Promoting repair of holes in nets – The Gambia

The rate at which nets wear out is highly variable....

- Between nets in a cohort
- Between settings
- Between LN products (ranking may vary with setting)
Current GMP issues in LLIN procurement & distribution

- How long do LLINs really last?
- Which LLIN product to buy?
- Procurement Guidelines
Elements of durability:

A. Bio-efficacy (residual insecticidal activity)
B. Physical Integrity (holes)
C. Survivorship / Attrition including retention

WHOPES methods emphasis A and B and may fail to measure C…

but we now know that attrition is the primary cause of loss of net protection
Between-site variation in rate of physical wear

Hole Index

- Small holes = 1
- Medium holes = 3
- Large Holes = 9

- Redrawn from 12th WHOPES report
Monitoring LLIN Durability - Background

- Multi-country studies show unexpectedly large variation in effective life between locations – even more variation between locations than between brands
  - Evidence that the relative lifespan of different brands is not constant but varies in different contexts
  - So a global “top five” ranking is not realistic (and would not be good for market)
- Retrospective monitoring limited by
  - Unreliable recall / records to estimate net-age
  - Attrition cannot be estimated
  - Ceiling effect on holes
- Standard durability monitoring methods now published.
WHO LLIN-durability monitoring methods

- Part of routine M&E in every major LLIN programme
- A Mixture of Brands / Products used together
  - *(why this is new and important)*
- Exactly equal and recorded numbers of each brand
  - *(why this is new and important)*
- Emphasis on attrition and holes – insecticide optional
- A Hole Index - quantification of physical wear
  - *(not just % with holes) (but need to calibrate this)*
- Procedures can be openly & critically scrutinised
  - – *so demonstrably free of external influence / bias*
- Should user preference also be included? Is it possible to get user preference data that is guaranteed free from manufacturers' influence? *(feedback from the meeting please).*
Data on LLIN Durability

- Need constant flow of location-specific data, not some large set-piece trials from WHO. This monitoring will be recommended as "good practice" in all large-scale procurements/deployments, for all implementation agencies, and all donors, especially GFATM.

- Estimated Cost: depends on scale and outcomes measured. Typical ballpark might be (excluding nets): $100k - $300k

- So – how often?
  - should normally be part of every procurement over $2m?
  - With many small procurements, then at every cumulative $2m.
  - So then cost of monitoring would be an extra 1%.
  - Expected to save >>10%!

- WHO must set standards and criteria for data independence and quality this is the key condition for procurement agencies
Using data on LLIN durability to inform local procurement decisions – a suggestion

- Observe survivorship at two time points, >50% and <50%
- Interpolate (linear) to estimate median survival time
- Divide bid price by this median lifespan.
- Gives estimate of price as "cost per year of effective life".
- Procurement process continues as usual, with sealed bids and predetermined weighting for other criteria such as delivery deadlines and previous delivery performance, but now price is measured as price per year, rather than unit price.
Using data on LLIN durability for procurement – remaining issues

- How to ensure system is NOT biased towards products for which there is more data, and against newer products with less track record.

- Review this system after 3 years to check for redundancy – if the same results are seen repeatedly and consistently, then reduce level of replication;

- Use data from other countries – scope and weighting?

- Use these data as the gold standard for comparison with novel predictors of durability (better measures of physical strength);

- Not just durability
Other local data for procurement

- Preference?
  - Solomons data – qual vs quant
  - As part of durability competitive trial?
  - Ask users to choose between products?
  - Monitor usage of different products?

- Size?
  - As part of durability competitive trial?
  - In coverage surveys? (usage by size?)