

## Updating brief 5: Warehouse assessment and stacking practices

### REPLACEMENT FOR WAREHOUSING AND STORAGE PARAGRAPHS OF CHAPTER 5, SECTION 5.1

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#### 1. Selection of warehouses

Proper oversight and planning are essential components of any LLIN campaign process. During the logistics operation, one key element that requires accurate and detailed information is the selection of warehousing facilities at all levels where LLINs will be stored. At district level, this becomes extremely important for the Central Logistics Team (CLT), when a Pooled Procurement Mechanism (PPM) is used to acquire the country's shipments of LLINs. If direct delivery to district levels is selected, all warehouses to be used for storing LLINs at these levels must be identified early and must be sufficient in size and meet proper standards and security for campaign LLIN storage.

#### 2. Warehouse assessment tool

Prior to any field visit, the team leaders must be aware of and briefed on information needed for undertaking a warehouse assessment. A Warehouse Assessment Tool should be developed to gather this detailed information. See the Resource example of a warehouse selection assessment guide from the Sierra Leone 2015 campaign.

Warehouse or storage facilities used at distribution points and pre-positioning sites also need to be fit for purpose, and should be included in the assessments.

#### 3. Initial assessment

Some areas that are important and must be considered when assessing storage are:

- Size of each warehouse space (measured accurately to obtain square footage and including height).
- Name and location of warehouse and contact information (including mobile phone numbers for owner or managers).
- Availability of large truck access to loading and unloading sites, number of doors/ramps, etc.
- Relevant health officials (e.g. District Health Management Team) and logistics personnel (e.g. District Logistics Officer) should be aware of facility and be familiar with owner/managers. If the warehouse has been used before for similar activities, determine if there were any problems or concerns that should be discussed and addressed before selecting the warehouse.
- Check availability of each warehouse storage space for planned campaign dates. Include monthly rental costs and possibility for further extension of rental agreement to be notified 30 days in advance of rental termination date in case any delays in campaign implementation occur.
- Conduct preliminary discussion with owner/manager to negotiate/reduce any rental costs, together with relevant health officials (e.g. the District Medical Officer and District Logistics Officer).
- Preparation of contracts and signatures. Following signature, arrangements should be made for warehouse/storage space owner/manager to be contacted at an agreed time prior to LLIN arrival to ensure that the space is ready.

#### 4. Necessity of field trips

In many cases, all micro level storage facilities would be assessed within the process of campaign micro planning field trips conducted prior to the actual delivery of LLINs. Warehouse assessment forms are sent out early to ensure teams on the ground can assess their warehouse availability based on approved criteria and volume of storage space required for each location.

If it is not possible to time the warehouse assessments with the micro planning (e.g. the nets are arriving very early), separate missions will need to be planned and budgeted for the CLT to ensure that this key step is complete prior to LLIN arrival in country and delivery to initial storage points as well as through to the lowest storage levels. This activity also forms part of risk assessment and mitigation.

**SEE BRIEF 3:  
RISK MITIGATION PLANNING**

A key CLT challenge is to analyse the information collected during the campaign micro planning field trips and determine whether proposed storage space is accurate and acceptable. If there are gaps in information, locations missing or improper assessment assumptions made, there will be a requirement to conduct a detailed warehouse assessment field trip. It will be important to work closely with local health and logistics personnel, such as appropriate members of the District Health Management Teams, including District Medical Officers and District Logistics Officers, as well as other logistics representatives to identify the resources of each district. The assessment should be conducted as a collaborative exercise between national level and districts. An example of a warehouse assessment field trip activity could be as follows:

- Mission to all targeted areas of the country consisting of \_\_\_\_ x teams with representation from Ministry of Health, Central Medical Stores (as appropriate) and the National Malaria Control Programme. Each

assessment team would be responsible to assess \_\_\_\_ x districts and selected warehouses.

- Assessment field trip findings and any action taken or suggested (such as need for purchase of fire extinguishers) must be communicated to the CLT to ensure remedial action is taken prior to LLIN delivery schedules.
- Assessment information, which might include photographs of the warehouses and their environment, must be compiled and analysed quickly on completion of the assessment to enable the CLT to submit any additional costing if needed to the campaign programme and to move forward with contracting, so that identified, suitable space is not lost through lack of timely action.

#### 5. Action required

Some general issues that may be identified during a warehouse assessment field trip and require follow-up action are:

- Minor repairs or purchases needed in some storage locations to improve security, such as additional locks, bars on doors and fire extinguishers.
- District needing more than one location to accommodate the quantities of LLINs forecast for delivery.
- Some warehouses might be sharing a percentage of space with other non-campaign products. This needs to be carefully assessed because of the insecticide on the LLINs.
- Drop-off storage points (if any) not appropriate.
- Lack of contact information or rental cost per warehouse storage location.

It is important to note that a stand-alone warehouse assessment field trip would only be necessary if the logistics information from the campaign micro-

planning trip were inaccurate or missing. It is paramount to ensure appropriate warehousing is available when receiving LLIN shipments for security reasons, LLIN storage quality and accountability.

## 6. Arrival of LLINs and stacking practices

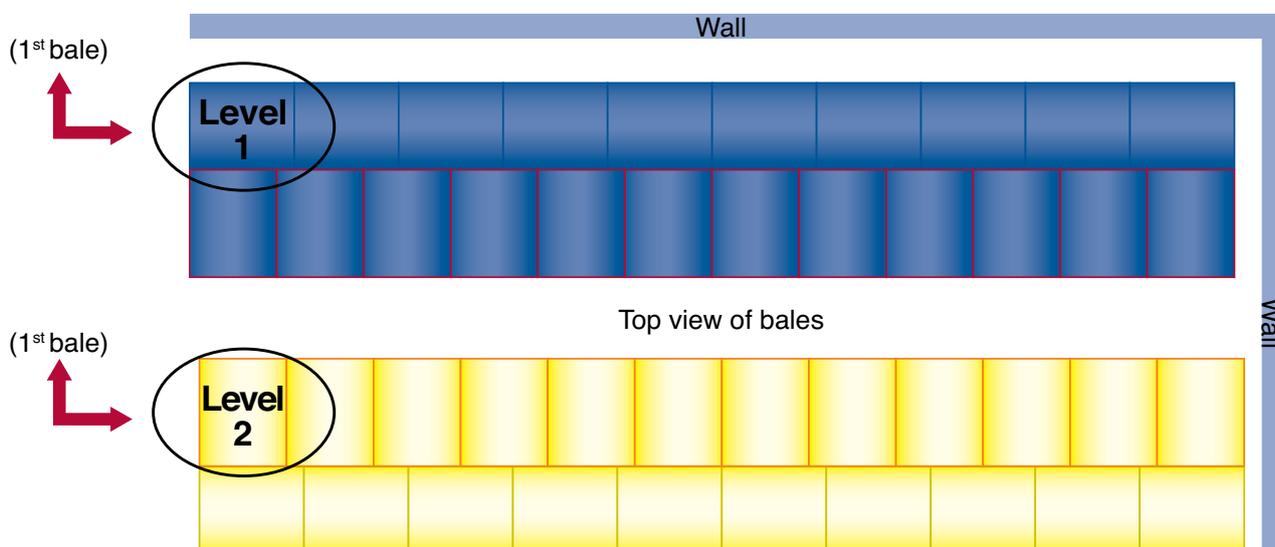
Each warehouse stacking configuration must be well planned to enable safe, accurate LLIN dispatching and inventory checks as well as providing adequate space for building fire safety measures.

When offloading and storing bales of LLINs, it is imperative to ensure stacking is securely done

and safe for all workers within the warehouse facility. Normally, an alternating stacking position of LLIN bales will provide an interlocking system for a solid secure platform. Standard height of stacking is usually 2.0 metres using this interlocking system. In some cases, dependent on the warehouse height and the bale compression (LLIN baling tightness), 2.5 metres may be used. However, the higher the stack of LLINs, the more difficult it is for workers loading and unloading; the climbing height will become somewhat perilous and when planning, safety must always be paramount.

### 2013 Indonesia bale size

Bales: 1.60 x 2.62 x 1.31 ft or  
0.49 x 0.80 x 0.40 m



**Level1:** first layer of bales on the floor. First row positioned all one way; second row on floor positioned opposite way (blue squares are ground level).

**Level2:** second layer of bales sit on of first level. Position the bales opposite direction starting at the first bale as indicated. Repeat same positioning pattern for all remaining rows.

Continue alternating this positioning pattern for all addition levels. (ie: level 3 will be similar to level 1; level 4 will be similar to level 2; etc, etc).

This develops an interlocking positioning system that helps to provide rigid stability.

**IMPORTANT:** if bales are not compressed properly, the stacking will be compromised as the stacking height increases.

Ideally, usage of available warehouse space is normally only about 80–85 per cent with the remaining space used as walking space around LLIN stacks, fire safety corridors and space to complete inventory verification, all part of good warehouse management.

Resource: Sample Warehouse Selection Assessment Guide, Sierra Leone 2015 (Excel file).