L’article en français

All vector control products for public health use, including long-lasting insecticidal nets (LLINs), are prequalified by WHO. The WHO Prequalification Team assess the products and insecticides to determine that they can be used safely, are effective and are manufactured to a high-quality standard. This is achieved by assessing product dossiers submitted by the manufacturer and inspection of manufacturing sites.[1] While many African countries allow for the deployment of LLINs in their respective countries once they are prequalified by WHO, others have developed additional in-country regulatory approval systems for vector control products. It should be noted that the regulatory approval processes are not standardised, and data requirements differ from country to country.[2]

Current practices for national regulatory approval systems focus on the quality, safety and efficacy of the product at the time of registration and register all LLINs under the same category. However, the WHO Malaria Policy Advisory Group has recognised the need to differentiate between LLINs based on intended impact on mosquitoes. There is an opportunity for regulatory authorities to reflect the WHO LLIN classification in product registration.

A robust regulatory approval system for LLINs can also play a role in monitoring products’ safety, efficacy and quality in real-life conditions of use and in generating data that can inform national malaria control programmes.

The new WHO classification for LLINs

The fast spreading resistance to pyrethroid insecticides has required continuous innovation in vector control tools. This threat has led to the initial development of PBO nets, a generation of bednets with increased efficacy against insecticide resistant mosquitoes. PBO LLINs are now considered the standard of care in the fight against malaria. Additionally, new nets are being developed containing complex chemical formulations with different modes of action that will preserve the efficacy of bednets against the threat of resistance.

Accordingly, national malaria control programmes and communities need to understand when and where certain products should be deployed and how they can have the greatest impact. A revised Insecticide Treated Net classification has been developed by the WHO

Malaria Policy Advisory Committee[3], that distinguishes products by their efficacy claim as follows:

(1) ITNs designed to kill insecticide-susceptible mosquitoes

(2) ITNs designed to kill insecticide-resistant mosquitoes *(includes pyrethroid-PBO nets but would be expanded to include pyrethroid + chlorfenapyr nets as soon as their public health value has been demonstrated*)

(3) ITNs designed to sterilise and/or reduce the fecundity of insecticide-resistant mosquitoes *(This class will provisionally include pyrethroid + pyriproxyfen nets)*

In-country regulatory approval processes can increase clarity about the conditions for deployment of various LLINs by aligning their evaluation processes with the WHO classification. Individual product efficacy claims should also be considered when authorising products and the product registration should clearly indicate the registered claims of the LLIN.

Designing a responsive regulatory system through the creation of a feedback loop between post-market surveillance and product registration

An additional role of the regulatory authority can be to monitor the registered products to ensure they perform in the field according to their claims. Post-market surveillance activities can support this monitoring. The Global Fund to Fight AIDS, Tuberculosis and Malaria is currently working on new guidance for post market surveillance that covers all LLINs procured through the Global Fund[4].

While these guidelines are being developed, country stakeholders may explore how post-market surveillance should be implemented. For instance, national regulatory authorities and national malaria programmes can advocate for post-market surveillance activities to be run in a systematic manner and at meaningful time intervals (e.g., every 6 months). They could ensure that this surveillance includes all aspects of durability such as, physical durability, insecticide and synergist chemical content, and bioefficacy over the product lifetime. The results of these activities should be transparent and delivered in a timely

manner to country programmes and regulatory authorities in a feedback loop that supports the identification and analysis of relevant trends.

We note that durability monitoring of LLINs is even more important for PBO (piperonyl butoxide) LLINs since 20 washes, which is the current proxy for 3 years use in experimental hut trials, do not adequately predict release and retention of PBO in field conditions. There are concerns that a low PBO start concentration may be insufficient to guarantee synergistic action throughout the lifetime of a net. Ideally, bioavailability of the active ingredients at the material surface should also be measured and tools are under development to measure surface chemistry.

An effective national regulatory environment can drive the generation of product performance data in local settings

National regulatory authorities who are responsible for the approval of vector control products can play an important role in the prevention of vector borne diseases like malaria. At this time, there is an opportunity to align regulatory processes with the new WHO classification. They can also build a responsive national regulatory system by creating a feedback loop with data generated by post-market surveillance activities, which can in turn inform national malaria control programs. Ultimately, the data generated could help support the prioritisation of the most effective tools in the local context.

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[1] Welcome to Vector Control Product Prequalification | WHO – Prequalification of Medical Products (IVDs, Medicines, Vaccines and Immunization Devices, Vector Control)

[2] Pan-African Registration Landscape for Vector Control Tools (innovationtoimpact.org)

[3] https://www.who.int/malaria/mpac/mpac-may2020-session2-itn-categorization-presentation.pdf?ua=1

[4] OIG Investigative Report on TANA Netting – Letter from the Executive Director – Office

of the Inspector General – The Global Fund to Fight AIDS, Tuberculosis and Malaria