

EXECUTIVE SUMMARY

NETMARK BASELINE SURVEY ON INSECTICIDE-TREATED MATERIALS SENEGAL

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 mosquito control products

METHODOLOGY: Survey

SAMPLE: 1000 Senegalese households from 5 sites: Dakar, Thies, St. Louis, Kaolack, and Tambacounda. 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 French term for malaria—"paludisme" (or "palu" for short)—was very high. Knowledge of symptoms and vulnerable groups was very good. Knowledge about causes was somewhat low. Exposure to information about malaria prevention appears high.

- The great majority of respondents (86%) reported having heard of "paludisme"/ "palu". Although the vast majority knew that mosquitoes cause malaria (88%), only 28% knew that mosquitoes are the *only* cause of malaria. The majority (89%) mentioned fever as a symptom; many mentioned other symptoms that are also manifestations of malaria. Few (4%), however, mentioned convulsions, a symptom of severe malaria. Most (86%) knew that children under five and pregnant women are most susceptible to severe malaria.
- Most (91%) respondents who had heard of "paludisme"/ "palu" said they had received information about avoiding the disease in the past 12 months. However, 5% had heard information only from non-professional sources (friends, neighbors, or relatives), rather than from more professional and presumably more reliable sources. There is a considerable amount of information transmitted via mass media—69% had heard something on the radio and 52% had seen something on TV—as well as via health staff (36%) and/or health facility posters (14%).

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 and helping children sleep better. *Treated* nets were seen as especially effective, with the added advantage of killing and repelling mosquitoes. The small portion of respondents citing disadvantages of a child sleeping under a net were concerned about suffocation, heat or entrapment. Respondents cited stronger disadvantages of *treated* nets, voicing concerns about the safety of the chemical and its smell.

- Virtually all respondents (99%) perceived advantages for a child under five sleeping under a mosquito net. Most commonly mentioned advantages were “avoid getting bitten by mosquitoes”(89%), “don’t get bothered by other insects/pests” (46%), “don’t get malaria” (40%), and “sleep better” (39%).
- The vast majority of respondents (85%) did not cite any disadvantages to a child under five sleeping under a mosquito net. The most commonly mentioned disadvantages were “child might get caught/trapped” (5%), “child may suffocate” (3%), and “it is hot sleeping under a net” (3%).
- Almost all respondents (89%) perceived advantages for a child under five sleeping under a *treated* net. The most commonly mentioned advantages were “kills mosquitoes” (42%), “repels mosquitoes away from net” (42%), and “works better against mosquitoes than an untreated net” (33%).
- About three-fourths (76%) did not cite any disadvantages for a child under five sleeping under a *treated* net. The most commonly mentioned disadvantages were that the chemical is dangerous (11%) and that smell of the chemical is bad (10%).
- The vast majority of respondents (85%) perceived advantages for a pregnant woman sleeping under a *treated* net. The most commonly mentioned were “repels mosquitoes away from the net” (37%), “kills mosquitoes” (35%), that the “pregnant woman is more protected” (30%), and that it “works better against mosquitoes than a net that has not been treated” (25%).
- About three-fourths (73%) did not cite any disadvantages for a pregnant woman sleeping under a *treated* net. The most commonly mentioned disadvantages were that the smell of the chemical is bad (13%) and that the chemical is dangerous (12%).

Access to mosquito nets

Nets were available through commercial and non-commercial outlets, with markets being reported as the most accessible. There was great range in the amount of time/distance necessary to travel to find a net. Some consumers reported that nets are not available or they did not know where to get them.

- About half (52%) of respondents reported that the market was the nearest place where they could buy mosquito nets; 21% named a non-commercial source. Most (47%) would get there on foot and take an average of 13 minutes, or travel by bus (33%) and take an average of 40 minutes.
- Ten percent (10%) said that nets were not available or that they did not know where to get them.

Mosquito net ownership, treatment, and use

Net ownership in the study sites was moderately high and nets were not used year-round. 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. Some viewed nets as unnecessary and others said that nets were not available or they did not know where to get them. Awareness of treatment of nets with insecticide was high although relatively few people treated their nets. Those who did tended to get the treatment from a public source. Pregnant women and children under five were more likely than other family members to sleep under a net.

- One-third (34%) of households reported owning one or more mosquito nets. Over half (52%) of net-owning households owned more than one mosquito net. Net ownership was lowest in the Dakar site (18%). Households of lower socio-economic status (SES) were somewhat more likely than households of higher socio-economic status to own a net.
- Most (70%) households had heard of treating mosquito nets with insecticide solution and 11% of households owned a treated mosquito net. Thirty percent (30%) of nets were treated: 18% had been pretreated when purchased and 15% were treated/re-treated after purchase. Households from higher SES segments were more likely to be aware of net treatments and to have treated a net than those from lower SES segments. On average, nets had been treated/re-treated 2.7 times since purchase, were last treated 5.6 months ago and were washed 3 times since last treatment.
- Treatments were obtained mostly from non-commercial sources such as clinics (49%) or hygiene services (22%), and most consumers (91%) did not know what product was used to treat the net.
- About half (53%) of children under five in net-owning households slept under a net the prior night, representing 18% of all children under five in the households in the sample. Only 17% of these children slept under a *treated* net the prior night, representing 6% of all children under five in the households in the sample. The proportion of net-owning households where all children under five slept under a net the prior night decreased the more children the household had.
- Almost half (49%) of women of reproductive age (WRA) in net-owning households slept under a net the prior night, representing 17% of the total number of women of reproductive age in the households in the sample. Only 9% of WRA slept under a *treated* net the prior night, representing 5% of WRA in the households in the sample. Sixty percent (60%) of pregnant women in net-owning households slept under a net the prior night, representing 21% of pregnant women in the households in the total sample. Only 17% in net-owning households slept under a *treated* net the prior night, representing 6% 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.
- Two or three people usually slept under a large net.
- Half (50%) of non-net owners said they did not own a net because they don't have enough money. Almost one fourth (24%) reported that they do not need them. Ten percent (10%) said that nets were not available or that they did not know where to get them.

Characteristics of nets owned

About half of all nets were purchased in a market. The average price of a net was 5.32 USD. Almost half had been acquired within the past two years. Almost all were rectangular, and most were either king or double-sized. Tailor-made (non-manufactured nets) were common. Nets are commonly unbranded products; consumers were unaware of the brand. Half the nets were reportedly washed at least once a month.

- About half (51%) of the nets owned were purchased in a market. Twelve percent (12%) were received as a gift. A higher percentage of nets in lower SES households were purchased from an informal commercial source (e.g., open air market) than those from higher SES households. Forty-five percent (45%) of nets had been acquired within the past 2 years and 19% were acquired 5 or more years ago.
- Households reported paying an average of 5.32 USD per net (conversion based on the exchange rate for the dollar on the date of the data collection).
- Almost one-fifth (19%) of nets owned by households were tailor-made (non-manufactured nets). Owners of manufactured nets were generally unaware of the brand.

- The most common net sizes owned were king (44%) and double (43%). The most common shape was rectangular (88%).
- About three-fourths (74%) of nets had been washed. Half (50%) were reportedly washed at least once a month, with 15% of nets being washed weekly.

Consumer mosquito net preferences

Households generally preferred round/conical, king sized nets. They liked a variety of colors.

- Over half of all respondents (54%) preferred round/conical nets and 38% preferred rectangular nets. Preferred net sizes were king (80%) and double (12%).
- Twenty-nine percent (29%) of respondents preferred white mosquito nets; 19% dark blue; 18% pink; and 17% light blue. Thirty six percent (36%) disliked black nets; 19% dark green; 17% white; 14% dark blue; 10% pink; and 9% light green.

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. Those most frequently used were coils and insecticides. Consumers tended to purchase these products frequently, mostly from general shops.

- Awareness (unprompted) of mosquito control products was highest for mosquito nets (85%), mosquito coils (85%), and aerosol insecticides (80%). The most frequently used products were coils (61%) and aerosol insecticides (54%). (These use figures may be low, given that “use” was asked only of those who indicated unprompted that they were aware of a given product.) Use of aerosols was higher in urban areas whereas use of coils and nets was higher in rural areas.
- The average reported prices were \$1.37 for 180-220 ml can of aerosol insecticide and \$1.85 for a 300-350 ml can; single mosquito coils averaged \$0.07. Nearly three-fourths (72%) of households that had purchased mosquito coils in the 12 months prior to the interview did so within the last 7 days. Three-fourths (75%) of households purchased aerosols within the last month or less. Aerosols were purchased mostly in general shops (71%), as were coils (93%).

Perceptions of mosquito control attributes, products, and brands

The most highly valued attributes that consumers wanted in an insect control product were that it kills mosquitoes and other insects and reduces malaria. Of all insect control products, nets were rated most highly among consumers on most attributes. Insecticides were rated most highly on killing mosquitoes and other insects and being an effective brand. Consumers were most aware of Yotox, Baygon, and Elf brands and associated them most with the attributes of insect control products they value.

- On a scale of 1-7, respondents said that the most important attributes of mosquito control products were “kills mosquitoes” (6.76), “kills other insects, other than mosquitoes” (6.57), “reduces malaria” (6.51), “is safe to use around children (6.28), and “is a long-term solution to mosquito problems” (6.19).
- Respondents rated mosquito nets more highly than all other insect control products on the majority of insect control product attributes including, is safe to use around children (89%), reduces malaria (83%), is a long-term solution to mosquito problems (78%), keeps mosquitoes away while sleeping (71%), and is a good value for the money (64%). Sprays/aerosols were considered to be the best products to kill mosquitoes (92%), to kill other

insects other than mosquitoes (91%), and to rate higher than the other insect control products on “is a high quality/effective brand” (60%).

- Brand awareness was highest for Yotox (93%), Baygon (77%), and Elf (66%). Yotox, Baygon, and Elf were most associated with the insect control attributes consumers value.

PROGRAM/PRODUCT IMPLICATIONS:

The overall setting for ITM promotion and sales in Senegal 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;
- common use and relatively frequent purchase of mosquito control products;
- 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); 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.