SUCCESSFUL INTEGRATION OF INSECTICIDE-TREATED BED NET DISTRIBUTION WITH MASS DRUG ADMINISTRATION IN CENTRAL NIGERIA

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Abstract. In Africa anopheline mosquitoes transmit malaria and lymphatic filariasis (LF); insecticide-treated bed nets significantly reduce transmission of both. Insecticide-treated bed net provision to children under 5 (U5) and

Insecticide-treated bed net usage. Among PW and U5, 37% (95% CI, 30–44%) slept under an ITN the night before the survey; significantly more reported this in Akwanga (58%; 95% CI, 46–71%) than Kanke (19%; 95% CI, 7–30%; Table 1). This trend was noted for U5, currently pregnant women, and women pregnant during MDA (Figure 2). Among the target population, the lowest ITN usage rates were seen in currently pregnant women, and the highest among those pregnant during the MDA (see Table 1). Only 15% of all (eligible and ineligible) persons surveyed slept

achieve results consistent with previous integrated campaigns. Both the current study and these other successful integrated programs demonstrate that campaign-style distribution programs have a large, immediate impact on ITN ownership, and seem more effective than local or regional public health systems for reaching established and accepted targets. For example, in our central Nigerian program where no mass distribution program had occurred previously, the ITN ownership (indeed any net ownership) and usage rates were extremely low prior to the integrated ITN/MDA distribution. Free ITNs, often integral to high community acceptance,[8–11] can result in excellent net retention.[9,24] Our study supports these findings, given the high community demand and 94% ITN retention at 6–8 months post-distribution. We believe free ITN distribution to at least U5 and PW can rapidly achieve both high ITN ownership and retention rates in sub-Saharan Africa, and given the comparability of our results to these previous campaigns, that ITN distribution through an MDA program is a viable means of achieving this.

Despite high rates of household ITN ownership, we observed ITNs hanging above only 43% of VSS, with only 37% of U5/PW reporting ITN use the previous night. This modest ITN usage likely resulted from seasonal factors, given the

might lead to less community pressure, though ITN distribution to the entire population would eliminate this problem altogether.

Limitations. Seasonal influences based on the timing of the cluster survey likely resulted in lower ITN use (especially in Kanke) and made it difficult to accurately assess some elements of our program's impact. Additionally, the 6–8-month interval between distribution and the survey resulted in shifts in the PW population rendering ITN coverage among PW falsely low, and U5 coverage correspondingly higher (due to parturition). Coverage surveys must account for these factors, though it is conceivable that they (timing surveys during rainy season versus closely after distribution) could be in conflict.

Future directions. The activities reported here are but the first step in the ITN/MDA integration effort. MDA occurs annually, and so should linked ITN activities, such as: (i) provision of ITNs to PW or U5s still without one; (ii) replacement of lost or damaged ITNs, and (iii) community-based ITN retreatment (which should occur every 6–12 months). Logistics, training, and resources for purchase of reimpregnation materials will remain challenges to the integrated program for the foreseeable future. As with all new technology, ITNs should be monitored for quality to assure the expected public health benefit. During distribution, 4 of the pretreated nets were obtained in a nonrandom manner and tested for insecticide levels; deltamethrin was detected on those nets at substandard levels. We are currently evaluating community-based reimpregnation of ITNs during MDA. However, the use of long-lasting ITNs would obviate much of the effort and cost required for reimpregnation, and should be used wherever possible. We hope to see expansion of this effort to a larger scale involving multiple LGAs/states in Nigeria.

We believe ITN/MDA integration is the best way forward among integrated campaigns for ITN distribution because it uses a community-based approach, placing much of the responsibility of the transport and distribution of nets on community resources, and obviates the need for the presence of skilled workers, transport, and equipment associated with vaccine campaigns. However, comparison of costs and ITN

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