

Liberia Malaria Indicators Survey, 2005



By

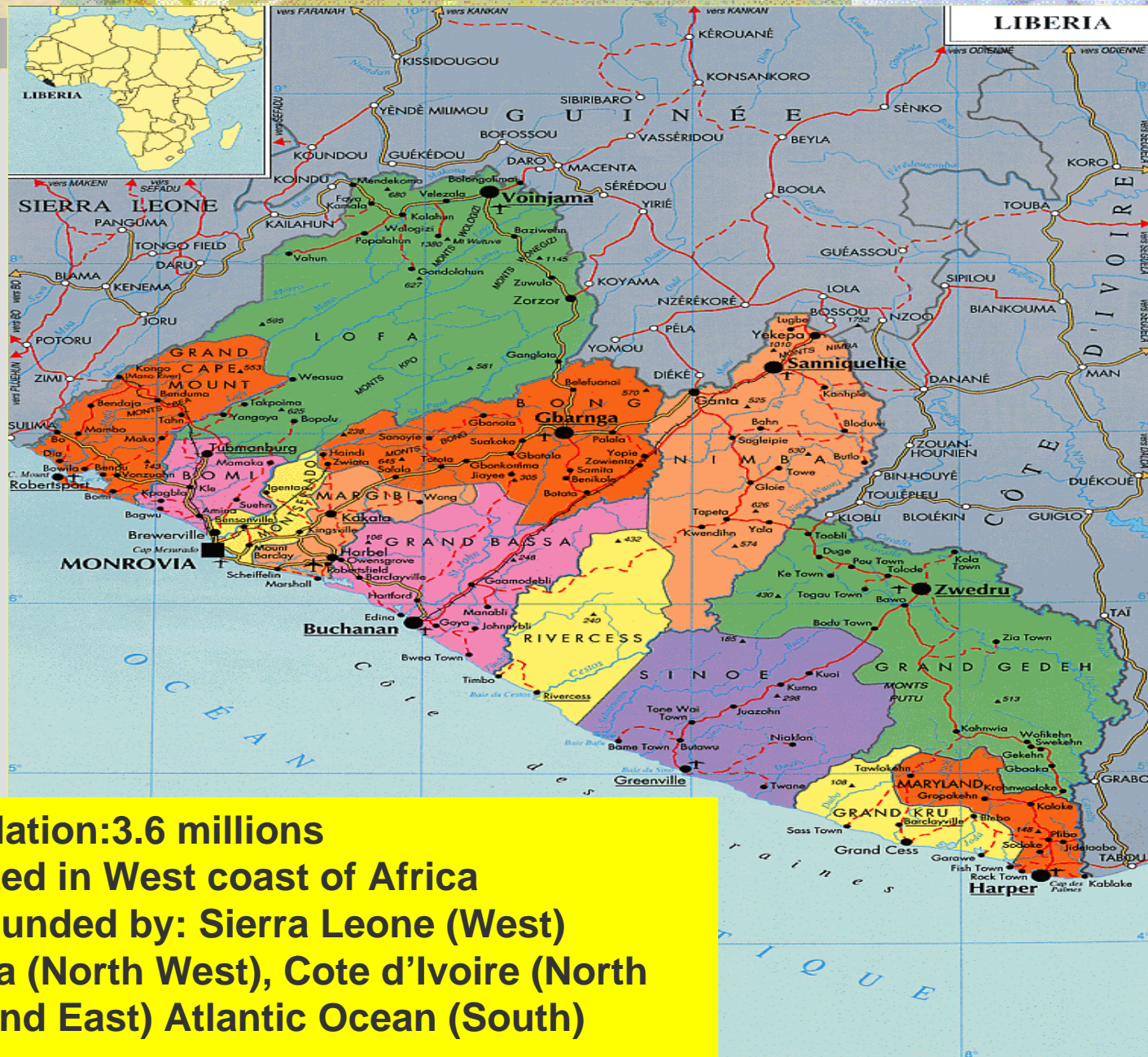
National Malaria Control Programme

With

WHO Technical Support

OUTLINE

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- Population:3.6 millions
- Located in West coast of Africa
- Surrounded by: Sierra Leone (West)
Guinea (North West), Cote d'Ivoire (North East and East) Atlantic Ocean (South)

1.Presentation of Liberia (cont'd)

- Malaria is endemic, main public health problem
- Rainfall : 2,000-5000 mm / year
- Forest , swamps
- Malaria transmission throughout all the year
- Main vector: *Anopheles gambiae*, *An. Funestus*
- Main Parasite: *Plasmodium falciparum*
- Entire population : at risk of contracting malaria
- U 5 years children , pregnant women: vulnerable
- 14 years of war (1989-2003): destruction of health infrastructure, malaria control tools not available to population

2. Rationale of the Survey

- Liberia is signatory to Abuja Declaration on Roll Back Malaria (April 2000)
- Strategic Plan adopted in 2004: to halve malaria morbidity and mortality by 2010
- **National Health Information System database destroyed during civil conflict**
- **How to measure achieved progress in the future?**
- **A less expensive and nationally representative Survey can fill the gap by gathering baseline indicators as gauge for measuring achieved progress by 2010 and beyond.**

3. Objectives of the Survey

1. **Overall** : To update the baseline core indicators of malaria in Liberia both in community and in health facilities.
2. **Specific objectives**
 - To obtain data on malaria prevention in households (use of ITNs; IPT for Pregnant Women)
 - To obtain data on fever management in HH
 - To obtain data on prevalence of malaria, anemia
 - To explore Knowledge, Attitude, Practice (KAP)
 - To assess the performance of health workers in the management of malaria
 - To establish the proportion of malaria among patients
 - To establish malaria mortality rate among in-patients

4. Methodology: Community(1)

1. Use of tools developed by ORC MACRO and WHO
2. Reference to 600 Enumeration Areas used by Liberia's Demographic and Health Survey of 2000
3. Sampling of 360 EAs in rural and urban zones
4. Sampling of 9,000 households in 360 EAs
5. Development of questionnaires
 - 5.1. Women questionnaire: Knowledge – Attitude - Practice (KAP), prevention and treatment of malaria in community
 - 5.2. HH questionnaire: for people's characteristics
6. Photospectrometer for anemia; RDT for diagnosis
7. Codification , Pre-test + workers training
8. Field work :July-August 2005

4.Methodology: Health Facilities (2)

- Random selection of 120 HF out of 260 functional
- Use of forms and manual designed by WHO
- Codification + Pre-test of questionnaires
- Training of interviewers
- Field work : September- October 2005

4. Methodology: data management(3)

- Filled out forms centralized at NMCP in Monrovia
- Cleaning process
- Control of coherence
- Single enter of data in IMPS software (Integrated Micro-computer Processing System)
- Data analysis with SPSS software (Statistical Package for Social Scientists)
- HF component: use of Epi-Info 3.3.2. for analysis



5. Findings

5.1. Characteristics of study population

5.2. Malaria Indicators

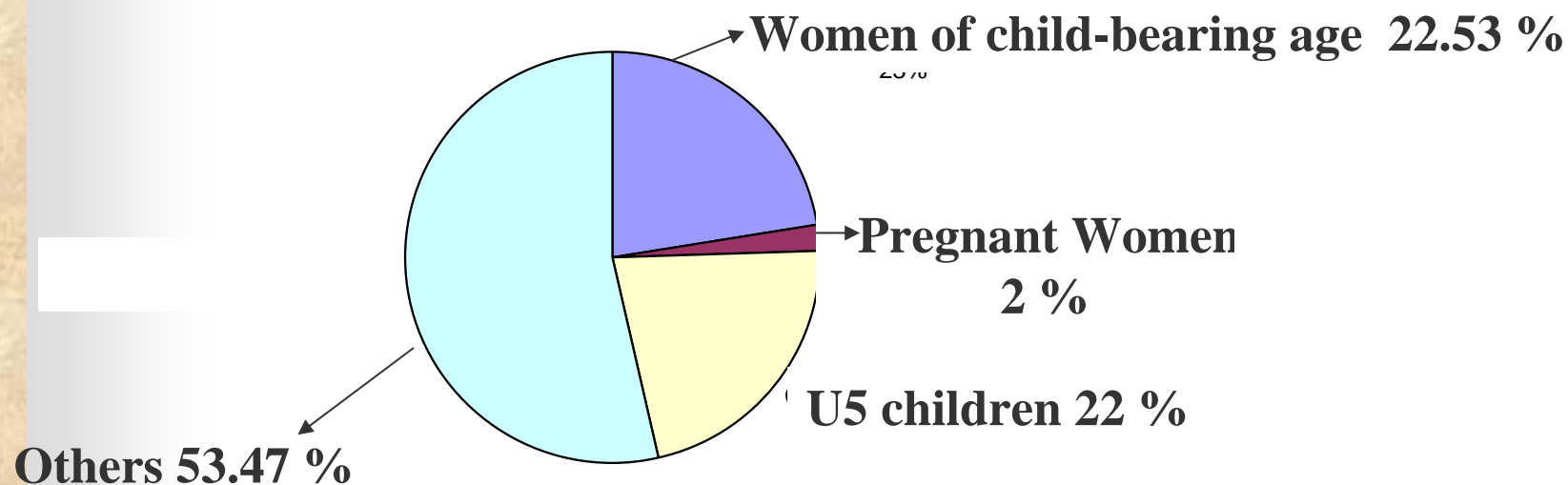
5. Findings : Population(1)

Table 1. Summary of the study targeted population groups, LMIS 2005

Population type	Study targets	Actual achieved	%
Households	9,000	8,226	91.40
Overall sample	All members of sampled HH	40,757	100.00
Women of Child bearing age	All women 15-49 yrs in sampled HH	9,181	22.53
Pregnant Women	All pregnant women in sampled HH	755	1.85
Children < 5 yrs	All children < 5 yrs in sampled HH	8,933	22
Others	All others, excluding the 3 groups above	21,888	53.70

5.1. Population groups (2)

Fig.1. Proportion of population groups, LMIS 2005



5.1. Population groups (3)

Fig. 2. Proportion of rural and urban population, LMIS 2005

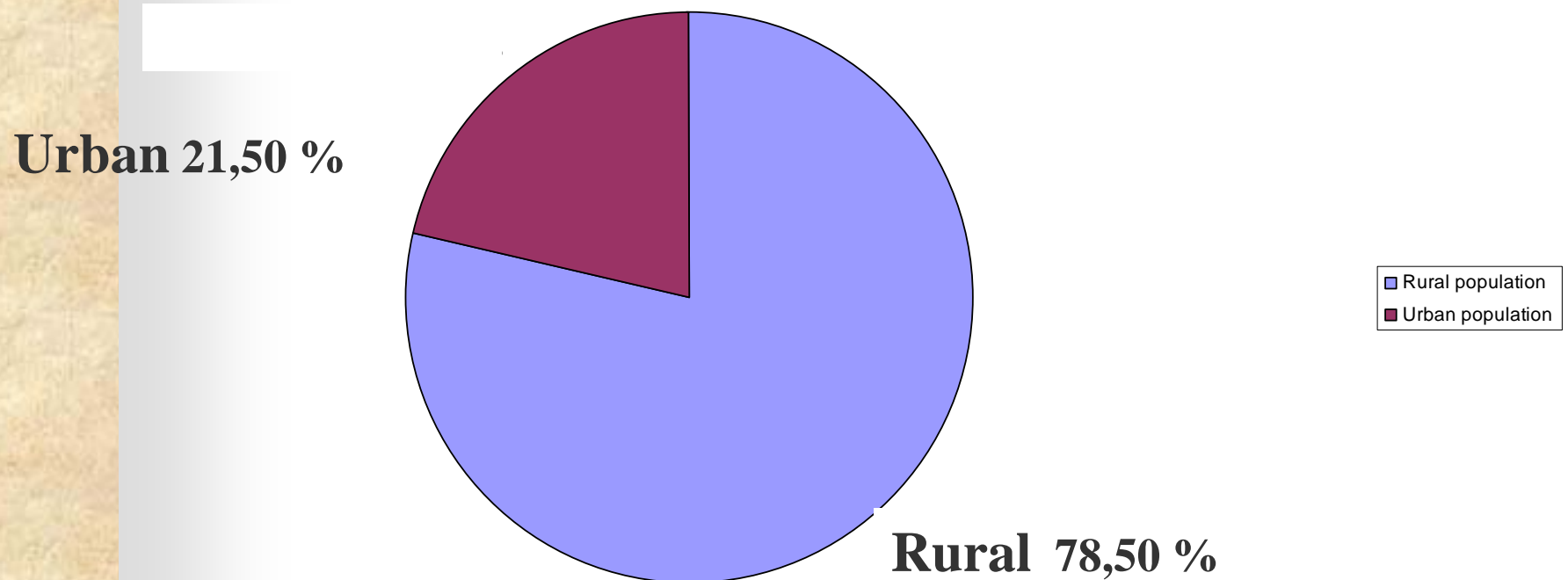
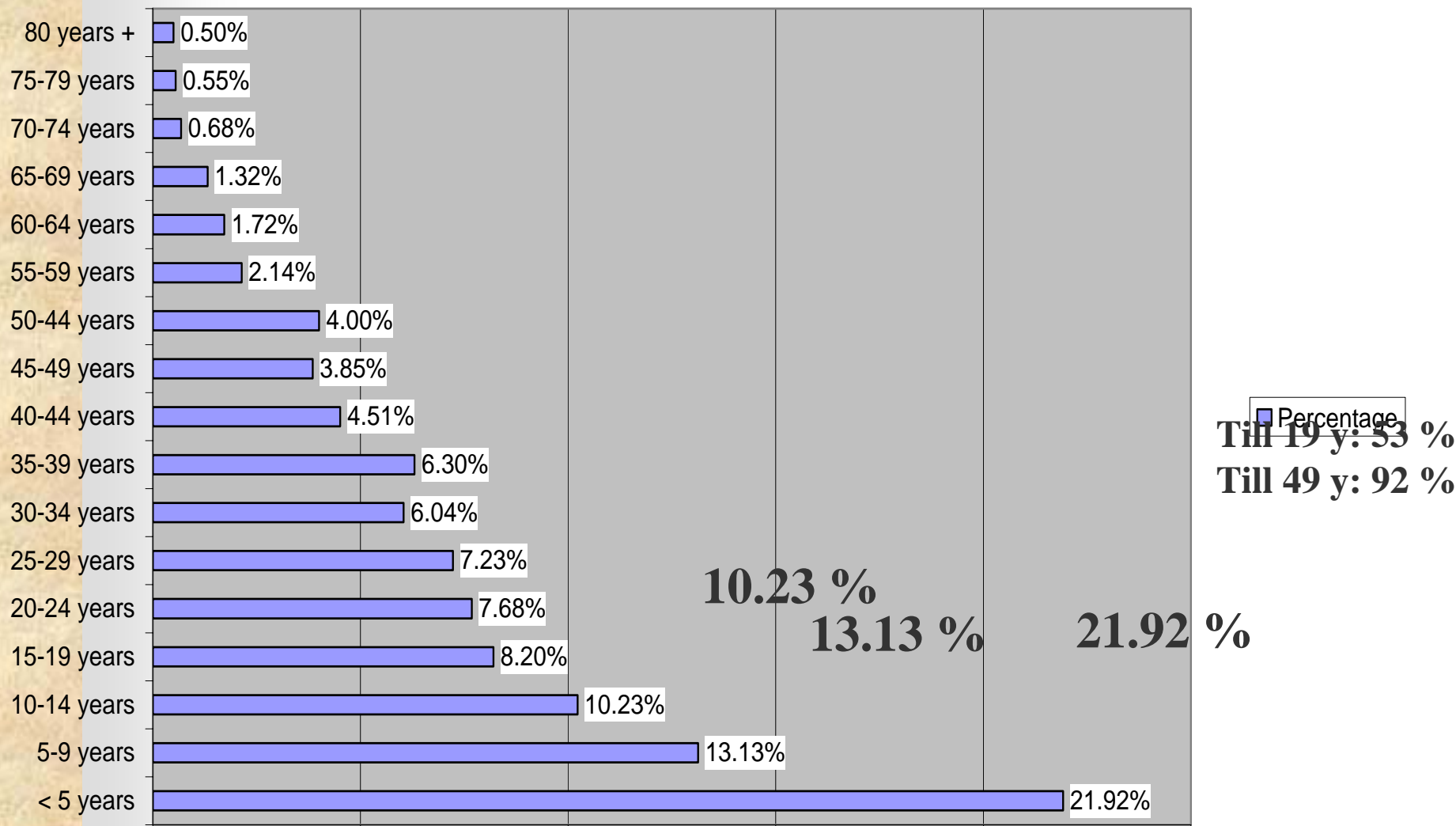


Fig.3. Histogram of age groups, LMIS 2005

Fig. 4bis. Histogram of age groups, LMIS 2005



5.2. Mosquitoes Nets INDICATORS

Fig.4. Households ownership of any NETS, LMIS 2005

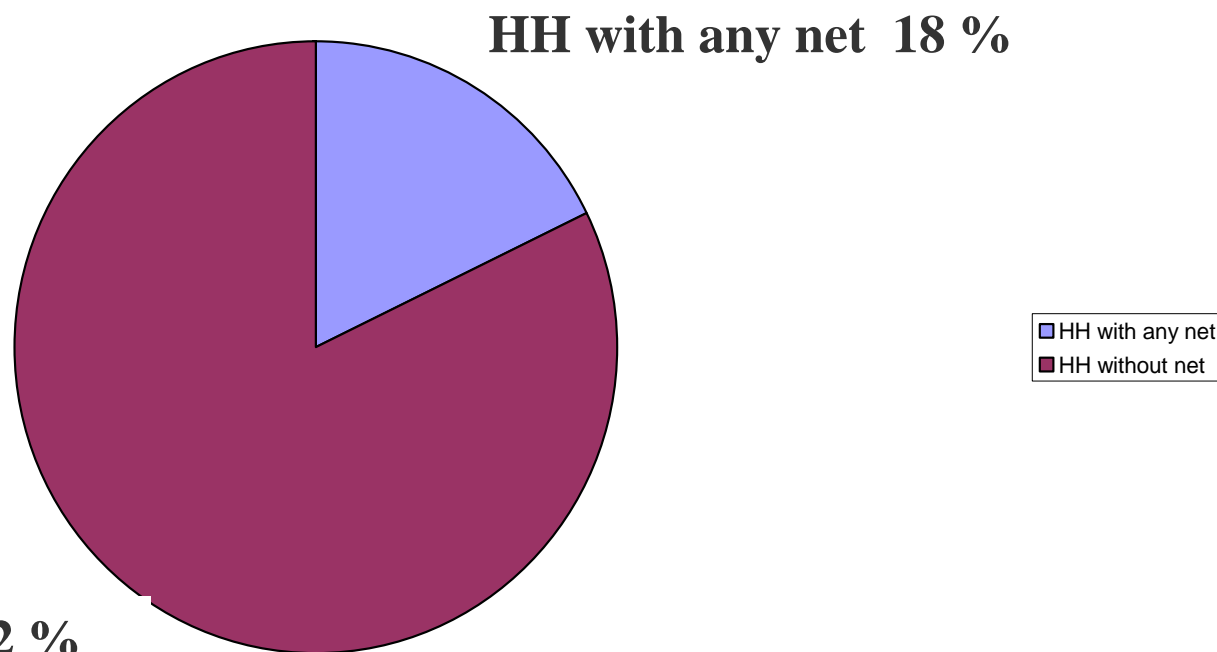


Fig.5. ITN coverage of U5 children vs. Abuja target, LMIS 2005

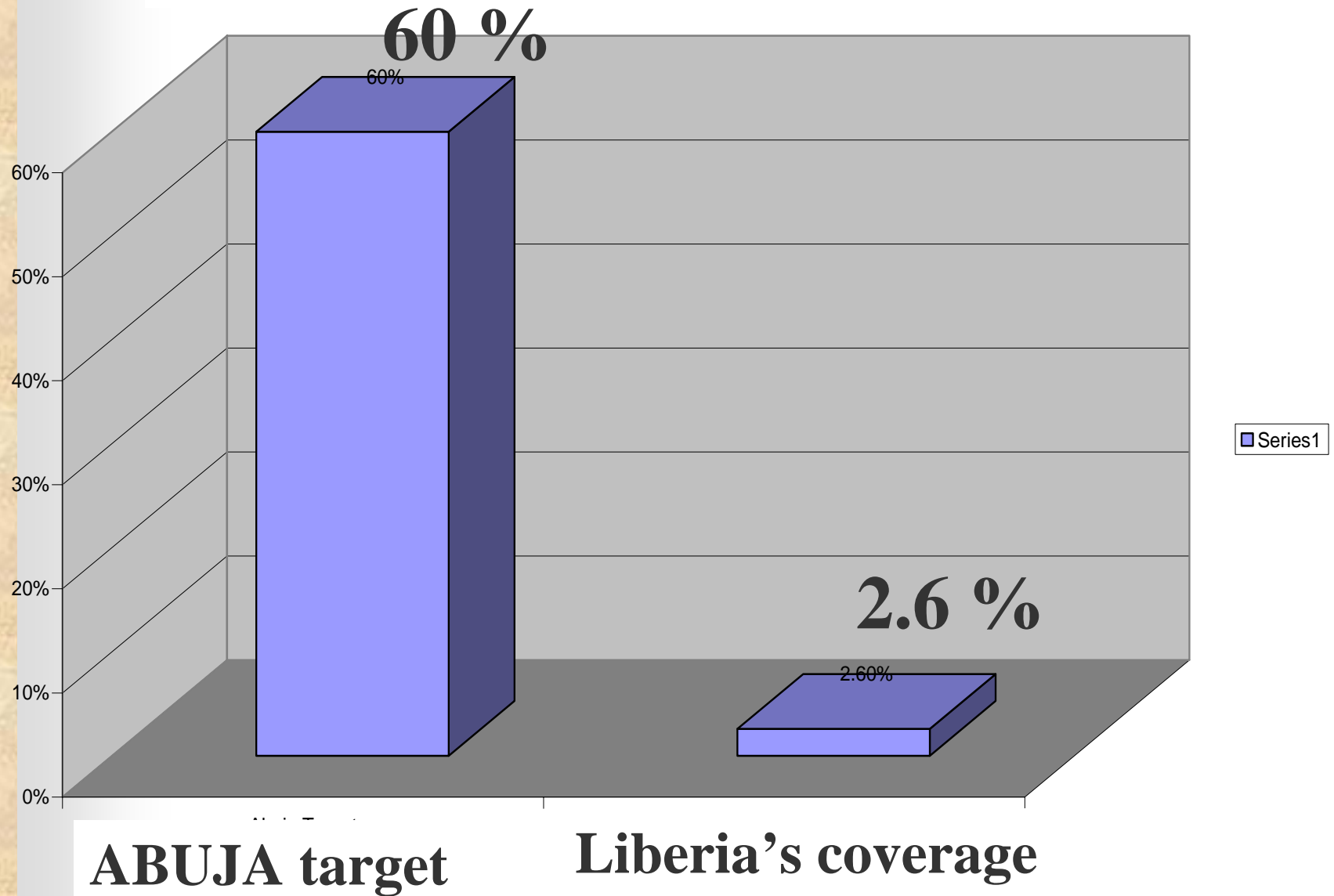
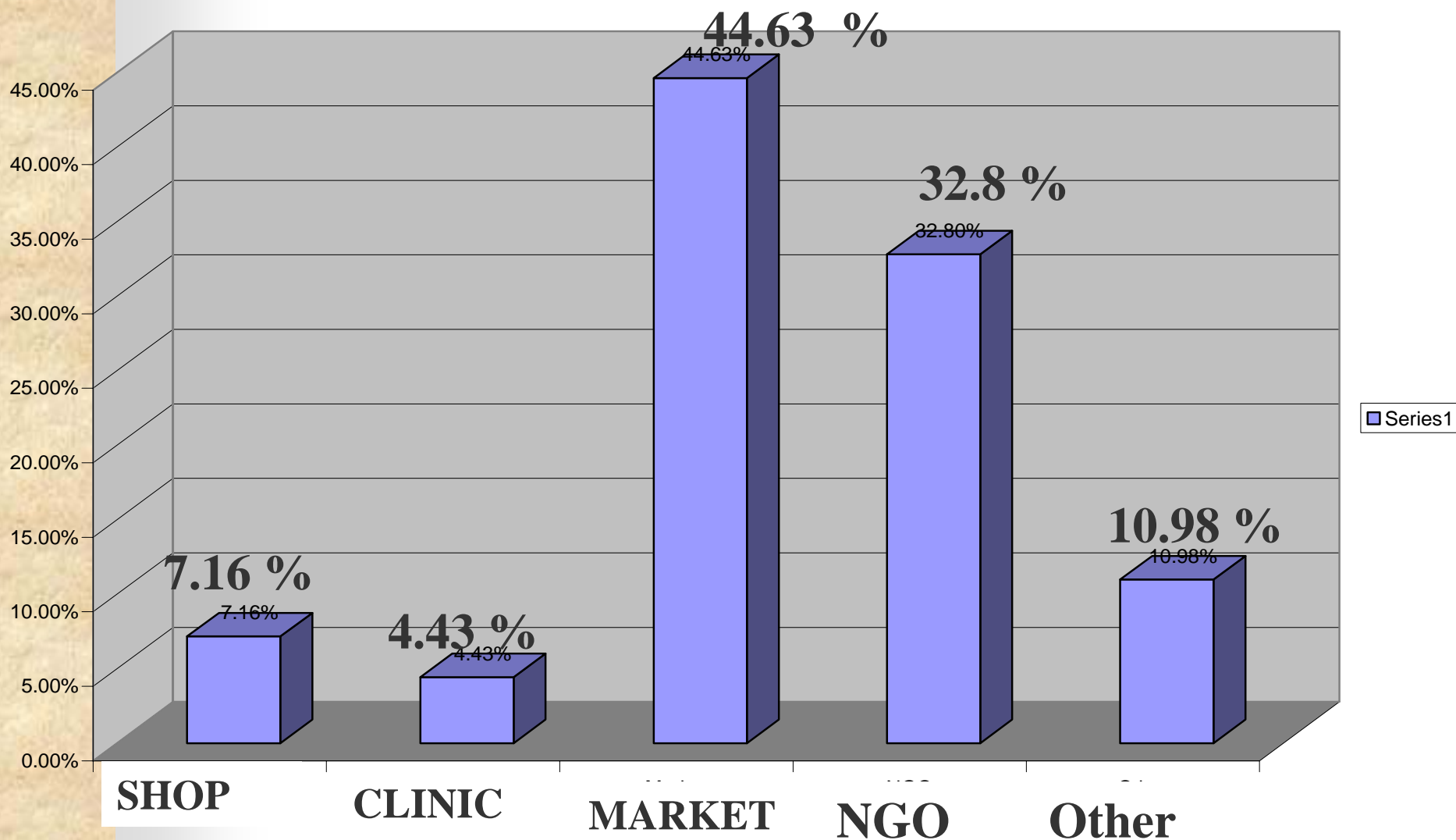


Fig.6. Sources of HH nets, LMIS 2005

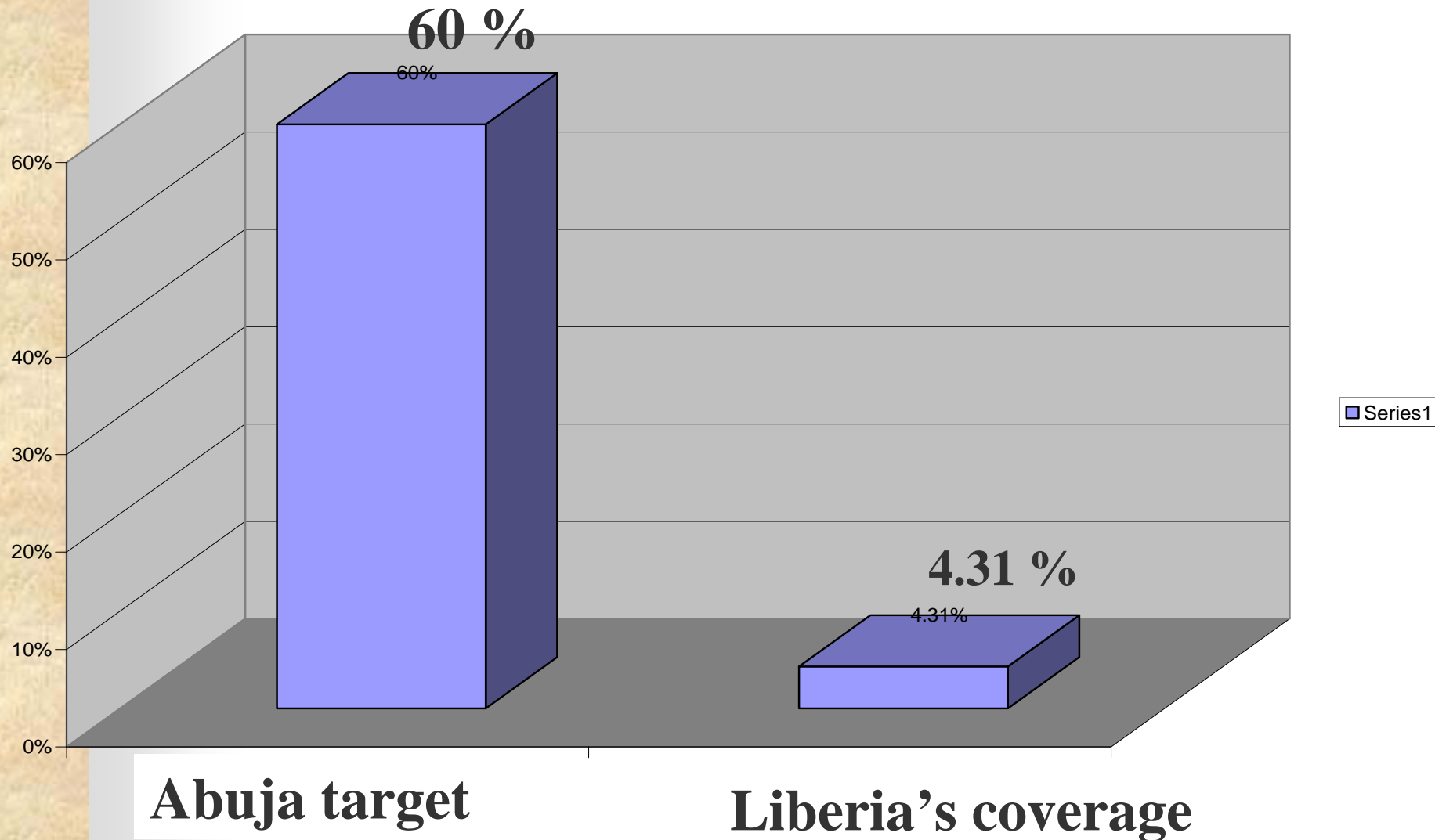


**Table 2. Reasons for not having nets in HH,
LMIS 2005**

Reasons	Respondents (N)	Proportion (%)
Too expensive	1,847	40.6
Not available	1,349	29.6
Don't like	180	4.0
Other	1,140	25.0
Don't know	38	0.8
TOTAL	4,554	100.0

5.3. Preventive Treatment of Pregnant Women

Fig. 7. Liberia's IPT coverage vs. Abuja target, LMIS 2005



5.4. Malaria treatment indicators in community

Table 3. Place where parents sought fever treatment , LMIS 2005

Place	Parents (N)	%
Hospital	102	14.3
Clinic	517	72.3
Mobil clinic	8	1.1
Field worker	19	2.7
Pharmacy	20	2.8
Shop	11	1.5
Traditional Pract.	16	2.2
Others	22	3.1
Total	715	100

**Fig.8. Drug used to treat fever in U5 children,
LMIS 2005**

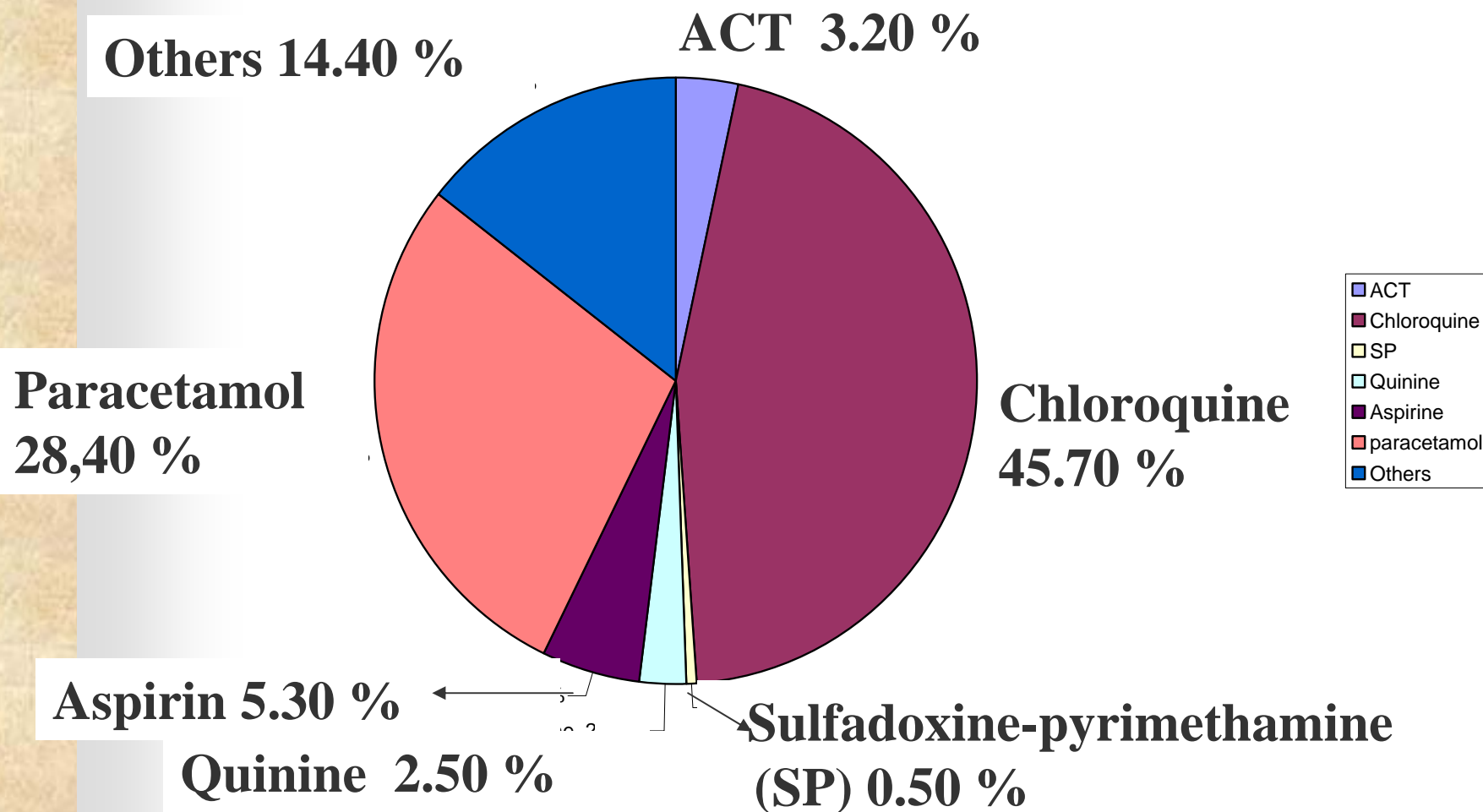
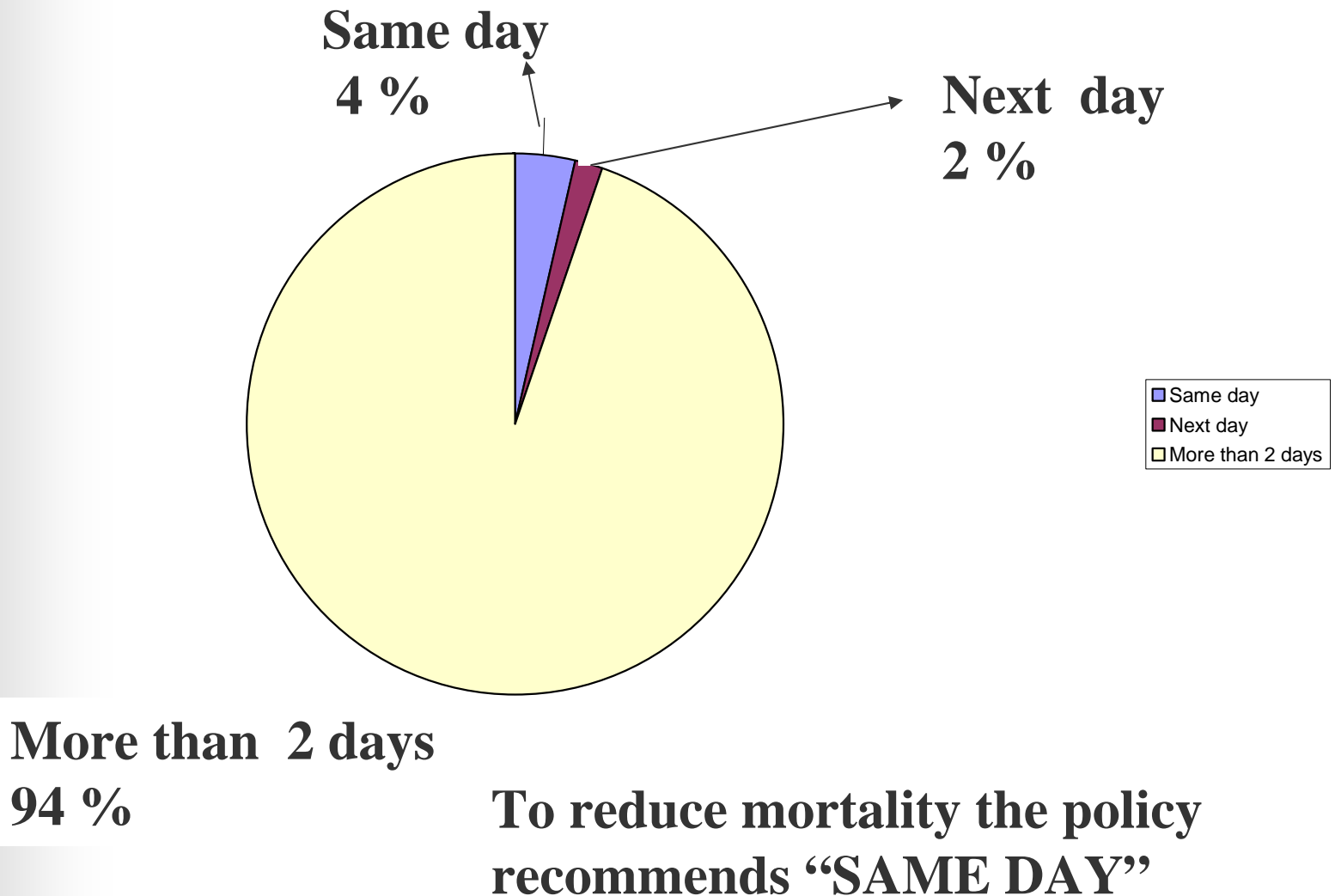


Fig.9. Time parents took to seek children fever treatment, LMIS 2005



5.5. Malaria morbidity in community

Table 4. Prevalence of malaria parasite infection, LMIS 2005

Results of malaria test (RDT)	Children U5 Without Fever Tested	Proportion
	(Total) 7,666	100 %
Positive	5,038	66 %
Negative	2,628	34 %

CI 95 %: 64,9 % - 67.1 %

**Table 5. Incidence of malaria among U5 children
presenting Fever , LMIS 2005**

Results of Malaria Test (RDT)	Number of Children With Fever and Tested	Proportion
	(Total) 4,059	100 %
Positive	3,672	90.5 %
Negative	487	9.5 %

CI 95 % : 90.49 % - 90.51 %

Table 6. Prevalence of anemia among U5, LMIS 2005

Results of test (Hemocue)	Number of U5 Without Fever	Proportion
	(Total) 7,666	100 %
Anemia present	6,643	86,7 %
Anemia absent	1,023	13.3 %

CI 95 % for anemia present: 85.92 % - 87.48 %

CI 95 % for anemia absent : 12.22 % - 13.78 %

Anemia definition: Hemoglobin < 11 g/dl of blood

5.5. Knowledge, Attitude and Practice of people, LMIS 2005

Fig. 10. Causes of malaria according to respondents, LMIS 2005

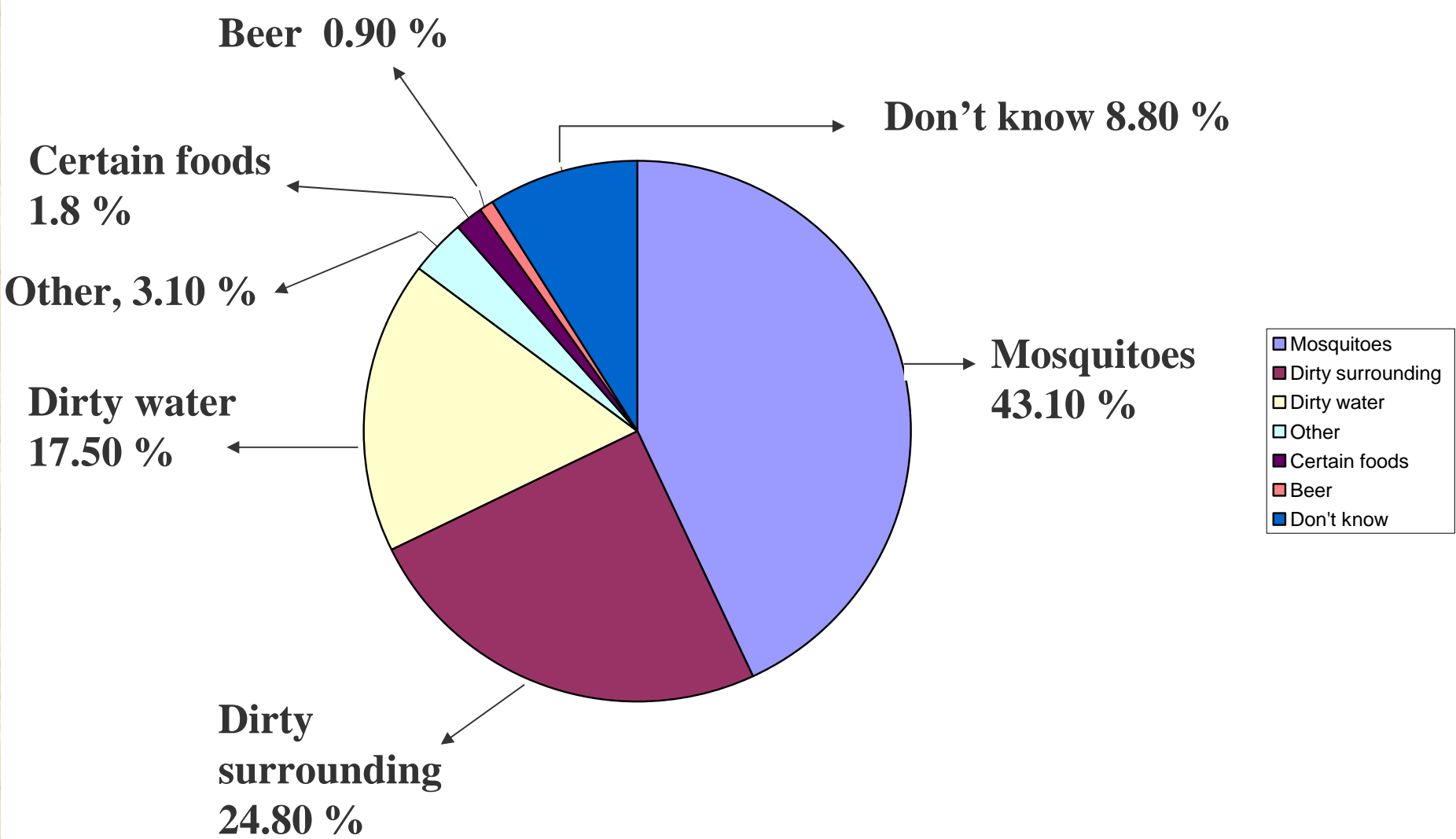


Fig. 11. Groups likely to get severe malaria according to respondents' education, LMIS 2005

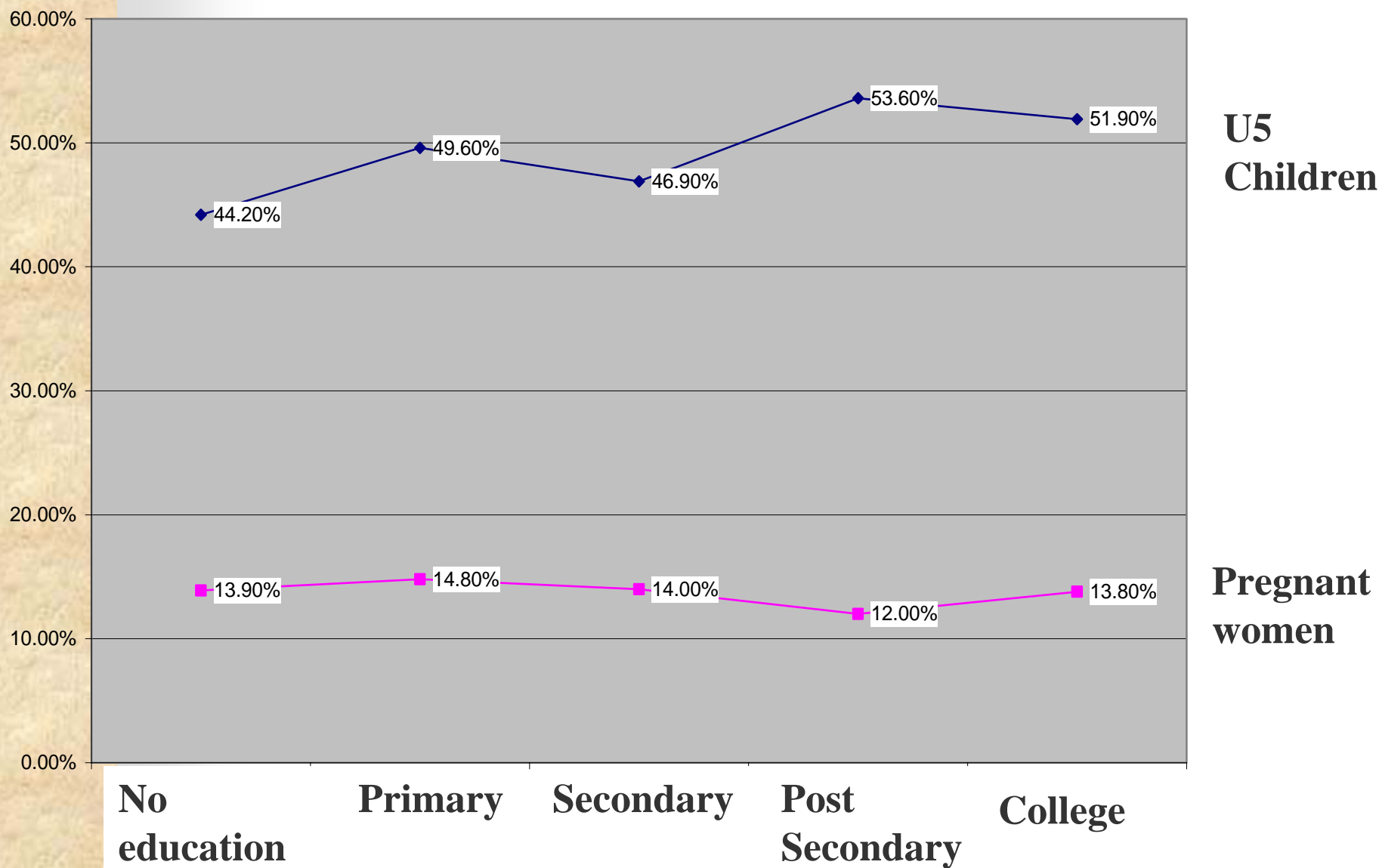


Fig 12. Ways to avoid getting malaria according to respondents, LMIS 2005

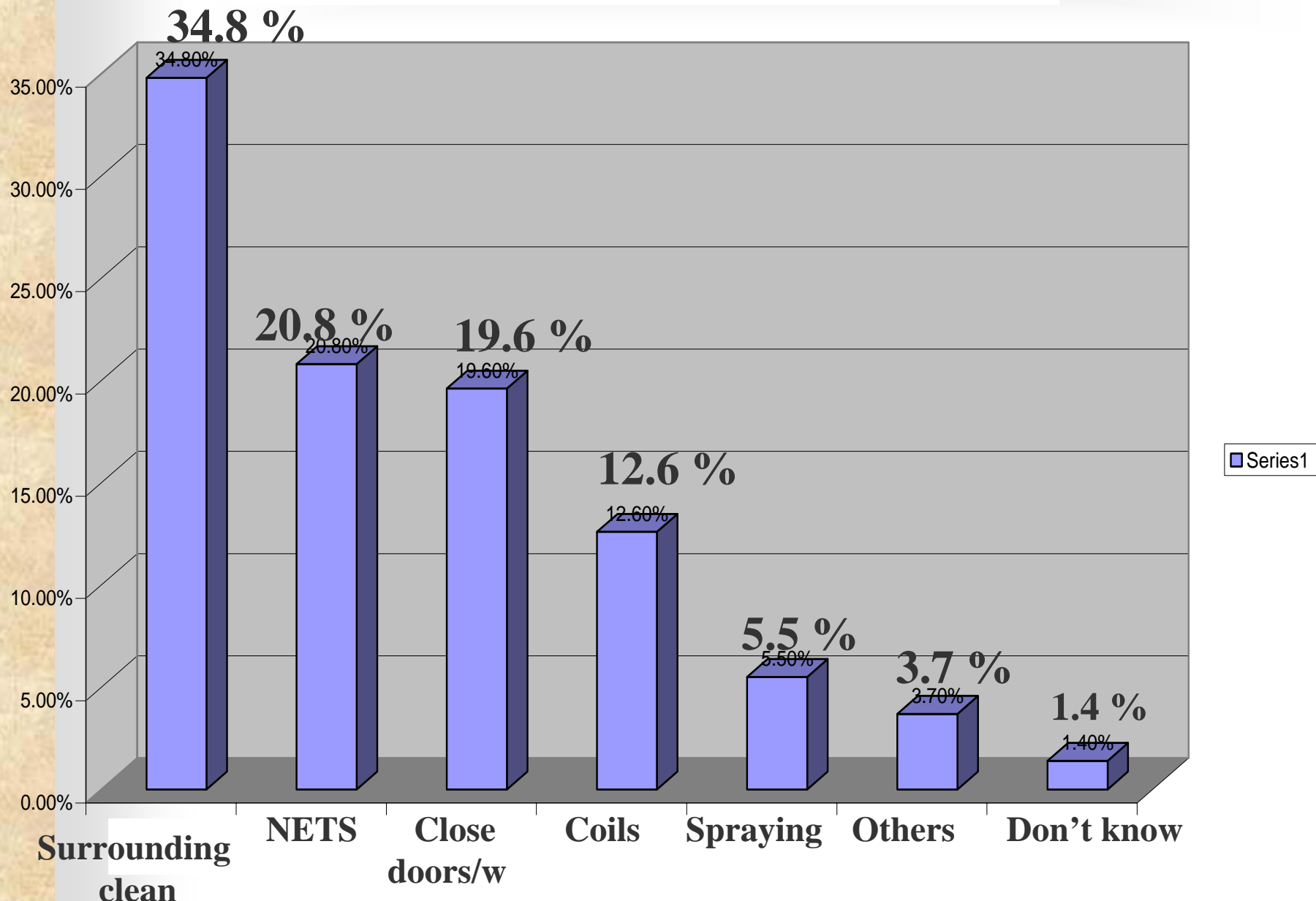
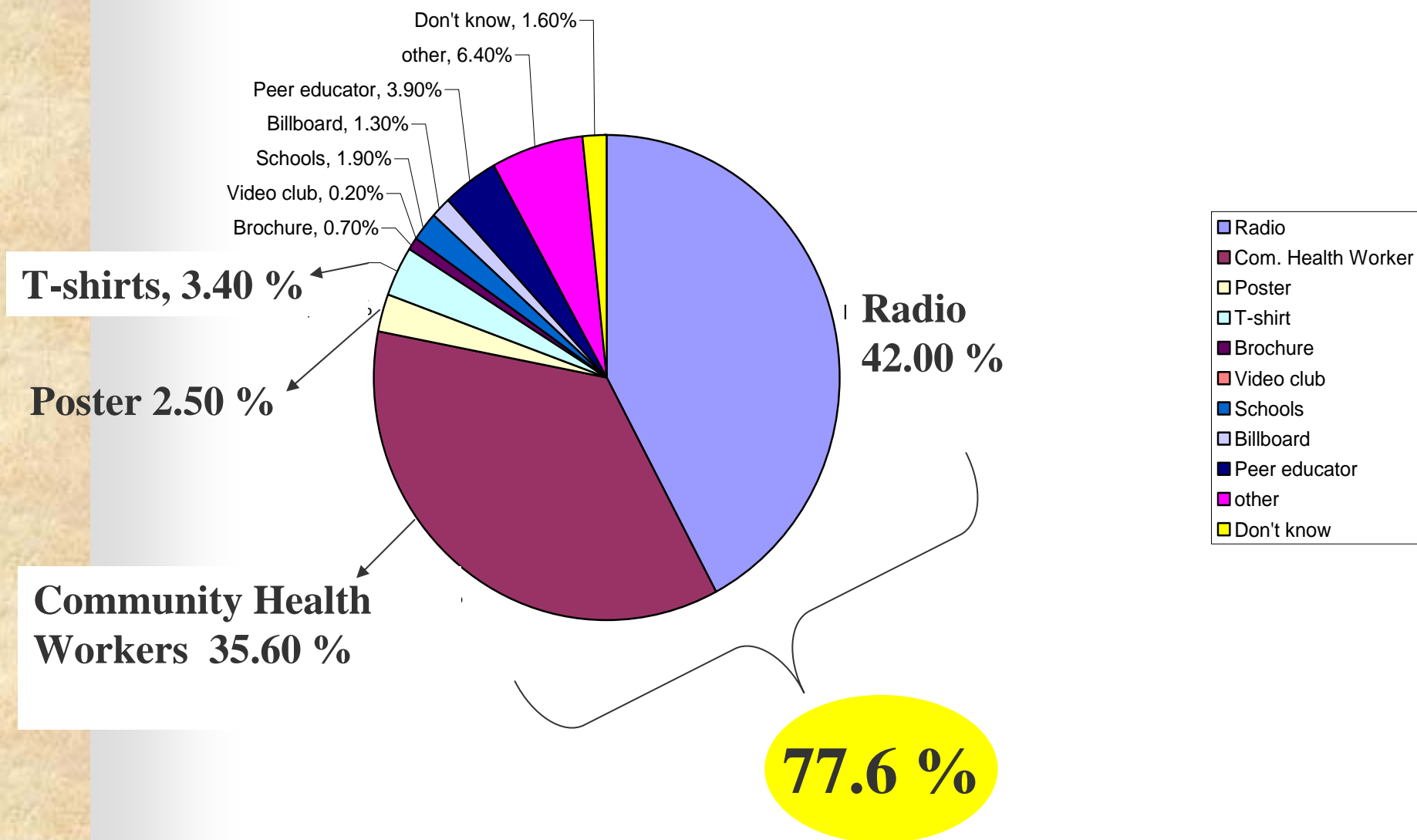


Table 7. Causes of deaths according to members of households, LMIS 2005

Causes of deaths	Number	Percentage
Malaria	648	46.6
Tuberculosis	39	2.8
HIV/AIDS	6	0.4
Accident	70	5.0
Violence	55	4.0
Others	223	16.0
Not stated	351	25.2
Total	1,392	100.0

Fig. 11. Reliable communication channels, LMIS 2005



5.6. Malaria indicators in Health Facilities (HF)

Table 8. Categories of Health workers in surveyed HF, LMIS 2005

Categories		N	%
1.	Doctors	15	2.95
2.	Physician Assistants	187	36.81
3.	Nurses	146	28.74
4.	Midwives	49	9.65
5.	Dispenser	11	2.17
6.	Nurse Aides	22	4.33
7.	Others	78	15.35
Total		508	100

66 %

Fig. 12. Performance of HW in searching danger signs of malaria at OPD, LMIS 2005

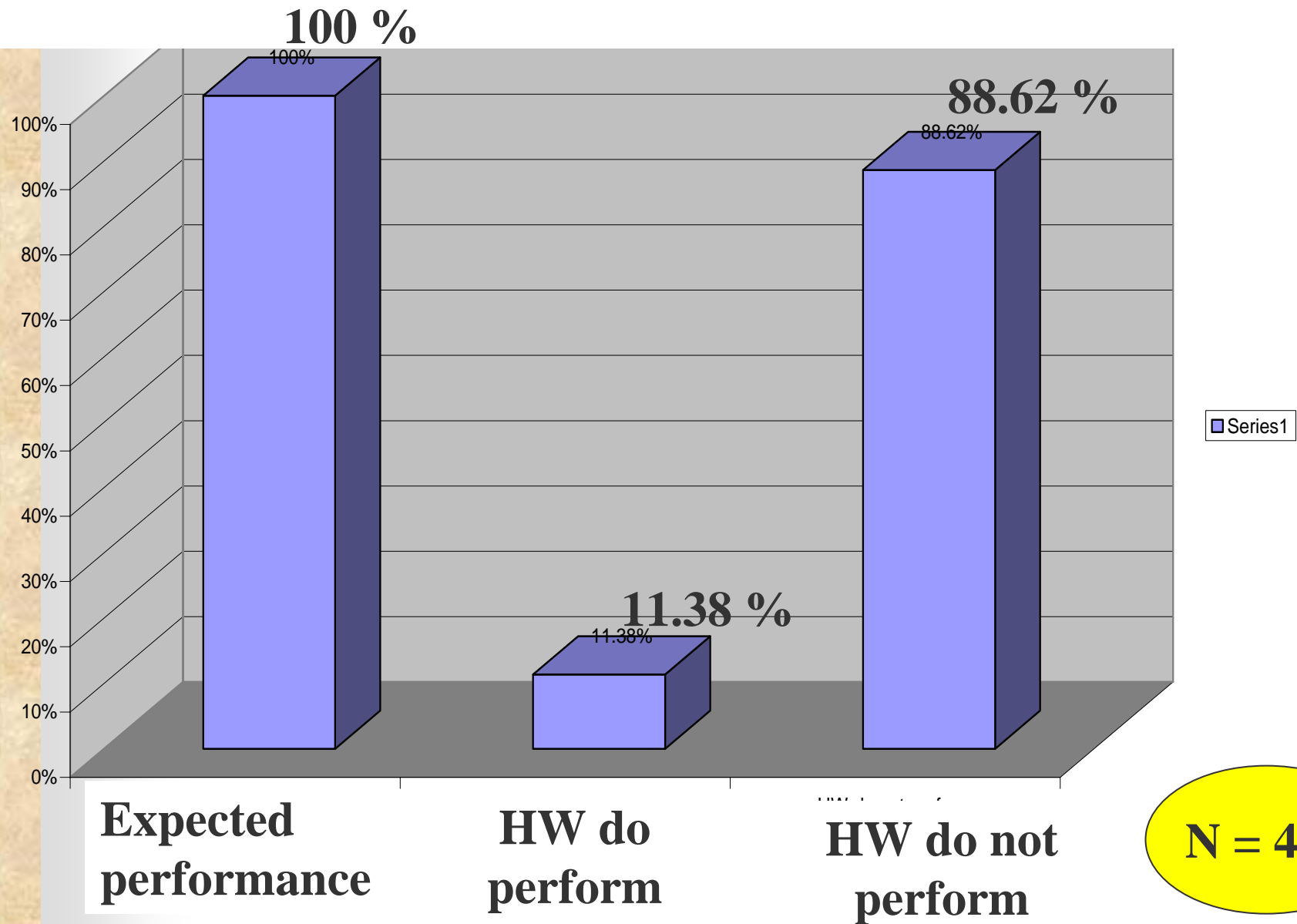
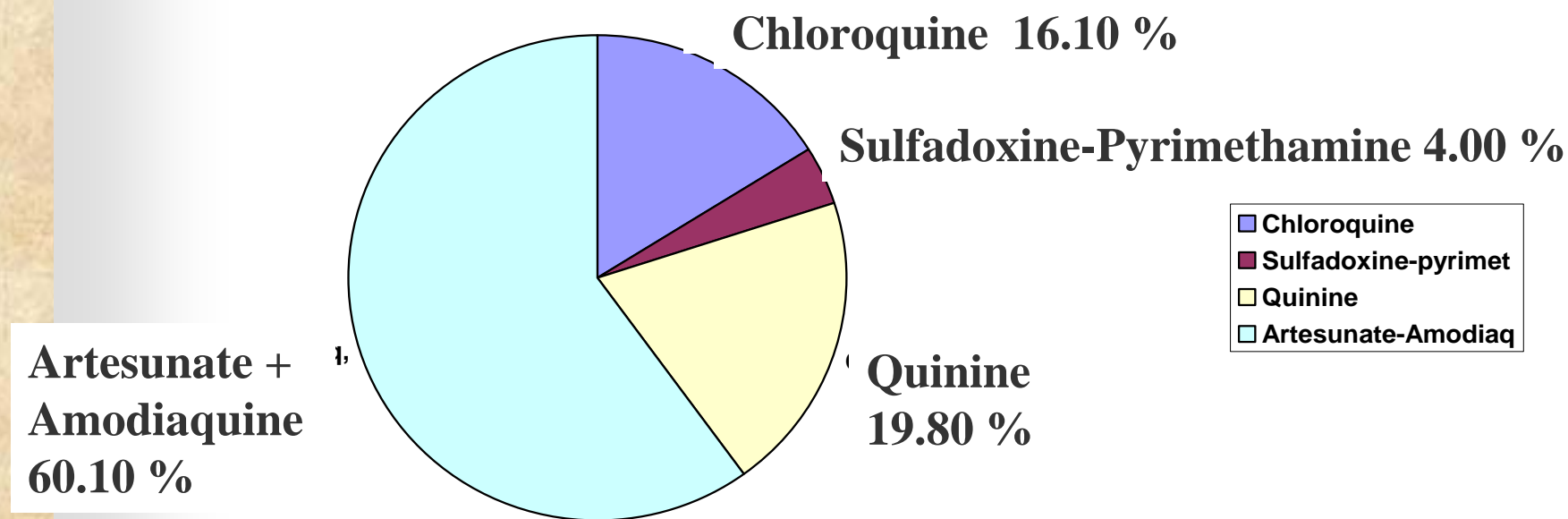


Fig.13. Drugs used by HW to treat uncomplicated malaria, LMIS 2005



N = 323

**Table 9. Opinions of caretakers on the performance of HW,
LMIS 2005**

Expected performance	Respondents (N)	HW did		HW didn't		Don't know	
		N	%	N	%	N	%
To tell parents what sickness the child has	476	296	62.2	179	37.6	1	0.2
To tell parents to bring back the child if any danger appears	480	177	37	299	62.2	4	0.8

Table 10. Policy documents in HF, LMIS 2005

Expected policy documents		Surveyed Facilities	Document Present		Document Absent	
		N	N	%	N	%
National malaria treatment guidelines		103	79	77	24	2.3
IMCI guidelines		103	12	11.65	91	88.35

Table 11. Malaria morbidity at OPD, LMIS 2005

Social groups		OPD attendants	Clinical malaria		Other diseases	
		N	N	%	N	%
U5 children		206,684	122,256	59.15	84,428	40.85
Pregnant women		68,586	21,019	30.65	47,567	69.35
Others		506,075	149,715	29.58	356,360	70.42
Total		781,345	292,990	37.50	488,355	62.50

Table 12. Lab-confirmed cases of malaria at OPD, LMIS 2005

Social groups		Clinical malaria	Lab-confirmed cases of malaria		Lab-no confirmed cases of malaria	
		N	N	%	N	%
U5 children		122,256	82,056	67.12	40,197	32.88
Pregnant women		21,019	9,851	46.87	11,168	53.13
Others		149,715	76,707	51.23	73,008	48.77
Total		292,900	162,617	55.50	124,373	45.50

Table 13. In-patients malaria morbidity, LMIS 2005

Social groups		Admitted patients	In-Patients with clinical malaria		In-Patients with Lab-confirmed malaria	
		N	N	%	N	%
U5 children		13,552	1,211	8.95	2,458	18.14
Pregnant women		8,926	596	6.67	1,363	15.27
Others		33,927	2,529	7.45	5,405	15.93
Total		56,405	4,335	7.68	9,226	16.36

Table 14. Inpatient malaria mortality, LMIS 2005

Social groups		Inpatient deaths	Deaths with clinical malaria		Deaths with lab-confirmed malaria		Total deaths attributed to malaria	
		N	N	%	N	%	N	%
U5 children		668	100	14.97	310	46.41	410	61.38
Pregnant women		85	13	15.30	36	42.35	49	57.65
Others		473	52	11.00	197	41.65	249	52.64
Total		1,226	165	13.46	543	42.30	708	57.75

6. Summary of main Malaria Baseline Indicators in Liberia, 2005

6.1. Malaria prevention indicators

- HH owning any mosquito net : 18 %
- U5 children who slept under ITN : 2.6 %
- Pregnant women receiving correct IPT : 4.31 %

6.2. Malaria treatment indicators

- U5 children treated with ACT : 3.2 %
- U5 children treated within 24 hours after onset: 5.26 %
- Cases of malaria lab-confirmed :162,617 cases out 292,990 clinical malaria (55.50 %)
- Health facilities with microscopy: 35 %

6. Summary of main Malaria Baseline Indicators in Liberia, 2005 (cont'd)

6.3. Impact indicators

- **Prevalence of malaria parasite infection (U5 children) : 66 %**
- **Incidence of malaria among U5 children: 90.5 %**
- **Prevalence of anemia among U5 children : 87 %**
- **Malaria-attributed deaths : 708 /1226 (57.75 %)**
- **Lab-confirmed malaria deaths in H.F. : 543/1226 (44.30 %)**
- **Among malaria attributed deaths , 410 were U5 children (57.91%)**



7. Conclusion

- Malaria prevalence and incidence are too high in Liberia (morbidity)
- Malaria mortality is too high in Liberia
- **All coverage indicators are too low and far from Abuja targets of 60 %**



8. Recommendations

- **To RBM partners : to mobilize more resources for the scaling up of the coverage of ongoing interventions**
- **To plan a mid-term LMIS by 2008 and a third by 2010 to measure any achieved progress compared to 2005 data presented in this report.**

9. Acknowledgement

- **The MOH & SW express her warm gratitude to:**
 - UNDP/GF and WHO for funding LMIS
 - WHO for technical support in designing the protocol , interpreting data and writing the report
 - UNFPA , UNICEF and Mentor Initiative for technical support in designing the protocol
 - The staff of the MOH&SW and MPEA for the designing of the protocol and data analysis plan , and report writing
 - All field workers who collected data and those who entered them in the computer
 - All household members in all counties for their collaboration



Thank you