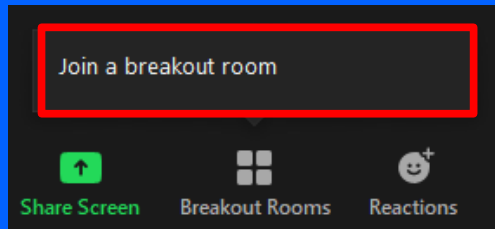


10 March 2022

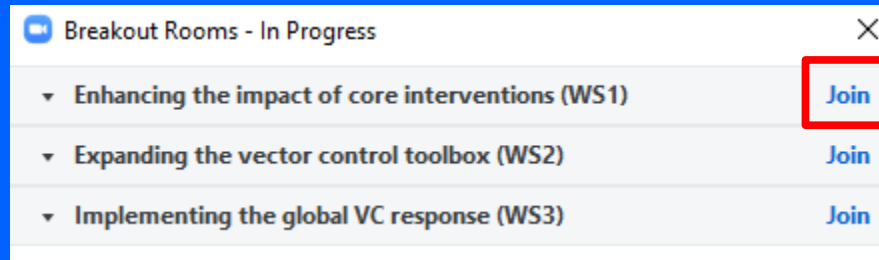
Break-out room instructions

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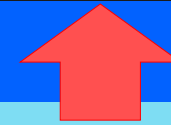
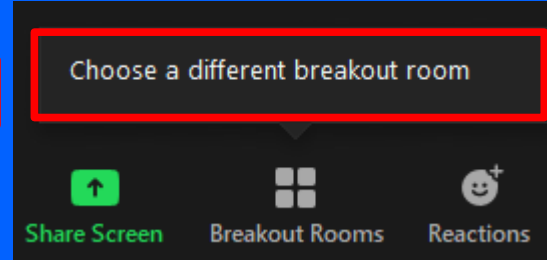
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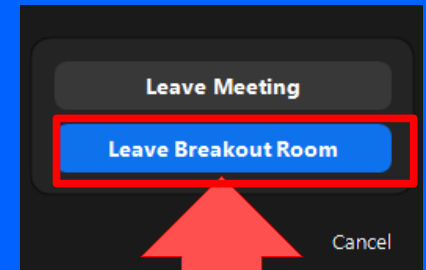
Choose the session you would like to join, by clicking on «join»

3



You can change between rooms

4



Leave break out room, NOT LEAVE MEETING!!!



RBM

Partnership
To End Malaria

Vector Control Working Group



IVCC

Building Partnerships
Creating Solutions
Saving Lives

10 March 2022

17th Annual VCWG Meeting

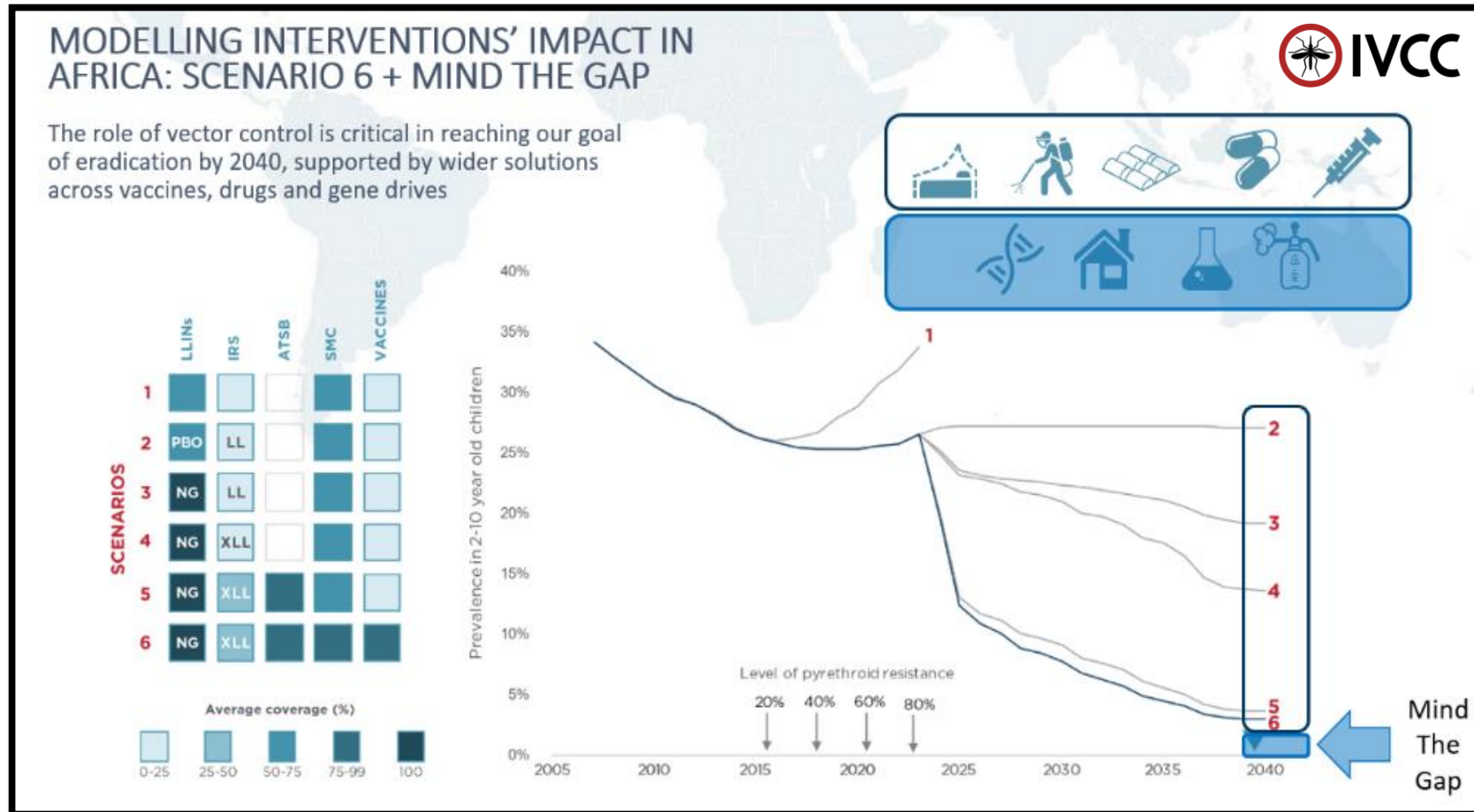
2022 Virtual Event

Scene-setting presentation and discussion on “Closing the Gap”

EVCT Workstream Co-Leads: Sheila Ogoma and Allison Tatarsky

Problem: Elimination requires disruptive solutions

Even with high coverage of new nets, extra long-lasting IRS, ATSBs, SMC and the RTS,S vaccine, transmission is likely to persist in many malaria hotspots



Looking forward: we need to adapt to emerging threats:
"Prepare for the next war, not the last"

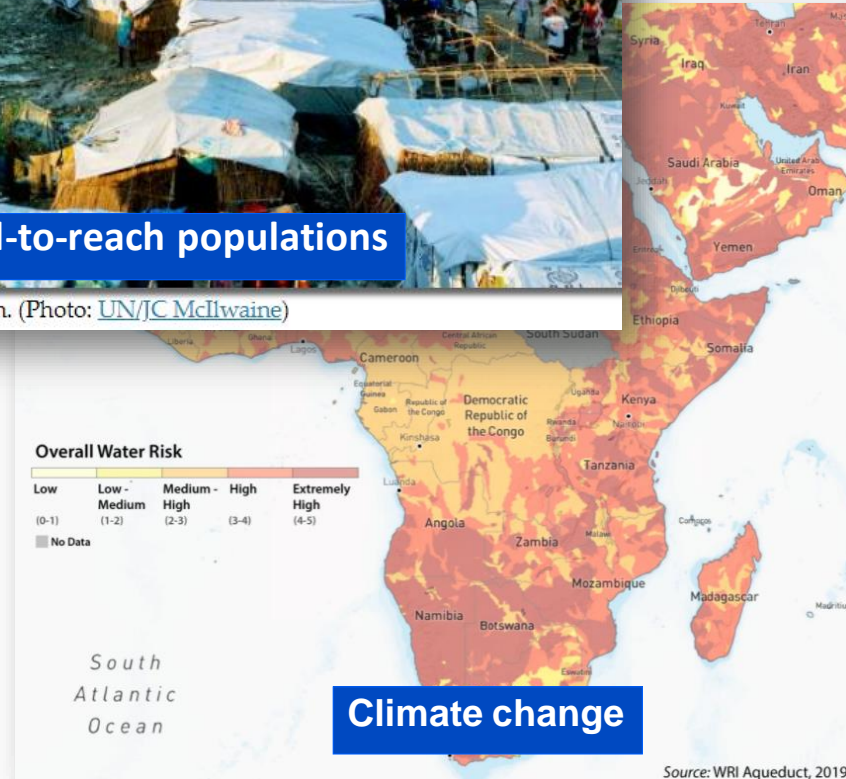


The growth of hard-to-reach populations

The Bentiu Protection of Civilians site in South Sudan. (Photo: [UN/JC McIlwaine](#))



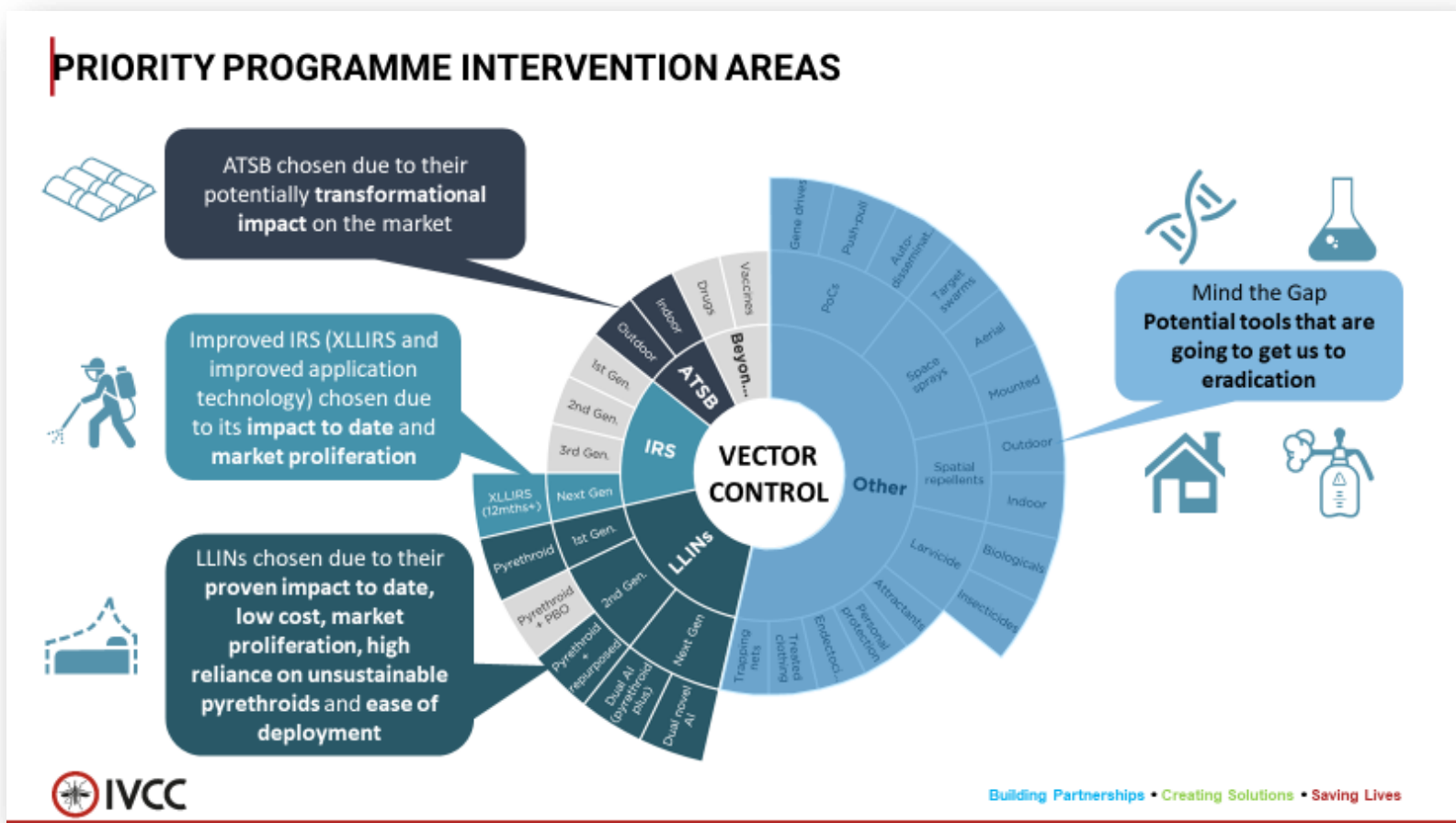
Urbanization



Climate change

Source: WRI Aqueduct, 2019

Step 1: Focus attention



Identify and prioritize high potential tools

IVCC's "closing the gap" prioritization process

Built list of 29 interventions focused on solutions to compliment IRS, LLINs and ATSBs.

These were prioritized by surveying the IVCC tech team (n=11) and a group of external experts (n=10)

Preferred product profile was solution that are:

- (1) likely to have an impact,
- (2) have a high chance of being delivered within 5 years, and
- (3) have high feasibility to deliver.

Survey of Potential Close the Gap Tools: Results

Green = top 11 (10 and 11 tied)

 Indoor control tools
 Outdoor control tools

Possible tools	Combined Rank
Improved housing (e.g., eave tubes, eave ribbons, screens)	1
Volatile Pyrethroid emanators (indoor)	2
Volatile pyrethroid emanators-targeting high risk peri domestic areas (e.g. outdoor kitchens, verandas, etc)	3
Improved larvicide delivery (targeting)	4
Forest packs (e.g. hammock or net, clothing, and repellents (topical or spatial))	5
Outdoor adulticide spraying-residual, peridomestic, targeting outer walls of structures	6
Residual spray for temporary shelters, tarpaulins and tents	7
ATSB-Outdoors	8
Insecticide Treated Hammock Nets	9
Improved larvicide delivery (wide area spraying)	10
Insecticide treatment of conventional market nets	11
Insecticide treated blankets	12
Zooprophylaxis with systemic insecticides (e.g. feed throughs, pour ons, ear tags, dips, etc)	13
Clothing- insecticide treated	14
Improved outdoor adulticide delivery technology (residual or non residual, drone, vehicle, or hand)	15
Attract and kill solutions other than ATSB (e.g. host lures)	16
Volatile pyrethroid emanators, wearable	17
Outdoor adulticide spraying-non residual, targeted space spray	18
Insecticide treated barrier fencing	19
Clothing - Bite-proof	20
Attract and kill solutions (e.g. oviposition lures; mating swarm lures)	21
Entomopathogenic fungi (e.g. <i>Beauveria bassiana</i> in In2Care traps)	22
Outdoor adulticide spraying-residual, targeted barrier sprays on vegetation	23
Lethal ovitraps	24
Autodissemination of insecticides (during mating or egg laying)	25
Adult mosquito traps for control	26

Survey of Potential Close the Gap Tools: Results

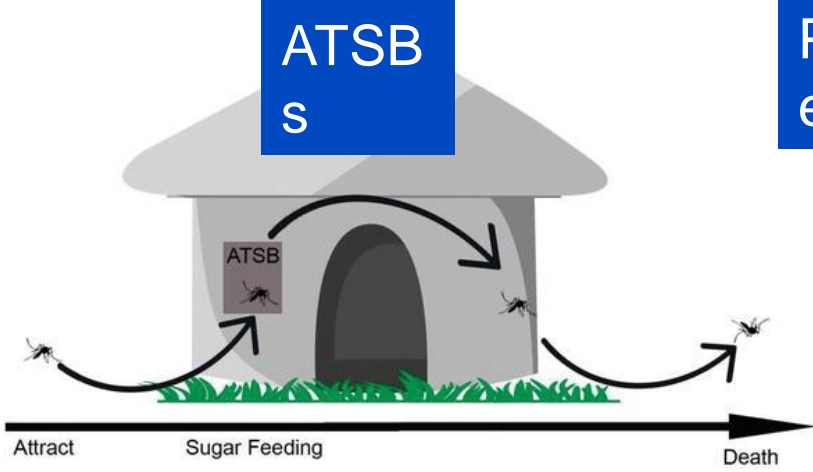
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Insecticide treatment of conventional market nets	11

Tools with high potential

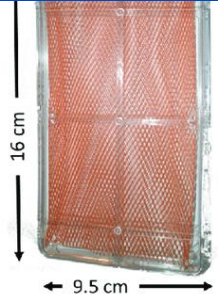
Larval control



ATSBs



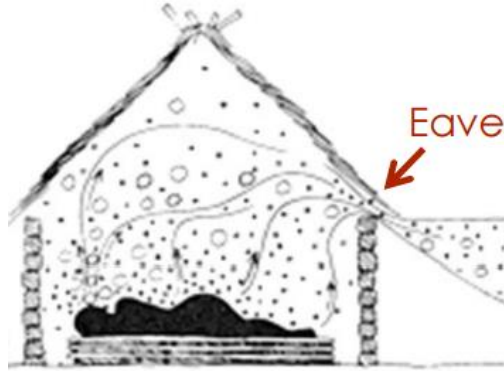
Passive emanators



Targeted IRS



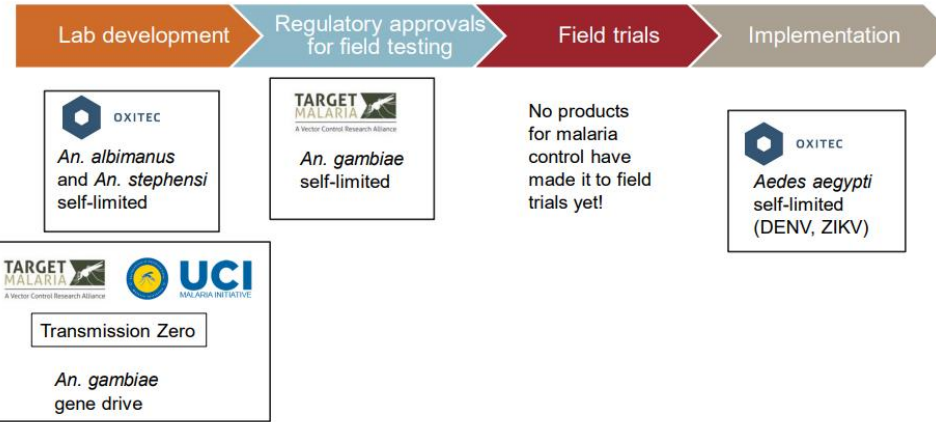
Other tools to think about.....



House improvement



Endectocides



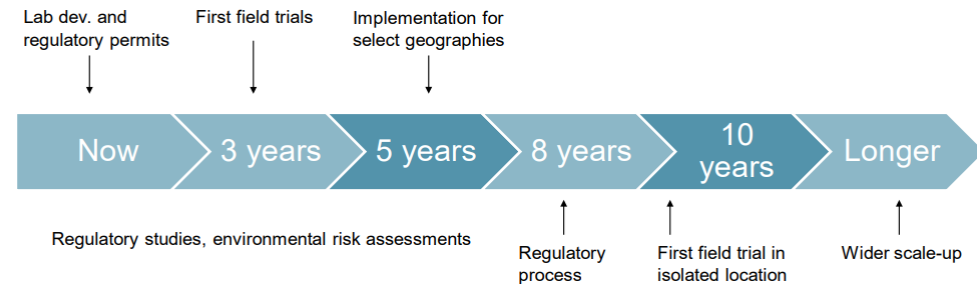
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GM & Gene drive mosquitoes

ESTIMATED TIMELINE TO MARKET

Note: these are estimated, best-case scenarios for a very uncertain new product timeline!

GM self-limited



Gene drive

Perfect tools, new or old, are not a panacea

- There is some urgency
- How can we use what we have now to meet immediate needs?
- *“Where there is the will there is the way”*
- But we must fight apathy, win support and train people to do the job

Barrier to implementation



In summary

Closing the gap with...

- Volatile emanators
- Improved targeting and delivery
- Combination products for mobile populations
- Community based LSM
- ATSBs
- IRS for temporary and animal shelters



Rural Communities



Displaced Populations



Urban communities

Hinging on...

- Local expertise
- Action now
- Learning by doing with current tools



10 March 2022

Q&A

Allison Tatarsky

10 March 2022

Task Team 1: Larval Source Management

Jennifer Armistead
Prosper Chaki

LSM TASK FORCE

Main objective of the task force:

- ❑ Provide platforms for convening LSM stakeholders and promoting knowledge exchange
- ❑ Prepare documentation summarizing existing knowledge and outlining gaps and challenges in LSM implementation and M&E
- ❑ Collate and review evidence on the impact of LSM (e.g., AFRO II project, India LSM program, mosquito abatement district experiences)
- ❑ Track case studies focused on ongoing programmatic application in Africa (e.g., Madagascar, Zanzibar, Tanzania and Rwanda)

Thematic areas membership

Technology for LSM

- Dr. Guillermo Garcia, Medical Care Development International, Equatorial Guinea
- Dr. Mark Lathacam, IVCC, USA

Operational implementation of LSM

- Dr. Bashir Mohammed Ahmed, MOH Sudan
- Prof. Jackie Cooke, LSHTM UK
- Dr. Jennifer Armistead, USAID PMI, USA
- Dr. Michael MacDonald, IVCC, USA
- Dr. Prosper Chaki, PAMCA
- Dr. Silas Majambere, Valent Bioscience

Environmental management for Malaria

- Dr. Hmooda Kafy, FMOH Sudan
- Prof (Dr) Rajander S Sharma, ICMR, India
- Dr. Eline Boelee, Deltares, Netherlands

Priorities for 2022:

Gather and consolidate existing knowledge and gaps pertaining to LSM implementation:

- ✓ Tools for habitat characterization and coverage
- ✓ Larvicide delivery (conventional vs aerial)
- ✓ Product optimization (residual effect, cost, cost-effectiveness)
- ✓ Implementation framework and tools
- ✓ Monitoring and evaluation framework and tools

Conduct a landscape analysis to:

- ✓ Identify countries currently implementing LSM
- ✓ Highlight challenges, success stories, and best practices, with special attention to use of drones/AI technology
- ✓ Identify and document perspectives from current and potential funders/stakeholders

Priorities for 2022:

Organize convenings for LSM stakeholders, including national programs, researchers, donors, private sector, etc.:

- ✓ Webinar
- ✓ PAMCA symposium (September, Rwanda)
- ✓ ASTMH symposium (IVCC) and/or side meeting (November, Seattle)
- ✓ Knowledge exchange between countries and regional bodies (APMEN, PAMCA, AMCA, Mosquito Abatement Districts)

Technology for LSM (GIS, satellite imagery, use of drones for mapping and larviciding, new larvicide-application technology, aerial application)

Potential objectives:

1. Consolidating data on aerial application of larvicides with UAVs (drones) in Sub Saharan Africa (i.e. Rwanda, Madagascar)
2. Define and provide updates on new technology and methods for accurate source identification and complete source coverage essential for effective LSM programme. Adult surveillance (new trap technology?) as a measure of LSM effectiveness (entomological vs epidemiological).
3. Combination of existing basic tools (“boots on the ground”) and advanced technology (drone/spectral/satellite imagery) through user-friendly planning tools (GIS, Smartphone apps) for evidenced based planning and decision making.
4. Identify different levels or tiered system for technology integration based on funding/programmatic support level
5. Determine applicability of new technologies (particularly drone usage) in different country settings and additional efforts required (community engagement/perception/political sensitivity)
6. Determine applicability, efficiency and cost effectiveness of short-lived (weekly retreatment) products vs residual (monthly retreatment) products

Technology for LSM

Potential outputs:

1. A lessons learned document on technical challenges and opportunities of aerial application
2. An inventory of available new technologies and products illustrating their application guidance, benefits and negative aspects. The inventory can be accessed by VCWG members and others
3. Comparative table of currently utilized LSM methods and potential “New Technology” replacement (or complimentary) methods and products
4. Examples of existing “New Technology” tools and projects where combination methods have been (or are being) evaluated)
5. Listing of existing examples and tiers into which they may fit
6. Listing of theoretical barriers to new technologies (particularly drone usage) in different country settings and additional efforts required (community engagement/perception/political sensitivity)
7. Guide research agenda:
 - Optimization of larvicide formulations for control of malaria vectors
 - Optimization of larvicide application equipment for control of malaria vectors

Operational LSM projects and programmes

Potential objectives:

1. Generate robust evidence for LSM to reduce malaria and arboviral mosquitoes including container breeding species
2. Advance operational research and R&D for LSM in Africa providing evidence on reduction of malaria cases
3. In countries with seasonal malaria indices due to wet and dry seasons, develop larval source management operational programs to control malaria vectors during the dry season. Integrate dry season larval interventions with existing rainy season larval source management programs
4. Combine dry season larval source management programs with other outdoor vector interventions such as ATSB
5. Enable the implementation of methods evaluated in research studies (i.e drones, apps) to be integrated into operational use by NMCPs
6. Secure commitment for LSM funding from PMI, GF, etc.

Operational LSM projects and programmes

Potential outputs:

1. Agenda for operational research for LSM
2. Forum for engagement between LSM tech experts, NMCP and funders – a webinar??
3. Technical note on the threat of container breeding mosquitoes in Africa
4. Updated program guidelines for consideration by national malaria control programs
5. An inventory of larvicide formulations that would optimize larva efficacy in these primary larval malaria vector habitats
6. Reduce larval populations of malaria vectors prior to the beginning of the rainy season by targeting permeant habitats such as manmade dams, other irrigation and water sources

Environmental management projects and programmes

Potential objectives:

1. Promote EM as the first line approach for mosquito control
2. Multisectoral engagement for mosquito abatement
3. Synthesize existing experience in environmental vector control
4. Develop evaluation tools for public health value and feasibility of environmental approaches in LSM
5. Assess effective environmental management interventions and conditions for success

Potential outputs:

1. Technical note on community engagement for mosquito control (educational material)
2. Technical note on multisectoral engagement for mosquito abatement (educational material)
3. Compendium of past and present experiences- lessons learned document
4. Guidelines for evaluations, with technical and financial tools and indicators at all levels

March 10th, 2022

Task Team 2: Human behavior and human-centered design for vector control

Task Team Update - April Monroe & Lina Finda

Overview

1. Background

2. Objectives

3. Workplan snapshot

4. Activity **spotlight**

5. Next Steps

Background



Increasing recognition of the importance of human behavior in the field



Growing interest from RBM Vector Control Working Group members



Trend toward including social science research in evaluation of new vector control interventions

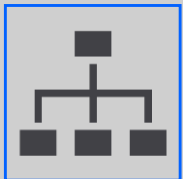


Increasing interest in application of human-centered design framework and design thinking process

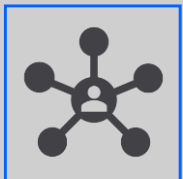
Objectives



Provide platform for engagement and exchange among professionals and groups working on vector control and human behavior



Document lessons learned, best practices, and information gaps for considering human behavior in vector control



Support opportunities to expand understanding and application of human-centered approaches among professionals and organizations working in the vector control field

Proposed Y1 Work Plan Activities

Objective 1: Provide platform for engagement and exchange

Activity 1.1: Host quarterly task force meetings and updates

Activity 1.2: Coordinate with RBM Social and Behavior Change Working Group

Proposed Y1 Work Plan Activities

Objective 2: Document lessons learned, best practices, and information gaps

Activity 2.1: Document application of indicators for measuring patterns of human and vector interaction

Activity 2.2: Identify social and behavioral considerations for *An. stephensi* interventions in Africa

Proposed Y1 Work Plan Activities

Objective 3: Support opportunities to expand understanding and application of human-centered approaches

Activity 3.1: Facilitate intro to human-centered design workshop

Activity 3.2: Support dissemination of 'Connecting Citizens to Science' podcast

Activity 3.3: Curate resource list of experts and groups working on human behavior for vector control

SPOTLIGHT: HCD Workshop

Description: Hands-on introduction to design thinking and HCD for malaria professionals

Dates: March 29th, April 5th, April 12th

Time: 9am-12:30pm EDT

Objectives:

1. Explain the importance of a human-centered mindset to malaria control
2. Define key concepts related to HCD and the design thinking process
3. Apply phases of the design thinking process
4. Discuss potential applications of HCD in malaria control

SPOTLIGHT: HCD Workshop

- (Wonderfully) high level of interest
 - 35 spots, 127 people registered
- Adapting format and content to respond to interest
 - Increased from 1 workshop to 3 and reduced length
- Looking at opportunities to continue engagement on the topic moving forward

SPOTLIGHT: Podcast

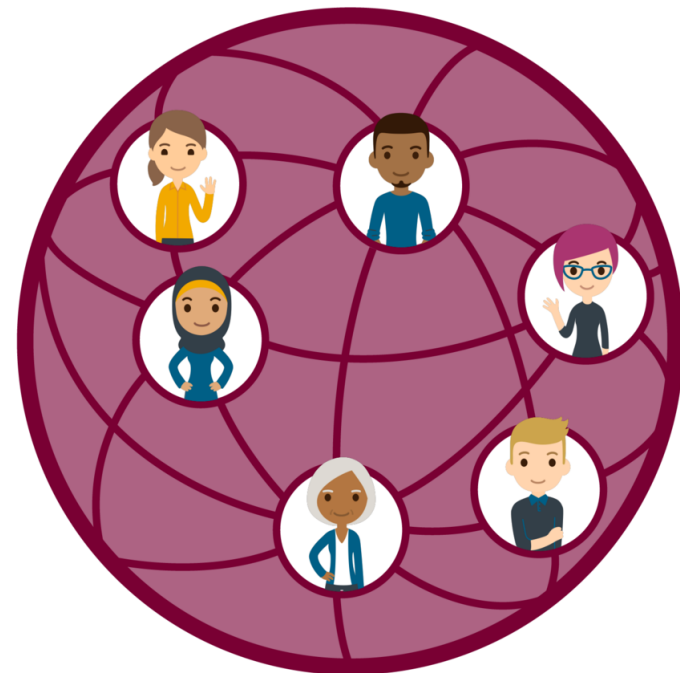
Connecting Citizens to Science –
a podcast from LSTM about engaging with
communities in global health research

**Series 2: Vector-borne disease research
and control**

**Please get in touch if you have an idea for
an episode or a series and would like to
be involved!**

→Bea Egid, 194711@lstmed.ac.uk

CONNECTING CITIZENS TO SCIENCE



SERIES 2 EPISODES

1. **Behavioural considerations and human-centred design for vector control** *with* April Monroe (JHU) and Danielle Piccinini Black (JHU)
2. **Participatory Integrated Vector Management** *with* Charles Mbogo (KEMRI) and Hmooda Kafy (Sudan FMoH)
3. **Community engagement for release of modified mosquitoes** *with* Lee Ching Ng (NEA) and Lina Finda (IHI)
4. **Community-based clinical trials for malaria elimination** *with* Joan Muela (URV) and Yoriko Masunaga (ITM)

1898 - 2023
125 YEARS OF LSTM

JOHNS HOPKINS
Center for Communication Programs

Podcast Series 2
Vector-borne disease research and control

Connecting Citizens to Science

Episode 1 - Behavioural considerations and human-centred design for vector control

Listen on

Danielle Piccinini Black

Bea Egid

Fatou Jaiteh

April Monroe

This promotional graphic for Episode 1 features a dark background with a red geometric pattern. It includes the LSTM 125th anniversary logo, the Johns Hopkins Center for Communication Programs logo, and the podcast title 'Connecting Citizens to Science'. The episode title is 'Episode 1 - Behavioural considerations and human-centred design for vector control'. It lists four participants: Danielle Piccinini Black, Bea Egid, Fatou Jaiteh, and April Monroe, each with a circular portrait. Listening instructions for Apple Podcasts and Spotify are also present.

1898 - 2023
125 YEARS OF LSTM

Environmental Health Institute
National Environment Agency
IFAKARA HEALTH INSTITUTE

Podcast Series 2
Vector-borne disease research and control

Connecting Citizens to Science

Episode 3 - Community engagement for release of modified mosquitoes

Listen on

Dr. Lina Finda

Bea Egid

Fatou Jaiteh

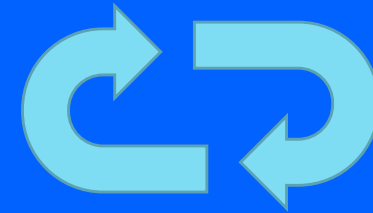
Dr Ng Lee Ching

This promotional graphic for Episode 3 features a dark background with a red geometric pattern. It includes the LSTM 125th anniversary logo and logos for the Environmental Health Institute, National Environment Agency, and Ifakara Health Institute. The podcast title is 'Connecting Citizens to Science'. The episode title is 'Episode 3 - Community engagement for release of modified mosquitoes'. It lists four participants: Dr. Lina Finda, Bea Egid, Fatou Jaiteh, and Dr. Ng Lee Ching, each with a circular portrait. Listening instructions for Apple Podcasts and Spotify are also present.

Next steps

1. Schedule next task team meeting
2. Facilitate HCD workshop
3. Finalize work plan and share back with task force
4. Finalize activity leads, process, and timeline
5. Identify process for engaging experts across the globe

Iterative process for setting up and improving taskforce



Reach out if interested in getting involved:

Thank you!

April Monroe (amonro10@jhu.edu) and Lina Finda (lfinda@ihi.or.tz)



10 March 2022

Q&A

Sheila Ogoma

Agenda

Time (CET)	Topic	Presenter/Moderator
15:40-15.50	Scene-setting presentation and discussion on “Closing the Gap”	Sheila Ogoma
15:50-15.55	Q&A	Moderator: Allison Tatarsky
Introduction to task force leads and task force updates		
15:55-16:05	Task Force 1: Larval Source Management	Jennifer Armistead, USAID-PMI and Prosper Chaki, PAMCA/IHI
16:05-16:15	Task Force 2: Human Behavior and Human-Centered Design in Vector Control	Lina Finda, IHI and April Monroe, JHU CCP
16:15-16:35	Q&A	Moderator: Sheila Ogoma
Paradigm and tool tracking and workstream prioritization		
16:35-16:40	Brief overview of survey on vector control product information access and gaps	Allison Tatarsky
16:40-16:50	Interactive discussion on vector control paradigm tracking	Moderator: Allison Tatarsky
16:50-17:00	Polls and discussion on overall workstream prioritization	Moderator: Sheila Ogoma



Overview of survey on vector control product information access and gaps

VCWG survey on access to vector control product/paradigm information

Objective:

To inform the RBM VCWG on the current platforms that members use to access information on vector control products and guide whether there is a need to develop, optimize, or promote platforms to improve access to vector control information.

I.e. does the malaria community need one go-to vector control tool inventory for decision-making on vector control strategy, research priorities, and planning or are current sources of information meeting the need?

VCWG survey on access to vector control product/paradigm information

Methods:

- A series of 14 questions sent via SurveyMonkey to all VCWG members via the listserv
- Maximum 10 minutes to complete survey
- Responses are submitted anonymously but by affiliation
- EVCT co-leads will analyze the data and present results during the May 4 EVCT session



Discussion on vector control paradigm tracking

Paradigm roadmap tracking (for *Anopheles* control*)

- Attractive targeted sugar baits (ATSB)
- Endectocides
- Genetic control
- Housing modifications e.g. eave tubes
- Push-pull
- Space spray
- Spatial repellents
- Other bite prevention e.g. topical repellents, insecticide-treated clothing

*Other paradigms are under VCAG review for *Aedes* control

Paradigm roadmap tracking

What is the best way to track and share progress as well as gaps in the evidence base?

Are presentations – either live, recorded, or provided by PDF/PPT – at each annual meeting sufficient to keep the malaria community up-to-date?

Do we need task teams for one, some, or all of the paradigms/tools?

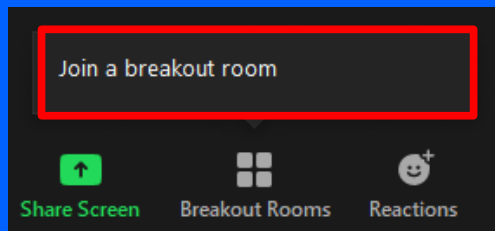


Discussion on workstream prioritization

10 March 2022

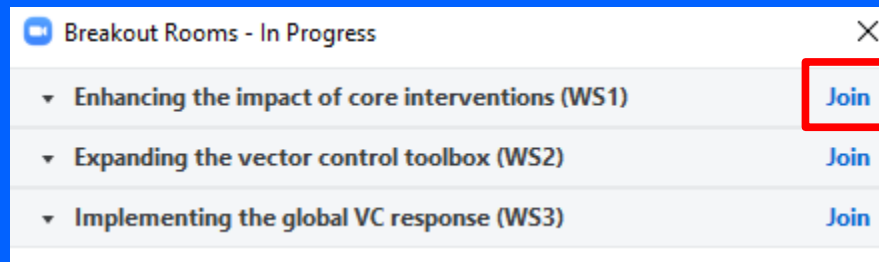
Break-out room instructions

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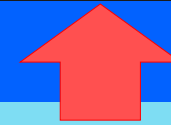
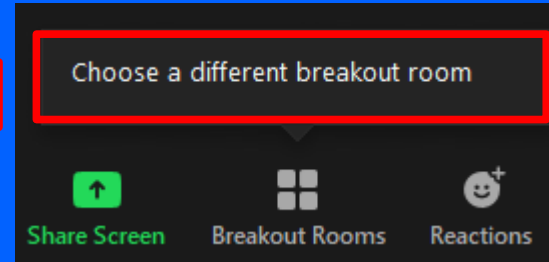
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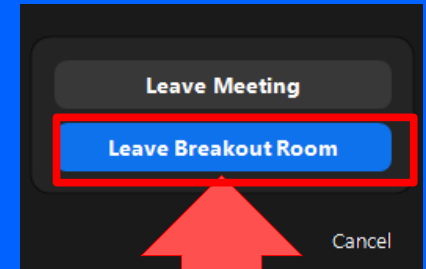
Choose the session you would like to join, by clicking on «join»

3



You can change between rooms

4



Leave break out room, NOT LEAVE MEETING!!!