

EXECUTIVE SUMMARY

NETMARK BASELINE SURVEY ON INSECTICIDE-TREATED MATERIALS ZAMBIA

PURPOSE: Provide baseline measures of

- Knowledge and beliefs about mosquitoes and malaria
- Beliefs and attitudes about use of treated and untreated mosquito nets
- Access, affordability, and ownership of mosquito nets
- Net treatment practices
- Use of nets and treated nets by vulnerable groups: children under five, pregnant women, and women of reproductive age
- Consumer preferences regarding mosquito nets
- Usage and attitudes regarding other mosquito control products

METHODOLOGY: Survey

SAMPLE: 1000 Zambian households from 5 sites: Lusaka, Kitwe, Mansa, Choma, and Kaoma. Target sample in each site was 200: 80 respondents from urban households, 60 from households within 100km, and 60 from households 100-200 km from the urban center. Respondents were women aged 15-49 who were mothers/guardians of children under five years of age.

DATA COLLECTION: October 2000

STUDY FINDINGS:

Knowledge and beliefs about malaria and mosquitoes

Recognition of the English term “malaria” was very high and knowledge of symptoms good; however knowledge about causes and vulnerable groups was moderate. Exposure to information about malaria prevention was moderate and came mainly from health services.

- Virtually all respondents (99.7%) reported having heard of the English term “malaria.” Although the vast majority of those who recognized the term knew that mosquitoes cause malaria (81%), a smaller percentage (42%) knew that mosquitoes are the *only* cause of malaria. Seventy-nine percent (79%) mentioned fever as a symptom and 47% mentioned “chills/shivering”, a symptom of fever; most named other symptoms that are also manifestations of malaria. Few (3%), however, mentioned convulsions, a symptom of severe malaria. Nearly two-thirds (63%) knew that children under five and pregnant women are the groups most susceptible to getting a serious case of malaria.
- Forty-two percent (42%) of the respondents had not received any information about avoiding malaria in the past 12 months. Of the 58% who saw/heard information, the majority heard it from staff in health facilities (62%), but other common sources were friends and relatives (23%) and the radio (21%). Fourteen percent (14%) had heard information *only* from non-professionals (friends, neighbors or relatives), rather than from more professional and presumably more reliable sources.

Perceived advantages and disadvantages of net use

Levels of perceived advantages of net use by vulnerable groups—children under five and pregnant women—were very high, while levels of perceived disadvantages were low. Nets were seen as providing good protection against mosquitoes and malaria. *Treated* nets were seen as especially effective, with the added advantage of killing and repelling mosquitoes. The small proportion of respondents citing disadvantages of a child sleeping under a net were concerned about suffocation or entrapment. Respondents cited stronger disadvantages of *treated* nets, voicing concerns about the safety of the chemical and its smell.

- Almost all respondents (98%) perceived advantages for a child under five sleeping under a mosquito net. Most commonly mentioned were “avoid getting bitten by mosquitoes”(87%) and “avoid getting malaria”(53%).
- The majority of respondents (81%) did not cite any disadvantages for a child under five sleeping under a mosquito net. The most commonly mentioned disadvantages were “child may suffocate”(6%); “child may get caught/trapped” (5%); and “not enough air under the net” (3%).
- The vast majority of respondents (89%) perceived advantages for a child under five sleeping under a *treated* net. The most commonly mentioned were “kills mosquitoes” (41%); “is better at preventing malaria” (35%); “repels mosquitoes away from net” (32%); and “kills/ repels other insects or pests” (30%).
- Most respondents (64%) did not cite any disadvantages for a child under five sleeping under a treated net. The most commonly mentioned disadvantages were concerns about the safety of the chemical: “the chemical is dangerous” (13%); “child might chew/suck net” (10%); “causes irritation/cough” (10%); and “chemical can kill” (9%).
- The vast majority of respondents (81%) perceived advantages for a pregnant woman sleeping under a *treated* net. Advantages had to do with the greater efficacy of a treated net: “is better at preventing malaria (39%); “the pregnant woman is more protected” (26%); “repels mosquitoes away from the net” (26%) and “works better against mosquitoes than a net that has not been treated” (20%).
- Most respondents (60%) did not cite any disadvantages for a pregnant woman sleeping under a treated net. The most commonly mentioned disadvantages had to do with safety and smell issues: “might make woman nauseated/vomit” (16%); “smell is bad” (14%); “causes irritation/cough” (11%); “chemical is dangerous” (10%); and “chemical can kill fetus/cause miscarriage” (10%).

Access to mosquito nets

Nets were available through different commercial and non-commercial outlets, with general shops and clinics/hospitals being reported as the most accessible. Some consumers said they would have to travel far to find nets. Others reported that nets are not available or they did not know where to get them.

- The nearest places where a mosquito net could be bought were general/Indian shop (36%) and clinic/hospital (24%). The average time to get to the nearest place of purchase was about one hour by foot or 75 minutes by bus.
- Fourteen percent (14%) of respondents reported that mosquito nets were not available or that they did not know where to get them. Seven percent (7%) reported that mosquito nets are “not available.”

Mosquito net ownership, treatment, and use

Net ownership in the study sites was moderate, and was highest in net project areas. Nets had been obtained from both commercial and non-commercial sources. Non-owners said that the main reason they did not own a net was cost. Use of nets by vulnerable groups was somewhat low, and nets were not used year-round. Awareness of treatment of nets with insecticide was moderate although relatively few people treated their nets.

- About one-quarter (27%) of households reported owning one or more mosquito nets, and 28% of these households owned more than one mosquito net. (These figures may be higher than the national average, given that two of the sample sites—Mansa and Kitwe—have active net promotion projects.) Ownership was higher in urban (35%) than in rural areas (21%). Households of higher the socio-economic statuses were more likely than households of lower socio-economic status to own a net.
- About half (51%) of all households had heard of treating mosquito nets with insecticide solution and 9% of households owned a treated mosquito net. About one-third (35%) of nets were treated: 27% had been pretreated when purchased and 15% were treated/re-treated after purchase. On average, those nets had been treated/re-treated 2 times and were last treated six months ago. Treatment was obtained mostly from non-commercial sources: clinics (40%), projects (18%), employers (6%) and as gifts (11%). Most people (86%) did not know what product was used for treating the net. Those from higher SES households were more likely to be aware of net treatments, but those from lower SES households were more likely to have a treated net.
- About half (48%) of children under five in net-owning households slept under a net (treated or untreated) the prior night, representing 12% of all children in the households in the sample. Only 16% of these children slept under a *treated* net the prior night, representing 4% of all children in the households in the sample. In net-owning households, a higher proportion of children under two slept under a net than did 2, 3, and 4 year olds. The proportion of net-owning households where all children under five slept under any net decreased the more children the household had.
- Forty-two percent (42%) of women of reproductive age (WRA) in net-owning households slept under a net (treated or untreated) the prior night, representing 11% of the total number of women of reproductive age in the households in the sample. Only 14% of WRA slept under a *treated* net the prior night, representing 4% of WRA in the households in the total sample. Eighteen percent (18%) of pregnant women in net-owning households slept under a net the prior night, representing 4% of pregnant women in the households in the total sample. Only 6% in net-owning households slept under a treated net the prior night, representing 1% of all pregnant women in the sample households. (The denominators for pregnant women, however, were very small.)
- For those household members who did sleep under mosquito nets, the average number of months per year they slept under nets was 6.6.
- Two or three people usually slept under a large net.
- The majority (88%) of non-net owners said they didn't own a net because they don't have enough money.

Characteristics of nets owned

Nets were obtained from both commercial and non-commercial sources. Over one-third were acquired within the past two years. Most were round/conical and double sized; average price among all nets was 5.30 USD. Nets are commonly unbranded products; consumers were unaware of the brand. Half the nets were reportedly washed at least once a month.

- About one third (32%) of nets were purchased from a general shop; 16% from the clinic; 8% from a project; and 6% as a gift; 12% were of unknown source. A higher percentage of nets in higher SES households were

purchased from a formal commercial source (fixed store) than those in lower SES households, which were more likely to obtain nets from non-commercial sources such as projects or clinics. Thirty-six percent (36%) of nets had been acquired within the past two years and 16% were acquired 5 or more years ago.

- Households reported paying an average of 5.30 USD per net (conversion based on the exchange rate for the dollar on the date of data collection).
- Owners did not know the brand name for the majority of nets (84%). Six percent (6%) of the nets were reported to be PowerNets. Five percent (5%) were tailor-made (non-manufactured) nets.
- The most common net sizes owned were double (62%) and single (21%); only 6% were king size and 0.6% cot-size. The most common shapes were round/conical (66%) and rectangular (27%).
- The great majority of nets (85%) had been washed. Half (51%) of washed nets were reportedly washed at least once a month with one-fourth (26%) reportedly washed at least every two weeks.

Consumer mosquito net preferences

Households, whether net-owning or not, generally preferred round/conical, king size, and white-colored nets.

- The majority of respondents (67%) preferred round/conical shaped nets; 24% preferred rectangular nets. Preferred sizes were king (51%) and double (35%).
- Forty percent (40%) of respondents preferred white nets; 16% light green. Over half (54%) disliked black nets; 26% disliked dark green; 23% disliked dark blue nets; and 22% disliked white nets.

Awareness, use, and price of mosquito control products

Mosquito nets, coils, and aerosol insecticides were the mosquito control products that consumers were most aware of. Use and frequency of purchase of commercial products was somewhat low.

- Awareness (unprompted) of mosquito control products was highest for mosquito nets (70%), mosquito coils (49%), and aerosol insecticide (43%); few respondents (8%) were aware of repellants. Aside from nets, the most frequently used products were coils (29%) and aerosols (20%). (These use figures may be low, given that “use” was asked only of those who indicated they were aware of a given product.) Use was higher in urban than in rural areas.
- The average reported prices were \$1.29 for 180-220 ml can of aerosol insecticide; \$1.64 for a 300-350 ml can; and \$0.17 for a single mosquito coil. Half (51%) of households that had purchased mosquito coils or aerosols in the 12 months prior to the interview did so within the last 3 months. Aerosols were generally purchased in supermarkets (43%) and in general shops (17%). Coils were most frequently purchased in kiosks (25%), markets (24%), and general shops (22%).

Perceptions of mosquito control attributes, products, and brands

Consumers wanted a mosquito control product that kills mosquitoes and reduces malaria. Among all other insect control products, nets were rated most highly on every positive mosquito control attribute, except “killing mosquitoes and other insects.” Consumers were most aware of Target brand and associated it with the insect control attributes they value.

- On a scale of 1-7, respondents said that the most important attributes of mosquito control products were “kills mosquitoes” (6.38) and “reduces malaria” (6.31).

- Respondents rated mosquito nets more highly than all other insect control products on “is a long-term solution to mosquito problems”(79%); “is safe to use around children” (77%); “keeps mosquitoes away while sleeping” (73%); “reduces malaria” (68%); “is a high quality/effective brand”(66%); “is good value for the money” (60%); and “keeps mosquitoes away for a long time” (56%). Spray/aerosol was most strongly associated with killing mosquitoes (85%) and killing other insects (84%); nets were among the lowest rated products on these attributes (15%; 5%).
- Brand awareness was highest for Target (72%) and much lower for other brands. Awareness of any brands was very low in rural areas. Target was most associated with the insect control attributes consumers value.

PROGRAM/PRODUCT IMPLICATIONS:

The overall setting for ITM promotion and sales in Zambia is favorable, with a few negative perceptions of net treatments (but not nets) to be overcome.

Favorable factors include:

- high awareness of malaria and general understanding of how it is transmitted;
- high awareness of mosquito nets as an insect control method and highly favorable attitudes toward mosquito nets compared to other insect control products;
- a net culture that is already being established (moderate level of net ownership and recent acquisition of nets);
- evidence of higher net coverage rates where they have been promoted;
- already moderate level of ITM awareness in many areas;
- strong valuing of the product attributes that ITMs deliver; and
- very high level of perceived advantages of net use by vulnerable groups and low level of perceived disadvantages.

Main barriers to overcome for ITM promotion are:

- perceived high cost of nets;
- limited access to nets;
- lack of variety in net size, shape, and color;
- concerns regarding the safety and potential adverse health effects of treated nets, particularly with regard to young children and pregnant women;
- marginal availability of insecticide treatments through commercial sector;
- lack of strong branding of nets and insecticide treatments;
- low levels of ITM awareness in some areas; inadequate net treatment practices, including lack of regular treatment and re-treatment of nets;
- inadequate use of ITMs by young children and pregnant women;
- moderate exposure to malaria prevention messages; and
- misperceptions about the causes of malaria