



**NetMark
2008 Household Survey on
Insecticide-Treated
Nets (ITNs)
in Ghana**



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CREDITS

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Dr. Carol Baume has been Principal Investigator for the Netmark household surveys since the baselines in 2000. Ms. Celeste Marin co-conducted the Ghana survey, including all aspects of preparation and fieldwork, and was also responsible for sampling and data management and analysis. Dr. Ana Franca Koh also served as data analyst. Dr. Megan Deitchler of AED provided technical advice on sampling. Ms. Efua Orleans-Lindsay produced the tables and graphs.

The AED-Satellite Center for Health Information Technology programmed the questionnaire on the PDAs used for data collection, and provided a consultant, Mr. Ernest Mwebaze of Uganda Chartered Healthnet to provide technical assistance during training and fieldwork.

Business Interactive Consulting group in Ghana recruited and managed the field teams.

LIST OF ACRONYMS

| | |
|--------|--|
| AED | Academy for Educational Development |
| ANC | Ante-natal care |
| DHS | Demographic and Health Surveys |
| GHS | Ghana Health Service |
| GFATM | Global Fund for AIDS, tuberculosis, and malaria |
| ITNs | Insecticide-treated nets |
| LLINs | Long-lasting insecticide-treated nets |
| MOH | Ministry of Health |
| RBM | Roll Back Malaria |
| SES | Socio-economic status |
| UNICEF | United Nations' Children's Fund |
| USAID | United States Agency for International Development |
| WHO | World Health Organization |
| WRA | Women of reproductive age |

MAP OF GHANA



Raw 802424 (A00953) 12-95

NETMARK 2008 SURVEY OF ITNS IN GHANA: OVERVIEW

PURPOSE: Measure changes in the following since 2004:

- Ownership of mosquito nets and ITNs
- Use of nets and treated nets by vulnerable groups
- Characteristics of nets owned
- Knowledge and beliefs about malaria, nets, and ITNs
- Consumer preferences regarding mosquito nets; use of mosquito control products

SAMPLE:

- Sites
 - Accra: Accra and Eastern regions, except Afram Plains district
 - Ashanti: Ashanti region
 - Central: Central region
 - Volta: Volta region
 - Northern: Northern region east of the Volta River
 - Upper West: Upper West region plus Bole and West Gonja districts of Northern region
- Sample size
 - In 2004: 1420 respondents
 - In 2008: 1796 respondents
- Respondents: women age 15-49 who were pregnant or responsible for at least 1 child under age 5

DATA COLLECTION: August 2008, and comparison with data collected August 2004

HIGHLIGHTS:

- % of respondents aware of treated nets (ITNs)
 - In 2004: 91%
 - In 2008: 99%
- % of households owning an ITN
 - In 2004: 11%
 - In 2008: 64%
- % of children under five who slept under an ITN the prior night
 - In 2004: 8%
 - In 2008: 41%
- % of pregnant women who slept under an ITN the prior night
 - In 2004: 7%
 - In 2008: 32%
- Nets that were paid for were more likely to be used than free nets:
67% of paid nets were used the prior night compared to 55% of free nets.

SECTION 1

INTRODUCTION

1.1 BACKGROUND

The Problem of Malaria

Malaria is a major health problem in Africa. Each year, 300-500 million people worldwide suffer from the disease¹, with some estimates as high as 515 million². Of the more than one million people who die from malaria each year, 9 out of 10 live in sub-Saharan Africa^{3 4} and the vast majority are children less than five years of age. Pregnant women are also particularly susceptible to the disease. Malaria during pregnancy can cause severe anemia, miscarriage, stillbirth, and maternal death, and in endemic areas, may account for up to 40% of preventable low birth weight among newborns⁵, the single greatest risk factor for neonatal death.^{6 7} Malaria places a staggering economic burden on already strained national economies and on struggling families. The disease has been estimated to cost sub-Saharan African nations more than 12 billion dollars every year in lost gross domestic product⁸ and to slow economic growth in Africa by up to 1.3% each year⁹. In addition, malaria reduces human work capacity and productivity, and affects social development indicators such as child health and school attendance.¹⁰

Malaria transmission can be reduced by up to 90% through the use of insecticide-treated nets (ITNs), according to efficacy trials.¹¹ Nightly ITN use can prevent one-fifth of child deaths from all causes, with some country-specific studies in Africa suggesting that as much as 42% of all-cause mortality among children under-five can be averted.¹² ¹³ Use of ITNs among pregnant women has been associated with lower prevalence of malaria infection, fewer premature births, and significant reductions in all-cause maternal anemia.^{14 15} Even untreated nets provide some protection, about half that of a treated net.^{16 17}

In 2000 in most African countries, few households owned nets and even fewer owned ITNs. Between 2000 and 2004, net and ITN ownership increased substantially in many countries through strategies of reducing taxes and tariffs, commercial market development, social marketing activities, demand creation, and efforts to reach the most vulnerable populations with subsidized ITNs. From 2004 to the present, new programs are emphasizing mass distribution of ITNs free of charge to households.

NetMark

NetMark is an eight-year project funded by the United States Agency for International Development (USAID) to prevent malaria by increasing access to and appropriate use of ITNs in sub-Saharan Africa. NetMark aims both to develop a sustainable commercial market to create a steady supply of ITNs, and to ensure that vulnerable groups have access to free or subsidized ITNs through voucher programs. In addition to expanding the number of households that own ITNs, the project also seeks to increase nightly use of treated nets, especially by children under five years of age and pregnant women. NetMark began in 1999 and is managed by the Academy for Educational Development (AED). Its partners include over 40 national and international insecticide and net manufacturers, product distributors, and advertising companies.

Malaria in Ghana

Malaria is a major cause of morbidity and mortality in Ghana, directly contributing to poverty, low productivity, and reduced school attendance. According to the MOH, between 3-3.5 million cases of malaria are reported each year... Malaria is reported to account for 61% of under-five hospital admissions and 8% of admissions of pregnant women. However, the malaria statistics captured by health facility data are well recognized to greatly underreport the extent of malaria morbidity and mortality. Given that the under-five mortality rate of 111/1000 is well documented, and assuming that malaria is responsible for an estimated 22% of under-five mortality and 9% of maternal deaths in Ghana (WHO 2005), one can conservatively estimate that 20,000 children under five die from malaria in Ghana each year.

--PMI Malaria Operational Plan – FY08

1.2 SURVEY OBJECTIVES, SAMPLE AND SITES, AND IMPLEMENTATION

Objectives

As part of a comprehensive research agenda that includes both market and behavioral research, NetMark conducts periodic household surveys on ITN-related topics in selected countries. The survey provides quantitative information for the public health community as well as to the commercial sector. Survey topics include:

- Ownership of mosquito nets and ITNs
- Use of nets and treated nets by vulnerable groups and other family members
- Net treatment practices
- Characteristics of nets owned
- Knowledge and beliefs about mosquitoes and malaria; exposure to information about ITNs
- Perceptions of treated and untreated mosquito nets
- Consumer preferences regarding mosquito nets

NetMark has conducted household surveys in the following countries and years:

Table 1.1 NetMark Surveys: Countries and Dates

| Country | 2000 | 2003 | 2004 | 2008 |
|------------|------|------|------|------|
| Mozambique | X | | | |
| Uganda | X | | | |
| Mali | | X | | |
| Zambia | X | | X | |
| Nigeria | X | | X | X |
| Senegal | X | | X | X* |
| Ethiopia | | | X | |
| Ghana | | | X | X |

*in conjunction with the Malaria Indicator Survey

Summary reports, full survey reports, and questionnaires for all countries are available on the web at www.netmarkafrica.org/research.

Sample and Sites

Procedure

The 2008 survey was conducted among 1796 Ghanaian households with women of reproductive age (15-49) who were pregnant or mothers/guardians of children under five years of age. The sites included in the study were Accra, Ashanti, Central, Volta, Northern, and Upper West. The regions and districts included in each site are listed in the table below.

Table 1.2 Ghana Sites and Sample Sizes

| SITE | 2004 | 2008 |
|---|-------------|-------------|
| Accra: Accra and Eastern regions, except Afram Plains district | 231 | 639 |
| Ashanti: Ashanti region | 240 | 459 |
| Central: Central region | 70 | 207 |
| Volta: Volta region | 140 | 202 |
| Northern: Northern region east of the Volta River | 291 | 180 |
| Upper West: Upper West region, plus Bole and West Gonja districts of Northern region | 309 | 109 |
| TOTAL | 1420 | 1796 |

Using a standardized multi-stage sampling procedure, NetMark selected independent samples for each survey. In 2008, 180 clusters were selected with probability proportionate to size, and interviews were conducted in 10 households per cluster. This approach resulted in a self-weighting sample. In 2004, clusters were allocated equally to each site (with Accra, Eastern and Central regions comprising one site), with 10 interviews in each of 142 clusters. Data from 2004 have been weighted for all analyses in this report so that they are comparable to 2008.

Annex A describes the sample and procedure in more detail. Because the sample includes only households with a child under five, and was conducted only in malarious areas, basic ownership and use indicators are likely to be higher than results obtained from national random sample surveys such as the Demographic and Health Surveys (DHS).

Annex B contains descriptive data on the Ghana sample and information on how the socio-economic status (SES) indicator was calculated.

ITN Activities in the Sites

ITN activities varied by site. AED/NetMark has been extremely active in Ghana since 2004, creating demand by airing radio and television ads based on formative research; making ITNs available at subsidized prices through voucher schemes; and providing technical support to the private sector to create effective marketing and distribution systems. AED's Ghana Social Change Project continued demand creation, focusing more recently on "below the line" or community level communication. In 2006, The Global Fund has provided funds for the Ghana Ministry of Health and Ghana Health Service to distribute ITNs at no or reduced cost to families. Free ITN distributions have taken place nationwide during integrated Child health campaigns in November of 2006, 2007, and 2008. The World Bank has distributed ITNs free to families in Ashanti Region. The following table summarizes ITN promotion activities in the study sites.

Table 1.3: ITN Promotion Activities in the Study Sites

| SITE | Actor / Organization | Activities | Dates |
|---|---------------------------------|---|--------------|
| Accra: Accra and Eastern regions, except Afram Plains district | AED/NetMark | BCC/demand creation | 2006 – |
| | AED/Ghana Social Change Project | BCC/demand creation | 2005 – |
| | MOH/GFATM | Voucher Scheme in Eastern Region and limited ANC distribution | 2006 – 2008 |
| Ashanti: Ashanti region | AED/NetMark | BCC/demand creation | 2006 – |
| | GHS/GFATM | Voucher program and limited ANC subsidized distribution | 2006 – |
| | GHS/World Bank | Free distribution | 2007 – 2008 |
| Central: Central region | AED/NetMark | Voucher program in 163 clinics in all 13 districts | 2007 – |
| | GHS/GFATM | Limited ANC subsidized distribution | 2007 – |
| | AED/Ghana Social Change Project | BCC | 2005 – |
| Volta: Volta region | AED/NetMark & GHS | Voucher program | 2004 – 2008 |
| | AED/NetMark | BCC/demand creation | 2006 – 2008 |
| | GHS / indigenous NGOs | Community level & limited ANC subsidized distribution | 2006 – 2008 |
| | GHS/GFATM | Limited ANC subsidized distribution | 2006 – 2008 |
| Upper West: Upper West region + Bole and West Gonja districts of Northern region | GHS/GFATM | Limited ANC subsidized distribution | 2006 – |

ANC = ante-natal care

GHS = Ghana Health Service

GFATM = Global Fund for AIDS, tuberculosis, and malaria

MOH = Ministry of Health

Implementation

The data were collected from 1796 households in August 2008, during the rainy season. The initial household survey was carried out at the same time of year, in August of 2004. Nearly all of the survey questions were the same as those in 2004, in order to enable comparability of data.

The research was designed and carried out by NetMark, which contracted with Business Interactive Consulting to organize and manage the fieldwork. Responses were entered directly into PDAs (personal digital assistants, or handheld computers). AED/Satellite programmed the PDAs and provided technical support, including arranging on-the-ground technical support from Uganda Chartered HealthNet. AED staff analyzed the data and wrote the report.

1.3 ORGANIZATION OF REPORT AND TABLES

This report intends to serve the data needs of both the public health community and the commercial sector for ITNs, and compare findings from 2004 and 2008. The report attempts to present a large amount of data in a standard and accessible way. It includes a complete set of tables to serve as a data resource, accompanied by statements summarizing the main results.

Most of the tables in this report are broken down in the following way for both 2004 and 2008:

- By **site**: the six primary sampling areas (Accra, Ashanti, Central, Volta, Northern, Upper West), *each of which includes both urban and rural areas*
- By **urban-rural**: all urban respondents across sites compared with all rural respondents across sites
- By **urban Accra** only: only the *urban* households in the Accra site, i.e., only the city of Accra
- By **socio-economic status (SES)**: a scale broken into quintiles (scale description found in Annex B)

These breakdowns are combined in one table, set up as follows:

Table x.x:

Among... [specification of denominator]

| | | TOTAL | Site (city plus surrounding rural areas) | | | | | | Urban Accra only | Urban/Rural | | Socio-economic status | | | | | |
|----------|------|-------|--|---------|---------|-------|-----------|------------|------------------|-------------|-------|-----------------------|---|---|---|--------|--|
| | | | Accra | Ashanti | Central | Volta | North-ern | Upper West | | Urban | Rural | 1 Low | 2 | 3 | 4 | 5 High | |
| | 2004 | | | | | | | | | | | | | | | | |
| | 2008 | | | | | | | | | | | | | | | | |
| BASE (N) | 2004 | | | | | | | | | | | | | | | | |
| BASE (N) | 2008 | | | | | | | | | | | | | | | | |

SECTION 2 NET AND ITN OWNERSHIP

2.1 OWNERSHIP OF NETS AND TREATED NETS

This Section reports the proportion of households owning nets of different treatment status. If a household owned more than one net, the household was categorized according to the most recently treated net. This section also reports on the proportion of nets that are of different treatment status. A series of questions was asked to determine whether each net owned is currently treated—thereby qualifying it as an ITN.

Net and ITN Ownership Patterns

- The percent of households owning at least one net (whether ITN or not) increased tremendously: from 29% in 2004 to 71% in 2008. The percent of households owning at least one ITN made even larger gains, increasing nearly six-fold: from 11% to 64%.
- The greatest gain in net ownership was in Central Region: soaring from 9% to 73%, with nearly all nets owned being ITNs.
- Unlike in 2004, net ownership in 2008 was fairly equal across regions. It was also fairly equal by urban-rural location. Households of higher socioeconomic status (SES) were only slightly more likely to own a net than poorer households.
- More households now own more than one net: In 2008, 36% of households owned more than one net, compared to 27% in 2004. Among net-owning households, the average number of nets owned increased marginally: from 1.4 in 2004 to 1.5 in 2008.

DEFINITIONS

Net: any hanging net for use while sleeping regardless of whether it has ever been treated; excludes baby nets (defined below) but includes cot nets which are hung or draped over a crib.

ITN or currently-treated net: a net that is an LLIN (long-lasting insecticide-treated net), or is pre-treated and has been purchased within the last 12 months, or has had insecticide put on it up to and including the last 12 months. This is equivalent to the RBM definition of an ITN.

Baby net: a small umbrella-type net that is not hung but is placed over an infant. It is often used to keep flies off a sleeping infant during the day, but can also be used at night. Baby nets are rarely treated, and the umbrella frame precludes dipping the netting in an insecticide solution. Baby nets are not counted in the household net ownership figures, but are reported here separately.

Fig 2.1 Percent of households owning nets and ITNs 2004 & 2008

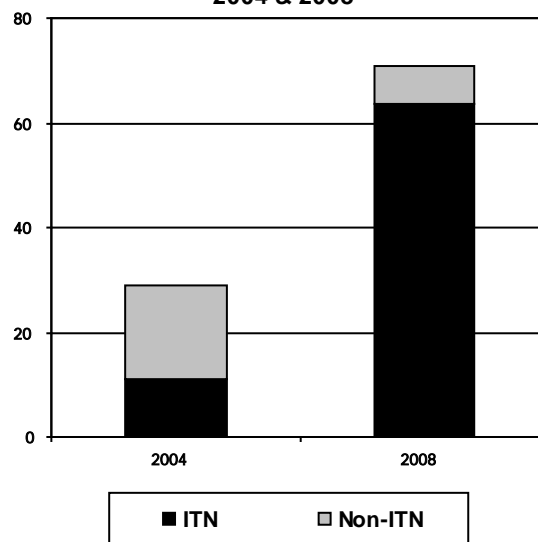


Figure 2.2

**Percent of households owning a net/ITN
2004 and 2008, by site, urban-rural, and SES**

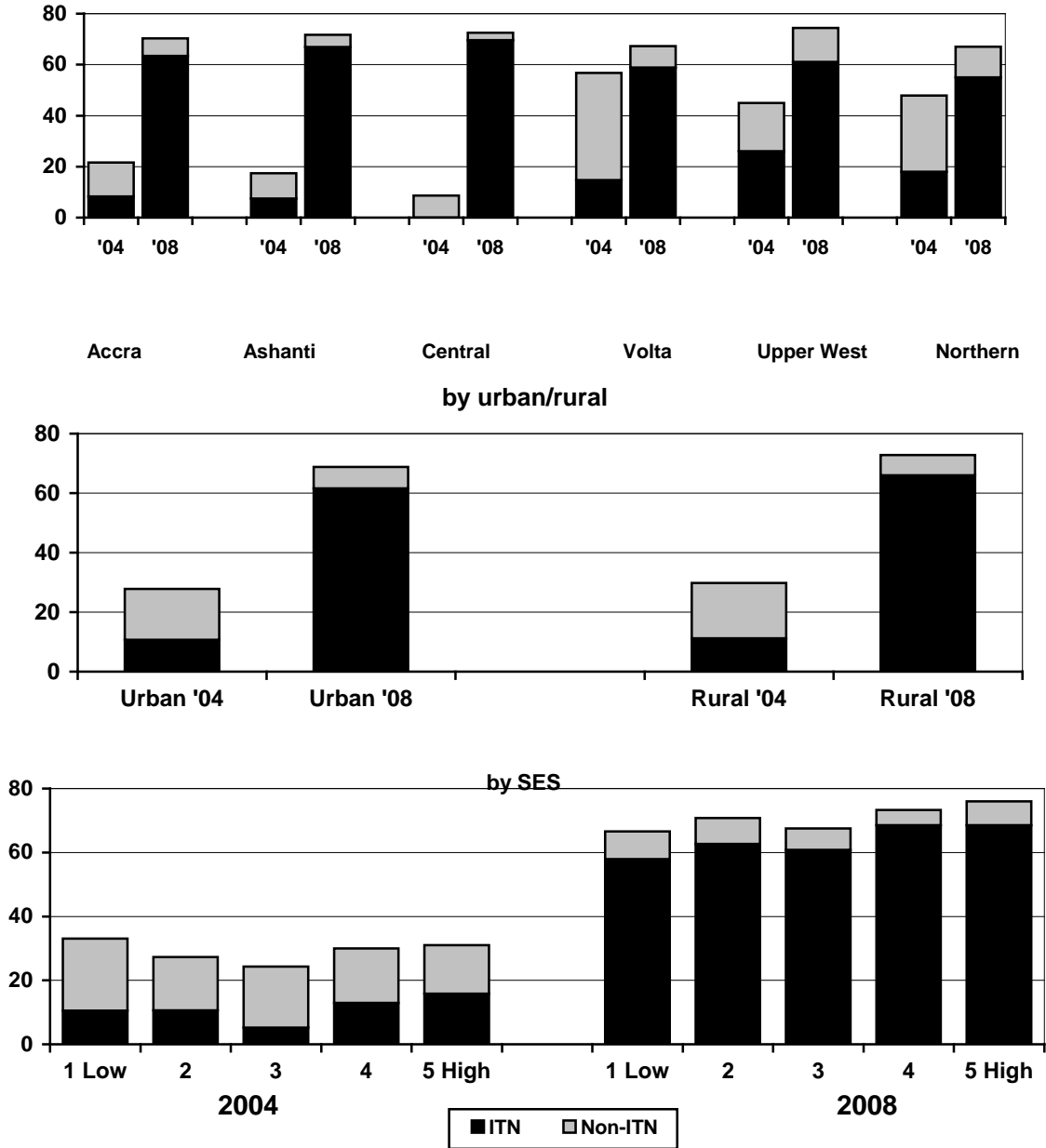


Table 2.1 Percent of households owning nets and ITNs, 2004 & 2008

Among all households

| | | Site (urban and rural areas combined) | | | | | | | Urban Accra only | Urban/Rural | | Socio economic status | | | | |
|----------------|------|---------------------------------------|-------|---------|---------|-------|----------|---------------|------------------------|--------------|--------------|-----------------------|------|------|------|-----------|
| | | TOTAL | Accra | Ashanti | Central | Volta | Northern | Upper West | | All Urban | All Rural | 1 Low | 2 | 3 | 4 | 5 High |
| Owns a net | 2004 | 29.0 | 21.6 | 17.4 | 8.6 | 56.8 | 45.0 | 47.9 | 20.0 | 27.8 | 29.8 | 33.1 | 27.3 | 24.3 | 30.0 | 31.0 |
| | 2008 | 70.8 | 70.3 | 71.7 | 72.5 | 67.3 | 74.4 | 67.0 | 69.6 | 68.8 | 72.8 | 66.6 | 70.8 | 67.5 | 73.3 | 76.0 |
| Owns an ITN | 2004 | 11.0 | 8.3 | 7.5 | 0.0 | 14.7 | 26.1 | 18.0 | 9.2 | 10.7 | 11.2 | 10.5 | 10.6 | 5.2 | 12.9 | 15.8 |
| | 2008 | 63.8 | 63.4 | 66.9 | 69.6 | 58.9 | 61.1 | 55.0 | 59.9 | 61.6 | 66.0 | 57.9 | 62.7 | 60.8 | 68.5 | 68.5 |
| BASE | 2004 | 1420 | 231 | 240 | 70 | 291 | 279 | 309 | 120 | 610 | 810 | 355 | 302 | 281 | 281 | 201 |
| | 2008 | 1796 | 639 | 459 | 207 | 202 | 180 | 109 | 299 | 917 | 879 | 359 | 359 | 360 | 359 | 359 |

Table 2.2 Average number of nets/ITNs owned

Among households owning each type of net

| | | Site (urban and rural areas combined) | | | | | | | Urban Accra only | Urban/Rural | | Socio economic status | | | | |
|------|------|---------------------------------------|-------|---------|---------|-------|----------|---------------|------------------------|--------------|--------------|-----------------------|-----|-----|-----|-----------|
| | | TOTAL | Accra | Ashanti | Central | Volta | Northern | Upper West | | All Urban | All Rural | 1 Low | 2 | 3 | 4 | 5 High |
| Nets | 2004 | 1.4 | 1.4 | 1.4 | 1.0 | 1.9 | 1.1 | 1.2 | 1.3 | 1.6 | 1.4 | 1.2 | 1.4 | 1.7 | 1.5 | 1.4 |
| | 2008 | 1.5 | 1.4 | 1.6 | 1.8 | 1.3 | 1.4 | 1.3 | 1.5 | 1.5 | 1.5 | 1.4 | 1.5 | 1.4 | 1.5 | 1.5 |
| BASE | 2004 | 549 | 50 | 42 | 6 | 186 | 121 | 144 | 24 | 242 | 307 | 146 | 115 | 95 | 112 | 81 |
| | 2008 | 1272 | 450 | 329 | 150 | 136 | 134 | 73 | 208 | 632 | 640 | 239 | 254 | 243 | 263 | 273 |
| ITN | 2004 | 1.2 | 1.1 | 1.3 | 0.0 | 1.3 | 1.0 | 1.1 | 1.3 | 1.1 | 1.0 | 1.0 | 1.0 | 1.0 | 1.2 | 1.3 |
| | 2008 | 1.4 | 1.4 | 1.5 | 1.6 | 1.2 | 1.3 | 1.3 | 1.4 | 1.4 | 1.3 | 1.3 | 1.4 | 1.4 | 1.5 | 1.4 |
| BASE | 2004 | 207 | 19 | 18 | 0 | 46 | 70 | 54 | 11 | 85 | 122 | 47 | 42 | 25 | 50 | 43 |
| | 2008 | 1144 | 404 | 307 | 144 | 119 | 110 | 60 | 179 | 564 | 580 | 208 | 225 | 219 | 246 | 246 |

Baby Net Ownership

Baby nets – small nets for infants that have a built-in frame – are not specifically promoted by malaria prevention programs. They only fit infants and are rarely treated. Most often they are used to keep flies off the baby during the day, but they can also provide protection from mosquitoes at night if there are no holes in the netting. Households owning only a baby net are *not* included in household net ownership rates above.

- Baby net ownership declined from 28% to 16%. Baby net ownership is more common in urban than rural areas, and increases sharply as SES rises.
- In 2004, 20% of households owned only a baby net and no hanging net, whereas in 2008, 4% of households owned only a baby net.

Table 2.3 Ownership of baby nets (non-hanging)

Among all households

| | | TOTAL | Site (urban and rural areas combined) | | | | | | Urban Accra only | Urban/Rural | | Socio economic status | | | | |
|--|------|-------|---------------------------------------|---------|---------|-------|----------|---------------|------------------------|--------------|--------------|-----------------------|------|------|------|-----------|
| | | | Accra | Ashanti | Central | Volta | Northern | Upper West | | All Urban | All Rural | 1 Low | 2 | 3 | 4 | 5 High |
| Owns a baby net | 2004 | 28.4 | 27.1 | 38.5 | 38.6 | 25.2 | 12.6 | 15.7 | 31.7 | 37.5 | 26.4 | 16.5 | 21.0 | 26.7 | 42.1 | 35.7 |
| | 2008 | 15.7 | 17.2 | 24.2 | 19.3 | 4.0 | 4.4 | 3.7 | 22.1 | 19.1 | 12.1 | 5.3 | 11.7 | 13.1 | 20.9 | 27.3 |
| Own only a baby net (no hanging net) | 2004 | 19.9 | 20.6 | 30.4 | 35.7 | 8.0 | 5.8 | 5.4 | 25.8 | 22.4 | 18.3 | 11.6 | 14.3 | 22.2 | 27.6 | 23.5 |
| | 2008 | 4.0 | 4.4 | 6.5 | 3.9 | 1.0 | 1.7 | 0.9 | 5.7 | 5.3 | 2.6 | 0.8 | 2.2 | 3.1 | 7.0 | 7.0 |
| BASE | 2004 | 1420 | 231 | 240 | 70 | 291 | 279 | 309 | 120 | 610 | 810 | 355 | 302 | 281 | 281 | 201 |
| | 2008 | 1796 | 639 | 459 | 207 | 202 | 180 | 109 | 299 | 917 | 879 | 359 | 359 | 360 | 359 | 359 |

Net Treatment Patterns

Nets that are treated with an insecticide are much more effective than untreated nets. Nets that are “pretreated” (i.e., already have insecticide on them when purchased) are available, but unless these nets are “long-lasting” ITNs, even these nets need to be re-treated regularly (“post-treated”) to remain effective.

This section describes the treatment status of nets owned. For each net owned, up to a maximum of five nets, respondents were asked whether it was bought treated and whether it had been treated since being acquired.

Note that the base (denominator) of this analysis is *nets*, not *households*, and all figures are based on the proportion of nets owned. The proportion of *households* owning a treated net is shown in Table 2.1 and Figures 2.1 - 2.2.

- *Currently treated (ITN)*: In 2004, 31% percent of nets qualified as an ITN; in 2008, 86% did. The percent of nets that were ITNs was about 88% in all sites except Upper West at 83% and Northern at 75%. There was little variation by urban-rural and by SES.
- *Ever treated*: In 2004, 45% of nets had ever been treated (either bought treated or treated after purchase); in 2008 94% had.
- *Pre-treated (including LLINs)*: In 2004, 37% of nets were already treated when they were acquired; in 2008, 91% were.
- *Post-treated*: In 2004, 17% of nets were treated since they were acquired; in 2008, 16% were. In 2004, low net treatment rates were a problem, since there were few LLINs. Now the low rates are acceptable, since most nets owned already have treatment on them that lasts for 20 washes—generally the life of the net. In 2004, 6% of nets came packaged (“bundled”) with an insecticide treatment; in 2008, 16% did. Since more and more nets owned are LLINs and unlikely to require re-treatment, bundling becomes less necessary. Most nets treated since acquired (80%) were treated at home, and most (70%) had been treated within the prior year.

Figure 2.3:

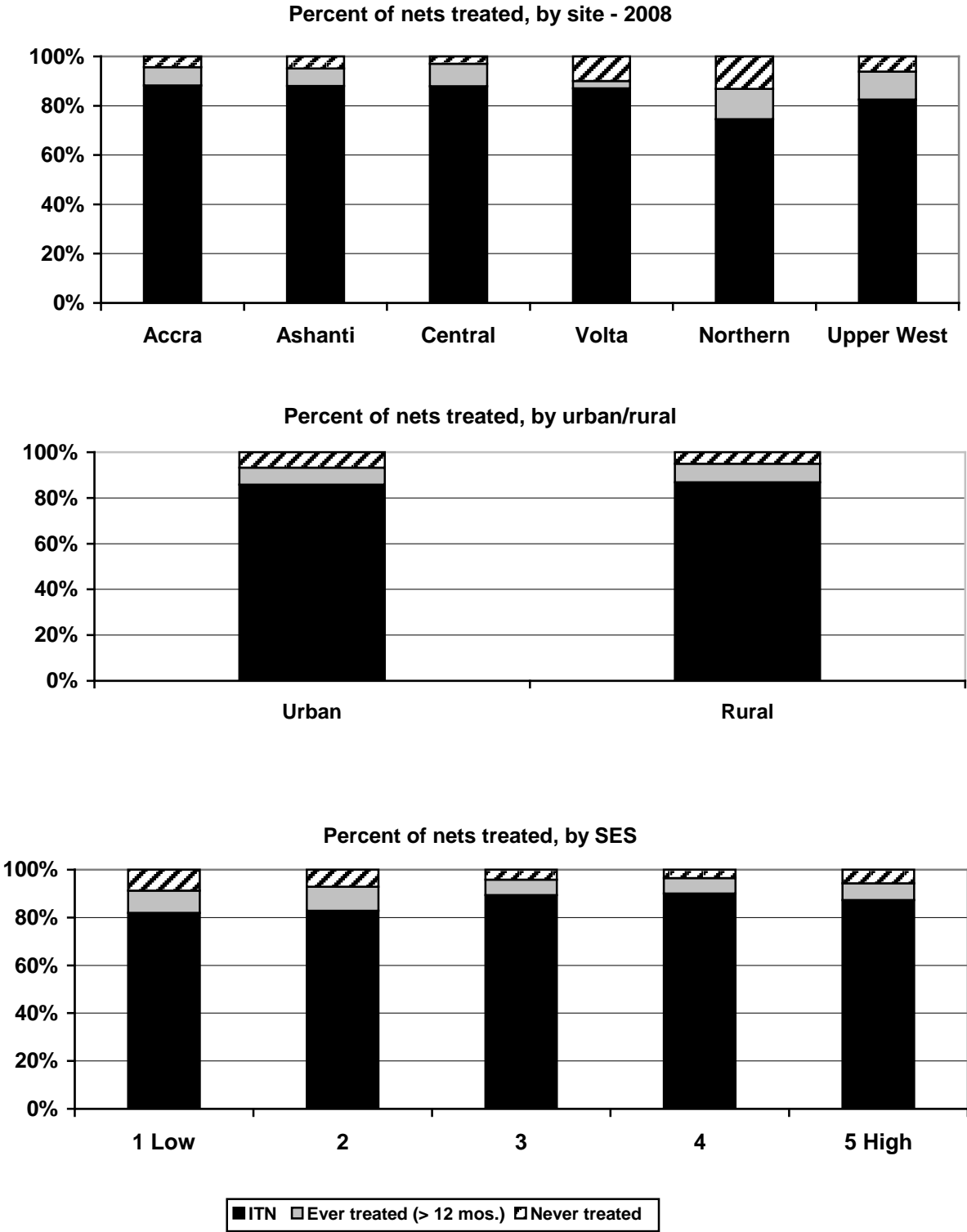


Table 2.4 Percent of nets treated

Among all nets owned

| | | Total | Site (urban and rural areas combined) | | | | | | Urban Accra only | Urban/Rural | | Socio-Economic Status | | | | |
|---|------|-------|---------------------------------------|---------|---------|-------|----------|---------------|------------------------|--------------|--------------|-----------------------|------|------|------|-----------|
| | | | Accra | Ashanti | Central | Volta | Northern | Upper West | | All Urban | All Rural | 1 low | 2 | 3 | 4 | 5 high |
| Currently treated (ITN) | 2004 | 31.1 | 31.3 | 40.8 | 0 | 17.9 | 57.1 | 34.9 | 43.3 | 32.2 | 30.5 | 26.6 | 29.7 | 14.1 | 36.2 | 46.2 |
| | 2008 | 86.3 | 88.2 | 88.0 | 87.9 | 87.1 | 74.6 | 82.5 | 84.0 | 85.8 | 86.8 | 81.9 | 82.8 | 89.4 | 90.0 | 87.3 |
| Ever treated | 2004 | 44.6 | 50.5 | 43.8 | 50.0 | 24.4 | 81.5 | 56.7 | 63.3 | 45.6 | 44.0 | 37.0 | 41.0 | 29.8 | 48.2 | 64.0 |
| | 2008 | 94.2 | 95.7 | 95.1 | 97.0 | 90.0 | 86.8 | 93.8 | 95.2 | 93.3 | 95.0 | 91.2 | 92.9 | 95.8 | 96.5 | 94.3 |
| Bought pretreated ("pretreated") | 2004 | 37.3 | 47.7 | 31.9 | 50.0 | 19.2 | 67.2 | 48.1 | 63.3 | 40.3 | 35.3 | 31.7 | 30.0 | 27.1 | 37.9 | 56.9 |
| | 2008 | 90.6 | 90.4 | 93.1 | 97.0 | 92.0 | 78.3 | 83.2 | 88.2 | 88.8 | 91.3 | 87.0 | 92.4 | 92.0 | 92.9 | 88.7 |
| Treated since purchase ("post- treated") | 2004 | 17.3 | 8.9 | 20.4 | 16.7 | 11.0 | 36.1 | 29.0 | 10.0 | 16.5 | 17.8 | 16.5 | 17.7 | 8.0 | 21.7 | 21.0 |
| | 2008 | 15.7 | 13.4 | 13.7 | 20.0 | 16.5 | 23.3 | 13.4 | 13.6 | 17.6 | 14.1 | 11.4 | 14.0 | 16.6 | 16.8 | 19.2 |
| BASE | 2004 | 777 | 68 | 59 | 6 | 347 | 130 | 167 | 30 | 378 | 399 | 178 | 167 | 147 | 168 | 117 |
| | 2008 | 1852 | 621 | 510 | 265 | 170 | 189 | 97 | 294 | 910 | 942 | 342 | 378 | 331 | 399 | 402 |

2.2 REASONS FOR NOT OWNING ANY MOSQUITO NETS

Respondents from households that did not own any (hanging) mosquito nets were asked why they did not own one: "There are different reasons why people do not have mosquito nets. Could you tell me for what reasons your household does not have a mosquito net?"

The single most common reason offered was that the household does not have enough money: 41%, down from 61% in 2004. It is possible that some gave this answer because it is socially acceptable, since 34% of those in the highest SES segment gave this response. The second most common reason was that the household uses something else to control mosquitoes, given by 22% of respondents.

Table 2.5 Reasons for not owning any mosquito nets – 2004 & 2008

Among households that do not own a net (multiple responses possible)

| | TOTAL 2004 | TOTAL 2008 | Site (urban and rural areas combined) | | | | | | Urban Accra only | Urban/Rural | | Socio-Economic Status | | | | |
|---|---------------|---------------|---------------------------------------|---------|---------|-------|---------------|---------------|------------------------|--------------|--------------|-----------------------|------|------|------|-----------|
| | | | Accra | Ashanti | Central | Volta | North- ern | Upper West | | All Urban | All Rural | 1 low | 2 | 3 | 4 | 5 high |
| Too expensive/ not enough money | 61.1 | 43.1 | 38.6 | 49.2 | 42.1 | 53.0 | 32.6 | 41.7 | 33.0 | 37.9 | 49.4 | 60.8 | 39.0 | 43.6 | 33.3 | 33.7 |
| Not available / don't know where to get | 11.5 | 9.0 | 8.5 | 4.6 | 10.5 | 4.5 | 19.6 | 19.4 | 8.8 | 8.8 | 9.2 | 9.2 | 7.6 | 9.4 | 8.3 | 10.5 |
| Places with nets too far/expensive to get to | 1.9 | 2.5 | 1.1 | 2.3 | 0.0 | 1.5 | 4.3 | 13.9 | 0.0 | 2.5 | 2.5 | 5.0 | 1.9 | 0.0 | 2.1 | 3.5 |
| Nets do not fit sleeping space or take up too much space | 3.2 | 3.8 | 1.6 | 7.7 | 8.8 | 1.5 | 0.0 | 2.8 | 2.2 | 6.0 | 1.3 | 1.7 | 1.9 | 2.6 | 8.3 | 5.8 |
| DON'T NEED | 19.2* | 25.6 | | | | | | | | | | | | | | |
| > Use something else | | 21.8 | 13.2 | 26.2 | 28.1 | 28.8 | 15.2 | 36.1 | 16.5 | 19.6 | 24.3 | 20.0 | 22.9 | 17.1 | 29.2 | 20.9 |
| > Don't need because no/few mosquitoes | | 5.0 | 4.8 | 8.5 | 3.5 | 3.0 | 4.3 | 0.0 | 5.5 | 6.0 | 3.8 | 2.5 | 6.7 | 6.0 | 4.2 | 5.8 |
| DON'T LIKE | 2.7* | 10.7 | | | | | | | | | | | | | | |
| > Too hot | | 7.8 | 3.2 | 20.8 | 3.5 | 6.1 | 4.3 | 0.0 | 4.4 | 8.1 | 7.5 | 1.7 | 4.8 | 9.4 | 12.5 | 12.8 |
| > Might harm (illness, rash, entanglement) | | 1.1 | 2.1 | 1.5 | 0.0 | 0.0 | 0.0 | 0.0 | 3.3 | 1.1 | 1.3 | 0.0 | 0.0 | 0.9 | 1.0 | 4.7 |
| > Confining | | 1.9 | 1.1 | 3.1 | 1.8 | 1.5 | 0.0 | 5.6 | 0.0 | 2.1 | 1.7 | 0.0 | 2.9 | 0.0 | 2.1 | 5.8 |
| OTHER | 7.5* | 4.0 | 6.9 | 3.8 | 1.8 | 1.5 | 2.2 | 0.0 | 3.3 | 4.2 | 3.8 | 1.7 | 4.8 | 2.6 | 7.3 | 4.7 |
| Didn't get a free net (not in town, didn't qualify, nets ran out); waiting for free net | | 8.0 | 6.9 | 3.8 | 12.3 | 7.6 | 17.4 | 11.1 | 7.7 | 6.3 | 10.0 | 10.8 | 8.6 | 6.8 | 6.2 | 7.0 |
| Gave away; some-one else has net | | 3.2 | 6.3 | 0.0 | 5.3 | 3.0 | 0.0 | 0.0 | 5.5 | 4.2 | 2.1 | 0.0 | 7.6 | 4.3 | 1.0 | 3.5 |
| Net too old/worn so discarded it | | 5.0 | 8.5 | 2.3 | 1.8 | 1.5 | 6.5 | 5.6 | 11.0 | 6.3 | 3.3 | 2.5 | 4.8 | 8.5 | 5.2 | 3.5 |
| Waiting until I give birth | | 1.1 | 1.6 | 0.0 | 0.0 | 4.5 | 0.0 | 0.0 | 1.1 | 0.4 | 2.1 | 0.0 | 1.9 | 2.6 | 1.0 | 0.0 |
| Didn't get a coupon or lost coupon | | 0.8 | 1.1 | 1.5 | 0.0 | 0.0 | 0.0 | 0.0 | 2.2 | 1.1 | 0.4 | 0.8 | 1.0 | 0.0 | 1.0 | 1.2 |
| Don't know | 3.7 | 5.9 | 7.4 | 4.6 | 12.3 | 3.0 | 4.3 | 0.0 | 9.9 | 6.3 | 5.4 | 5.8 | 5.7 | 6.0 | 6.2 | 5.8 |
| BASE | 549 | 524 | 189 | 130 | 57 | 66 | 46 | 36 | 91 | 285 | 239 | 120 | 105 | 117 | 96 | 86 |

* Category not broken down further in 2004

SECTION 3

NET AND ITN USE BY HOUSEHOLD MEMBERS

Although it is beneficial for any household member to sleep under a net, it is particularly important for those vulnerable to severe malaria — children under five (and especially children under one) and pregnant women — to do so. This section reports the proportions of various household members sleeping under nets and ITNs — in all households as well as in net-owning households. The proportion *in all households* shows status of the sample with regard to RBM targets, and the proportion *within net-owning households* shows who uses the net(s) when nets are present.

The sample was limited to women of reproductive age (WRA) — age 15 to 49 — so that net use by WRA could be calculated in addition to net use by pregnant women. The greatest health benefits for women and neonates are achieved when treated nets are used from the beginning of the pregnancy; however, many women do not realize they are pregnant, or do not wish to make their pregnancy public, for several months or more. Therefore, it is advisable for all women of reproductive age to sleep under treated nets nightly, and we report usage rates for this group.

Data were collected during the rainy season (August), when malaria transmission and therefore net use is typically higher than in the dry season.

Use by children under age five

- The proportion of children under five who slept under a net (treated or not) the prior night rose sharply: from 19% in 2004 to 47% in 2008. When those sleeping under baby nets are included, the rise is from 25% to 49% of under-fives sleeping under some type of net. There was little variation across sites or by SES, and there was no difference in use by gender. However, rural children were somewhat more likely to be sleeping under a net than urban ones (52% vs. 41%).
- There was a five-fold increase in the percent of young children sleeping under an ITN: from 8% in 2004 to 42% in 2008. As with all nets, there was little variation across sites or by SES, though rural children were more likely than urban ones to have slept under an ITN the prior night (47% vs. 36%).
- Children under five, and especially those under one, were more likely than any other family member to be using the household net. (See section on intra-household net allocation.)

Use by pregnant women and women of reproductive age

- The percent of pregnant women sleeping under a net – whether treated or not – rose from 16% in 2004 to 36% in 2008. The percent sleeping under an ITN made even steeper gains, rising from 7% to 32%.
- The percent of pregnant women sleeping under a net was highest in Upper West (47%) and Central (45%) and lowest in Accra region (29%). The percent sleeping under an ITN followed similar patterns: highest in Central and Upper West (42% and 40% respectively) and lowest in Accra region (25%).
- Pregnant women in rural areas were more likely than those in urban areas to use a net (42% vs. 30%) or ITN (38% vs. 26%).
- Among all households, 37% of WRA slept under a net the prior night, including 33% that slept under an ITN.

Figure 3.1

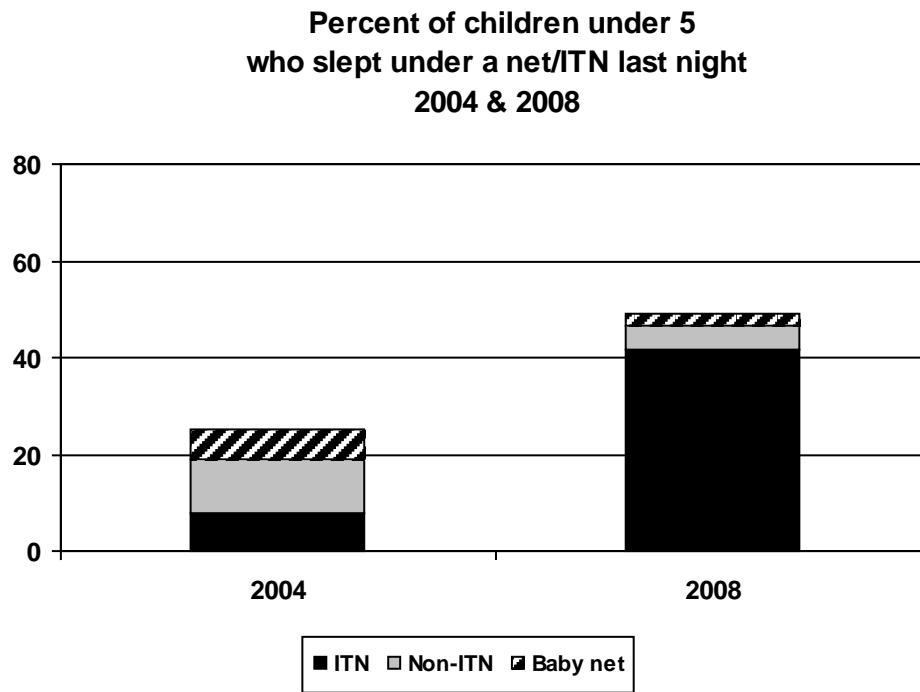


Figure 3.2

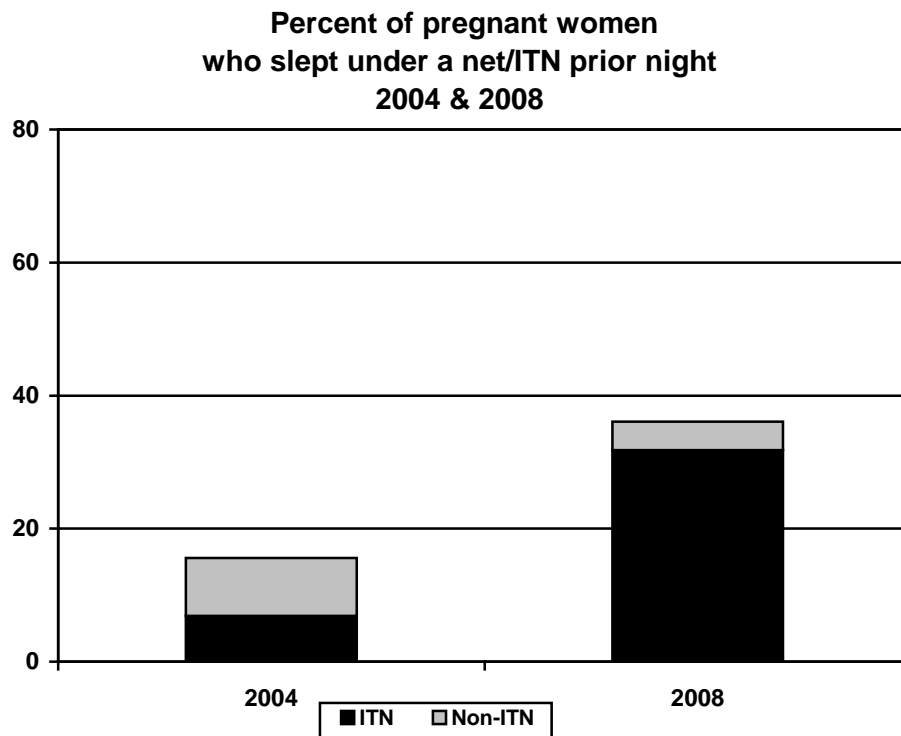


Figure 3.3

Percent of children under 5 sleeping under nets and ITNs
By site, urban-rural, and SES
2004 & 2008

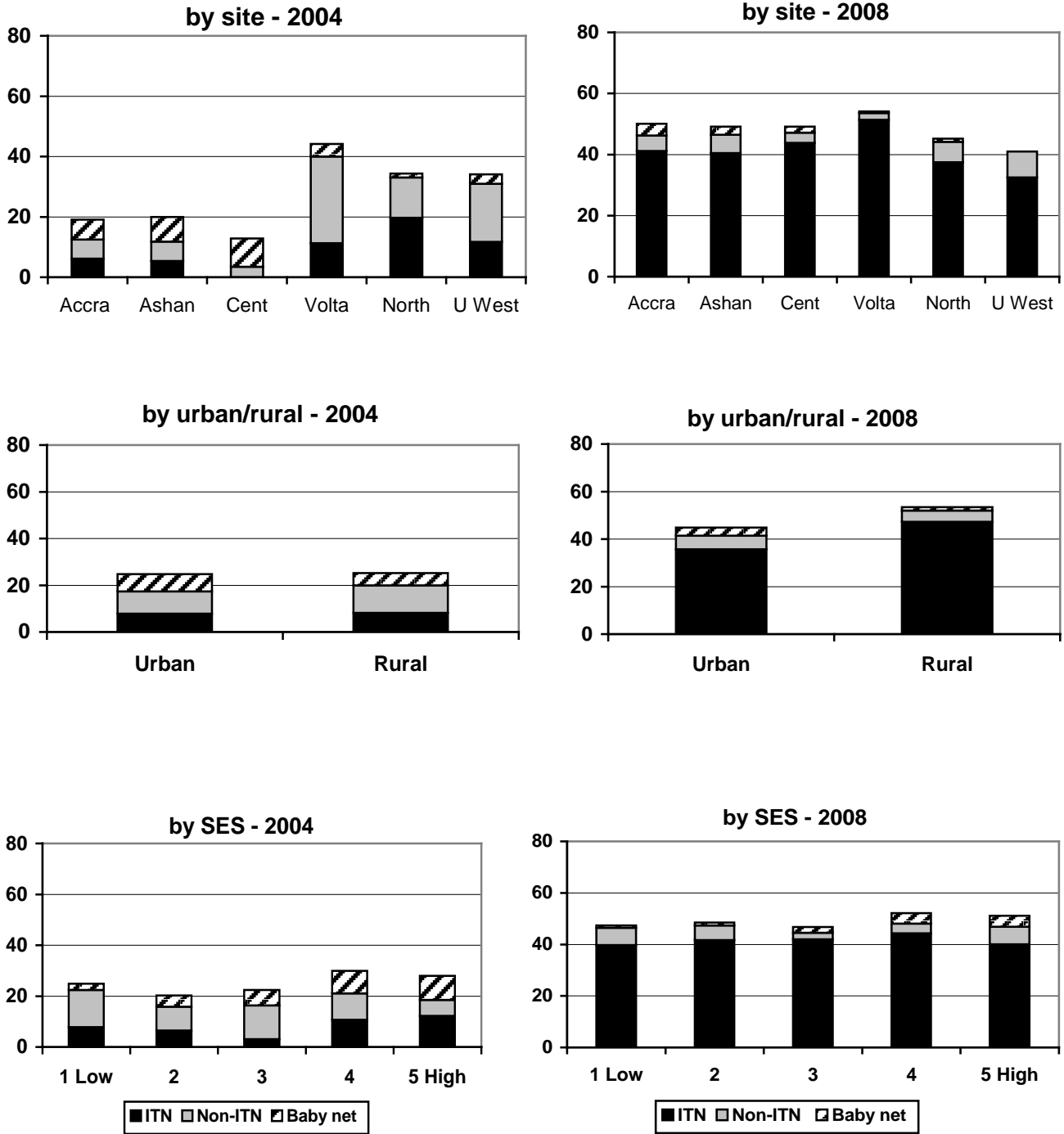


Figure 3.4

**Percent of pregnant women sleeping under nets and ITNs,
By site, urban-rural, and SES
2004 & 2008**

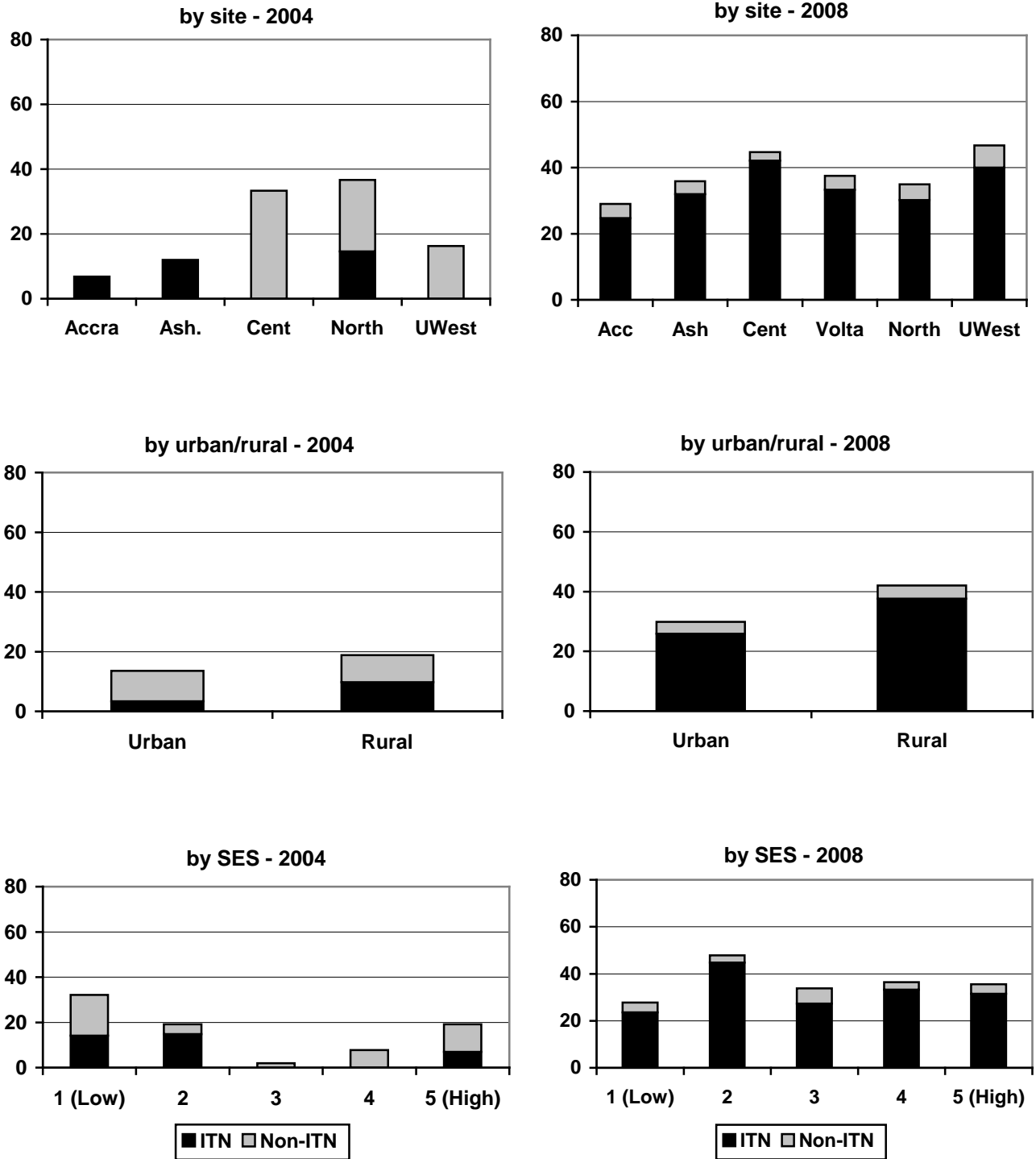


Table 3.1 Percent of vulnerable groups who slept under a net and ITN last night – 2004 & 2008

Among ALL households

| | Total | Site (urban and rural areas combined) | | | | | | Urban Accra only | Urban/Rural | | Socio-Economic Status | | | | | |
|---------------------------|-------|---------------------------------------|---------|---------|-------|----------|---------------|------------------------|--------------|--------------|-----------------------|------|------|------|-----------|------|
| | | Accra | Ashanti | Central | Volta | Northern | Upper West | | All Urban | All Rural | 1 low | 2 | 3 | 4 | 5 high | |
| Children <5 | | | | | | | | | | | | | | | | |
| Hanging net | 2004 | 18.9 | 12.5 | 11.8 | 3.5 | 40.0 | 33.1 | 31.0 | 11.4 | 17.4 | 19.9 | 22.4 | 15.8 | 16.4 | 21.1 | 18.5 |
| | 2008 | 46.7 | 46.2 | 46.5 | 47.2 | 53.6 | 44.2 | 41.0 | 43.5 | 41.4 | 52.0 | 46.5 | 47.4 | 44.5 | 48.1 | 46.9 |
| Hanging or baby net | 2004 | 25.0 | 19.1 | 20.0 | 12.8 | 44.2 | 34.4 | 34.1 | 19.8 | 24.8 | 25.2 | 24.9 | 20.3 | 22.4 | 29.9 | 28.0 |
| | 2008 | 49.2 | 50.1 | 49.1 | 49.1 | 54.1 | 45.2 | 41.0 | 48.9 | 44.9 | 53.4 | 47.4 | 48.5 | 46.8 | 52.1 | 51.1 |
| ITN | 2004 | 8.0 | 6.2 | 5.4 | 0.0 | 11.3 | 19.7 | 11.7 | 7.2 | 7.8 | 8.2 | 7.8 | 6.5 | 3.1 | 10.7 | 12.2 |
| | 2008 | 41.5 | 41.2 | 40.5 | 43.8 | 51.4 | 37.5 | 32.5 | 37.1 | 35.7 | 47.3 | 39.7 | 41.7 | 42.0 | 44.3 | 40.1 |
| BASE | 2004 | 1879 | 310 | 345 | 86 | 362 | 375 | 401 | 167 | 787 | 1092 | 532 | 399 | 356 | 341 | 251 |
| | 2008 | 2124 | 746 | 566 | 265 | 222 | 208 | 117 | 356 | 1061 | 1063 | 456 | 439 | 400 | 420 | 409 |
| Pregnant women | | | | | | | | | | | | | | | | |
| Any net | 2004 | 15.6 | 6.8 | 12.0 | 33.3 | 15.4 | 36.7 | 16.3 | 0.0 | 13.6 | 18.8 | 32.1 | 19.1 | 1.9 | 7.7 | 19.1 |
| | 2008 | 36.1 | 29.0 | 35.9 | 44.7 | 37.5 | 34.9 | 46.7 | 27.5 | 29.9 | 42.0 | 27.8 | 47.8 | 33.8 | 36.4 | 35.6 |
| ITN | 2004 | 6.9 | 6.8 | 12.0 | 0.0 | 0.0 | 14.6 | 0.0 | 0.0 | 3.4 | 9.8 | 14.1 | 14.8 | 0.0 | 0.0 | 7.0 |
| | 2008 | 31.8 | 24.7 | 32 | 42.1 | 33.3 | 30.2 | 40.0 | 19.6 | 25.9 | 37.6 | 23.6 | 44.8 | 27.3 | 33.3 | 31.5 |
| BASE | 2004 | 97 | 14 | 17 | 6 | 17 | 21 | 22 | 9 | 48 | 49 | 23 | 20 | 22 | 16 | 16 |
| | 2008 | 355 | 93 | 103 | 38 | 48 | 43 | 30 | 51 | 174 | 181 | 72 | 67 | 77 | 66 | 73 |

Table 3.2a Percent of household members who slept under a net last night – 2004

Among ALL HOUSEHOLDS and within NET-OWNING households

| | In ALL HOUSEHOLDS | | | In NET-OWNING HOUSEHOLDS (Intra-household net allocation) | |
|-----------------------------------|-------------------|---------------------------|---|--|---------------------------|
| | BASE | % sleeping under a net | % sleeping under an ITN ¹ | BASE | % sleeping under a net |
| ALL household members | 7222 | 14.1 | 5.1 | 2116 | 48.1 |
| Younger children (under 5) | 1920 | 18.9 | 8.0 | 541 | 67.2 |
| <i>Including baby nets</i> | | 25.0 | | | 70.1 |
| Males | 973 | 18.6 | 8.0 | 272 | 66.5 |
| Females | 947 | 19.3 | 8.0 | 269 | 67.9 |
| <i>Males including babynets</i> | | 25.7 | | | 69.2 |
| <i>Females including babynets</i> | | 24.3 | | | 70.9 |
| Age 0 - <1 | 407 | 20.9 | 9.3 | 114 | 74.9 |
| <i>Including babynets</i> | | 40.6 | | | 82.6 |
| Age 1 - <2 | 344 | 23.3 | 11.0 | 108 | 74.6 |
| <i>Including babynets</i> | | 31.0 | | | 79.1 |
| Age 2 - <3 | 362 | 16.9 | 7.2 | 93 | 65.4 |
| <i>including babynets</i> | | 18.9 | | | 67.6 |
| Age 3 - <4 | 357 | 20.6 | 8.6 | 107 | 69.0 |
| Age 4 - <5 | 451 | 14.0 | 4.8 | 119 | 53.0 |
| Older children (ages 5-14) | 1686 | 10.5 | 2.7 | 526 | 33.6 |
| Males | 840 | 9.3 | 1.8 | 255 | 30.6 |
| Females | 846 | 11.7 | 3.5 | 271 | 36.4 |
| Adults (15-49) | 3138 | 13.9 | 5.1 | 925 | 47.2 |
| Males 15-49 | 1163 | 8.6 | 2.7 | 354 | 28.5 |
| Females 15-49 | 1974 | 17.0 | 6.5 | 572 | 58.9 |
| Non-pregnant women 15-49 | 1880 | 17.1 | 6.5 | 548 | 58.7 |
| Pregnant women | 95 | 15.6 | 6.9 | 24 | 62.2 |
| Older adults (50+) | 477 | 8.3 | 1.7 | 125 | 31.9 |
| Males | 238 | 9.0 | 1.7 | 74 | 28.9 |
| Females | 240 | 7.6 | 1.6 | 50 | 36.4 |

¹ The figures for ITN use in this table will differ somewhat from those in the Ghana 2004 report. The results presented in the 2004 report were based on an unweighted analysis of survey data. The results presented in this report are based on a weighted analysis of data from both 2004 and 2008 surveys.

Table 3.2b Percent of household members who slept under a net last night - 2008

Among all households and within NET-OWNING households

| 2008 | Household members in ALL HOUSEHOLDS | | | Household members in NET-OWNING HOUSEHOLDS: Intra-household net allocation | |
|-----------------------------------|-------------------------------------|------------------------|--------------------------------------|--|------------------------|
| | BASE | % sleeping under a net | % sleeping under an ITN ¹ | BASE | % sleeping under a net |
| ALL | 7616 | 34.9 | 30.6 | 5483 | 48.4 |
| Younger children (under 5) | 2125 | 46.7 | 41.5 | 1586 | 62.5 |
| <i>Including babynets</i> | | 49.1 | | | 64.6 |
| Males | 1078 | 46.7 | 41.3 | 814 | 61.8 |
| Females | 1047 | 46.7 | 41.7 | 772 | 63.3 |
| <i>Males including babynets</i> | | 49.2 | | | 63.9 |
| <i>Females incl babynets</i> | | 49.1 | | | 65.4 |
| Age 0 - <1 | 328 | 53.4 | 47.9 | 251 | 69.7 |
| <i>Including baby nets</i> | | 63.1 | | | 77.3 |
| Age 1 - <2 | 490 | 53.9 | 48.2 | 398 | 66.3 |
| <i>Including baby nets</i> | | 57.1 | | | 69.3 |
| Age 2 - <3 | 444 | 48.6 | 43.2 | 336 | 64.4 |
| <i>Including baby nets</i> | | 49.1 | | | 64.9 |
| Age 3 - <4 | 435 | 45.1 | 40.0 | 325 | 60.3 |
| Age 4 - <5 | 428 | 32.9 | 28.7 | 276 | 51.1 |
| Older children (ages 5-14) | 1682 | 25.4 | 22.2 | 1189 | 35.9 |
| Males | 844 | 26.5 | 23.2 | 605 | 37.0 |
| Females | 838 | 24.2 | 21.2 | 584 | 34.8 |
| Adults (15-49) | 3531 | 33.7 | 29.5 | 2517 | 47.3 |
| Males 15-49 | 1232 | 27.2 | 23.0 | 907 | 36.8 |
| Females 15-49 | 2299 | 37.2 | 32.9 | 1610 | 53.2 |
| Non-pregnant females 15-49 | 1945 | 37.4 | 33.1 | 1405 | 51.8 |
| Pregnant women | 354 | 36.2 | 31.9 | 205 | 62.4 |
| Older Adults (50+) | 278 | 16.2 | 13.3 | 191 | 23.6 |
| Males | 121 | 19.8 | 15.7 | 89 | 27.0 |
| Females | 157 | 13.4 | 11.5 | 102 | 20.6 |

¹ Corresponds to RBM definition of a currently treated net, or ITN: a long-lasting insecticide treated net, or one treated or bought pre-treated within the prior 12 months

Intra-household net allocation

When a household owns a net, who in the family uses it? In this section, we look *among net-owning households only*, to examine which household members are given use of the net. (The prior data included all households, whether net-owning or not, as the denominator – to conform to RBM indicators.)

- The household members most likely to sleep under a net/ITN were children under five and women of reproductive age, including pregnant women. Adults over 50 were the least likely to sleep under a net, followed by men 15-49 and children 5-14.
- Among net-owning households, 63% of children under five slept under a net/ITN the prior night, compared with 57% in 2004.
- As in 2004, within net-owning households, the younger the under-five child, the more likely that he or she is sleeping under a net.
- As in 2004, there was no gender bias in childhood net use; equal proportions of male and female under-fives slept under a net/ITN.
- Among net-owning households, the same percent of pregnant women used the household net in 2008 as in 2004: 62%.
- Pregnant WRA were more likely to be sleeping under a net than non-pregnant WRA, at comparative rates of 62% and 52%.

Figure 3.5

Intra-household net allocation
Percent of family members under a net
(among net-owning households) – 2004 & 2008

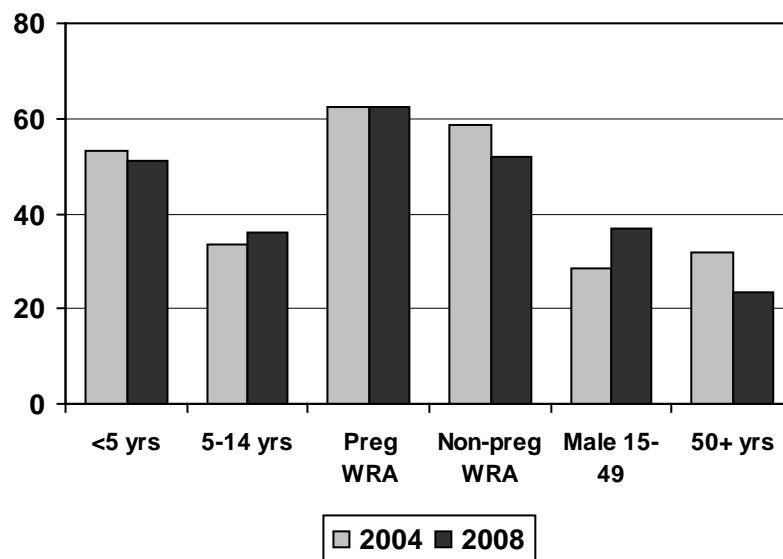


Figure 3.6

Percent of under-fives sleeping under a net,
by yearly cohort
(among net-owning households)

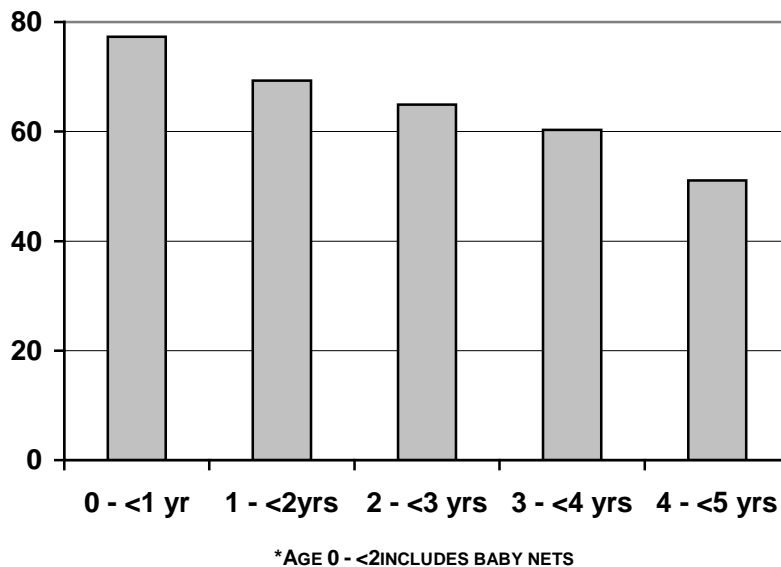


Table 3.3 Percent of vulnerable groups who slept under a net last night – 2004 & 2008

Within NET-OWNING households

| | Total | Site (urban and rural areas combined) | | | | | | | | Socio-Economic Status | | | | | | |
|-----------------------|-------|---------------------------------------|---------|---------|-------|----------|------------|------------------|-----------------------|-----------------------|-------|------|------|------|--------|------|
| | | Accra | Ashanti | Central | Volta | Northern | Upper West | Urban Accra only | Urban/Rural All Urban | Urban/Rural All Rural | 1 low | 2 | 3 | 4 | 5 high | |
| Children <5 | | | | | | | | | | | | | | | | |
| Hanging net | 2004 | 67.2 | 59.8 | 70.0 | 42.9 | 72.6 | 74.1 | 62.1 | 55.9 | 64.2 | 69.0 | 69.7 | 66.9 | 68.5 | 72.8 | 58.5 |
| | 2008 | 62.5 | 62.6 | 60.6 | 62.5 | 73.5 | 57.1 | 61.5 | 59.6 | 49.1 | 61.8 | 65.8 | 64.2 | 61.8 | 62.2 | 58.7 |
| Hanging or baby net | 2004 | 70.1 | 64.5 | 71.5 | 42.9 | 75.6 | 75.7 | 65.3 | 61.8 | 67.8 | 71.4 | 70.3 | 67.9 | 71.5 | 77.0 | 64.3 |
| | 2008 | 64.5 | 66.4 | 62.0 | 64.0 | 74.1 | 58.4 | 61.5 | 65.4 | 60.0 | 69.0 | 66.8 | 65.4 | 63.5 | 64.9 | 62.4 |
| BASE | 2004 | 710 | 65 | 59 | 7 | 223 | 161 | 195 | 34 | 298 | 412 | 218 | 139 | 121 | 133 | 99 |
| | 2008 | 1586 | 551 | 434 | 200 | 162 | 161 | 78 | 260 | 772 | 814 | 322 | 324 | 288 | 325 | 327 |
| Pregnant women | | | | | | | | | | | | | | | | |
| Any net | 2004 | 62.2 | 31.5 | 100.0 | 100.0 | 37.9 | 100.0 | 46.5 | 0.0 | 51.2 | 70.1 | 80.8 | 71.0 | 29.4 | 61.1 | 47.1 |
| | 2008 | 62.1 | 51.9 | 62.7 | 77.3 | 75.0 | 48.4 | 77.8 | 50.0 | 47.4 | 61.3 | 51.3 | 80.0 | 60.5 | 64.9 | 55.3 |
| BASE | 2004 | 30 | 3 | 2 | 2 | 9 | 6 | 8 | 2 | 15 | 15 | 9 | 6 | 2 | 5 | 8 |
| | 2008 | 206 | 52 | 59 | 22 | 24 | 31 | 18 | 28 | 95 | 111 | 39 | 40 | 43 | 37 | 47 |

Table 3.4 Percent vulnerable groups that slept under ITN last night – 2004 & 2008

Within ITN-OWNING households

| | Total | Site (urban and rural areas combined) | | | | | | Urban Accra only | Urban/Rural | | Socio-Economic Status | | | | | |
|-----------------------|-------|---------------------------------------|---------|---------|-------|----------|------------|------------------|-------------|-----------|-----------------------|------|------|------|--------|------|
| | | Accra | Ashanti | Central | Volta | Northern | Upper West | | All Urban | All Rural | 1 low | 2 | 3 | 4 | 5 high | |
| Children <5 | | | | | | | | | | | | | | | | |
| ITN | 2004 | 72.7 | 70.6 | 79.5 | NA | 72.6 | 75.1 | 63.8 | 75.0 | 72.1 | 73.1 | 69.3 | 71.5 | 61.1 | 80.4 | 73.6 |
| | 2008 | 61.0 | 61.3 | 55.9 | 60.1 | 78.1 | 58.6 | 61.3 | 57.4 | 54.0 | 67.7 | 63.7 | 63.1 | 62.7 | 61.2 | 54.8 |
| BASE | 2004 | 212 | 27 | 24 | NA | 60 | 94 | 71 | 16 | 109 | 167 | 76 | 52 | 32 | 62 | 54 |
| | 2008 | 1445 | 501 | 410 | 193 | 146 | 133 | 62 | 230 | 702 | 743 | 284 | 290 | 268 | 304 | 299 |
| Pregnant women | | | | | | | | | | | | | | | | |
| ITN | 2004 | 61.1 | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| | 2008 | 60.8 | 51.1 | 58.9 | 72.7 | 80.0 | 48.1 | 75.0 | 45.5 | 54.9 | 65.4 | 48.6 | 81.1 | 60 | 62.9 | 52.3 |
| BASE | 2004 | 10 | 2 | 2 | NA | 2 | 2 | 2 | 1 | 4 | 6 | 2 | 2 | 1 | 1 | 4 |
| | 2008 | 186 | 45 | 56 | 22 | 20 | 27 | 16 | 22 | 82 | 104 | 35 | 37 | 35 | 35 | 44 |

*Denominator too small for meaningful calculation

Overall household use

- The percent of people who had slept under a net the prior night increased substantially, from 14% in 2004 to 35% in 2008. The increase was even greater for ITNs: from 5% 31%. This reflects the large growth in net, and especially ITN, ownership.
- The percent of nets owned that were used the prior night decreased from 77% in 2004 to 59% in 2008. Most nets that went unused were those that were free to the beneficiary.
- About 21% of nets owned were still in the package, unopened. Another 32% of nets were out of the package but not hanging. The rest – 56% – were hanging and ready to use.
- Nets that were paid for were more likely to be used than those provided at no cost to households: 68% of nets for which something had been paid were used the prior night, compared with 55% of nets given to households at no charge.
- Nets are being used for a greater number of months throughout the year than in 2004. Over half of net-owners now say they use the net all year round. The average number of months per year a family uses its net(s) increased from 7.8 in 2004 to 9.3 in 2008.

Figure 3.7

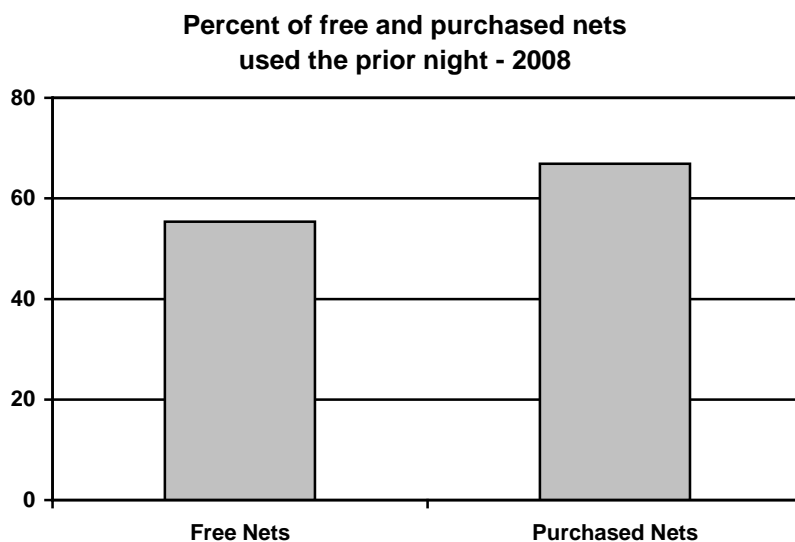


Table 3.5 Percent of nets used (had someone sleeping under) last night

Among all nets owned

| | TOTAL | Site (urban and rural areas combined) | | | | | | Urban Accra only | Urban/Rural | | Socio economic status | | | | |
|----------------------|-------|---------------------------------------|---------|---------|-------|----------|------------|------------------|-------------|-----------|-----------------------|------|------|------|--------|
| | | Accra | Ashanti | Central | Volta | Northern | Upper West | | All Urban | All Rural | 1 Low | 2 | 3 | 4 | 5 High |
| 2004 | 75.2 | 65.8 | 83.5 | 50.0 | 74.0 | 85.8 | 78.4 | 56.7 | 73.0 | 76.7 | 83.9 | 74.4 | 71.9 | 77.8 | 68.2 |
| 2008 | 58.7 | 56.7 | 57.5 | 58.5 | 67.7 | 56.6 | 67.0 | 50.7 | 52.1 | 65.1 | 66.1 | 59.3 | 59.2 | 58.4 | 51.7 |
| BASE 2004 | 777 | 68 | 59 | 6 | 347 | 130 | 167 | 30 | 378 | 399 | 178 | 167 | 147 | 168 | 117 |
| BASE 2008 | 1852 | 621 | 510 | 265 | 170 | 189 | 97 | 294 | 910 | 942 | 342 | 378 | 331 | 399 | 402 |
| Free nets (2008) | 55.3 | 53.2 | 51.5 | 54.3 | 67.3 | 58.1 | 67.2 | 46.2 | 46.3 | 63.2 | 64.9 | 58.7 | 57.6 | 51.8 | 43.4 |
| Nets paid for (2008) | 68.1 | 67.5 | 72.7 | 68.8 | 75.0 | 56.7 | 65.5 | 63.0 | 65.4 | 70.9 | 70.1 | 60.0 | 66.2 | 78.7 | 65.8 |
| BASE Free | 1185 | 410 | 330 | 175 | 107 | 105 | 58 | 195 | 557 | 628 | 228 | 247 | 229 | 255 | 226 |
| BASE Paid | 451 | 117 | 121 | 77 | 40 | 67 | 29 | 54 | 228 | 223 | 87 | 90 | 71 | 89 | 114 |

Figure 3.8

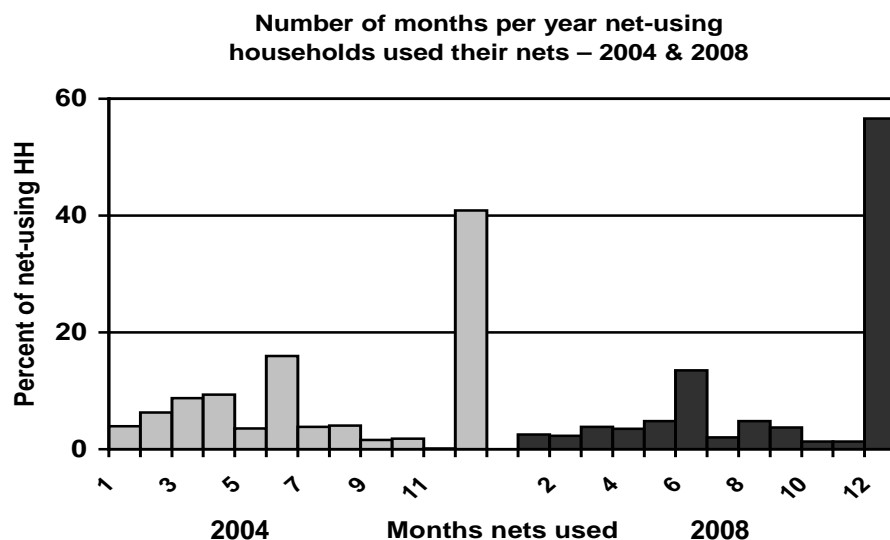


Table 3.6 Mean number of months per year people in household sleep under a net

Among all net-owning households

| | TOTAL | Site (urban and rural areas combined) | | | | | | Urban Accra only | Urban/Rural | | Socio economic status | | | | |
|-----------|-------|---------------------------------------|---------|---------|-------|----------|------------|------------------|-------------|-----------|-----------------------|-----|-----|-----|--------|
| | | Accra | Ashanti | Central | Volta | Northern | Upper West | | All Urban | All Rural | 1 Low | 2 | 3 | 4 | 5 High |
| 2004 | 7.8 | 8.7 | 6.9 | 6.8 | 9.5 | 5.2 | 7.2 | 9.3 | 8.1 | 7.6 | 7.6 | 7.2 | 8.3 | 8.4 | 7.4 |
| 2008 | 9.3 | 9.5 | 10.2 | 10.7 | 10.2 | 6.0 | 6.1 | 9.2 | 9.2 | 9.4 | 8.5 | 9.4 | 9.9 | 9.3 | 9.4 |
| BASE 2004 | 508 | 37 | 39 | 6 | 175 | 115 | 136 | 17 | 220 | 288 | 140 | 107 | 82 | 107 | 72 |
| BASE 2008 | 1155 | 389 | 303 | 133 | 128 | 131 | 71 | 176 | 563 | 592 | 226 | 235 | 220 | 238 | 236 |

Table 3.7 Percent of nets currently hanging (and ready to use), 2008

Among all nets owned

| | TOTAL | Site (urban and rural areas combined) | | | | | | Urban Accra only | Urban/Rural | | Socio-Economic Status | | | | |
|--------------------------------|-------|---------------------------------------|---------|---------|-------|----------|------------|------------------|-------------|-----------|-----------------------|------|------|------|--------|
| | | Accra | Ashanti | Central | Volta | Northern | Upper West | | All Urban | All Rural | 1 low | 2 | 3 | 4 | 5 high |
| Still in package | 20.7 | 24.0 | 22.8 | 26.7 | 12.4 | 8.5 | 13.4 | 29.3 | 22.4 | 19.0 | 14.6 | 19.3 | 19.9 | 22.3 | 26.1 |
| Out of package but not hanging | 23.3 | 22.5 | 18.2 | 12.5 | 19.4 | 57.1 | 24.7 | 26.5 | 26.7 | 18.1 | 27.5 | 20.6 | 20.5 | 24.1 | 23.6 |
| Hanging | 56.1 | 53.5 | 59.0 | 61.9 | 68.2 | 34.4 | 61.9 | 44.2 | 48.9 | 63.0 | 57.9 | 60.1 | 59.5 | 53.6 | 50.2 |
| BASE | 1852 | 621 | 510 | 265 | 170 | 189 | 97 | 294 | 910 | 942 | 342 | 378 | 331 | 399 | 402 |

Table 3.8 Why net not used prior night (multiple responses possible), 2008

Among all nets owned

| | Total | Site (urban and rural areas combined) | | | | | | Urban Accra only | Urban/Rural | | Socio-Economic Status | | | | |
|---|-------|---------------------------------------|---------|---------|-------|-----------|------------|------------------|-------------|-----------|-----------------------|------|------|------|--------|
| | | Accra | Ashanti | Central | Volta | North-ern | Upper West | | All Urban | All Rural | 1 low | 2 | 3 | 4 | 5 high |
| Net is not hung / never been used | 36.2 | 26.0 | 42.2 | 66.4 | 29.1 | 13.4 | 28.1 | 26.2 | 29.6 | 45.0 | 33.6 | 42.2 | 41.5 | 34.9 | 30.4 |
| Too hot / not enough air | 17.4 | 17.5 | 25.3 | 10.9 | 9.1 | 15.9 | 3.1 | 20.7 | 19.7 | 14.3 | 12.9 | 8.4 | 20.7 | 18.1 | 24.2 |
| Net not necessary now / not many mosquitoes now | 10.8 | 11.9 | 4.6 | 6.4 | 7.3 | 25.6 | 28.1 | 13.8 | 11.7 | 9.7 | 13.8 | 12.3 | 7.4 | 7.2 | 13.4 |
| Net is old / in poor condition | 9.3 | 7.4 | 10.6 | 4.5 | 12.7 | 13.4 | 15.6 | 5.5 | 8.3 | 10.6 | 15.5 | 11.0 | 5.2 | 11.4 | 5.2 |
| Don't like sleeping under a net; uncomfortable | 7.7 | 13.0 | 4.6 | 0.0 | 16.4 | 6.1 | 0.0 | 12.4 | 9.6 | 5.2 | 2.6 | 5.8 | 8.1 | 5.4 | 13.9 |
| Does not match sleeping space | 6.9 | 7.1 | 8.3 | 7.3 | 1.8 | 8.5 | 0.0 | 9.0 | 8.5 | 4.9 | 2.6 | 6.5 | 14.1 | 4.2 | 7.2 |
| No one slept in the bed under the net last night | 4.1 | 1.5 | 5.5 | 9.1 | 1.8 | 4.9 | 0.0 | 2.1 | 2.5 | 6.1 | 3.4 | 5.8 | 4.4 | 6.6 | 0.5 |
| Saving net for someone/something | 3.0 | 5.2 | 0.9 | 1.8 | 5.5 | 2.4 | 0.0 | 2.1 | 3.4 | 2.4 | 1.7 | 3.2 | 2.2 | 2.4 | 4.6 |
| Net never necessary / Not bothered by mosquitoes; Don't get malaria | 2.7 | 2.2 | 3.7 | 1.8 | 1.8 | 2.4 | 6.2 | 2.1 | 2.5 | 3.0 | 2.6 | 2.6 | 3.0 | 3.0 | 2.6 |
| Forgot to pull down net before going to bed | 2.0 | 1.5 | 1.8 | 0.9 | 0.0 | 2.4 | 12.5 | 2.1 | 2.3 | 1.5 | 4.3 | 1.9 | 0.7 | 0.6 | 2.6 |
| Net doesn't work / Doesn't keep mosquitoes away | 1.4 | 0.4 | 1.4 | 0.0 | 1.8 | 6.1 | 3.1 | 0.0 | 1.8 | 0.9 | 2.6 | 1.3 | 1.5 | 1.8 | 0.5 |
| Used other mosquito control product | 1.4 | 0.7 | 0.9 | 0.9 | 3.6 | 3.7 | 3.1 | 0.7 | 1.4 | 1.5 | 1.7 | 1.3 | 1.5 | 1.2 | 1.5 |
| Someone else has net / net is elsewhere | 1.3 | 1.1 | 1.4 | 0.0 | 3.6 | 1.2 | 3.1 | 1.4 | 0.7 | 2.1 | 2.6 | 1.9 | 0.7 | 0.6 | 1.0 |
| Treatment no longer effective; net needs re-treating | 0.9 | 1.1 | 0.5 | 0.0 | 3.6 | 1.2 | 0.0 | 0.0 | 0.9 | 0.9 | 0.9 | 1.9 | 0.0 | 0.6 | 1.0 |
| Net is dirty / being washed | 0.9 | 0.7 | 0.0 | 1.8 | 0.0 | 1.2 | 6.2 | 0.7 | 0.7 | 1.2 | 1.7 | 0.6 | 0.7 | 1.2 | 0.5 |
| Other | 1.7 | 2.2 | 0.5 | 0.9 | 0.0 | 6.1 | 0.0 | 1.4 | 1.8 | 1.5 | 2.6 | 1.3 | 1.5 | 1.2 | 2.1 |
| Don't know | 3.3 | 13.0 | 0.9 | 3.6 | 9.1 | 2.4 | 0.0 | 15.2 | 8.9 | 2.7 | 2.6 | 7.1 | 2.2 | 7.2 | 9.8 |
| BASE | 765 | 269 | 217 | 110 | 55 | 82 | 32 | 145 | 436 | 329 | 116 | 154 | 132 | 166 | 194 |

SECTION 4

CHARACTERISTICS OF NETS OWNED

Respondents in net-owning households were asked, for each net owned (up to four nets), when and where the net was acquired and what type, brand, price, size, shape, and color it was. They were also asked who obtained the net. Interviewers observed the net and rated its condition in terms of wear and cleanliness.

4.1 AGE OF NETS

- A greater proportion of nets in 2008 than in 2004 were recently acquired; that is, nets were newer: In 2004, 31% of nets had been acquired within the prior year, compared with 43% in 2008. In 2004, 19% of nets owned were five or more years old; in 2008, only 2% of nets were that old.
- Central region had the greatest proportion of new nets (52%) and Northern and Volta the lowest (33% and 35% respectively). Age of net did not vary much by urban-rural or by SES.

Table 4.1 Age of net
Among total number of nets

| | | Total | Site (urban and rural areas combined) | | | | | | Urban Accra only | Urban/Rural | | Socio-Economic Status | | | | |
|-----------------|------|-------|---------------------------------------|---------|---------|-------|----------|------------|------------------|-------------|-----------|-----------------------|------|------|------|--------|
| | | | Accra | Ashanti | Central | Volta | Northern | Upper West | | All Urban | All Rural | 1 low | 2 | 3 | 4 | 5 high |
| <1 year | 2004 | 30.8 | 25.4 | 41.5 | 0.0 | 21.1 | 59.5 | 28.3 | 36.7 | 34.2 | 28.6 | 28.4 | 27.3 | 22.7 | 30.6 | 42.9 |
| | 2008 | 43.4 | 45.0 | 43.7 | 51.7 | 35.5 | 33.2 | 42.7 | 46.6 | 41.9 | 44.8 | 42.4 | 43.5 | 43.4 | 42.9 | 44.5 |
| 1 - <2 years | 2004 | 19.0 | 14.9 | 14.5 | 0.0 | 19.8 | 24.4 | 27.3 | 20.0 | 17.3 | 20.0 | 2.3.4 | 25.5 | 15.7 | 14.8 | 16.3 |
| | 2008 | 18.5 | 16.1 | 21.6 | 23.6 | 18.3 | 13.9 | 12.5 | 18.6 | 16.3 | 20.6 | 19.0 | 20.7 | 21.1 | 15.7 | 16.8 |
| 2 - <3 years | 2004 | 12.9 | 13.0 | 6.8 | 60.0 | 13.4 | 8.3 | 19.5 | 6.7 | 12.1 | 13.5 | 14.1 | 14.1 | 16.4 | 11.3 | 9.7 |
| | 2008 | 24.9 | 26.9 | 24.4 | 16.0 | 32.0 | 28.9 | 19.8 | 22.4 | 26.7 | 23.2 | 24.3 | 22.8 | 24.2 | 28.8 | 24.1 |
| 3 - <4 years | 2004 | 9.5 | 10.2 | 9.8 | 20.0 | 12.1 | 2.4 | 7.0 | 6.7 | 6.2 | 11.7 | 14.1 | 5.9 | 11.3 | 12.3 | 4.0 |
| | 2008 | 8.2 | 7.7 | 5.6 | 5.3 | 11.2 | 12.3 | 18.8 | 8.6 | 9.7 | 6.7 | 8.0 | 7.3 | 6.7 | 7.3 | 11.1 |
| 4 - <5 years | 2004 | 8.4 | 8.7 | 11.5 | 0.0 | 9.1 | 1.5 | 9.4 | 6.7 | 11.1 | 6.6 | 7.0 | 8.2 | 8.3 | 7.8 | 10.5 |
| | 2008 | 3.0 | 3.0 | 3.2 | 1.5 | 0.6 | 6.4 | 4.2 | 3.4 | 3.8 | 2.3 | 3.0 | 3.3 | 2.1 | 3.5 | 3.0 |
| 5 years or more | 2004 | 19.4 | 27.8 | 16.0 | 20.0 | 24.6 | 3.9 | 8.6 | 23.3 | 19.0 | 19.7 | 13.0 | 19.0 | 25.6 | 23.2 | 16.6 |
| | 2008 | 2.0 | 1.3 | 1.6 | 1.9 | 2.4 | 5.3 | 2.1 | 0.3 | 1.6 | 2.5 | 3.3 | 2.4 | 2.4 | 1.8 | 0.5 |
| BASE | 2004 | 737 | 68 | 57 | 5 | 315 | 130 | 162 | 30 | 356 | 381 | 175 | 156 | 134 | 162 | 110 |
| | 2008 | 1826 | 607 | 504 | 263 | 169 | 187 | 96 | 290 | 895 | 931 | 337 | 368 | 327 | 396 | 398 |

4.2 CONDITION OF NETS

Interviewers asked to see the nets owned, and rated the condition and cleanliness of each net they were able to observe. 42% of nets were seen by the interviewer. The great majority of nets observed were in good condition: either like new (64%) or worn without holes (28%). The majority (63%) of nets were clean; 33% were a bit dirty;

and only 5% very dirty. Note that a minority of nets was observed, and the figures could be biased if respondents tended not to show the interviewer nets that were in poor condition or dirty.

Table 4.2 Condition of nets - 2008

Among all nets owned and observed

| | TOTAL | Site (urban and rural areas combined) | | | | | | Urban Accra only | Urban/Rural | | Socio-economic status | | | | |
|-------------------|-------|---------------------------------------|---------|---------|-------|----------|------------|------------------|-------------|-------|-----------------------|------|------|------|--------|
| | | Accra | Ashanti | Central | Volta | Northern | Upper West | | Urban | Rural | 1 Low | 2 | 3 | 4 | 5 High |
| New, like new | 63.7 | 68.3 | 68 | 76.5 | 54.7 | 49.2 | 51.4 | 67 | 64.4 | 63.1 | 52.7 | 67.5 | 60 | 67.1 | 73.2 |
| Worn but no holes | 28.2 | 20.6 | 27.3 | 19.3 | 35.9 | 39.2 | 40 | 18 | 25.1 | 30.5 | 36.5 | 21.7 | 33.3 | 26.8 | 21 |
| Small holes | 5.5 | 8 | 2.1 | 4.2 | 9.4 | 6.9 | 4.3 | 12 | 6.9 | 4.5 | 7.2 | 8.3 | 4.8 | 4 | 2.9 |
| Medium holes | 2.3 | 3 | 2.6 | 0 | 0 | 3.1 | 4.3 | 3 | 3 | 1.8 | 2.4 | 2.5 | 1.8 | 2 | 2.9 |
| Large holes | 0.3 | 0 | 0 | 0 | 0 | 1.5 | 0 | 0 | 0.6 | 0 | 1.2 | 0 | 0 | 0 | 0 |
| BASE | 776 | 199 | 194 | 119 | 64 | 130 | 70 | 100 | 334 | 442 | 167 | 157 | 165 | 149 | 138 |

*Not asked in 2004

Table 4.3 Cleanliness of net

Among all nets owned and observed

| | TOTAL | Site (urban and rural areas combined) | | | | | | Urban Accra only | Urban/Rural | | Socio-economic status | | | | |
|-------------|-------|---------------------------------------|---------|---------|-------|----------|------------|------------------|-------------|-------|-----------------------|------|------|------|--------|
| | | Accra | Ashanti | Central | Volta | Northern | Upper West | | Urban | Rural | 1 Low | 2 | 3 | 4 | 5 High |
| Very clean | 62.6 | 64.1 | 67.5 | 73.1 | 51.6 | 51.5 | 57.1 | 67 | 65.2 | 60.6 | 49.7 | 65.6 | 54.5 | 71.8 | 74.5 |
| A bit dirty | 32.6 | 32.3 | 27.8 | 25.2 | 46.9 | 40.8 | 31.4 | 28 | 30.3 | 34.4 | 41.3 | 29.3 | 41.8 | 24.2 | 24.1 |
| Very dirty | 4.8 | 3.5 | 4.6 | 1.7 | 1.6 | 7.7 | 11.4 | 5 | 4.5 | 5 | 9 | 5.1 | 3.6 | 4 | 1.5 |
| BASE | 775 | 198 | 194 | 119 | 64 | 130 | 70 | 100 | 333 | 442 | 167 | 157 | 165 | 149 | 137 |

*Not asked in 2004

4.3 SOURCE OF NETS

Since 2004 there has been international emphasis on government and NGO distribution of nets free to beneficiaries in order to make a rapid impact on malaria control. Most free nets were distributed at health facilities, but some were available via vouchers redeemable at commercial outlets.

- In 2004, 68% of nets were obtained from a commercial outlet, usually a market. In 2008, 28% of nets were from a commercial outlet, with more variety in outlets. (Although the percent of commercially-obtained nets has decreased, this does not mean that the number of nets from commercial sources decreased, as the total market size has increased.)
- The proportion of nets obtained from commercial and non-commercial sources does not vary by urban-rural or SES. Commercial nets are most common in Ashanti and Central regions (33%-36%), and least common in Volta and Northern regions (20%-22%).
- In 2004, most commercial nets were from a market; now there is a greater variety of commercial outlets. For non-commercial sources, health facilities had been, and remain, the main source.

Table 4.4 Place where net was obtained

Among all nets where respondents knew the source of the net

| | | Site (city plus surrounding rural areas) | | | | | | | Urban Accra only | Urban/Rural | | Socio-Economic Status | | | | |
|--|-------------|--|-------------|-------------|-------------|-------------|-------------|---------------|------------------------|--------------|--------------|-----------------------|-------------|-------------|-------------|-------------|
| | | Total | Accra | Ashanti | Central | Volta | Northern | Upper West | | All Urban | All Rural | 1 low | 2 | 3 | 4 | 5 high |
| COMMERCIAL | 2004 | 67.6 | 72.4 | 76.1 | 66.7 | 86.2 | 16.4 | 46.2 | 67.9 | 72.3 | 64.6 | 60.6 | 65.3 | 75.6 | 69.4 | 67.7 |
| | 2008 | 27.9 | 24.6 | 36.3 | 33.2 | 20.2 | 21.5 | 17.0 | 27.4 | 29.5 | 26.2 | 23.1 | 31.3 | 27.1 | 27.9 | 29.5 |
| Open air / street market | 2004 | 52.2 | 51.6 | 56.6 | 50.0 | 75.1 | 3.9 | 33.3 | 28.6 | 51.4 | 52.7 | 48.0 | 58.9 | 63.8 | 56.6 | 35.9 |
| | 2008 | 5.7 | 3.3 | 10.1 | 3.8 | 3.0 | 8.1 | 3.2 | 5.8 | 5.2 | 6.1 | 7.7 | 5.6 | 5.4 | 5.1 | 4.8 |
| Itinerant vendor | 2004 | 2.4 | 1.6 | 1.9 | 0.0 | 2.1 | 3.1 | 3.1 | 3.6 | 1.8 | 2.8 | 5.7 | 0.8 | 3.3 | 1.4 | 0.8 |
| | 2008 | 0.8 | 1.5 | 0.8 | 0.4 | 0.0 | 0.5 | 0.0 | 0.6 | 1.3 | 0.3 | 0.3 | 1.6 | 1.2 | 0.5 | 0.5 |
| Street / table top vendor | 2004 | 0.2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.8 | 0.6 | 0.0 | 0.0 | 0.3 | 1.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| | 2008 | 0.3 | 0.3 | 0.2 | 0.0 | 0.0 | 1.1 | 0.0 | 0.4 | 0.4 | 0.1 | 0.3 | 0.3 | 0.6 | 0.0 | 0.3 |
| General store | 2004 | 0.7 | 0.0 | 1.9 | 0.0 | 0.3 | 2.3 | 1.9 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 1.1 | 1.2 | 1.2 |
| | 2008 | 1.4 | 0.2 | 3.8 | 1.5 | 0.0 | 1.1 | 0.0 | 1.7 | 1.2 | 1.6 | 0.3 | 2.7 | 1.8 | 1.3 | 1.0 |
| Pharmacy / chemist | 2004 | 3.5 | 6.5 | 9.4 | 0.0 | 0.9 | 0.8 | 0.6 | 14.3 | 7.4 | 0.9 | 0.0 | 1.0 | 0.9 | 0.8 | 13.7 |
| | 2008 | 1.9 | 3.3 | 0.6 | 0.0 | 3.0 | 2.2 | 3.2 | 1.6 | 2.9 | 1.0 | 0.0 | 1.9 | 1.5 | 1.8 | 4.1 |
| Chemical store / drug shop | 2004 | 2.3 | 1.6 | 1.9 | 0.0 | 2.7 | 1.6 | 0.0 | 3.6 | 1.9 | 2.6 | 0.0 | 0.0 | 2.8 | 4.9 | 3.6 |
| | 2008 | 2.9 | 3.9 | 1.2 | 2.6 | 5.9 | 0.5 | 6.3 | 2.7 | 4.1 | 1.8 | 1.2 | 2.4 | 2.7 | 4.0 | 4.1 |
| Supermarket / food store | 2004 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.8 | 0.0 | 0.0 | 0.2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| | 2008 | 1.4 | 2.3 | 0.2 | 0.4 | 2.4 | 2.2 | 2.1 | 1.4 | 1.6 | 1.3 | 1.5 | 1.3 | 0.6 | 1.3 | 2.3 |
| Tailor | 2004 | 0.4 | 0.0 | 0.0 | 0.0 | 1.5 | 0.0 | 0.0 | 0.0 | 0.9 | 0.0 | 0.0 | 0.0 | 0.0 | 1.7 | 0.0 |
| | 2008 | 0.1 | 0.0 | 0.0 | 0.0 | 0.6 | 0.5 | 0.0 | 0.1 | 0.0 | 0.2 | 0.6 | 0.0 | 0.0 | 0.0 | 0.0 |
| Petrol station / Mobil mart | 2004 | 1.2 | 3.2 | 1.9 | 0.0 | 0.3 | 0.8 | 0.6 | 7.1 | 2.9 | 0.1 | 0.0 | 0.5 | 0.0 | 0.0 | 5.4 |
| | 2008 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.5 | 0.0 | 0.1 | 0.0 | 0.1 | 0.3 | 0.0 | 0.0 | 0.0 | 0.0 |
| Wholesaler | 2004 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| | 2008 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 1.1 | 0.1 | 0.0 | 0.1 | 0.0 | 0.0 | 0.3 | 0.0 | 0.0 |
| Unspecified retail outlet, using voucher | 2004 | * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| | 2008 | 13.2 | 9.8 | 19.4 | 24.5 | 5.3 | 4.8 | 1.1 | 12.9 | 12.8 | 13.6 | 10.9 | 15.5 | 13.0 | 13.9 | 12.4 |
| NON-COMMERCIAL | 2004 | 32.4 | 27.6 | 23.9 | 33.3 | 13.8 | 83.7 | 53.8 | 32.1 | 27.7 | 35.4 | 39.4 | 34.7 | 24.5 | 30.7 | 32.3 |
| | 2008 | 68.4 | 73.3 | 58.8 | 63.4 | 74.6 | 74.7 | 79.0 | 68.7 | 66.9 | 69.9 | 74.0 | 64.6 | 69.8 | 67.7 | 66.8 |
| Project / NGO | 2004 | 1.1 | 0.0 | 0.0 | 0.0 | 4.0 | 0.8 | 0.0 | 0.0 | 2.4 | 0.2 | 0.4 | 0.7 | 1.5 | 1.0 | 1.7 |
| | 2008 | 1.7 | 0.8 | 2.4 | 0.0 | 1.8 | 4.3 | 4.2 | 2.0 | 1.8 | 1.7 | 3.2 | 1.9 | 0.3 | 2.3 | 1.0 |
| Health facility | 2004 | 30.2 | 25.8 | 20.8 | 33.3 | 10.3 | 80.5 | 53.1 | 0.0 | 24.8 | 33.8 | 36.8 | 33.6 | 21.1 | 29.6 | 30.0 |
| | 2008 | 48.7 | 51.8 | 40.0 | 42.6 | 47.9 | 61.3 | 69.5 | 48.3 | 48.3 | 49.2 | 54.3 | 41.8 | 45.6 | 47.2 | 54.7 |

| | | Total | Site (city plus surrounding rural areas) | | | | | | | Urban Accra only | Urban/Rural | | Socio-Economic Status | | | | |
|---|------|-------|--|---------|---------|-------|----------|---------------|--------------|------------------------|--------------|----------|-----------------------|------|------|-----------|--|
| | | | Accra | Ashanti | Central | Volta | Northern | Upper West | All Urban | | All Rural | 1 low | 2 | 3 | 4 | 5 high | |
| Immunization / Child Health Day | 2004 | * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | |
| | 2008 | 16.5 | 18.6 | 15.4 | 19.6 | 24.9 | 5.9 | 5.3 | 17.3 | 14.7 | 18.2 | 15.0 | 19.8 | 23.6 | 15.9 | 9.1 | |
| School | 2004 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | |
| | 2008 | 0.7 | 0.8 | 0.8 | 0.8 | 0.0 | 1.1 | 0.0 | 0.7 | 0.8 | 0.6 | 0.9 | 0.0 | 0.3 | 1.3 | 1.0 | |
| Women's group | 2004 | 0.5 | 0.0 | 1.9 | 0.0 | 0.0 | 0.0 | 1.2 | 0.0 | 0.0 | 0.8 | 2.1 | 0.45 | 0.0 | 0.0 | 0.0 | |
| | 2008 | 0.2 | 0.0 | 0.0 | 0.0 | 0.0 | 1.6 | 0.0 | 0.2 | 0.1 | 0.2 | 0.6 | 0.3 | 0.0 | 0.0 | 0.0 | |
| Local officials or community organization | 2004 | * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | |
| | 2008 | 0.6 | 1.3 | 0.2 | 0.4 | 0.0 | 0.5 | 0.0 | 0.2 | 1.2 | 0.0 | 0.0 | 0.8 | 0.0 | 1.0 | 1.0 | |
| Gift | 2004 | 3.1 | 4.8 | 1.9 | 16.7 | 1.8 | 3.9 | 2.5 | 7.1 | 3.1 | 3.2 | 1.7 | 4.1 | 3.4 | 1.1 | 5.4 | |
| | 2008 | 1.7 | 0.8 | 2.4 | 0.0 | 1.8 | 4.3 | 4.2 | 2.0 | 1.8 | 1.7 | 3.2 | 1.9 | 0.3 | 2.3 | 1.0 | |
| BASE | 2004 | 740 | 62 | 53 | 6 | 329 | 128 | 162 | 28 | 358 | 382 | 172 | 160 | 139 | 156 | 113 | |
| | 2008 | 1851 | 620 | 510 | 265 | 170 | 189 | 97 | 294 | 909 | 942 | 342 | 377 | 331 | 399 | 402 | |

*Not included as category in 2004

4.4 FACTORY-MADE VS TAILOR-MADE NETS

- A much greater proportion of nets owned now are factory-made rather than tailor-made: 55% were factory-made in 2004 compared with 98% in 2008.
- The small minority of tailor-made nets in 2008 were most commonly found in the lowest SES segments.

Table 4.5 Factory-made vs. tailor-made nets

Among all nets owned

| | | Total | Site (urban and rural areas combined) | | | | | | | Urban Accra only | Urban/Rural | | Socio-Economic Status | | | | |
|--|------|-------|---------------------------------------|---------|---------|-------|----------|---------------|--------------|------------------------|--------------|----------|-----------------------|------|------|-----------|--|
| | | | Accra | Ashanti | Central | Volta | Northern | Upper West | All Urban | | All Rural | 1 low | 2 | 3 | 4 | 5 high | |
| Manufactured | 2004 | 55.5 | 55.1 | 47.5 | 83.3 | 36.6 | 99.0 | 75.7 | 73.3 | 56.3 | 54.9 | 54.4 | 48.1 | 36.5 | 61.8 | 73.1 | |
| | 2008 | 98.2 | 99.0 | 97.4 | 97.7 | 99.4 | 97.3 | 96.9 | 99.3 | 98.4 | 97.9 | 96.2 | 97.1 | 99.1 | 98.5 | 99.7 | |
| Tailor-made | 2004 | 40.1 | 43.5 | 36.8 | 16.7 | 59.9 | 0.5 | 21.7 | 26.7 | 37.7 | 41.6 | 39.2 | 46.7 | 58.5 | 34.9 | 24.2 | |
| | 2008 | 1.6 | 0.8 | 2.6 | 2.3 | 0.6 | 1.6 | 1.0 | 0.7 | 1.3 | 1.8 | 3.2 | 2.7 | 0.3 | 1.5 | 0.3 | |
| Manufactured then modified by tailor | 2004 | 4.5 | 1.4 | 15.6 | 0.0 | 3.4 | 0.5 | 2.5 | 0.0 | 6.0 | 3.5 | 6.4 | 5.2 | 5.0 | 3.3 | 2.7 | |
| | 2008 | 0.3 | 0.2 | 0.0 | 0.0 | 0.0 | 1.1 | 2.1 | 0.0 | 0.2 | 0.3 | 0.6 | 0.3 | 0.6 | 0.0 | 0.0 | |
| BASE | 2004 | 573 | 133 | 94 | 9 | 200 | 67 | 69 | 62 | 225 | 347 | 116 | 105 | 107 | 124 | 121 | |
| | 2008 | 1839 | 617 | 509 | 265 | 164 | 187 | 97 | 292 | 900 | 939 | 340 | 375 | 327 | 398 | 399 | |

4.5 BRAND OF NETS OWNED

In order to find out the brand of net owned, interviewers were given instruction in brand identification, and, if they had the opportunity to look at the net, told to look for labels that identified brand. If there was no label and the brand was in doubt, respondents were asked the brand and shown a card with the logos of various net brands available in Ghana to help them identify brand.

- There has been an increase in the number of brands on the market.
- The dominant brands in 2008 were PermaNet (58%) and Olyset (15%), the brands procured for mass distribution campaigns.
- The brand of net is now more easily identified: in 2004, the brand was unknown or unidentifiable for 35% of nets owned; in 2008, brand was unknown or unidentifiable for 11% of nets owned.

Table 4.6a Net brands owned – 2008

Among factory-made (non-tailor made) nets owned

| | TOTAL | Site (urban and rural areas combined) | | | | | | Urban Accra only | Urban/Rural | | Socio-economic status | | | | |
|--------------------|-------|---------------------------------------|---------|---------|-------|----------|------------|------------------|-------------|-------|-----------------------|------|------|------|--------|
| | | Accra | Ashanti | Central | Volta | Northern | Upper West | | Urban | Rural | 1 Low | 2 | 3 | 4 | 5 High |
| PermaNet | 58.2 | 66.2 | 58.8 | 59.6 | 70.0 | 25.4 | 42.3 | 54.4 | 56.6 | 59.7 | 50.6 | 57.4 | 61.3 | 61.9 | 59.0 |
| Olyset | 15.4 | 10.6 | 16.5 | 16.2 | 7.1 | 30.2 | 24.7 | 15.3 | 15.5 | 15.4 | 21.3 | 12.4 | 12.7 | 13.0 | 17.9 |
| UNICEF & SiamDutch | 4.3 | 4.3 | 3.9 | 3.4 | 2.4 | 6.9 | 7.2 | 6.8 | 4.5 | 4.1 | 3.8 | 4.8 | 6.3 | 4.0 | 3.0 |
| UNICEF (only) | 2.3 | 0.6 | 0.6 | 1.5 | 0.0 | 9.5 | 13.4 | 0.7 | 1.8 | 2.8 | 5.6 | 1.9 | 0.6 | 1.8 | 1.7 |
| SiamDutch (only) | 2.3 | 2.3 | 2.4 | 1.5 | 1.8 | 3.7 | 2.1 | 3.1 | 1.8 | 2.8 | 2.0 | 2.6 | 4.2 | 1.5 | 1.2 |
| Dawa Plus | 1.9 | 2.1 | 1.6 | 1.5 | 2.9 | 3.2 | 0.0 | 2.7 | 2.9 | 1.1 | 0.6 | 4.0 | 1.2 | 1.5 | 2.2 |
| Iconet | 1.2 | 1.6 | 1.8 | 0.0 | 0.0 | 1.1 | 1.0 | 2.0 | 1.5 | 0.8 | 0.6 | 1.1 | 1.2 | 1.5 | 1.5 |
| Dawa Net | 1.1 | 1.4 | 1.4 | 0.0 | 1.2 | 1.1 | 0.0 | 2.4 | 1.1 | 1.1 | 1.5 | 1.3 | 0.3 | 0.5 | 1.7 |
| KO Net | 0.6 | 0.6 | 1.2 | 0.4 | 0.6 | 0.0 | 0.0 | 1.0 | 0.9 | 0.4 | 0.0 | 0.8 | 0.9 | 1.5 | 0.0 |
| Dura Net | 0.2 | 0.2 | 0.0 | 0.0 | 0.0 | 1.1 | 0.0 | 0.0 | 0.3 | 0.0 | 0.0 | 0.0 | 0.0 | 0.3 | 0.5 |
| Other | 2.1 | 2.2 | 2.0 | 1.5 | 2.9 | 2.1 | 1.0 | 3.4 | 2.4 | 1.7 | 1.2 | 1.1 | 3.3 | 2.3 | 2.5 |
| Don't know | 10.5 | 7.7 | 10.0 | 14.3 | 11.2 | 15.9 | 8.2 | 8.2 | 10.8 | 10.2 | 12.9 | 12.7 | 7.9 | 10.3 | 8.7 |
| BASE | 1852 | 621 | 510 | 265 | 170 | 189 | 97 | 294 | 910 | 942 | 342 | 378 | 331 | 399 | 402 |

Table 4.6b Net brands owned - 2004

Among factory-made (non-tailor made) nets owned

| | TOTAL | Site (urban and rural areas combined) | | | | | | Urban Accra only | Urban/Rural | | Socio-economic status | | | | |
|--------------------|-------|---------------------------------------|---------|---------|-------|----------|------------|------------------|-------------|-------|-----------------------|------|------|------|--------|
| | | Accra | Ashanti | Central | Volta | Northern | Upper West | | Urban | Rural | 1 Low | 2 | 3 | 4 | 5 High |
| PermaNet | 13.8 | 13.4 | 10.2 | 0.0 | 11.9 | 16.8 | 19.5 | 18.2 | 15.9 | 12.4 | 13.0 | 6.7 | 17.6 | 10.1 | 20.2 |
| Netmark | 10.9 | 27.2 | 10.2 | 0.0 | 4.4 | 5.4 | 7.1 | 45.5 | 19.8 | 4.7 | 5.1 | 7.1 | 1.0 | 5.7 | 26.6 |
| UNICEF & SiamDutch | 10.8 | 10.0 | 5.4 | 40.0 | 7.5 | 13.3 | 16.1 | 0.0 | 6.6 | 13.8 | 9.3 | 10.7 | 12.2 | 16.9 | 6.2 |
| KO Net | 10.3 | 0.0 | 8.5 | 0.0 | 4.4 | 29.9 | 12.9 | 0.0 | 4.6 | 14.3 | 13.4 | 18.6 | 16.7 | 9.5 | 0.8 |
| SiamDutch only | 7.7 | 10.0 | 5.4 | 20.0 | 1.9 | 12.2 | 8.3 | 0.0 | 3.5 | 10.6 | 9.8 | 14.6 | 13.2 | 2.8 | 3.5 |
| Dawa Net | 4.3 | 13.4 | 0.0 | 0.0 | 3.5 | 2.4 | 0.8 | 18.2 | 6.0 | 3.2 | 2.0 | 0.0 | 1.5 | 5.8 | 8.7 |
| UNICEF only | 3.8 | 0.0 | 0.0 | 0.0 | 4.4 | 8.8 | 6.4 | 0.0 | 1.0 | 5.7 | 6.2 | 6.0 | 4.8 | 3.3 | 0.5 |
| Iconet | 2.3 | 2.5 | 2.4 | 0.0 | 1.2 | 1.9 | 4.2 | 0.0 | 1.7 | 2.7 | 1.6 | 2.7 | 1.5 | 3.9 | 1.5 |
| Don't know | 35.8 | 23.4 | 57.8 | 40.0 | 59.6 | 9.3 | 24.8 | 18.2 | 40.8 | 32.3 | 39.6 | 33.5 | 29.5 | 42.0 | 32.0 |
| BASE | 480 | 38 | 38 | 5 | 138 | 129 | 132 | 22 | 219 | 261 | 113 | 94 | 71 | 109 | 93 |

4.6 COST OF NETS

- In 2008, almost two-thirds (64%) of nets owned had been obtained at no cost to the household, whereas there were virtually no free nets in 2004. There was little variation in the percent of free nets by site, urban-rural, or SES.
- Among the 25% of nets that had been paid for and cost was known, the average price was 3.3 new cedis. These include nets bought at subsidized prices or with a voucher as well as nets purchased at full commercial price.
- Those in higher SES segments paid more for nets they purchased: an average of 4.2 cedis compared with those in the lowest SES segment who paid an average of 2.6 cedis.
- In 2004, the average price was also 3.3 cedis. Note that in 2004, few nets were ITNs and in 2008, most were.
- The median ITN price was highest in pharmacies or chemical stores, and lowest when bought with a voucher.

Table 4.7a Cost of nets owned - 2008

Among all nets owned

| | TOTAL | Site (urban and rural areas combined) | | | | | | Urban Accra only | Urban/Rural | | Socio-economic status | | | | |
|--------------------------|-------|---------------------------------------|---------|---------|-------|----------|------------|------------------|-------------|-------|-----------------------|------|------|------|--------|
| | | Accra | Ashanti | Central | Volta | Northern | Upper West | | Urban | Rural | 1 Low | 2 | 3 | 4 | 5 High |
| % Free | 64.0 | 66.0 | 64.7 | 66.0 | 62.9 | 55.6 | 59.8 | 66.3 | 61.2 | 66.7 | 66.7 | 65.3 | 69.2 | 63.9 | 56.2 |
| % Trade/barter | 0.8 | 1.6 | 0.2 | 0.0 | 1.2 | 0.0 | 2.1 | 2.7 | 1.1 | 0.5 | 0.3 | 0.0 | 1.5 | 2.3 | 0.0 |
| % Gift | 1.2 | 0.5 | 2.0 | 1.9 | 1.2 | 1.1 | 1.0 | 0.7 | 0.9 | 1.6 | 1.8 | 1.3 | 0.6 | 1.3 | 1.2 |
| % Paid for, cost unknown | 9.6 | 13.0 | 9.4 | 3.0 | 11.2 | 7.9 | 7.2 | 11.9 | 11.8 | 7.5 | 5.8 | 9.5 | 7.3 | 10.3 | 14.2 |
| % Paid for, cost known | 24.4 | 18.8 | 23.7 | 29.1 | 23.5 | 35.4 | 29.9 | 18.4 | 25.1 | 23.7 | 25.4 | 23.8 | 21.5 | 22.3 | 28.4 |
| BASE | 1852 | 621 | 510 | 265 | 170 | 189 | 97 | 294 | 910 | 942 | 342 | 378 | 331 | 399 | 402 |
| New Cedis | | | | | | | | | | | | | | | |
| Median* | 3.0 | 4.0 | 3.0 | 2.0 | 4.0 | 1.0 | 2.5 | 5.0 | 3.5 | 2.5 | 2.5 | 3.0 | 2.5 | 2.5 | 4.0 |
| Mean* | 3.3 | 4.6 | 3.4 | 2.6 | 3.8 | 2.0 | 2.7 | 5.0 | 3.8 | 2.9 | 2.6 | 3.2 | 2.9 | 3.5 | 4.2 |
| Std. Deviation* | 2.02 | 2.43 | 1.30 | 1.51 | 1.29 | 1.91 | 1.93 | 2.47 | 2.17 | 1.75 | 1.91 | 1.92 | 1.57 | 1.86 | 2.25 |
| BASE | 451 | 117 | 121 | 77 | 40 | 67 | 29 | 54 | 228 | 223 | 87 | 90 | 71 | 89 | 114 |

Table 4.7b Cost of nets owned - 2004

Among all nets owned

| | TOTAL | Site (urban and rural areas combined) | | | | | | Urban Accra only | Urban/Rural | | Socio-economic status | | | | |
|--------------------------|-------|---------------------------------------|---------|---------|-------|----------|------------|------------------|-------------|-------|-----------------------|------|------|------|--------|
| | | Accra | Ashanti | Central | Volta | Northern | Upper West | | Urban | Rural | 1 Low | 2 | 3 | 4 | 5 High |
| % Free | 1.1 | 0.0 | 0.0 | 0.0 | 1.4 | 3.4 | 1.7 | 0.0 | 0.3 | 1.6 | 0.3 | 3.3 | 0.4 | 1.7 | 0.0 |
| % Paid for, cost known | 73.6 | 63.5 | 82.2 | 83.3 | 69.1 | 86.8 | 80.1 | 70.0 | 75.2 | 72.5 | 82.2 | 78.0 | 68.2 | 63.8 | 76.5 |
| % Paid for, cost unknown | 25.3 | 36.5 | 17.8 | 16.7 | 29.5 | 9.8 | 18.1 | 30.0 | 24.5 | 25.9 | 17.5 | 18.8 | 31.4 | 34.5 | 23.5 |
| BASE | 777 | 68 | 59 | 6 | 347 | 130 | 167 | 30 | 378 | 399 | 178 | 167 | 147 | 168 | 117 |
| New Cedis | | | | | | | | | | | | | | | |
| Median* | 3.0 | 3.5 | 3.0 | 3.0 | 3.5 | 1.0 | 2.5 | 3.5 | 3.5 | 3.0 | 2.5 | 3.0 | 3.5 | 2.5 | 3.5 |
| Mean* | 3.4 | 4.0 | 3.4 | 3.1 | 4.0 | 2.0 | 2.6 | 4.9 | 3.9 | 3.1 | 2.7 | 3.3 | 3.3 | 3.2 | 4.4 |
| Std. Deviation* | 2.1 | 2.4 | 1.8 | 1.1 | 2.1 | 1.8 | 1.4 | 2.9 | 2.3 | 1.9 | 1.8 | 2.0 | 1.9 | 1.9 | 2.4 |
| BASE | 582 | 43 | 49 | 5 | 240 | 111 | 134 | 21 | 279 | 303 | 149 | 132 | 102 | 109 | 90 |

Table 4.7c Cost of nets by source - 2008

Among sources of 10 or more nets

| 2008 | Open Air / structured market | Itinerant vendor | General shop | Pharmacy / chemist | Chemical store / drug shop | Supermarket / food store | Health facility | Immunization / Child Health day | Unspecified retail outlet, using voucher |
|----------------------------|------------------------------|------------------|--------------|--------------------|----------------------------|--------------------------|-----------------|---------------------------------|--|
| % Free | 5.8 | 6.7 | 0.0 | 0.0 | 3.7 | 7.7 | 67.8 | 92.7 | 89.3 |
| % Paid for, cost unknown | 27.9 | 13.3 | 46.2 | 28.6 | 27.8 | 30.8 | 5.4 | 2.0 | 2.1 |
| % Paid for, cost known | 66.3 | 80.0 | 53.8 | 71.4 | 68.5 | 61.5 | 25.8 | 4.3 | 8.7 |
| BASE | 104 | 15 | 26 | 35 | 54 | 26 | 894 | 302 | 242 |
| AMONG NETS PAID FOR | | | | | | | | | |
| Median (cedis) | 3.0 | 3.0 | 4.0 | 4.5 | 4.5 | 2.5 | 2.5 | 2.5 | 2.0 |
| Mean (cedis) | 3.6 | 3.6 | 4.6 | 4.6 | 4.7 | 3.3 | 2.8 | 3.0 | 3.4 |
| Std. Deviation | 1.65 | 1.49 | 2.41 | 1.55 | 2.06 | 2.82 | 1.84 | 2.50 | 2.66 |
| BASE | 69 | 12 | 14 | 25 | 37 | 16 | 231 | 13 | 21 |

4.7 SIZE, SHAPE AND COLOR OF NETS OWNED

- Households typically owned double-size nets in both 2004 (80%) and 2008 (83%).
- Almost all nets owned were rectangular-shaped in both years: 93% in 2004 and 95% in 2008.
- Most nets owned were white, both in 2004 (69%) and 2008 (63%). In 2008, the second most common color was light blue (18%).

Table 4.8 Size of nets owned

Among all nets owned

| | TOTAL 2004 | TOTAL 2008 | Site (urban and rural areas combined) | | | | | | Urban Accra only | Urban/Rural | | Socio-Economic Status | | | | |
|-------------|------------|------------|---------------------------------------|---------|---------|-------|----------|------------|------------------|-------------|-----------|-----------------------|------|------|------|--------|
| | | | Accra | Ashanti | Central | Volta | Northern | Upper West | | All Urban | All Rural | 1 low | 2 | 3 | 4 | 5 high |
| Single | 14.6 | 8.4 | 12.4 | 2.5 | 0.8 | 7.4 | 16.0 | 22.7 | 11.6 | 9.0 | 7.8 | 11.9 | 6.2 | 9.0 | 7.0 | 8.2 |
| Double | 80.1 | 82.9 | 80.2 | 87.5 | 84.5 | 83.3 | 80.3 | 75.3 | 81.2 | 81.9 | 83.9 | 83.4 | 84.8 | 81.4 | 83.9 | 81.0 |
| Triple/king | 5.0 | 8.3 | 7.0 | 9.4 | 14.3 | 9.3 | 3.2 | 2.1 | 6.5 | 8.4 | 8.2 | 4.7 | 8.7 | 9.6 | 8.8 | 9.5 |
| Cot/crib | 0.3 | 0.4 | 0.3 | 0.6 | 0.4 | 0.0 | 0.5 | 0.0 | 0.7 | 0.7 | 0.1 | 0.0 | 0.3 | 0.0 | 0.3 | 1.3 |
| BASE | 775 | 1804 | 582 | 510 | 265 | 162 | 188 | 97 | 276 | 879 | 925 | 337 | 368 | 323 | 386 | 390 |

Table 4.9 Shape of nets owned

Among all nets owned

| | TOTAL 2004 | TOTAL 2008 | Site (urban and rural areas combined) | | | | | | Urban Accra only | Urban/Rural | | Socio-Economic Status | | | | |
|------------------|------------|------------|---------------------------------------|---------|---------|-------|----------|------------|------------------|-------------|-----------|-----------------------|------|------|------|--------|
| | | | Accra | Ashanti | Central | Volta | Northern | Upper West | | All Urban | All Rural | 1 low | 2 | 3 | 4 | 5 high |
| Rectangular | 93.3 | 94.7 | 94.0 | 92.9 | 97.4 | 93.2 | 97.4 | 97.9 | 92.1 | 92.5 | 96.8 | 97.6 | 95.9 | 97.2 | 91.7 | 91.8 |
| Round/conical | 5.9 | 4.7 | 5.3 | 5.9 | 2.6 | 6.2 | 2.1 | 2.1 | 6.5 | 6.7 | 2.7 | 1.8 | 3.8 | 2.5 | 7.0 | 7.4 |
| Triangle/pyramid | 0.1 | 0.3 | 0.2 | 1.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.4 | 0.3 | 0.3 | 0.0 | 0.0 | 0.3 | 0.8 | 0.5 |
| Wedge | 0.7 | 0.3 | 0.5 | 0.2 | 0.0 | 0.6 | 0.5 | 0.0 | 1.1 | 0.5 | 0.2 | 0.6 | 0.3 | 0.0 | 0.5 | 0.3 |
| BASE | 763 | 1804 | 583 | 509 | 265 | 161 | 189 | 97 | 277 | 880 | 924 | 337 | 367 | 324 | 386 | 390 |

Table 4.10 Color of net owned

Among all nets owned

| | TOTAL 2004 | TOTAL 2008 | Site (urban and rural areas combined) | | | | | | Urban Accra only | Urban/Rural | | Socio-Economic Status | | | | |
|-----------------------|---------------|---------------|---------------------------------------|---------|---------|-------|----------|---------------|------------------------|--------------|--------------|-----------------------|------|------|------|-----------|
| | | | Accra | Ashanti | Central | Volta | Northern | Upper West | | All Urban | All Rural | 1 low | 2 | 3 | 4 | 5 high |
| White | 68.9 | 63.3 | 69.4 | 62.2 | 64.9 | 78.6 | 34.4 | 56.7 | 63.0 | 62.5 | 64.1 | 57.8 | 63.0 | 71.0 | 63.1 | 62.3 |
| Light blue | 6.8 | 18.0 | 18.3 | 18.0 | 11.3 | 15.5 | 27.5 | 19.6 | 19.2 | 19.3 | 16.7 | 14.7 | 17.0 | 16.0 | 19.6 | 21.7 |
| Dark blue | 3.6 | 7.1 | 4.0 | 10.4 | 11.7 | 1.8 | 8.5 | 3.1 | 6.5 | 6.3 | 7.9 | 7.9 | 8.0 | 6.6 | 7.8 | 5.2 |
| Green | 12.7 | 6.8 | 3.2 | 6.7 | 11.3 | 1.2 | 15.9 | 9.3 | 5.8 | 7.2 | 6.4 | 8.2 | 7.7 | 4.8 | 5.8 | 7.2 |
| Turquoise | 1.2 | 2.7 | 3.2 | 1.0 | 0.0 | 0.6 | 7.9 | 8.2 | 4.8 | 3.0 | 2.3 | 5.9 | 2.1 | 0.3 | 3.0 | 2.0 |
| Pink | 3.1 | 0.7 | 0.8 | 0.4 | 0.4 | 1.2 | 0.5 | 2.1 | 0.3 | 0.8 | 0.6 | 2.1 | 0.3 | 0.0 | 0.3 | 1.0 |
| Sea green | 1.0 | 0.4 | 0.6 | 0.0 | 0.4 | 0.0 | 1.1 | 0.0 | 0.3 | 0.3 | 0.4 | 0.6 | 0.3 | 0.6 | 0.3 | 0.2 |
| Orange | 0.3 | 0.3 | 0.2 | 0.2 | 0.0 | 1.2 | 0.5 | 0.0 | 0.0 | 0.1 | 0.4 | 0.6 | 0.8 | 0.0 | 0.0 | 0.0 |
| Gray | 0.3 | 0.2 | 0.2 | 0.4 | 0.0 | 0.0 | 0.5 | 0.0 | 0.0 | 0.2 | 0.2 | 0.6 | 0.0 | 0.3 | 0.0 | 0.2 |
| Yellow | 0.3 | 0.2 | 0.0 | 0.2 | 0.0 | 0.0 | 1.1 | 0.0 | 0.0 | 0.1 | 0.2 | 0.3 | 0.5 | 0.0 | 0.0 | 0.0 |
| Black | 0.1 | 0.2 | 0.0 | 0.2 | 0.0 | 0.0 | 0.5 | 1.0 | 0.0 | 0.1 | 0.2 | 0.6 | 0.0 | 0.3 | 0.0 | 0.0 |
| Peach | 0.6 | 0.1 | 0.0 | 0.2 | 0.0 | 0.0 | 0.5 | 0.0 | 0.0 | 0.1 | 0.1 | 0.3 | 0.3 | 0.0 | 0.0 | 0.0 |
| Olive green | 0.1 | 0.1 | 0.0 | 0.2 | 0.0 | 0.0 | 0.5 | 0.0 | 0.0 | 0.0 | 0.2 | 0.3 | 0.0 | 0.0 | 0.3 | 0.0 |
| Multi-color design | 0.8 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.5 | 0.0 | 0.0 | 0.0 | 0.1 | 0.3 | 0.0 | 0.0 | 0.0 | 0.0 |
| BASE | 773 | 1847 | 618 | 510 | 265 | 168 | 189 | 97 | 292 | 907 | 940 | 341 | 376 | 331 | 398 | 401 |

4.8 WHO OBTAINED THE NET

- In 2004, about half (53%) of nets were obtained by the respondent but in 2008, 82% of nets were obtained by the respondent herself. The difference is likely due to the distribution of free nets through targeted campaigns at health centers and to voucher programs for pregnant women.

Table 4.11 Who obtained the net (2004 & 2008)

Among all nets

| | | TOTAL | Site (urban and rural areas combined) | | | | | | Urban Accra only | Urban/Rural | | Socio economic status | | | | |
|--------------------------------|------|-------|---------------------------------------|---------|---------|-------|----------|---------------|------------------------|--------------|--------------|-----------------------|------|------|------|-----------|
| | | | Accra | Ashanti | Central | Volta | Northern | Upper West | | All Urban | All Rural | 1 Low | 2 | 3 | 4 | 5 High |
| Myself | 2004 | 52.9 | 45.2 | 52.7 | 50.0 | 47.8 | 79.3 | 57.6 | 55.2 | 47.8 | 56.3 | 58.8 | 60.0 | 49.2 | 49.7 | 47.9 |
| | 2008 | 82.2 | 84.8 | 79.2 | 84.5 | 85.9 | 78.3 | 81.4 | 86.4 | 83.5 | 81.0 | 81.6 | 83.5 | 84.5 | 80.9 | 80.8 |
| Husband | 2004 | 24.8 | 31.1 | 37.3 | 33.3 | 18.7 | 12.4 | 24.8 | 24.1 | 27.7 | 22.9 | 25.4 | 11.5 | 24.1 | 29.4 | 31.8 |
| | 2008 | 7.2 | 7.8 | 5.5 | 3.8 | 7.1 | 12.7 | 11.3 | 8.2 | 9.1 | 5.3 | 5.0 | 8.0 | 5.5 | 6.5 | 10.4 |
| Mother or mother-in- law | 2004 | 8.6 | 10.3 | 1.5 | 0.0 | 16.2 | 0.0 | 2.7 | 6.9 | 11.1 | 7.0 | 5.7 | 9.3 | 12.4 | 10.7 | 5.3 |
| | 2008 | 2.5 | 1.5 | 3.7 | 3.0 | 3.0 | 2.1 | 2.0 | 1.0 | 2.0 | 3.2 | 4.2 | 1.6 | 2.4 | 2.8 | 2.9 |
| Other family member | 2004 | 10.7 | 8.9 | 8.5 | 0.0 | 15.7 | 5.4 | 9.3 | 6.9 | 11.1 | 10.5 | 8.4 | 18.4 | 12.4 | 5.9 | 9.8 |
| | 2008 | 5.8 | 3.9 | 9.4 | 6.8 | 3.5 | 5.3 | 2.1 | 2.7 | 3.4 | 8.2 | 7.9 | 5.3 | 6.4 | 6.8 | 3.2 |
| Given by someone | 2004 | 2.9 | 4.6 | 0.0 | 16.7 | 1.6 | 2.9 | 5.7 | 6.9 | 2.3 | 3.3 | 1.7 | 0.7 | 1.9 | 4.3 | 5.3 |
| | 2008 | 2.2 | 1.9 | 2.2 | 1.9 | 3.5 | 1.6 | 3.1 | 1.7 | 2.0 | 2.3 | 2.3 | 1.6 | 1.2 | 3.0 | 2.5 |
| BASE | 2004 | 577 | 67 | 59 | 6 | 347 | 130 | 167 | 29 | 377 | 399 | 178 | 167 | 147 | 168 | 116 |
| | 2008 | 1848 | 618 | 509 | 265 | 170 | 189 | 97 | 294 | 908 | 940 | 342 | 376 | 330 | 398 | 402 |

4.9 NET WASHING PATTERNS

Respondents were asked, for each net owned, if it had been washed and, if so, how often. Since effectiveness of the treatment diminishes with washing, families should be discouraged from washing their nets more than about twice a year.

The figures for 2004 and 2008 are not strictly comparable. In 2008, we recorded whether the net was still in the pack, and deleted those from the washing analysis. In 2004, we did not record whether the net was still in the pack, although presumably few nets were, since most had been had been used the prior night. In spite of lack of strict comparability, given the magnitude of the change, it is clear that family nets are being washed less frequently now than they were four years prior.

- In 2004, 76% of nets had ever been washed; in 2008, 60% had ever been washed. (Note that more nets are newer in 2008, so may not be ready to be washed.) The lower the SES quintile, the more likely that the family net had been washed.
- In 2004, 40% of all nets were reportedly washed at least once a month; in 2008, 22% of nets were reportedly washed that frequently.

Figure 3.9:

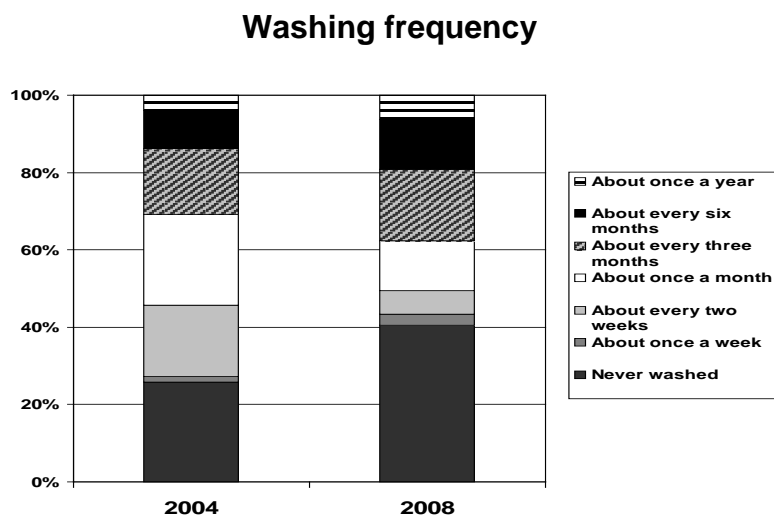


Table 4.12 Net washing patterns

Among nets that were no longer in package, where washing pattern was known

| | | Site (city plus surrounding rural areas) | | | | | | | Urban Accra only | Urban/Rural | | Socio-Economic Status | | | | |
|-----------------------------------|------|--|-------|---------|---------|-------|----------|---------------|------------------------|--------------|--------------|-----------------------|------|------|------|-----------|
| | | Total | Accra | Ashanti | Central | Volta | Northern | Upper West | | All Urban | All Rural | 1 low | 2 | 3 | 4 | 5 high |
| Never washed | 2004 | 23.8 | 28.2 | 20.8 | 16.7 | 11.7 | 51.6 | 28.2 | 36.7 | 21.8 | 25.1 | 18.3 | 23.6 | 19.8 | 28.0 | 28.0 |
| | 2008 | 40.1 | 42.6 | 37.7 | 41.9 | 40.8 | 33.7 | 45.1 | 45.5 | 41.9 | 38.3 | 33.0 | 36.4 | 41.8 | 44.3 | 44.7 |
| About once a week | 2004 | 1.3 | 11.3 | 9.4 | 0.0 | 7.5 | 1.0 | 7.7 | 0.0 | 5.7 | 9.3 | 9.3 | 6.6 | 15.3 | 5.6 | 3.5 |
| | 2008 | 3.0 | 2.5 | 4.1 | 1.0 | 2.1 | 5.9 | 1.2 | 3.5 | 2.5 | 3.5 | 5.3 | 4.1 | 1.6 | 17. | 2.4 |
| About every two weeks | 2004 | 17.0 | 17.5 | 18.4 | 33.3 | 19.0 | 4.9 | 18.0 | 13.3 | 13.5 | 19.3 | 20.4 | 18.3 | 19.6 | 12.3 | 15.3 |
| | 2008 | 5.9 | 3.6 | 6.9 | 7.9 | 4.2 | 8.3 | 7.3 | 4.0 | 4.5 | 7.2 | 9.2 | 9.6 | 4.3 | 4.7 | 1.7 |
| About once a month | 2004 | 21.6 | 16.2 | 20.9 | 16.7 | 30.4 | 14.6 | 14.8 | 16.7 | 24.1 | 20.0 | 15.6 | 29.4 | 23.4 | 28.2 | 12.3 |
| | 2008 | 12.8 | 14.0 | 11.5 | 12.0 | 12.0 | 14.2 | 12.2 | 11.1 | 13.0 | 12.5 | 13.1 | 11.7 | 13.3 | 14.1 | 11.7 |
| About every three months | 2004 | 15.8 | 16.3 | 14.5 | 33.3 | 16.4 | 14.7 | 14.1 | 20.0 | 20.9 | 12.5 | 25.9 | 10.1 | 7.1 | 13.9 | 20.9 |
| | 2008 | 18.4 | 17.8 | 21.3 | 17.8 | 19.7 | 13.6 | 17.1 | 20.2 | 17.6 | 19.2 | 19.9 | 18.9 | 22.3 | 10.7 | 21.0 |
| About every six months | 2004 | 9.0 | 7.5 | 9.5 | 0.0 | 9.7 | 8.8 | 10.1 | 10.0 | 9.3 | 8.7 | 7.8 | 8.6 | 4.8 | 7.2 | 15.8 |
| | 2008 | 12.8 | 14.0 | 10.8 | 11.5 | 15.5 | 13.6 | 12.2 | 9.1 | 13.0 | 12.5 | 12.8 | 14.1 | 10.2 | 15.1 | 11.3 |
| About once a year | 2004 | 3.7 | 3.0 | 5.0 | 0.0 | 3.0 | 3.4 | 5.8 | 3.3 | 3.2 | 4.0 | 2.5 | 1.9 | 9.1 | 3.0 | 2.3 |
| | 2008 | 6.2 | 4.1 | 7.4 | 7.9 | 2.8 | 10.7 | 4.9 | 4.0 | 6.5 | 6.0 | 6.0 | 4.5 | 5.9 | 8.4 | 6.2 |
| BASE | 2004 | 777 | 68 | 59 | 6 | 347 | 130 | 167 | 30 | 378 | 399 | 178 | 167 | 147 | 168 | 117 |
| | 2008 | 1418 | 444 | 390 | 191 | 142 | 169 | 82 | 198 | 682 | 736 | 282 | 291 | 256 | 298 | 291 |

SECTION 5

KNOWLEDGE, BELIEFS AND SOURCES OF INFORMATION ABOUT MALARIA AND ITNS

This section contains information on awareness, perceptions, and knowledge about malaria and ITNs, as well as exposure to information on ITNs. We report on:

1. Recognition of the English term “malaria”
2. Perceived symptoms and causes of malaria
3. Knowledge of vulnerable groups
4. Perceived advantages and disadvantages of net and ITN use by vulnerable groups
5. Exposure to information on ITNs, source of information, and recall of content

5.1 RECOGNITION OF THE TERM “MALARIA”

Respondents were asked whether they had heard of the term “malaria” in English in order to find out the extent to which the term can be used in promotion activities. Ability to use a single term – rather than multiple local terms – for promotion activities would be important for building local knowledge about malaria.

- Recognition of the English term “malaria” was nearly universal in both years: 98.2% in 2004 and 99.6% in 2008.

Table 5.1 Recognition of term “malaria”

Among all respondents

| | Total | Site (city plus surrounding rural areas) | | | | | | Urban Accra only | Urban/Rural | | Socio-Economic Status | | | | |
|-----------|-------|--|---------|---------|-------|----------|------------|------------------|-------------|-----------|-----------------------|------|------|-------|--------|
| | | Accra | Ashanti | Central | Volta | Northern | Upper West | | All Urban | All Rural | 1 low | 2 | 3 | 4 | 5 high |
| 2004 | 98.2 | 99.6 | 99.1 | 98.6 | 97.5 | 96.3 | 92.8 | 100 | 99.1 | 97.6 | 93.2 | 99.0 | 99.0 | 997.7 | 99.9 |
| 2008 | 99.6 | 99.8 | 99.4 | 100.0 | 99.0 | 99.4 | 100.0 | 100.0 | 99.8 | 99.4 | 98.9 | 99.7 | 99.7 | 99.7 | 100.0 |
| BASE 2004 | 1420 | 231 | 240 | 70 | 291 | 279 | 309 | 120 | 610 | 810 | 355 | 302 | 281 | 281 | 201 |
| BASE 2008 | 1796 | 639 | 459 | 207 | 202 | 180 | 109 | 299 | 917 | 879 | 359 | 329 | 360 | 359 | 359 |

5.2 PERCEIVED SYMPTOMS AND CAUSES OF MALARIA

Malaria can exhibit a diverse set of symptoms, but fever is common to all symptomatic cases. In order to determine the extent to which respondent perceptions of malaria coincide with the biomedical definitions, those who had heard of the term “malaria” were asked what the symptoms and causes were.

- Knowledge of the symptoms of malaria was good in both years, and the percent mentioning various symptoms did not change over time. In 2008, 77% mentioned fever or its manifestations (chills, shivering), as did 75% in 2004. However, less than 2% in both years mentioned convulsions, a symptom of severe malaria.
- When asked what causes malaria, 86% mentioned mosquitoes, up somewhat from 81% in 2004; 42% mentioned dirty surroundings or standing water, probably thinking that mosquitoes breed in such conditions. (The mosquitoes that carry the malaria parasite actually breed in clean water.) Some people also mentioned incorrect causes such as drinking dirty water or eating cold/dirty food (19%), the weather (13%), or eating a specific food (13%). Notably, 20% in Ashanti thought that eating a specific food caused malaria.

Table 5.2 Perceived symptoms of malaria

Among respondents who have heard of malaria (multiple responses possible)

| | | Total | Site (city plus surrounding rural areas) | | | | | | Urban Accra only | Urban/Rural | | Socio-Economic Status | | | | |
|---|------|-------|--|---------|---------|-------|---------------|---------------|------------------|--------------|--------------|-----------------------|------|------|------|-----------|
| | | | Accra | Ashanti | Central | Volta | North- ern | Upper West | | All Urban | All Rural | 1 low | 2 | 3 | 4 | 5 high |
| Fever, hot body, temperature | 2004 | 66.8 | 73.1 | 68.3 | 66.7 | 50.5 | 70.7 | 60.1 | 73.3 | 72.0 | 63.5 | 60.5 | 59.8 | 66.6 | 70.5 | 76.2 |
| | 2008 | 61.6 | 62.1 | 58.1 | 58.9 | 55.0 | 74.3 | 69.7 | 60.7 | 63.0 | 60.2 | 62.3 | 57.0 | 62.1 | 60.3 | 66.3 |
| Feeling cold, chills, shivering | 2004 | 29.8 | 35.5 | 22.7 | 26.1 | 23.9 | 23.6 | 39.8 | 40.8 | 34.9 | 24.8 | 22.7 | 21.3 | 25.3 | 30.4 | 43.6 |
| | 2008 | 36.9 | 38.2 | 42.3 | 46.4 | 29.0 | 21.8 | 27.5 | 36.6 | 40.2 | 33.4 | 32.4 | 34.6 | 33.4 | 38.8 | 45.1 |
| Fever and/or chills (combination of above symptoms) | 2004 | 75.4 | 81.8 | 75.5 | 75.4 | 57.7 | 81.1 | 72.8 | 83.3 | 80.9 | 71.9 | 69.6 | 68.7 | 72.4 | 79.2 | 86.7 |
| | 2008 | 76.5 | 76.0 | 74.6 | 77.3 | 67.5 | 85.5 | 87.2 | 79.0 | 79.6 | 73.2 | 76.9 | 72 | 74 | 77 | 82.5 |
| Headache, body ache, pain | 2004 | 23.5 | 27.3 | 16.3 | 14.5 | 23.9 | 27.5 | 35.8 | 34.2 | 31.0 | 18.7 | 20.9 | 13.9 | 20.8 | 24.3 | 37.3 |
| | 2008 | 30.4 | 28.8 | 30.0 | 30.0 | 28.0 | 35.2 | 38.5 | 30.9 | 30.3 | 30.5 | 33.0 | 27.7 | 29.2 | 29.9 | 32.3 |
| Vomiting, yellow vomit, nausea | 2004 | 37.8 | 44.9 | 32.4 | 31.9 | 34.0 | 37.2 | 39.8 | 57.5 | 44.3 | 33.5 | 28.5 | 35.9 | 37.4 | 40.6 | 45.8 |
| | 2008 | 43.2 | 47.0 | 40.1 | 31.9 | 44.5 | 42.5 | 53.2 | 41.1 | 45.4 | 40.8 | 40.3 | 42.5 | 43.2 | 42.5 | 47.4 |
| Diarrhea | 2004 | 13.4 | 13.1 | 13.0 | 14.5 | 17.0 | 15.8 | 5.7 | 15.0 | 13.0 | 13.6 | 16.1 | 11.3 | 12.9 | 13.7 | 12.9 |
| | 2008 | 10.3 | 7.4 | 9.9 | 5.3 | 14.5 | 14.0 | 25.7 | 10.6 | 7.8 | 13.0 | 14.6 | 12.8 | 9.7 | 8.7 | 5.8 |
| Loss of appetite | 2004 | 25.7 | 28.5 | 21.6 | 30.4 | 23.7 | 20.4 | 33.9 | 33.3 | 30.0 | 22.9 | 20.8 | 19.6 | 21.0 | 31.6 | 35.0 |
| | 2008 | 36.9 | 41.5 | 42.8 | 44.4 | 32.0 | 12.8 | 20.2 | 37.0 | 40.3 | 33.4 | 25.6 | 33.8 | 38.7 | 42.7 | 43.7 |
| Cough | 2004 | 3.1 | 3.4 | 2.1 | 5.8 | 2.9 | 3.9 | 2.4 | 2.5 | 2.5 | 3.5 | 3.7 | 2.8 | 1.9 | 4.4 | 2.7 |
| | 2008 | 2.4 | 3.1 | 2.6 | 0.5 | 3.0 | 1.7 | 0.9 | 2.4 | 2.7 | 2.1 | 2.3 | 2.0 | 1.9 | 2.5 | 3.3 |
| Pale/yellow eyes or palms | 2004 | 28.3 | 26.0 | 21.6 | 39.1 | 35.5 | 34.2 | 31.7 | 23.3 | 24.4 | 30.8 | 28.2 | 31.3 | 33.9 | 27.4 | 20.6 |
| | 2008 | 27.0 | 25.7 | 24.8 | 27.5 | 37.5 | 28.5 | 21.1 | 27.8 | 22.7 | 31.5 | 32.1 | 32.4 | 25.6 | 26.0 | 18.9 |
| Convulsions, fits | 2004 | 1.9 | 0.8 | 2.2 | 1.5 | 2.1 | 4.4 | 2.7 | 0.0 | 1.4 | 2.3 | 2.1 | 1.4 | 3.3 | 2.7 | 0.1 |
| | 2008 | 1.4 | 0.8 | 2.9 | 1.9 | 0.0 | 1.7 | 0.0 | 1.5 | 1.2 | 1.6 | 1.4 | 1.1 | 1.1 | 2.0 | 1.4 |
| Weakness, tiredness | 2004 | 27.7 | 36.4 | 17.5 | 29.0 | 24.3 | 32.2 | 27.9 | 42.5 | 31.2 | 25.4 | 23.4 | 26.4 | 27.1 | 25.7 | 35.7 |
| | 2008 | 30.4 | 30.4 | 32.0 | 28.0 | 48.0 | 16.2 | 18.3 | 32.6 | 28.6 | 32.2 | 27.9 | 28.2 | 29.2 | 35.8 | 30.6 |
| Anemia, lack of blood, weak blood | 2004 | 3.8 | 5.2 | 1.9 | 2.9 | 4.7 | 5.6 | 2.4 | 5.0 | 3.2 | 4.3 | 2.6 | 3.5 | 3.6 | 4.8 | 4.5 |
| | 2008 | 2.6 | 4.5 | 1.3 | 1.9 | 2.5 | 0.6 | 0.9 | 2.1 | 2.1 | 3.1 | 3.1 | 3.1 | 1.9 | 2.0 | 2.8 |
| Other | 2004 | 6.0 | 6.1 | 8.2 | 10.1 | 2.3 | 0.3 | 2.2 | 5.8 | 5.5 | 6.2 | 5.0 | 7.4 | 6.5 | 5.9 | 5.0 |
| | 2008 | 6.5 | 3.0 | 3.5 | 5.3 | 1.5 | 0.6 | 0.0 | 5.8 | 7.4 | 5.5 | 7.6 | 2.8 | 5.3 | 7.0 | 9.7 |
| Don't know any | 2004 | 6.5 | 4.2 | 11.1 | 5.8 | 7.1 | 3.4 | 2.9 | 1.7 | 4.1 | 8.1 | 13.5 | 7.3 | 7.5 | 3.1 | 1.6 |
| | 2008 | 2.8 | 0.0 | 0.2 | 0.5 | 1.0 | 0.6 | 0.0 | 2.6 | 2.8 | 2.7 | 2.8 | 3.4 | 4.2 | 1.4 | 2.2 |
| BASE | 2004 | 1377 | 230 | 238 | 69 | 284 | 270 | 286 | 120 | 595 | 782 | 327 | 296 | 275 | 279 | 200 |
| | 2008 | 1789 | 638 | 456 | 207 | 200 | 179 | 109 | 299 | 915 | 874 | 355 | 358 | 359 | 358 | 359 |

Table 5.3 Perceived causes of malaria

Among respondents who have heard of malaria (multiple responses possible)

| | | Site (city plus surrounding rural areas) | | | | | | | Urban Accra only | Urban/Rural | | Socio-Economic Status | | | | |
|---|------|--|-------|---------|---------|-------|----------|---------------|------------------------|--------------|--------------|-----------------------|------|------|------|-----------|
| | | Total | Accra | Ashanti | Central | Volta | Northern | Upper West | | All Urban | All Rural | 1 low | 2 | 3 | 4 | 5 high |
| Mosquitoes/ mosquito bites | 2004 | 81.3 | 85.2 | 75.4 | 76.8 | 86.5 | 76.7 | 86.4 | 93.3 | 91.0 | 75.0 | 66.5 | 75.5 | 79.6 | 87.7 | 96.0 |
| | 2008 | 85.5 | 83.5 | 91.2 | 85.0 | 78.5 | 82.1 | 92.7 | 83.3 | 86.7 | 84.3 | 82.3 | 82.4 | 86.9 | 86.9 | 89.1 |
| Dirty surround- ings/ garbage/ standing water | 2004 | 35.2 | 39.8 | 39.4 | 39.1 | 22.3 | 36.9 | 18.9 | 44.2 | 37.9 | 33.4 | 35.2 | 30.9 | 34.0 | 38.9 | 36.8 |
| | 2008 | 41.5 | 49.8 | 39.7 | 36.7 | 37.5 | 36.3 | 25.7 | 50.8 | 43.6 | 39.4 | 35.8 | 38.3 | 39.6 | 45.5 | 48.5 |
| Overwork | 2004 | 1.3 | 0.4 | 0.0 | 0.0 | 5.4 | 3.2 | 1.3 | 0.0 | 1.2 | 1.4 | 1.6 | 2.2 | 1.6 | 1.0 | 0.1 |
| | 2008 | 3.0 | 1.6 | 1.3 | 0.5 | 15.0 | 0.0 | 5.5 | 1.0 | 2.0 | 4.0 | 6.5 | 3.9 | 1.4 | 2.2 | 0.8 |
| God/Allah | 2004 | 0.8 | 0.4 | 1.0 | 0.0 | 0.0 | 0.0 | 4.7 | 0.0 | 0.4 | 1.0 | 0.6 | 0.8 | 2.1 | 0.1 | 0.4 |
| | 2008 | 1.0 | 0.0 | 0.0 | 0.5 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.0 | 0.3 | 0.0 | 0.0 | 0.0 |
| Weather (rain, cold or sun) | 2004 | 16.6 | 8.7 | 7.6 | 14.5 | 20.6 | 29.8 | 58.2 | 8.3 | 11.9 | 19.7 | 25.9 | 21.3 | 17.5 | 12.9 | 6.2 |
| | 2008 | 13.2 | 9.7 | 5.0 | 1.9 | 33.5 | 22.4 | 36.7 | 8.4 | 9.7 | 16.8 | 21.4 | 15.1 | 12.5 | 11.7 | 5.3 |
| Drinking dirty water; eating cold/dirty food | 2004 | 18.2 | 18.9 | 13.5 | 18.8 | 23.8 | 20.2 | 19.2 | 13.3 | 14.8 | 20.4 | 16.7 | 23.1 | 22.3 | 17.3 | 11.5 |
| | 2008 | 19.1 | 19.9 | 16.2 | 15.5 | 11.5 | 24.0 | 39.5 | 22.1 | 17.8 | 20.5 | 21.7 | 21.0 | 15.3 | 19.0 | 18.7 |
| Eating a specific type of food | 2004 | 6.0 | 6.9 | 5.4 | 11.6 | 4.4 | 6.1 | 2.5 | 6.7 | 5.9 | 6.1 | 6.2 | 6.7 | 8.4 | 5.3 | 3.7 |
| | 2008 | 13.3 | 11.8 | 19.7 | 13.0 | 14.5 | 6.7 | 4.6 | 9.7 | 13.6 | 13.0 | 10.4 | 15.4 | 13.1 | 14.8 | 12.8 |
| Other | 2004 | 3.1 | 0.5 | 6.1 | 4.4 | 5.1 | 0.5 | 2.3 | 0.8 | 2.1 | 3.8 | 4.2 | 5.5 | 1.8 | 1.5 | 2.8 |
| | 2008 | 4.0 | 5.5 | 1.8 | 0.0 | 5.5 | 7.3 | 3.7 | 6.4 | 4.3 | 3.7 | 3.7 | 3.6 | 4.2 | 3.9 | 4.5 |
| Don't know | 2004 | 5.1 | 2.9 | 6.1 | 1.5 | 3.5 | 15.5 | 3.8 | 0.0 | 1.4 | 7.5 | 16.0 | 6.3 | 3.2 | 0.7 | 0.0 |
| | 2008 | 2.7 | 3.5 | 1.1 | 4.8 | 2.5 | 2.8 | 0.9 | 3.7 | 2.7 | 2.6 | 3.1 | 3.6 | 4.2 | 1.4 | 1.1 |
| BASE | 2004 | 1377 | 230 | 238 | 69 | 284 | 270 | 286 | 120 | 595 | 782 | 327 | 296 | 275 | 279 | 190 |
| | 2008 | 1789 | 638 | 456 | 207 | 200 | 179 | 109 | 299 | 915 | 874 | 355 | 358 | 359 | 358 | 359 |

5.3 KNOWLEDGE OF VULNERABLE GROUPS

In order to measure knowledge of vulnerable groups — children under five and pregnant women — interviewers showed those respondents who recognized the term “malaria” a card with drawings of five household members and identified each: a man, a woman (not pregnant), a pregnant woman, a child of age 3, and a child of age 6.

Respondents were asked to select the person most vulnerable to a serious case of malaria and to then select, among the remaining, who else is most vulnerable.

- The proportion of respondents knowing both groups most vulnerable to malaria increased from 64% in 2004 to 70% in 2008. 92% selected the young child, but fewer selected the pregnant woman.
- The main other family member mentioned in both years was the child of 6 years.

Table 5.4 Knowledge of vulnerable groups

Among respondents who have heard of malaria (multiple responses possible)

| | | Total | Site (city plus surrounding rural areas) | | | | | | Urban Accra only | Urban/Rural | | Socio-Economic Status | | | | |
|------------------------------------|------|-------|--|---------|---------|-------|----------|---------------|------------------------|--------------|--------------|-----------------------|------|------|------|-----------|
| | | | Accra | Ashanti | Central | Volta | Northern | Upper West | | All Urban | All Rural | 1 low | 2 | 3 | 4 | 5 high |
| Man | 2004 | 2.8 | 1.7 | 4.3 | 4.4 | 1.8 | 3.2 | 1.8 | 0.8 | 1.2 | 3.8 | 5.7 | 5.7 | 2.0 | 0.6 | 0.1 |
| | 2008 | 3.1 | 2.5 | 4.6 | 3.9 | 0.0 | 6.2 | 0.0 | 2.3 | 3.3 | 3.0 | 4.8 | 4.5 | 3.1 | 2.2 | 1.1 |
| Woman | 2004 | 3.6 | 2.6 | 5.4 | 4.4 | 3.0 | 3.6 | 2.2 | 1.7 | 2.0 | 4.7 | 7.2 | 3.3 | 3.4 | 2.0 | 2.5 |
| | 2008 | 5.6 | 5.0 | 7.0 | 4.8 | 5.5 | 6.7 | 2.8 | 5.4 | 4.4 | 6.9 | 7.9 | 6.7 | 4.7 | 4.5 | 4.2 |
| Pregnant woman | 2004 | 71.4 | 76.2 | 61.6 | 72.5 | 71.3 | 74.6 | 81.2 | 78.3 | 73.3 | 70.1 | 63.0 | 68.5 | 73.6 | 74.5 | 76.6 |
| | 2008 | 76.0 | 78.5 | 73.9 | 67.2 | 75.0 | 83.8 | 76.2 | 75.3 | 78.8 | 73.1 | 73.5 | 74.9 | 72.1 | 76.5 | 83.0 |
| Child of 6 years | 2004 | 28.6 | 23.4 | 35.9 | 29.0 | 32.6 | 25.4 | 21.5 | 20.8 | 27.0 | 29.7 | 33.3 | 31.5 | 28.0 | 25.2 | 25.5 |
| | 2008 | 20.9 | 19.3 | 20.8 | 28.0 | 21.0 | 16.2 | 24.8 | 23.1 | 18.3 | 23.7 | 23.7 | 21.8 | 22.6 | 19.6 | 17.0 |
| Child of 3 years | 2004 | 91.2 | 95.7 | 87.4 | 89.9 | 88.5 | 91.3 | 91.6 | 97.5 | 95.3 | 88.5 | 83.4 | 88.6 | 92.7 | 95.7 | 94.9 |
| | 2008 | 92.2 | 92.5 | 93.2 | 90.8 | 94.5 | 85.5 | 96.3 | 92.6 | 93.6 | 90.9 | 88.7 | 88.6 | 94.7 | 94.4 | 94.7 |
| Don't know | 2004 | 1.0 | 0.0 | 2.4 | 0.0 | 0.9 | 1.0 | 0.8 | 0.0 | 0.3 | 1.4 | 3.7 | 0.7 | 0.1 | 0.5 | 0.0 |
| | 2008 | 1.3 | 1.4 | 0.2 | 2.9 | 2.5 | 1.1 | 0.0 | 0.7 | 1.0 | 1.6 | 0.9 | 2.2 | 2.0 | 1.4 | 0.0 |
| Knows both vulnerable groups | 2004 | 64.3 | 71.9 | 53.9 | 63.8 | 60.9 | 66.8 | 73.5 | 75.8 | 69.5 | 61.0 | 53.5 | 57.7 | 66.4 | 71.4 | 72.0 |
| | 2008 | 70.0 | 72.6 | 68.6 | 61.8 | 71.5 | 71.0 | 72.5 | 68.9 | 73.6 | 66.4 | 63.9 | 67.0 | 68.5 | 72.6 | 78.0 |
| BASE | 2004 | 1377 | 230 | 238 | 69 | 284 | 270 | 286 | 120 | 595 | 782 | 327 | 296 | 275 | 279 | 200 |
| | 2008 | 1789 | 638 | 456 | 207 | 200 | 179 | 109 | 299 | 915 | 874 | 355 | 358 | 359 | 358 | 359 |

5.4 PERCEIVED ADVANTAGES AND DISADVANTAGES OF NET AND ITN USE BY VULNERABLE GROUPS

All respondents were asked to name advantages and disadvantages of sleeping under an ITN *compared to an untreated net* for a child under five and for a pregnant woman. Interviewers did not give response options or prompt respondents. ITNs were viewed more favorably in 2008 than in 2004. In 2008 more advantages were mentioned by a greater proportion of respondents, and fewer people mentioned disadvantages.

Advantages and disadvantages of treated and untreated nets for child under five

- Almost all respondents (98%) named at least one advantage of a treated net over an untreated net for a child under five. The advantages showing the largest increases were that it is better at preventing malaria, which rose from 54% to 70%; and that it protects against bites, which rose from 38% to 52%. Fewer said it kills mosquitoes (declining from 42% in 2004 to 16% in 2008), possibly because the NetMark radio and television message “Kill mosquitoes; mosquitoes kill” had stopped being aired.
- In both 2004 and 2008, about 82% of respondents said they did not know of disadvantages of a treated net over an untreated net for a child under five. The disadvantage cited the most often – still low at 8% – was that treated nets can cause irritation or cough.

Advantages and disadvantages of treated and untreated net for pregnant woman

- Almost all respondents named at least one advantage for a pregnant woman to sleep under a treated instead of an untreated net. Paralleling responses for a child under five, the advantages showing the largest increases were that treated net is better at preventing malaria (increased from 56% to 74%) and that it protects against bites (increased from 31% to 44%). As above, fewer said it kills mosquitoes, decreasing from 38% in 2004 to 14% in 2008.
- The great majority of respondents in both 2004 and 2008 did not cite any disadvantage of a treated net over an untreated net for a pregnant woman. The disadvantage cited by the most people – still low at 7% – was that treated nets can have negative effects on the pregnant woman or the fetus.

Table 5.5 Advantages of ITN over untreated net for child under five
Among all respondents (multiple responses possible)

| | | Site (city plus surrounding rural areas) | | | | | | | | | Socio-Economic Status | | | | | |
|--|------|--|-------|---------|---------|-------|----------|------------|------------------|-----------------------|-----------------------|-------|------|------|------|--------|
| | | Total | Accra | Ashanti | Central | Volta | Northern | Upper West | Urban Accra only | Urban/Rural All Urban | Urban/Rural All Rural | 1 low | 2 | 3 | 4 | 5 high |
| Works better than untreated nets | 2004 | 38.6 | 37.3 | 48.2 | 40.0 | 47.0 | 16.6 | 23.7 | 38.3 | 42.6 | 36.2 | 24.4 | 39.9 | 42.4 | 41.0 | 45.5 |
| | 2008 | 27.7 | 28.8 | 35.5 | 35.8 | 19.8 | 14.4 | 9.2 | 28.1 | 29.3 | 25.9 | 25.6 | 26.7 | 22.8 | 28.7 | 34.5 |
| Kills mosquitoes | 2004 | 41.8 | 53.2 | 33.7 | 50.0 | 40.2 | 33.2 | 31.8 | 51.7 | 44.6 | 40.0 | 35.1 | 38.6 | 39.5 | 43.5 | 52.2 |
| | 2008 | 16.0 | 20.7 | 19.0 | 18.4 | 10.0 | 5.0 | 1.8 | 20.1 | 18.2 | 13.8 | 11.7 | 12.3 | 15.3 | 17.8 | 23.1 |
| Repels mosquitoes | 2004 | 13.3 | 9.2 | 12.4 | 10.0 | 15.5 | 24.3 | 18.3 | 10.8 | 12.6 | 13.7 | 14.2 | 15.1 | 13.4 | 9.5 | 14.3 |
| | 2008 | 15.1 | 17.4 | 21.8 | 10.1 | 3.0 | 14.4 | 6.4 | 19.1 | 19.1 | 10.9 | 8.9 | 15.0 | 15.3 | 16.4 | 19.8 |
| Protects against bites / few bites | 2004 | 37.9 | 37.8 | 44.4 | 50.0 | 30.1 | 24.2 | 35.7 | 10.0 | 36.4 | 38.9 | 41.2 | 34.5 | 34.4 | 37.2 | 42.2 |
| | 2008 | 51.5 | 47.1 | 61.9 | 58.9 | 55.9 | 32.8 | 42.2 | 37.1 | 48.9 | 54.3 | 46.8 | 49.6 | 58.6 | 53.5 | 49.0 |
| Kills/repels other insects | 2004 | 8.7 | 5.3 | 8.2 | 1.4 | 10.9 | 15.5 | 17.6 | 6.7 | 9.5 | 8.2 | 9.3 | 9.4 | 8.3 | 9.3 | 7.2 |
| | 2008 | 8.9 | 8.8 | 15.3 | 6.8 | 2.5 | 6.7 | 1.8 | 7.7 | 10.3 | 7.4 | 5.3 | 5.9 | 8.3 | 10.0 | 14.8 |
| Better at preventing malaria | 2004 | 53.7 | 58.2 | 55.1 | 64.3 | 40.8 | 47.0 | 52.5 | 61.7 | 58.4 | 50.8 | 41.5 | 51.7 | 54.3 | 58.0 | 63.1 |
| | 2008 | 70.0 | 73.7 | 59.9 | 67.2 | 76.7 | 71.1 | 82.6 | 67.9 | 69.6 | 70.5 | 70.2 | 69.9 | 71.4 | 69.4 | 69.4 |
| Child more protected against illness/ healthier | 2004 | 32.9 | 29.3 | 23.3 | 34.3 | 44.2 | 53.6 | 34.7 | 25.0 | 29.8 | 34.8 | 35.8 | 31.4 | 34.0 | 39.6 | 23.7 |
| | 2008 | 33.7 | 30.7 | 38.6 | 33.8 | 39.1 | 28.9 | 28.4 | 21.4 | 30.0 | 37.5 | 36.8 | 31.2 | 31.4 | 36.8 | 32.3 |
| Child sleeps better | 2004 | 25.3 | 32.5 | 17.8 | 17.1 | 22.3 | 27.6 | 31.6 | 32.5 | 27.0 | 24.2 | 27.1 | 19.2 | 24.5 | 28.6 | 26.9 |
| | 2008 | 24.0 | 23.8 | 21.1 | 15.0 | 25.3 | 25.6 | 49.5 | 21.1 | 25.1 | 22.9 | 28.4 | 19.8 | 19.7 | 25.9 | 26.2 |
| Saves more money/ time because child does not get sick | 2004 | 4.3 | 4.8 | 2.7 | 0.0 | 5.1 | 8.8 | 4.7 | 5.0 | 6.6 | 4.8 | 5.6 | 5.9 | 2.5 | 5.7 | 1.8 |
| | 2008 | 2.2 | 1.4 | 2.6 | 1.0 | 0.5 | 5.6 | 4.6 | 2.0 | 2.3 | 2.1 | 3.1 | 0.8 | 1.7 | 2.5 | 2.8 |
| Other | 2004 | 0.0 | 0.0 | 0.0 | 0.0 | 0.7 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.0 | 0.1 | 0.3 | 0.0 | 0.0 |
| | 2008 | 1.0 | 0.8 | 1.3 | 0.0 | 1.5 | 2.2 | 0.0 | 1.0 | 1.1 | 0.9 | 0.8 | 0.3 | 0.6 | 1.4 | 2.0 |
| Don't Know or None | 2004 | 2.8 | 2.1 | 4.5 | 0.0 | 4.3 | 1.2 | 1.1 | 1.7 | 1.7 | 3.5 | 4.6 | 4.1 | 2.4 | 1.3 | 1.5 |
| | 2008 | 2.0 | 1.7 | 2.0 | 2.0 | 4.0 | 1.2 | 0.9 | 2.4 | 1.9 | 2.0 | 1.9 | 2.3 | 2.0 | 1.4 | 2.3 |
| BASE | 2004 | 1420 | 231 | 240 | 70 | 291 | 279 | 309 | 120 | 610 | 810 | 355 | 302 | 281 | 281 | 201 |
| | 2008 | 1796 | 639 | 459 | 207 | 202 | 180 | 109 | 299 | 917 | 879 | 359 | 359 | 360 | 359 | 326 |

Table 5.6 Disadvantages ITN compared to untreated net for child under five

Among all respondents (multiple responses possible)

| | | Site (city plus surrounding rural areas) | | | | | | | | | | Socio-Economic Status | | | | |
|--|------|--|-------|---------|---------|-------|----------|------------|------------------|-----------------------|-----------|-----------------------|------|------|------|--------|
| | | Total | Accra | Ashanti | Central | Volta | Northern | Upper West | Urban Accra only | Urban/Rural All Urban | All Rural | 1 low | 2 | 3 | 4 | 5 high |
| Not effective | 2004 | 1.0 | 1.8 | 0.0 | 0.0 | 0.0 | 1.0 | 3.3 | 2.5 | 1.8 | 0.4 | 0.4 | 1.8 | 0.4 | 1.2 | 1.0 |
| | 2008 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Smell bad | 2004 | 5.6 | 4.0 | 3.6 | 1.4 | 3.4 | 8.7 | 21.3 | 6.7 | 8.8 | 3.6 | 5.6 | 5.6 | 4.2 | 6.2 | 6.5 |
| | 2008 | 4.2 | 3.8 | 4.8 | 0.0 | 3.5 | 5.6 | 11.0 | 5.4 | 4.1 | 4.2 | 5.6 | 3.9 | 2.8 | 2.8 | 5.9 |
| Causes irritation/ cough/ illness | 2004 | 2.4 | 0.9 | 1.1 | 0.0 | 4.5 | 4.2 | 13.0 | 1.7 | 3.5 | 1.6 | 1.9 | 2.3 | 1.6 | 2.0 | 4.0 |
| | 2008 | 8.4 | 7.2 | 11.1 | 6.3 | 5.5 | 11.1 | 8.3 | 8.0 | 8.6 | 8.1 | 6.7 | 5.6 | 6.1 | 10.9 | 12.5 |
| Chemical dangerous/ could kill child/ might chew/ suck net | 2004 | 3.0 | 2.3 | 0.7 | 1.4 | 2.3 | 5.4 | 12.2 | 4.2 | 4.9 | 1.7 | 1.7 | 2.9 | 2.5 | 2.9 | 4.8 |
| | 2008 | 3.3 | 1.6 | 4.1 | 1.9 | 0.0 | 10.6 | 7.3 | 2.7 | 3.4 | 3.3 | 4.5 | 3.1 | 1.9 | 3.3 | 3.9 |
| Can't be washed | 2004 | 0.7 | 0.9 | 0.0 | 0.0 | 0.7 | 1.2 | 2.3 | 0.8 | 0.8 | 0.7 | 1.2 | 0.5 | 0.9 | 0.7 | 0.1 |
| | 2008 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| More expensive than regular net | 2004 | 7.4 | 9.5 | 1.4 | 8.6 | 11.5 | 6.2 | 12.9 | 8.3 | 7.3 | 7.4 | 5.7 | 6.7 | 8.0 | 7.6 | 9.0 |
| | 2008 | 0.8 | 0.0 | 0.2 | 0.5 | 4.5 | 0.6 | 1.8 | 0.0 | 0.4 | 1.1 | 2.0 | 0.6 | 0.8 | 0.3 | 0.3 |
| Other | 2004 | 1.2 | 0.4 | 1.2 | 2.9 | 0.4 | 1.9 | 2.8 | 0.0 | 1.1 | 1.2 | 0.9 | 1.2 | 1.1 | 2.1 | 0.5 |
| | 2008 | 4.9 | 7.5 | 4.8 | 1.0 | 5.9 | 2.2 | 0.0 | 9.0 | 6.8 | 3.0 | 2.5 | 2.8 | 3.9 | 6.7 | 8.6 |
| Don't know or None | 2004 | 83.8 | 83.0 | 92.9 | 87.2 | 82.7 | 80.7 | 60.7 | 80.0 | 78.5 | 87.2 | 87.0 | 85.2 | 85.1 | 83.4 | 78.3 |
| | 2008 | 82.4 | 83.3 | 81.3 | 92.3 | 82.2 | 75.0 | 75.3 | 79.6 | 80.8 | 84.0 | 81.9 | 87.2 | 87.7 | 80.0 | 74.9 |
| BASE | 2004 | 1420 | 231 | 240 | 70 | 291 | 279 | 309 | 120 | 610 | 810 | 355 | 302 | 281 | 281 | 201 |
| | 2008 | 1796 | 639 | 459 | 207 | 202 | 180 | 109 | 299 | 917 | 879 | 359 | 359 | 360 | 359 | 359 |

Table 5.7 Advantages of ITN over untreated net for pregnant woman

Among all respondents (multiple responses possible)

| | | Site (city plus surrounding rural areas) | | | | | | | Urban Accra only | Urban/Rural | | Socio-Economic Status | | | | |
|---|------|--|-------|---------|---------|-------|----------|------------|------------------|-------------|-----------|-----------------------|------|------|------|--------|
| | | Total | Accra | Ashanti | Central | Volta | Northern | Upper West | | All Urban | All Rural | 1 low | 2 | 3 | 4 | 5 high |
| Works better than untreated net | 2004 | 29.1 | 37.3 | 48.2 | 40.0 | 47.0 | 16.6 | 23.7 | 34.2 | 30.5 | 28.2 | 18.4 | 32.3 | 28.2 | 30.2 | 36.5 |
| | 2008 | 22.8 | 21.9 | 32.7 | 33.8 | 17.8 | 5.6 | 2.8 | 18.4 | 23.0 | 22.5 | 19.2 | 24.5 | 21.4 | 22.3 | 26.5 |
| Kills mosquitoes | 2004 | 38.0 | 46.5 | 32.0 | 47.1 | 36.8 | 33.7 | 25.6 | 50.0 | 43.4 | 34.6 | 31.1 | 36.9 | 33.3 | 38.4 | 50.3 |
| | 2008 | 14.0 | 18.9 | 16.8 | 15.9 | 5.9 | 3.3 | 1.8 | 19.4 | 16.1 | 11.7 | 8.9 | 9.5 | 17.5 | 14.2 | 19.8 |
| Repels mosquitoes | 2004 | 11.4 | 6.5 | 12.3 | 8.6 | 18.1 | 15.4 | 13.8 | 6.7 | 10.2 | 12.2 | 11.7 | 11.5 | 14.4 | 8.7 | 10.7 |
| | 2008 | 9.5 | 13.0 | 11.1 | 8.7 | 1.0 | 7.2 | 2.8 | 12.7 | 11.9 | 6.9 | 5.9 | 8.9 | 9.4 | 10.6 | 12.5 |
| Protects against bites/few bites | 2004 | 31.0 | 28.1 | 35.5 | 45.7 | 25.0 | 25.2 | 31.5 | 27.5 | 26.5 | 33.9 | 33.9 | 30.6 | 32.0 | 32.4 | 26.2 |
| | 2008 | 44.4 | 41.5 | 52.5 | 52.7 | 52.5 | 19.4 | 38.5 | 35.1 | 44.2 | 44.7 | 37.3 | 44.3 | 47.5 | 47.6 | 45.4 |
| Kills/ repels other insects | 2004 | 7.1 | 3.9 | 7.5 | 1.4 | 6.9 | 13.8 | 15.3 | 4.2 | 7.4 | 6.9 | 7.3 | 9.6 | 7.9 | 6.1 | 4.8 |
| | 2008 | 8.0 | 9.4 | 12.0 | 6.3 | 4.5 | 3.3 | 0.9 | 7.0 | 9.3 | 6.7 | 4.5 | 5.9 | 8.3 | 9.8 | 11.7 |
| Better at preventing malaria | 2004 | 56.2 | 58.8 | 60.8 | 48.6 | 48.1 | 53.1 | 54.1 | 66.7 | 62.8 | 51.9 | 46.7 | 48.9 | 52.3 | 62.9 | 70.1 |
| | 2008 | 74.3 | 78.6 | 67.1 | 76.8 | 76.2 | 65.6 | 85.3 | 75.3 | 74.4 | 74.2 | 66.3 | 71.6 | 76.1 | 79.9 | 75.5 |
| Prevents miscarriage/stillbirth | 2004 | 7.5 | 5.2 | 5.6 | 2.9 | 17.0 | 6.5 | 12.4 | 4.2 | 8.0 | 7.3 | 4.3 | 7.1 | 8.0 | 9.9 | 8.3 |
| | 2008 | 6.7 | 4.5 | 16.8 | 2.9 | 1.0 | 2.2 | 2.8 | 6.7 | 7.9 | 5.6 | 3.1 | 4.7 | 6.4 | 9.2 | 10.3 |
| Woman/ fetus better protected/healthier | 2004 | 52.8 | 53.6 | 42.0 | 68.6 | 58.4 | 61.3 | 52.7 | 52.5 | 47.6 | 56.0 | 55.3 | 49.6 | 55.4 | 55.1 | 48.3 |
| | 2008 | 52.2 | 49.5 | 56.9 | 60.4 | 44.1 | 48.9 | 53.2 | 41.5 | 48.2 | 56.3 | 53.8 | 53.2 | 20.6 | 51.0 | 52.4 |
| Woman sleeps better | 2004 | 25.4 | 33.6 | 19.6 | 14.3 | 17.9 | 26.7 | 33.2 | 30.8 | 29.2 | 23.0 | 26.5 | 22.9 | 20.9 | 26.7 | 30.0 |
| | 2008 | 22.2 | 22.5 | 15.7 | 15.5 | 24.8 | 32.2 | 39.5 | 17.4 | 22.3 | 21.7 | 27.6 | 19.9 | 17.5 | 23.4 | 22.8 |
| Saves money /time because woman does not get sick | 2004 | 5.3 | 4.8 | 2.4 | 2.9 | 9.4 | 9.0 | 7.6 | 5.0 | 4.6 | 5.7 | 5.9 | 7.6 | 4.7 | 5.2 | 3.0 |
| | 2008 | 1.4 | 0.9 | 0.9 | 1.0 | 0.5 | 2.2 | 7.3 | 1.3 | 1.1 | 1.7 | 2.8 | 0.6 | 0.8 | 1.1 | 1.7 |
| Other | 2004 | 0.3 | 0.5 | 0.0 | 1.4 | 0.2 | 0.0 | 0.0 | 0.8 | 0.4 | 0.2 | 0.5 | 0.0 | 0.9 | 0.0 | 0.0 |
| | 2008 | 0.5 | 0.8 | 0.7 | 0.0 | 0.5 | 0.0 | 0.0 | 1.0 | 0.4 | 0.6 | 0.3 | 0.0 | 0.8 | 0.3 | 1.1 |
| Don't know or None | 2004 | 3.1 | 2.6 | 5.8 | 0.0 | 4.1 | 0.5 | 0.7 | 1.7 | 1.9 | 3.9 | 5.5 | 4.8 | 2.2 | 1.8 | 1.5 |
| | 2008 | 1.8 | 1.8 | 1.5 | 1.5 | 3.5 | 2.2 | 0.0 | 2.3 | 1.7 | 1.8 | 1.7 | 2.0 | 2.0 | 1.4 | 2.0 |
| BASE | 2004 | 1420 | 231 | 240 | 70 | 291 | 279 | 309 | 120 | 610 | 810 | 355 | 302 | 281 | 281 | 201 |
| | 2008 | 1796 | 639 | 459 | 207 | 202 | 180 | 109 | 299 | 917 | 879 | 359 | 359 | 360 | 359 | 359 |

Table 5.8 Disadvantages of ITN compared to untreated net for pregnant woman

Among all respondents (multiple responses possible)

| | | Site (city plus surrounding rural areas) | | | | | | | | | | Socio-Economic Status | | | | |
|---|------|--|-------|---------|---------|-------|----------|------------|------------------|-----------------|-----------------|-----------------------|------|------|------|--------|
| | | Total | Accra | Ashanti | Central | Volta | Northern | Upper West | Urban Accra only | Urban All Urban | Rural All Rural | 1 low | 2 | 3 | 4 | 5 high |
| Not effective | 2004 | 1.1 | 1.8 | 0.4 | 0.0 | 0.0 | 1.4 | 3.2 | 2.5 | 1.9 | 0.6 | 0.4 | 0.7 | 1.5 | 1.1 | 1.8 |
| | 2008 | 0.1 | 0.2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.0 | 0.0 | 0.0 | 0.3 | 0.0 | 0.0 |
| Smell bad | 2004 | 7.2 | 6.1 | 4.4 | 0.0 | 5.9 | 12.7 | 21.9 | 7.5 | 9.9 | 5.5 | 6.5 | 4.6 | 7.8 | 7.8 | 9.4 |
| | 2008 | 7.2 | 3.4 | 3.3 | 0.0 | 4.0 | 6.1 | 18.4 | 4.4 | 4.1 | 4.3 | 6.4 | 3.3 | 3.1 | 2.2 | 6.1 |
| Causes irritation/ cough/ illness | 2004 | 2.6 | 2.2 | 1.1 | 0.0 | 1.1 | 2.6 | 13.2 | 2.5 | 3.8 | 1.8 | 1.6 | 1.8 | 2.5 | 3.7 | 3.4 |
| | 2008 | 1.3 | 0.6 | 1.5 | 1.0 | 0.0 | 2.2 | 5.5 | 0.7 | 1.1 | 1.5 | 2.0 | 0.8 | 0.8 | 2.2 | 0.6 |
| Chemical dangerous/ could kill fetus/ cause miscarriage/ nausea & vomit | 2004 | 4.6 | 3.1 | 1.9 | 4.3 | 3.4 | 5.2 | 19.9 | 5.0 | 6.5 | 3.4 | 3.4 | 4.1 | 6.2 | 4.8 | 4.4 |
| | 2008 | 7.4 | 5.0 | 10.9 | 4.4 | 5.5 | 9.4 | 11.9 | 5.0 | 8.0 | 6.7 | 5.9 | 7.0 | 5.3 | 8.6 | 10.0 |
| Can't be washed | 2004 | 0.2 | 0.0 | 0.0 | 0.0 | 0.5 | 0.5 | 0.8 | 0.0 | 0.2 | 0.2 | 0.6 | 0.0 | 0.0 | 0.2 | 0.1 |
| | 2008 | 0.1 | 0.0 | 0.2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.0 | 0.0 | 0.3 | 0.0 | 0.0 | 0.0 |
| More expensive than regular net | 2004 | 6.2 | 7.7 | 0.5 | 8.6 | 10.7 | 7.1 | 9.0 | 5.0 | 5.3 | 6.7 | 4.0 | 8.6 | 5.5 | 7.7 | 5.2 |
| | 2008 | 0.8 | 0.2 | 0.0 | 0.0 | 3.5 | 2.2 | 2.8 | 0.0 | 0.4 | 1.3 | 2.5 | 0.3 | 0.6 | 0.3 | 0.6 |
| Other | 2004 | 1.3 | 1.3 | 1.3 | 1.4 | 0.9 | 0.7 | 2.5 | 0.8 | 1.2 | 1.4 | 0.3 | 1.6 | 2.1 | 0.9 | 1.6 |
| | 2008 | 5.0 | 6.9 | 2.0 | 2.4 | 5.5 | 3.3 | 0.9 | 9.4 | 6.8 | 3.2 | 2.8 | 3.6 | 3.1 | 7.0 | 8.6 |
| Don't know or None | 2004 | 82.0 | 80.9 | 91.3 | 87.1 | 79.8 | 78.5 | 60.4 | 79.2 | 77.5 | 85 | 86.3 | 83.1 | 81.7 | 80.2 | 79.2 |
| | 2008 | 84.5 | 89.3 | 83 | 92.3 | 83.2 | 79.5 | 76.2 | 84 | 82.7 | 86.3 | 88 | 87.2 | 89.2 | 82.8 | 78.3 |
| BASE | 2004 | 1420 | 231 | 240 | 70 | 291 | 279 | 309 | 120 | 610 | 810 | 355 | 302 | 281 | 281 | 201 |
| | 2008 | 1796 | 639 | 459 | 208 | 202 | 180 | 109 | 299 | 917 | 879 | 359 | 359 | 360 | 359 | 359 |

5.5 EXPOSURE TO INFORMATION ON ITNS

All respondents were asked whether they had heard or seen any information about nets treated with insecticide in the last 12 months, where they had heard/seen the information, and what they remembered about the message.

From 2004-2008, NetMark aired TV and radio spots, although during 2007 and 2008, the intensity of the ads was decreased.

- Most respondents (83%) had seen or heard information about nets treated with insecticide in the prior 12 months. Exposure to information on ITNs increased with SES.
- Mass media declined as a source of information on ITNs: radio declined from 46% to 32%, and TV from 41% to 24%. Health staff remained an important source of information, reaching about half of the respondents (49% in 2004 and 54% in 2008).
- Respondents tended to mention general information such as the need to protect against mosquitoes or malaria. With decreased airing of NetMark ads, mention of the tag line (“Mosquitoes kill: kill mosquitoes”) and ad content (a buzzing mosquito, a mosquito falling and dying, person slapping at mosquitoes) decreased.

Table 5.9 Exposure to information about ITNs in past 12 months and source of information

Among those who saw/heard information on treated nets (multiple responses possible)

| | | Total | Site (city plus surrounding rural areas) | | | | | | Urban Accra only | Urban/Rural | | Socio-Economic Status | | | | |
|------------------------------|------|-------|--|---------|---------|-------|-----------|------------|------------------|-------------|-----------|-----------------------|------|------|------|--------|
| | | | Accra | Ashanti | Central | Volta | North-ern | Upper West | | All Urban | All Rural | 1 low | 2 | 3 | 4 | 5 high |
| Saw or heard information | 2004 | 89.4 | 93.7 | 85.2 | 82.9 | 91.7 | 93.9 | 83.7 | 98.3 | 95.0 | 85.9 | 81.3 | 82.7 | 89.2 | 95.7 | 98.2 |
| | 2008 | 82.7 | 87.5 | 75.0 | 58.5 | 90.6 | 93.9 | 100.0 | 85.3 | 86.5 | 79.7 | 76.6 | 76.9 | 83.9 | 83.3 | 92.8 |
| BASE | 2004 | 1420 | 231 | 240 | 70 | 291 | 279 | 309 | 120 | 610 | 810 | 355 | 302 | 281 | 281 | 201 |
| | 2008 | 1796 | 639 | 459 | 207 | 202 | 180 | 109 | 299 | 917 | 879 | 359 | 359 | 360 | 359 | 359 |
| SOURCE OF INFORMATION | | | | | | | | | | | | | | | | |
| Radio | 2004 | 45.7 | 60.1 | 40.7 | 48.3 | 42.8 | 18.3 | 41.4 | 67.8 | 56.2 | 38.4 | 25.2 | 32.5 | 47.4 | 54.5 | 63.9 |
| | 2008 | 32.4 | 39.6 | 30.7 | 23.2 | 37.6 | 21.7 | 22.9 | 36.8 | 35.4 | 29.2 | 25.9 | 24.5 | 29.4 | 37.1 | 45.1 |
| TV | 2004 | 41.3 | 58.0 | 52.2 | 46.6 | 14.8 | 7.3 | 22.2 | 80.5 | 66.7 | 23.5 | 9.8 | 18.9 | 33.5 | 50.2 | 84.8 |
| | 2008 | 23.6 | 37.7 | 24.0 | 8.2 | 14.9 | 12.2 | 2.8 | 41.1 | 33.4 | 13.3 | 5.9 | 8.6 | 17.5 | 33.2 | 52.7 |
| Newspaper/magazine | 2004 | 1.0 | 1.4 | 0.6 | 0.0 | 0.4 | 0.5 | 2.5 | 2.5 | 1.6 | 0.5 | 0 | 0.5 | 0.0 | 0.3 | 3.0 |
| | 2008 | 0.1 | 0.0 | 0.4 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.3 | 0.3 |
| Poster in a shop | 2004 | 2.6 | 7.8 | 0.4 | 8.6 | 1.3 | 0.3 | 1.4 | 8.5 | 4.5 | 1.3 | 0.6 | 2.0 | 2.0 | 2.1 | 5.9 |
| | 2008 | 2.5 | 2.8 | 1.7 | 0.0 | 7.9 | 0.0 | 1.8 | 3.7 | 3.1 | 1.8 | 0.6 | 2.5 | 2.8 | 1.4 | 5.0 |
| Poster at health facility | 2004 | 7.4 | 7.0 | 7.0 | 13.8 | 7.6 | 5.2 | 7.4 | 8.5 | 8.3 | 6.7 | 7.2 | 3.1 | 7.5 | 8.9 | 9.6 |
| | 2008 | 22.4 | 29.9 | 13.7 | 13.0 | 24.8 | 18.9 | 34.9 | 29.8 | 26.3 | 18.4 | 17.8 | 18.9 | 16.4 | 25.9 | 33.2 |
| Drama group/radio show | 2004 | 1.8 | 1.0 | 2.6 | 0.0 | 4.5 | 0.0 | 1.6 | 1.7 | 7.4 | 2.1 | 0.4 | 2.6 | 1.4 | 3.8 | 0.7 |
| | 2008 | 1.2 | 1.6 | 2.0 | 0.5 | 1.0 | 0.0 | 0.0 | 2.0 | 2.1 | 0.3 | 0.0 | 0.6 | 0.8 | 2.5 | 2.2 |
| Billboards | 2004 | 0.5 | 1.0 | 0.0 | 0.0 | 0.7 | 0.0 | 0.8 | 1.7 | 0.9 | 0.2 | 0.0 | 0.0 | 0.0 | 0.5 | 1.8 |
| | 2008 | 1.3 | 2.5 | 0.2 | 0.5 | 2.5 | 0.0 | 0.0 | 4.0 | 1.7 | 0.8 | 0.0 | 0.6 | 1.4 | 1.1 | 3.3 |
| Health staff | 2004 | 48.6 | 41.1 | 33.5 | 34.5 | 70.1 | 79.2 | 63.7 | 28.0 | 30.7 | 61.1 | 65.1 | 58.8 | 50.3 | 44.0 | 29.1 |
| | 2008 | 54.2 | 51.0 | 56.6 | 40.6 | 62.4 | 60.0 | 63.3 | 445 | 53.1 | 55.3 | 50.7 | 52.7 | 60.3 | 52.7 | 54.6 |
| Staff in a shop | 2004 | 2.4 | 4.8 | 0.9 | 1.7 | 0.7 | 1.2 | 2.3 | 7.6 | 4.8 | 0.7 | 1.2 | 0.5 | 0.4 | 2.4 | 6.6 |
| | 2008 | 1.4 | 2.5 | 1.3 | 0.5 | 0.5 | 0.0 | 0.9 | 3.7 | 2.5 | 0.2 | 0.3 | 0.3 | 1.9 | 2.0 | 2.5 |
| Friends/neighbors/relatives | 2004 | 17.8 | 18.1 | 23.1 | 19.0 | 11.3 | 12.0 | 16.1 | 18.6 | 18.4 | 17.3 | 16.8 | 25.4 | 16.2 | 16.8 | 14.4 |
| | 2008 | 17.7 | 18.9 | 15.3 | 9.2 | 31.2 | 16.1 | 14.7 | 8.4 | 16.9 | 18.5 | 16.4 | 17.8 | 20.8 | 19.5 | 13.9 |
| School | 2004 | 0.7 | 0.0 | 1.5 | 0.0 | 0.7 | 0.8 | 1.1 | 0.0 | 0.7 | 0.7 | 0.2 | 1.3 | 1.6 | 0.3 | 0.1 |
| | 2008 | 0.6 | 0.5 | 1.1 | 0.5 | 0.5 | 0.0 | 0.9 | 0.3 | 0.4 | 0.8 | 0.3 | 0.6 | 0.3 | 0.6 | 1.4 |
| Church/ mosque | 2004 | 0.7 | 0.4 | 0.4 | 0.0 | 2.4 | 0.3 | 0.3 | 0.0 | 0.7 | 0.6 | 0.2 | 0.0 | 0.9 | 2.0 | 0.1 |
| | 2008 | 1.5 | 1.1 | 0.2 | 2.4 | 3.5 | 0.6 | 4.6 | 0.7 | 1.0 | 1.9 | 1.7 | 1.7 | 1.1 | 2.0 | 0.8 |
| Women's group | 2004 | 1.1 | 0.0 | 1.1 | 0.0 | 0.0 | 6.3 | 1.7 | 0.0 | 0.8 | 1.3 | 3.3 | 0.9 | 1.3 | 0.3 | 0.0 |
| | 2008 | 0.6 | 0.0 | 0.7 | 0.0 | 0.0 | 3.3 | 1.8 | 0.0 | 0.7 | 0.6 | 1.7 | 0.3 | 0.6 | 0.0 | 0.6 |
| BASE | 2004 | 1268 | 216 | 207 | 58 | 269 | 260 | 258 | 118 | 562 | 706 | 295 | 260 | 252 | 265 | 196 |
| | 2008 | 1796 | 639 | 459 | 207 | 202 | 180 | 109 | 299 | 917 | 879 | 359 | 359 | 360 | 359 | 359 |

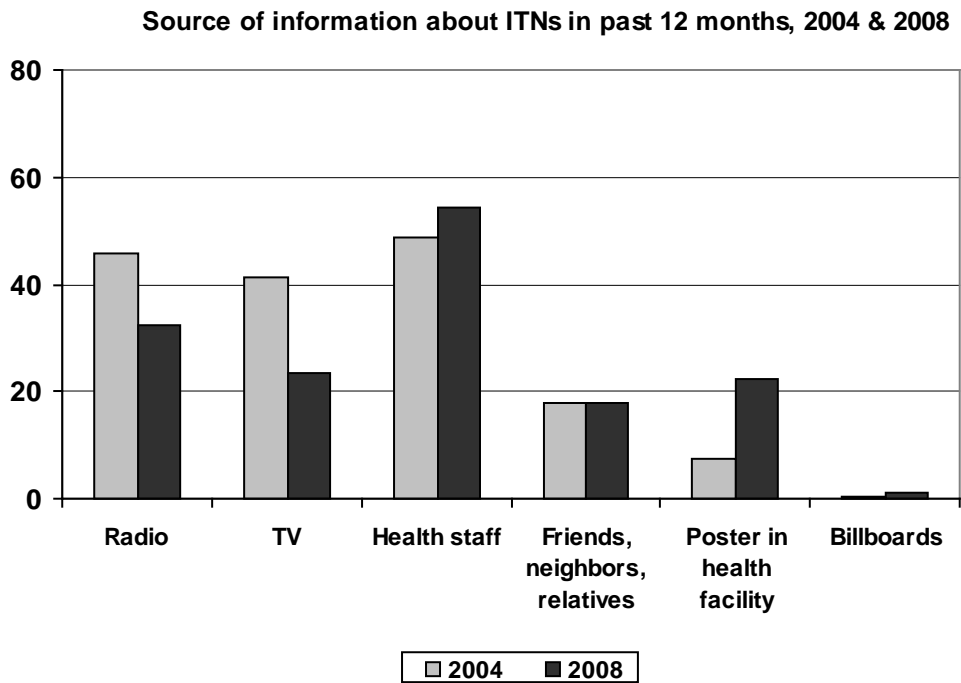
Table 5.10 Content of message about ITNs

Among those who saw/heard information on treated nets (multiple responses possible)

| | | Site (city plus surrounding rural areas) | | | | | | | Urban Accra only | Urban/Rural | | Socio-Economic Status | | | | |
|---|------|--|-------|---------|---------|-------|-----------|------------|------------------|-------------|-----------|-----------------------|------|------|------|--------|
| | | Total | Accra | Ashanti | Central | Volta | North-ern | Upper West | | All Urban | All Rural | 1 low | 2 | 3 | 4 | 5 high |
| Mosquitoes kill | 2004 | 22.6 | 17.9 | 33.5 | 10.3 | 24.3 | 10.7 | 27.8 | 23.7 | 28.4 | 18.5 | 17.0 | 19.3 | 17.0 | 26.1 | 34.5 |
| | 2008 | 1.7 | 1.7 | 2.0 | 0.0 | 3.0 | 1.1 | 1.8 | 2.0 | 2.3 | 1.0 | 0.6 | 1.4 | 1.9 | 1.7 | 2.8 |
| Kill mosquitoes | 2004 | 42.9 | 52.0 | 36.6 | 41.4 | 35.9 | 39.9 | 43.0 | 56.8 | 48.2 | 39.1 | 34.5 | 39.1 | 43.7 | 41.9 | 53.4 |
| | 2008 | 6.2 | 11.4 | 2.8 | 0.0 | 8.9 | 2.8 | 2.8 | 10.0 | 8.2 | 4.2 | 2.5 | 4.5 | 5.8 | 8.1 | 10.3 |
| Malaria very dangerous for pregnant women | 2004 | 7.5 | 5.5 | 3.2 | 4.2 | 17.7 | 9.2 | 11.3 | 3.4 | 5.9 | 8.5 | 5.2 | 9.5 | 8.2 | 11.4 | 3.1 |
| | 2008 | 15.8 | 23.3 | 8.7 | 10.1 | 19.3 | 7.8 | 18.4 | 19.1 | 18.9 | 12.5 | 10.0 | 12.8 | 17.5 | 17.3 | 21.2 |
| Malaria very dangerous for children | 2004 | 8.0 | 6.4 | 7.5 | 6.9 | 9.6 | 11.5 | 10.2 | 5.1 | 6.3 | 9.2 | 7.4 | 8.8 | 10.1 | 11.5 | 2.6 |
| | 2008 | 20.7 | 28.6 | 17.8 | 14.0 | 22.7 | 10.0 | 15.6 | 23.4 | 22.1 | 19.1 | 15.3 | 18.7 | 22.0 | 23.1 | 24.2 |
| Mosquito flying/ noise/ buzzing/ biting | 2004 | 7.2 | 11.4 | 7.3 | 8.6 | 1.8 | 2.0 | 4.8 | 17.0 | 12.0 | 3.9 | 0.4 | 4.6 | 6.4 | 5.7 | 17.3 |
| | 2008 | 1.6 | 4.1 | 0.2 | 0.0 | 0.5 | 0.0 | 0.0 | 6.7 | 2.8 | 0.2 | 0.6 | 0.3 | 0.6 | 2.0 | 4.5 |
| Mosquito that falls/ dies | 2004 | 8.7 | 6.2 | 13.1 | 12.1 | 8.0 | 3.3 | 10.1 | 10.2 | 12.9 | 5.8 | 4.6 | 6.5 | 8.2 | 7.4 | 18.8 |
| | 2008 | 1.0 | 2.4 | 0.4 | 0.0 | 0.0 | 0.0 | 0.0 | 3.3 | 1.6 | 0.2 | 0.3 | 0.3 | 0.6 | 1.1 | 2.5 |
| Person hitting/ slapping/ trying to kill mosquito | 2004 | 6.9 | 7.6 | 11.4 | 3.5 | 1.5 | 4.5 | 4.7 | 11.0 | 12.4 | 3.0 | 2.3 | 5.0 | 4.9 | 7.3 | 13.9 |
| | 2008 | 3.5 | 8.0 | 0.4 | 0.0 | 2.0 | 0.6 | 3.7 | 10.7 | 5.5 | 1.4 | 1.1 | 0.6 | 2.2 | 5.3 | 8.1 |
| Demonstration how to use net | 2004 | 12.6 | 15.3 | 7.3 | 15.5 | 6.3 | 26.8 | 9.2 | 14.3 | 12.2 | 12.8 | 12.0 | 13.5 | 9.4 | 14.0 | 13.8 |
| | 2008 | 20.5 | 19.9 | 19.4 | 11.1 | 31.2 | 20.0 | 27.5 | 16.4 | 20.5 | 20.5 | 19.5 | 19.2 | 20.6 | 24.0 | 19.2 |
| Saw a treated net | 2004 | 7.3 | 8.4 | 7.6 | 5.2 | 6.8 | 7.7 | 3.7 | 10.2 | 8.6 | 6.4 | 5.2 | 5.9 | 7.8 | 8.0 | 9.0 |
| | 2008 | 8.4 | 9.2 | 11.8 | 3.4 | 10.4 | 3.9 | 2.8 | 7.4 | 9.3 | 7.5 | 5.0 | 7.8 | 7.2 | 11.7 | 10.3 |
| Someone sleeping well | 2004 | 14.8 | 17.3 | 23.0 | 15.5 | 4.6 | 4.5 | 7.5 | 20.3 | 23.4 | 8.7 | 4.0 | 11.0 | 10.3 | 17.2 | 28.5 |
| | 2008 | 6.5 | 10.8 | 5.7 | 3.9 | 2.5 | 2.8 | 2.8 | 15.4 | 9.9 | 2.8 | 2.0 | 4.2 | 3.6 | 10.0 | 12.5 |
| Where to get a net | 2004 | 6.9 | 8.7 | 3.2 | 3.5 | 15.5 | 4.3 | 2.6 | 7.6 | 6.7 | 7.0 | 4.3 | 8.5 | 6.0 | 8.3 | 7.2 |
| | 2008 | 3.6 | 3.3 | 2.2 | 1.9 | 9.4 | 2.2 | 5.5 | 1.3 | 3.6 | 3.5 | 3.6 | 3.3 | 4.2 | 3.1 | 3.6 |
| Treat net/ how to treat/ retreat | 2004 | 16.5 | 16.5 | 13.4 | 13.8 | 14.6 | 32.2 | 12.0 | 12.7 | 13.2 | 18.8 | 23.0 | 14.8 | 17.0 | 15.6 | 12.9 |
| | 2008 | 10.3 | 10.6 | 10.5 | 6.8 | 13.4 | 11.1 | 7.3 | 7.4 | 9.6 | 11.0 | 7.2 | 8.1 | 11.1 | 13.9 | 11.1 |
| Protect against mosquito bites | 2004 | 29.8 | 22.7 | 29.8 | 27.6 | 39.2 | 44.1 | 25.4 | 23.7 | 24.5 | 33.4 | 32.3 | 32.9 | 28.4 | 29.6 | 26.4 |
| | 2008 | 28.7 | 26.6 | 37.7 | 28.5 | 42.6 | 10.6 | 7.3 | 18.7 | 29.6 | 27.8 | 18.7 | 29.0 | 30.3 | 32.0 | 33.4 |
| Prevent malaria | 2004 | 40.5 | 35.6 | 48.2 | 29.3 | 45.2 | 41.3 | 35.1 | 34.8 | 38.3 | 42.0 | 40.9 | 42.7 | 38.3 | 42.0 | 38.8 |
| | 2008 | 38.5 | 46.8 | 37.0 | 23.7 | 60.4 | 10.0 | 30.3 | 33.8 | 40.5 | 25.6 | 25.6 | 34.3 | 44.4 | 41.2 | 46.8 |
| Prevent illnesses/ give better health | 2004 | 17.1 | 8.6 | 15.8 | 13.8 | 31.9 | 28.5 | 19.1 | 3.4 | 10.9 | 21.5 | 24.9 | 16.0 | 22.1 | 18.8 | 5.4 |
| | 2008 | 14.0 | 11.6 | 20.9 | 13.0 | 18.9 | 12.8 | 9.2 | 5.4 | 14.1 | 14.0 | 10.9 | 11.4 | 16.1 | 16.2 | 15.6 |
| It's good to use | 2004 | 22.2 | 16.9 | 25.3 | 29.3 | 40.1 | 10.2 | 13.0 | 11.0 | 18.1 | 25.1 | 21.4 | 22.9 | 27.1 | 25.9 | 14.4 |
| | 2008 | 23.7 | 21.9 | 27.7 | 28.5 | 37.1 | 8.3 | 9.2 | 11.7 | 21.4 | 26.2 | 21.5 | 23.4 | 26.1 | 24.2 | 23.4 |

| | | Site (city plus surrounding rural areas) | | | | | | | | | | Socio-Economic Status | | | | |
|------------|------|--|-------|---------|---------|-------|-----------|------------|------------------|-----------------|-----------------|-----------------------|-----|-----|-----|--------|
| | | Total | Accra | Ashanti | Central | Volta | North-ern | Upper West | Urban Accra only | Urban/All Urban | Rural/All Rural | 1 low | 2 | 3 | 4 | 5 high |
| Economical | 2004 | 1.0 | 0.9 | 0.0 | 0.0 | 3.0 | 0.8 | 2.0 | 0.9 | 1.1 | 0.9 | 0.4 | 0.4 | 1.0 | 2.1 | 0.8 |
| | 2008 | 1.0 | 1.7 | 0.2 | 0.5 | 1.5 | 0.6 | 0.9 | 1.7 | 1.3 | 0.7 | 0.3 | 0.0 | 1.9 | 0.8 | 2.0 |
| Don't Know | 2004 | 3.0 | 1.4 | 2.5 | 5.2 | 2.7 | 2.3 | 10.8 | 0.9 | 2.1 | 3.7 | 6.3 | 2.6 | 2.5 | 1.6 | 2.5 |
| | 2008 | 9.0 | 7.5 | 2.0 | 2.9 | 5.5 | 31.1 | 29.4 | 9.0 | 8.5 | 9.6 | 15.6 | 8.6 | 7.8 | 6.7 | 6.4 |
| BASE | 2004 | 1268 | 216 | 207 | 58 | 269 | 260 | 258 | 118 | 562 | 706 | 295 | 260 | 252 | 265 | 196 |
| | 2008 | 1796 | 639 | 459 | 207 | 202 | 180 | 109 | 299 | 917 | 879 | 359 | 359 | 360 | 359 | 359 |

Figure 5.1



SECTION 6

CONSUMER PREFERENCES AND PERCEPTIONS

6.1 PREFERRED NET SIZE, SHAPE AND COLOR

Section 4 described the size, shape and color of nets owned, which largely reflects characteristics of nets available or distributed. This section reports on the characteristics of nets that consumers *prefer*. Questions on preferences were asked of all respondents, whether or not their household owned a net. This information can be used to develop and supply nets with features that consumers want.

There is a large discrepancy between the size, shape, and color that consumers prefer and what they own.

- The net size preferences expressed in 2008 were nearly identical to those in 2004. There was a definitive preference for very large nets: 61% preferred triple/king nets and 34% preferred double size. (Although 61% preferred triple/king size, only 8% of nets owned were this size.)
- The preference for triple/king nets was highest in Northern region, in rural areas, and among lower SES segments.
- About half (53%) of respondents preferred conical nets and 39% preferred rectangular. (Although 53% preferred conical, only 5% of nets owned were conical.)
- The preference for conical nets was highest in Ashanti region, at 62%. There was little variation by urban-rural or SES.
- The top three preferred colors were white (27%), dark blue (18%), and light blue (15%). (Although 27% prefer white, 63% of nets owned were white.)
- White was more preferred in the city of Accra and in the highest SES quintile than in other groups.

Figure 5.2 and 5.3

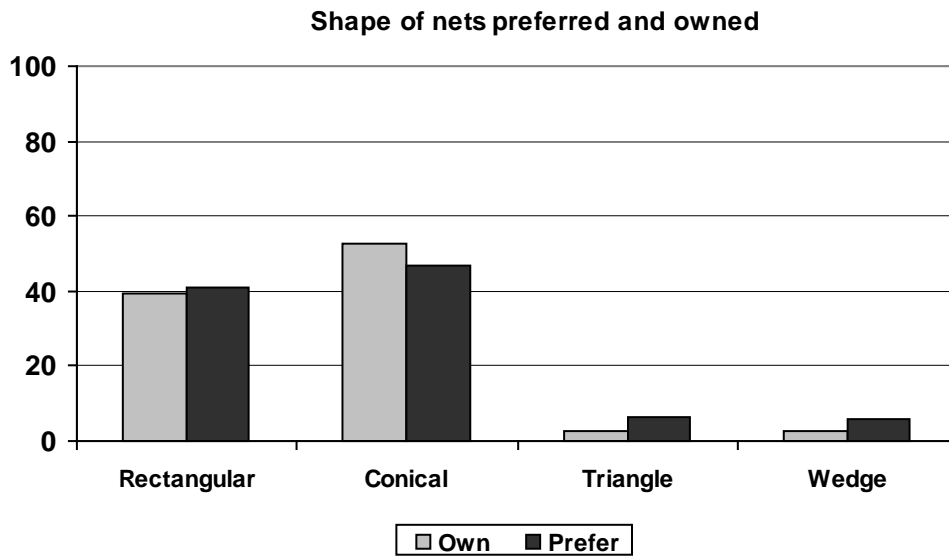
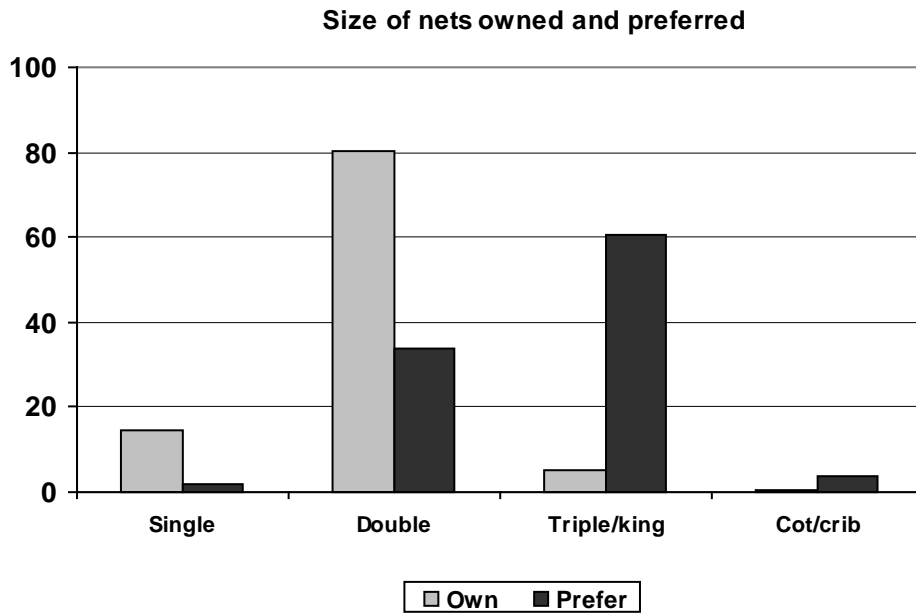


Table 6.1 Net size preferences

Among all respondents

| | | Total | Site (city plus surrounding rural areas) | | | | | | Urban Accra only | Urban/Rural | | Socio-Economic Status | | | | |
|--------------|------|-------|--|---------|---------|-------|----------|------------|------------------|-------------|-----------|-----------------------|------|------|------|--------|
| | | | Accra | Ashanti | Central | Volta | Northern | Upper West | | All Urban | All Rural | 1 low | 2 | 3 | 4 | 5 high |
| Single | 2004 | 4.0 | 5.1 | 2.7 | 5.8 | 4.5 | 2.8 | 3.6 | 3.3 | 2.7 | 4.9 | 4.4 | 7.5 | 1.7 | 4.1 | 2.5 |
| | 2008 | 1.9 | 2.2 | 2.6 | 2.4 | 0.0 | 1.1 | 0.9 | 2.7 | 2.4 | 1.4 | 1.7 | 2.0 | 1.7 | 2.0 | 2.2 |
| Double | 2004 | 30.8 | 34.5 | 27.8 | 17.4 | 45.5 | 22.0 | 34.3 | 36.7 | 36.7 | 37.0 | 23.6 | 26.5 | 31.5 | 34.2 | 38.3 |
| | 2008 | 33.8 | 39.3 | 29.0 | 26.6 | 39.1 | 26.7 | 37.6 | 44.2 | 38.0 | 29.5 | 30.9 | 24.8 | 31.4 | 39.3 | 42.6 |
| Triple/ king | 2004 | 62.0 | 57.8 | 69.4 | 73.9 | 48.9 | 69.4 | 56.1 | 57.5 | 58.1 | 64.5 | 67.3 | 61.3 | 62.7 | 60.3 | 58.4 |
| | 2008 | 60.5 | 54.0 | 65.1 | 67.2 | 57.9 | 68.9 | 57.8 | 49.2 | 55.7 | 65.5 | 62.4 | 70.8 | 63.3 | 55.7 | 50.4 |
| Cot/ crib | 2004 | 3.2 | 2.6 | 3.1 | 2.9 | 1.1 | 5.8 | 6.0 | 2.5 | 2.4 | 3.7 | 4.6 | 4.8 | 4.2 | 1.5 | 0.9 |
| | 2008 | 3.6 | 4.5 | 3.1 | 3.4 | 2.5 | 3.3 | 3.7 | 4.0 | 3.7 | 3.5 | 5.0 | 2.5 | 3.1 | 3.1 | 4.5 |
| Don't know | 2004 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| | 2008 | 0.2 | 0.0 | 0.2 | 0.5 | 0.5 | 0.0 | 0.0 | 0.0 | 0.2 | 0.1 | 0.0 | 0.0 | 0.6 | 0.0 | 0.3 |
| BASE | 2004 | 1417 | 230 | 240 | 69 | 290 | 279 | 309 | 120 | 609 | 808 | 355 | 300 | 281 | 281 | 200 |
| | 2008 | 1796 | 639 | 459 | 207 | 202 | 180 | 109 | 299 | 917 | 879 | 359 | 359 | 360 | 359 | 359 |

Table 6.2 Net shape preferences

Among all respondents

| | | Total | Site (city plus surrounding rural areas) | | | | | | Urban Accra only | Urban/Rural | | Socio-Economic Status | | | | |
|-------------------|------|-------|--|---------|---------|-------|----------|------------|------------------|-------------|-----------|-----------------------|------|------|------|--------|
| | | | Accra | Ashanti | Central | Volta | Northern | Upper West | | All Urban | All Rural | 1 low | 2 | 3 | 4 | 5 high |
| Rectangular | 2004 | 41.0 | 38.8 | 35.1 | 30.0 | 54.8 | 43.7 | 51.6 | 41.7 | 42.4 | 40.0 | 38.5 | 40.1 | 38.5 | 46.4 | 41.2 |
| | 2008 | 39.2 | 44.3 | 29.0 | 35.3 | 40.1 | 45.0 | 48.6 | 47.5 | 39.9 | 38.5 | 37.3 | 35.7 | 38.9 | 38.4 | 45.7 |
| Conical/ Round | 2004 | 46.8 | 49.6 | 53.5 | 47.1 | 36.7 | 40.5 | 38.0 | 49.2 | 48.0 | 46.0 | 51.3 | 43.5 | 47.0 | 44.7 | 47.5 |
| | 2008 | 52.6 | 50.9 | 62.3 | 52.2 | 46.0 | 46.7 | 44.0 | 47.2 | 53.1 | 52.0 | 52.0 | 55.4 | 52.5 | 53.2 | 49.6 |
| Triangle/ pyramid | 2004 | 6.5 | 6.5 | 8.6 | 12.9 | 2.9 | 2.3 | 5.3 | 5.0 | 5.2 | 7.4 | 4.8 | 8.0 | 8.4 | 4.5 | 6.8 |
| | 2008 | 4.8 | 2.8 | 7.8 | 6.3 | 10.4 | 3.9 | 5.5 | 3.0 | 3.8 | 5.9 | 6.7 | 6.7 | 4.2 | 4.2 | 2.5 |
| Wedge | 2004 | 5.8 | 5.2 | 2.9 | 10.0 | 5.6 | 13.5 | 5.1 | 4.2 | 4.4 | 6.6 | 5.5 | 8.4 | 6.1 | 4.4 | 4.5 |
| | 2008 | 2.7 | 2.0 | 3.1 | 3.4 | 3.0 | 3.9 | 1.8 | 2.3 | 2.7 | 2.7 | 3.3 | 2.0 | 3.6 | 2.8 | 2.0 |
| Don't know | 2004 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| | 2008 | 0.7 | 0.0 | 0.9 | 2.9 | 0.5 | 0.6 | 0.0 | 0.0 | 0.4 | 0.9 | 0.6 | 0.3 | 0.8 | 1.4 | 0.3 |
| BASE | 2004 | 1417 | 230 | 239 | 70 | 290 | 279 | 309 | 120 | 609 | 808 | 353 | 301 | 281 | 281 | 201 |
| | 2008 | 1796 | 639 | 459 | 207 | 202 | 180 | 109 | 299 | 917 | 879 | 359 | 359 | 360 | 359 | 359 |

Table 6.3 Net color preferences

Among all respondents

| | | Total | Site (city plus surrounding rural areas) | | | | | | Urban Accra only | Urban/Rural | | Socio-Economic Status | | | | |
|----------------------|------|-------|--|---------|---------|-------|----------|------------|------------------|-------------|-----------|-----------------------|------|------|------|--------|
| | | | Accra | Ashanti | Central | Volta | Northern | Upper West | | All Urban | All Rural | 1 low | 2 | 3 | 4 | 5 high |
| White | 2004 | 18.5 | 27.4 | 13.6 | 15.7 | 23.1 | 3.3 | 14.3 | 37.8 | 29.1 | 11.8 | 6.1 | 15.6 | 11.4 | 22.5 | 37.2 |
| | 2008 | 26.7 | 27.4 | 31.2 | 30.0 | 24.3 | 15.6 | 21.1 | 33.1 | 29.2 | 24.1 | 15.6 | 23.4 | 30.0 | 29.8 | 34.8 |
| Light blue | 2004 | 9.9 | 13.6 | 7.9 | 11.4 | 10.6 | 4.2 | 6.4 | 16.0 | 12.6 | 8.1 | 4.0 | 6.1 | 9.0 | 12.0 | 18.2 |
| | 2008 | 15.2 | 17.5 | 13.7 | 10.6 | 19.8 | 8.9 | 18.4 | 18.7 | 16.8 | 13.5 | 13.4 | 12.3 | 12.2 | 18.1 | 20.1 |
| Dark blue | 2004 | 7.4 | 7.3 | 8.6 | 2.9 | 9.4 | 4.9 | 7.7 | 5.9 | 6.6 | 8.0 | 9.3 | 7.8 | 8.7 | 5.3 | 6.1 |
| | 2008 | 18.2 | 16.4 | 19.4 | 22.2 | 15.4 | 21.7 | 14.7 | 15.7 | 17.7 | 18.7 | 21.2 | 17.8 | 19.4 | 17.3 | 15.0 |
| Pink | 2004 | 9.7 | 11.5 | 6.9 | 12.9 | 14.1 | 6.5 | 5.9 | 6.7 | 7.0 | 11.4 | 7.3 | 9.0 | 14.1 | 10.2 | 7.8 |
| | 2008 | 5.4 | 5.6 | 6.3 | 3.9 | 7.4 | 2.2 | 3.7 | 6.7 | 5.7 | 5.0 | 3.9 | 5.6 | 4.2 | 5.3 | 7.8 |
| Black | 2004 | 1.7 | 0.8 | 2.4 | 0.0 | 2.5 | 1.2 | 3.1 | 0.0 | 1.4 | 1.9 | 4.0 | 1.0 | 1.2 | 1.8 | 0.5 |
| | 2008 | 2.2 | 1.1 | 2.4 | 1.5 | 0.5 | 6.1 | 6.4 | 0.3 | 1.5 | 3.0 | 2.8 | 3.1 | 2.2 | 1.7 | 1.4 |
| Gray | 2004 | 5.1 | 5.6 | 6.2 | 5.7 | 1.2 | 4.7 | 6.0 | 5.0 | 5.0 | 5.2 | 5.9 | 4.6 | 3.8 | 8.3 | 3.0 |
| | 2008 | 1.3 | 0.9 | 0.9 | 1.0 | 3.0 | 1.7 | 1.8 | 1.0 | 1.3 | 1.3 | 1.1 | 1.4 | 1.4 | 1.1 | 1.1 |
| Yellow | 2004 | 5.0 | 4.3 | 5.5 | 11.4 | 4.9 | 2.6 | 4.1 | 3.4 | 3.8 | 5.8 | 6.1 | 5.3 | 5.2 | 4.1 | 4.7 |
| | 2008 | 2.0 | 2.5 | 0.9 | 1.5 | 3.0 | 3.3 | 0.9 | 1.7 | 1.9 | 2.2 | 2.5 | 2.8 | 1.4 | 1.1 | 2.2 |
| Peach | 2004 | 4.4 | 5.2 | 2.9 | 5.7 | 3.9 | 6.3 | 3.7 | 5.0 | 4.1 | 4.6 | 4.8 | 4.8 | 5.3 | 4.4 | 2.6 |
| | 2008 | 0.6 | 0.3 | 1.5 | 0.0 | 0.0 | 0.6 | 0.9 | 0.3 | 0.4 | 0.8 | 0.8 | 1.1 | 0.3 | 0.8 | 0.0 |
| Orange | 2004 | 4.8 | 4.3 | 7.0 | 1.4 | 1.6 | 5.9 | 5.5 | 4.2 | 5.2 | 4.5 | 5.3 | 3.2 | 8.7 | 4.2 | 2.5 |
| | 2008 | 5.5 | 5.8 | 5.5 | 4.8 | 3.0 | 8.3 | 4.6 | 3.3 | 4.4 | 6.6 | 6.7 | 7.2 | 5.6 | 4.7 | 3.1 |
| Turquoise | 2004 | 10.7 | 6.4 | 9.0 | 12.9 | 11.0 | 23.4 | 15.2 | 4.2 | 6.6 | 13.3 | 18.2 | 16.1 | 8.8 | 7.3 | 3.1 |
| | 2008 | 12.1 | 11.9 | 7.8 | 13.5 | 13.4 | 18.3 | 15.6 | 9.4 | 10.7 | 13.5 | 18.1 | 11.4 | 11.7 | 11.4 | 7.8 |
| Sea green | 2004 | 5.0 | 5.1 | 6.5 | 7.1 | 1.4 | 5.4 | 3.6 | 3.4 | 3.6 | 6.0 | 5.4 | 6.8 | 5.1 | 4.9 | 3.0 |
| | 2008 | 1.3 | 1.9 | 0.9 | 0.5 | 2.5 | 0.6 | 0.0 | 1.7 | 1.7 | 0.8 | 1.1 | 1.1 | 1.9 | 1.1 | 1.1 |
| Green | 2004 | 10.9 | 5.7 | 12.1 | 7.1 | 12.0 | 23.1 | 13.6 | 5.9 | 9.6 | 11.7 | 14.8 | 12.6 | 11.5 | 9.8 | 5.9 |
| | 2008 | 5.7 | 5.5 | 4.8 | 5.3 | 4.5 | 8.9 | 8.2 | 5.4 | 6.0 | 5.4 | 6.4 | 8.1 | 5.6 | 4.5 | 3.9 |
| Olive green | 2004 | 3.2 | 0.4 | 5.7 | 2.9 | 3.0 | 4.2 | 4.9 | 0.0 | 1.9 | 4.1 | 4.4 | 2.6 | 4.9 | 2.6 | 1.7 |
| | 2008 | 2.5 | 1.9 | 2.6 | 3.9 | 2.5 | 2.2 | 2.8 | 1.7 | 1.2 | 3.8 | 5.3 | 3.3 | 1.7 | 1.1 | 0.8 |
| Multi-colored design | 2004 | 3.7 | 2.2 | 5.8 | 2.9 | 1.4 | 4.5 | 6.0 | 2.5 | 3.5 | 3.8 | 4.6 | 4.7 | 2.5 | 2.8 | 3.9 |
| | 2008 | 1.1 | 1.3 | 1.5 | 0.5 | 0.0 | 1.7 | 0.9 | 1.0 | 1.1 | 1.1 | 0.8 | 1.4 | 1.7 | 1.1 | 0.6 |
| BASE | 2004 | 1419 | 230 | 240 | 70 | 291 | 279 | 309 | 119 | 609 | 810 | 355 | 302 | 281 | 281 | 200 |
| | 2008 | 1796 | 639 | 459 | 207 | 202 | 180 | 109 | 299 | 917 | 879 | 359 | 359 | 360 | 359 | 359 |

6.2 AWARENESS AND PERCEPTIONS OF MOSQUITO NET BRANDS

Brand awareness

Respondents were asked to name the brands of mosquito nets and ITNs they were aware of, even if they did not use them (unprompted awareness). After responding, they were shown a card with the name and logo of different brands. The interviewer read aloud each name/brand and asked the respondent to indicate which other brands, apart from any already mentioned, they recognized (prompted awareness). Since “NetMark” was used in early promotional ads, it was included on the card, even though it is not a brand. The NetMark logo is on partner brands sold through the voucher scheme and the commercial outlets. UNICEF was also included on the show card, since some subsidized nets are from UNICEF. The tables show unprompted, prompted, and total (unprompted plus prompted) brand awareness.

- Unprompted net/ITN brand awareness in Ghana is only 7% (93% could not name any brand), but 91% said they recognized at least one brand after being shown and read a card with logos with associated brand names. Total awareness – the percent of those who recognized at least one brand either unprompted or prompted – was 93%.
- Total awareness was highest by far for PermaNet at 68%.

Table 6.4 Awareness of mosquito net brand names, unprompted

Among all respondents (multiple responses possible)

| | | Total | Site (city plus surrounding rural areas) | | | | | | | Urban Accra only | Urban/Rural All Urban | Urban/Rural All Rural | Socio-Economic Status | | | | |
|-----------------------|------|-------|--|---------|---------|-------|----------|---------------|----------|------------------------|-----------------------------|-----------------------------|-----------------------|------|------|-----------|------|
| | | | Accra | Ashanti | Central | Volta | Northern | Upper West | 1 low | | | | 2 | 3 | 4 | 5 high | |
| Dawa Net | 2004 | 0.3 | 0.9 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 1.7 | 0.7 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 1.5 |
| | 2008 | 0.5 | 0.6 | 0.0 | 0.0 | 0.0 | 0.0 | 2.2 | 0.0 | 1.0 | 0.8 | 0.1 | 0.6 | 0.3 | 0.6 | 0.0 | 0.5 |
| Icon Net | 2004 | 0.2 | 0.4 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.3 | 0.0 | 0.1 | 0.2 | 0.0 | 0.0 | 0.0 | 0.7 | 0.1 |
| | 2008 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 1.1 | 0.0 | 0.0 | 0.2 | 0.0 | 0.3 | 0.3 | 0.0 | 0.0 | 0.0 |
| KO Net | 2004 | 0.4 | 0.5 | 0.4 | 0.0 | 0.0 | 0.0 | 0.5 | 0.6 | 0.8 | 0.8 | 0.1 | 0.1 | 0.0 | 0.5 | 0.0 | 1.1 |
| | 2008 | 0.3 | 0.2 | 0.0 | 0.0 | 0.0 | 0.0 | 2.2 | 0.9 | 0.3 | 0.4 | 0.2 | 1.1 | 0.0 | 0.3 | 0.0 | 0.3 |
| NetMark | 2004 | 2.7 | 6.7 | 0.4 | 0.0 | 0.0 | 0.0 | 0.2 | 4.6 | 10.8 | 5.6 | 0.8 | 0.2 | 0.9 | 0.0 | 0.8 | 11.5 |
| | 2008 | 0.2 | 0.5 | 0.0 | 0.0 | 0.0 | 0.5 | 0.0 | 0.0 | 0.7 | 0.2 | 0.2 | 0.0 | 0.0 | 0.0 | 0.3 | 0.8 |
| PermaNet | 2004 | 0.4 | 0.5 | 0.4 | 0.0 | 0.0 | 0.0 | 1.0 | 1.0 | 0.8 | 0.9 | 0.0 | 0.6 | 0.2 | 0.0 | 0.0 | 1.4 |
| | 2008 | 5.9 | 6.3 | 2.6 | 2.9 | 6.9 | 12.8 | 9.8 | 8.0 | 7.2 | 4.4 | 5.3 | 2.5 | 4.4 | 3.6 | 13.4 | |
| UNICEF / SiamDutch | 2004 | 1.0 | 1.8 | 0.0 | 0.0 | 0.7 | 0.9 | 2.7 | 2.5 | 1.6 | 0.6 | 0.5 | 0.5 | 0.4 | 0.5 | 3.1 | |
| | 2008 | 0.9 | 0.5 | 0.2 | 0.0 | 0.0 | 3.3 | 5.5 | 0.7 | 1.2 | 0.6 | 1.4 | 1.1 | 0.3 | 0.8 | 0.8 | |
| Olyset | 2004 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | |
| | 2008 | 1.0 | 0.9 | 0.2 | 0.0 | 0.0 | 2.2 | 6.4 | 2.0 | 1.2 | 0.8 | 2.0 | 0.3 | 0.8 | 0.0 | 2.0 | |
| Dawa Plus | 2004 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | |
| | 2008 | 0.2 | 0.5 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 1.0 | 0.3 | 0.0 | 0.0 | 0.0 | 0.0 | 0.3 | 0.6 |
| Icon Life | 2004 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | |
| | 2008 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.6 | 0.0 | 0.0 | 0.0 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.3 |
| Interceptor | 2004 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | |
| | 2008 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | |
| Dura Net | 2004 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | |
| | 2008 | 0.2 | 0.0 | 0.0 | 0.0 | 0.0 | 1.7 | 0.9 | 0.0 | 0.4 | 0.0 | 0.6 | 0.0 | 0.0 | 0.3 | 0.3 | |
| Other | 2004 | 0.2 | 0.4 | 0.0 | 0.0 | 0.4 | 0.0 | 0.0 | 0.0 | 0.1 | 0.2 | 0.0 | 0.1 | 0.8 | 0.0 | 0.0 | |
| | 2008 | 0.2 | 0.3 | 0.0 | 0.0 | 0.0 | 0.6 | 0.0 | 0.0 | 0.3 | 0.0 | 0.3 | 0.0 | 0.0 | 0.0 | 0.6 | |
| None | 2004 | 95.6 | 90.3 | 99.3 | 100.0 | 98.9 | 97.6 | 92.6 | 85.8 | 91.7 | 98.1 | 98.7 | 98.5 | 98.3 | 98.0 | 84.7 | |
| | 2008 | 92.5 | 92.3 | 97.2 | 97.1 | 92.6 | 81.7 | 83.5 | 90.3 | 90.6 | 94.5 | 92.8 | 95.8 | 95.0 | 95.0 | 84.1 | |
| BASE | 2004 | 1420 | 231 | 240 | 70 | 291 | 279 | 309 | 120 | 610 | 810 | 355 | 302 | 281 | 281 | 201 | |
| | 2008 | 1796 | 639 | 459 | 207 | 202 | 180 | 109 | 299 | 917 | 879 | 359 | 359 | 360 | 359 | 359 | |

Table 6.5 Awareness of mosquito net brand names, prompted

Among all respondents (multiple responses possible)

| | | Total | Site (city plus surrounding rural areas) | | | | | | | Urban Accra only | Urban/Rural All Urban | Urban/Rural All Rural | Socio-Economic Status | | | | |
|-----------------------|------|-------|--|---------|---------|-------|----------|---------------|----------|------------------------|-----------------------------|-----------------------------|-----------------------|------|------|-----------|--|
| | | | Accra | Ashanti | Central | Volta | Northern | Upper West | 1 low | | | | 2 | 3 | 4 | 5 high | |
| Dawa Net | 2004 | 3.2 | 5.6 | 0.7 | 1.4 | 4.9 | 2.1 | 1.8 | 5.8 | 4.3 | 2.5 | 0.7 | 1.6 | 1.7 | 7.9 | 3.8 | |
| | 2008 | 4.1 | 4.4 | 2.8 | 1.5 | 3.0 | 8.9 | 6.4 | 4.0 | 4.3 | 3.9 | 5.3 | 3.6 | 2.2 | 3.3 | 5.9 | |
| Icon Net | 2004 | 5.0 | 7.0 | 2.7 | 2.9 | 5.4 | 4.7 | 6.7 | 7.5 | 6.6 | 4.0 | 2.6 | 4.5 | 4.2 | 7.7 | 5.9 | |
| | 2008 | 6.6 | 8.0 | 7.6 | 3.9 | 1.5 | 8.9 | 5.5 | 7.4 | 8.2 | 5.0 | 4.7 | 5.3 | 7.5 | 8.1 | 7.5 | |
| KO Net | 2004 | 8.2 | 4.8 | 6.9 | 7.1 | 9.4 | 18.7 | 11.6 | 5.8 | 7.6 | 8.5 | 7.0 | 8.7 | 6.9 | 13.3 | 5.0 | |
| | 2008 | 3.7 | 3.8 | 3.5 | 3.4 | 1.5 | 7.2 | 2.8 | 5.0 | 4.6 | 2.7 | 4.2 | 1.7 | 3.1 | 4.2 | 5.3 | |
| NetMark | 2004 | 17.4 | 26.0 | 16.3 | 10.0 | 11.8 | 10.8 | 11.5 | 35.8 | 27.0 | 11.3 | 9.0 | 12.2 | 12.5 | 20.8 | 32.4 | |
| | 2008 | 9.7 | 12.4 | 7.2 | 3.4 | 19.3 | 5.6 | 5.5 | 15.1 | 11.0 | 8.3 | 6.1 | 7.2 | 8.3 | 10.6 | 16.2 | |
| Permanet | 2004 | 8.1 | 7.0 | 4.2 | 2.9 | 12.9 | 14.6 | 14.1 | 9.2 | 10.4 | 6.7 | 6.8 | 5.4 | 7.4 | 9.4 | 11.6 | |
| | 2008 | 62.4 | 62.4 | 70.2 | 77.8 | 66.8 | 29.4 | 46.8 | 55.9 | 59.5 | 65.4 | 54.3 | 64.6 | 66.1 | 65.7 | 61.3 | |
| UNICEF / SiamDutch | 2004 | 24.5 | 25.9 | 21.2 | 20.0 | 25.6 | 31.0 | 25.1 | 23.3 | 24.5 | 24.5 | 17.5 | 26.4 | 26.4 | 29.1 | 23.3 | |
| | 2008 | 19.8 | 17.1 | 17.0 | 22.7 | 17.8 | 23.9 | 38.5 | 17.7 | 18.8 | 20.8 | 19.8 | 20.9 | 22.5 | 22.0 | 13.7 | |
| Olyset* | 2004 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | |
| | 2008 | 20.3 | 13.9 | 19.0 | 26.1 | 19.3 | 33.33 | 32.1 | 20.1 | 18.4 | 22.2 | 24.5 | 20.6 | 16.1 | 18.7 | 21.5 | |
| Dawa Plus* | 2004 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | |
| | 2008 | 6.8 | 7.0 | 4.8 | 7.3 | 6.4 | 12.8 | 3.7 | 7.7 | 7.0 | 6.6 | 9.2 | 7.2 | 7.2 | 3.9 | 6.4 | |
| Icon Life* | 2004 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | |
| | 2008 | 1.7 | 1.6 | 1.7 | 1.5 | 0.5 | 2.8 | 2.8 | 1.0 | 1.6 | 1.7 | 2.0 | 1.1 | 2.2 | 2.5 | 0.6 | |
| Interceptor* | 2004 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | |
| | 2008 | 0.1 | 0.3 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.3 | 0.2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.6 | |
| Dura Net* | 2004 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | |
| | 2008 | 0.8 | 0.5 | 0.9 | 0.5 | 0.5 | 2.2 | 0.9 | 0.7 | 1.0 | 0.6 | 0.6 | 0.0 | 1.4 | 1.1 | 0.8 | |
| None | 2004 | 53.4 | 40.7 | 58.4 | 57.1 | 46.8 | 25.7 | 41.7 | 31.7 | 37.6 | 51.9 | 59.9 | 50.3 | 49.9 | 36.9 | 34.6 | |
| | 2008 | 9.2 | 11.1 | 7.2 | 3.9 | 12.4 | 13.9 | 3.7 | 11.7 | 10.1 | 8.3 | 11.1 | 8.4 | 8.3 | 7.5 | 10.9 | |
| BASE | 2004 | 1420 | 231 | 240 | 70 | 291 | 279 | 309 | 120 | 610 | 810 | 355 | 302 | 281 | 281 | 201 | |
| | 2008 | 1796 | 639 | 459 | 207 | 202 | 180 | 109 | 299 | 917 | 879 | 359 | 359 | 360 | 359 | 359 | |

*These nets were not asked about in 2004

Table 6.6 Awareness of mosquito net brand names, total unprompted and prompted

Among all respondents (multiple responses possible)

| | | Total | Site (city plus surrounding rural areas) | | | | | | Urban Accra only | Urban/Rural | | Socio-Economic Status | | | | |
|------------------|------|-------|--|---------|---------|-------|----------|---------------|------------------------|--------------|--------------|-----------------------|------|------|------|-----------|
| | | | Accra | Ashanti | Central | Volta | Northern | Upper West | | All Urban | All Rural | 1 low | 2 | 3 | 4 | 5 high |
| Dawa Net | 2004 | 3.4 | 6.5 | 0.7 | 1.4 | 4.9 | 2.1 | 1.8 | 7.5 | 5.0 | 2.5 | 0.7 | 1.6 | 1.7 | 7.9 | 5.3 |
| | 2008 | 4.5 | 5.0 | 2.8 | 1.5 | 3.0 | 11.1 | 6.4 | 5.0 | 5.0 | 4.0 | 5.9 | 3.9 | 2.8 | 3.3 | 6.7 |
| Icon Net | 2004 | 5.1 | 7.4 | 2.7 | 2.9 | 5.4 | 4.7 | 7.0 | 7.5 | 6.6 | 4.2 | 2.6 | 4.5 | 4.2 | 8.3 | 6.0 |
| | 2008 | 6.7 | 8.0 | 7.6 | 3.9 | 1.5 | 10.0 | 5.5 | 7.4 | 8.4 | 5.0 | 5.0 | 5.6 | 7.5 | 8.1 | 7.5 |
| KO Net | 2004 | 8.5 | 5.3 | 7.3 | 7.1 | 9.4 | 19.2 | 12.2 | 6.7 | 8.4 | 8.6 | 7.1 | 8.7 | 7.4 | 13.3 | 6.2 |
| | 2008 | 4.0 | 3.9 | 3.5 | 3.4 | 1.5 | 9.4 | 3.7 | 5.4 | 5.0 | 3.0 | 5.3 | 1.7 | 3.3 | 4.2 | 5.6 |
| NetMark | 2004 | 20.0 | 32.7 | 16.6 | 10.0 | 11.8 | 11.1 | 16.1 | 46.7 | 32.6 | 12.1 | 9.1 | 13.1 | 12.5 | 21.6 | 43.9 |
| | 2008 | 10.0 | 12.8 | 7.2 | 3.4 | 19.8 | 5.6 | 5.5 | 15.7 | 11.2 | 8.5 | 6.1 | 7.2 | 8.3 | 10.9 | 17.0 |
| PermaNet | 2004 | 8.5 | 7.5 | 4.6 | 2.9 | 12.9 | 15.5 | 15.0 | 10.0 | 11.3 | 6.8 | 7.4 | 5.6 | 7.4 | 9.4 | 12.9 |
| | 2008 | 68.3 | 68.7 | 72.8 | 80.7 | 73.8 | 42.2 | 54.0 | 63.9 | 66.7 | 69.9 | 59.6 | 67.1 | 70.6 | 69.4 | 74.7 |
| UNICEF/SiamDutch | 2004 | 25.5 | 27.6 | 21.2 | 20.0 | 26.2 | 32.0 | 27.8 | 25.8 | 26.2 | 25.2 | 18.0 | 26.9 | 26.9 | 29.6 | 26.4 |
| | 2008 | 20.7 | 17.5 | 17.2 | 22.7 | 17.8 | 27.2 | 44.0 | 18.4 | 20.0 | 21.4 | 21.2 | 22.0 | 22.8 | 22.8 | 14.5 |
| Olyset* | 2004 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| | 2008 | 21.3 | 14.9 | 19.2 | 26.1 | 19.3 | 35.6 | 38.5 | 22.1 | 19.6 | 23.0 | 26.5 | 20.9 | 16.9 | 18.7 | 23.4 |
| Dawa Plus* | 2004 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| | 2008 | 7.0 | 7.5 | 4.8 | 7.3 | 6.4 | 12.8 | 3.7 | 8.7 | 7.3 | 6.6 | 9.2 | 7.2 | 7.2 | 4.2 | 7.0 |
| Icon Life* | 2004 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| | 2008 | 1.7 | 1.6 | 1.7 | 1.5 | 0.5 | 3.3 | 2.8 | 1.0 | 1.7 | 1.7 | 2.0 | 1.1 | 2.2 | 2.5 | 0.8 |
| Interceptor* | 2004 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| | 2008 | 0.1 | 0.3 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.3 | 0.2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.6 |
| Dura Net* | 2004 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| | 2008 | 1.0 | 0.5 | 0.9 | 0.5 | 0.5 | 3.9 | 1.8 | 0.7 | 1.4 | 0.6 | 1.1 | 0.0 | 1.4 | 1.4 | 1.1 |
| None | 2004 | 43.9 | 34.6 | 58.4 | 57.1 | 45.9 | 25.0 | 38.3 | 24.2 | 33.7 | 50.3 | 59.1 | 49.4 | 48.9 | 35.4 | 26.5 |
| | 2008 | 6.8 | 8.9 | 5.2 | 3.4 | 10.4 | 6.1 | 1.8 | 8.7 | 6.9 | 6.7 | 8.6 | 7.0 | 6.4 | 5.9 | 6.1 |
| BASE | 2004 | 1420 | 231 | 240 | 70 | 291 | 279 | 309 | 120 | 610 | 810 | 355 | 302 | 281 | 281 | 201 |
| | 2008 | 1796 | 639 | 459 | 207 | 202 | 180 | 109 | 299 | 917 | 879 | 359 | 359 | 360 | 359 | 359 |

*These nets were not asked about in 2004

6.3 AWARENESS AND USE OF OTHER MOSQUITO CONTROL PRODUCTS

In order to understand the role of nets in the larger context of mosquito control products, respondents were asked what mosquito control methods they knew of and used, and which products they associated with various attributes.

To measure awareness of other mosquito control products, respondents were shown a card including images of coils and aerosols. The interviewer pointed to and named each, and asked whether the respondent had heard of each. Levels of awareness and patterns of use remained essentially the same as in 2004.

- Awareness of coils and aerosol insecticides was nearly universal. Use of these commercial insect control alternatives was moderate and about the same as in 2004: 58% had used coils during the mosquito season in the past 12 months, and 36% had used aerosols.
- Frequency of coil use was approximately the same in 2004 and 2008: 43% of coil users used them daily during mosquito season, and another 31% used them several times a week.
- About 15% of those who had used aerosol in the prior 12 months used it every day during mosquito season, and another 31% used it several times a week. Aerosol use appears to have decreased slightly from 2004, when 17% used it daily and 40% used it several times per week.
- Respondents were also asked if they had ever used a flit gun that they filled with insecticide to kill mosquitoes. Few – only 2% – had done so.
- Overall, few (6%) households had received government-organized indoor residual spraying (IRS). IRS was concentrated in the Northern region, as 33% of respondents there said their house had been sprayed, and another 4% said someone had come to spray but they refused to have it done. Of those who had their house sprayed in Northern region, 4% had re-plastered or re-painted their walls afterwards.

Table 6.7 Awareness of coils and aerosols

Among all respondents (multiple responses possible)

| | | Site (city plus surrounding rural areas) | | | | | | | | Socio-Economic Status | | | | | | |
|-------------------|------|--|-------|---------|---------|-------|----------|------------|------------------|-----------------------|-----------|-------|------|-------|-------|--------|
| | | Total | Accra | Ashanti | Central | Volta | Northern | Upper West | Urban Accra only | Urban/Rural All Urban | All Rural | 1 low | 2 | 3 | 4 | 5 high |
| Aware of coils | 2004 | 99.6 | 99.6 | 99.5 | 100.0 | 99.5 | 99.8 | 99.3 | 100.0 | 99.9 | 99.4 | 99.0 | 99.0 | 99.9 | 100.0 | 100.0 |
| | 2008 | 99.7 | 100.0 | 98.9 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 99.4 | 100.0 | 98.9 | 100.0 | 99.7 | 100.0 |
| Aware of aerosols | 2004 | 95.5 | 98.3 | 94.9 | 98.7 | 92.8 | 92.6 | 91.4 | 100.0 | 97.8 | 94.0 | 87.6 | 94.9 | 96.7 | 98.4 | 99.7 |
| | 2008 | 97.6 | 99.5 | 95.4 | 98.1 | 98.0 | 96.7 | 95.4 | 99.7 | 99.1 | 96.0 | 94.2 | 96.4 | 98.3 | 99.2 | 100.0 |
| BASE | 2004 | 1420 | 231 | 240 | 70 | 291 | 279 | 309 | 120 | 610 | 810 | 355 | 302 | 281 | 281 | 201 |
| | 2008 | 1791 | 639 | 459 | 207 | 202 | 180 | 109 | 299 | 917 | 879 | 359 | 359 | 360 | 359 | 359 |

Table 6.8 Use of coils, aerosols, and spray (flit) gun in last 12 months

Among all respondents (multiple responses possible)

| | | Total | Site (city plus surrounding rural areas) | | | | | | Urban Accra only | Urban/Rural All Urban | Urban/Rural All Rural | Socio-Economic Status | | | | |
|---------------------------|------|-------|--|---------|---------|-------|----------|---------------|------------------------|-----------------------------|-----------------------------|-----------------------|------|------|------|-----------|
| | | | Accra | Ashanti | Central | Volta | Northern | Upper West | | | | 1 low | 2 | 3 | 4 | 5 high |
| Used coils | 2004 | 58.3 | 57.7 | 52.4 | 57.1 | 50.7 | 75.5 | 72.8 | 50.0 | 56.5 | 59.4 | 56.5 | 61.8 | 64.9 | 66.4 | 41.7 |
| | 2008 | 58.0 | 54.6 | 56.4 | 48.1 | 60.9 | 72.2 | 74.3 | 54.5 | 58.2 | 57.7 | 62.9 | 51.8 | 64.4 | 60.3 | 50.4 |
| BASE | 2004 | 1420 | 231 | 240 | 70 | 291 | 279 | 309 | 120 | 610 | 810 | 355 | 302 | 281 | 281 | 201 |
| | 2008 | 1790 | 639 | 464 | 206 | 202 | 180 | 109 | 299 | 917 | 873 | 358 | 355 | 360 | 358 | 359 |
| Used aerosols | 2004 | 30.6 | 39.5 | 27.1 | 20.0 | 19.5 | 29.5 | 36.7 | 60.0 | 50.4 | 18.0 | 7.3 | 17.2 | 22.5 | 33.9 | 72.1 |
| | 2008 | 35.8 | 42.5 | 35.4 | 13.9 | 23.6 | 46.0 | 45.2 | 53.7 | 47.0 | 23.7 | 18.3 | 22.5 | 26.8 | 46.9 | 62.7 |
| BASE | 2004 | 1420 | 231 | 240 | 70 | 291 | 279 | 309 | 120 | 610 | 810 | 355 | 302 | 281 | 281 | 201 |
| | 2008 | 1753 | 636 | 438 | 202 | 199 | 174 | 104 | 298 | 909 | 844 | 338 | 346 | 354 | 356 | 359 |
| Used spray (flit) gun* | 2008 | 2.3 | 3.9 | 2.0 | 0.0 | 1.5 | 1.7 | 0.9 | 5.0 | 3.7 | 0.8 | 0.3 | 1.7 | 2.2 | 2.2 | 5.0 |
| BASE | 2008 | 1795 | 639 | 459 | 206 | 202 | 180 | 109 | 299 | 917 | 878 | 358 | 359 | 360 | 359 | 359 |

* not asked in 2004

Table 6.9 Frequency of mosquito coil use

Among households that used mosquito coils in the 12 months before the interview

| | | Total | Site (city plus surrounding rural areas) | | | | | | Urban Accra only | Urban/Rural All Urban | Urban/Rural All Rural | Socio-Economic Status | | | | |
|---|------|-------|--|---------|---------|-------|----------|---------------|------------------------|-----------------------------|-----------------------------|-----------------------|------|------|------|-----------|
| | | | Accra | Ashanti | Central | Volta | Northern | Upper West | | | | 1 low | 2 | 3 | 4 | 5 high |
| Every day | 2004 | 42.4 | 40.4 | 37.0 | 37.5 | 42.9 | 53.3 | 50.7 | 43.3 | 44.1 | 41.4 | 37.1 | 42.6 | 48.0 | 49.6 | 29.4 |
| | 2008 | 42.9 | 44.1 | 46.9 | 34.3 | 35.0 | 47.7 | 39.5 | 42.9 | 45.1 | 40.5 | 41.3 | 40.8 | 42.7 | 45.8 | 43.7 |
| Several times (2 to 6 times a week) | 2004 | 34.2 | 36.5 | 34.4 | 37.5 | 31.8 | 35.2 | 26.2 | 35.0 | 33.0 | 34.9 | 36.7 | 35.1 | 28.4 | 32.5 | 41.1 |
| | 2008 | 31.3 | 30.7 | 27.3 | 32.3 | 37.4 | 31.5 | 35.8 | 30.1 | 28.7 | 34.1 | 31.1 | 30.4 | 34.1 | 29.2 | 31.5 |
| Once a week/ several times a month | 2004 | 15.4 | 17.0 | 15.0 | 20.0 | 14.9 | 8.7 | 16.8 | 11.7 | 12.7 | 17.0 | 17.3 | 13.8 | 15.9 | 15.5 | 14.0 |
| | 2008 | 21.4 | 19.2 | 21.5 | 26.3 | 26.8 | 17.7 | 22.2 | 19.0 | 22.1 | 20.6 | 21.3 | 25.0 | 21.1 | 21.3 | 18.2 |
| Once a month | 2004 | 3.0 | 0.8 | 5.5 | 5.0 | 4.4 | 1.9 | 2.4 | 1.7 | 3.9 | 2.5 | 4.1 | 2.6 | 3.2 | 1.5 | 4.5 |
| | 2008 | 3.3 | 4.6 | 2.7 | 5.1 | 0.0 | 3.1 | 2.5 | 6.1 | 3.4 | 3.2 | 4.4 | 3.8 | 1.3 | 1.9 | 5.5 |
| Less than once a month | 2004 | 5.0 | 5.3 | 8.2 | 0.0 | 6.0 | 0.9 | 3.9 | 8.3 | 6.3 | 4.3 | 5.0 | 6.0 | 4.5 | 1.0 | 11.0 |
| | 2008 | 1.1 | 1.4 | 1.2 | 2.0 | 0.8 | 0.0 | 0.0 | 1.8 | 0.8 | 1.4 | 1.3 | 0.0 | 0.9 | 1.9 | 1.1 |
| Don't know | 2004 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| | 2008 | 0.1 | 0.0 | 0.4 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.4 | 0.0 | 0.0 | 0.0 | 0.0 |
| BASE | 2004 | 883 | 134 | 127 | 40 | 146 | 210 | 226 | 60 | 384 | 499 | 212 | 196 | 189 | 185 | 101 |
| | 2008 | 1038 | 349 | 256 | 99 | 123 | 130 | 81 | 163 | 534 | 504 | 225 | 184 | 232 | 216 | 181 |

Table 6.10 Frequency of aerosol insecticide use

Among households that used aerosol insecticides in the 12 months before the interview

| | | Total | Site (city plus surrounding rural areas) | | | | | | Urban Accra only | Urban/Rural | | Socio-Economic Status | | | | |
|---|------|-------|--|---------|---------|-------|----------|---------------|------------------------|--------------|--------------|-----------------------|------|------|------|-----------|
| | | | Accra | Ashanti | Central | Volta | Northern | Upper West | | All Urban | All Rural | 1 low | 2 | 3 | 4 | 5 high |
| Every day | 2004 | 16.7 | 19.2 | 9.6 | 14.3 | 7.8 | 31.1 | 19.4 | 20.8 | 16.4 | 17.3 | 8.6 | 24.9 | 15.4 | 18.0 | 15.4 |
| | 2008 | 14.5 | 15.2 | 16.1 | 21.4 | 12.8 | 13.8 | 4.3 | 18.1 | 16.6 | 10.0 | 12.9 | 12.8 | 12.6 | 15.6 | 15.6 |
| Several times (2 to 6 times a week) | 2004 | 38.9 | 45.1 | 40.1 | 42.9 | 23.7 | 31.0 | 29.7 | 47.2 | 45.1 | 27.8 | 16.6 | 11.7 | 38.4 | 42.4 | 46.1 |
| | 2008 | 31.9 | 31.9 | 29.7 | 17.9 | 27.7 | 40.0 | 38.3 | 34.4 | 34.7 | 26.0 | 25.8 | 26.9 | 30.5 | 35.9 | 32.9 |
| Once a week/ several times a month | 2004 | 24.5 | 22.4 | 22.6 | 28.6 | 28.4 | 34.7 | 23.3 | 20.8 | 22.1 | 28.8 | 51.8 | 21.0 | 17.8 | 21.6 | 26.1 |
| | 2008 | 32.4 | 32.6 | 28.4 | 35.7 | 38.3 | 23.8 | 51.1 | 26.3 | 27.6 | 42.5 | 32.3 | 35.9 | 40.0 | 29.3 | 30.2 |
| Once a month | 2004 | 9.9 | 11.1 | 8.8 | 0.0 | 17.2 | 1.6 | 13.8 | 8.3 | 9.9 | 9.9 | 1.6 | 10.4 | 15.0 | 11.7 | 8.2 |
| | 2008 | 14.8 | 17.0 | 16.1 | 7.1 | 12.8 | 13.8 | 6.4 | 17.5 | 15.2 | 14.0 | 21.0 | 11.5 | 12.6 | 13.8 | 16.0 |
| Less than once a month | 2004 | 9.3 | 2.3 | 17.5 | 17.3 | 19.6 | 1.6 | 13.9 | 2.8 | 5.8 | 15.6 | 21.5 | 31.2 | 12.0 | 4.7 | 4.2 |
| | 2008 | 6.2 | 3.0 | 9.7 | 17.9 | 8.5 | 8.8 | 0.0 | 3.1 | 5.6 | 7.5 | 8.1 | 12.8 | 4.2 | 5.4 | 4.9 |
| Don't know | 2004 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| | 2008 | 0.2 | 0.4 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.6 | 0.2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| BASE | 2004 | 443 | 89 | 70 | 14 | 67 | 87 | 116 | 72 | 275 | 168 | 37 | 67 | 80 | 110 | 149 |
| | 2008 | 627 | 270 | 155 | 28 | 47 | 80 | 47 | 160 | 427 | 200 | 62 | 78 | 95 | 167 | 225 |

Table 6.11 Someone came to house to spray walls for mosquitoes in past 12 months, 2008

Among all households

| | Total | Site (city plus surrounding rural areas) | | | | | | Urban Accra only | Urban/Rural | | Socio-Economic Status | | | | | |
|---|-------|--|---------|---------|-------|----------|---------------|------------------------|--------------|--------------|-----------------------|------|------|------|-----------|--|
| | | Accra | Ashanti | Central | Volta | Northern | Upper West | | All Urban | All Rural | 1 low | 2 | 3 | 4 | 5 high | |
| No | 93.2 | 97.3 | 92.4 | 98.6 | 100.0 | 63.3 | 98.2 | 97.3 | 92.8 | 93.5 | 87.7 | 94.4 | 93.1 | 95.0 | 95.5 | |
| Yes, walls sprayed | 6.2 | 2.2 | 7.4 | 1.0 | 0.0 | 32.8 | 1.8 | 2.0 | 6.5 | 5.8 | 10.3 | 5.3 | 6.7 | 4.2 | 4.5 | |
| Yes, but refused | 0.7 | 0.5 | 0.2 | 0.5 | 0.0 | 3.9 | 0.0 | 0.7 | 0.7 | 0.7 | 2.0 | 0.3 | 0.3 | 0.9 | 0.0 | |
| BASE | 1796 | 639 | 459 | 207 | 202 | 180 | 109 | 299 | 917 | 879 | 359 | 359 | 360 | 359 | 359 | |
| Among those whose wall were sprayed | | | | | | | | | | | | | | | | |
| Repainted or replastered walls after spraying | 5.5 | 7.1 | 8.8 | 0.0 | 0.0 | 3.5 | 0.0 | 16.7 | 8.5 | 2.0 | 2.8 | 5.3 | 8.3 | 0.0 | 12.5 | |
| BASE | 110 | 14 | 34 | 2 | 0 | 58 | 2 | 6 | 59 | 51 | 36 | 19 | 24 | 15 | 16 | |

[Not asked in 2004]

6.4 ASSOCIATION OF ATTRIBUTES WITH NETS, ITNs AND OTHER MOSQUITO CONTROL PRODUCTS

Respondents were asked which mosquito control products (coils, aerosols, untreated nets and treated nets) they thought of when each of a list of nine mosquito control product attributes was named:

1. Kills mosquitoes
2. Is a modern solution to mosquito problems
3. Keeps mosquitoes away while sleeping
4. Kills insects other than mosquitoes
5. Is safe to use around children
6. Is good value to the money
7. Is a long-term solution to mosquito problems
8. Is a high quality product
9. Reduces malaria

The respondent could indicate more than one product per attribute. (Note that the base is respondents who were aware of a given product. The table indicates the percentage of those respondents selecting a given product when a particular attribute was named.)

- In 2008, treated mosquito nets were very highly regarded and were most associated with eight of the nine attributes — all but “killing other insects.”
- The product associated most with the other attribute — “killing other insects” — was aerosol. A minority of respondents associated ITNs with this attribute, even though ITNs do kill other insects.

Figure 6.2

Associations of mosquito control products with attributes – 2008

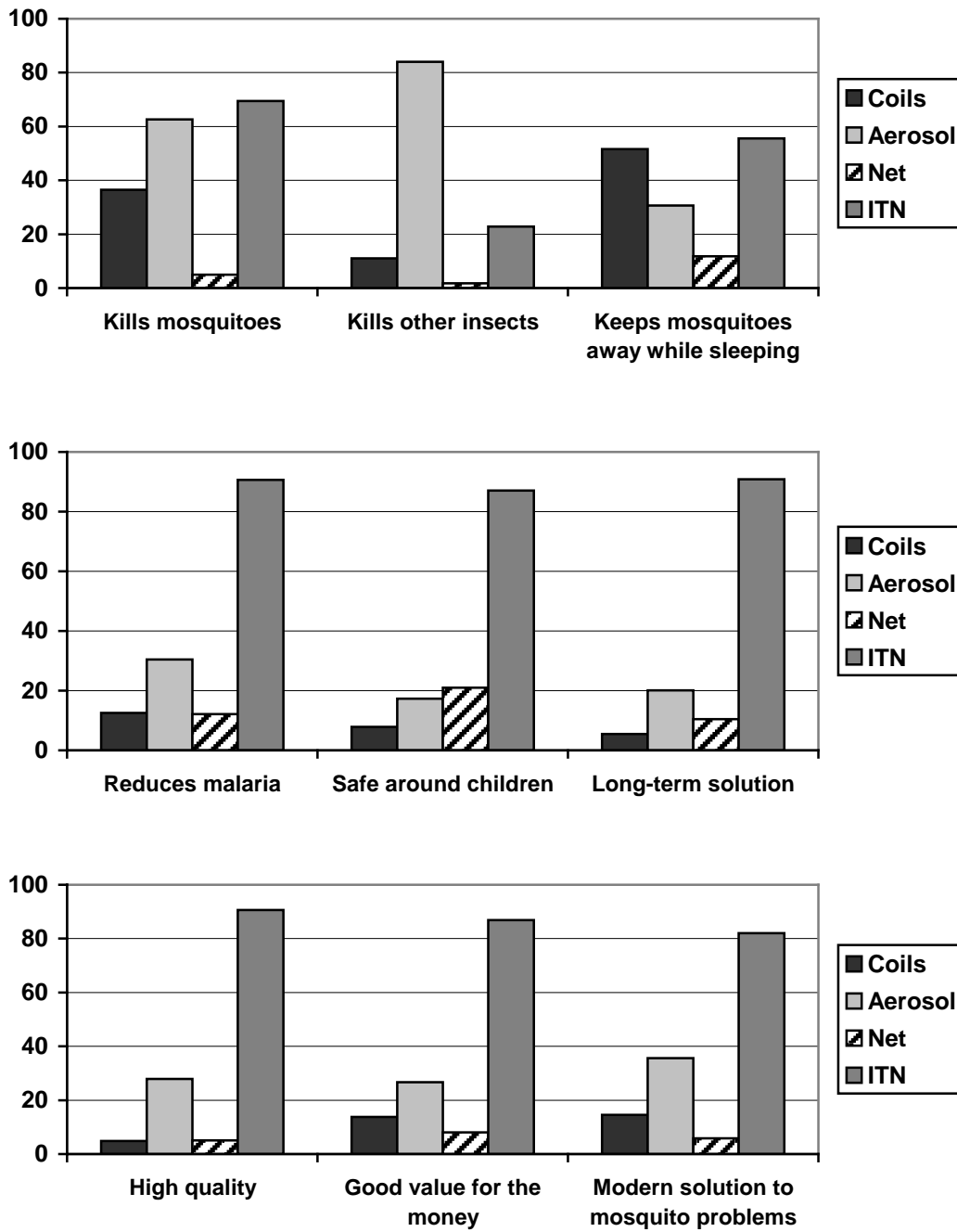


Table 6.12 Association of mosquito control products and attributes – 2008

Among respondents who are aware of specific mosquito control products (multiple responses possible)*

| Attribute | Coils | Aerosol | Net | ITN |
|--------------------------------------|-------|---------|------|------|
| Kills mosquitoes | 36.5 | 62.6 | 5.0 | 69.5 |
| Modern solution to mosquito problems | 14.5 | 35.6 | 5.8 | 82.0 |
| Keeps mosquitoes away while sleeping | 51.6 | 30.7 | 11.8 | 55.6 |
| Kills other insects | 11.0 | 84.0 | 1.8 | 22.8 |
| Safe around children | 7.9 | 17.3 | 21.0 | 87.1 |
| Good value | 13.8 | 26.7 | 8.0 | 86.9 |
| Long-term solution | 5.5 | 20.1 | 10.4 | 90.8 |
| High quality | 4.8 | 27.9 | 5.1 | 90.6 |
| Reduces malaria | 12.5 | 30.4 | 12.1 | 90.6 |
| BASE | 1791 | 1753 | 1794 | 1780 |

* The base is respondents who were aware of a given product. The table indicates the percentage of those respondents selecting a given product when a particular attribute was named.

Table 6.13 Association of mosquito control products and attributes – 2004

Among respondents who are aware of specific mosquito control products (multiple responses possible)*

| Attribute | Coils | Aerosol | Net | ITN |
|--------------------------------------|-------|---------|------|------|
| Kills mosquitoes | 45.0 | 85.5 | 11.2 | 74.7 |
| Modern solution to mosquito problems | 16.9 | 39.3 | 22.1 | 89.2 |
| Keeps mosquitoes away while sleeping | 56.7 | 43.7 | 45.1 | 68.6 |
| Kills other insects | 17.8 | 88.9 | 4.9 | 31.4 |
| Safe around children | 13.0 | 24.9 | 63.7 | 83.6 |
| Good value | 26.4 | 39.8 | 32.3 | 80.6 |
| Long-term solution | 12.1 | 31.3 | 42.8 | 86.4 |
| High quality | 12.1 | 45.8 | 26.9 | 85.7 |
| Reduces malaria | 29.3 | 55.8 | 41.2 | 86.9 |
| BASE | 1414 | 1334 | 1381 | 1295 |

* The base is respondents who were aware of a given product. The table indicates the percentage of those respondents selecting a given product when a particular attribute was named.

CONCLUSION

Between 2004 and 2008, the “net picture” has changed dramatically for the better in Ghana. Awareness of ITNs is nearly universal, and the majority of households now own a net, almost all of them ITNs. ITNs are very favorably regarded, much more so than other insect control products, and few people mention disadvantages of using them. The soaring increase in ITN ownership from 21% to 63% documents the success of demand creation and the “mixed model”: a segmented market in which free, subsidized, and commercial nets are made available to households. Similarly, a much higher proportion of children and pregnant women slept under a net in 2008 than in 2004. ITN ownership and use is fairly equitable across SES groups. Within net/ITN-owning households, children under five, and especially those under one, are given priority for use of the net. Pregnant women are also given priority. A majority of families are now using their nets year-round. This extremely positive picture is tempered by an increase in the percent of nets that are owned but unused. ITN promotion programs need to understand the barriers to use, and make net utilization a focus of efforts.

ANNEX A: SAMPLING PLAN AND PROCEDURE

The following is a description of the sampling plan as well as a comparison of this sample with nationally representative samples.

PLAN AND PROCEDURE

The 2008 sample was composed of 1,796 Ghanaian households. Respondents were women of reproductive age (15-49) who were pregnant or mothers or guardians of children under five years of age. The sample was drawn from six primary sites: Accra, Ashanti, Central, Volta, Northern, and Upper West. The target sample ranged from 110 to 640 households per site, for a total of 1,800 households. In the interest of comparability, the 2008 survey used the same multi-stage sampling procedure that was used in 2004 and in other countries where NetMark conducted surveys, with a few modifications.

1- Selection of primary sampling units: Five primary sites were purposively selected in 2004 for their geo-ethnic diversity and potential for NetMark to be active in product distribution and/or programs to provide targeted subsidies for women who were pregnant or who had a child under five. In every country except Ethiopia, the area around the capital was included as a site. In 2008, Central region was split from Accra site to create six sites: Accra, Ashanti, Central, Volta, Northern and Upper West. The districts and regions comprising each site are shown in Table A1, below. Each site contains at least one urban center and surrounding rural areas in several districts, up to 200km from the center.

2- Selection of sampling points: Within each of the sites, a number of clusters (localities defined by the census) were randomly selected. In 2008, the number of clusters was selected using probability proportionate to size, and thus differed between sites according to the population of each site. The number of clusters in each site is shown in Table A1, below. The clusters were selected from both urban and rural areas, using the 2000 census (published in 2005) as a sampling frame. Urban areas were defined as those with a population of 10,000 or more, or within a district called “Metropolis” (e.g. Accra Metropolis) and rural areas were those with a population below 10,000. Localities with fewer than 20 households were not included in the sampling frame. In 2008, clusters were selected with probability proportionate to size (PPS), which resulted in a self-weighting sample. In 2004, an equal number of clusters was selected in each site (12 urban clusters from the city at the center of each site, and 18 rural villages from within 200km of each urban center), and data were weighted for analysis. In order to conform to the more explicit site boundaries used in 2008, several clusters from 2004 were reassigned to a different site, or dropped from the analysis.

Table A1 Number of clusters selected, by region – 2008

| | | TOTAL | Urban | Rural |
|--------------|---|------------|-----------|-----------|
| Accra | Accra and Eastern regions, except for Afram Plains district | 64 | 46 | 18 |
| Ashanti | Ashanti region | 46 | 21 | 25 |
| Central | Central region | 21 | 7 | 14 |
| Volta | Volta region | 20 | 6 | 14 |
| Northern | Northern region east of Volta River | 18 | 9 | 9 |
| Upper West | Upper West region plus Bole and West Gonja districts in Northern region | 11 | 3 | 8 |
| TOTAL | | 180 | 92 | 88 |

In 2004, urban households were selected from the urban center only. This stratification scheme was designed to meet the purposes of the evaluation. Since a key objective of NetMark is to increase ownership of ITNs across the socio-economic spectrum and in rural as well as urban areas, it was essential to include urban centers with the potential to be reached by product distribution systems as well as households located at varying distances from urban areas where lower socio-economic status (SES) individuals typically reside. In order to make the survey more representative in 2008, urban households were sampled from all municipalities in the districts.

3- Selection of households: Approximately ten interviews were conducted per sampling point, each in a different household. For each selected cluster, a starting point (a fixed landmark or address) and the direction from which to start the data collection were chosen. Interviewers were instructed to go to the starting point and walk in the chosen direction until they located a residence with a qualified respondent. After a successful interview, interviewers were instructed to skip two or more residences and seek another qualified respondent.

4- Selection of eligible respondents: An eligible respondent for the survey was a female 15-49 years old who was currently pregnant or who was the parent or guardian of a child under five years, i.e., aged 0-4. Women aged 15-49 were selected to maximize the sample size for calculating the proportion of females of reproductive age sleeping under a net. Similarly women who had a child under five were included to maximize the sample size for calculating the proportion of children under five sleeping under a net. In 2004, only pregnant women who were already the mother or guardian of a child were included in the sample. In 2008, to increase the number of pregnant women in the sample, pregnant women who did not already have children were also included.

HOW THE SAMPLE MAY DIFFER FROM NATIONALLY REPRESENTATIVE SAMPLES

This sampling procedure was designed to meet the purposes of this study. This procedure may result in findings that differ from those obtained from a nationally representative sample, which was neither desirable nor feasible for this study.

- a) Only households with children under five or currently pregnant women were included in the sample, and households with young children or pregnant women are more likely than others to own a net.
- b) Only women of reproductive age were selected as respondents. Responses from men or from older women may differ from those of women of reproductive age.
- c) This survey used a population of 10,000 as the threshold for considering a location urban, while the Ghana Census uses a population of 5,000. Using a population of 10,000 as the threshold for urban, approximately one-third of Ghana's population is urban, while one-half of the population in the regions included in the survey is urban (Ghana Statistical Service, 2005).
- d) The sample was drawn only from 7 of Ghana's 10 regions and excluded several districts from sampled regions. To the extent that coverage in the regions and districts not included differs from the districts included, the survey is likely to differ from a nationally representative sample. Net ownership is likely much higher in the north, where there have been extensive ITN distribution activities. In other districts that were not included in the sample, net ownership may be higher or lower than the areas sampled.

Nevertheless, although the different survey designs limit direct comparisons to the Demographic and Health Survey (DHS), net and ITN ownership rates from the DHS are comparable to NetMark findings.

ANNEX B

CHARACTERISTICS OF RESPONDENTS AND HOUSEHOLDS AND SES SCALE

This Annex provides descriptive information on respondents and households in the sample, as well as a description of how these variables were combined to construct a socio-economic status (SES) scale.

CHARACTERISTICS OF RESPONDENTS

Table B.1 Characteristics of respondents

| | | Total | Site (urban and rural areas combined) | | | | | | Urban Accra only | Urban/Rural | | Socio-Economic Status | | | | |
|------------------|------|-------|---------------------------------------|---------|---------|-------|----------|------------|------------------|-------------|-----------|-----------------------|------|------|------|--------|
| | | | Accra | Ashanti | Central | Volta | Northern | Upper West | | All Urban | All Rural | 1 low | 2 | 3 | 4 | 5 high |
| Age Group | | | | | | | | | | | | | | | | |
| 15 – 19 years | 2004 | 4.3 | 5.6 | 4.6 | 1.4 | 5.6 | 0.5 | 2.6 | 4.2 | 3.7 | 4.6 | 2.6 | 5.8 | 7.3 | 3.7 | 2.0 |
| | 2008 | 5.9 | 6.3 | 7.2 | 7.3 | 5.5 | 2.8 | 1.8 | 4.0 | 4.9 | 6.9 | 7.2 | 6.4 | 8.0 | 4.7 | 3.1 |
| 20 – 29 years | 2004 | 45.3 | 43.9 | 47.0 | 51.4 | 41.1 | 42.5 | 49.6 | 38.3 | 39.2 | 49.2 | 48.2 | 49.8 | 47.8 | 47.2 | 33.4 |
| | 2008 | 53.2 | 51.3 | 52.9 | 58.0 | 61.4 | 42.2 | 59.6 | 48.5 | 50.4 | 56.2 | 54.0 | 54.9 | 55.3 | 54.3 | 47.6 |
| 30 – 39 years | 2004 | 39.9 | 39.1 | 40.8 | 31.4 | 41.6 | 45.6 | 38.1 | 42.5 | 43.9 | 37.4 | 38.6 | 36.3 | 35.1 | 39.6 | 50.2 |
| | 2008 | 33.9 | 35.1 | 33.3 | 29.5 | 27.7 | 45.6 | 30.3 | 38.1 | 37.0 | 30.7 | 32.3 | 30.6 | 31.4 | 34.8 | 40.4 |
| 40 – 49 years | 2004 | 10.6 | 11.4 | 7.7 | 15.7 | 11.7 | 11.5 | 9.6 | 15.0 | 13.2 | 8.9 | 10.6 | 8.2 | 9.9 | 9.6 | 14.5 |
| | 2008 | 7.0 | 7.4 | 6.5 | 5.3 | 5.5 | 9.4 | 8.3 | 9.4 | 7.7 | 6.2 | 6.4 | 8.1 | 5.3 | 6.1 | 8.9 |
| BASE | 2004 | 1420 | 231 | 240 | 70 | 291 | 279 | 309 | 120 | 610 | 810 | 355 | 302 | 281 | 281 | 201 |
| | 2008 | 1796 | 639 | 459 | 207 | 202 | 180 | 109 | 299 | 917 | 879 | 359 | 359 | 360 | 359 | 359 |
| Education | | | | | | | | | | | | | | | | |
| None | 2004 | 27.2 | 16.1 | 18.1 | 22.9 | 17.7 | 81.7 | 54.1 | 8.3 | 16.6 | 34.0 | 60.5 | 30.7 | 28.4 | 14.5 | 2.0 |
| | 2008 | 19.5 | 1.9 | 2.8 | 3.9 | 2.0 | 2.8 | 1.8 | 9.7 | 14.7 | 23.6 | 47.6 | 22.3 | 15.0 | 7.8 | 5.0 |
| 1 – 3 years | 2004 | 5.1 | 5.2 | 5.8 | 4.3 | 5.5 | 2.9 | 4.6 | 5.0 | 4.7 | 5.3 | 8.0 | 6.5 | 4.9 | 5.5 | 0.4 |
| | 2008 | 2.5 | 12.5 | 15.7 | 20.8 | 14.8 | 6.1 | 14.7 | 2.0 | 2.2 | 2.7 | 2.8 | 5.3 | 2.5 | 1.4 | 0.3 |
| 4 – 6 years | 2004 | 14.8 | 16.6 | 17.7 | 20.0 | 10.9 | 5.6 | 11.5 | 9.2 | 11.8 | 16.7 | 11.4 | 20.3 | 21.4 | 16.0 | 4.9 |
| | 2008 | 14.1 | 40.5 | 48.8 | 46.4 | 40.6 | 11.7 | 15.6 | 12.7 | 12.3 | 16.0 | 19.2 | 17.8 | 16.1 | 11.4 | 6.1 |
| 7 – 9 years | 2004 | 27.9 | 30.2 | 33.1 | 35.7 | 35.0 | 2.8 | 14.2 | 28.3 | 27.2 | 28.4 | 14.3 | 31.7 | 29.1 | 39.0 | 25.6 |
| | 2008 | 38.9 | 40.5 | 48.8 | 46.4 | 40.6 | 11.7 | 15.6 | 33.1 | 37.8 | 40.1 | 26.7 | 42.9 | 43.9 | 47.4 | 33.7 |
| 10 – 12 years | 2004 | 18.0 | 17.2 | 22.0 | 14.3 | 26.7 | 4.9 | 11.4 | 25.0 | 25.4 | 13.2 | 5.7 | 10.5 | 13.1 | 22.8 | 37.7 |
| | 2008 | 18.4 | 26.3 | 14.5 | 11.6 | 22.3 | 6.1 | 11.0 | 29.4 | 22.4 | 14.3 | 3.6 | 9.5 | 19.2 | 26.5 | 33.4 |
| 13+ years | 2004 | 7.0 | 14.7 | 3.3 | 2.9 | 4.3 | 2.1 | 4.2 | 24.2 | 14.4 | 2.3 | 0.2 | 0.4 | 3.1 | 2.0 | 29.5 |
| | 2008 | 6.5 | 8.9 | 6.5 | 2.4 | 5.9 | 2.8 | 7.3 | 13.0 | 9.6 | 3.3 | 0.0 | 2.2 | 3.3 | 5.6 | 21.5 |
| BASE | 2004 | 1420 | 231 | 240 | 70 | 291 | 279 | 309 | 120 | 610 | 810 | 355 | 302 | 281 | 281 | 201 |
| | 2008 | 1796 | 639 | 459 | 207 | 202 | 180 | 109 | 299 | 917 | 879 | 359 | 359 | 360 | 359 | 359 |

CHARACTERISTICS OF HOUSEHOLDS

Table B.2 Household distribution and composition

| | | Site (urban and rural areas combined) | | | | | | | Urban Accra only | Urban/Rural | | Socio-Economic Status | | | | |
|--|------|---------------------------------------|-------|---------|---------|-------|----------|---------------|------------------------|--------------|--------------|-----------------------|-----|-----|-----|-----------|
| | | Total | Accra | Ashan i | Central | Volta | Northern | Upper West | | All Urban | All Rural | 1 low | 2 | 3 | 4 | 5 high |
| Average number of people in HH | 2004 | 5.1 | 4.7 | 5.4 | 5.1 | 5.0 | 5.4 | 5.4 | 4.8 | 5.1 | 5.1 | 5.5 | 5.2 | 4.9 | 4.8 | 5.0 |
| | 2008 | 4.3 | 3.9 | 4.8 | 5.1 | 3.5 | 4.2 | 3.8 | 4.0 | 4.1 | 4.4 | 4.4 | 4.3 | 4.1 | 4.3 | 4.2 |
| Average number of women of reproductive health in HH | 2004 | 1.4 | 1.4 | 1.5 | 1.5 | 1.3 | 1.3 | 1.3 | 1.6 | 1.5 | 1.3 | 1.3 | 1.4 | 1.4 | 1.4 | 1.5 |
| | 2008 | 1.3 | 1.2 | 1.4 | 1.5 | 1.1 | 1.2 | 1.1 | 1.3 | 1.3 | 1.3 | 1.3 | 1.3 | 1.3 | 1.3 | 1.2 |
| Average number of children under 5 in HH | 2004 | 1.4 | 1.3 | 1.4 | 1.2 | 1.3 | 1.4 | 1.3 | 1.4 | 1.3 | 1.4 | 1.5 | 1.4 | 1.3 | 1.3 | 1.3 |
| | 2008 | 1.2 | 1.2 | 1.2 | 1.3 | 1.1 | 1.2 | 1.1 | 1.2 | 1.2 | 1.2 | 1.3 | 1.2 | 1.1 | 1.2 | 1.1 |
| BASE | 2004 | 1420 | 231 | 240 | 70 | 291 | 279 | 309 | 120 | 610 | 810 | 355 | 302 | 281 | 281 | 201 |
| | 2008 | 1792 | 638 | 459 | 206 | 202 | 178 | 109 | 298 | 914 | 878 | 359 | 359 | 357 | 358 | 359 |

Table B.3 Age distribution of household members

| | | Site (urban and rural areas combined) | | | | | | | Urban Accra only | Urban/Rural | | Socio-Economic Status | | | | |
|--------------------|------|---------------------------------------|-------|---------|---------|-------|----------|---------------|------------------------|--------------|--------------|-----------------------|------|------|------|-----------|
| | | Total | Accra | Ashanti | Central | Volta | Northern | Upper West | | All Urban | All Rural | 1 low | 2 | 3 | 4 | 5 high |
| Age 0 – 4 | 2004 | 26.6 | 28.9 | 26.6 | 24.1 | 25.6 | 25.2 | 24.3 | 28.9 | 26.6 | 26.6 | 27.8 | 26.5 | 26.1 | 26.2 | 26.3 |
| | 2008 | 27.9 | 30.1 | 25.5 | 25.3 | 31.3 | 27.9 | 28.4 | 30.1 | 28.4 | 27.8 | 28.9 | 28.4 | 27.6 | 27.2 | 27.4 |
| Age 5 - 14 | 2004 | 23.4 | 19.4 | 24.3 | 23.0 | 23.3 | 28.0 | 27.8 | 18.0 | 21.6 | 24.5 | 25.8 | 24.5 | 22.5 | 22.7 | 21.0 |
| | 2008 | 22.1 | 19.3 | 24.5 | 24.5 | 16.6 | 26.7 | 20.9 | 17.5 | 21.9 | 22.3 | 22.2 | 23.3 | 21.5 | 21.9 | 21.4 |
| Age 15 – 49 female | 2004 | 27.3 | 30.1 | 26.9 | 28.6 | 26.3 | 23.6 | 25.0 | 32.9 | 29.9 | 25.7 | 23.7 | 26.4 | 27.5 | 29.0 | 30.6 |
| | 2008 | 30.2 | 31.3 | 29.8 | 30.1 | 31.2 | 27.7 | 29.4 | 32.2 | 30.5 | 29.9 | 29.3 | 30.3 | 34.7 | 30.7 | 29.1 |
| Age 15 – 49 male | 2004 | 16.1 | 15.6 | 15.1 | 16.3 | 16.3 | 18.4 | 18.1 | 15.7 | 15.9 | 16.2 | 15.7 | 14.9 | 17.2 | 15.6 | 17.3 |
| | 2008 | 16.2 | 17.5 | 15.1 | 13.0 | 20.3 | 14.1 | 18.7 | 17.8 | 16.3 | 16.0 | 15.1 | 14.2 | 15.6 | 17.2 | 18.9 |
| 50 or older | 2004 | 6.6 | 6.1 | 7.1 | 8.1 | 9.0 | 4.8 | 4.8 | 4.5 | 6.0 | 7.0 | 7.1 | 7.8 | 6.7 | 6.5 | 4.9 |
| | 2008 | 3.7 | 1.9 | 5.2 | 7.2 | 0.6 | 3.6 | 2.7 | 2.4 | 3.3 | 4.1 | 4.4 | 3.9 | 3.7 | 3.0 | 3.2 |
| BASE | 2004 | 7355 | 1073 | 1300 | 357 | 1463 | 1497 | 1665 | 578 | 3181 | 4174 | 1959 | 1570 | 1426 | 1395 | 1005 |
| | 2008 | 7616 | 2480 | 2222 | 1048 | 709 | 745 | 412 | 1181 | 3788 | 3828 | 1579 | 1547 | 1450 | 1544 | 1497 |

SOCIOECONOMIC CHARACTERISTICS

Table B.4 Socio-economic status (SES) indicators

| | | Total | Site (urban and rural areas combined) | | | | | | Urban Accra only | Urban/Rural | | Socio-Economic Status | | | | |
|--------------------------|------|-------|---------------------------------------|---------|---------|-------|----------|---------------|------------------------|--------------|--------------|-----------------------|------|------|------|-----------|
| | | | Accra | Ashanti | Central | Volta | Northern | Upper West | | All Urban | All Rural | 1 low | 2 | 3 | 4 | 5 high |
| HEAD OF HOUSEHOLD | | | | | | | | | | | | | | | | |
| Self | 2004 | 16.0 | 17.9 | 17.5 | 20.0 | 18.6 | 2.4 | 11.9 | 21.7 | 19.5 | 13.8 | 14.6 | 18.5 | 15.1 | 17.0 | 14.7 |
| | 2008 | 13.3 | 14.0 | 9.8 | 22.2 | 11.4 | 11.1 | 14.7 | 14.1 | 13.3 | 13.3 | 18.7 | 17.3 | 12.6 | 10.9 | 7.2 |
| Husband | 2004 | 66.7 | 65.2 | 61.8 | 60.0 | 62.6 | 86.9 | 76.9 | 60.8 | 62.8 | 69.2 | 66.0 | 61.6 | 67.8 | 66.3 | 71.7 |
| | 2008 | 72.8 | 75.2 | 68.1 | 60.9 | 81.7 | 77.8 | 76.2 | 73.5 | 74.3 | 71.2 | 62.4 | 67.7 | 74.9 | 76.3 | 82.7 |
| Father | 2004 | 6.2 | 5.7 | 8.3 | 4.3 | 5.1 | 7.0 | 4.0 | 6.7 | 6.8 | 5.8 | 7.5 | 7.7 | 4.9 | 5.5 | 5.4 |
| | 2008 | 4.2 | 3.1 | 7.4 | 4.4 | 0.5 | 4.4 | 2.8 | 4.0 | 3.7 | 4.7 | 6.4 | 4.7 | 4.2 | 4.7 | 3.9 |
| Brother | 2004 | 0.8 | 0.4 | 0.8 | 1.4 | 1.4 | 0.5 | 1.0 | 0.0 | 0.5 | 1.0 | 1.2 | 1.1 | 0.3 | 0.8 | 0.5 |
| | 2008 | 0.7 | 0.8 | 0.2 | 0.5 | 0.5 | 2.2 | 0.0 | 1.3 | 0.7 | 0.7 | 1.1 | 0.8 | 0.8 | 0.3 | 0.3 |
| Mother | 2004 | 6.8 | 6.5 | 8.2 | 12.9 | 7.8 | 0.9 | 3.4 | 7.5 | 6.6 | 6.9 | 8.0 | 6.5 | 8.4 | 6.6 | 4.4 |
| | 2008 | 6.9 | 4.9 | 11.4 | 9.7 | 5.0 | 3.3 | 4.6 | 5.4 | 6.0 | 7.9 | 8.6 | 8.9 | 5.6 | 7.8 | 3.6 |
| Sister | 2004 | 1.1 | 1.3 | 1.7 | 1.4 | 0.7 | 0.0 | 0.6 | 1.7 | 1.4 | 1.0 | 0.8 | 0.5 | 1.2 | 1.3 | 2.0 |
| | 2008 | 0.3 | 0.3 | 0.7 | 0.0 | 0.5 | 0.0 | 0.0 | 0.0 | 0.4 | 0.2 | 0.3 | 0.0 | 0.3 | 0.6 | 0.6 |
| Other | 2004 | 2.4 | 3.0 | 1.7 | 0.0 | 3.9 | 2.4 | 2.3 | 1.7 | 2.5 | 2.4 | 2.0 | 4.0 | 2.3 | 2.5 | 1.2 |
| | 2008 | 1.8 | 1.7 | 2.4 | 2.4 | 0.5 | 1.1 | 1.8 | 1.7 | 1.5 | 2.1 | 2.5 | 0.6 | 1.7 | 2.5 | 1.7 |
| INCOME REGULARITY | | | | | | | | | | | | | | | | |
| Regular salary | 2004 | 30.4 | 52.4 | 19.7 | 30.0 | 16.5 | 20.1 | 17.5 | 65.5 | 46.0 | 21.0 | 0.6 | 12.7 | 25.1 | 43.5 | 69.8 |
| | 2008 | 39.5 | 40.6 | 48.3 | 47.8 | 30.2 | 24.4 | 22.0 | 48.0 | 48.6 | 29.9 | 9.2 | 26.7 | 41.9 | 48.2 | 71.3 |
| Occasional pay | 2004 | 36.3 | 30.4 | 42.3 | 37.1 | 52.5 | 19.0 | 32.2 | 33.3 | 42.3 | 32.5 | 16.8 | 39.2 | 46.9 | 49.4 | 29.3 |
| | 2008 | 38.0 | 48.8 | 28.4 | 26.1 | 42.1 | 31.7 | 41.3 | 47.0 | 40.9 | 35.0 | 24.5 | 45.1 | 43.6 | 49.0 | 27.9 |
| Seasonal pay | 2004 | 33.3 | 17.2 | 38.0 | 32.9 | 31.0 | 60.9 | 50.2 | 4.2 | 12.6 | 46.5 | 82.6 | 48.1 | 28.0 | 7.1 | 0.8 |
| | 2008 | 21.7 | 9.9 | 21.6 | 26.1 | 27.2 | 43.9 | 36.7 | 3.4 | 9.8 | 34.1 | 65.7 | 27.3 | 13.1 | 2.0 | 0.6 |
| Don't know | 2004 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| | 2008 | 0.8 | 0.8 | 1.8 | 0.0 | 0.5 | 0.0 | 0.0 | 1.7 | 0.7 | 0.9 | 0.6 | 0.8 | 1.4 | 0.8 | 0.3 |

| HEAD OF HOUSEHOLD YEARS OF SCHOOLING | | | | | | | | | | | | | | | | |
|--------------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| 0 | 2004 | 3.7 | 3.0 | 5.2 | 1.4 | 2.7 | 1.9 | 7.4 | 1.7 | 3.2 | 4.1 | 8.0 | 5.4 | 4.1 | 1.3 | 0.0 |
| | 2008 | 15.3 | 5.5 | 6.8 | 12.6 | 8.9 | 61.1 | 50.5 | 5.0 | 11.4 | 19.5 | 46.2 | 15.9 | 6.7 | 6.4 | 1.4 |
| 1 – 3 | 2004 | 1.4 | 1.4 | 0.8 | 1.4 | 2.0 | 1.4 | 1.9 | 2.5 | 2.0 | 1.0 | 1.6 | 1.4 | 2.4 | 1.2 | 0.3 |
| | 2008 | 0.8 | 0.6 | 0.9 | 1.9 | 1.5 | 0.0 | 0.0 | 1.0 | 1.2 | 0.5 | 1.1 | 1.4 | 1.1 | 0.6 | 0.0 |
| 4 – 6 | 2004 | 7.3 | 7.7 | 5.7 | 12.9 | 8.4 | 4.7 | 7.6 | 5.0 | 5.8 | 8.2 | 10.4 | 9.3 | 9.7 | 6.5 | 0.5 |
| | 2008 | 4.5 | 4.1 | 4.4 | 8.2 | 5.5 | 1.7 | 3.7 | 4.7 | 3.6 | 5.5 | 7.5 | 7.5 | 3.9 | 2.0 | 1.7 |
| 7 – 9 | 2004 | 17.4 | 16.6 | 19.2 | 31.4 | 18.6 | 8.2 | 11.1 | 10.8 | 13.0 | 20.1 | 13.9 | 20.9 | 25.7 | 19.8 | 6.5 |
| | 2008 | 21.0 | 19.9 | 26.0 | 29.5 | 28.2 | 2.8 | 7.3 | 13.4 | 17.6 | 24.6 | 15.9 | 30.6 | 26.3 | 22.6 | 9.8 |
| 10 – 12 | 2004 | 30.6 | 28.5 | 41.8 | 25.7 | 37.1 | 15.2 | 13.1 | 35.8 | 36.2 | 27.0 | 10.9 | 36.0 | 26.0 | 38.1 | 41.7 |
| | 2008 | 25.9 | 31.2 | 28.0 | 24.7 | 30.7 | 10.0 | 11.9 | 29.5 | 26.5 | 25.4 | 13.4 | 20.1 | 34.1 | 35.9 | 26.2 |
| 13+ | 2004 | 15.8 | 26.4 | 11.2 | 7.1 | 14.7 | 7.0 | 10.2 | 35.0 | 25.2 | 9.8 | 0.3 | 6.2 | 8.5 | 18.6 | 45.4 |
| | 2008 | 17.8 | 23.5 | 16.4 | 12.6 | 12.4 | 15.6 | 14.7 | 28.9 | 24.9 | 10.5 | 1.4 | 8.1 | 10.9 | 17.6 | 51.3 |
| Don't know | 2004 | 24.0 | 16.6 | 16.0 | 20.0 | 16.6 | 61.6 | 48.7 | 9.2 | 14.7 | 29.9 | 55.0 | 20.8 | 23.5 | 14.7 | 5.7 |
| | 2008 | 3.9 | 6.3 | 2.0 | 1.0 | 5.5 | 2.2 | 2.8 | 5.4 | 3.9 | 3.8 | 5.3 | 3.3 | 4.8 | 3.9 | 2.0 |

| HOUSEHOLD ASSETS | | | | | | | | | | | | | | | | |
|-----------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|-------|
| Electricity | 2004 | 69.0 | 88.1 | 65.7 | 78.6 | 61.7 | 50.0 | 35.0 | 92.5 | 82.6 | 60.3 | 17.0 | 50.3 | 82.3 | 95.5 | 100.0 |
| | 2008 | 74.8 | 84.0 | 74.9 | 74.9 | 70.3 | 63.9 | 46.8 | 95.0 | 90.9 | 58.0 | 18.1 | 65.7 | 91.9 | 98.6 | 99.7 |
| Radio | 2004 | 78.7 | 86.8 | 74.9 | 71.4 | 69.6 | 77.9 | 82.2 | 92.5 | 87.8 | 72.9 | 49.7 | 63.8 | 83.0 | 98.1 | 98.8 |
| | 2008 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| TV | 2004 | 41.4 | 60.4 | 38.7 | 34.3 | 28.7 | 25.5 | 24.9 | 84.2 | 67.6 | 24.8 | 0.7 | 5.4 | 30.1 | 72.7 | 98.3 |
| | 2008 | 52.2 | 68.7 | 55.0 | 39.6 | 32.7 | 36.7 | 29.4 | 84.6 | 72.7 | 30.8 | 0.8 | 11.4 | 55.3 | 93.3 | 100.0 |
| Phone/ Mobile | 2004 | 19.3 | 35.9 | 18.6 | 7.1 | 7.4 | 3.3 | 7.6 | 63.3 | 43.6 | 3.8 | 0.0 | 0.7 | 3.0 | 16.2 | 76.7 |
| | 2008 | 54.9 | 68.3 | 61.6 | 44.0 | 35.6 | 40.0 | 28.4 | 81.5 | 72.6 | 36.4 | 8.6 | 25.6 | 55.0 | 87.5 | 97.5 |
| Fridge | 2004 | 30.5 | 45.3 | 28.3 | 22.9 | 20.9 | 17.3 | 20.1 | 70.8 | 55.1 | 14.9 | 0.7 | 1.7 | 11.9 | 47.6 | 90.8 |
| | 2008 | 33.6 | 45.5 | 44.3 | 22.7 | 8.4 | 17.2 | 12.8 | 64.8 | 52.5 | 13.9 | 0.3 | 2.0 | 12.0 | 57.4 | 96.1 |
| Bike | 2004 | 25.0 | 15.2 | 7.5 | 10.0 | 18.0 | 86.2 | 70.5 | 15.8 | 20.2 | 28.0 | 35.2 | 25.4 | 21.3 | 26.4 | 16.5 |
| | 2008 | 19.7 | 8.2 | 14.4 | 5.8 | 9.4 | 76.1 | 62.4 | 11.7 | 16.1 | 23.6 | 41.2 | 19.2 | 12.3 | 14.2 | 11.7 |
| Motorcycle | 2004 | 5.2 | 1.7 | 1.7 | 2.9 | 2.6 | 18.1 | 20.7 | 1.7 | 4.6 | 5.6 | 2.8 | 4.4 | 5.3 | 9.0 | 4.5 |
| | 2008 | 7.0 | 2.4 | 2.4 | 0.5 | 1.0 | 30.0 | 38.5 | 2.7 | 6.8 | 72 | 7.5 | 7.2 | 5.0 | 7.2 | 7.8 |
| Car/Truck | 2004 | 7.5 | 11.7 | 6.0 | 4.3 | 5.3 | 7.5 | 3.4 | 20.8 | 14.9 | 2.9 | 0.8 | 1.1 | 4.0 | 5.1 | 26.7 |
| | 2008 | 7.1 | 9.4 | 8.1 | 3.9 | 4.5 | 6.1 | 1.8 | 14.1 | 0.8 | 3.2 | 0.3 | 0.8 | 3.6 | 3.9 | 26.7 |
| Animal- drawn cart/ vehicle | 2004 | 1.1 | 0.9 | 0.4 | 1.4 | 0.0 | 3.7 | 2.4 | 1.7 | 1.2 | 1.0 | 0.5 | 0.9 | 0.5 | 1.7 | 1.7 |
| | 2008 | 1.3 | 0.3 | 0.4 | 0.0 | 0.5 | 7.2 | 4.6 | 0.0 | 0.8 | 1.8 | 4.7 | 0.3 | 1.1 | 0.3 | 0.0 |
| Animal- drawn plough | 2004 | 1.2 | 0.5 | 0.4 | 1.4 | 0.0 | 3.3 | 5.7 | 0.8 | 0.9 | 1.3 | 1.2 | 1.4 | 1.5 | 1.0 | 0.8 |
| | 2008 | 1.2 | 0.3 | 0.2 | 0.0 | 1.0 | 6.7 | 4.6 | 0.0 | 0.4 | 2.1 | 4.7 | 0.6 | 0.6 | 0.3 | 0.0 |
| Have screens | 2004 | 53.0 | 73.9 | 47.5 | 60.0 | 40.9 | 31.0 | 32.7 | 90.8 | 76.1 | 38.3 | 3.1 | 25.6 | 57.1 | 83.9 | 95.4 |
| | 2008 | 57.0 | 71.8 | 61.4 | 55.6 | 49.0 | 22.2 | 27.5 | 84.2 | 72.6 | 40.8 | 7.5 | 35.7 | 61.5 | 83.0 | 97.5 |
| None of the above | 2004 | 8.2 | 5.1 | 10.4 | 5.7 | 17.7 | 4.0 | 4.4 | 2.5 | 4.2 | 10.8 | 30.2 | 10.4 | 0.5 | 0.0 | 0.0 |
| | 2008 | 29.7 | 15.5 | 23.6 | 21.7 | 30.2 | 78.9 | 70.6 | 13.8 | 19.2 | 40.5 | 81.6 | 28.4 | 12.3 | 14.2 | 11.7 |

| SOURCE OF DRINKING WATER | | | | | | | | | | | | | | | | |
|---------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| Surface water | 2004 | 11.1 | 1.7 | 19.8 | 5.7 | 13.7 | 18.2 | 10.1 | 0.0 | 1.9 | 17.0 | 33.1 | 13.7 | 4.3 | 4.5 | 0.0 |
| | 2008 | 4.9 | 1.3 | 2.2 | 8.2 | 6.4 | 14.4 | 12.8 | 0.0 | 0.7 | 9.3 | 18.7 | 4.5 | 1.1 | 0.3 | 0.0 |
| Public well/bore hole | 2004 | 26.3 | 17.4 | 23.8 | 44.3 | 11.5 | 43.1 | 57.0 | 0.0 | 5.1 | 39.8 | 47.7 | 41.7 | 29.0 | 12.5 | 0.7 |
| | 2008 | 22.3 | 10.8 | 32.3 | 19.8 | 15.8 | 32.8 | 46.8 | 5.4 | 8.2 | 37.0 | 48.5 | 30.9 | 19.8 | 10.0 | 2.2 |
| Own well | 2004 | 2.1 | 0.8 | 1.4 | 0.0 | 3.6 | 6.3 | 3.9 | 0.0 | 0.7 | 3.0 | 1.6 | 4.5 | 2.9 | 1.7 | 0.0 |
| | 2008 | 4.5 | 2.4 | 3.5 | 0.5 | 6.4 | 11.1 | 13.8 | 0.0 | 3.6 | 5.4 | 6.4 | 4.5 | 5.0 | 5.3 | 1.1 |
| Public tap | 2004 | 36.7 | 41.5 | 25.6 | 32.9 | 62.9 | 25.6 | 19.8 | 40.0 | 42.5 | 33.0 | 17.3 | 35.8 | 52.6 | 57.8 | 19.9 |
| | 2008 | 47.1 | 48.4 | 41.3 | 67.6 | 64.9 | 32.8 | 14.7 | 42.3 | 50.4 | 43.6 | 25.4 | 55.4 | 63.4 | 62.4 | 28.7 |
| Piped into home/bottle/sachet | 2004 | 23.7 | 38.6 | 26.5 | 17.1 | 8.4 | 6.9 | 8.5 | 60.0 | 49.7 | 7.1 | 0.2 | 4.2 | 11.2 | 23.6 | 79.3 |
| | 2008 | 21.2 | 37.2 | 20.5 | 3.9 | 6.4 | 8.3 | 11.9 | 52.4 | 37.1 | 4.7 | 0.8 | 4.7 | 10.6 | 21.7 | 68.0 |
| Other | 2004 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.7 | 0.0 | 0.0 | 0.1 | 0.2 | 0.2 | 0.0 | 0.0 | 0.0 |
| | 2008 | 0.1 | 0.0 | 0.2 | 0.0 | 0.0 | 0.6 | 0.0 | 0.0 | 0.1 | 0.1 | 0.3 | 0.0 | 0.0 | 0.3 | 0.0 |
| SANITARY FACILITIES | | | | | | | | | | | | | | | | |
| No toilet/public toilet | 2004 | 48.4 | 45.9 | 37.1 | 57.1 | 46.7 | 76.6 | 57.2 | 25.8 | 30.4 | 59.8 | 75.1 | 67.0 | 53.1 | 38.1 | 7.6 |
| | 2008 | 44.9 | 38.4 | 45.4 | 82.6 | 49.5 | 27.2 | 30.3 | 34.6 | 35.3 | 55.0 | 65.5 | 56.0 | 50.0 | 42.9 | 10.3 |
| Traditional pit latrine | 2004 | 17.9 | 14.1 | 25.5 | 25.7 | 17.0 | 4.0 | 18.5 | 9.2 | 11.4 | 22.1 | 19.7 | 18.9 | 23.2 | 19.8 | 8.0 |
| | 2008 | 13.7 | 12.9 | 4.6 | 1.0 | 30.7 | 24.4 | 32.1 | 3.7 | 7.8 | 19.9 | 21.2 | 20.6 | 13.7 | 10.0 | 3.1 |
| VIP latrine | 2004 | 18.2 | 11.3 | 18.9 | 15.7 | 33.8 | 16.9 | 19.6 | 11.7 | 20.9 | 16.4 | 5.3 | 12.7 | 20.8 | 34.5 | 17.5 |
| | 2008 | 30.3 | 30.4 | 37.1 | 11.6 | 16.8 | 46.1 | 34.9 | 33.6 | 37.4 | 22.9 | 13.1 | 23.1 | 35.8 | 37.3 | 42.1 |
| Shared flush toilet | 2004 | 7.1 | 10.8 | 10.7 | 1.4 | 0.0 | 2.1 | 2.8 | 20.0 | 16.3 | 1.2 | 0.0 | 0.7 | 2.0 | 6.6 | 25.8 |
| | 2008 | 2.6 | 5.0 | 2.6 | 0.0 | 1.0 | 0.6 | 0.0 | 7.1 | 4.6 | 0.6 | 0.3 | 0.0 | 0.3 | 2.0 | 10.6 |
| Own flush toilet | 2004 | 8.5 | 18.0 | 7.7 | 0.0 | 2.6 | 0.5 | 1.9 | 33.3 | 21.0 | 0.6 | 0.0 | 0.7 | 0.0 | 0.9 | 41.1 |
| | 2008 | 8.5 | 13.3 | 10.3 | 4.8 | 2.0 | 1.7 | 2.8 | 21.1 | 15.0 | 1.7 | 0.0 | 0.3 | 0.3 | 7.8 | 34.0 |

ENERGY SOURCE FOR COOKING

| | | | | | | | | | | | | | | | | |
|-----------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| Firewood, straw, dung | 2004 | 44.5 | 24.6 | 49.3 | 55.7 | 45.2 | 77.7 | 53.8 | 3.3 | 11.1 | 65.7 | 92.9 | 73.0 | 41.7 | 13.6 | 1.2 |
| | 2008 | 33.8 | 15.4 | 33.4 | 46.4 | 42.1 | 67.2 | 48.6 | 2.0 | 10.7 | 57.8 | 88.6 | 52.4 | 22.1 | 5.6 | 0.3 |
| Charcoal | 2004 | 40.0 | 47.2 | 36.5 | 38.6 | 45.8 | 20.2 | 39.6 | 46.7 | 53.7 | 31.3 | 6.4 | 26.7 | 57.3 | 74.5 | 35.0 |
| | 2008 | 54.4 | 60.5 | 58.1 | 51.7 | 53.0 | 30.6 | 49.5 | 62.1 | 68.4 | 39.7 | 11.4 | 47.1 | 77.6 | 89.4 | 46.5 |
| Kerosene/ gas | 2004 | 15.2 | 28.3 | 13.4 | 5.7 | 8.5 | 2.1 | 6.3 | 50.0 | 34.7 | 2.8 | 0.7 | 0.3 | 1.1 | 11.5 | 62.6 |
| | 2008 | 11.5 | 23.4 | 8.1 | 1.9 | 5.0 | 2.2 | 1.8 | 34.2 | 20.3 | 2.3 | 0.0 | 0.6 | 0.3 | 5.3 | 51.3 |
| Electricity | 2004 | 0.3 | 0.0 | 0.7 | 0.0 | 0.5 | 0.0 | 0.3 | 0.0 | 0.6 | 0.1 | 0.0 | 0.0 | 0.0 | 0.3 | 1.4 |
| | 2008 | 0.4 | 0.8 | 0.4 | 0.0 | 0.0 | 0.0 | 0.0 | 1.7 | 0.6 | 0.2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

MAIN FLOORING

| | | | | | | | | | | | | | | | | |
|---------------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| Earth/dung | 2004 | 11.8 | 10.9 | 8.9 | 17.1 | 18.1 | 9.6 | 12.8 | 3.3 | 5.1 | 16.1 | 34.9 | 10.3 | 8.1 | 4.0 | 1.8 |
| | 2008 | 10.3 | 4.2 | 4.2 | 4.8 | 23.8 | 27.8 | 27.5 | 1.0 | 4.0 | 16.7 | 10.7 | 8.1 | 2.2 | 0.3 | 0.0 |
| Wood | 2004 | 0.1 | 0.5 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.8 | 0.4 | 0.0 | 0.0 | 0.0 | 0.7 | 0.0 | 0.0 |
| | 2008 | 0.2 | 0.0 | 0.4 | 0.5 | 0.5 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.6 | 0.0 | 0.0 | 0.3 | 0.3 |
| Cement | 2004 | 75.1 | 64.1 | 81.3 | 67.1 | 76.2 | 89.7 | 83.8 | 55.8 | 70.6 | 78.0 | 64.7 | 88.0 | 84.6 | 80.8 | 57.6 |
| | 2008 | 86.9 | 91.2 | 91.9 | 94.2 | 75.7 | 71.7 | 71.6 | 92.6 | 91.4 | 82.1 | 58.2 | 91.1 | 96.9 | 97.8 | 90.3 |
| Parquet/ vinyl/ carpet/ ceramic tiles | 2004 | 12.9 | 24.5 | 9.8 | 14.7 | 5.6 | 0.7 | 3.4 | 40.0 | 24.0 | 5.9 | 0.4 | 1.7 | 6.6 | 15.2 | 40.7 |
| | 2008 | 2.2 | 4.1 | 2.2 | 0.5 | 0.0 | 0.6 | 0.9 | 5.7 | 3.6 | 0.7 | 0.3 | 0.6 | 0.6 | 1.1 | 8.4 |
| Other | 2004 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| | 2008 | 0.5 | 0.5 | 1.3 | 0.0 | 0.0 | 0.0 | 0.0 | 0.7 | 0.8 | 0.2 | 0.3 | 0.3 | 0.3 | 0.6 | 1.1 |
| BASE | 2004 | 1420 | 231 | 240 | 70 | 291 | 279 | 309 | 120 | 610 | 810 | 355 | 302 | 281 | 281 | 201 |
| | 2008 | 1794 | 638 | 458 | 207 | 202 | 180 | 109 | 298 | 915 | 879 | 359 | 359 | 358 | 359 | 359 |

CALCULATION OF SOCIO-ECONOMIC STATUS (SES)

The socio-economic status (SES) scale was developed from the above questions on ownership of assets, household characteristics, and level of education. Most of these variables were drawn from the DHS. Principal components analysis was used to extract the main, single factor that accounted for the largest amount of variance in the data. Using the factor scores from the principal component analysis, respondents were divided into quintiles based on their factor scores.

Table B.5 Distribution of SES levels

| | | Total | Site (urban and rural areas combined) | | | | | | Urban Accra only | Urban/Rural | |
|--------|------|-------|---------------------------------------|---------|---------|-------|----------|------------|---------------------|-------------|-----------|
| | | | Accra | Ashanti | Central | Volta | Northern | Upper West | | All Urban | All Rural |
| 1 low | 2004 | 20.0 | 5.8 | 23.0 | 17.1 | 18.5 | 41.7 | 42.7 | 0.8 | 5.0 | 29.6 |
| | 2008 | 20.0 | 7.0 | 14.6 | 21.3 | 28.7 | 50.6 | 49.5 | 1.3 | 5.2 | 35.4 |
| 2 | 2004 | 19.9 | 14.2 | 21.2 | 24.3 | 24.4 | 24.5 | 20.9 | 3.3 | 8.4 | 27.3 |
| | 2008 | 20.0 | 14.9 | 19.4 | 31.4 | 25.3 | 20.0 | 21.1 | 5.7 | 13.1 | 27.2 |
| 3 | 2004 | 20.0 | 19.0 | 19.8 | 25.7 | 24.6 | 17.4 | 15.7 | 9.2 | 15.0 | 23.2 |
| | 2008 | 20.0 | 21.6 | 20.0 | 20.3 | 27.2 | 11.7 | 11.0 | 17.7 | 19.0 | 21.2 |
| 4 | 2004 | 20.1 | 23.2 | 17.2 | 22.9 | 25.2 | 14.1 | 14.3 | 19.2 | 25.0 | 16.9 |
| | 2008 | 20.0 | 21.6 | 27.0 | 18.8 | 12.9 | 11.1 | 11.0 | 25.1 | 28.0 | 11.6 |
| 5 high | 2004 | 20.0 | 37.7 | 18.9 | 10.0 | 7.3 | 2.4 | 6.5 | 67.5 | 46.6 | 3.0 |
| | 2008 | 20.0 | 34.9 | 19.0 | 8.2 | 5.9 | 6.7 | 7.3 | 50.2 | 34.7 | 4.7 |
| BASE | 2004 | 1420 | 231 | 240 | 70 | 291 | 279 | 309 | 120 | 610 | 810 |
| | 2008 | 1796 | 639 | 459 | 207 | 202 | 180 | 109 | 299 | 917 | 879 |

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