

## MALI BASELINE EXECUTIVE SUMMARY

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**PURPOSE:** Provide baseline information useful to the public health community as well as the private sector involved in ITNs (insecticide-treated nets); provide a consumer perspective for commercial companies as they develop and supply their products; and serve as the basis for the design of promotional campaigns encouraging the purchase and correct use of these products. The main topics covered are:

- Knowledge and beliefs about malaria and nets
- Mosquito nets: access, ownership, treatment, and use
- Consumer preferences regarding mosquito nets
- Usage and attitudes regarding other mosquito control products

**METHODOLOGY:** Household Survey

**SAMPLE:** 1000 Malian households from 5 sites: Bamako, Kayes, Segou, Sikasso, and Mopti. 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:** July 2003

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### STUDY FINDINGS:

#### Knowledge and beliefs about malaria and mosquitoes, and exposure to promotion

Recognition of the term paludisme or palu was fairly high, but respondents were not well informed about the symptoms and causes of malaria. A much greater proportion of people had heard something about ITNs in the prior 2 months (when NetMark promotion had been implemented) than in the year before that.

- Recognition of the French term for malaria — paludisme or palu — was fairly high: 72%.
- Given that fever is the defining symptom of malaria, a somewhat low proportion — 51% of those who had heard of paludisme/palu — mentioned this symptom. Only 9% mentioned convulsions/fits, a symptom of severe malaria.
- A rather low proportion (59%) of those who had heard of paludisme/palu knew that mosquitoes are the cause, and only 15% of them knew that mosquitoes are the *only* cause. There were many misconceptions, with 40% of those who had heard of paludisme/palu attributing the cause to certain foods.
- The majority (72%) of those who had heard of paludisme/palu knew that children under five and pregnant women are the groups most susceptible to getting a serious case of malaria.
- Most respondents — 61% — said they had heard or seen something about nets treated with insecticide *in the last two months* — the time period during which NetMark promotion was implemented. A lower proportion — 37% — said they had heard or seen something on ITNs in the *year prior to the last 2 months* when there was no NetMark promotion.

- The main sources of information for those who had heard/seen information on ITNs *in the last 2 months* were family/neighbors (43%), TV (43%), and radio (38%). The main sources of information for those who had heard/seen information on ITNs *in the year prior to the last 2 months* (i.e., before NetMark promotion) were family/neighbors (44%), TV (24%), and radio (30%).

### Perceived advantages and disadvantages of net and ITN use

Nets are viewed very favorably, and there are no beliefs, fears, or misconceptions that present a significant barrier to net or ITN use.

- Virtually all respondents (99%) named at least one advantage for a child under five to sleep under a net, the most common being avoiding mosquito bites (79%) and avoiding malaria (57%). Only 6% named any disadvantage, the most common being that that nets can be hot, mentioned by only 3%.
- The vast majority of respondents (91%) named advantages for a child under five to sleep under a *treated* net, the most commonly mentioned being “protects against bites” (56%) and “better at preventing malaria” (44%). There was no disadvantage mentioned by more than 1% of respondents.
- The vast majority of respondents (90%) cited advantages for a pregnant woman to sleep under a *treated* net, the most common being that it protects against bites (52%) and malaria (50%). Only 5% named a disadvantage, with disagreeable odor being the most common, mentioned by less than 3%.

### Access to mosquito nets

Access to a place to get a mosquito net is fairly good in urban areas but not as good in rural areas.

- The market was the nearest place to get a net for 72% of households. Another 11% said a health facility would be the nearest place.
- Less than 2% said that mosquito nets were not available or that they did not know where to get them.
- Most (58%) would get to the nearest place by foot, and it would take an average of 26 minutes in urban areas and 75 minutes in rural areas to get there. Another 19% would travel by bus, which would take an average of 31 minutes in urban areas and 90 minutes in rural areas.

### Mosquito net ownership

Net ownership in the study sites was high. Tailor-made nets were as common as commercially-made nets. The majority of those who had commercial nets were unaware of brand. Most nets were obtained in the market, but in some areas non-commercial sources contribute to net ownership.

- The majority (73%) of households owned at least one (hanging) mosquito net; 48% of net-owning households owned more than one net. Ownership was highest in the Mopti site (91%) and lowest in the Bamako site (53%). Ownership was higher in urban (81%) than in rural areas (67%). Households of higher SES (socio-economic status) were more likely to own a net than households of lower SES.
- Nineteen percent (19%) of nets owned were acquired within the past year, and 18% were five or more years old.
- Most nets owned (65%) were bought in the market; very few nets were purchased in stores, pharmacies, or supermarkets. Twelve percent (12%) were obtained from a non-commercial source such as a health facility or project. Nets from non-commercial sources were going principally to the higher SES households.
- As high a proportion of nets were tailor-made (45%) as were manufactured (46%).

- Of those who owned a manufactured net, most (67%) did not know the brand of their net.
- The typical net owned is double-sized (63%), rectangular shaped (79%), and white (66%).
- Among those who paid for a net, the median price paid was 3500 CFA Francs, or about 6.34 USD.
- Of those who did not own a net, 86% said it was because of cost.
- Eight percent (8%) of households owned a non-hanging baby net.

### Mosquito net treatment

Awareness of treated nets was fairly high, but a minority of people treated their nets. Most treatment was done by the non-commercial sector.

- Most (73%) respondents had heard of treating mosquito nets with insecticide solution.
- One-fourth (25%) of nets owned had reportedly been treated at least once (either bought pre-treated or treated since acquired). The proportion of treated nets was highest in Mopti (39%) and lowest in Bamako (15%).
- Most nets (80%) that had been treated since acquired were treated outside the home, most commonly by a health agent; 87% were reportedly treated within the past six months.
- No insecticide treatments were obtained from commercial sources.
- Most nets that had been treated were treated once (68%) or twice (21%).
- About half (51%) received the net treatment for free. Among those who paid, the average cost was 625 CFA Francs (about 1.13 USD).
- The great majority of nets (85%) had been washed. Most (73%) of washed nets were reportedly washed at least once a month.

### Mosquito net use (“Appropriate Use”)

Vulnerable groups were more likely to have slept under a net than other household members, but nets are not used year-round.

- Among children under five in net-owning households, 73% slept under a net (treated or untreated) the prior night; 25% slept under a *treated* net the prior night.
- Among children under five in all households in the sample, 53% slept under a net (treated or untreated) the prior night; 18% slept under a *treated* net the prior night.
- Among WRA (women of reproductive age: 15-49) in net-owning households, 69% slept under a net (treated or untreated) the prior night; 25% slept under a *treated* net the prior night.
- Among WRA in all households, 51% slept under a net (treated or untreated) the prior night; 19% slept under a *treated* net the prior night.
- Among pregnant women in net-owning households, 64% slept under a net (treated or untreated) the prior night; 25% slept under a *treated* net the prior night.
- Among pregnant women in all households, 50% slept under a net (treated or untreated) the prior night; 20% slept under a *treated* net the prior night.
- The average number of months per year mosquito nets were used was 7.6.

## **Consumer mosquito net preferences**

- About half of respondents (52%) preferred conical nets; 41% preferred rectangular nets.
- The preferred size by far was extra large (85%).
- There are strong urban-rural differences in net color preference, with urban respondents favoring white, light blue, and a range of other colors; and rural respondents preferring bright colors such as light green, pink, and turquoise. Black was the least liked color.

## **Use of other mosquito control products**

- Awareness of nets, coils, and aerosols was nearly universal.
- Use of commercial mosquito control products is moderate: 53% reported using coils in the past 12 months, and 32% reported using aerosols.
- Those who do use these products use them frequently — at least several times a week during mosquito season.
- Both coils and aerosols are usually purchased from a store.

## **Perceptions of mosquito control attributes, products, and brands**

People value a mosquito control product that kills mosquitoes and other insects, reduces malaria, and is safe around children. Not all of the valued attributes are highly associated with nets or ITNs. ITNs are seen as a modern solution to the mosquito problem. Few people could name or recognize any mosquito net brands.

- All mosquito control attributes named were considered fairly important. The most highly ranked attribute on a scale of 1-7 was “kills mosquitoes” (6.6), but “kills other insects”, “is safe around children”, and “reduces malaria” all received rankings virtually as high (6.5).
- The product associated with the most highly valued attribute — killing mosquitoes — was aerosol. Aerosols were also highly associated with killing other insects.
- Mosquito nets — not necessarily treated ones — were most associated with being safe around children, reducing malaria, and being a long-term solution.
- The attribute most associated with ITNs was “modern solution”, far outranking coils, aerosols, and untreated nets. ITNs, along with untreated nets, were the products most associated with reducing malaria. Treated nets were also rated higher than any other product (including untreated nets) as a high quality product.

## SUMMARY OF MALI SITUATION FOR ITN PROMOTION

The situation in Mali is very favorable for ITN promotion. There is a “net culture” in Mali: nets are widely used and favorably viewed. Further, most people have heard of ITNs; they are considered more modern than untreated nets, and people do not have negative perceptions of the insecticide. The main focus should be on improving access and reducing cost of ITNs, especially those that are longer lasting. Additionally, special attention should be given to net treatment and re-treatment, given the large quantity of untreated nets already in households. Promotion should build on the perception that ITNs are a modern solution, emphasizing that they kill mosquitoes and are more effective against malaria — a long-term solution that is worth the cost.

Favorable factors include:

- An established net culture, including acceptance of the nets and ITNs across the SES spectrum
- General willingness to pay current prices for nets (and ITNs), even among lower SES groups
- Fairly good level of awareness of ITNs
- High levels of use of mosquito control products, including nets
- Favorable attitudes toward mosquito nets and ITNs compared to other insect control products
- Substantial increases in exposure to messages about malaria and ITNs within a short time following campaign launch
- Evidence of higher net and ITN coverage rates in areas where they have been promoted
- Strong valuing of the product attributes that ITNs deliver
- Extremely high level of perceived advantages of net and ITN use by vulnerable groups and extremely low level of perceived disadvantages

Main barriers to overcome for ITN promotion are:

- Perceived (and real) high cost of nets, with highest prices being paid by those least able to afford the cost
- Subsidized nets are going mainly to high SES households
- Limited access to ITNs in some areas
- Limited availability of ITNs in areas where people are most likely to purchase nets (i.e., markets)
- Lack of variety in net size, shape, and color and mismatch between net/ITN product features and consumer preferences
- Extremely low education and literacy levels, which has implications for communication approaches and for comprehension of product use and re-treatment instructions
- Lack of strong branding of nets and insecticide treatments
- Minimal availability of insecticide treatments through commercial sector and no virtually no experience among population with use of individual treatment kits
- Inadequate net treatment practices, including lack of regular treatment and re-treatment of nets
- Fairly high level of misinformation about the symptoms and causes of malaria that may limit the perception of ITNs as a solution to malaria

The last section of this report, PROGRAM AND PRODUCT IMPLICATIONS, details the specific implications of these findings for developing ITN products and promoting their use.