

***Baseline Health Survey***  
***Siem Reap and Oddar Meanchey Provinces***  
***Cambodia, 2005***

**FINAL REPORT**

**Siem Reap and Oddar Meanchey PHD**  
**Belgian Technical Co-operation**  
**Domrei Research and Consulting**

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## Baseline indicators - Summary

The Provision of Basic Health Services Siem Reap / Oddar Meanchey (PBHS SR/OMC) is part of the Cambodian-Belgian bilateral co-operation health project supporting the delivery of health services in the four Operational Districts (OD) of Siem Reap Province and in Oddar Meanchey, covering a population of 914,000 inhabitants. The project started in June 2004 and is expected to end in 2008. The general objective is to improve the health of the population, especially mothers and children, thereby contributing to poverty alleviation and socio-economic development in Siem Reap and Oddar Meanchey. The Project aims to strengthen Provincial Health Departments in the two provinces and help them to comply with the National Health Strategic Plan 2003-2007.

As part of the project's monitoring and evaluation activities, Domrei Research and Consulting designed and conducted a **baseline population-based household survey** to collect data and compute project baseline indicators to provide benchmarks to assess the project's impact by the mid-term and final evaluation.

### Baseline survey objectives:

- To collect reliable baseline data from a representative sample of ever-married women aged 15-49 years
- To compute the selected indicators for each of the five ODs covered by the project
- To provide hands on training in survey design and data collection to selected provincial health staff

Domrei did not encounter any major difficulties in conducting the surveys. Therefore, we recommend that the same instruments be administered in the same locations at endline. PBHS was given the list of clusters and soft copies of the survey instruments to facilitate this replication.

### Results

The weighted Infant Mortality Rate for the five ODs combined was computed following the DHS method and estimated at 68.4 per thousand live births for the period 1995-2004. The other project indicators are presented in the following tables, by OD and the weighted totals for the four Siem Reap ODs and the two provinces combined.

	Siem Reap Province					Oddar Meanchey	All
	Angkor Chum	Kralanh	Siem Reap	Soth Nikum	Total SR	Sam Rong	SR + OM
Average number of OPD contacts <sup>1</sup>	1.6	1.7	2.0	2.2	1.9	2.0	1.9
Number of hospitalisations <sup>2</sup>	15	23	22	33	24	29	25
Number of traffic injuries	4640	2325	8200	5264	20429	2568	22997
% who sought treatment at public facility first <sup>3</sup>	19.9	13.6	17.5	34.4	23.3	19.8	22.8
Opinion on Public Health Centre							
% respondents said HC was clean	75.6	78.7	60.0	73.7	71.4	48.3	68.2
% respondents said HC staff talked well	58.1	62.7	51.4	54.0	55.2	32.2	52.1
% respondents said HC was free or cheap	41.4	30.7	47.1	29.2	36.4	17.2	33.8
% respondents said HC service was sufficient	77.0	86.7	81.4	92.7	85.8	73.6	84.1
% respondents said they were satisfied	93.1	89.3	91.4	93.4	92.5	88.5	92.0
Proportion of deliveries <sup>4</sup>							
at Public Facility	2.1	6.3	9.8	10.6	7.6	9.3	7.6
attended by trained health staff	20.8	22.8	81.1	34.8	44.4	28.9	37.7
at least two ANC	56.1	65.4	82.6	55.3	65.4	53.1	62.5
at least two Tetanus shots	61.9	67.7	50.0	58.3	57.7	67.1	60.9
Modern CPR among married women	23.3	25.3	28.4	35.4	29.0	36.9	30.1
% fully vaccinated children <sup>5</sup>							
excluding Hepatitis B	40.9	39.8	45.9	34.5	40.2	31.6	39.0
including Hepatitis B	4.5	9.7	6.8	4.6	5.9	5.1	5.8
Nutritional status among children under five <sup>6</sup>							
% wasted children 0-23 months	3.9	11.8	12.0	0.0	6.7	9.4	7.1
% wasted children 24-59 months	1.8	3.9	9.0	5.0	5.0	9.6	5.7
% stunted children 0-23 months	30.1	21.5	16.7	24.3	22.9	12.9	21.6
% stunted children 24-59 months	52.2	62.0	39.8	54.2	51.0	43.9	49.9

1. per inhabitant. 2. per 1000 inhabitants. 3. among all household members who had a health problem in the last two weeks. 4. percent of most recent delivery since 2003. 5. aged 24-35 months. 6. Malnutrition prevalence combines moderate and severe cases -2 standard deviations (Z scores) from WHO norm. Only four cases of severe wasting recorded. Siem Reap Province and SR+OM totals are weighted to take into account unequal sampling probabilities resulting from OD stratification.

Average health expenditures per episode, in Riel, Siem Reap and Oddar Meanchey, 2005														
OD Number of episodes	Siem Reap Province										Oddar Meanchey Sam Rong		All SR + OM	
	Angkor Chum		Kralanh		Siem Reap		Soth Nikum		Total SR					
	360		451		257		395		1463		355		1818	
	amount	%	amount	%	amount	%	amount	%	amount	%	amount	%	amount	%
Drugs and exams	27571	75.4	52817	84.7	43586	85.0	23488	83.4	33953	82.3	20634	80.0	331953	97.9
Official fees	1176	3.2	682	1.1	2490	4.9	394	1.4	1136	2.8	826	3.2	1091	0.3
Informal fees	391	1.1	67	0.1	438	0.9	230	0.8	296	0.7	261	1.0	291	0.1
<b>Total cost of care</b>	<b>29138</b>	<b>79.7</b>	<b>53566</b>	<b>85.9</b>	<b>46514</b>	<b>90.7</b>	<b>24112</b>	<b>85.6</b>	<b>35385</b>	<b>85.8</b>	<b>21721</b>	<b>84.2</b>	<b>333335</b>	<b>98.3</b>
Transportation	7405	20.3	8828	14.1	4787	9.3	4066	14.4	5874	14.2	4079	15.8	5607	1.7
<b>Total</b>	<b>36543</b>	<b>100.0</b>	<b>62394</b>	<b>100.0</b>	<b>51301</b>	<b>100.0</b>	<b>28178</b>	<b>100.0</b>	<b>41259</b>	<b>100.0</b>	<b>25800</b>	<b>100.0</b>	<b>338942</b>	<b>100.0</b>
Siem Reap and SR+OM means are weighted to take into account unequal sample probabilities due to stratification by OD														

Average household health expenditures, in US dollars, Siem Reap and Oddar Meanchey, 2005														
OD Number of households	Siem Reap Province										Oddar Meanchey Sam Rong		All SR + OM	
	Angkor Chum		Kralanh		Siem Reap		Soth Nikum		Total SR					
	258		258		237		258		1011		249		1260	
	amount	%	amount	%	amount	%	amount	%	amount	%	amount	%	amount	%
Drugs and exams	35.80	70.6	92.41	83.6	43.87	84.8	33.88	81.6	44.65	80.3	32.47	80.3	42.89	80.4
Official fees	2.23	4.4	1.60	1.4	2.46	4.8	0.55	1.3	1.70	3.1	1.58	3.9	1.68	3.1
Informal fees	0.71	1.4	0.09	0.1	0.33	0.6	0.29	0.7	0.39	0.7	0.31	0.8	0.38	0.7
<b>Total cost of care</b>	<b>38.74</b>	<b>76.4</b>	<b>94.10</b>	<b>85.1</b>	<b>46.66</b>	<b>90.1</b>	<b>34.72</b>	<b>83.6</b>	<b>46.74</b>	<b>84.1</b>	<b>34.36</b>	<b>85.0</b>	<b>44.95</b>	<b>84.3</b>
Transportation	11.98	23.6	16.43	14.9	5.10	9.9	6.80	16.4	8.84	15.9	6.06	15.0	8.40	15.7
<b>Total</b>	<b>50.72</b>	<b>100.0</b>	<b>110.53</b>	<b>100.0</b>	<b>51.76</b>	<b>100.0</b>	<b>41.52</b>	<b>100.0</b>	<b>55.58</b>	<b>100.0</b>	<b>40.42</b>	<b>100.0</b>	<b>53.35</b>	<b>100.0</b>
Siem Reap and SR+OM means are weighted to take into account unequal sample probabilities due to stratification by OD.														

Average health expenditures per capita, in US dollars, Siem Reap and Oddar Meanchey, 2005														
OD	Siem Reap Province										Oddar Meanchey Sam Rong		All SR + OM	
	Angkor Chum		Kralanh		Siem Reap		Soth Nikum		Total SR		amount	%	amount	%
Number of households	258		258		237		258		1011		249		1260	
household size	5.3		5.6		6.2		5.8		5.7		5.9		5.8	
	amount	%	amount	%	amount	%	amount	%	amount	%	amount	%	amount	%
Drugs and exams	6.74	70.6	16.53	83.6	7.13	84.8	5.89	81.6	7.78	80.3	5.51	80.3	7.44	80.4
Official fees	0.42	4.4	0.29	1.4	0.40	4.8	0.10	1.3	0.30	3.1	0.27	3.9	0.29	3.1
Informal fees	0.13	1.4	0.02	0.1	0.05	0.6	0.05	0.7	0.07	0.7	0.05	0.8	0.07	0.7
<b>Total cost of care</b>	<b>7.29</b>	<b>76.4</b>	<b>16.84</b>	<b>85.1</b>	<b>7.58</b>	<b>90.1</b>	<b>6.03</b>	<b>83.6</b>	<b>8.14</b>	<b>84.1</b>	<b>5.83</b>	<b>85.0</b>	<b>7.80</b>	<b>84.3</b>
transportation	2.25	23.6	2.94	14.9	0.83	9.9	1.18	16.4	1.54	15.9	1.03	15.0	1.46	15.7
<b>Total</b>	<b>9.54</b>	<b>100.0</b>	<b>19.78</b>	<b>100.0</b>	<b>8.41</b>	<b>100.0</b>	<b>7.21</b>	<b>100.0</b>	<b>9.69</b>	<b>100.0</b>	<b>6.86</b>	<b>100.0</b>	<b>9.26</b>	<b>100.0</b>

Siem Reap and SR+OM means are weighted to take into account unequal sample probabilities due to stratification by OD

## Table of contents

<b>INTRODUCTION .....</b>	<b>9</b>
1. SURVEY OBJECTIVE .....	9
2. METHODS AND DATA .....	9
2.1. <i>Sample methodology</i> .....	9
2.2. <i>Questionnaire design</i> .....	10
2.3. <i>Training and fieldwork</i> .....	10
2.4. <i>Data analysis methods</i> .....	11
<b>RESULTS .....</b>	<b>12</b>
1. DESCRIPTION OF SAMPLE AND DATA .....	12
1.1. <i>Response rates</i> .....	12
1.2. <i>Household characteristics</i> .....	13
1.3. <i>Household population</i> .....	17
1.4. <i>Respondent characteristics</i> .....	19
2. NUMBER OF NEW OPD HC CONTACT/INHABITANT/YEAR .....	20
3. NUMBER OF PUBLIC HOSPITAL ADMISSIONS/1,000 INHABITANTS/YEAR .....	21
4. TRAFFIC AND LAND MINE INJURIES .....	22
5. HOUSEHOLD MEMBERS WHO SOUGHT CARE IN PUBLIC HEALTH FACILITIES .....	25
6. HEALTH EXPENDITURES .....	27
6.1. <i>Method limitations and caveats</i> .....	27
6.2. <i>Household expenditure on health care per episode, by OD</i> .....	28
6.3. <i>Household expenditure on health care per wealth group</i> .....	34
7. SATISFACTION WITH PUBLIC HEALTH SERVICES .....	35
7.1. <i>% of clients satisfied with attitude of staff in the public health facilities (PHF)</i> .....	38
7.2. <i>% of clients satisfied with services provided by public health facilities</i> .....	39
8. MATERNAL HEALTH .....	39
8.1. <i>Proportion (%) of deliveries attended by trained health staff</i> .....	40
8.2. <i>Proportion (%) of pregnant women who went to at least 2 ANC visits</i> .....	41
8.3. <i>Proportion (%) of pregnant women who received at least 2 Tetanus shots</i> .....	41
9. CONTRACEPTIVE USE .....	42
9.1. <i>Current contraceptive prevalence rate (CPR)</i> .....	42
9.2. <i>Unmet need</i> .....	43
9.3. <i>Contraceptive mix</i> .....	44
10. INFANT MORTALITY .....	44
11. IMMUNISATION .....	45
11.1. <i>Children 12-35 months immunised, per vaccine</i> .....	46
11.2. <i>Children 12-35 months old fully immunised, per OD</i> .....	49
12. ANTHROPOMETRICS .....	50
12.1. <i>Data and methods</i> .....	50
12.2. <i>% of children who are wasted</i> .....	50
12.3. <i>% of children who are stunted</i> .....	51
12.4. <i>Summary of anthropometric indicators</i> .....	52
<b>ANNEX: WOMEN'S QUESTIONNAIRE AND ANTHROPOMETRICS FORM .....</b>	<b>54</b>

## Figures

Figure 1: Interview results by OD.....	12
Figure 2: Household characteristics - housing, by OD.....	13
Figure 3: Proportion (%) of households that own no assets, no livestock and no helmet, by OD. ....	14
Figure 4: Proportion (%) of households that own a radio, a television, a refrigerator or an ox cart, by OD. ....	15
Figure 5: Proportion (%) of households that own a bicycle, a moto, a car or a boat, by OD. ....	15
Figure 6: Proportion (%) of households that own poultry, pigs, cows or buffaloes, by OD.....	16
Figure 7: Proportion (%) of households that own goats, horses, fish or crocodiles, by OD.....	16
Figure 8: Distribution of households according to wealth group, by OD.....	17
Figure 9: Sample population age pyramid .....	18
Figure 10: Age structure of respondent sample.....	19
Figure 11: Marital status of respondents, ever-married women ages 15 to 49.....	20
Figure 12: Respondent's relation to household head. ....	20
Figure 13: proportion of household members who went at least once to a public health facility for a health service in the last 12 months.....	21
Figure 14: Proportion of household members who were admitted for at least one night in a hospital in the last 12 months.....	22
Figure 15: Means of transportation used by injured individual when the accident occurred. ....	23
Figure 16: Breakdown of traffic related injuries according to severity, by OD. ....	24
Figure 17: Percent distribution of traffic-related injuries by health costs.....	24
Figure 18: traffic-related injuries - number of reported cases, estimated total number of cases, mean household expenses, by OD.....	25
Figure 19: Proportion (%) of household members who sought care in public health facilities as first choice when ill. ....	26
Figure 20: Percent distribution of episodes by the number of health providers consulted, by OD. ....	26
Figure 21: Percent distribution of episodes according to amount (in Riel) paid for transportation, by OD. ....	30
Figure 22: Percent distribution of episodes according to amount (in Riel) paid for drugs and examinations, by OD.....	31
Figure 23: Percent distribution of episodes according to amount (in Riel) paid for consultation fees, by OD. ....	31
Figure 24: Percent distribution of episodes according to amount (in Riel) paid for gifts and "unofficial" fees, by OD.....	32
Figure 25: Percent distribution of episodes according to total amount (in Riel) paid, by OD. ....	32
Figure 26: Breakdown of total household health expenses into transportation, drugs and examinations, official and unofficial fees, by OD.....	33
Figure 27: Mean yearly household health expenses, per item and total, by OD. ....	34
Figure 28: Percent distribution of episodes of illness by total amount (in Riel) spent among wealth groups. ....	35

Figure 29: Proportion of respondents who went to a public health facility in the three months preceding the survey. ....	36
Figure 30: Proportion (%) of respondents who went to a public health facility in the three months preceding the survey and said the facility was clean. ....	37
Figure 31: Proportion (%) of respondents who went to a public health facility in the three months preceding the survey and said the service were expensive. ....	37
Figure 32: Proportion (%) of respondents who went to public health facility and said the staff spoke well. ....	38
Figure 33: Proportion (%) of respondents who went to a public health facility and said the facility provided sufficient service. ....	39
Figure 34: Proportion (%) of respondents who went to a public health facility and said they were satisfied. ....	39
Figure 35: Proportion of respondents who have given birth at least once. ....	40
Figure 36: Proportion of women whose latest delivery was at a public health facility, among respondents who delivered since 2002. ....	40
Figure 37: Proportion of women whose latest delivery was assisted by a TBA or a midwife, among respondents who delivered since 2002. ....	41
Figure 38: proportion of women who had at least two ANC visits during their last pregnancy among respondents who delivered since 2002. ....	41
Figure 39: Proportion (%) of women who had at least two tetanus shots among respondents who delivered since 2002. ....	42
Figure 40: Proportion (%) of current contraceptors by method. ....	44
Figure 41: Proportion (%) of children who had a yellow card. ....	46
Figure 42: BCG immunisation coverage, by OD. ....	46
Figure 43: Polio immunisation coverage, by OD. ....	47
Figure 44: DCT (DPT) immunisation coverage, by OD. ....	47
Figure 45: Measles immunisation coverage, by OD. ....	48
Figure 46: Hepatitis B immunisation coverage, by OD. ....	48
Figure 47: Proportion of fully immunised children, excluding hepatitis B, by OD. ....	49
Figure 48: Proportion of fully immunised children, including hepatitis B, by OD. ....	49
Figure 49: Prevalence of wasting among children under 24 months, 24-59 months, and all children under 5, by OD. ....	51
Figure 50: Prevalence of stunting among children under 24 months, 24-59 months, and all children under 5, by OD. ....	52
Figure 51: Summary of anthropometric indicators, by OD. ....	53
Figure 52: Proportion (%) of moderately and severely underweight children, by wealth group. ....	53

## Tables

Table 1: Survey sample - number and average number of members, ever-married women of reproductive age and children under five .....	13
Table 2: Estimated number of OPD contacts per 1000 inhabitants, by OD.....	21
Table 3: Estimated number of hospital admissions per 1000 inhabitants.....	22
Table 4: mean and distribution of total health expenses in USD, by wealth group.....	35
Table 5: Modern Contraceptive Prevalence Rates among married women, by OD.....	43
Table 6: CPR among married women of reproductive age, by method .....	43
Table 7: Modern Contraceptive Prevalence Rates and unmet need among ever-married non-pregnant women, by OD .....	43
Table 8: Modern Contraceptive Prevalence Rates and unmet need for ever-married non-pregnant women who do not want to become pregnant, by OD .....	44

## Abbreviations

ANC	Antenatal care
BTC	Belgian Technical Co-operation
CDHS	Cambodian Demographic Health Survey
CEB	Children ever born
CI	Confidence Interval
CPR	Contraceptive prevalence rate
HIV	Human Immuno-deficiency Virus
IUD	Intra-uterine device
MoH	Ministry of Health
OD	Operational District
OM	Oddar Meanchey
OPD	Out patient department
PBHS	Provision of Basic Health Services
PHD	Provincial Health Department
sd	Standard deviation (Z-score)
SR	Siem Reap (refers to the province only)
UXO	Unexploded ordnance

## INTRODUCTION

The Provision of Basic Health Services Siem Reap/Oddar Meanchey (PBHS SR/OMC) is part of the Cambodian-Belgian bilateral co-operation health project supporting the delivery of health services in Siem Reap and Oddar Meanchey provinces where there are 5 Operational Health Districts. The project timeframe is four years, starting from June 2004. The general objective is to improve the health of the population, especially of mothers and children, thereby contributing to poverty alleviation and socio-economic development in Siem Reap and Oddar Meanchey. The framework of the project is to strengthen the Provincial Health Departments of the two provinces to comply with the National Health Strategic Plan 2003-2007.

As part of monitoring and evaluation, PBHS contracted Domrei Research and Consulting to design and conduct a baseline population-based household survey to collect data and compute the project indicators so that the impact of the project by the mid-term and final evaluation can be measured.

### 1. Survey objective

To collect baseline data and to produce baseline indicators on health related topics on a random sample representative of the target populations of the five Operational Districts covered by the Belgian Technical Co-operation project.

### 2. Methods and data

#### 2.1. *Sample methodology*

The survey was designed to collect population level indicators by interviewing a representative sample of ever-married women (15-49 years old) who are deemed to be the likeliest health service users.

As most indicators are computed at OD level and then compared at end line, a cluster design was implemented where 10 clusters in each OD were randomly selected proportionally to population size<sup>1</sup>. In each cluster, 25 households were randomly selected using a variation of the EPI random-walk sampling method. All ever-married women were eligible for interview; all children under five were invited to the weighing station and all children 12 to 35 months had their immunisation status recorded from their yellow cards.

$$n = 5 \text{ ODs} \times 10 \text{ clusters} \times 25 \text{ households} = 1250 \text{ households}$$

Only households with at least one eligible respondent were to be included in the sample. It was estimated that we would find on average between 1.1 and 1.2 eligible

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<sup>1</sup> PPS sampling provides a self-weighting sample in each OD. For provincial or programme level indicators, weighting is required to compensate for the different sample probabilities of each OD.

respondents per household, i.e. between 1,375 and 1,500 ever married women 15-49 years, the target being set at 1,400.

This sample size was assessed to be sufficient to measure an amplitude of change of 15 percentage points at OD level and 5 percentage points at programme (Siem Reap Province or Siem Reap + Oddar Meanchey) level using the following formula:

$$n = D [(Z_{\alpha} + Z_{\beta})^2 (P_1 (1 - P_1) + P_2 (1 - P_2)) / (P_2 - P_1)^2]$$

where:

n = required minimum sample size per survey round (baseline and end line)

D = design effect (set at 2 to take into account cluster effect)

P<sub>1</sub> = the estimated level of an indicator measured as a proportion at the time of the first survey

P<sub>2</sub> = the expected level of the indicator either at end line such that the quantity (P<sub>2</sub> - P<sub>1</sub>) is the size of the magnitude of change it is desired to be able to detect

Z<sub>α</sub> = the Z-score corresponding to the degree of confidence with which it is desired to be able to conclude that an observed change of size (P<sub>2</sub> - P<sub>1</sub>) would not have occurred by chance (α— the level of statistical significance, is set at 90% to avoid the risk of not detecting a change when one actually occurred), and

Z<sub>β</sub> = the z-score corresponding to the degree of confidence with which it is desired to be certain of detecting a change of size (P<sub>2</sub> - P<sub>1</sub>) if one actually occurred (β— statistical power, set at 80%).

## 2.2. Questionnaire design

The questionnaire (see annex) was designed to collect a great variety of data: household data, population data, data on traffic and landmine injuries, data on recent illness, and health expenses, immunisation (children 12-35), contraception (ever-married women ages 15-49), infant mortality (birth histories), etc. It thus was structured into 14 sections. The questionnaire was field tested three times, the third time during interviewer training. In all, over one hundred test interviews were conducted. SROM BTC, PHD and OD staff provided their input, validated the instrument and participated in the interviewer training where it was discussed in length, not least the wording in the Khmer version.

## 2.3. Training and fieldwork

Interviewers and Field Editors were provided with extensive training covering ethical issues, anthropometrics, immunisation, health costs, data collection, interview techniques and pre-testing of the instrument. Training took place over five days during February 2004. Nine representatives from the five ODs, the two PHDs and PBHS/BTC participated in the training workshop.

PBHS selected and seconded to the survey team 7 health staff to implement the anthropometrics component under the supervision of the Domrei field supervisors. During a one-day workshop in Siem Reap (February 24), Domrei trained the health staff in anthropometrics. They were trained in setting up and managing the weighing station, weighing, and measuring, according to the MCH/WHO guidelines. A special emphasis was placed on the ethics of anthropometric surveys. Health staff were trained to plot the weights on the yellow card growth chart and to refer all severely underweight children to the closest hospital or health centre (red zone on card) and to counsel them when they were mildly underweight (orange zone). As a courtesy to the

community and in compliance with the ethical principle of beneficence, health staffs were instructed to weigh all children that were brought to the weighing station even if they were not part of the sample.

Data collection was carried out over a two-week period between February 25 to March 10. Four teams composed of a supervisor, four interviewers, one field editor and one seconded health staff collected data in 50 randomly selected clusters. Supervisors and field editors used simple field reporting to manage data collection. In the field, supervisors conducted spot checks, re-interviews or observed twenty percent of all interviews to ensure data quality. Dedicated field editors in each team checked all questionnaires before leaving the village.

Each supervisor checked and collated all data in clusters while in the field. On the teams return to Phnom Penh, data was delivered to the Research Director with a summary sheet for each cluster, the completed questionnaires, the records of field checks and any refusals or incomplete questionnaires. The Research Director checked and collated this information, and reported the data collection results to BTC/PBHS. The data was entered on a Microsoft Access database. Consistency checks were built into the design of the database entry form to ensure accuracy and internal consistency. Inconsistencies identified by the data validation programmes and queries were investigated by the research director, first checked on the paper questionnaire then corrected, if necessary, on the database. Data was thus cleaned and analysed using Microsoft Access, EPI Info and Stata software.

#### **2.4. *Data analysis methods***

OD results are computed separately, except when the number of observations is too small to allow for a reliable estimate (e.g. infant mortality rate). OD level statistics are self-weighting (cf. sample methods). Siem Reap province level totals are weighted to take into account the differences in population sizes and thus the different sample probabilities for each OD. Level of significance is set at 95% unless specified otherwise. The software package Stata version 8 was used for descriptive statistics and graphs.

## RESULTS

For easy reference, results are presented in the order the questions appear in the questionnaire. We first describe the sample using data from the cover sheet, sections 1 and 2.

We then present indicators that concern all household members: hospitalisation and OPD indicators (questionnaire section 2 data), traffic accidents and land mine/UXO injuries (questionnaire sections 3-6), health seeking behaviour and health expenses (questionnaire sections 7 and 8).

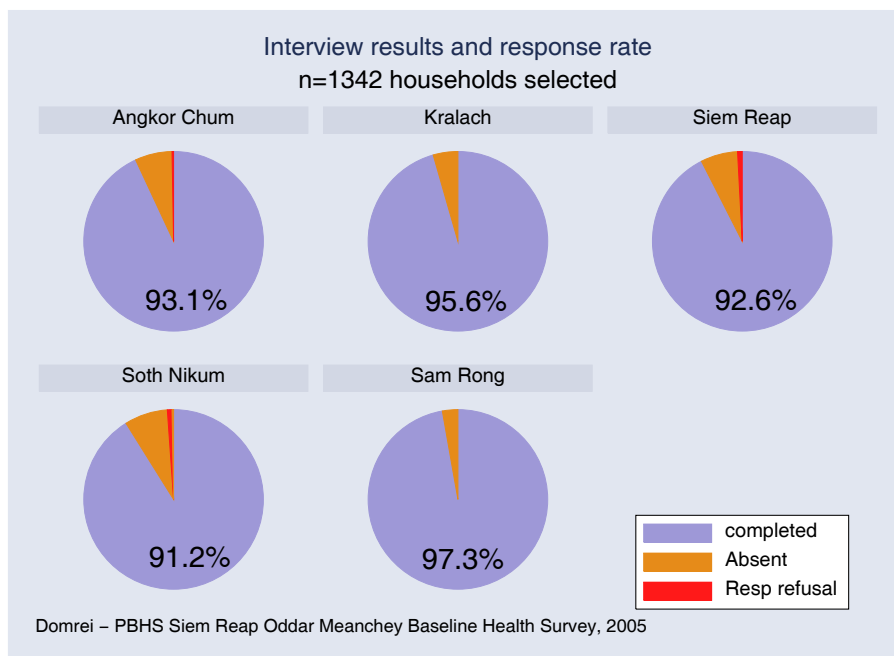
We then present the indicators that concern only the respondents: satisfaction with public health services (questionnaire section 9), contraception (questionnaire section 10), birth attendance, place of delivery, ANC and tetanus statistics (section 11) and infant mortality (section 12).

Immunisation coverage indicators concerning children aged 12 to 36 months (section 13) and anthropometric indicators for children under five years of age (section 14) are presented last.

### 1. Description of sample and data

#### 1.1. Response rates

The household response rate was very satisfactory ranging from 91% in Soth Nikum to 97.3% in Oddar Meanchey.



**Figure 1: Interview results by OD.**

The final sample includes 1,260 households (objective: 1250) and 1,467 eligible respondents of which 1,425 were successfully interviewed (objective: 1,400). The sample household population was 7,224, with an average household size ranging from

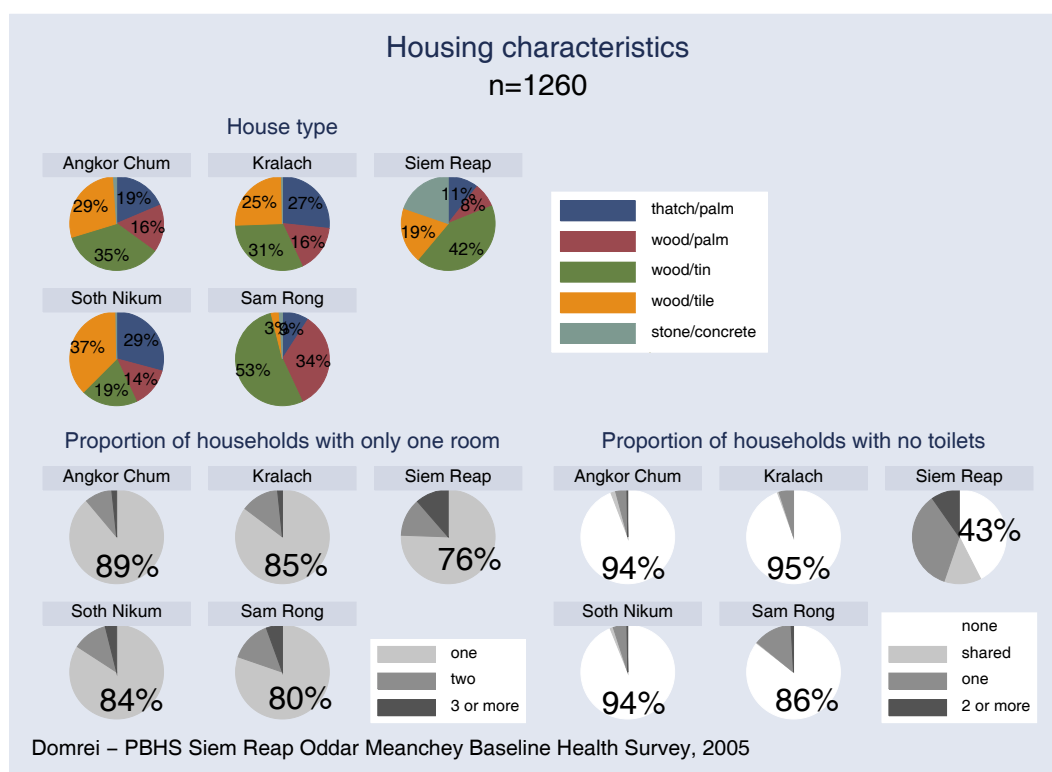
5.3 individuals in Angkor Chum to 6.2 in Siem Reap OD. Household size is slightly higher than the CDHS-2000 national rural average (5.3) because the sample only includes households with ever-married women of reproductive age. The household sample also included 1072 children under five eligible for weighing and measuring (Table 1).

**Table 1: Survey sample - number and average number of members, ever-married women of reproductive age and children under five**

OD	households (n)	number of household members	mean household size	Number of ever-married women 15-49	number of children <5 years
Angkor Chum	258	1371	5.3	287	224
Kralanh	258	1442	5.6	288	228
Siem Reap	237	1458	6.2	311	201
Soth Nikum	258	1485	5.8	291	213
Sam Rong	249	1468	5.9	290	206
All five ODs	1260	7224	5.7	1467	1072

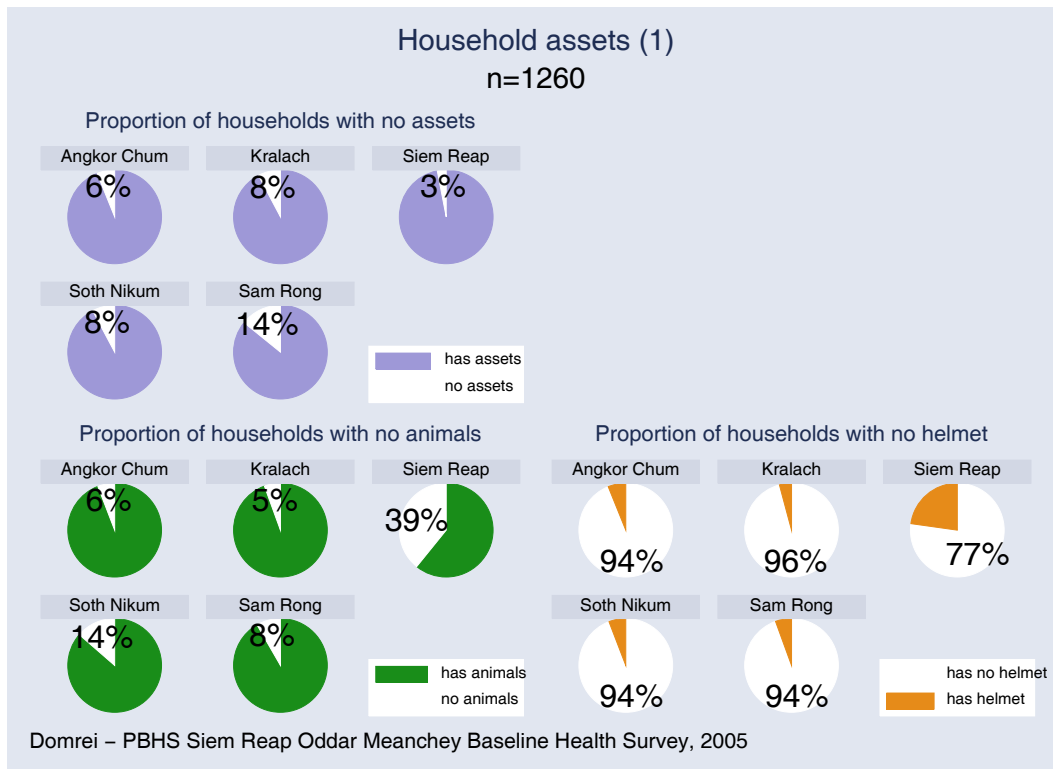
## 1.2. Household characteristics

Figure 3 shows that Siem Reap OD, as expected, is less rural than the other ODs. A greater number of households in Siem Reap OD live in concrete houses, have more than one room to sleep in, and have their own toilet(s).



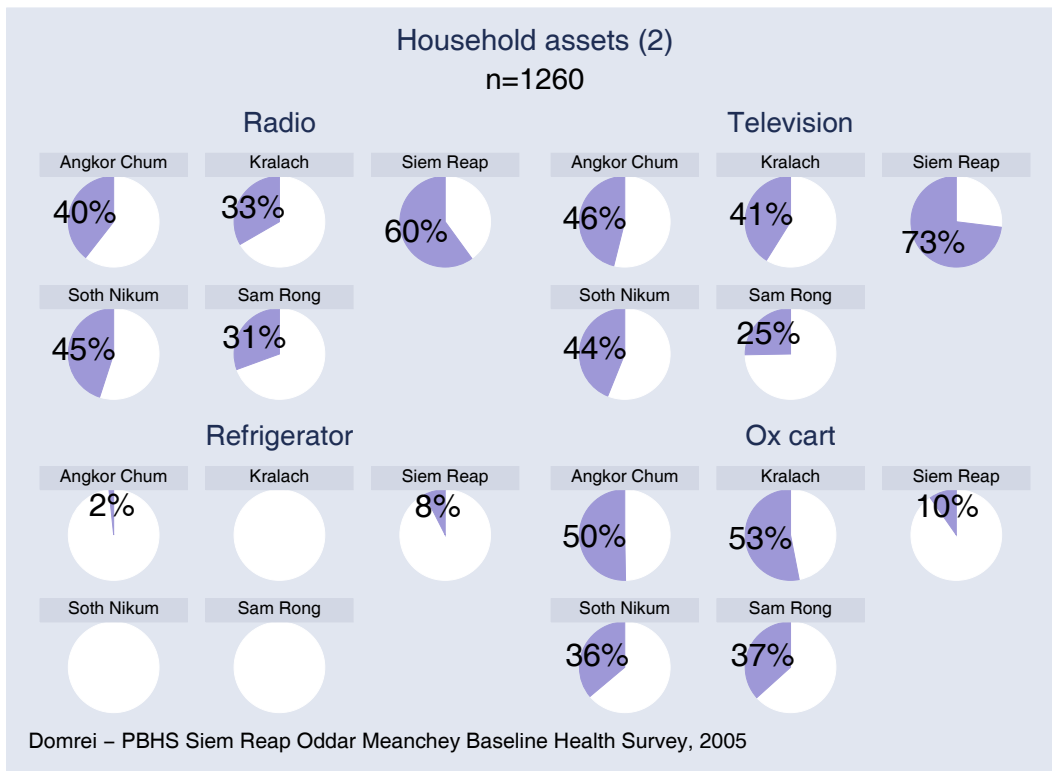
**Figure 2: Household characteristics - housing, by OD.**

Fewer households in Siem Reap OD have no assets, and over a third have neither poultry nor livestock, as can be expected in semi-urban district (Figure 3).

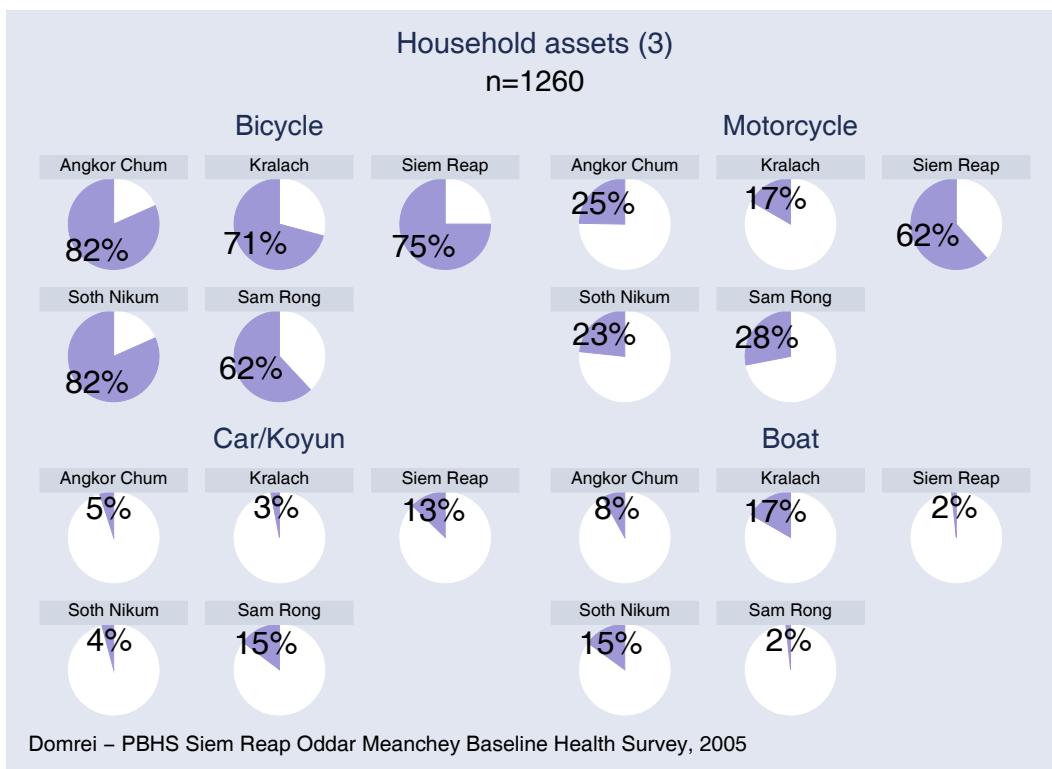


**Figure 3: Proportion (%) of households that own no assets, no livestock and no helmet, by OD.**

Almost two thirds of the household in Siem Reap OD own a radio and three quarters of the Siem Reap households own a television set, against, respectively a third and a quarter of the households in Sam Rong (Oddar Meanchey). Other indicators of Siem Reaps more “urban” lifestyle include more households with refrigerators and fewer households with ox carts (Figure 4). Two thirds of the households in Siem Reap OD own at least one motorcycle (but only a third own a helmet – see Figure 3) and more than one in ten owns a car (Figure 5).

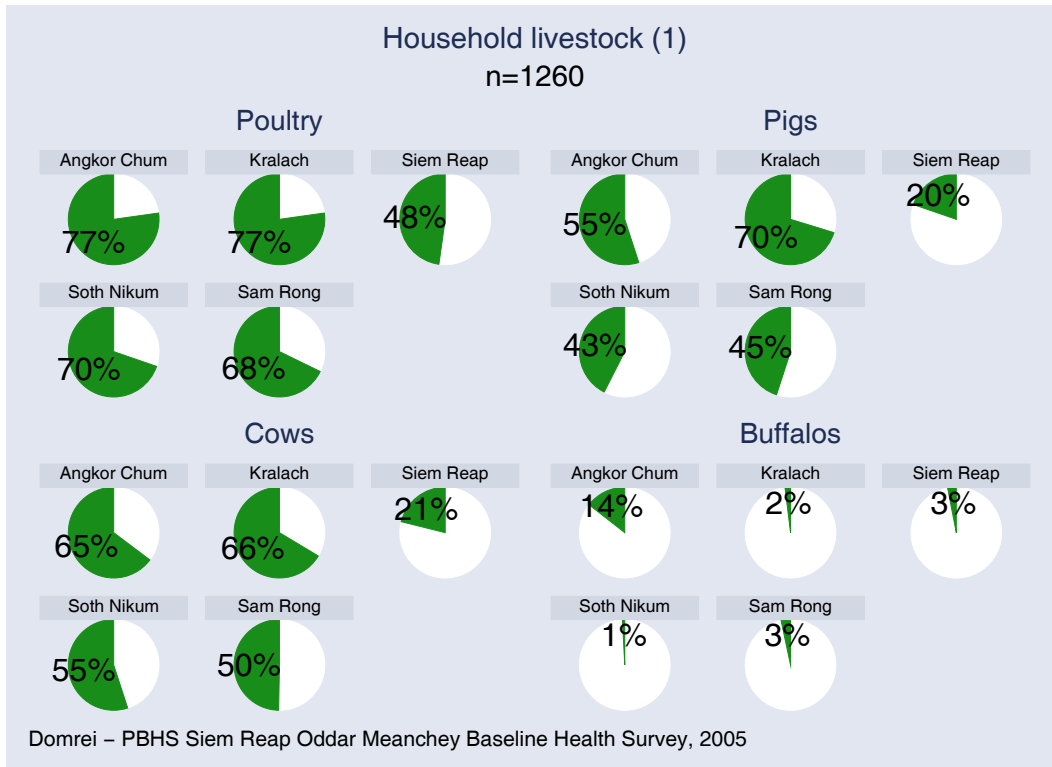


**Figure 4: Proportion (%) of households that own a radio, a television, a refrigerator or an ox cart, by OD.**

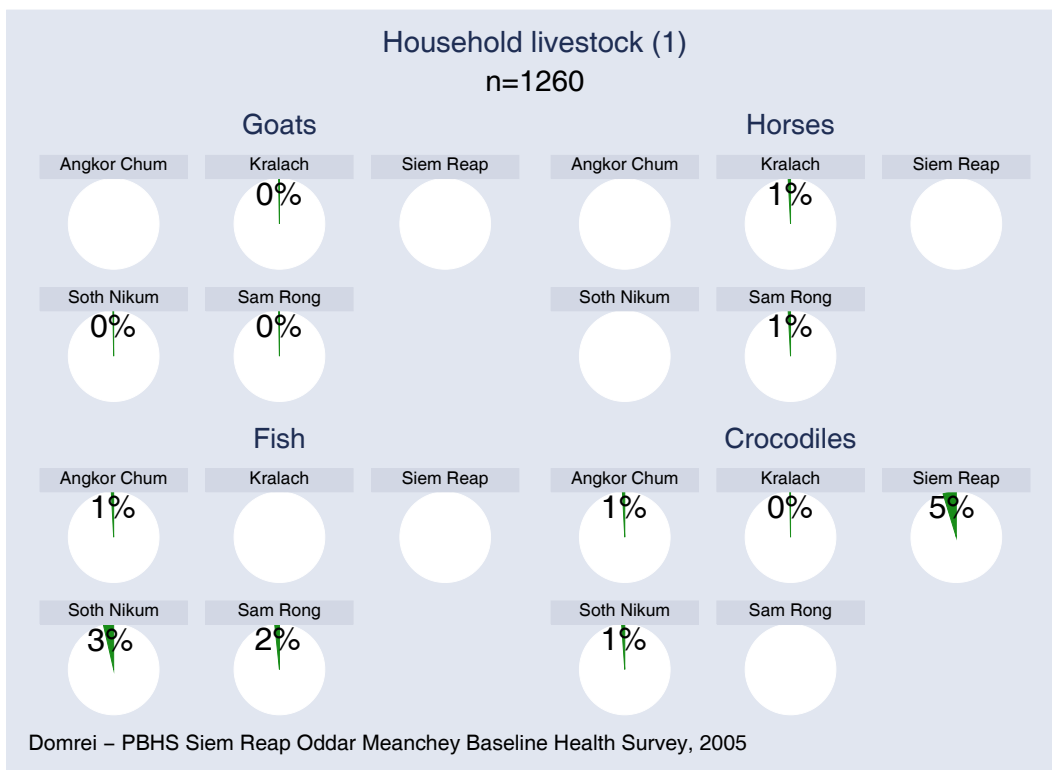


**Figure 5: Proportion (%) of households that own a bicycle, a moto, a car or a boat, by OD.**

As expected, a smaller proportion of households in Siem Reap OD own ducks, chickens, pigs, cows, etc than in the other four, more rural ODs (Figure 6).



**Figure 6: Proportion (%) of households that own poultry, pigs, cows or buffaloes, by OD.**

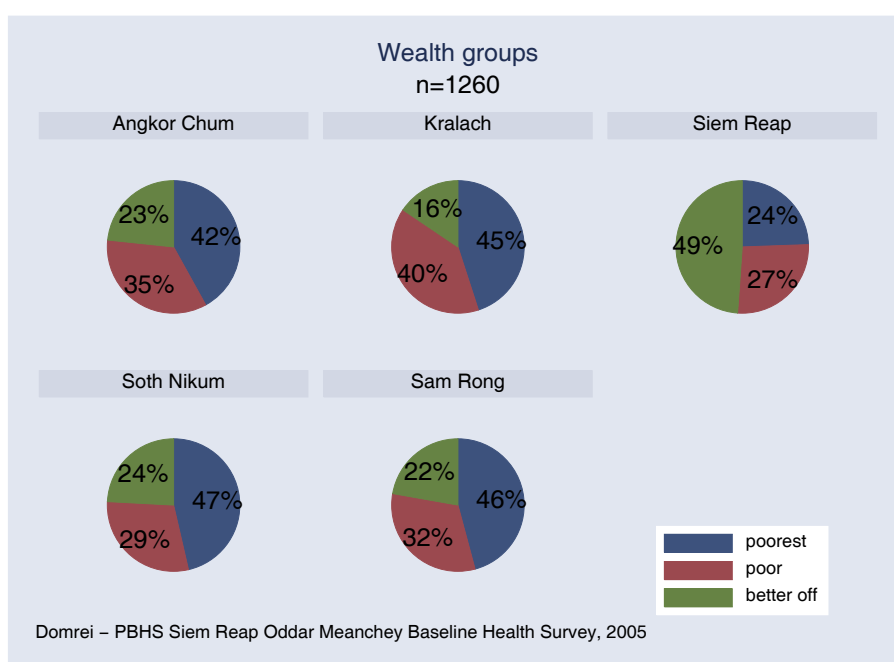


**Figure 7: Proportion (%) of households that own goats, horses, fish or crocodiles, by OD.**

We categorised respondents into three groups to assess possible inequities in health.

Wealth categories (poorest, poor and better off) were defined using the following indicators: housing type, assets, animals, number of rooms used for sleeping and availability of toilets. Interviewers were also asked to observe and rank each household in three categories, from poorest to richest. Points are attributed for each answer and a wealth score is computed for each respondent by adding these points. Scores ranged from 0 to a maximum of 16 points. The two cut-off points were then selected so that no category was smaller than 15% in any of the ODs<sup>2</sup>.

The wealth indicator is thus a composite indicator of six different wealth proxy variables. Figure 8 shows that it is consistent with the household data presented above: Half of the households in the Siem Reap OD sample are “better off,” while in the other four ODs, over three quarters of the households are “poor” or “poorest”



**Figure 8: Distribution of households according to wealth group, by OD.**

The composite wealth indicator is correlated with child weight-for-age and height-for-age, two indicators of malnutrition usually associated with poverty (see Figure 52 page 53)

### 1.3. Household population

Age and birth dates are particularly difficult to collect in rural Cambodia as (1) few adults know their exact age; (2) respondents use the Khmer calendar. Interviewers had

<sup>2</sup> The poorest category is defined as having a wealth score of 0-6 points and the better off as having a score of 7-16. The algorithm to attribute a score to a household is the following : an asset indicator is generated where no assets = 0, ownership of a radio is worth 1, ownership of a TV, a bicycle, a refrigerator or an oxcart is worth 2, ownership of a boat or oxcart is worth 3 and ownership of a car is worth 4. A livestock indicator is generated where animal=0 if the household does not own any animals. In any other case, animal=round((poultry/2+pig+goat)/2+(cow+buffalo+crocodile+fish+horse)/2). The wealth score is computed by adding the assets and animals indicators with house type, number of rooms and interviewers subjective wealth assessment: wscore=housetype+assets+animals+toilets+rooms+wealth.

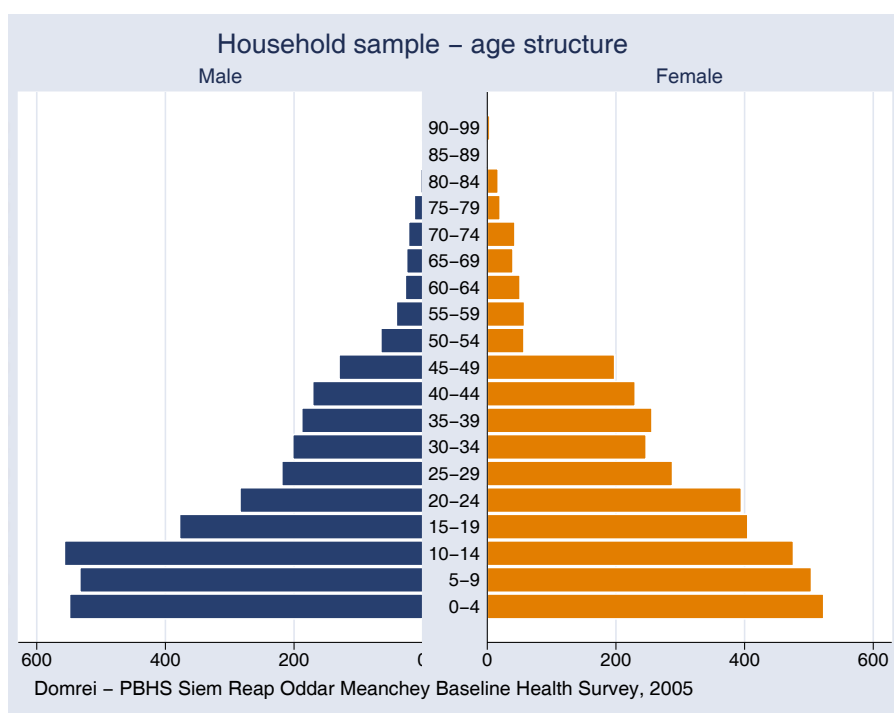
a Khmer-to-Gregorian calendar age converter and were instructed to prompt if the answer seemed inconsistent with other data (e.g. birth histories or relation to household head).

The age pyramid below (Figure 9) shows that the household sample’s age structure is consistent with what one would expect in rural Cambodia. On the female side of the pyramid, a drop between the 45-49 age group and the 50-54 age group suggests that some older women may have had their ages reported to be in the 45-50 age group to allow them to be eligible for the interview. While this may be possible to a limited extent, we do not think this is a survey bias for the following three reasons:

- 1) A similar drop exists among men, where 45-49 year olds are twice as numerous as the 50-54 year olds
- 2) There is no indication of age heaping in the respondent sample, where 49 year olds are in fact less numerous than 48 year olds, 47 year olds, 46 year olds and 45 year olds (Figure 10).

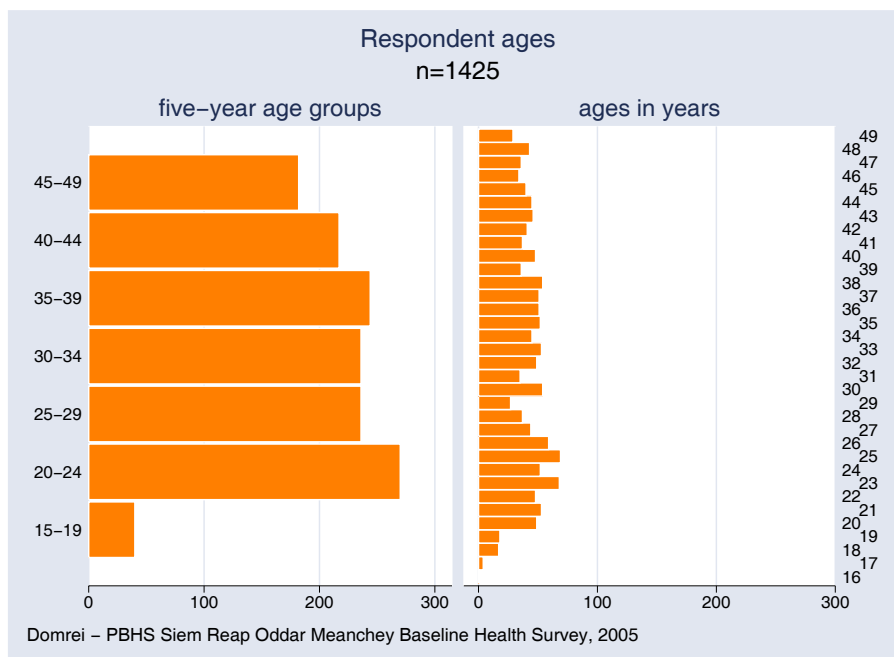
Explanation for the drop in population between 45-49 and 50-54 age groups should therefore be sought in the demographic history of Siem Reap and Oddar Meanchey, accentuated by random fluctuations due to sample size, and does not affect the representativeness of the sample.

Low fertility and high infant and child mortality associated with the Khmer Rouge regime is suggested by the smaller number of 25-29 and 30-34 year olds compared to the 20-24 and 35-39 year olds, though this can also be the effect of migration.



**Figure 9: Sample population age pyramid**

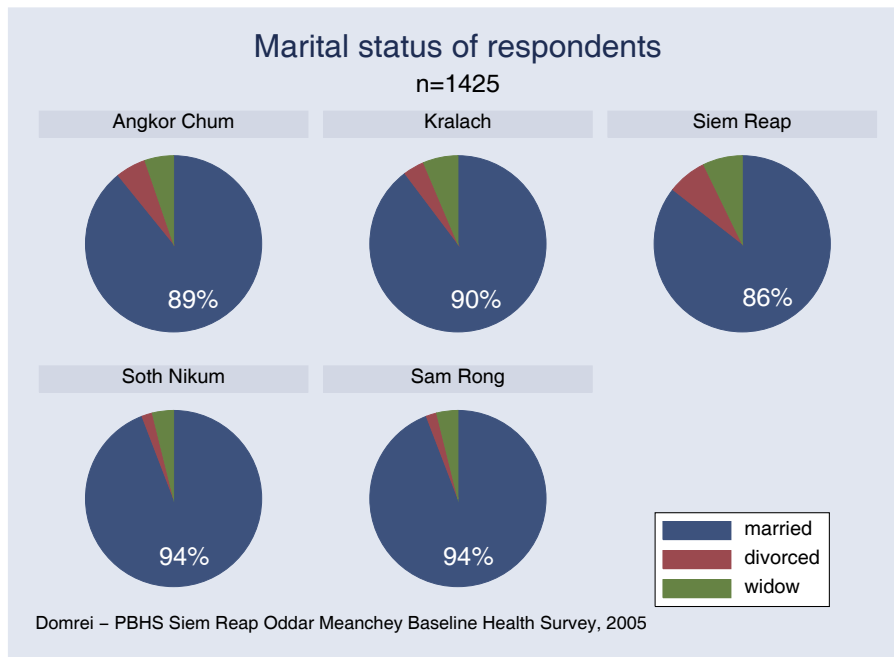
#### 1.4. Respondent characteristics



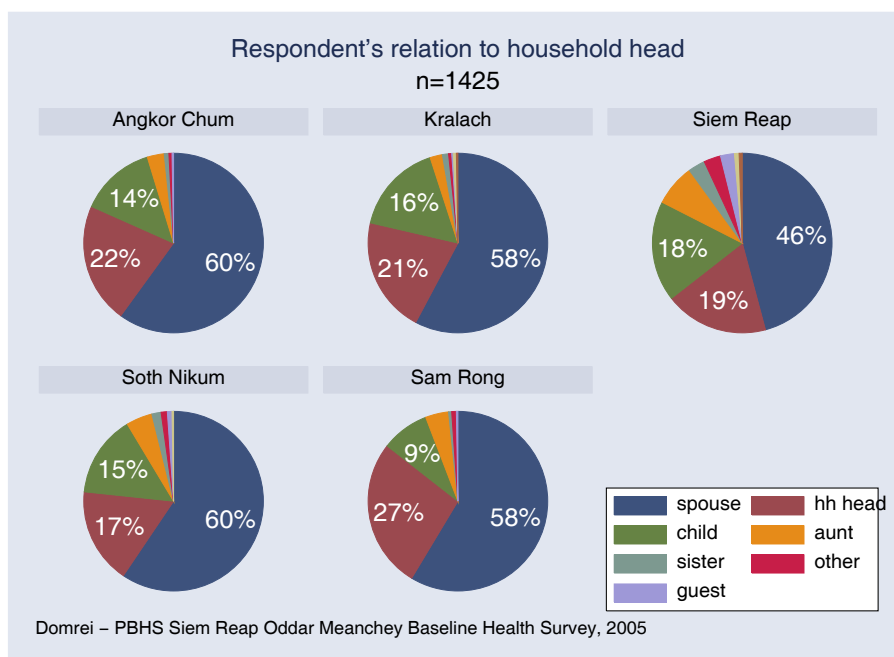
**Figure 10: Age structure of respondent sample.**

Figure 10 presents the ages of the interviewed women. Not surprisingly, the proportion of respondents' aged 15-19 is small: most girls in this age group are not yet married, and were therefore not eligible respondents. The right panel does not show any age heaping, and the differences in age frequencies can be safely attributed to random effects due to the small number of women of each age.

The sample contains few respondents who are divorced, separated or widowed. However, we suspect that some separated or divorced women may have been reported as married. There are no substantial differences between ODs in the proportion of married women: 86% in Siem Reap OD, 94% in Soth Nikum and Oddar Meanchey (Figure 11). The respondents are most frequently the wives of the household head (between 46% in Siem Reap OD and 60% in Soth Nikum and Angkor Chum). In about 20% of the cases, the respondent herself is the household head (Figure 12).



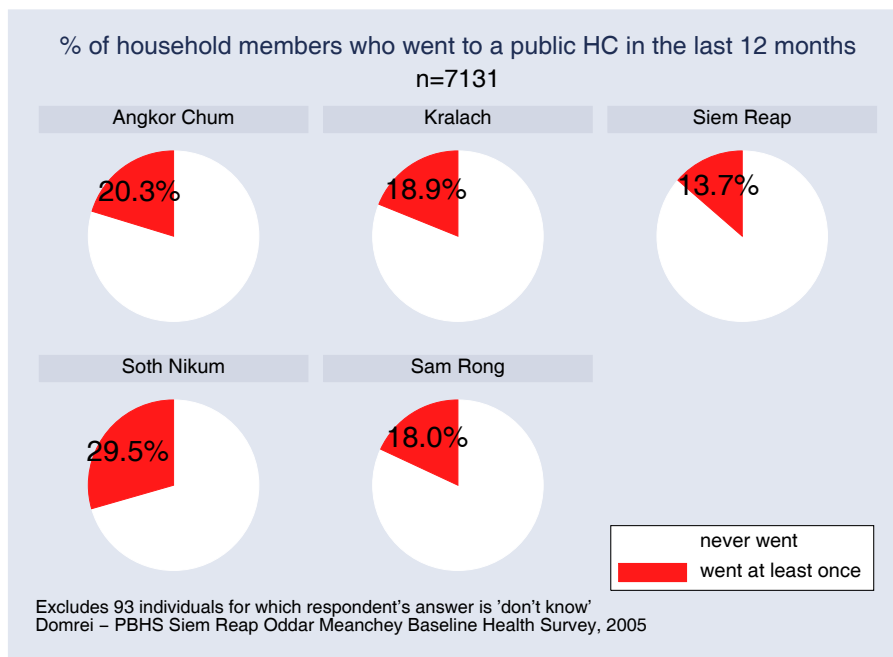
**Figure 11: Marital status of respondents, ever-married women ages 15 to 49.**



**Figure 12: Respondent's relation to household head.**

## 2. Number of new OPD HC contact/inhabitant/year

Figure 13 shows the proportion of household members who went to a health centre for a health service (i.e. not to accompany a parent or friend) at least once in the last 12 months.



**Figure 13: proportion of household members who went at least once to a public health facility for a health service in the last 12 months.**

Some individuals may have gone more than once for the same episode, or twice for two different episodes. Because we cannot differentiate between the two, the number of OPD contacts per 1000 inhabitants can be considered as conservative estimates of out-patient contacts if one assumes that all respondents can make the distinction between a public health facility and a private NGO establishment.

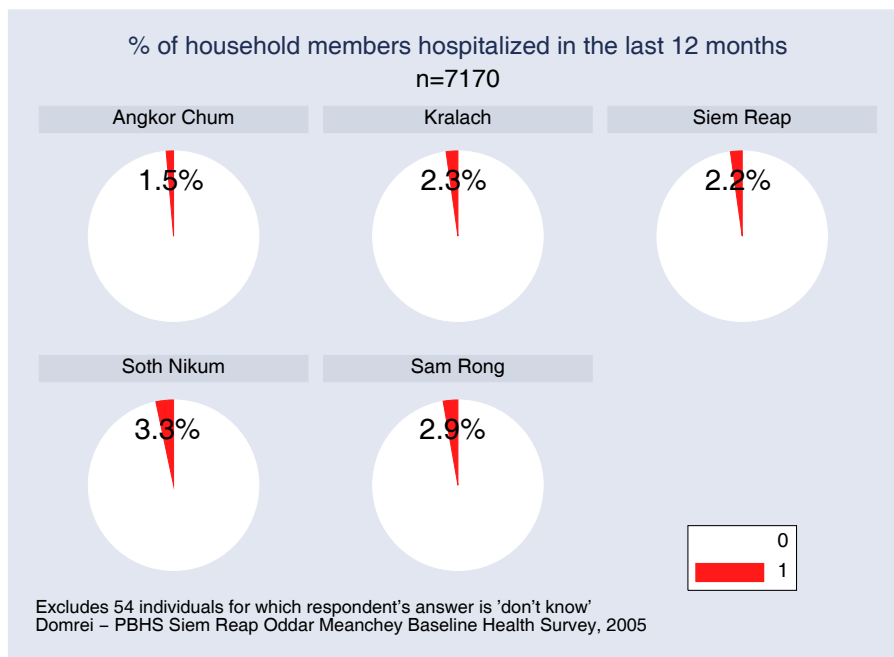
**Table 2: Estimated number of OPD contacts per 1000 inhabitants, by OD.**

OD	n	At least one contact	rate*	95% CI
Angkor Chum	1358	275	202	181-224
Kralanh	1425	269	188	168-209
Siem Reap	1435	197	137	119-155
Soth Nikum	1468	433	295	272-318
Sam Rong	1445	260	180	160-200

\*Number of individuals who went at least once to the HC for treatment per 1000 inhabitants in the twelve months preceding the survey. 93 "Don't knows" excluded from sample.

### 3. Number of public hospital admissions/1,000 inhabitants/year

Figure 14 shows the proportion of household members that were hospitalised in a Government facility at least once in the 12 months preceding the survey. A person is considered as hospitalised if he or she stayed overnight at least once in a public hospital. Here again we assume that respondents can make the distinction between a public hospital, a not for profit hospital and a private clinic. The estimated number of public hospital admissions per 1000 inhabitants is presented in Table 3.



**Figure 14: Proportion of household members who were admitted for at least one night in a hospital in the last 12 months.**

**Table 3: Estimated number of hospital admissions per 1000 inhabitants**

OD	n	hospitalised	rate*	95% CI
Angkor Chum	1361	20	15	8 - 21
Kralanh	1437	33	23	15 - 31
Siem Reap	1441	32	22	15 - 30
Soth Nikum	1481	49	33	24 - 42
Sam Rong	1450	42	29	20 - 38

\*Number of individuals hospitalised per 1000 inhabitants (hospitalised x 1000/n).

54 "Don't knows" excluded from sample

#### 4. Traffic and land mine injuries

Traffic accidents are a major public health issue in and around the urban centres of Phnom Penh and Siem Reap. It was therefore important to measure the scale of the problem and its direct costs to the households.

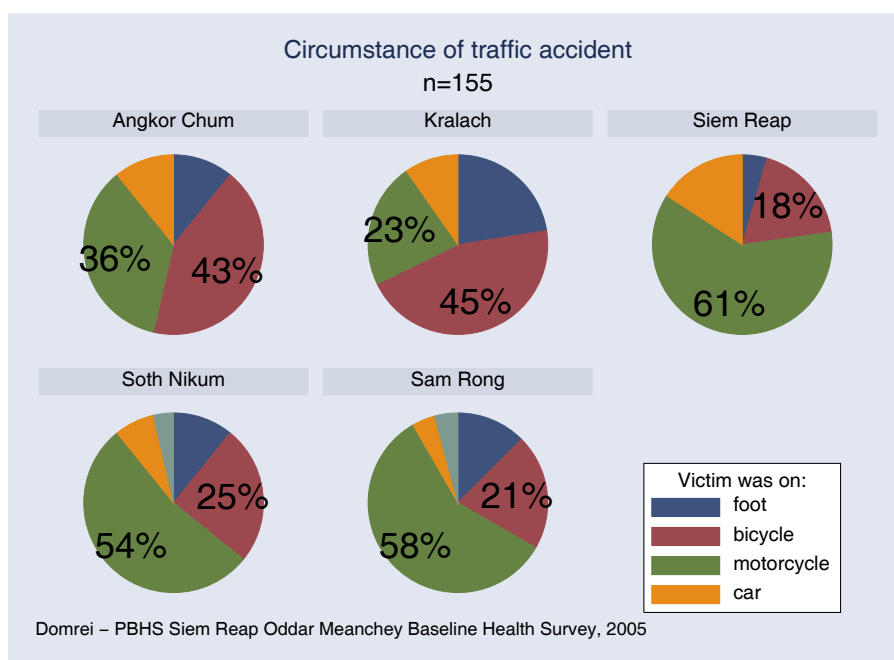
Despite de-mining efforts, land mines and unexploded ordnance (UXO) continue to pose a threat in Oddar Meanchey. This survey was an opportunity to compare these two specific causes of injuries and mortality. Serious injuries are fortunately rare events, so the reference period used in the questionnaire is one year.

There were no landmine/UXO fatalities in the 249 Oddar Meanchey sample households, and out of the 1,468 household members living in Sam Rong OD, only one was injured by a UXO. The injury was reported to be slight, no medical treatment was sought and no money was spent to treat the injury.

As expected, traffic accidents pose a much greater threat to public health than landmines, including in mine-infested Oddar Meanchey, where 24 traffic accident injuries were reported, among which 46% were serious. In other words, traffic accident injuries are 24 times more frequent and far more costly than Landmine/UXO injuries in Oddar Meanchey (see Figure 18).

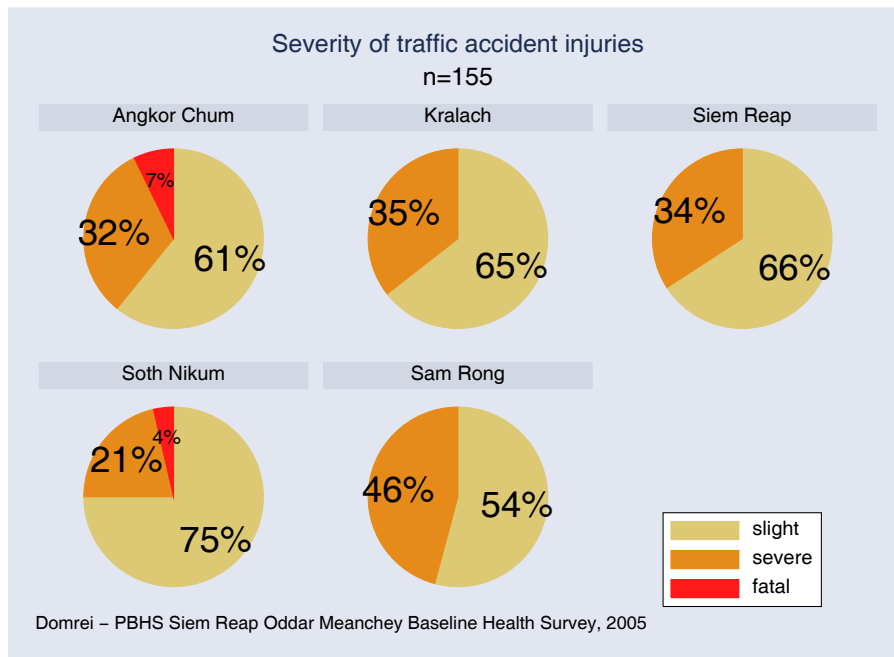
The total number of injuries reported makes for a small sample of cases (n=155 reported injuries), so the proportions we now present should be interpreted with caution.

The two most dangerous vehicles are motorcycles and bicycles. In Siem Reap OD, about two thirds of injuries occurred on a motorcycle. In Kralanh, almost half of the injuries occurred when the victim was on a bicycle. This does not mean bicycle riding is more dangerous than motorcycle riding in Kralanh. It reflects the fact that proportionally fewer people ride motorcycles than bicycles in Kralanh, while many people ride motorcycles in Siem Reap OD. Consequently, a greater proportion of the population is exposed to motorcycle accidents in Siem Reap than in Kralanh. That said, our data confirms that motorcycles pose a serious threat to the safety of their riders and bystanders.



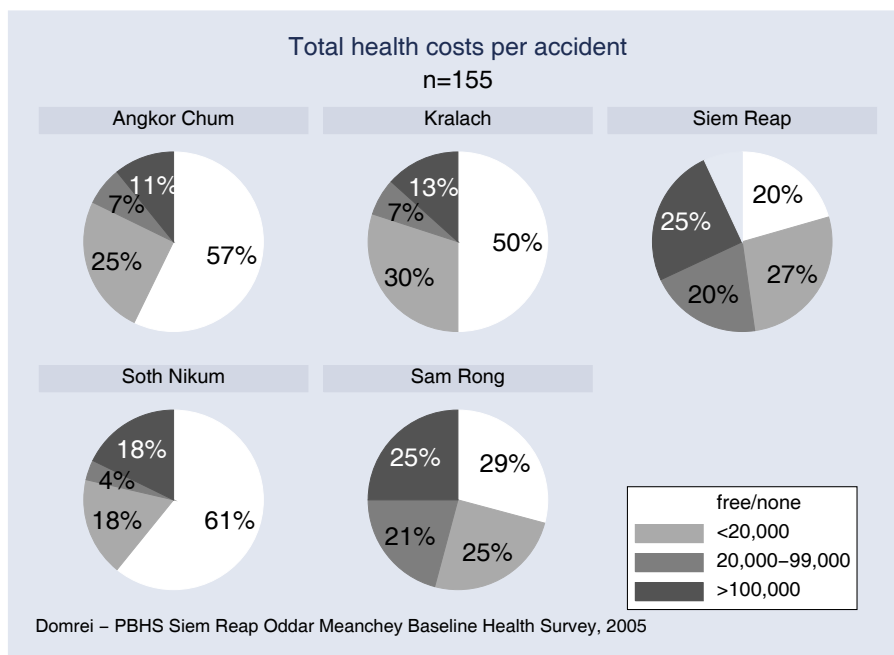
**Figure 15: Means of transportation used by injured individual when the accident occurred.**

Fortunately, the majority of reported traffic injuries were not severe (Figure 16).



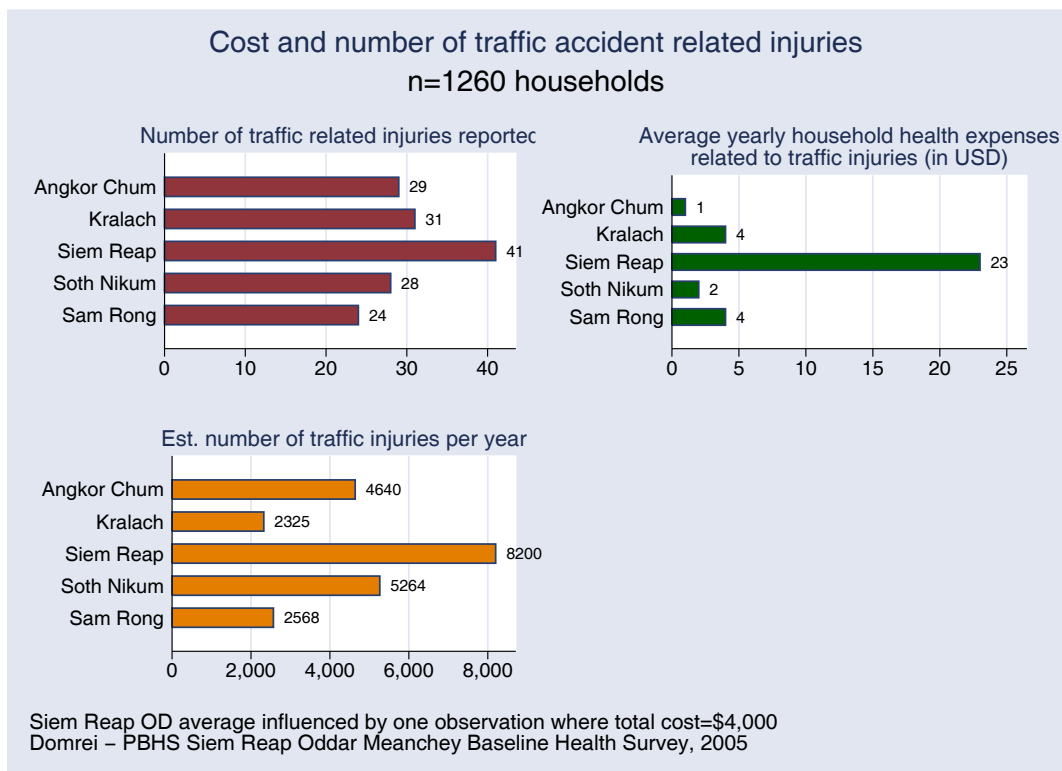
**Figure 16: Breakdown of traffic related injuries according to severity, by OD.**

The severity of an injury is obviously a subjective statement, and our respondents may not be the best qualified to assess the severity of an injury. A better indicator of severity is the money spent to treat the injury. As Figure 17 shows, about half the injuries cost less than \$5.00 to treat across all ODs.



**Figure 17: Percent distribution of traffic-related injuries by health costs**

As expected, Siem Reap is the most disadvantaged OD in terms of traffic accidents. It has the highest number of accidents per inhabitant, it has the highest proportion of injuries that cost more than \$5.00 to treat and it is where the average traffic injury related cost is highest (Figure 18).

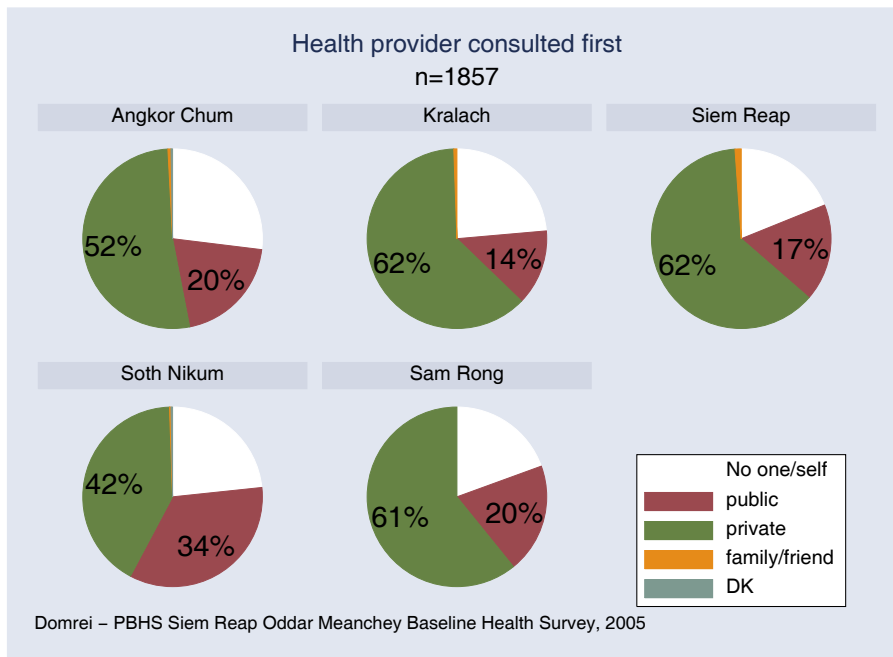


**Figure 18: traffic-related injuries - number of reported cases, estimated total number of cases, mean household expenses, by OD.**

## 5. Household members who sought care in public health facilities

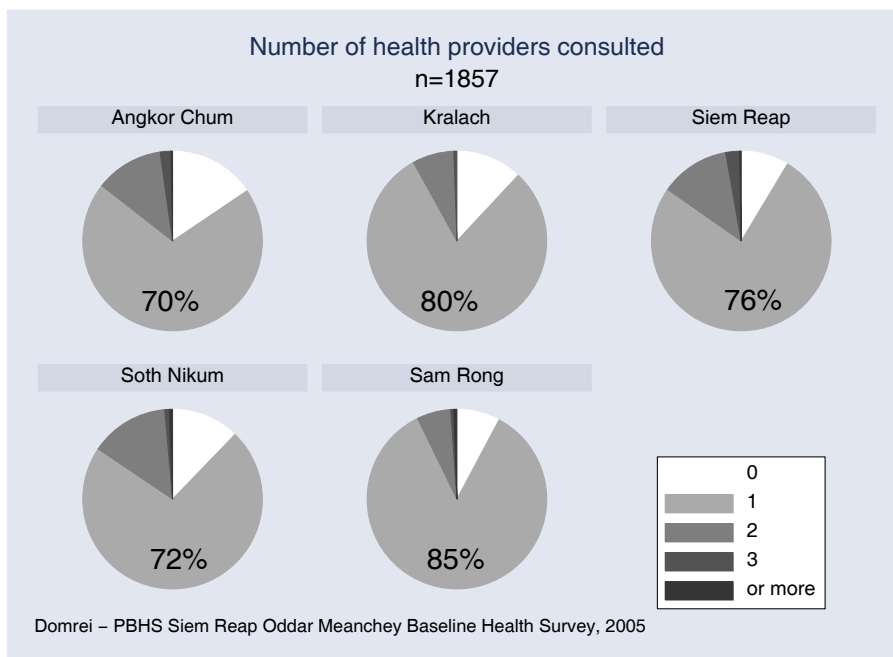
The survey identified 1,857 episodes of illness or injury in the two weeks preceding the survey (sections 7 and 8 of the questionnaire). Among those, 11 were fatal. For every reported case of illness, injury or mortality that occurred in the two weeks preceding the survey, the interviewer asked the respondent “who did [name of person with the health problem] see first to treat the illness?” The possible answers were: (1) no one -- which includes self-treatment, doing nothing, or planning to go later if things get worse, (2) a public provider (e.g. someone at a public health centre or referral hospital), (3) a private provider, which includes NGO clinics and private not-for-profit hospitals, though the nuance may have been lost on some respondents, and (4) non professionals such as neighbours, family or friends. The respondent also had the possibility of answering “don’t know.”

Figure 19 shows that between 14% (in Kralanh) and 34% (in Soth Nikum) of the health problems were first treated at a public health facility. In all ODs, people prefer to first seek treatment from a private provider. In Siem Reap, three times more patients seek treatment in the private/NGO sector than at a public facility, while in Soth Nikum the two sectors have an equal share of the healthcare market.



**Figure 19: Proportion (%) of household members who sought care in public health facilities as first choice when ill.**

In all ODs less than a third of illness episodes led to the consultation of more than one health provider.



**Figure 20: Percent distribution of episodes by the number of health providers consulted, by OD.**

## 6. Health Expenditures

### 6.1. *Method limitations and caveats*

Average household health expenditures are an important yet elusive indicator. A substantial amount of time was spent discussing the technical limitations of this indicator, its inherent biases and the difficulty in collecting reliable household data on expenses in a health survey.

Health expenditures are highly correlated with wealth, even in a culture where the extended family is functional and where it may be possible to borrow money at short notice to cover health costs. In absolute terms, the rich spend more on health than the poor do, even if the poor are less healthy than the rich are. The equity issue lies in the fact that poorer families spend proportionally more of their income on health than wealthy families, and can be excluded from proper health care – in which case they spend less money on health care.

Health inequities are of the utmost importance, and require comprehensive household budget and health expense data. The most accurate way to collect expenditure data is to follow households over time and record all expenses, or to work with each respondent in detailing her household budget for the previous month. In both cases, these are time consuming and intrusive methods, which were far beyond the scope of the baseline survey.

It was agreed that the interviewer would ask the respondent to report the amount her household spent on transportation, on drugs and medical exams, on official consultation fees and “thank you gifts” (a euphemism for unofficial “under-the-table fees” or bribes) for each health episode (disease or injury) that had occurred among (1) any of the current household members in the last two weeks and (2) to anyone who lived in the household and died in the two weeks preceding the survey.<sup>3</sup>

The interviewer then asked the respondent how much the household had spent altogether on this health problem. If the total amount reported by the respondent was inconsistent with the sum of the four items, the interviewer probed, whenever possible with respect to the respondent’s sensitivity, to establish a more plausible estimate and adjusted the answers accordingly.

This method was tested three times on the field, and was deemed acceptable. Nevertheless, before interpreting the results, the reader needs to be aware of the biases of this method to avoid misinterpreting the results.

- 1) The information is indirect for all episodes that concern a household member other than the respondent and her children. Even then, the respondent may not be aware of some costs paid directly by another person (her father, husband, etc.). In that case, what is reported is the respondents’ perception, or best guess, of other people’s health expenses. As the respondent reported she did not know how much was spent on at least one of the four items in only 72 cases out of 1857 reported episodes; it is reasonable to assume that a fair amount of guesswork occurred during the interview.

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<sup>3</sup> The survey identified 11 cases of mortality in the last two weeks.

- 2) Respondents are usually tempted to “round-up” or exaggerate the amount they spend, especially if they think their answers might influence pricing policy in the public sector or result in a gift.
- 3) The topic only concerns “health problems” and is designed to evaluate the amount of money spent on curative services, not other non-curative health expenses such as check-ups, contraception, etc.
- 4) The interviewer and respondent discussed the direct medical cost of each *episode* that occurred in the last 15 days. In some cases (e.g. HIV/AIDS, diabetes, tuberculosis, etc), the illness lasts for much longer and some respondents presumably included expenses that cover more than 15 days of treatment. This means that when extrapolating medical expenses per episode to an average outlay per household and per year, assumptions need to be made about the average number of episodes that occur in one year in an average household. The result, therefore, depends as much on these assumptions as on the data collected.
- 5) The health expense indicator is an average. Averages are heavily influenced by extreme values, and as our samples at OD level are relatively small (i.e. 1445 household members per OD on average) a very small number of “tragic” episodes can explain differences between ODs, and counter-intuitively high averages.

We first present health expenses per episode. This will allow us to assess the quality of the data, the distribution and variance of costs among the sample cases, and identify extreme values that affect the mean. We will then present the percent distribution of these episodes according to each expenditure item, the breakdown of total cost by item, and finally the average costs per household and per capita.

## 6.2. Household expenditure on health care per episode, by OD

The table below presents statistics, in Riel, for all four types of expenses and the reported total. For example, for a person living in Angkor Chum, one illness episode costs on average 7,405 Riel in transportation, 27,571 for drugs and medical exams, 1,176 Riel in consultation fees and 391 Riel in “gifts.” It is important to note, however, that an average hides a great variety of situations. In Angkor Chum, at least 25% (see row p25, the 25<sup>th</sup> percentile) of the illnesses or injuries cost no more than 500 Riel to treat, and 75% of the episodes cost less than 15,000 Riel to treat. The average values are therefore heavily influenced by a small number of severe cases where costs were extremely high. Maximum values (max) range from 1,985,000 Riel (\$500) for one episode in Soth Nikum to 11,250,000 Riel (\$2,800) for another episode in Kralanh. Consequently, standard deviations in all five ODs are quite high.

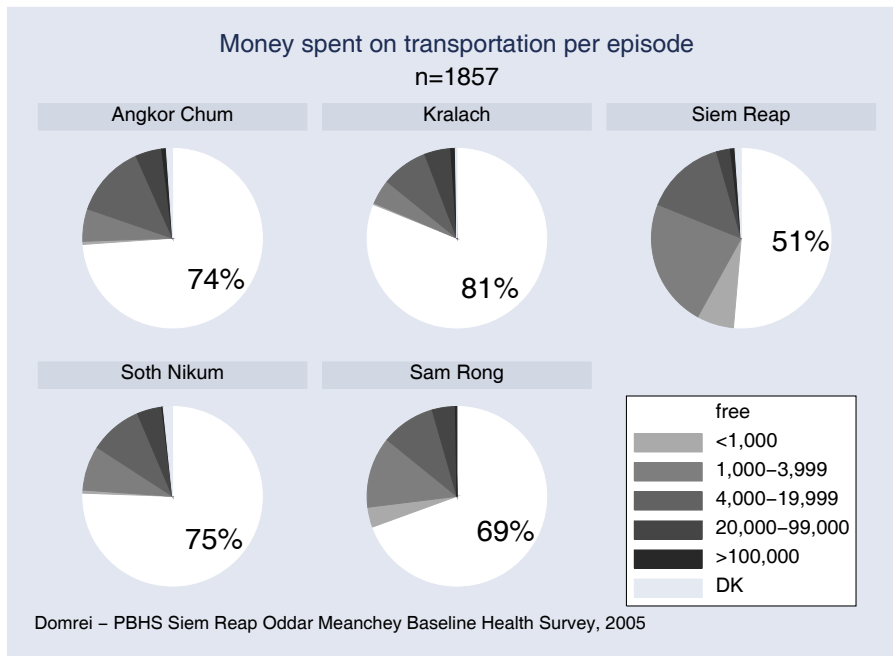
OD	Transport	Drugs	Fees	Gifts	Total*
<b>Angkor Chum</b>					
n	363	354	361	363	360
mean	7405	27571	1176	391	50138
sd	55716	147780	7709	3790	230573
min	0	0	0	0	0
p10	0	0	0	0	0
p25	0	0	0	0	500
median	0	1500	0	0	3000
p75	1000	8000	0	0	14500
p90	10000	45000	300	0	72500
max	1000000	2400000	106900	50000	2400000

<b>OD</b>	<b>Transport</b>	<b>Drugs</b>	<b>Fees</b>	<b>Gifts</b>	<b>Total*</b>
<b>Kralanh</b>					
n	463	452	462	463	451
mean	8828	52817	682	67	62542
sd	68163	500043	6102	986	563601
min	0	0	0	0	0
p10	0	0	0	0	0
p25	0	300	0	0	500
median	0	2000	0	0	3000
p75	0	12000	0	0	16000
p90	7000	50000	0	0	59000
max	1200000	10050000	90000	15000	11250000
<b>Siem Reap</b>					
n	260	258	258	260	257
mean	4787	43586	2490	438	58719
sd	15544	174737	11782	2914	206432
minimum	0	0	0	0	0
p10	0	0	0	0	0
p25	0	400	0	0	2000
median	0	4500	0	0	6000
p75	2850	20000	0	0	23000
p90	10000	80000	500	0	100000
maximum	120000	2100000	127000	30000	2205000
<b>Soth Nikum</b>					
n	397	394	404	404	395
mean	4066	23488	394	230	28324
sd	19214	102029	4101	2597	119817
min	0	0	0	0	0
p10	0	0	0	0	0
p25	0	500	0	0	1000
median	0	2000	0	0	4000
p75	0	10000	0	0	20000
p90	10000	50000	500	0	51500
max	330000	1560000	80000	40000	1985000
<b>Sam Rong</b>					
n	359	357	351	357	355
mean	4079	20634	826	261	27506
sd	18967	52834	7650	2173	72684
min	0	0	0	0	0
p10	0	0	0	0	0
p25	0	1000	0	0	1500
median	0	5000	0	0	5000
p75	2000	15000	0	0	20000
p90	10000	50000	0	0	55000
max	300000	400000	100000	20000	700000

\* Total represents respondents' evaluation of the total amount that the household spent to cover direct medical costs for each episode. It is slightly different from the sum of all items (transportation, drugs, fees and gifts) because the amount for some items was sometimes unknown to the respondent. Likewise, some items may be unknown to the respondent (e.g. drugs and exams) while she still provides an estimate for the total. This explains why the number of episodes for which drugs and exam costs are reported (n=351) is smaller than the number of episodes for a total is reported (n=355).

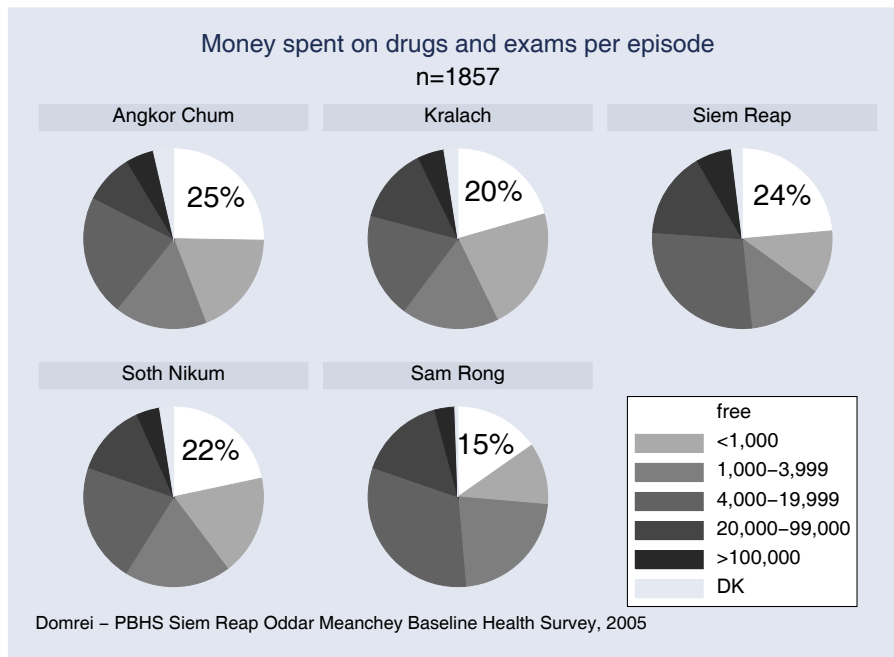
Source: Domrei PBHS Siem Reap Oddar Meanchey 2005 Baseline Survey.

The following figures show the percentage distribution of episodes for different types of costs. For example, Figure 21 shows that for 74% of the reported episodes in Angkor Chum no money was spent on transportation. Siem Reap is the OD where it is most common to pay for transportation to and from the health provider yet 51% of episodes reported no transportation costs.



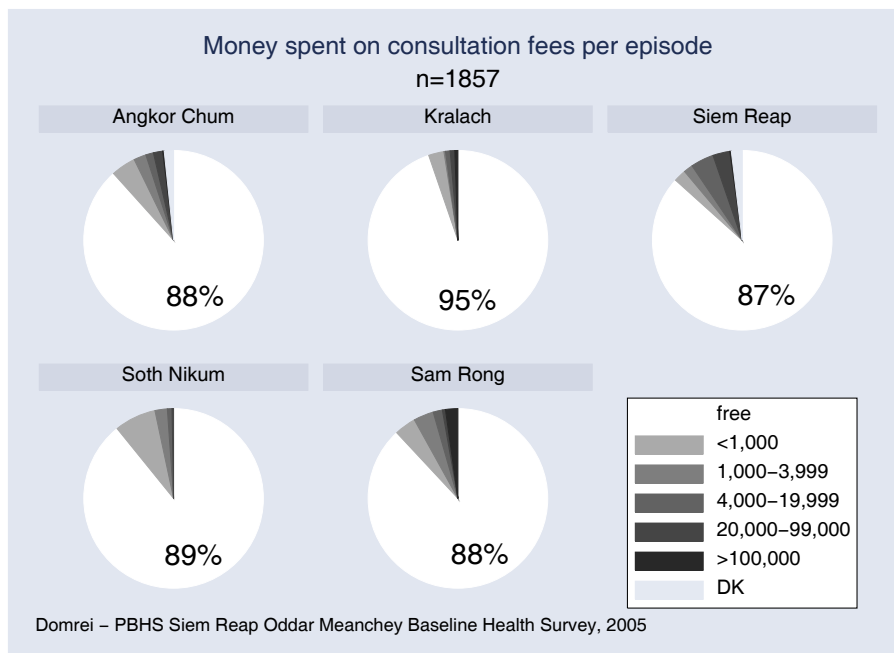
**Figure 21: Percent distribution of episodes according to amount (in Riel) paid for transportation, by OD.**

As we saw above, drugs and medical exams are what people with health problems spend the most money on. At best, a quarter of health episodes were treated without spending on drugs and exams (Figure 22). Expenses for drugs and exams are more spread out than the other expenditures.

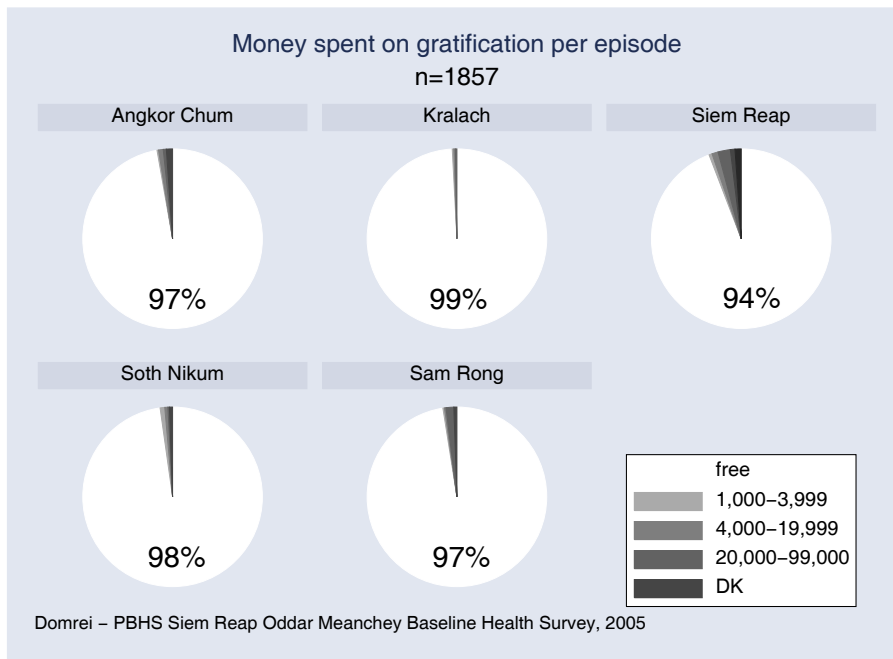


**Figure 22: Percent distribution of episodes according to amount (in Riel) paid for drugs and examinations, by OD.**

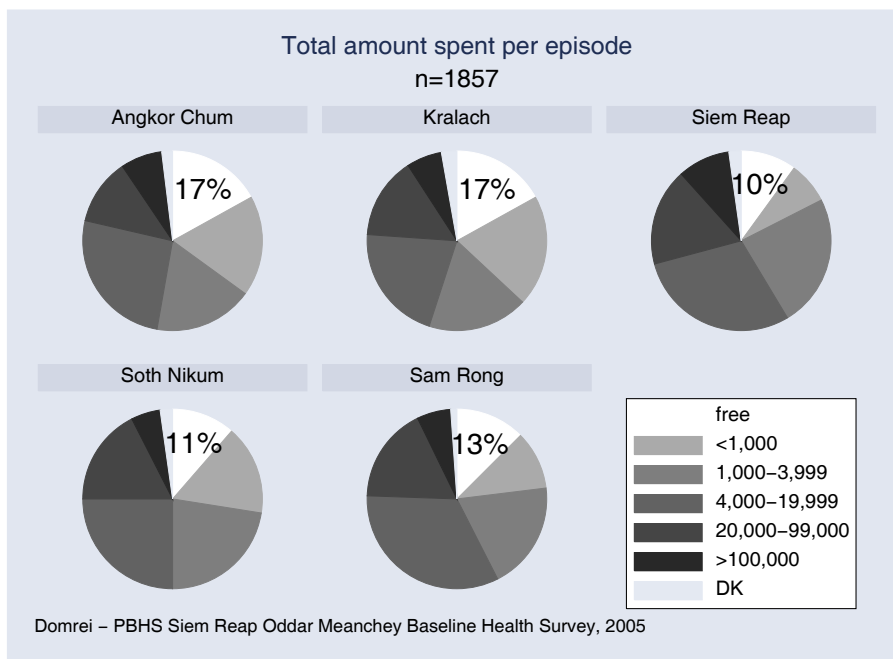
The money spent on official consultation fees is not high. Between 87% (Soth Nikum) and 95% (Kralanh) of the reported health problems did not cost the household any money in consultation fees, and only a very small minority paid more than \$1.00 in fees (Figure 23). This is also true for ‘unofficial’ fees (Figure 24). It is possible that some money spent on drugs includes fees, a common practice in the private medical sector.



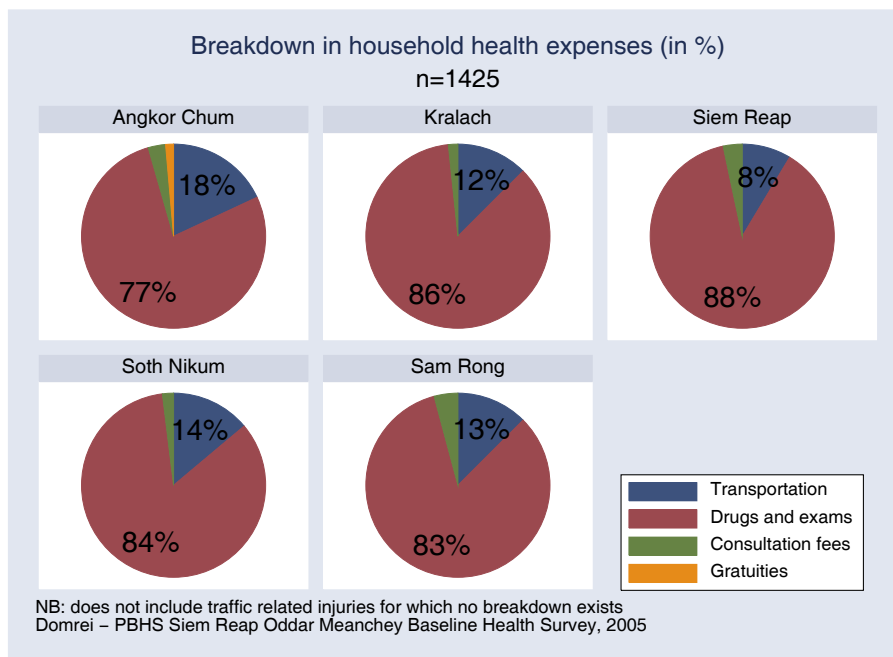
**Figure 23: Percent distribution of episodes according to amount (in Riel) paid for consultation fees, by OD.**



**Figure 24: Percent distribution of episodes according to amount (in Riel) paid for gifts and "unofficial" fees, by OD.**



**Figure 25: Percent distribution of episodes according to total amount (in Riel) paid, by OD.**

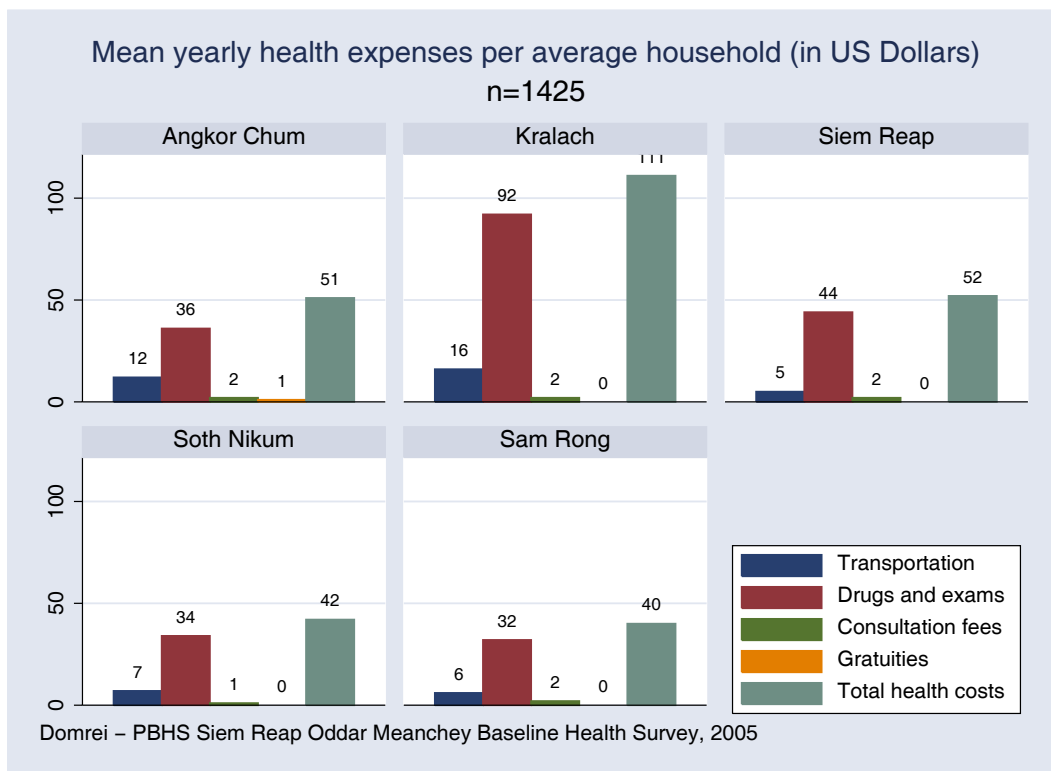


**Figure 26: Breakdown of total household health expenses into transportation, drugs and examinations, official and unofficial fees, by OD.**

By far the most costly health expense items are drugs and examinations, representing between 77% and 88% of total health expenditures. The second most expensive expense is transportation, representing between 8% of total health expenditures in Siem Reap OD and 18% in Angkor Chum. Consultation fees, whether official or not, represent only a small fraction of health expenses. Therefore, it is unlikely that a decrease in fees will reduce household health expenses. In fact, a successful policy to encourage the rational prescription of drugs and medical exams has the most potential to reduce household health expenses and improve health equity.

In one year, how much does an average household spend on health? To answer this question, we make the assumption that the last two weeks are representative of what happens in one year. This is a strong assumption, as health problems are often seasonal. We add the costs of all episodes for each household, multiply the total by 25 and divide the product by the number of household members to obtain per capita household averages. Then, for each OD, we add the per capita household averages and divide the total by the number of households.

Figure 27 presents, in US dollars, the estimates of how much “an average household” spends on healthcare in one year. We should be cautious in interpreting the results (see caveats above) and bear in mind the assumptions used to compute the estimates. However, we can note that an average household in Kralanh spends almost twice (\$110) on health in one year than an average household in Siem Reap OD (\$62). In turn, this is almost three times more than was spent by an average household in Soth Nikum or Oddar Meanchey (\$40).

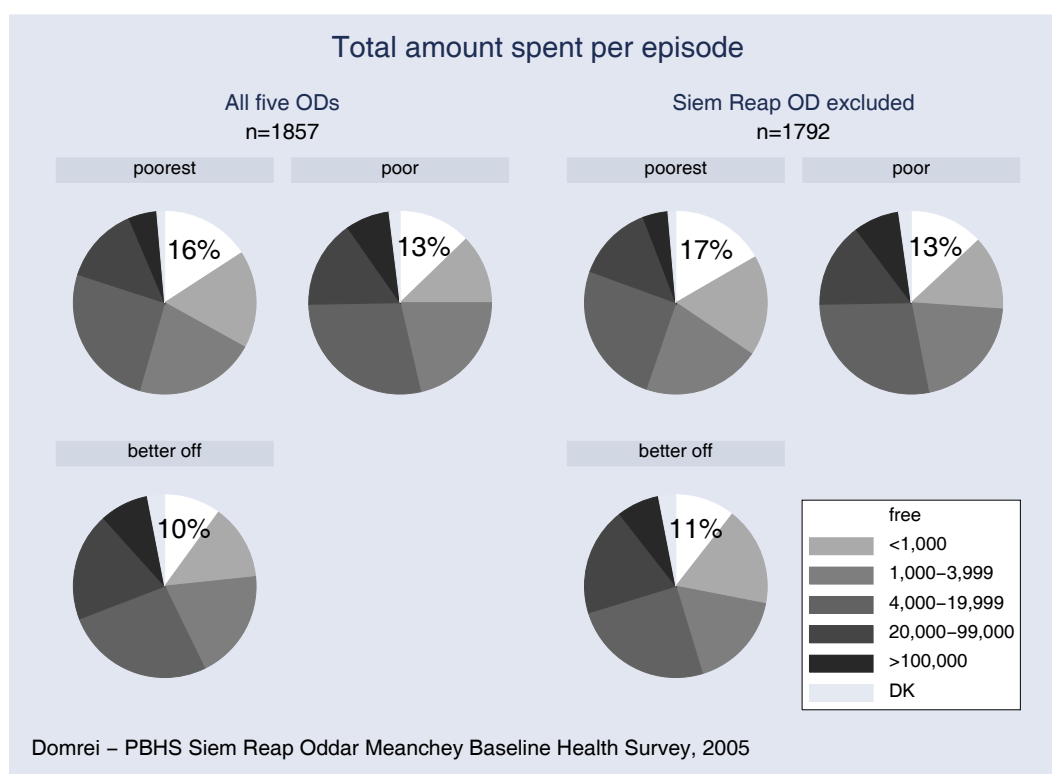


**Figure 27: Mean yearly household health expenses, per item and total, by OD.**

### 6.3. Household expenditure on health care per wealth group

In this paragraph, we compare the health expenses of the poorest and the better off households. We expect the “richer” households to spend more on health, because they have more money to spend. Moreover, in an equitable system, the poorer households spend less on healthcare than the rich do because they can access free or low cost services.

Altogether, among the poorest households, 16% of episodes cost nothing, against 10% among the “better off” households (left side of Figure 28). The picture is the same if we exclude households from Siem Reap OD (right side of Figure 28). On average, poorer households spend less than “wealthier” households do (\$8.68 versus \$12.28 – see Table 4). However, the distribution of total costs does not vary substantially. This reflects the fact that most of the “better off” households in Siem Reap and Oddar Meanchey are not much wealthier than the poor households, and that only a small minority of households are “rich” enough to spend much more on health.



**Figure 28: Percent distribution of episodes of illness by total amount (in Riel) spent among wealth groups.**

**Table 4: mean and distribution of total health expenses in USD, by wealth group**

wealth group	n*	mean	sd	p10	p25	p50	p75	p90	max
poorest	771	8.68	41.86	0.00	0.13	0.75	3.50	12.50	600.00
poor	560	12.76	100.25	0.00	0.25	1.25	5.00	18.75	2812.50
better off	487	12.28	43.65	0.00	0.33	1.38	6.75	20.25	600.00
Total	1818	10.95	65.06	0.00	0.25	1.13	5.00	16.00	2812.50

\*Does not include 49 records where respondent answered “Don’t know” for total amount spent  
Source: Domrei PBHS Siem Reap Oddar Meanchey 2005 Baseline Survey.

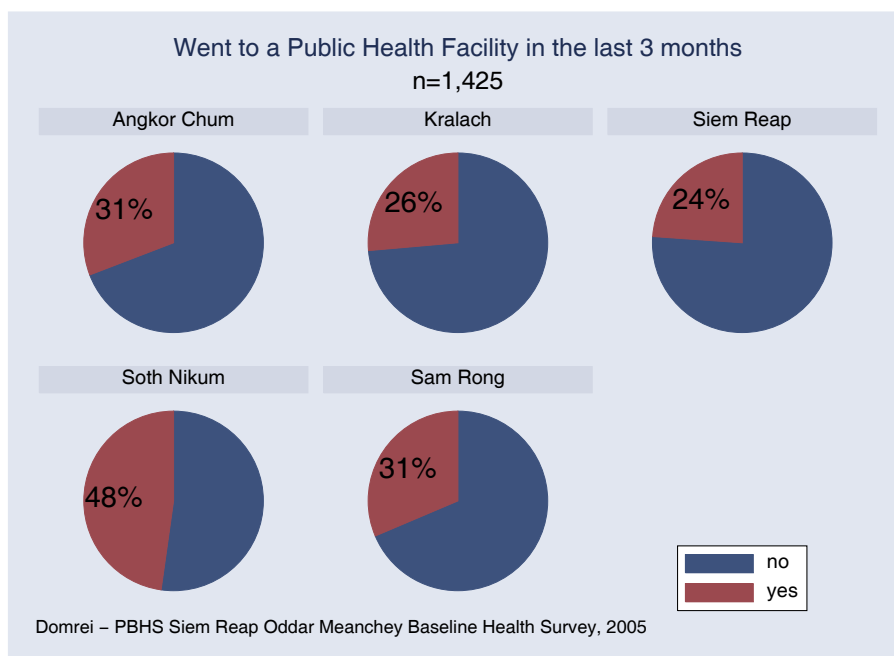
## 7. Satisfaction with Public Health Services

Client satisfaction is important to measure as one explanation for preferring private providers is dissatisfaction with public sector providers. Moreover, improving service quality and client-provider relations is a PBHS objective, and a greater level of satisfaction is expected at the follow-up surveys. However, as with health expenses, interpretation of client satisfaction results requires caution. Answers may reflect the respondents’ low expectations in regards to service quality and their perceptions about polite and appropriate answers rather than an accurate assessment of the service. Therefore, actual service improvement may lead to increased expectations and a decrease in satisfaction.

Client satisfaction surveys are usually conducted immediately after the service was provided (exit interviews), with a detailed and comprehensive instrument that collects in the least biased and most ways the different facets of client satisfaction. In this multi-purpose household health survey, BTC/PBHS chose to focus on three programme

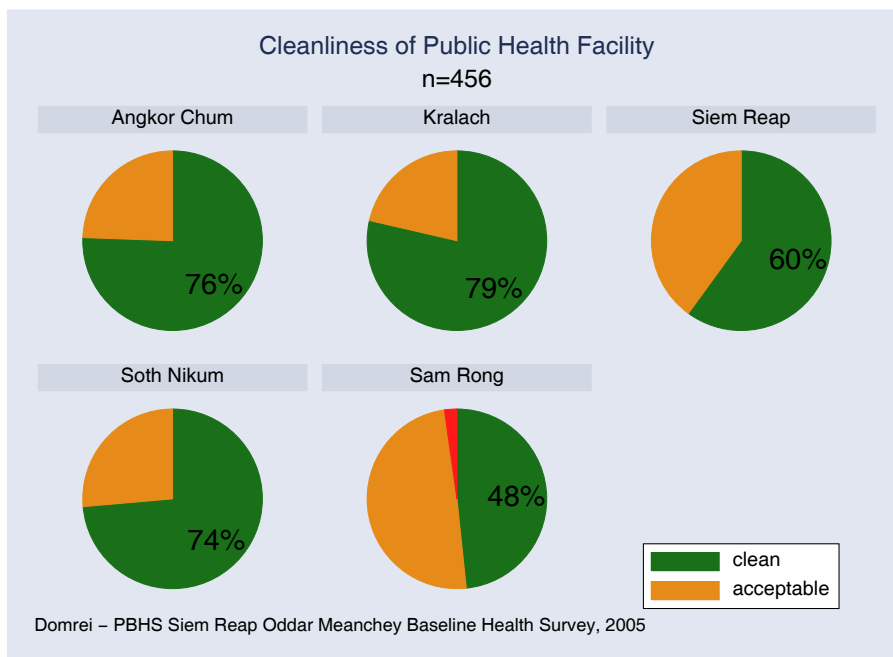
relevant topics (appreciation of cost, cleanliness of facility and politeness of staff) and two more general ones (overall satisfaction and adequacy of service) and formulated the questions accordingly.

Of the 1425 respondents, 456 (32%) had gone to a public health facility in the three months preceding the survey. This includes women who accompanied a child, relative or friend (Figure 29).



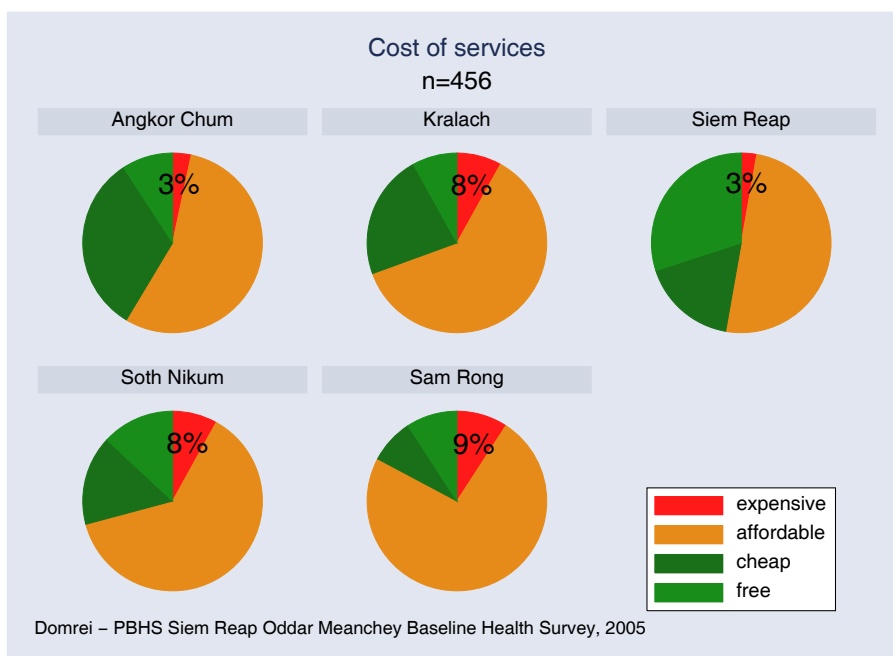
**Figure 29: Proportion of respondents who went to a public health facility in the three months preceding the survey.**

The majority of women said the health facility was clean, or acceptable (Figure 30). Only a handful of respondents said that it was dirty. This does not mean that the health centres do not need to improve hygiene: it may just reflect low expectations or politeness on the respondent's part.



**Figure 30: Proportion (%) of respondents who went to a public health facility in the three months preceding the survey and said the facility was clean.**

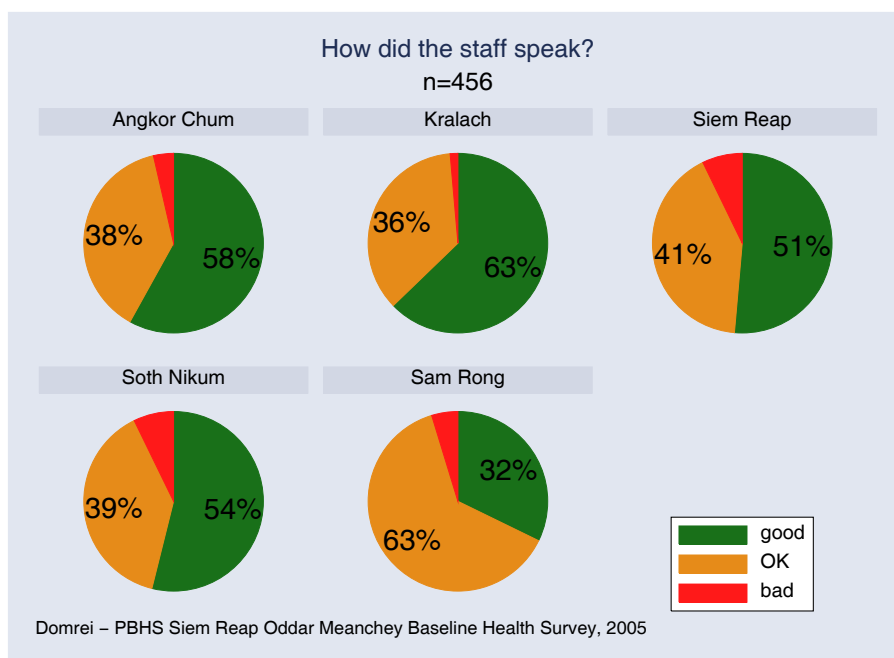
Service cost does not appear to be an issue, as less than ten percent of the respondents said that they were too expensive (Figure 31). About a third of the respondents in Siem Reap said that the services were free. It is important to note, however, that these statistics by themselves do not measure the affordability of health services, as some respondents may not have gone to a public health facility ***because*** they could not afford to do so, and are therefore not included in this sample.



**Figure 31: Proportion (%) of respondents who went to a public health facility in the three months preceding the survey and said the service were expensive.**

### 7.1. % of clients satisfied with attitude of staff in the public health facilities (PHF)

Staff attitude is approached by the way the staff spoke to the respondents (Figure 32). The results are less positive than for the cleanliness of the facility, as in every OD respondents were unhappy about how the staff spoke to them, despite low expectations. There is no doubt room for improvement here.



**Figure 32: Proportion (%) of respondents who went to public health facility and said the staff spoke well.**

The general satisfaction question came last and is very general (Figure 33 and Figure 34). A lot depends upon why the respondent went to the health facility, the type of service she expected, how much she paid and whether the outcome was positive. A high level of dissatisfaction would prompt patients to seek health care in the private sector.

7.2. % of clients satisfied with services provided by public health facilities

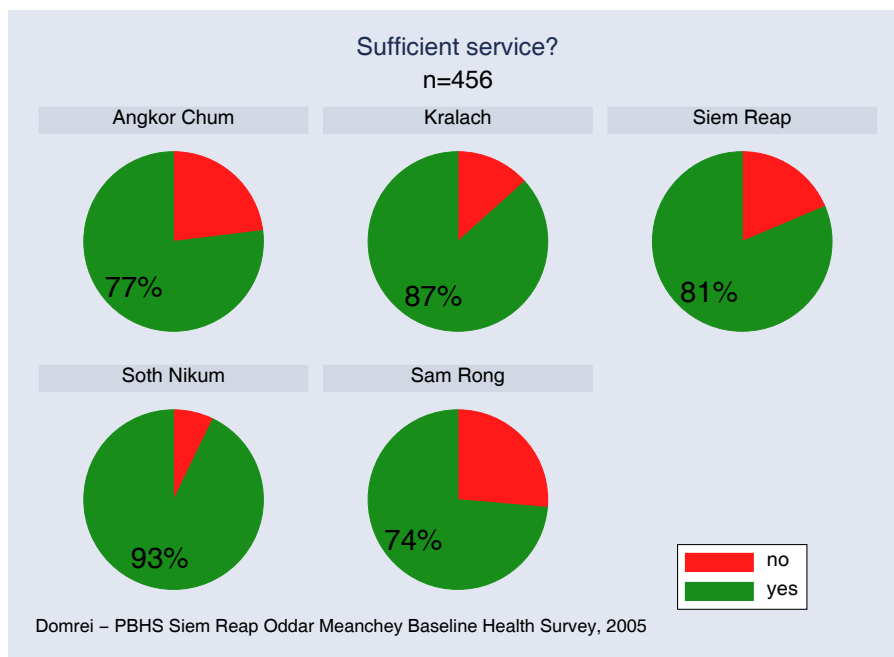


Figure 33: Proportion (%) of respondents who went to a public health facility and said the facility provided sufficient service.

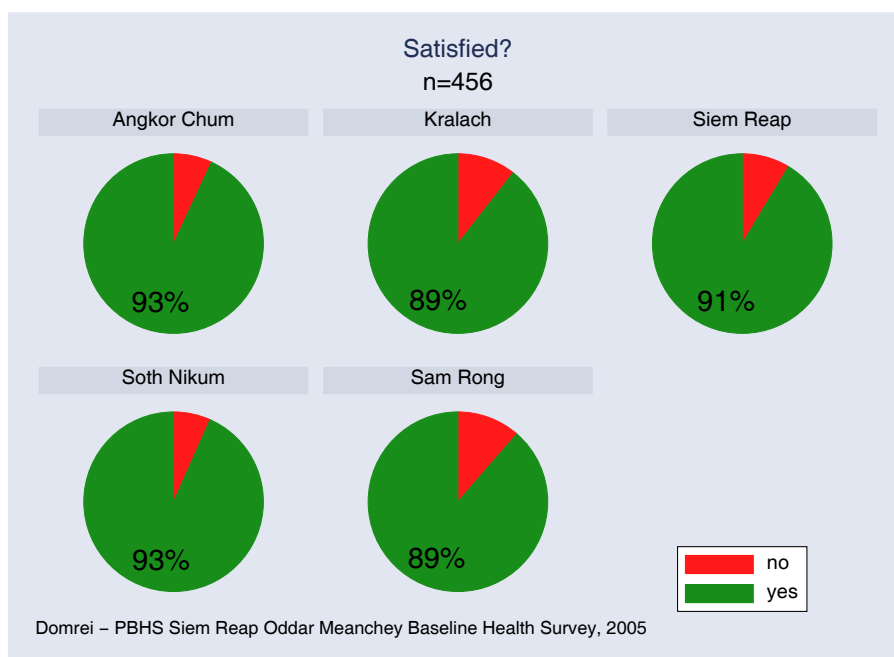
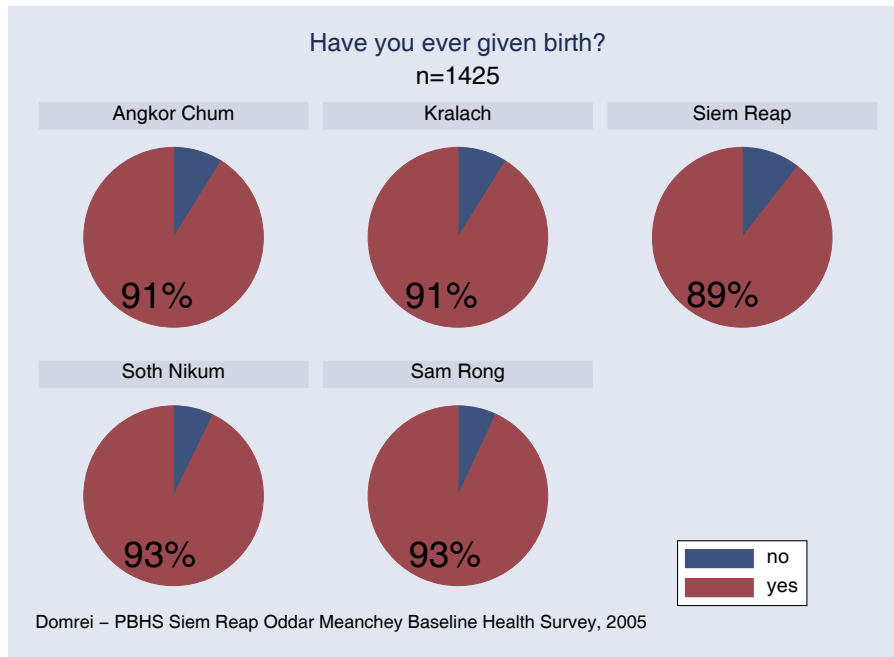


Figure 34: Proportion (%) of respondents who went to a public health facility and said they were satisfied.

8. Maternal health

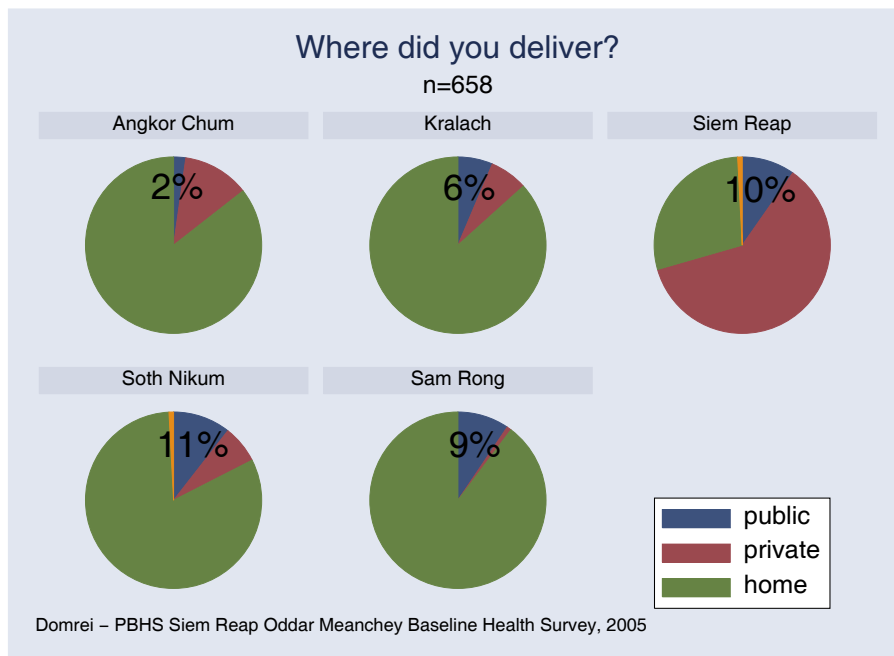
We decided to target ever-married women to maximise the number of women in our sample who would have given birth and taken care of children. This clearly shows in Figure 35 where over 90% of our respondents have experienced at least one complete

pregnancy. The following indicators are computed among all respondents who have delivered since 2002, and concern their last completed pregnancy (n=658 deliveries).

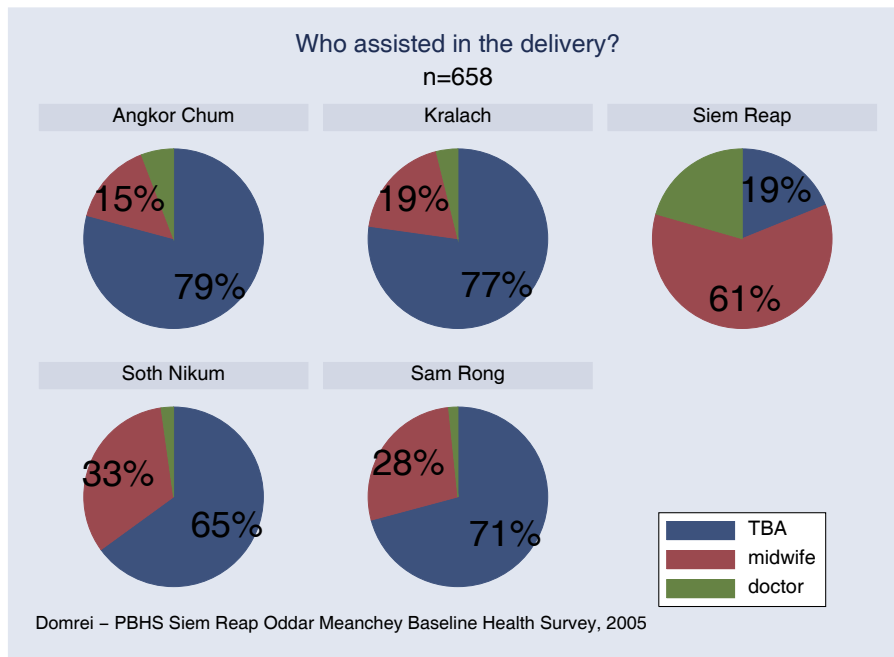


**Figure 35: Proportion of respondents who have given birth at least once.**

**8.1. Proportion (%) of deliveries attended by trained health staff**

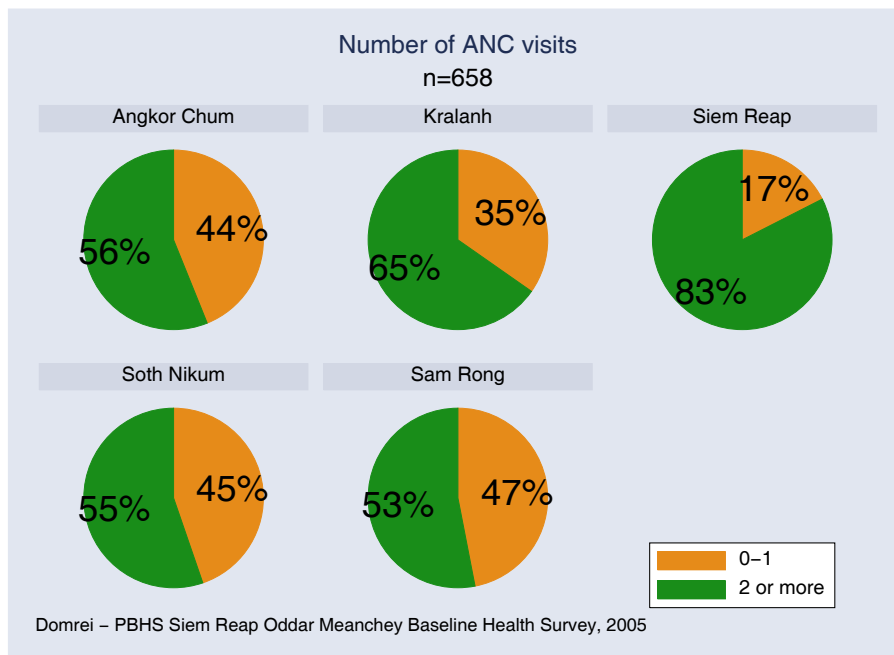


**Figure 36: Proportion of women whose latest delivery was at a public health facility, among respondents who delivered since 2002.**



**Figure 37: Proportion of women whose latest delivery was assisted by a TBA or a midwife, among respondents who delivered since 2002.**

**8.2. Proportion (%) of pregnant women who went to at least 2 ANC visits**

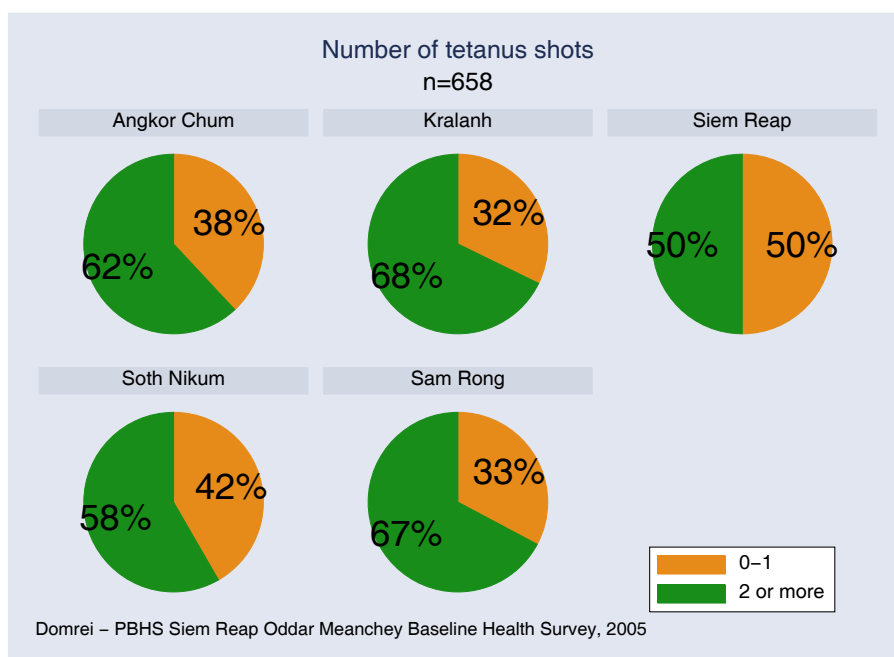


**Figure 38: proportion of women who had at least two ANC visits during their last pregnancy among respondents who delivered since 2002.**

**8.3. Proportion (%) of pregnant women who received at least 2 Tetanus shots**

Contrarily to the child immunisation coverage section, interviews did not seek documentary evidence of the respondent's TT immunisation status. Respondents were first asked if they had received tetanus injections during or before their last pregnancy.

If they answered yes, then they were asked how many shots they received (Figure 39).<sup>4</sup>



**Figure 39: Proportion (%) of women who had at least two tetanus shots among respondents who delivered since 2002.**

## 9. Contraceptive use

In this section, we present levels of current modern contraceptive use for:

- 1) Married women
- 2) Ever-married women who are not pregnant and say they do not wish to become pregnant. Those women who are not using contraception have an “unmet need”

### 9.1. Current contraceptive prevalence rate (CPR)

In this section, unless otherwise specified, we define a contraceptive user as a woman who reports using a modern method.

Increasing contraceptive prevalence is an objective of the National Health Strategic Plan, and there is some evidence that contraceptive rates are increasing in rural Cambodia.

This is the case in Oddar Meanchey where CPR is over 20% in all five ODs, and the overall average is at 27% against 14% in 2000.

<sup>4</sup> CDHS2000: 19.3% at national level

**Table 5: Modern Contraceptive Prevalence Rates among married women, by OD.**

OD	n	CPR (%)	[CI at 95%]
Angkor Chum	227	23.3	17.8 – 28.9
Kralanh	237	25.3	19.7 - 30.9
Siem Reap	217	28.4	22.5 – 34.6
Soth Nikum	243	35.4	29.3 - 41.4
Sam Rong	233	36.9	30.7 – 43.2

The highest increase since 2000 is among users of the daily pill (Table 7).

**Table 6: CPR among married women of reproductive age, by method**

	2000*	2005**
Daily pill	2.6	11.9
Monthly Pill	2.5	1.4
IUD	0.7	0.8
Injections	7.0	9.7
Condom	0.5	2.1
Sterilisation	0.4	0.7
Other modern	0.3	0.4
Total modern	14.0	27.0
Traditional	2.6	8.5
No method	83.3	64.6

\*CDHS \*\*Domrei – PBHS Siem Reap Oddar Meanchey Baseline Health Survey

## 9.2. Unmet need

Despite a significant increase in the CPR since 2000, unmet need is high (Table 7 and Table 8)

**Table 7: Modern Contraceptive Prevalence Rates and unmet need among ever-married non-pregnant women, by OD**

OD	n	CPR (%)	[CI at 95%]	Unmet need (100-CPR)
Angkor Chum	258	20.5	15.6 – 25.5	79.5
Kralanh	266	22.5	17.5 – 27.6	77.5
Siem Reap	257	24.1	18.9 – 29.4	75.9
Soth Nikum	260	33.1	27.3 – 38.9	66.9
Sam Rong	249	34.5	28.6 – 40.5	65.5

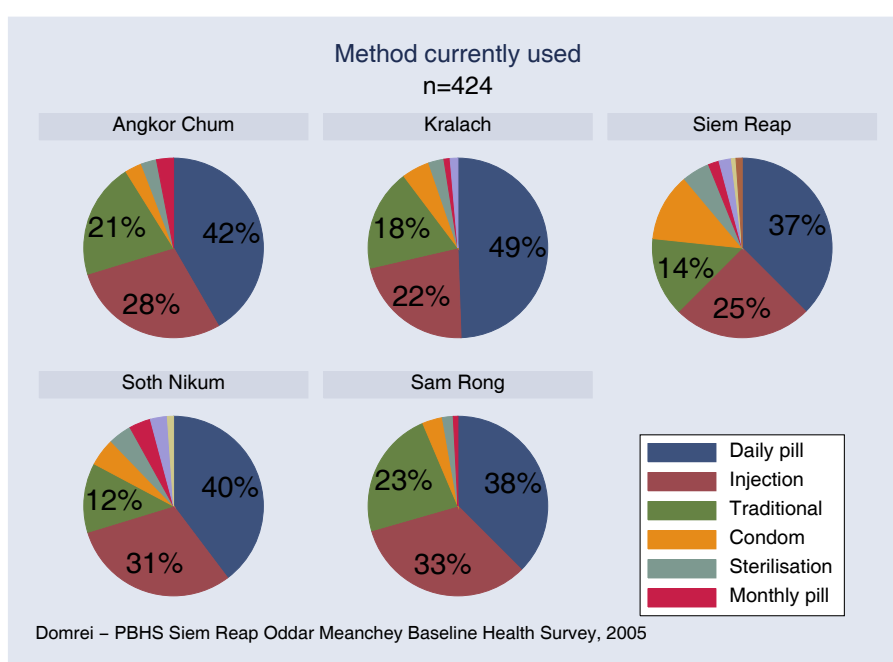
**Table 8: Modern Contraceptive Prevalence Rates and unmet need for ever-married non-pregnant women who do not want to become pregnant, by OD**

OD	n	CPR (%)	[CI at 95%]	Unmet need (100-CPR)
Angkor Chum	189	25.4	19.1 - 31.6	74.6
Kralanh	202	27.7	21.5 - 33.9	72.3
Siem Reap	191	30.3	23.8 - 36.9	69.7
Soth Nikum	204	38.2	31.5 - 44.0	61.8
Sam Rong	218	39.0	32.5 - 45.5	61.0

Even including traditional methods in current use, unmet need for contraception remains too high, between 53% in Oddar Meanchey and 72% in Angkor Chum (data not shown).

### 9.3. Contraceptive mix

Figure 40 presents the methods currently used among women who say they are currently using a modern method. The most frequently used modern methods are the daily pill and injectables.



**Figure 40: Proportion (%) of current contraceptors by method.**

## 10. Infant mortality

The infant mortality rate is computed with the birth history data (section 12 of the questionnaire). Each respondent was asked whether she had ever given birth. If she had, she was asked to provide a detailed birth history of her children in chronological order starting with the first child. For each birth, respondents were asked the date of

birth (month and year, either by the Gregorian or Khmer calendar), the survival status and if the child was not alive, the age at death. The rates of childhood mortality are expressed as deaths per 1,000 live births.

CDHS 2000 uses the same method, with the exception that the birth histories of all women are recorded, rather than only those of ever-married women. Infants born out of wedlock from young girls are vulnerable, but few single women give birth and over 90% of women are married, so the sampling bias is small.

If we use the birth histories from our sample for the same period as CDHS, (1990-1999) we find an infant mortality rate of 70.0 per thousand live births, against 77.9 for the CDHS. The difference may be attributed to the fact that we did not include in our sample women aged 50-54 (who were 45-49 in 2000) and the five year recall period.

Using the same method, we compute the current infant mortality rate. Between 1995 and 2004 (i.e. one year before the survey), there were 2,222 live births in the five ODs among which 181 children died before their first birthday. The weighted **infant mortality rate is 68.4 per thousand live births**<sup>5</sup>. This suggests a slight decrease in infant mortality in Siem Reap and Oddar Meanchey since 2000.

## 11. Immunisation

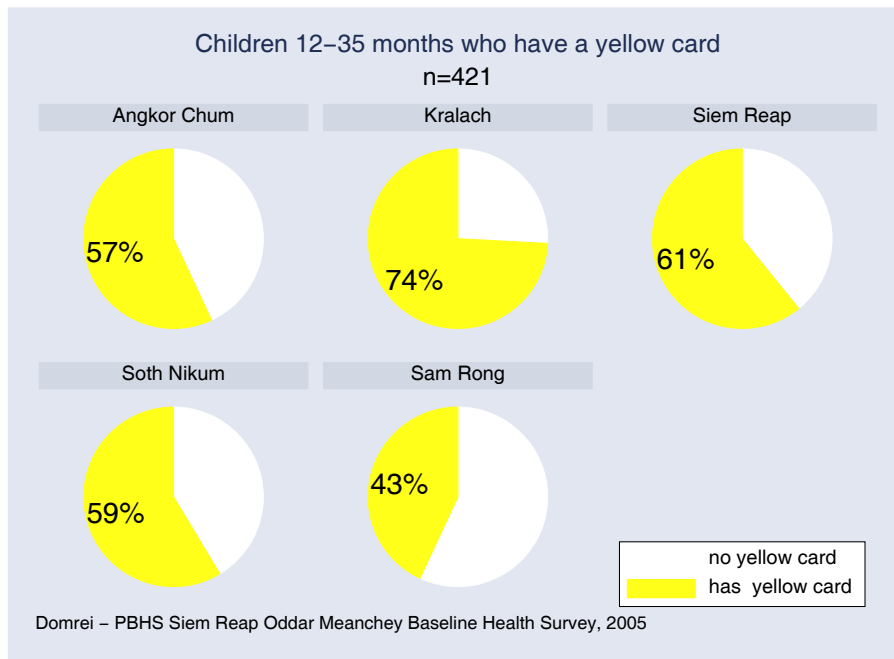
Immunisation data was collected from the yellow cards for all children in the household aged between 12 and 35 months that had a yellow card. It was decided that the respondent's recall of the various vaccines that are required for full immunisation would not be reliable. Therefore, the immunisation coverage figures that follow may exclude a small number of children who were immunised, but they are unbiased and reliable.

The proportion of children who had a yellow card varied significantly between ODs (Figure 41). In Oddar Meanchey, 43% of the children had yellow cards, against 74% in Kralanh. In some villages, health workers had collected the yellow cards, but the supervisors were able to collect the data.

We now present the results for each vaccine, then the proportion of fully immunised children (Figure 42 to Figure 48).

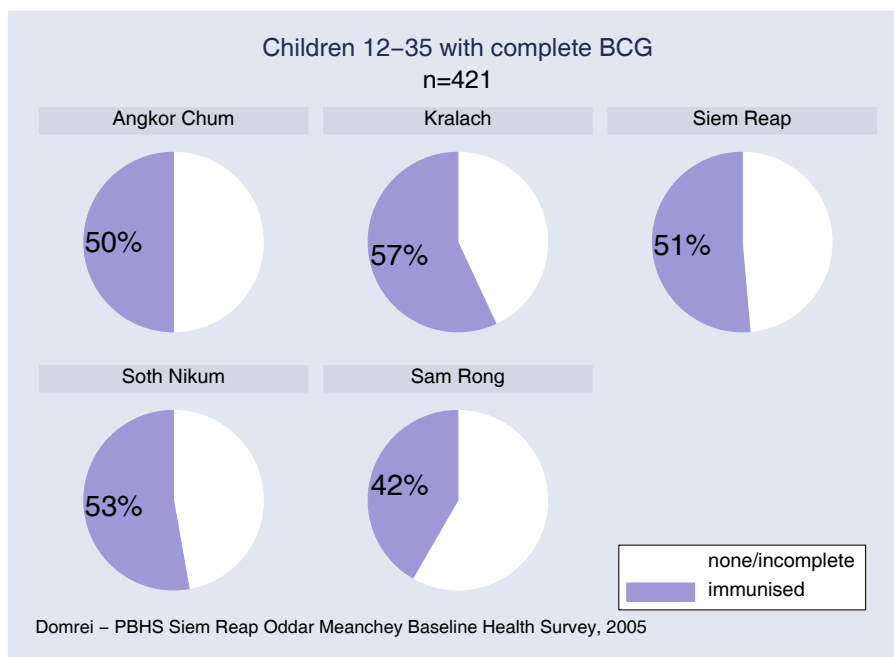
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<sup>5</sup> The weighted IMR is lower than the unweighted IMR because infant mortality is lowest in SR OD, which has the highest population.

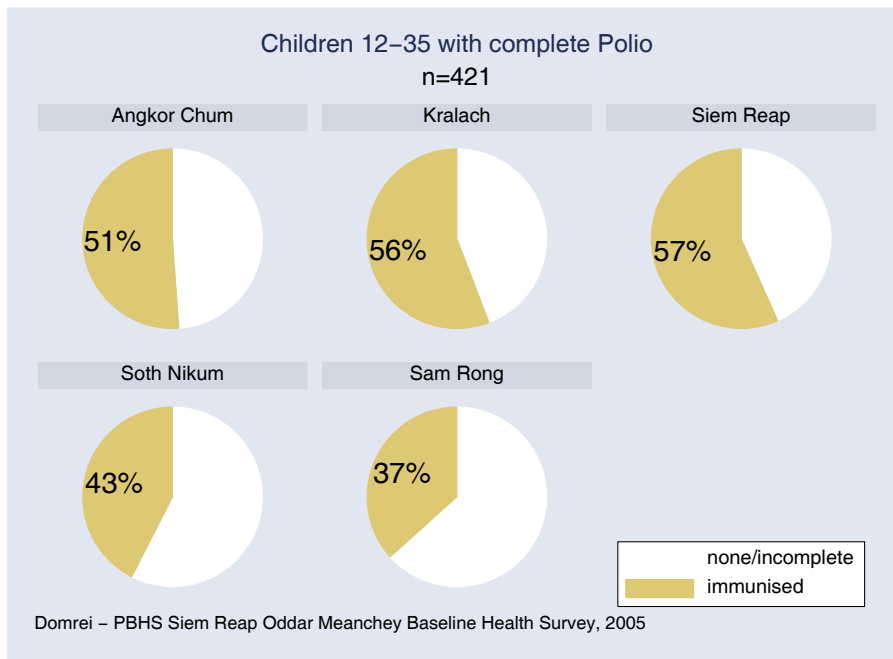


**Figure 41: Proportion (%) of children who had a yellow card.**

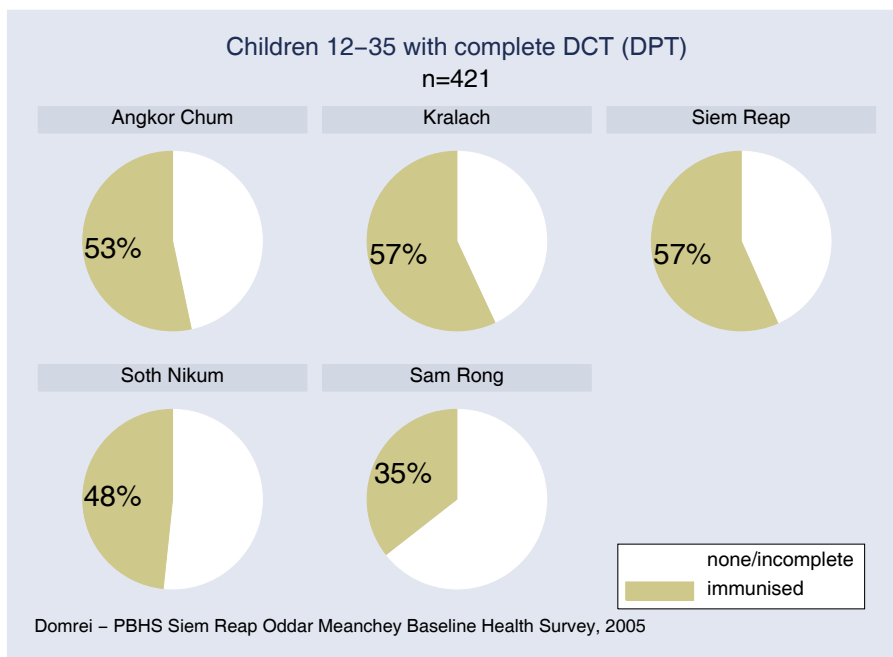
**11.1. Children 12-35 months immunised, per vaccine**



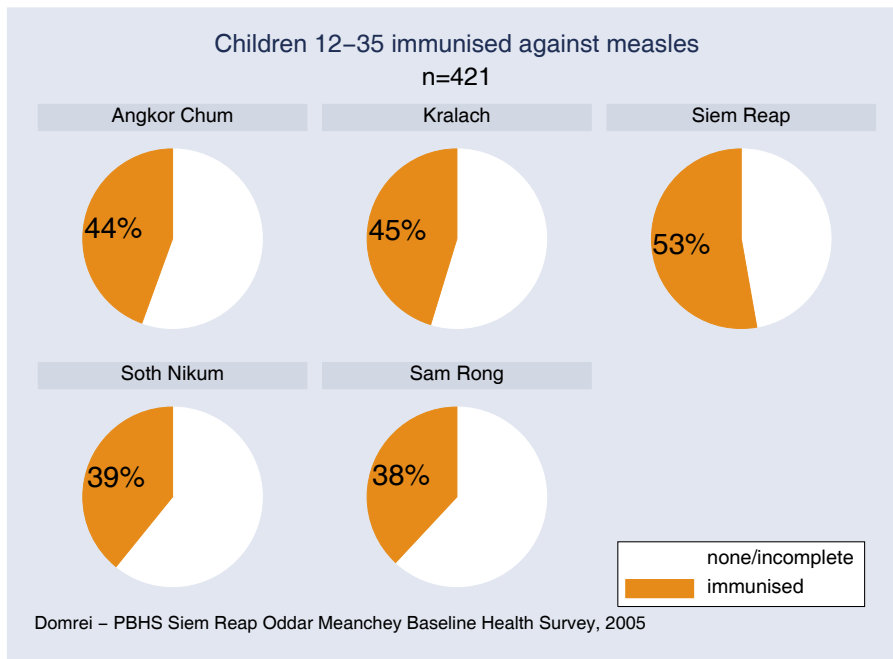
**Figure 42: BCG immunisation coverage, by OD.**



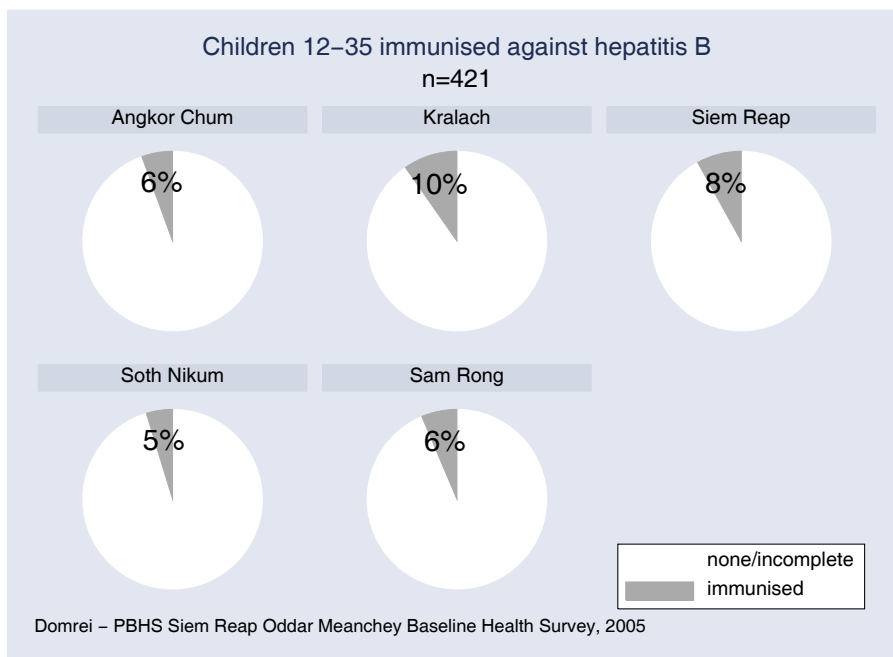
**Figure 43: Polio immunisation coverage, by OD.**



**Figure 44: DCT (DPT) immunisation coverage, by OD.**



**Figure 45: Measles immunisation coverage, by OD.**



**Figure 46: Hepatitis B immunisation coverage, by OD.**

11.2. Children 12-35 months old fully immunised, per OD

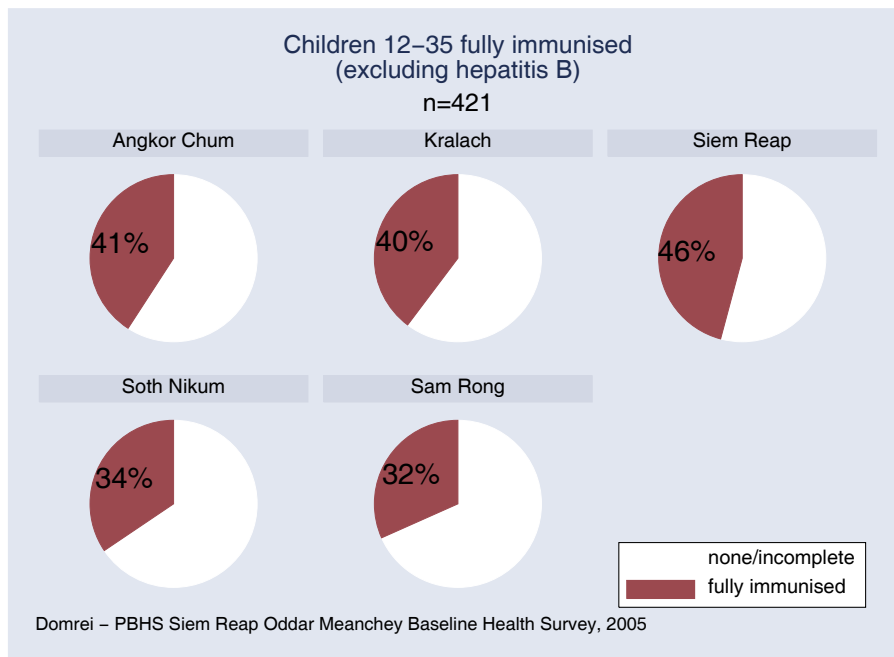


Figure 47: Proportion of fully immunised children, excluding hepatitis B, by OD.

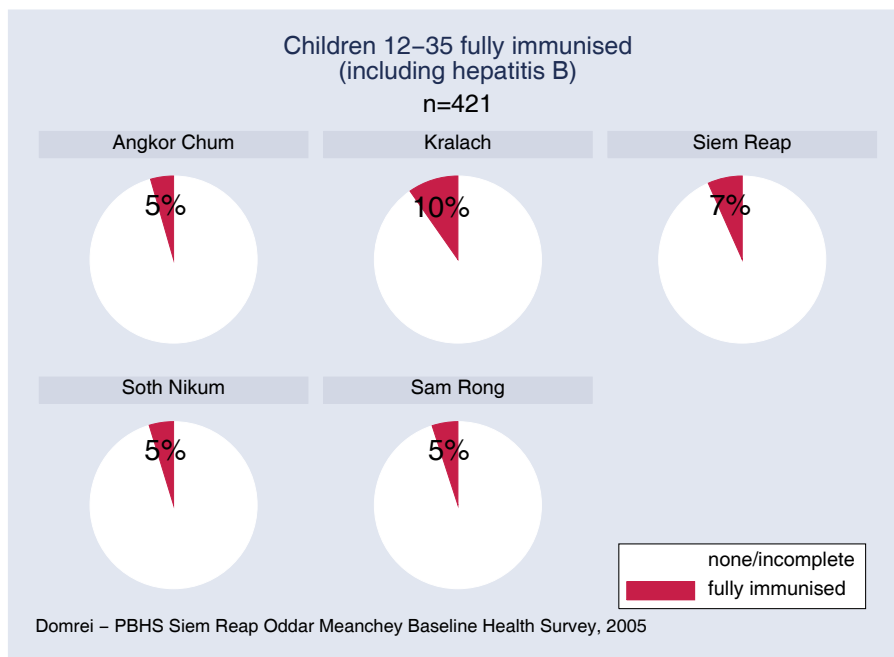


Figure 48: Proportion of fully immunised children, including hepatitis B, by OD.

## **12. Anthropometrics**

### **12.1. Data and methods**

At the end of each interview, interviewers gave the respondents an invitation slip for each child under five. They recorded on the invitation slip the household code, the child's line number on the household list (section 2) and the child's sex and age in months. All children under five were thus invited to the weighing station. To ensure maximum coverage, hesitant children and their guardians were brought to the weighing station by car. The mother presented her children's invitation slips and yellow cards to the health staff. The health staff recopied from the yellow slip the child's household and individual ID codes, date of birth, age in months (section 14 of the instrument). The data was then crosschecked with the yellow immunisation card. The health staff then weighed and measured the child, with the mother's help. Children under 24 months were measured lying down, children 24-49 months standing up, in accordance with WHO guidelines. The health staff then plotted the child's weight on the yellow card growth chart. If the child was severely underweight according to the growth chart, the health staff counselled the mother and referred the child to the appropriate health facility.

Age, weight and height consistency, and Z scores were computed using EpiNut software. Anthropometric norms are the international WHO norms, recommended by MCH.

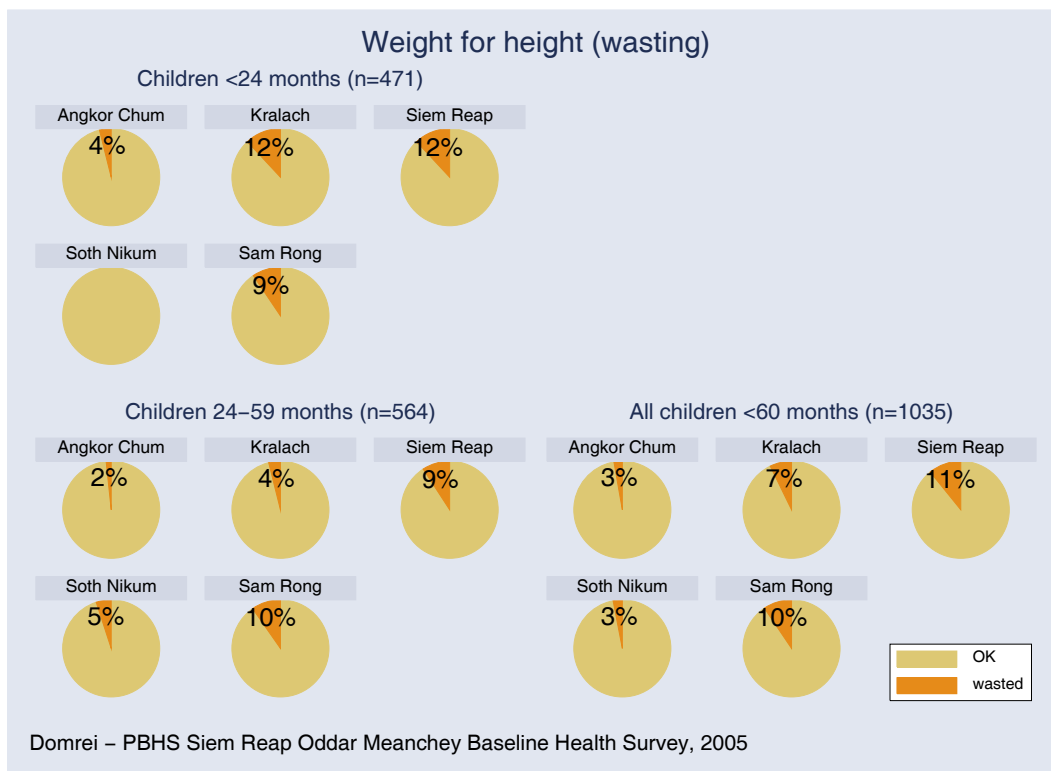
Of the 1,072 children enumerated in the sample household, 1051 (98%) were brought to the weighing station. Among the 1051 children brought to the weighing station, the health staff successfully measured 1035 children (98.5%).<sup>6</sup> In other words, the coverage rate of the anthropometrics component is 96.5%, a very satisfactory figure.

### **12.2. % of children who are wasted**

Wasting is measured by comparing a child's weight with the "normal" weight of children of the same height. Children who are too light for their height are skinny, and when their weight-for-height is more than -2 standard deviations from the norm they are moderately (<-2 Z scores) or severely (<-3 Z score) wasted. Wasting is an indicator of an immediate case of illness or low calorie intake. The prevalence of wasting among children (e.g. the percentage of children who are wasted at a given time) is expected to be high in a population where there was a recent food shortage, an epidemic and very poor sanitary conditions. There were only four cases of severe wasting and 64 cases of moderate wasting in our sample.

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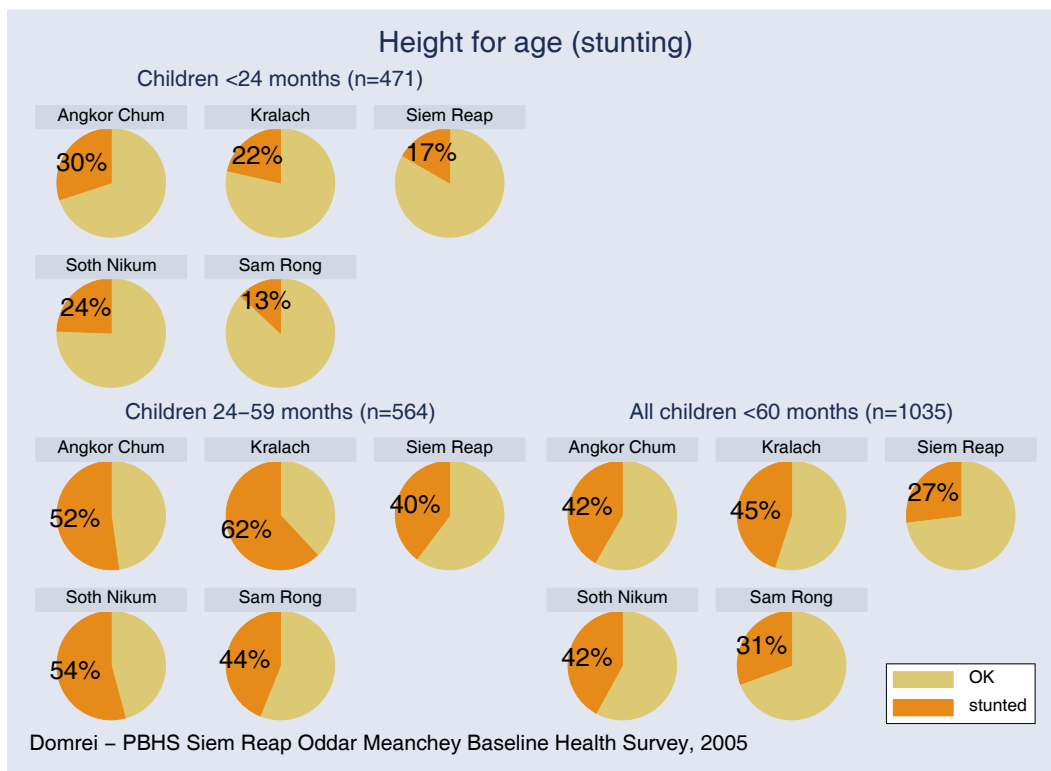
<sup>6</sup> A measurement is assessed to be satisfactory when the weight AND the height are consistent with the child's age and sex. EpiNut thus "flags" all records where this is not the case. Sixteen (16) flagged records are excluded from the prevalence rates.



**Figure 49: Prevalence of wasting among children under 24 months, 24-59 months, and all children under 5, by OD.**

### 12.3. % of children who are stunted

Stunting is measured by comparing a child's height with the "normal" height of children of the same age. Children who are too short for their age, i.e. when their height-for-age is more than -2 standard deviations from the norm they are moderately (<-2 Z scores) or severely (<-3 Z score) stunted. Stunting is an indicator of long-term low calorie intake, usually associated with long term poverty. The prevalence of stunting among children is expected to be high in a population where there are regular food shortages, epidemics and inadequate sanitary conditions. Older children are more susceptible to stunting as they have been exposed to the risk of inadequate nutrition and poor health for longer.

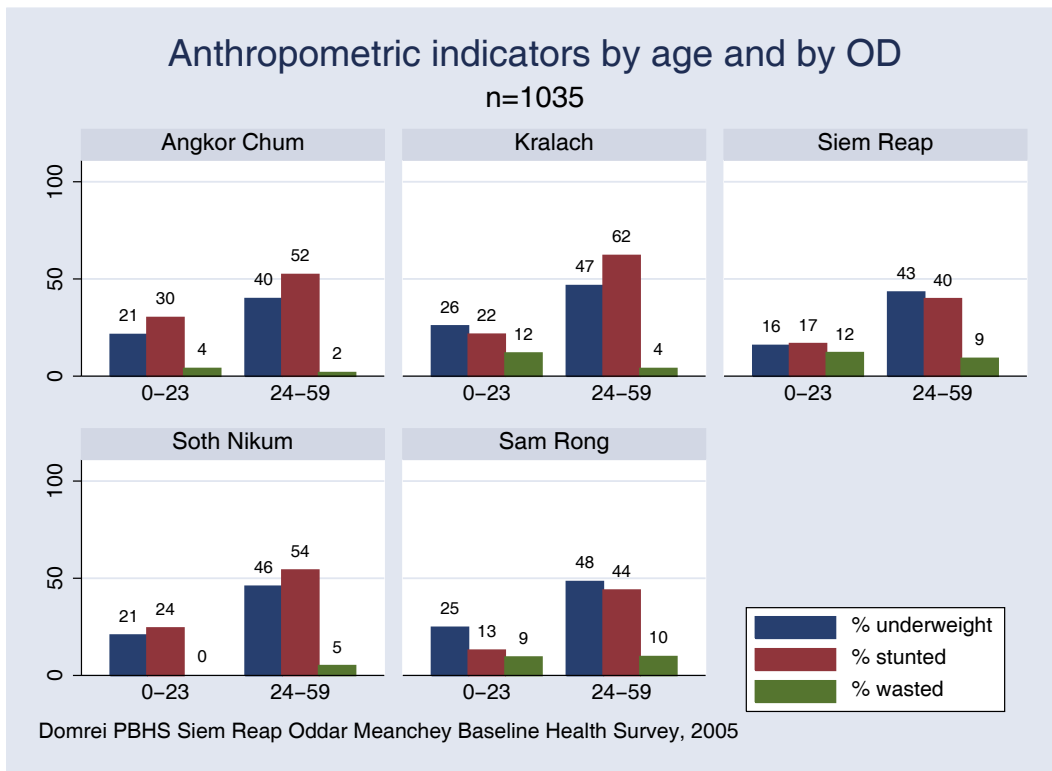


**Figure 50: Prevalence of stunting among children under 24 months, 24-59 months, and all children under 5, by OD.**

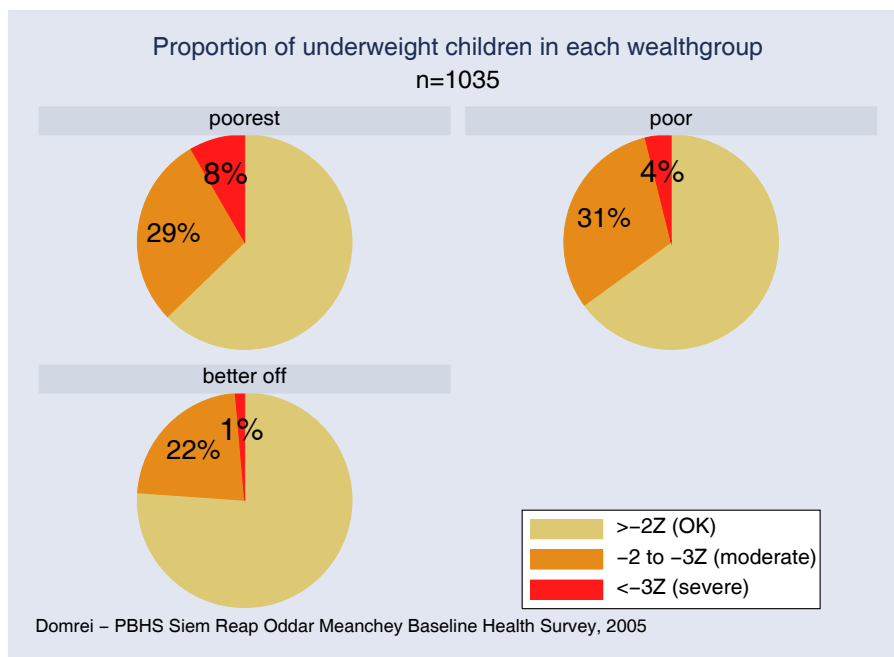
#### 12.4. Summary of anthropometric indicators

Figure 51 summarises the anthropometric results. The high rate of underweight children is mostly the result of stunting, and is therefore more prevalent in the 24-59 month age group.

Of the three household wealth groups, the poorest has the highest proportion of underweight and stunted children, and the “wealthiest” group has the lowest proportion of underweight and stunted children (Figure 52).



**Figure 51: Summary of anthropometric indicators, by OD**



**Figure 52: Proportion (%) of moderately and severely underweight children, by wealth group.**



**ANNEX: WOMEN'S QUESTIONNAIRE AND  
ANTHROPOMETRICS FORM**

**CONFIDENTIAL**

Province: _____				□ □		
Operational District (OD): _____				□ □		
Commune : _____				□ □		
Village/Cluster: _____				□ □		
Urban (1) Rural (2) .....				□		
Wealth Ranking – Poorest (0) Medium (1) Better-off (2).....				□		
House Type – Check your own observation.....				□		
Palm/thatch (0) Wood/palm (1) Wood/tin (2) Wood/tile (3) Brick or concrete (4)						
	1 <sup>st</sup> attempt	Appointment	2 <sup>nd</sup> attempt	TOTAL		
Date	/ / 05	/ / 05	/ / 05			
Time						
Location						
Number of eligible respondents	□			□		
Number of completed interviews	□		□	□		
Number of children to weigh	□		□	□		
Interviewer	□ □	□ □	□ □			
CONTENT OF HOUSEHOLD QUESTIONNAIRE			RESULT			
Number of extra household lists	□		<b>Result Codes</b> Sections 1-13 completed 1 Incomplete-respondent termination 2 Incomplete-third party interruption 3 A Respondents refused 4 Parent/guardian/spouse refusal 5 All eligible women absent at 2 <sup>nd</sup> appointment 6			
Number of section 3	□	□				
Number of section 4	□	□				
Number of section 5	□	□				
Number of section 6	□	□				
Number of extra section 7	□	□				
Number of extra section 8	□	□				
Number of section 13	□	□				
	Interviewer	Editor	Supervisor	Encoder1	Encoder2	Archived
ID code	□ □	□ □	□ □	□ □	□ □	Box: □ □ □
Date	/ / 05	/ / 05	/ / 05	/ / 05	/ / 05	/ / 05
Signature						

## First Ever Married Women's Questionnaire

### Introduction:

Hello I am (use your name) ..... working with Domrei Research and Consulting. We are here to interview women in this village about their families and some of their health problems. Please don't be scared or worried because this is only about the health. Everything you say will be kept quietly (confidential). We won't let anybody in the village or your family know what you say.

You can refuse to answer any question that you don't want to answer or you can stop to discuss the questions at any time. I want to thank you and say I hope this interview will only take 30 minutes.

I want to remind you that all your answers are very important. This is not a test. There are no right or wrong answers. Therefore, I want to ask you to answer truthfully. This will allow my team to give good information to the Ministry to improve health services in your province.

Do you have any questions for me?

Can I start asking the questions now?

Section1: Household assets		Code
100	What assets does your family own?	No assets 0
	PROMPT BY READING THE LIST MULTIPLE ANSWERS POSSIBLE – CIRCLE ALL ANSWERS GIVEN CHECK YOUR OWN OBSERVATION AS WELL	Radio 1
		Television 2
		Bicycle 3
		Refrigerator 4
		Motorcycle 5
		Ox cart 6
		Boat 7
		Car/Koyun 8
		Motorcycle helmet 9
101	What farm animals does your family own?	No animals 0
	PROMPT BY READING THE LIST MULTIPLE ANSWERS POSSIBLE – CIRCLE ALL ANSWERS GIVEN CHECK THAT THEY DON'T MIND THE ANIMALS FOR SOMEONE ELSE	Chicken/ducks 1
		Pigs 2
		Goats 3
		Cows 4
		Horses 5
		Crocodiles 6
		Fish 7
		Buffaloes 8
102	How many toilets does your household use?	No toilet/field 0
		Share with other 1
		family 2
		One toilet 3
103	How many rooms in your house are used for sleeping?	Two or more 3
104	How many people slept here last night?	

**Section 2: Household List**

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Now we would like to know about the people who slept here last night. Do not worry, all this information will stay confidential.

Please give me the first names of the persons who stayed here last night.	What is the relationship of (NAME) to the head of the household?  SEE CODES BELOW	What is (NAME'S) sex?  M      F	What is (NAME'S) age?  If under one year code 0	Is (NAME) 0-never married 1-currently married 2-separated/divorced 3-widow/widower	Circle all ever married women aged 15-49	Circle all children under age 5	In the last 12 months, did (NAME) spend one or more nights in a public hospital because he was ill or injured? 0 - no, 1 - yes 9 - DK	In the last 12 months, how many times did (NAME) go to a public health centre for a health service?  99 - DK
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200		201	202	203	204	205	206	207	208
01		□	1    2	□ □	0   1   2   3	01	01	0   1   9	□ □
02		□	1    2	□ □	0   1   2   3	02	02	0   1   9	□ □
03		□	1    2	□ □	0   1   2   3	03	03	0   1   9	□ □
04		□	1    2	□ □	0   1   2   3	04	04	0   1   9	□ □
05		□	1    2	□ □	0   1   2   3	05	05	0   1   9	□ □
06		□	1    2	□ □	0   1   2   3	06	06	0   1   9	□ □
07		□	1    2	□ □	0   1   2   3	07	07	0   1   9	□ □
08		□	1    2	□ □	0   1   2   3	08	08	0   1   9	□ □
09		□	1    2	□ □	0   1   2   3	09	09	0   1   9	□ □
10		□	1    2	□ □	0   1   2   3	10	10	0   1   9	□ □

1-self 2-spouse 3-child 4-father/mother 5-brother/sister 6-uncle/aunt; in-law 7-niece/nephew/cousin 8-grandchild 9-guest

**USE ANOTHER FORM IF MORE THAN 10 HOUSEHOLD MEMBERS. Record total number of household list forms for this household: 1 2 3**

Section 2: Household List (continued)

SUPERVISORS: USE THIS SHEET FOR SPOT CHECKS

209	<p>Count all the household members recorded on the household list (column 200) and write the number in the box below.</p> <p>Including you, were there <input type="text"/> people sleeping here last night?</p>	<p>No (go to 200)</p> <p>Yes: record number <input type="text"/></p>
210	<p>Count all the ever-married women aged 15-49 recorded on the household list (column 205) and write the number in the box below.</p> <p>Including yourself did <input type="text"/> women between 15 and 49 years old who are or have been married sleeping here last night?</p>	<p>No (go to 200)</p> <p>Yes: record number <input type="text"/></p>
211	<p>Count all the children five years or under recorded on the household list (column 206) and write the number in the box below.</p> <p>Did <input type="text"/> children under 5 sleeping here last night?</p>	<p>No (go to 200)</p> <p>Yes: record number <input type="text"/></p>
	<p>I would now like some information about traffic and mine accidents in your household</p>	
212	<p>In the last 12 months, was a person on the household list injured in a traffic accident?</p>	<p>No 0</p> <p>Yes (go to 300) 1</p>
213	<p>In the last 12 months, was a member of your household killed in a traffic accident?</p>	<p>No 0</p> <p>Yes (go to 400) 1</p>
214	<p>In the last 12 months was a person on the household list injured by a mine or UXO?</p>	<p>No 0</p> <p>Yes (go to 500) 1</p>
215	<p>In the last 12 months was a member of your household killed by a mine or UXO?</p>	<p>No (go to 700) 0</p> <p>Yes (go to 600) 1</p>

Section 3 : Household members INJURED in TRAFFIC ACCIDENTS

COMPLETE ONE SHEET PER INJURED PERSON AND PER ACCIDENT

300	Who was injured in a traffic accident? NAME: _____	ID number	<input type="text"/>
301	What type of vehicle was he/she travelling in when the accident happened?	Foot Bicycle Motorcycle Car/remorque Horse, Ox, Cow, cart Other Don't know	0 1 2 3 4 8 9
302	What the injuries slight or severe?	Slight Severe	0 1
303	Did he/she receive medical treatment after the accident?	No (go to 305) Yes	0 1
304	How much did the injuries cost (to treat) in Riel? NO COST: CODE 0. RESPONDENT DOES NOT KNOW: CODE 9----9		<input type="text"/>
305	In the last 12 months, was (NAME) injured in another traffic accident?	No Yes take a new sheet and start at 300	0 1
306	In the last 12 months, was another person on the household list injured in a traffic accident?	No Yes take a new sheet and start at 300	0 1
307	RECORD THE NUMBER OF SECTION 3 -TRAFFIC ACCIDENT INJURIES SHEETS COMPLETED FOR THIS HOUSEHOLD, INCLUDING THIS ONE.		<input type="text"/>
308	In the last 12 months, was a member of your household killed in a traffic accident?	No Yes (go to 400)	0 1
309	In the last 12 months was a person on the household list injured by a mine or UXO?	No Yes (go to 500)	0 1
310	In the last 12 months was a member of your household killed by a mine or UXO?	No (go to 700) Yes (go to 600)	0 1

Section 4 : Household members KILLED in TRAFFIC ACCIDENTS

COMPLETE ONE SHEET PER ACCIDENT DEATH

400	What type of vehicle was he/she travelling in when the accident happened?	Foot 0 Bicycle 1 Motorcycle 2 Car / remorque 3 Horse, Ox, Cow, cart 4 Other 8 Don't know 9								
401	Did he/she receive medical treatment after the accident?	No 0 Yes 1								
402	How much did the injuries cost (to treat) in Riel? NO COST: CODE 0. RESPONDENT DOES NOT KNOW: CODE 9-----9	<table border="1" style="width: 100%; height: 20px;"> <tr> <td style="width: 12.5%;"></td> <td style="width: 12.5%;"></td> <td style="width: 12.5%;"></td> <td style="width: 12.5%;"></td> <td style="width: 12.5%;"></td> <td style="width: 12.5%;"></td> <td style="width: 12.5%;"></td> <td style="width: 12.5%;"></td> </tr> </table>								
403	In the last 12 months how many times was he/she injured in other traffic accidents? RESPONDENT DOES NOT KNOW: CODE 9-----9	<input style="width: 30px; height: 20px;" type="text"/>								
404	In the last 12 months, was another member of your household killed in a traffic accident?	No 0 Yes: take new sheet and start at 400 1								
405	RECORD THE NUMBER OF SECTION 4 –TRAFFIC DEATHS SHEETS COMPLETED FOR THIS HOUSEHOLD, INCLUDING THIS ONE	<input style="width: 30px; height: 20px;" type="text"/>								
406	In the last 12 months was a person on the household list injured by a mine or UXO?	No 0 Yes (go to 500) 1								
407	In the last 12 months was a member of your household killed by a mine or UXO?	No (go to 700) 0 Yes (go to 600) 1								

Section 5: Mine and UXO INJURIES

COMPLETE ONE SHEET PER MINE INJURY

500	Who was injured by a mine or UXO?	ID number <input type="text"/> <input type="text"/> <input type="text"/>
501	Did he/she receive medical treatment after the accident?	No 0 Yes 1
502	What was the extent of his/her injuries?	Slight 0 Severe 1
503	How much did the injuries cost (to treat) in Riel? NO COST: 0. RESPONDENT DOES NOT KNOW: 9----9	<input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>
504	In the last 12 months was another person on your household list injured in a mine or UXO accident?	No 0 Yes: 1 take a new sheet and start at 500
506	RECORD THE NUMBER OF SECTION 5 – MINE AND UXO INJURIES SHEETS COMPLETED FOR THIS HOUSEHOLD, INCLUDING THIS ONE	<input type="text"/>
505	In the last 12 months was a member of your household killed by a mine or UXO?	No (go to 700) 0 Yes 1

Section 6: Mine and UXO Deaths

600	Did he/she receive medical treatment after the accident?	No (go to 602) 0 Yes 1
601	How much did the injuries cost (to treat) in Riel? NO COST: 0. RESPONDENT DOES NOT KNOW: 9----9	<input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>
602	In the last 12 months was another member of your household killed by a mine or UXO?	No 0 Yes: 1 take a new sheet and start at 600
603	RECORD THE NUMBER OF SECTION 5-6 – MINE AND UXO SHEETS COMPLETED FOR THIS HOUSEHOLD, INCLUDING THIS ONE	<input type="text"/>

Section 7: Household health expenses for individuals on household list		
DO NOT INCLUDE INFORMATION ON TRAFFIC AND LANDMINE/UXO ACCIDENTS		
700	In the last 15 days, did any person on the household list have a health problem?	No: (skip to 800) 0 Yes 1
701	Who was this? NAME: _____	ID number <input type="text"/>
702	What was (NAME'S) health problem?	Fever 1 Malaria 2 Dengue 3 Diarrhoea 4 Coughing/ARI 5 Measles 6 Injury 7 Other 8 DK 9
703	Who did (NAME) see first to treat the illness? PROMPT BY READING THE LIST	No one / self 0 Public provider 1 Private provider 2 Family, friend 3 DK 9
704	How many health providers did (NAME) see to treat the illness?	Number <input type="text"/>
705	Altogether, about how much do you think was spent on transportation for this illness? NO COST: CODE 0. RESPONDENT DOES NOT KNOW: CODE 9----9	<input type="text"/>
706	Altogether, about how much do you think was spent on drugs and medical exams? NO COST: CODE 0. RESPONDENT DOES NOT KNOW: CODE 9----9	<input type="text"/>
707	Altogether, about how much do you think was spent for official consultation fees? NO COST: CODE 0. RESPONDENT DOES NOT KNOW: CODE 9----9	<input type="text"/>
708	Altogether, about how much do you think was spent to "thank" the provider? NO COST: CODE 0. RESPONDENT DOES NOT KNOW: CODE 9----9	<input type="text"/>
709	So in total, that health problem cost about...	<input type="text"/>
710	In the last 15 days, did any other person on the household list have a health problem?	No 0 Yes: take a new sheet starting at 700 1
711	RECORD THE NUMBER OF SECTION 7 SHEETS COMPLETED FOR THIS HOUSEHOLD, INCLUDING THIS ONE	<input type="text"/>

Section 8: Household health expenses from fatal health problem			
DO NOT INCLUDE INFORMATION ON TRAFFIC AND LANDMINE/UXO ACCIDENTS			
800	In the last 15 days, did any member of your household die?	No: (skip to 900)	0
		Yes	1
801	What was his/her health problem?	Fever	1
		Malaria	2
		Dengue	3
		Diarrhoea	4
		Coughing/ARI	5
		Measles	6
		Injury	7
		Other	8
		DK	9
802	Who did he/she see first to treat the illness/injury? Prompt by reading the list	No one	0
		Public provider	1
		Private provider	2
		Family, friend	3
		DK	9
803	How many health providers did he/she see to treat the illness/injury?	Number	<input type="text"/>
804	Altogether, how much do you think was spent on transportation for this illness/injury? NO COST: CODE 0. RESPONDENT DOES NOT KNOW: CODE 9----9		<input type="text"/>
805	Altogether, how much do you think was spent on drugs and medical exams? NO COST: CODE 0. RESPONDENT DOES NOT KNOW: CODE 9----9		<input type="text"/>
806	Altogether, how much do you think was spent for official consultation fees? NO COST: CODE 0. RESPONDENT DOES NOT KNOW: CODE 9----9		<input type="text"/>
807	Altogether, how much do you think was spent to "thank" the health provider? NO COST: CODE 0. RESPONDENT DOES NOT KNOW: CODE 9----9		<input type="text"/>
808	So in total, that health problem cost about...		<input type="text"/>
809	In the last 15 days, did any one else in your household die?	No	0
		Yes: take a new sheet and start at 800	1
810	RECORD THE NUMBER OF SECTION 8 SHEETS COMPLETED FOR THIS HOUSEHOLD, INCLUDING THIS ONE		<input type="text"/>

Section 9: Satisfaction with Public Health Services

900	RECORD THE RESPONDENT'S ID	RESPONDENT ID <input type="text"/> <input type="text"/>
901	In the last three months, did you go to a public health facility? (REFERAL HOSPITAL, HEALTH CENTER)	No (go to 1000) 0 Yes 1
902	Was that public health facility very clean, acceptable or dirty?	Very clean 1 Acceptable 2 Dirty 3
903	How did the staff speak? PROMPT BY READING THE LIST	Good 1 Ok 2 Bad 3
904	How did you find the cost of the service? PROMPT BY READING THE LIST	Expensive 1 Affordable 2 Cheap 3 Free 4
905	Did facility provide sufficient service?	No 0 Yes 1
906	Were you satisfied with the service?	No 0 Yes 1

Section 10: Contraceptive Use

1000	Are you pregnant now?	No 0 Yes (go to 1100) 1
1001	Do you want to become pregnant now?	No 0 Yes 1
1002	Are you currently using any of these methods of contraception? PROMPT BY READING EACH METHOD ON THE LIST. AS YOU READ THE METHOD, HAND THE APPROPRIATE METHOD CARD TO THE RESPONDENT. STOP WHEN SHE IDENTIFIES A METHOD.	Daily pill 1 Monthly pill 2 IUD 3 Norplant 4 Injections 5 Sterilised 6 Vasectomy 7 Condom 8 Traditional 9 None 0

Section 11: Last delivery

1100	Have you ever given birth, including a still birth?	No (go to 1300)      0 Yes                      1								
1101	What is the date your last delivery IF THIS DELIVERY OCCURRED BEFORE 2002, GO TO 1200	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 25%; height: 20px;"> </td> <td style="width: 25%; height: 20px;"> </td> <td style="width: 25%; height: 20px;"> </td> <td style="width: 25%; height: 20px;"> </td> </tr> <tr> <td style="text-align: center;">DAY</td> <td style="text-align: center;">MONTH</td> <td colspan="2" style="text-align: center;">YEAR</td> </tr> </table> YEAR<2002: Go to 1200					DAY	MONTH	YEAR	
DAY	MONTH	YEAR								
1102	The last time you gave birth where did you deliver?	Public facility      1 Private facility      2 Home                      3 Other                      8								
1103	The last time you gave birth who assisted you in the delivery?	No one                      0 TBA                          1 Midwife                      2 Doctor                      3 Other                          8								
1104	During that pregnancy did you go for a check up (ANC)	No (go to 1106)      0 Yes                          1								
1105	How many times?	Number of times <input style="width: 20px; height: 20px;" type="text"/> <input style="width: 20px; height: 20px;" type="text"/>								
1106	Did you ever get tetanus injections any time before or during your last pregnancy?	No (go to 1200)      0 Yes                          1								
1107	How many times?	Number of times <input style="width: 20px; height: 20px;" type="text"/> <input style="width: 20px; height: 20px;" type="text"/>								



Section 13 Immunisation Status		COMPLETE ONE FOR EACH CHILD 12-35 MONTHS	
1300	CHECK HOUSEHOLD LIST FOR CHILDREN AGED FROM 1 AND 2 YEARS (COLUMNS 203 AND 206).  ASK FOR EACH CHILD (12-35 MONTHS) ONLY. RECORD CHILD'S ID IF THERE ARE NO CHILDREN 12-35 MONTHS: GO TO 1309	Child's ID: <input type="text"/> <input type="text"/>	
		None: go to 1309	
1301	ASK TO SEE THE VACCINATION CARD FOR THIS CHILD	Not (skip to 1309)	0
		Have	1
1302	RECORD THE CHILD'S AGE IN MONTHS	Age in months: <input type="text"/> <input type="text"/>	
1303	BCG VACCINATION	Incomplete	0
		Complete	1
1304	POLIO 1 POLIO 2 POLIO 3	Incomplete	0
		Complete	1
1305	DCT (DPT) 1 DCT (DPT) 2 DCT (DPT) 3	Incomplete	0
		Complete	1
1306	MEASLES	Incomplete	0
		Complete	1
1307	HEPATITIS B	Incomplete	0
		Complete	1
1308	Is there another child aged from 12 – 35 months?	No	0
		Yes: take a new sheet and start at 1300	1
1309	CHECK HOUSEHOLD LIST FOR CHILDREN AGED 0 TO 4 YEARS (COLUMNS 203 AND 206).  FOR EACH CHILD COMPLETE AN INVITATION SLIP  KINDLY ASK THE RESPONDENT TO SEND THESE CHILDREN TO THE WEIGHING STAION WITH THEIR YELLOW CARDS AND THE INVITATION SLIP. RECORD THE NUMBER OF CHILDREN INVITED FOR WEIGHING	NUMBER INVITATIONS	OF <input type="text"/>

***Thank the respondent very much for taking time to answer all these questions.***

