



Ministry of Health

Adopting Paperless PDF Tally sheet during the LLIN Durability Monitoring Study

[Digital M&E Practices]

Presented at: MOH M&E - Technical Working Group

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Interventions for Health Impact

About the Durability Monitoring study of LLINs

- **PACE**, in collaboration with MOH, is conducting a study to monitor the durability of LLINs distributed during the 2020 mass campaign
- **Five Brands of Nets under study:** Interceptor, Permanent 2.0, SafeNet, Permanent 3.0 and Royal Guard.
- This is a **Cohort Study** designed to take three years
- Data on physical integrity of nets [physical Condition] is collected at specific intervals; (Baseline, 12 months, 24 months and 36 months)

Primary Objective of the study

To assess the physical durability of LLINs, estimate median survival (Period at which 50% of the nets are no longer serviceable) & identify major determinants of field performance

Secondary objectives of the study

1. To describe major behavioural aspects of net care and repair and their impact on physical durability
2. To assess the insecticidal effectiveness (residue and bio-assay) after three years of field use



Paper-Tally Sheet

Initially, the Paper-Based Tally Sheet was used during the assessment of the fabric integrity of nets through determining the number and sizes of holes in the net.

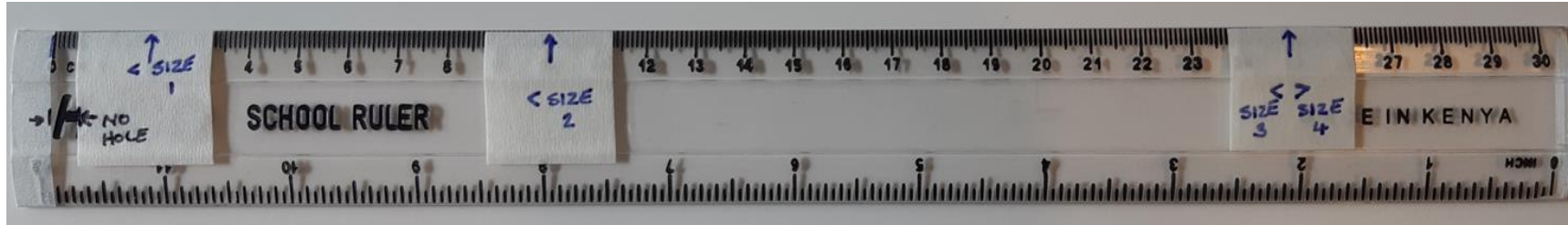
Size 1 holes. Mark the number of size 1 holes on the tally below, then size 2 holes, size 3 and finally size 4. Then move to the next side of the net.
When all sides are finished, add the marks in each row and enter the number in the "Total" box. Then add up all size 1, size 2, size 3, and size 4 at the bottom. These numbers are then entered in the net questionnaire. For conical nets use only the roof and one side.

If large parts of the net are missing so that counting of size 4 holes is not possible, the result is coded as 98 for size 4. If there is a code of 98 for any of the sides the total also is entered as 98.

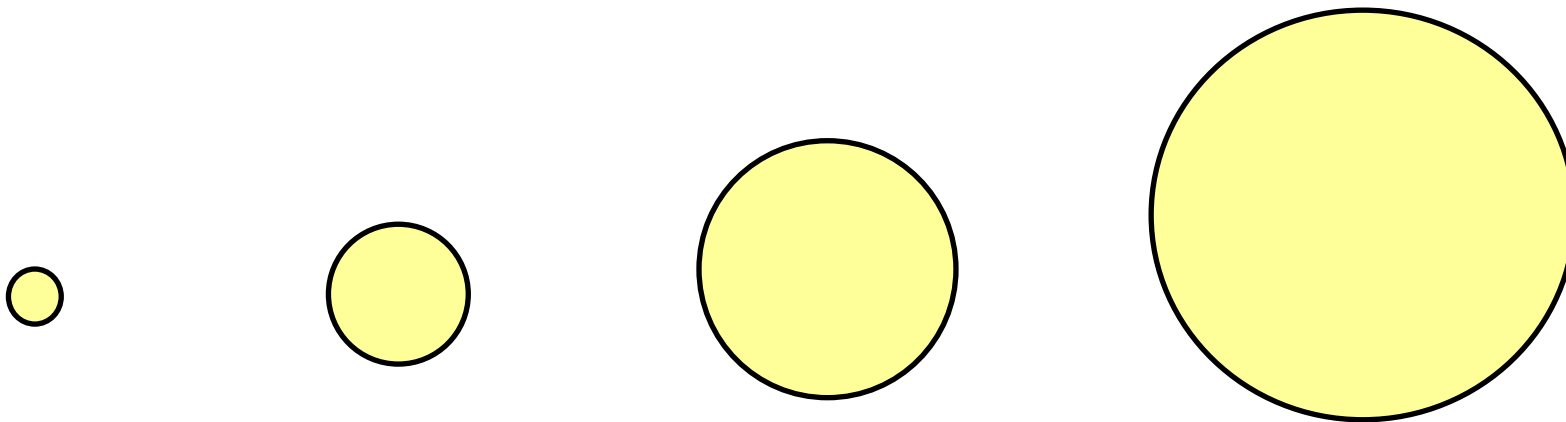
					TOTAL			
SHORT Side 1	5	10	15	20	Size 1	Size 2	Size 3	Size 4
Size 1	○○○○○	○○○○○	○○○○○	○○○○○				
Size 2	○○○○○	○○○○○	○○○○○	○○○○○				
Size 3	○○○○○	○○○○○	○○○○○	○○○○○				
Size 4	○○○○○	○○○○○	○○○○○	○○○○○				
LONG Side 1	5	10	15	20	Size 1	Size 2	Size 3	Size 4
Size 1	○○○○○	○○○○○	○○○○○	○○○○○				
Size 2	○○○○○	○○○○○	○○○○○	○○○○○				
Size 3	○○○○○	○○○○○	○○○○○	○○○○○				
Size 4	○○○○○	○○○○○	○○○○○	○○○○○				
SHORT Side 2	5	10	15	20	Size 1	Size 2	Size 3	Size 4
Size 1	○○○○○	○○○○○	○○○○○	○○○○○				
Size 2	○○○○○	○○○○○	○○○○○	○○○○○				
Size 3	○○○○○	○○○○○	○○○○○	○○○○○				
Size 4	○○○○○	○○○○○	○○○○○	○○○○○				
LONG Side 2	5	10	15	20	Size 1	Size 2	Size 3	Size 4
Size 1	○○○○○	○○○○○	○○○○○	○○○○○				
Size 2	○○○○○	○○○○○	○○○○○	○○○○○				
Size 3	○○○○○	○○○○○	○○○○○	○○○○○				
Size 4	○○○○○	○○○○○	○○○○○	○○○○○				
ROOF	5	10	15	20	Size 1	Size 2	Size 3	Size 4
Size 1	○○○○○	○○○○○	○○○○○	○○○○○				
Size 2	○○○○○	○○○○○	○○○○○	○○○○○				
Size 3	○○○○○	○○○○○	○○○○○	○○○○○				
Size 4	○○○○○	○○○○○	○○○○○	○○○○○				
TOTAL Size 1								
TOTAL Size 2								
TOTAL Size 3								
TOTAL Size 4								



Physical integrity Assessment Method (Hole Assessment)



proportionate Hole Index (pHI)



$$1 \times \# \text{ size 1} + 23 \times \# \text{ size 2} + 196 \times \# \text{ size 3} + 576 \times \# \text{ size 4}$$

Hole size categories

- Size 1: > 0.5 – 2 cm
- Size 2: > 2 – 10 cm
- Size 3: > 10 – 25 cm
- Size 4: > 25 cm

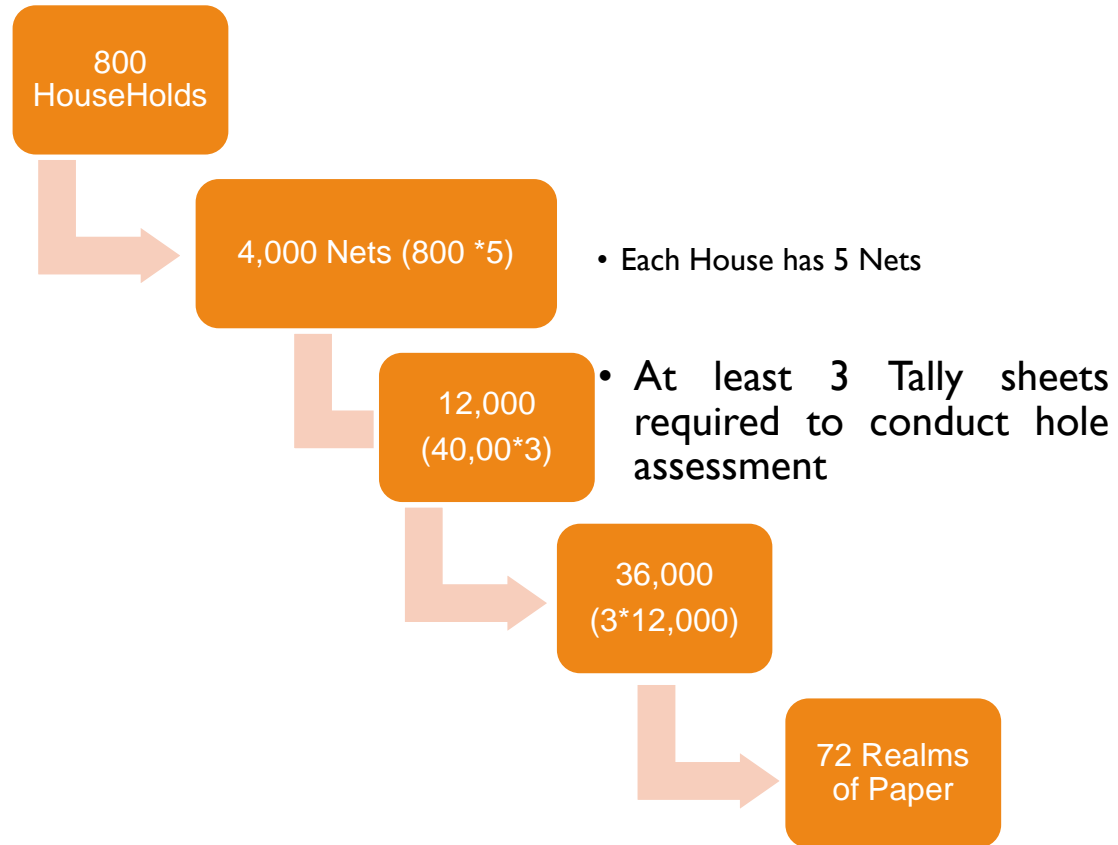
Good: pHI < 64 (corresponding to a total hole surface area < 0.01 m²)

Serviceable: pHI ≤ 642 (total hole surface area ≤ 0.1 m²)

Torn: pHI > 642 (total hole surface area > 0.1 m²)



Challenges of Paper-based Tally Sheets



- Prone to Arithmetic Error
- High risk of data loss in the field
- Cumbersome – [Printing takes time]
- Quite Expensive
- Presents storage space challenges

One round data collection take upto 72 Realms of Paper, and 216 Realms for 3 Rounds making the study. Not Environmentally friendly M&E practices



Adoption of the Electronic Tally Sheet

HH ID

NET ID

Tally sheet for net holes

For rectangular nets count holes separately for each of the sides and the roof starting with size 1 holes. Mark the number of size 1 holes on the tally below, then size 2 holes, size 3 and finally size 4. Then move to the next side of the net.

When all sides are finished, add the marks in each row and enter the number in the "Total" box. Then add up all size 1, size 2, size 3, and size 4 at the bottom. These numbers are then entered in the net questionnaire. For conical nets use only the roof and one side.

If large parts of the net are missing so that counting of size 4 holes is not possible, the result is coded as 98 for size 4. If there is a code of 98 for any of the sides the total also is entered as 98.

RESET

SHORT Side 1	5	10	15	20	TOTAL
Size 1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="text"/>
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Size 2	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="text"/>
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

SUMMARY	Size 1	Size 2	Size 3	Size 4
SHORT side 1	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
LONG side 1	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
SHORT side 2	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
LONG side 2	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
ROOF	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
TOTAL Size 1	<input type="text"/>			
TOTAL Size 2		<input type="text"/>		
TOTAL Size 3			<input type="text"/>	
TOTAL Size 4				<input type="text"/>



Using electronic tally sheets offers benefits such as

- **Enhanced Accuracy:** Minimizes human errors in data collection and calculations.
- **Time Efficiency:** Eliminates manual calculations and transcription, saving time and effort.
- **Data Accessibility:** Enables quick and easy access to collected data for validation
- **Data Integrity and Security:** Provides built-in mechanisms for data protection and reduces the risk of loss or damage.
- **Scalability and Flexibility:** Accommodates large data volumes and allows for easy customization.
- **Integration with Other Systems:** Seamlessly integrates with databases and analytics tools for automated workflows.
- **Environmental Friendliness:** Reduces paper waste and supports sustainable practices.
- **Cost Savings:** Long-term savings by eliminating printing, storage, and manual data entry expenses.
- **Audit Trail and Version Control:** Maintains an audit trail and tracks changes, ensuring data integrity and transparency.



Limitations of using electronic tally sheets for data collection include

- Technical dependencies: Reliance on technology and potential disruptions.
- Initial setup and training: Investment and learning curve required.
- Learning curve for users: Adjustment and training required.
- Reliance on power sources: Disruption risks in case of power outages.



Electronic Vs Paper-Based Tally Sheet



Take Home Message

- Embracing digital solutions can greatly enhance data accuracy, streamline the data collection process, and improve overall efficiency in monitoring LLIN durability.
- Use of Electronic Tally sheets can be scaled-out to MOH programmes and Activities including;
 - The Universal Coverage Campaign for LLINs
 - EPI
 - Logistics Management
 - Other data collection activities that utilize tally sheets





Thank you
Q&A

