

# 2007 Madagascar Integrated Campaign: Evaluation of LLIN Ownership, Usage and Equity Six Months Post-campaign

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## Executive Summary

Madagascar is an island country in Southern Africa, situated off the coast of Mozambique in the Indian Ocean (Figure 1). In Madagascar, malaria remains a leading cause of morbidity and mortality in children under 5 years of age.



Figure 1. Map of Madagascar

The entire population is considered to be at risk from malaria; however, there are differences in endemicity across the country. The tropical coastal climate is associated with highly endemic malaria transmission, while the temperate inland and arid south are epidemic-prone.

In recent years, several malaria control strategies, including the distribution of long-lasting insecticidal nets (LLINs), have been implemented in Madagascar. The East coast, where the malaria burden is greatest, has been prioritized for LLIN distribution through free distribution campaigns, routine distribution at antenatal clinics and vaccination visits, and social marketing [1].

To reinforce the reduction in morbidity and mortality of children under 5 years of age, in particular those caused by measles and malaria, the Government of Madagascar, with partners from around the world, implemented a national integrated campaign that included all 111 districts in the country, from October 22-30, 2007. The Mother and Child Health Week campaign provided measles vaccinations, along with vitamin A supplements and deworming medicine, to more than 2.8 million children under five years of age. In addition, more than 1.5 million insecticide-treated mosquito nets to prevent malaria were distributed in the 59 districts in the West and South of the country, which had not previously benefited from large-scale LLIN distribution. LLIN distribution was not integrated in the 32 districts in the East and the 20 Central Highlands districts. Social mobilization was conducted by the Malagasy Red Cross and the Ministry of Health, Family Planning and Social Protection.

Six months after the integrated campaign, a national community-based survey was conducted to evaluate the ownership and usage of LLINs. Personal digital assistants (PDAs) were used to collect information on all members of the household, all bednets, and on household economic indicators, with specific questions pertaining to children under 5 and women of reproductive age. This report presents the key results of the evaluation<sup>1</sup>.

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<sup>1</sup> The detailed survey report is available in French and in English at the HealthBridge website ([http://www.healthbridge.ca/malaria\\_redcross\\_e.cfm](http://www.healthbridge.ca/malaria_redcross_e.cfm))

## LLIN Ownership and Hanging

Nationally, 59% of households owned at least one LLIN and 22% owned at least 2 LLINs. Ownership of at least one LLIN was higher in districts with integrated LLIN distribution during the campaign<sup>2</sup> (77%) compared to districts where LLINs were not distributed during the campaign<sup>3</sup> (65%) (Figure 2). More than 90% of households that owned at least one LLIN reported having a LLIN hanging the previous night.

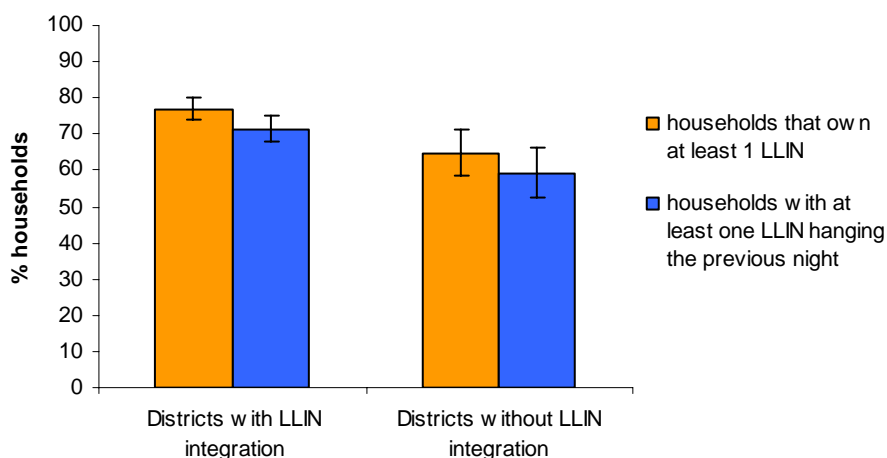


Figure 2. LLIN ownership and hanging rates

## Equity of LLIN Ownership

Post-campaign ownership of LLINs in districts where LLINs were distributed during the campaign was equitable across wealth quintiles. In districts where LLINs were not integrated during the campaign, LLIN ownership was higher in the wealthiest households than in the poorest households (Figure 3).

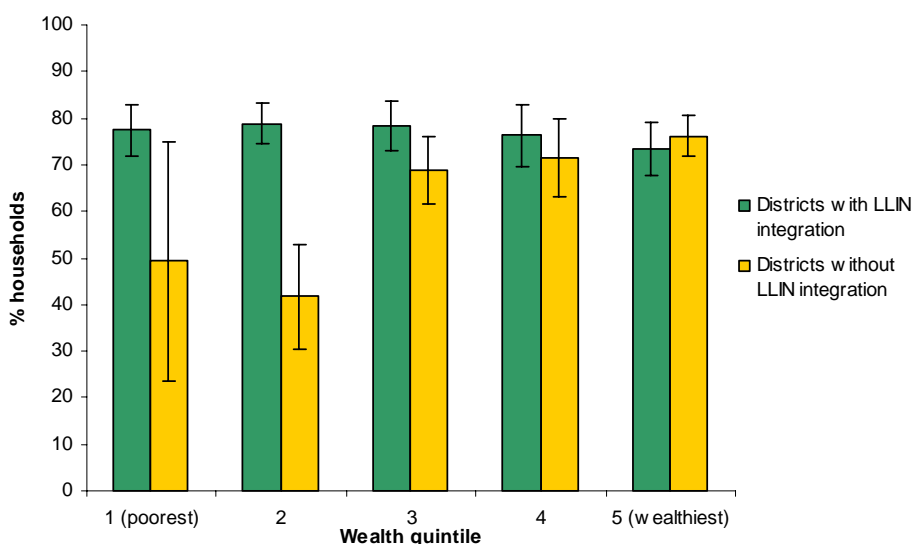


Figure 3. LLIN ownership across wealth quintiles<sup>4</sup>

<sup>2</sup> Includes 59 districts in the West and South

<sup>3</sup> Includes 32 districts in the East (does not include the 20 Central Highland districts)

<sup>4</sup> Wealth quintiles calculated based on economic indicators from the 2003-4 Madagascar Demographic and Health Survey [2]

## LLIN usage

Eighty-one percent of children under 5 and 69% of pregnant women slept under a LLIN the previous night in districts with LLIN integration. These rates were lower, 66% and 57%, respectively, in districts without LLIN integration during the campaign (Figure 4).

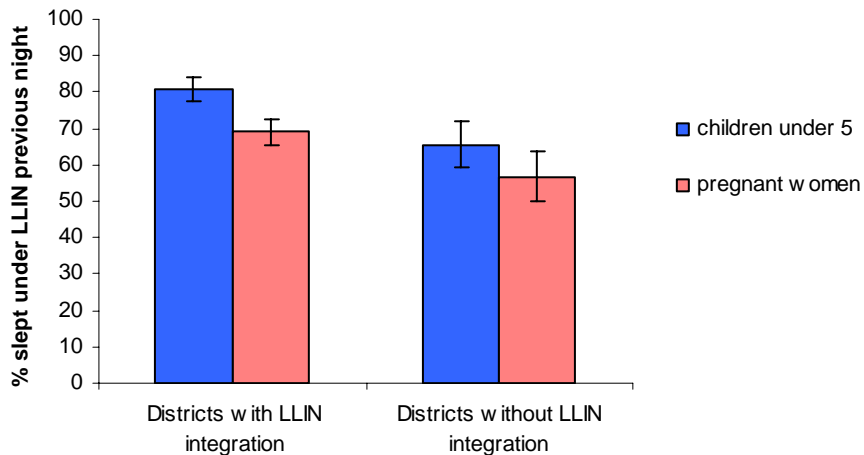


Figure 4. Usage of LLINs by children under 5 and pregnant women

## Equity of LLIN usage by children under 5

A high level of usage of LLINs by children under 5 (77-83%) was observed across wealth quintiles in districts with LLIN integration (Figure 5).

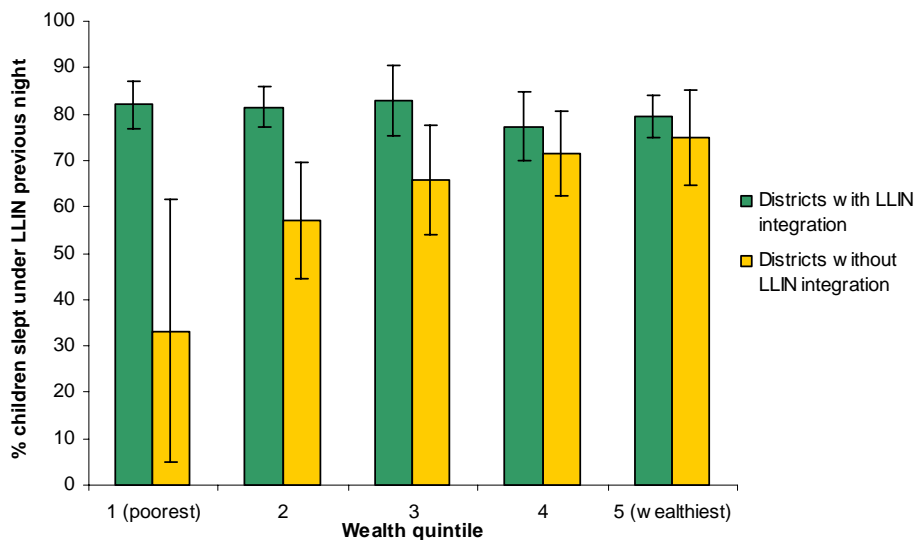


Figure 5. Usage of LLINs by children under 5 across wealth quintiles<sup>5</sup>

<sup>5</sup> Wealth quintiles calculated based on economic indicators from the 2003-4 Madagascar Demographic and Health Survey [2]

## Conclusion

The free distribution of LLINs during an integrated health campaign was an effective means for Madagascar to rapidly increase the ownership and usage of LLINs in its progress towards international targets [3]. Notably, there was a high level of LLIN ownership and usage of LLINs by children under 5 years and pregnant women in the districts where LLINs were distributed during the campaign. In addition, the campaign succeeded in reaching the poorest segment of the population, with equity of LLIN ownership and of under-5 usage across economic quintiles.



Children with campaign net in a village near Tamatave (photo: Manisha Kulkarni)

## Acknowledgements

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## References

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3. RBM (2008) The Global Malaria Action Plan. The Roll Back Malaria Partnership, Geneva.