Notice the two torn LLINs on this shelter

Closing the gap

Jason Richardson, Michael Macdonald (IVCC)
Outline

Three major global trends contributing to the “gap”
Practical approaches and tools to help close the “gap”
Looking forward: we need to adapt to emerging threats:

“Prepare for the next war, not the last”

- The growth of hard-to-reach populations
- Urbanization
- Climate change

Climate change

Urbanization

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Looking forward: Protecting the world’s displaced population

• This large, hard-to-reach population is growing...the number of people fleeing their homes has doubled in a decade

• Malaria and other vector-borne diseases are a major threat to populations in hard-to-reach areas
Looking forward: Protecting Africa’s displaced population

36 Million Africans Forcibly Displaced by Conflict and Repression

Forced Displacement Trends in Africa

Data Source: UNHCR, IDMC

Looking forward: Overlapping humanitarian crises and the *An. stephensi* invasion
Humanitarian Emergencies driven by climate and conflict

Pakistan
Flooding of June 2022 impacted 33m people, with large increase in malaria and dengue

Myanmar
1.7m IDPs, many in malaria endemic areas with limited access to LLINs and IRS

Sudan
>3m IDPs in Sudan contributed to an estimated 1.9m cases of malaria in 2022

Photo: Partners Relief & Development
https://www.partners.ngo/
Looking forward: Climate change in Africa

- Climate disasters will continue to increase vulnerability, potentially causing more migration
  - The African continent is facing a faster rate of natural disaster events than the rest of the world. From droughts to floods to cyclones to pandemics, the continent faces many natural drivers of instability.
  - The World Bank projects there will be 86 million climate change migrants in Africa by 2050.

Looking forward: Urbanization

- Urbanization is one of the leading global trends of the 21st century that has a significant impact on health.
- Potential massive increased transmission should *An. stephensi* become established.
- Likely increase in Aedes-borne virus transmission.
- Africa has experienced rapid urbanization in recent years.
The threats are growing…so what can we do today?

• These are emergency situations so why not use all available tools now
• Be smart, be scientific, appropriately assess risk
• If warranted, authorize emergency use of promising tools
• But don’t be hesitant...these most-in-need families can’t wait
Looking forward: flexible and creative problem solvers needed

Routine prevention vs emergency response vector control require different approaches
• Locally driven – solutions must be adapted to the setting
• Layered and aggressive – in crisis response, urgency and hard-hitting IVM package essential
Selected tools with high potential

- Larval control
- ATSBs
- Passive emanators
- Targeted IRS
- Treated textiles

*In scope for IVCC. Many promising solutions are out of scope for IVCC
Volatile Emanators (spatial repellents)

- Strong evidence of community impact beyond “repellency”
- Clear reduction in vectorial capacity even in temporary shelters
- New product lasts more than 6 months
- Minimal behaviour change required
Improved targeting and delivery of larvicides

• Multiple country programs, Goodbye Malaria, AGAMal, PMI and others are implementing or piloting larvicide programs
• Obstacles are limiting the potential impact
• This Workstream, PAMCA, IVCC and others are working together to clear these obstacles

<table>
<thead>
<tr>
<th>Obstacle</th>
<th>Solution</th>
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<tbody>
<tr>
<td>❑ Product choice is limited in Africa (but not elsewhere)</td>
<td>❑ Efficacy testing to generate data on various products to support product choice</td>
</tr>
<tr>
<td>❑ Insecticide is expensive (particularly when demand is low)</td>
<td>❑ Improve access to multiple PQ listed products</td>
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<tr>
<td>❑ A general lack of expertise to deliver risk of wasted resources &amp; perception of low cost-effectiveness</td>
<td>❑ Platform to share knowledge on products and best practice delivery methods</td>
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<tr>
<td></td>
<td>❑ Update technical manuals and build capacity and experience (including targeting and monitoring methods)</td>
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</table>
IRS in emergency settings

- Expanding sprayable structures to include IDP/refugee temporary shelters and tents
- Practical guidance needed for emergencies
- How do IRS teams adapt labels and spray methods to safely and effectively treat shelters?
ATSB: Opening a new product class

**RCTs are running in Zambia, Kenya and Mali targeting a submission to VCAG & PQ by end of 2024**

<table>
<thead>
<tr>
<th>Q1 22</th>
<th>Q2 22</th>
<th>Q3 22</th>
<th>Q4 22</th>
<th>Q1 23</th>
<th>Q2 23</th>
<th>Q3 23</th>
<th>Q4 23</th>
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</thead>
<tbody>
<tr>
<td>Updates to VCAG and PQ</td>
<td>Start of Kenya and Mali RCTs</td>
<td>Zambia RCT interim analysis</td>
<td>Kenya and Mali interim analyses</td>
<td>Update to VCAG spring meeting</td>
<td>Zambia RCT final analysis</td>
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**Access planning and country engagement**

**Efficacy determinants research**

**Bait station installation, Zambia. Credit: PATH/MRC**

**Bait station monitoring, Kenya. Credit: KEMRI**

**Bait station distribution, Mali. Credit: USTT-B**

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In conclusion

• **Local solutions**: All ideas rely on local entomologists to test and adapt the IVM package based on observations of what works.

• **Act now**: While we wait for results from multi-year epidemiological studies and the development of new tools, let us use known and promising new mosquito control tools to make an impact today.

• **We have options**: Local teams need to test current and close to market tools which might include:
  • Smart use of larvicides with good targeting and monitoring
  • Spatial repellents indoors and in temporary shelters
  • IRS for temporary shelters
  • Insecticide treated textiles
  • ...and even smartly delivered space sprays in emergency settings

“Where there is the will there is the way”