6th Durability of LLINs in the Field Work Stream

Meeting Outcomes

9th Annual RBM Vector Control Working Group (VCWG) Meeting
Geneva, 19 Feb 2014

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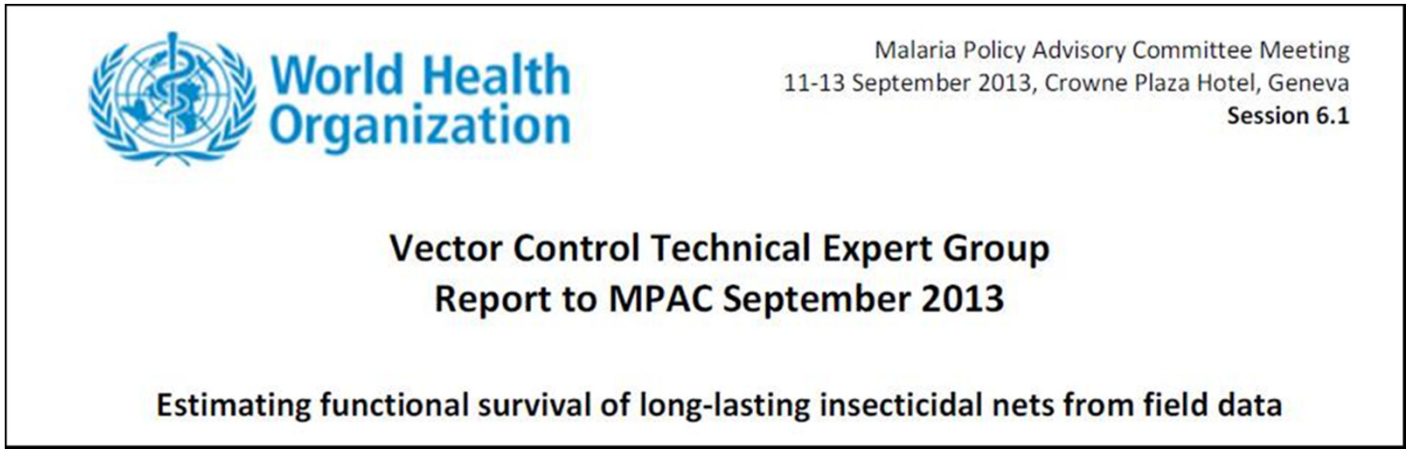
Measuring LLIN Attrition and Physical Durability – 1

- Methodology for measuring median LLIN survival published in 2013.
- Recommendation does not include measurement of insecticide activity loss until a practical, nondestructive field method becomes available.
- Published at http://www.who.int/malaria/mpac


World Health Organization

Malaria Policy Advisory Committee Meeting
11-13 September 2013, Crowne Plaza Hotel, Geneva
Session 6.1

Vector Control Technical Expert Group
Report to MPAC September 2013

Estimating functional survival of long-lasting insecticidal nets from field data

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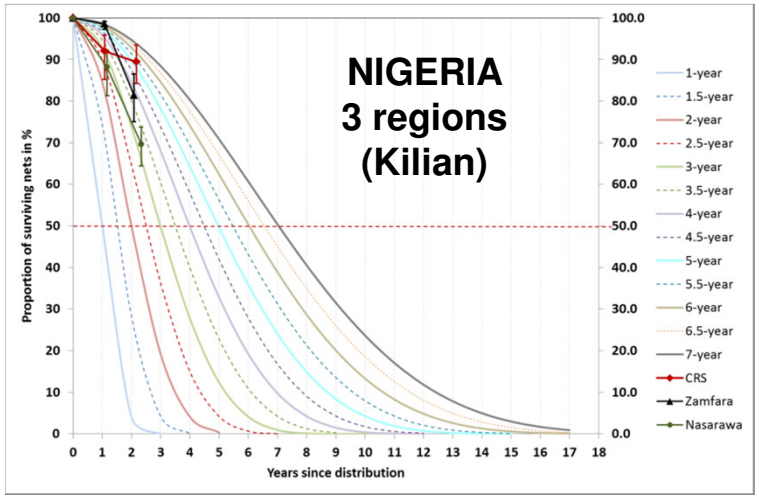
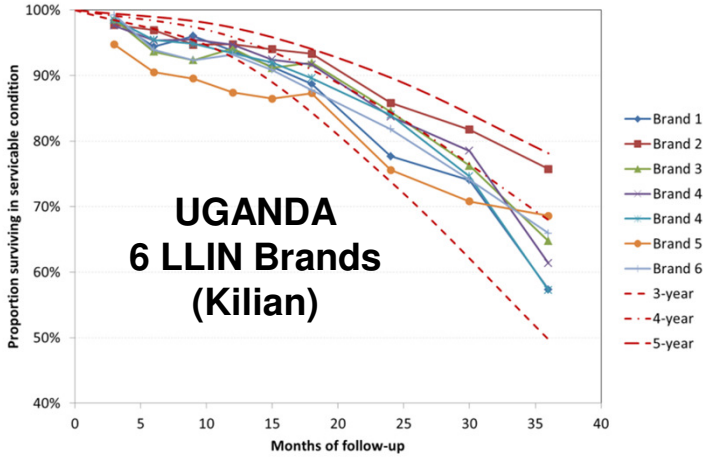
Measuring LLIN Attrition and Physical Durability – 2

- **Few field studies published thus far, but many are in progress.**
  - Working list of studies in-progress has been tabulated.
- **Initial findings suggest LLIN loss rates are highly dependent on local environments.**
  - Points to the need for LLIN monitoring as a routine activity.
- **Initial findings suggest most LLINs perform roughly the same.**
  - Exception: PMI studies found Olyset to be least durable.
  - Sumitomo responded by modifying the Olyset knit pattern.





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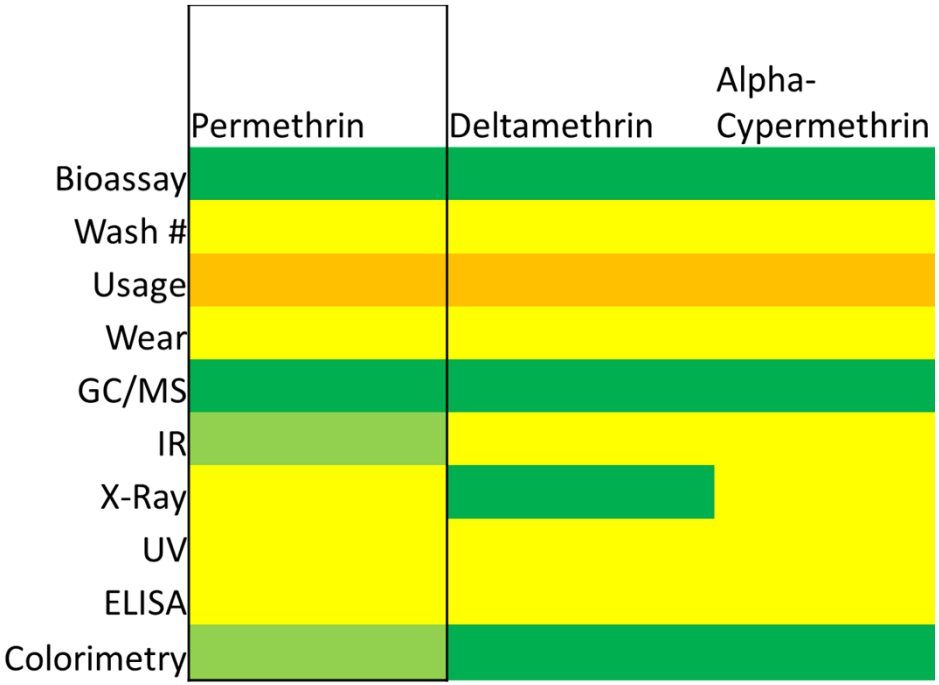
Field Measurement of Insecticide Levels

- **Karl Malamud-Roam (Rutgers): review of the state-of-the-art in nondestructive testing for pyrethroids on fabrics.**
- **No single method is suitable for all pyrethroids and more work is needed.**



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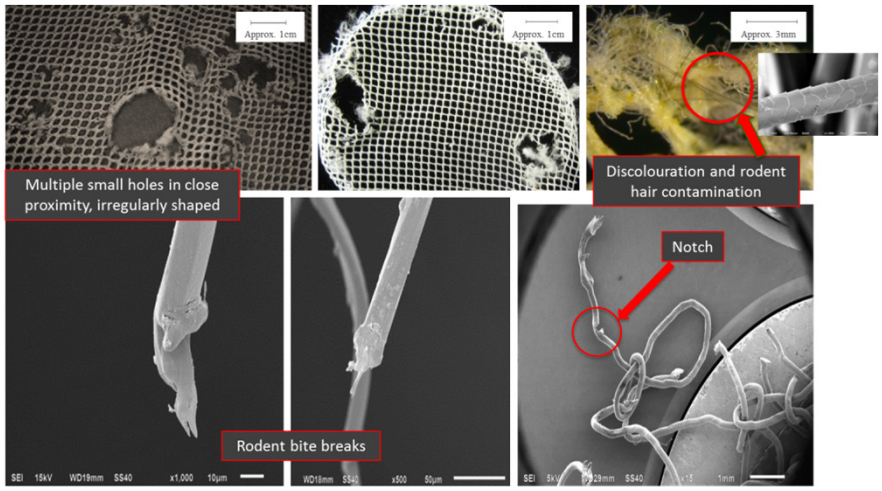
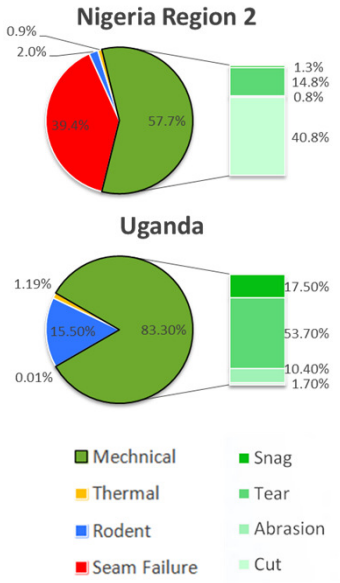
Causes of Physical Damage

- Stephen Russell (Leeds): Presented results from extensive microscopic examination of holes in field-retrieved LLINS.
- Morphological features of different kinds of damage identified.
- Breakdown of hole damage by use setting.
- Results were highly setting-dependent.
- Rodent damage commonplace, but most damage was result of snags and tears.





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Physical Testing of LLINs to Predict Durability

- Phase 2 of Leeds study to identify tests based on types of damage seen on used LLINs. (under way)
- WHOPES/CITEVE study testing all WHOPES-recommended LLINs using standard or slightly modified standard textile test methods. (to be published 2014)

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Issues not Addressed

- **Practical definition of a "failed" net.**
  - How much damage and insecticide loss is acceptable?

- **Economics of improving durability**
  - Apparent consensus that some improvement would bring long-term cost savings.
  - What is optimum lifespan of an LLIN?
    - Insecticide resistance implications.

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The way forward

- **Need to improve communication.**
  - Balancing presentations with discussion in future meetings.
  - Regular teleconferences.
  - Topic-based.
- **Work Stream activity development**
  - Co-chairs will continue to work with members to develop work plan.
  - Potential for developing collaborative ties with Global Fund.

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