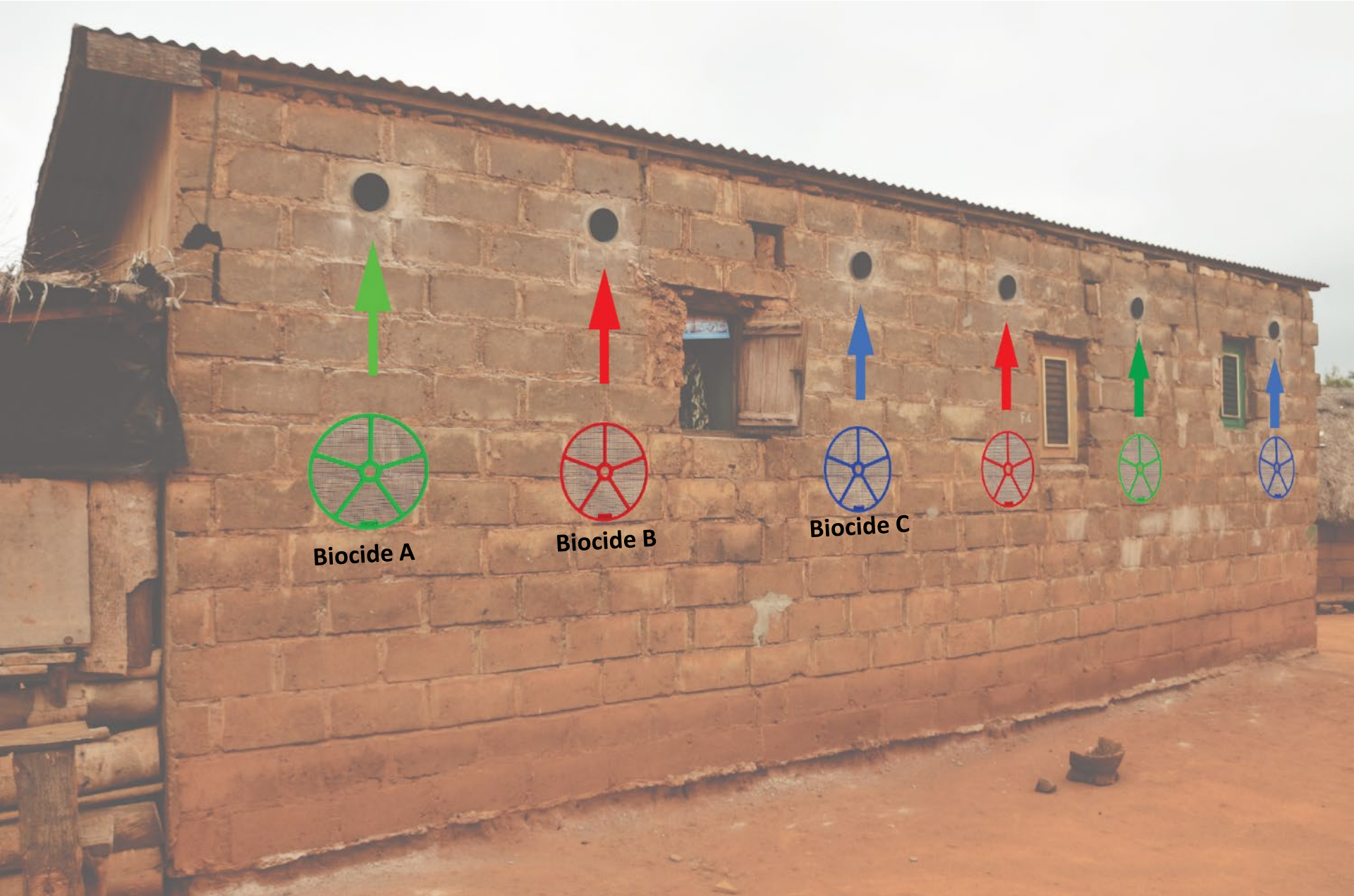
100 x less insecticide per house than IRS

Applied at roof level with minimal exposure risks



10 Eave Tube discs per house
~ **0.15 m²** surface to treat

Resistance management via insecticide Mosaics

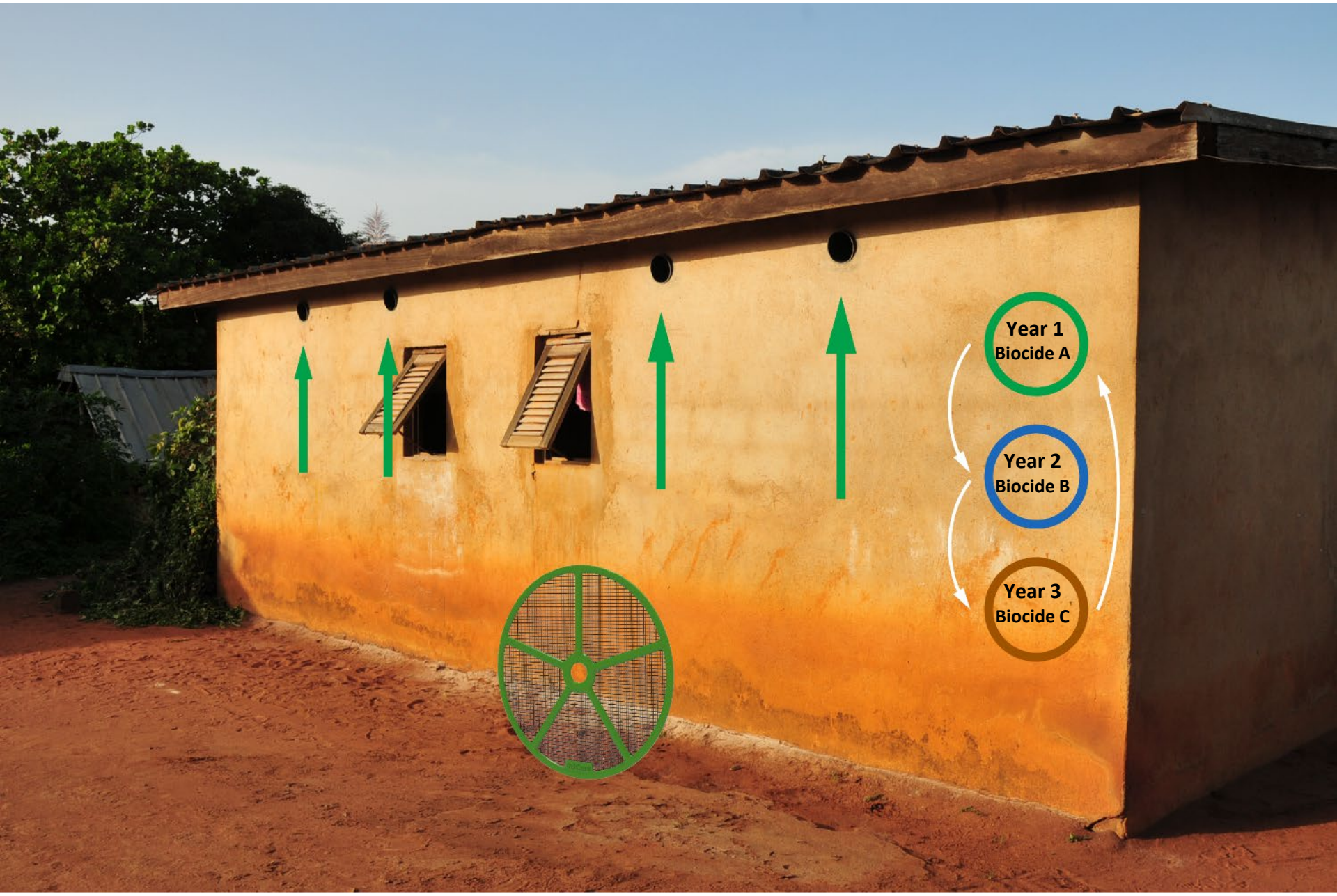


Biocide A

Biocide B

Biocide C

Resistance management via insecticide Rotations



Scientific validations

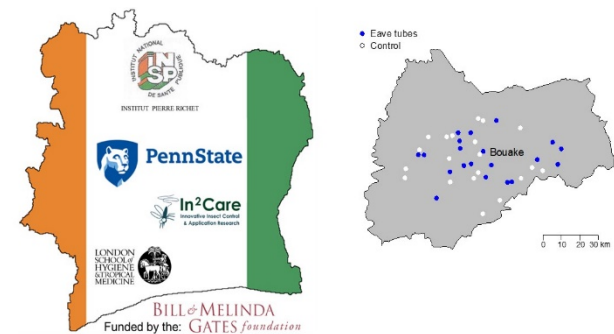
- Sternberg *et al.* Malaria Journal (2016) 15: 447
- Snetselaar *et al.* Malaria Journal (2017) 16: 276
- Barreaux *et al.* Malaria Journal (2018) 17: 306
- Oumbouke *et al.* Malaria Journal (2018) 17: 374
- Barreaux *et al.* Malaria Journal (2019) 18: 2986

→ **In2Care® EaveTubes attract & kill 50-70 % anophelines per night**



Cluster Randomized Control Trial Ivory Coast (2017-2019)

- 3069 houses received EaveTubes + window screening
- **Results will be presented tomorrow** by Prof. Matt Thomas @ VBD & Built environment workstream 15.00 hrs



Experimental hut studies in Ivory Coast:

→ In2Care EaveTubes also **effective without window screening:**

- Attract 93% more malaria mosquitoes than open windows
- Reduce mosquito entry with 60% when windows remain open
- Induce “exit mortality” for indoor resting mosquitoes



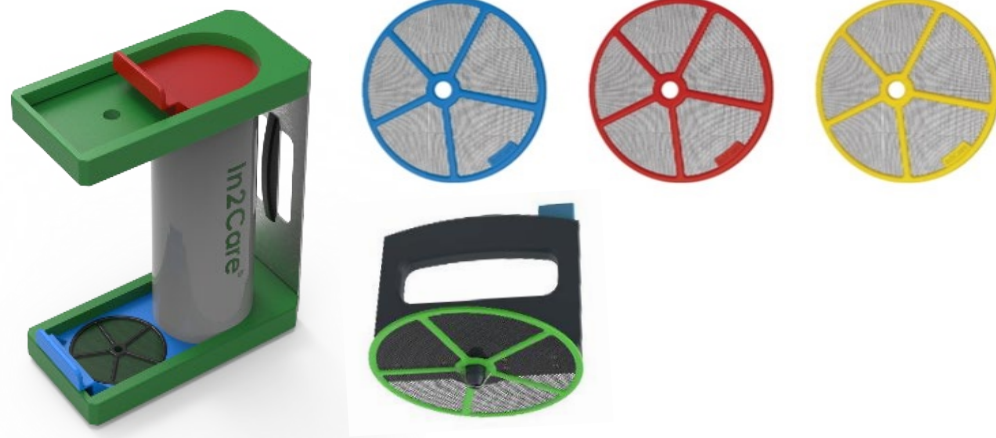
(Barreaux *et al* 2018)

How can NMCPs implement In2Care EaveTubes?

1. **One-off Installation** = placing EaveTubes & closing off open eaves



2. **EaveTube maintenance** = replacing the insecticide-treated netting discs



House eligibility In2Care EaveTubes



In rural Ivory Coast & Tanzania >85% of houses suitable

Installation: inserting tubes



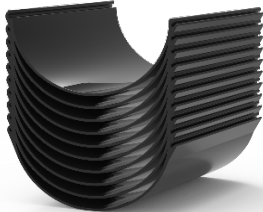
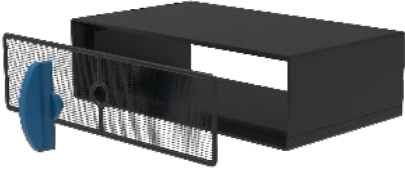
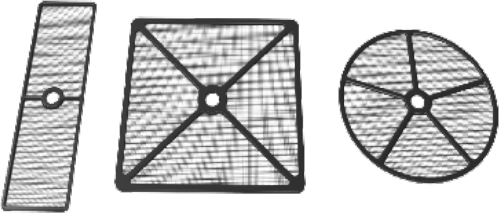
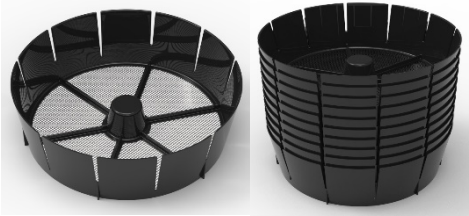
- Simple tools
- Local materials
- Trained local teams



Installation: closing off open eave spaces



Scalable installation options



Flat netting discs

Eave brick

2-component Tube



Mounting on existing ventilation openings

Pre-fab bricks

In2Care® EaveTubes as alternative to IRS

1. EaveTubes give **year-round** protection at **60% intervention coverage**

2. One-off EaveTube installation costs similar to IRS costs

Subsequent maintenance = much **easier & less costly** than IRS

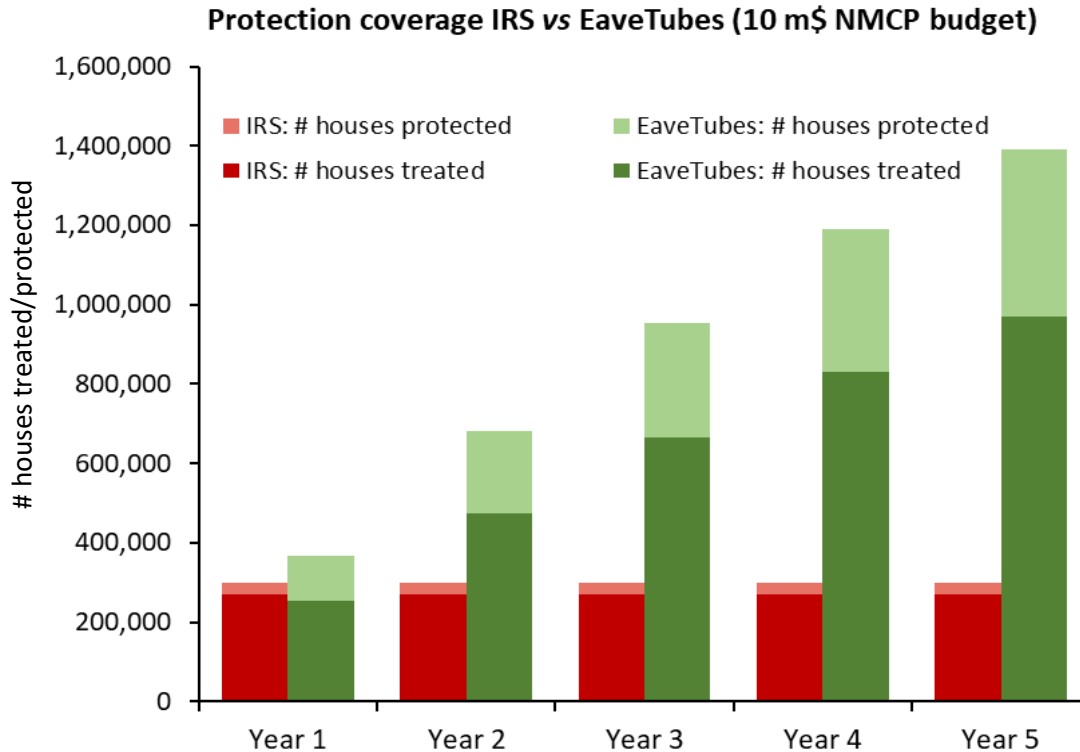


3. EaveTube costs **not driven by insecticide costs**

3% of total costs EaveTubes vs 40% of total costs IRS

Protecting more households each year

Low EaveTube maintenance costs → NMCPs can save budget and **treat more houses each year**



Assumptions for graph

Comparing year-round protection:

- 2 x IRS / year needed
- 1 EaveTube retreatment/year

Costs per house:

IRS: \$37 (2 x costs PMI AIRS report Tanzania)

EaveTubes: \$39 install, \$5 retreat

Protection coverage:

IRS: +20% of houses treated

EaveTubes: +40% of houses treated

→ In2Care EaveTubes can **protect 5-times more households** within 5 years compared to IRS

Next steps towards malaria control impact

1. Product registrations /approvals:

- Country registrations → started Tanzania & Ivory Coast
- WHO recommendation & PQ listing:
2nd RCT required → fundraising in progress



2. Preparing scalable implementation

- Mass scale manufacturing
- Finetuning product & installation tools for different house types / settings
 - **Collaborate & get feedback from malaria control implementers**
 - Find solutions for specific NMCP needs

Please contact us!

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