



SUMMARY OF SENEGAL 2004 ITN SURVEY AND COMPARISON WITH 2000 BASELINE SURVEY

HIGHLIGHTS

In 2000, 70% of respondents were aware of treated nets

In 2004, 97% of respondents were aware of treated nets

In 2000, 34% of households owned a net

In 2004, 56% of households owned a net

In 2000, 8% of households owned an ITN*

In 2004, 39% of households owned an ITN*

In 2000, 18% of children under five slept under a hanging net the prior night

In 2004, 35% of children under five slept under a hanging net the prior night;

38% slept under a hanging or baby net

In 2000, 5% of children under five slept under an ITN the prior night*

In 2004, 24% of children under five slept under an ITN the prior night*

In 2000, 22% of pregnant women slept under a net the prior night

In 2004, 42% of pregnant women slept under a net the prior night

In 2000, 5% of pregnant women slept under an ITN the prior night*

In 2004, 31% of pregnant women slept under an ITN the prior night*

**Roll Back Malaria Core Indicator; ITN=long lasting net or one treated within the prior 12 months*



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SUMMARY

SENEGAL 2004 ITN SURVEY AND COMPARISON WITH 2000 BASELINE SURVEY

NetMark conducted a baseline survey on ITNs in Senegal in 2000, and a follow-up survey in 2004. Both surveys included the same five sites and sampling procedure, and were conducted at the same time of year (September-October).

SAMPLE

- Sites: Dakar, Thiès, St. Louis, Kaolack and Tambacounda
- Sample size
 - In 2000: 1000 respondents (400 urban; 600 rural)
 - In 2004: 2000 respondents (800 urban; 1200 rural)
- Respondents: women aged 15-49 who were mothers or guardians of at least one child under the age of five

KEY FINDINGS

Net Ownership

- The percent of households owning at least one net has increased considerably: in 2000, it was 34%; in 2004, 56%. As in 2000, ownership varied widely by site in 2004: from 31% in Dakar to 83% in Tambacounda.
- Net ownership remained generally equitable by socio-economic status (SES).
- There was little difference in the percent of households owning a net in rural (58%) and urban (53%) areas.
- Among net-owning households, the average number of nets owned has increased. In 2000, the average number of nets owned in net-owning households was 2.1; in 2004 it was 2.8. The number of nets was highest in St. Louis site in both years, increasing by almost one full net per household from 2.8 in 2000 to 3.7 in 2004.
- Baby nets are not common: in 2004, 10% of households owned a baby net with a built-in frame¹. Baby net ownership was not asked about in 2000.
- In 2000, 49% of those in Senegal who did not own a net (33% of the whole sample) said that cost was a barrier to ownership. There are now fewer households that do not own nets; when those households were asked to name reasons they did not own a net, 63% of non net-owning households (28% of the whole sample) said that cost was a barrier.

¹ Baby nets are small umbrella-type nets that are not hung but are placed over an infant. They are not counted in household net coverage figures.

ITN Awareness and Ownership

- Awareness of *treated* nets is now nearly universal (97%), compared with 70% who had heard of treated nets in 2000.
- The proportion of households owning an ITN (a *currently treated* net) increased almost five-fold: from 8% in 2000 to 39% in 2004. Dakar site had the lowest proportion (20%) and Tambacounda the highest (69%).
- There was little difference in ownership of *ever-treated* and *currently-treated* nets by SES.
- ITN-owning households averaged 2.2 ITNs per household in 2004, up from 1.9 in 2000. Tambacounda had the highest average number of ITNs per household in 2004 (2.6).

Use of Nets and ITNs

Children under five

- Among all households, the percent of children under five sleeping under a hanging net the prior night doubled, from 18% in 2000 to 35% in 2004. There was little difference by urban/rural or by SES. However, there were large differences by site: from a low of 15% in Dakar to a high of 57% in Tambacounda sites.
- When those sleeping under baby nets were included, 38% of children under five in all households slept under some type of net. (No data on baby nets was collected in 2000.)
- Among all households, there was a five-fold increase in the percent of children under five sleeping under an ITN the prior night—from 5% in 2000 to 24% in 2004—ranging from lows of 9-10% in Dakar and Thies sites to a high of 47% in Tambacounda site.
- Within net-owning households, 60% of children under five slept under a net the prior night. This compares with 53% in 2000. When those sleeping under baby nets were included, 62% of under-fives in net-owning households slept under some kind of net. (No baby net data is available for 2000.)
- Within net-owning households, children under three were slightly more likely than those over three (but under five) to sleep under a net.
- There was no gender bias in childhood net use; approximately equal proportions of male and female children slept under a net.

Pregnant women

- Among all households, the proportion of pregnant women sleeping under a net nearly doubled from 2000 to 2004: from 22% to 42%. In 2004, the lowest proportion was in Dakar (27%) and Thies (32%) sites and the highest in St. Louis (50%) and Tambacounda (53%) sites.
- Among all households, 31% of pregnant women in 2004 slept under an ITN the prior night, a six-fold increase from 5% in 2000. In 2004, the lowest proportion was Dakar site at 16%, and the highest was Tambacounda site at 49%.

- Within net-owning households, in 2004, 66% of pregnant women slept under a net the previous night, an increase from 59% in 2000.

General patterns

- Within net-owning households, the household members most likely to sleep under a net were children under five (especially children under one) and pregnant women. Those least likely to sleep under a net were adult males (age 15 and over).
- In 2004, 9% of nets owned were not used the prior night. Rates of non-use were highest in Thies site (16%) and urban areas (14%), especially urban Dakar (19%). However, this was a substantial improvement from 2000, when non-use in urban Dakar was 33%.
- The average number of months during the year that nets were used in 2004 was 6.3, up somewhat from 5.6 in 2000.

Characteristics of Nets²

Net Treatment and Washing

- There has been a tremendous increase—from 30% to 73% – in the proportion of nets that have been treated in Senegal. In Tambacounda site, 88% of nets were treated, up from 13% in 2000, moving this site from last to first place in proportion of treated nets.
- In 2000, no nets came packaged (“bundled”) with an insecticide treatment; in 2004, 4% of nets were reported to be bundled.
- Among nets that were treated since acquired, 88% were treated outside the home the last time they were treated, 8% were treated at home by a member of the household, and 4% were treated by someone who came to the house specifically to treat the net. The percentage treated by a member of the household at home was highest in the highest SES quintile (30%), in urban areas (15%) and in Dakar (36%) and Thies (25%) sites.
- For most (60%) nets treated since acquired, treatments were provided free (86% in Tambacounda site, which may help explain the high proportion of treated nets there). Among those who paid and remembered a price, the median price was 300 FCFA or US\$0.55 US. The cost of treatment rose as SES rose. In 2000, 12% of nets had been treated for free, and the median price was 250 FCFA or US\$0.34.
- The treatment product *for nets treated at home* came from both commercial and non-commercial sources: 52% came bundled with the net, 12% from a commercial outlet, and 36% from a non-commercial source, primarily a health facility. In 2000, no nets were bundled with insecticide, and nearly all treatment products (89%) came from a health facility.
- Nets appear to be washed less frequently in 2004 than in 2000 (although nets are now newer and may not yet need washing). In 2000, 77% of nets had ever been washed, with 38% washed at least once a month. In 2004, 61% had ever been washed, with 26% washed at least once a month.

² This section reports on proportions of *nets*, not on proportions of *households* owning nets.

Net type, age, source, brand, price, and purchaser

- The proportion of nets that was tailor-made remained about the same: 20% in 2000 and 23% in 2004. Tailored nets were most common in St. Louis site, in rural areas, and in the three lowest SES quintiles.
- A far greater proportion of nets were recently acquired—that is, nets are newer. In 2004, 75% of nets had been acquired within the prior two years, compared with 47% in 2000.
- In 2004, most nets (64%; 80% in Tambacounda site) were obtained from non-commercial sources, mostly from clinics. In 2000 most were from a commercial source, primarily from markets. Fifty-five percent (55%) of nets were from markets in 2000 but only 16% in 2004 were. This does not mean that the number of nets acquired from commercial sources decreased, but that by 2004 there was a large increase in nets available from non-commercial sources – primarily health facilities.
- The brand was unknown for most (75%) commercially-made nets owned. The main brands identified by the respondent or a label were PermaNet (8%), Sentinelle (5%), NetMark (5%) and KO Net (4%).
- Reported net prices ranged considerably, with a median price of 3000 FCFA (US\$5.02). Over one-fourth (28%) did not know the cost of the net, and 3% of nets were obtained for free. The median price was lowest in Tambacounda site (1000 FCFA or US\$1.82), where clinics were a major source of nets. The median price increased with SES.
- About one-third (34%) of nets were obtained by the respondent's husband, and one-fourth by the respondent.

Net size, shape, and color

- Most people are continuing to purchase larger nets: in 2000, 89% were double or triple/king; in 2004, 96% were.
- Almost all nets were rectangular-shaped in both years, but the proportion decreased from 88% in 2000 to 70% in 2004 as more people acquired round/conical nets.
- The great majority of nets owned (83%) were white.

Net Preferences

- There was a definitive preference for very large nets: 80% preferred triple/king nets. (Although 80% preferred triple/king size, only 45% owned this size.) The size preferences were very similar in 2000.
- Two-thirds (64%) of respondents preferred round/conical-shaped nets and one-third (29%) preferred rectangular. The preference for conical was higher than in 2000 (54%).
- The three most preferred colors were white (23%), pink (16%), and turquoise (12%). The color most disliked was black (27%).

Brand awareness, and use and perceptions of other insect control products

- There was low brand awareness in Senegal: 3% could name a net/ITN brand unprompted, and a total of 40% recognized at least one brand after being shown a card with logos and told the name associated with each. There was higher awareness among urban respondents, and awareness increased with SES quintile. Permanet was the most recognized brand at 16% (prompted and unprompted), followed by Sentinelle (12%), NetMark (10%), KO Net (10%), KO Net Nouveau (6%) and Palunet (6%).
- Awareness of coils and aerosol insecticides was nearly universal. Use of these commercial insect control alternatives was moderate: 65% had used coils during the mosquito season in the past 12 months, and 44% had used aerosols. In 2000, more respondents had used aerosols (54%).
- Among various mosquito control products – coils, sprays, nets, and ITNs – ITNs are ranked highest on seven of the nine attributes that people want in such products and second on the other two, behind aerosols on “kills other insects” and behind coils on “keeps mosquitoes away while sleeping”.

Knowledge of malaria and perceptions of nets

Recognition of and knowledge about malaria

- As in 2000, recognition of the French term *paludisme* or *palu* for short (“malaria”) was very high at 85%.
- Knowledge of the symptoms of malaria was very good. The main symptoms named in 2004 were fever (89%), nausea/vomiting (51%), headaches/body aches (44%) . Only 3% mentioned convulsions, a symptom of severe malaria. These figures are similar to 2000.
- When asked what causes malaria, 93% mentioned mosquitoes, up from 88% in 2000. Most people also mentioned other causes such as standing water or dirty surroundings (41%) and the weather (32%), which were also the most common responses in 2000.
- The proportion of respondents knowing both groups most vulnerable to malaria (children under five and pregnant women) increased from 86% in 2000 to 91% in 2004. The main other family member mentioned in both years was a child of 6 years.

Perceived advantages and disadvantages of nets and ITNs for young children and pregnant women

- Almost all respondents named advantages for a child under five to sleep under a *net*, chiefly to avoid mosquito bites (63%), avoid malaria (33%), avoid other insects (26%), and sleep better (25%). These were the top four advantages of a net named in 2000 as well.
- The most mentioned advantages for a child under five to sleep under an *ITN* were that it works better or child gets fewer bites than with an untreated net (73%), is better at preventing malaria (44%), repels mosquitoes (43%), kills mosquitoes (43%). There was an increase in 2004 in the percent mentioning that ITNs work better than untreated nets and that they are better at preventing malaria.

- The advantages most mentioned for a pregnant woman to sleep under an ITN were that it works better or she gets fewer bites than with a net (64%), it is better at preventing malaria (55%), woman/fetus more protected (51%). The proportion mentioning these increased in 2004.
- Untreated nets are now viewed less favorably: in 2000, 15% of respondents named a disadvantage for a child under five to sleep under a net; in 2004, 48% did so. The most common disadvantage named in 2004 was that mosquitoes still get in the net or bite through the net (43%).
- ITNs for young children are now viewed more favorably: in 2000, 24% of respondents named a disadvantage for a child under five to sleep under an ITN; in 2004, 11% did so. In 2004, the disadvantages most frequently cited were that the ITN can smell bad (6%) and it could be dangerous if the child sucked on it (4%), or could cause irritation or cough (3%). Levels of fear about the dangers of treated nets for young children or smell were somewhat higher in 2000.
- ITNs for pregnant women are now viewed more favorably: in 2000, 27% named a disadvantage for a pregnant woman to sleep under an ITN; in 2004, only 10% did so. The disadvantages most frequently cited were that the ITN can smell bad (6%), it could be dangerous to the fetus, or cause nausea or vomiting in the woman (4%), and could cause irritation or cough (3%). Levels of fear about the dangers of treated nets for pregnant women or smell were much higher (more than double) in 2000.

Communication

- The proportion of respondents who had seen or heard information about nets treated with insecticide in the prior 12 months was very high at 90%. Exposure to information on ITNs was higher among owners of ever-treated nets, increased with SES quintile, and was higher in urban areas than rural ones.
- Among those who had seen or heard information on ITNs in the last 12 months, the main sources of information were mass media – TV (57%) and radio (53%). The next highest sources of information were health staff (41%) and friends/neighbors/relatives (26%).
- Among those who had seen or heard information on ITNs in the last 12 months, the ideas that were remembered most were: prevent malaria (49%), good to use an ITN (40%), and protects against mosquitoes/bites (33%).

SUMMARY OF FAVORABLE FACTORS AND CHALLENGES

Since the baseline in 2000 and NetMark’s involvement in Senegal, there have been dramatic increases in net and ITN ownership, and in the number of nets/ITNs per net-owning household. At the same time, net and ITN ownership across socio-economic segments has remained equitable or improved. In the past four years there has been a tremendous increase in the proportion of nets that are treated. Additionally, since 2000, the proportion of children and pregnant women who slept under a net or ITNs the prior night has increased substantially. The perception of ITNs has become extremely favorable in the public mind.

Favorable factors and trends include:

- There is “net culture”, and now, an “ITN culture” in much of Senegal: nets/ITNs are used across SES groups, in urban and rural households, and are favorably viewed. These measures have all improved since 2000.

- Almost all people have heard of ITNs, compared with less than three-fourths who had in 2000; promotion can move beyond awareness to focus on even higher ownership and use.
- People differentiate between nets and ITNs, perceiving ITNs to be far superior to nets on all desired attributes of mosquito control methods. The proportion of people with negative perceptions of the insecticide has decreased since 2000.
- A high proportion of nets (much higher than in 2000) was obtained in the past 1-2 years, indicating that recent promotion and distribution efforts have been effective.
- There is fairly high use of aerosols and very high and frequent use of coils, suggesting that people see mosquitoes and other insects as a problem and find it worthwhile to pay to combat the problem. The proportion of people using aerosols decreased in four of the five sites since 2000, as the proportion of people owning nets and ITNs has increased.
- ITNs are more favorably viewed than aerosols and coils on most of the desired attributes; more people may be open to substituting ITNs for aerosols and coils.
- Within net-owning households, the youngest children and pregnant women are given preference for sleeping under a net and it should be easy to reinforce and expand this practice.
- In 2004, more people are purchasing larger nets and conical ones, indicating a greater availability of the preferred size and shape.

Main barriers to overcome are:

- The proportion of treated nets could be increased, especially in Thies and St. Louis. People need to know and act on the fact that they can convert nets to ITNs.
- Since the great majority of post-treated nets were treated for free by health workers, there is little experience in acquiring single treatments commercially for re-treating.
- The perceived (and real) cost of nets is still high for many households – especially among a population largely paid on an occasional basis.
- There is still a perceived lack of availability in Tambacounda site, among the small proportion of respondents who do not yet have a net.
- There is lack of variety in net size, shape, and color; and mismatch between features of net/ITN products available and those that consumers want.
- Commercial ITNs face weak brand recall, strong competition from free and subsidized nets, and continued frequent use of both coils and aerosols.
- Misconceptions about causes of malaria other than mosquitoes may limit the perception of ITNs as a solution to malaria.
- The idea that nets are not needed is a barrier to increased use in urban and upper SES households, where use of window and door screens and/or aerosols is common. The idea is also prevalent in Dakar and St. Louis sites.
- Net and ITN ownership and usage in Dakar site, particularly in urban Dakar is lowest among the entire sample.

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