Kingdom of Cambodia
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Further Analysis of the
Cambodian Demographic and Health Surveys

Urban and Rural Disparities in Reproductive and Maternal Health, 2000-2014

National Institute of Statistics
Ministry of Planning

Directorate General for Health
Ministry of Health

December 2015

This report presents findings from a secondary analysis of four waves of the Cambodia Demographic and Health Surveys, 2000 to 2014, with support from the United Nations Population Fund (UNFPA) in Cambodia. Additional information about the Cambodian Demographic and Health Survey (CDHS) can be obtained from the National Institute of Statistics; 386 Monivong Boulevard, SangkatB eongKeng Kang 1, Chamkar Mon, Phnom Penh, Cambodia; Telephone: (855) 23-213650; E-mail: linahang@hotmail.com; Home Pages: www.nis.gov.kh

Suggested citation:

AUTHORS. "Urban and Rural Disparities in Reproductive and Maternal Health, 2000-2014." 2015. Phnom Penh, Cambodia: UNFPA and National Institute of Statistics.

Table of Contents

List of Tables

List of Figures

Preface

The Cambodia Demographic and Health Surveys (DHSs) collect high quality of data on the demographic and health characteristics of populations in Cambodia. The data available allow researchers to perform further and in depth analysis to examine issues related to the population and health conditions in Cambodia and inform policy makers evident based results useful for national programs and projects.

This Cambodia DHS further analysis focuses on Urban and Rural Disparities in Reproductive and Maternal Health in Cambodia between the years 2000-2014. It presents the differentials levels and trends of current fertility, reproductive, and maternal health access and outcomes. Additionally, the report pays special attention to the situation of the urban and rural poor by disaggregating outcomes over four waves of the CDHS by location and wealth status. This study uses data from four CDHSs surveys collected in 2000, 2005, 2010 and 2014, which are comparable, facilitating the trend analysis.

This further topic analyst is selected by the United Nations Population Fund in consultation with National Institute of Statistics of Ministry of Planning and the National Maternal and Child Health Center of the Ministry of Health.

It is anticipated that the findings from this analysis will enhance the understanding of important issues of reproductive health and Maternal Health in Cambodia by health analysts and policymakers.

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Acknowledgements

The authors would like to thank Prof. Zachary Zimmer, Department of Social and Behavioral Sciences, University of California, San Francisco for assistance with data analysis, and the reviewers for their comments on the report. Special thanks are given to the technical teams from National Institute of Statistics of Ministry of Planning and the National Maternal and Child Health Center of the Ministry of Health of Cambodia, which provided guidance and overviews to this work, and the United Nations Population Fund (UNFPA), which provided funding for this report.

We also would like to thank USAID, Australia-DFAT, UNFPA, UNICEF, JICA, KOICA, and HSSP2 for sponsored CDHS and ICF International for providing technical assistance. We gratefully acknowledge the support and encouragement extended by the Minister of Health and Minister of Planning; and other members of the 2014 CDHS Executive Committee and Technical Committee who contributed to the survey activities.

Executive Summary

This report aims to provide additional information to that found in the CDHS reports, with the objective of assessing change over time in fertility, reproductive, and maternal health access and outcomes. Additionally, the report pays special attention to the situation of the urban and rural poor by disaggregating outcomes over four waves of the CDHS by location and wealth status. The report assesses fertility, reproductive, maternal, and adolescent health indicators in separate chapters.

Four waves of the Cambodia Demographic and Health Survey (CDHS), conducted in 2000, 2005, 2010, and 2014, are analyzed. The CDHS collects data from a nationally representative sample of women in reproductive age, ages 15 to 49. The survey includes all provinces of Cambodia, and both urban and rural areas. These data are comparable from survey to survey. The sample in this analysis includes 15,351 in 2000, 16,823 in 2005, 18,754 in 2010 and 17,578 in 2014 of women of reproductive age. We measure wealth status separately in urban and rural areas to assess the situation of the urban and rural poor. We use DHS standardized indicators to assess fertility, reproductive health, and maternal. We specifically assess these outcomes among 15 to 19 year olds to understand trends in adolescent health. This report disaggregates indicators by urban and rural residence, and wealth status. The details methodology used in this report are provided in Chapter 3. A summary of the findings is given in Chapter 7, which also includes conclusions and recommendations.

Since 2000, the total fertility rate has decreased in Cambodia among both urban and rural women, and across all wealth quintiles. Women in the poorest two quintiles have experienced the greatest decrease in total fertility in this time. However, fertility remains higher among the poorest women and among rural women compared to urban women. Both knowledge and current use of family planning has increased significantly since 2000. Modern methods are more common than traditional methods, though the rhythm method remains popular among wealthier women. Urban women are more likely to access family planning methods in the private sector, while rural women are more likely to access family planning in public facilities. As the contraceptive prevalence has increased significantly since 2000 among all married women, unmet need for family planning has decreased significantly. Currently, the contraceptive prevalence rate is similar among urban and rural women. Yet, unmet need remains higher among rural women and poorer women in both urban and rural areas. The prevalence of lifetime abortion increased from 2000 to 2010, and decreased from 2010 to 2014 among rural women. In 2014, women ages 30 to 39 were significantly more likely than younger or older women to report having an abortion in the preceding five years.

Consistent with recent improvements in the maternal mortality ratio in Cambodia, maternal health indicators have improved significantly since 2000. In 2014, a significantly higher proportion of women entered care in their first trimester, access care with a skilled provider, and received quality ANC. The proportions of women who deliver in a health facility and with a skilled provider have increased significantly over time among all women. Delivery with a skilled attendant has also increased significantly with the rise of facility delivery. Yet, significantly disparities in antenatal care and delivery by location and wealth remain, disadvantaging rural and poorer women.

Adolescent fertility has increased significantly since 2010. From 2010 to 2014, age-specific fertility rates among adolescents decreased among the poorest, and increased among all other wealth groups. In this same period, age-specific fertility rates increased among rural

adolescents, although they decreased among urban adolescents. Childbearing among adolescents remains concentrated among 18- and 19-year olds. Use of family planning has increased significantly over time among currently married adolescents; it remains significantly lower among poorer adolescents, although it does not vary significantly by location. Poorer adolescents are disadvantaged in accessing family planning. Similar to improvements over time for all women in maternal health, adolescents' likelihood of accessing skilled ANC and delivering at a health facility has increased significantly over time since 2000; however, wealthier and urban adolescents are significantly advantaged over poorer and rural adolescents.

The poorest Cambodian women face multiple disadvantages in reproductive and maternal health care compared richer women, across both urban and rural areas. However, the urban poor are better off than the rural poor for most indicators, demonstrating an urban advantage. The poorest rural women are significantly less likely than other rural women to use any family planning method and have significantly higher unmet need. Despite gains in equity in access to family planning, the poorest women are especially disadvantaged in access to maternal health care. They are significantly less like to enter ANC in the first trimester or access ANC with a skilled provider.

Chapter 1
Introduction

I. Background

Cambodia has made important gains in women's health in recent years, improving reproductive and maternal health access and outcomes.Maternal mortality has declined significantly since 2000 as access to skilled birth attendance and facility delivery have increased among all women (Dingle, Powell-Jackson, and Goodman 2013; Liljestrand and Sambath 2012). Utilization of reproductive and maternal health services has increased in that time, and for several key indicators of women's health, including met need for family planning access to antenatal care and skilled delivery, equity has improved (Dingle et al. 2013). While these gains were greatest among the wealthiest women, poorer women now enjoy improved access as well (Dingle et al. 2013).These improvements are commendable, and the result of important policy changes and public and private sector programs designed to improve access to care and health outcomes among women of reproductive age(Dingle et al. 2013; Liljestrand and Sambath 2012; Van de Poel et al. 2014).

However, the situation of the urban poor is not well understood, and this group of women may be particularly disadvantaged in terms of access to reproductive and maternal health care and/or outcomes. A previous assessment of equity in reproductive and maternal health in Cambodia finds greater inequity among women within urban areas compared to rural women (Dingle et al. 2013). Given high rates of in-migration of young women to Phnom Penh (Ministry of Planning 2012) and the general urbanization of Cambodia (World Bank 2015), an analysis of the current situation of urban women in Cambodia is warranted, especially to understand how access to care is changing over time in a period of great population growth and change. Disaggregating key indicators in fertility, reproductive health, and maternal health and assessing change over time provides a deeper understanding of the current landscape of women's health in Cambodia. This report specifically adds to the existing literature on reproductive and maternal heath in Cambodia by utilizing newly released data from CDHS 2014, and it explores a broader range of fertility, reproductive health, and maternal health indicators.

A woman's type of place of residence, her socio-economic status, and other social characteristics such as education and marital status shape her access to and ability to utilize reproductive and maternal health services. These socio-demographic characteristics also influence her fertility and its determinants, such as the age at which she marries and the age of her first birth. This report focuses on two key determinants of women's health access and outcomes: urban versus rural residence, and household wealth.

On average globally, including in Cambodia, women in urban areas have better health status than women in rural areas in many countries, including in Cambodia (Matthews et al. 2010; National Institute of Statistics, Directorate General for Health, and ICF International 2015a). Women who reside in urban areas may benefit from a so-called "urban advantage" because they reside closer to a higher number of facilities, and those facilities may be of higher quality than facilities in rural areas. However, the urban poor may be significantly disadvantaged compared to other urban women and even rural women, facing an "urban penalty." The urban poor are comparatively disadvantaged for many social, economic, and structural reasons; for example, they may not be able to afford health services, be socially

excluded, lack information about health services, or face structural barriers to accessing facilities, especially if they reside in slums or other tenuous living situations (Montgomery and Ezeh 2005). In some countries, the urban poor are unable to access key maternal health services, despite close proximity to multiple health facilities (Matthews et al. 2010).

In addition to location, household wealth is an important determinant of health. An inability to pay for health services, difficulty accessing education, paid work, and healthy and nutritious food disadvantage the poor, and lead to worse health outcomes. Globally, the poor have worse health outcomes across many health indicators, including in reproductive and maternal health. For example, in most developing countries, unmet need for family planning among young married women is highest among poor women, and decreases significantly with higher household wealth (MacQuarrie 2014). Household wealth is strongly associated with Cambodian women's access to maternal health services (Sagna and Sunil 2012). In Cambodia, household wealth impacts a woman's ability to remain in the continuum of maternal health care; that is, poorer women who access antenatal care are less likely to deliver with a skilled birth attendant, and among those who deliver with a skilled birth attendant,poorer women are less likely to receive skilled postnatal care (Wang and Hong 2015). However, in the past decade, several efforts have increased access to facility delivery, and ante- and postnatal care, for many Cambodian women. These include a voucher scheme to encourage facility delivery, policies to improve the availability and training of midwives, and health equity funds and other subsidies to reduce the out-of-pocket costs associated with maternal health care(Ministry of Health et al. 2015). These programs have played an important role in increasing access to skilled antenatal care and facility delivery(Ir et al. 2008; Van de Poel et al. 2014). As a result, Cambodia has one of the highest institutional delivery rates in Southeast (United Nations Children's Fund (UNICEF) 2014).

Access to quality, appropriate reproductive and maternal care is critical for preventing maternal deaths, including antenatal care, skilled delivery, and postnatal care. Women and couples must have access to a range of acceptable, safe family planning methods, and information about those methods, in order to have control over their fertility and reproductive health. Investing in quality reproductive and maternal health services, and improving access to those services, can lead to a range of health and social benefits for women, children, and the population at large.

II. Objective

The objective of this study to is to assess how fertility, reproductive health, and maternal health, including for adolescents, has changed over time from 2000 to 2014. This report aims to characterize disparities by urban and rural residences, and in wealth status, and assess how these disparities have changed over time. This report contributes towards an understanding of equity in reproductive and maternal health in Cambodia. Importantly, it characterizes the situation of the urban poor, a group that has received little attention in previous reports, yet may be at risk for adverse reproductive and maternal health outcomes. This report will aid programmers and policymakers in Cambodia by identifying which women are most at risk, and assist in targeting interventions and programs to further improve reproductive and maternal health outcomes, building on the important gains made in recent years.

Chapter 2
Methodology

III. Study population

Data for this study are obtained from four waves of the Cambodia Demographic and Health Survey (CDHS), a national population-based, randomized repeated cross-sectional survey that uses multi-stage cluster-based sampling. The CDHS waves included in this study were conducted in 2000, 2005, 2010, and 2014. Each survey wave includes information from a nationally representative sample of women ages 15 to 49. In each wave, women are nested within clusters, or enumeration areas (EAs) in each province of Cambodia. In 2000, 15,351 women nested within 471 EAs were included; in 2005, 16,823 women nested within 557 EAs were included. The 2010 wave included 18,754 women in 611 EAs, and the 2014 wave included 17,578 women in 611 EAs.

Each wave uses a two-stage sampling design. A random sample of villages is selected with probability proportional to size in a first stage, where village size is measured as the number of households in the village. Each village selected in the first stage was mapped, and households within the village were systematically sampled in a second stage. All women ages 15 to 49 that are residents of the household, or a visitor to the household on the night before the survey, were eligible to complete the full survey. In each wave, the survey design is based on a master sampling frame derived from the most recent census. The sampling frame for the 2000 CDHS was derived from the 1998 General Population Census, with additional villages enumerated by the National Institute of Statistics (NIS) added to the General Population Census to create the sampling frame for CDHS 2005. The 2010 and 2014 CDHS waves were based on the 2008 General Population Census. The sampling design for each CDHS is a two-staged, stratified process. In each wave, the household response rate is over 99.0%. The response rates for the sample of women ages 15-49 were 97.5% or higher in each survey wave.Details of the sample design are available in the main CDHS report for each wave (National Institute of Statistics, Directorate General for Health, and ICF International 2015b; National Institute of Statistics, Directorate General for Health, and ICF Macro 2011; National Institute of Statistics, Directorate General for Health, and ORC Macro 2001; National Institute of Statistics, National Institute of Public Health, and ORC Macro 2006).

The CDHS includes a household census and socio-demographic characteristics of each household member, such as age, education, marital status, and employment status. It asks about housing characteristics, access to water and sanitation, and household health behaviors. Women are asked about their fertility preferences, use of family planning, antenatal and delivery practices, knowledge of health-related information, and practices around feeding and caring for their children, among other topics.

IV. Analysis

This report examines a variety of outcomes related to fertility, reproductive, and maternal health, and assesses these outcomes by type of location (urban versus rural) and by household wealth status. Urban or rural status is determined by the Government of Cambodia; these designations are used in this survey.

This report does not use the wealth quintiles determined by the DHS. At the household level,the DHS constructs a numeric wealth index factor are constructed using standard principal components analysis of household asset indicators as reported by the household (Filmer and Pritchett 2001). This includes possession of durable goods and physical housing characteristics, and is calculated across all women in a survey year. In this analysis, we use this score to create separate wealth indices among urban residents and rural residents, using all households in each survey year. By creating separate wealth quintiles for urban and rural residents, we account for the differences in wages and cost of living in urban and rural Cambodia. All households, not only those with a woman age 15 to 49, are included in the calculation of wealth quintiles to more accurately reflect the socio-economic status of women included in this analysis. Household wealth is calculated separately for each survey waves. Households range from poorest and poor to middle, to rich and richest, as in the DHS reports. As a result of this methodology, the reader should note that some estimates by wealth quintile will differ from the main DHS report, as some women are categorized in a different wealth quintile in this report.

We use the standard DHS methodology and definition for indicators calculated in this analysis, except where noted otherwise. In some instances,the estimates of certain indicators may differ slightly from those reported in the main DHS report for each survey year.This is due to the use of a different wealth classification, as well as different denominators for select indicators. Where our estimates differ from the main DHS report, we have noted how the estimates are calculated. We also note where the number of women included in our calculation differs from that in the main DHS report. The standard DHS definitions and methodology of indicators may be found in the Guide to DHS statistics (Rutstein and Rojas 2006). We stratify many indicators by type of location (urban or rural), and/or wealth quintile. In some places, especially for adolescent reproductive and maternal health outcomes, it is not possible to stratify indicators by wealth status because of small sample sizes.

The DHS utilizes complex survey weights to account for differences in the sampling frame from General Population Census of Cambodia. Tables in this report include both numbers of women and percentages. All numbers reported are unweighted, while all percentages are weighted, and thus are representative entire of Cambodia.

V. Ethics

This study is based on secondary analysis of existing survey data with all identifying information removed. Each woman included in each CDHS wave provided informed consent prior to participating in the study.

Chapter 3
Sample Characteristics

This report includes women of reproductive age, ages 15 to 49, included in four waves of the CDHS from 2000 to 2014. Tables 3.1, 3.2, and 3.3 report select socio-demographic characteristics of the women included, by survey wave.
The characteristics provided in Tables 3.1, 3.2, and 3.3 only include women of reproductive age, not all households in the survey; thus, some estimates differ from the DHS main report.

Table 3.1.Sample characteristics, CDHS 2000 – 2014.

	2000 (N=15351)		2005 (N=16823)		2010 (N=18754)		2014 (N=17578)	
Background characteristics	**N**	**%**	**N**	**%**	**N**	**%**	**N**	**%**
Age								
15-19	3564	23.6%	3646	21.4%	3915	19.9%	3006	16.5%
20-24	1942	12.9%	3020	18.1%	3172	16.8%	3038	17.2%
25-29	2164	13.8%	2104	12.2%	3209	17.4%	2866	16.1%
30-34	2234	14.3%	2035	12.4%	2178	11.6%	2996	17.3%
35-39	2202	14.1%	2247	13.3%	1995	10.9%	1776	10.5%
40-44	1823	12.0%	2080	12.6%	2225	12.3%	1995	11.6%
45-49	1422	9.3%	1691	10.1%	2060	11.2%	1901	10.9%
% urban	2627	17.5%	4152	17.7%	6077	21.0%	5667	18.5%
% rural	12724	82.5%	12671	82.3%	12677	79.0%	11911	81.5%
% female headed households	3648	24.4%	3419	21.4%	4517	25.8%	4434	24.5%
Mean household size	6.1		5.8		5.5		5.5	
Urban	6.6		6.4		5.9		6.2	
Rural	6.0		5.7		5.4		5.3	
Education								
None	4849	28.3%	3772	19.4%	3203	15.9%	2233	12.8%
Primary	8182	54.6%	9131	55.8%	8796	49.4%	7826	47.1%
Secondary	2276	16.8%	3771	23.6%	6141	31.7%	6535	35.5%
Post-secondary	44	0.4%	149	1.1%	614	3.1%	984	4.6%
Literacy								
Literate	6173	42.7%	8773	54.8%	10167	54.1%	10089	56.0%
Functionally literate	3590	24.4%	2418	14.6%	3617	19.5%	3447	20.1%
Not literate	5507	32.5%	5585	30.3%	4941	26.2%	4029	23.9%
Marital status								
Never married	4646	31.8%	5186	31.8%	5926	30.8%	4651	25.2%
Currently married	9422	59.6%	10494	61.1%	11488	61.7%	11642	67.5%
Living together	-	-	47	0.4%	97	0.6%	94	0.5%
Divorced or separated	372	6.0%	445	2.8%	689	2.8%	629	3.4%
Widowed	911	2.6%	651	4.0%	554	3.0%	562	3.4%
Wealth quintile								
Poorest	3427	19.0%	3626	17.5%	4130	18.4%	3922	18.3%
Poor	2966	18.3%	3481	18.4%	3773	18.5%	3624	18.5%
Middle	3109	19.6%	3428	19.4%	3561	19.2%	3368	19.7%
Rich	2836	20.5%	3136	20.8%	3563	20.9%	3207	20.8%
Richest	3013	22.6%	3152	23.8%	3727	23.0%	3457	22.7%

About 20% of Cambodia's population is urban, with the proportion urban steadily increasing from 2000 to 2010. Urban households tend to be slightly larger than rural households in all survey years. Formal education and literacy have increased over time. The proportion of never-married women has decreased over time, though this is likely due to the larger proportion of adolescents in the 2000 CDHS. The distribution of women by wealth quintile is reported for each survey year. Women of reproductive age tend to live in households that are slightly better off than the average Cambodian household, as evidenced by the fact that a higher proportion of women are in the richer versus the poorer households across survey waves. Households that do not include adults of working age are often disadvantaged in terms in terms of income, which is why we see slightly fewer women in the poorer and poorest households.

Cambodia is currently experiencing a demographic dividend, that is, a surplus of adults of working age. This is evident in the changing age distribution of the CDHS age structure in each survey wave, which is determined by the overall age distribution in the country. The demographic dividend is the result of the post-Khmer Rouge baby boom (Heuveline and Poch 2007); women in this cohort were adolescents or young adults in the 2000 CDHS, and are now in their early 30s.

Table 3.2. Geographic distribution of women included in CDHS samples, 2000 – 2014.

Background characteristics	2000		2005		2010		2014	
	N	**%**	**N**	**%**	**N**	**%**	**N**	**%**
# women	15351		16823		18754		17578	
Province								
BanteayMeanchey	740	4.4%	779	3.9%	919	3.8%	810	3.9%
Battambang	851	6.8%	995	7.1%	781	6.2%	765	6.5%
Kampong Cham*	814	12.8%	791	12.6%	909	11.3%	853	11.5%
Kampong Chhnang	1027	3.8%	804	3.3%	1132	3.9%	899	3.8%
Kampong Speu	781	4.7%	923	5.2%	958	5.7%	1022	6.8%
Kampong Thom	912	5.1%	899	4.8%	969	5.0%	905	4.8%
Kampot	655	4.9%	792	4.6%	875	4.5%	817	4.1%
Kandal	885	9.6%	876	9.6%	992	10.2%	875	7.6%
Kep	37	0.2%	81	0.4%	35	0.2%	63	0.3%
Koh Kong	857	1.0%	383	1.0%	397	1.0%	300	0.6%
Kratie	640	2.3%	854	2.0%	937	2.3%	874	2.8%
Mondulkiri	236	0.3%	191	0.4%	303	0.5%	287	0.6%
OttarMeanchey	90	0.6%	948	1.1%	947	1.3%	823	1.7%
Pailin	22	0.2%	41	0.3%	98	0.9%	102	1.1%
Phnom Penh	1157	10.8%	1105	11.3%	1376	11.6%	1400	11.3%
PreahVihear	211	0.8%	555	1.2%	565	1.4%	637	1.7%
Prey Veng	843	8.3%	883	8.3%	874	7.2%	819	6.8%
Pursat	885	2.8%	817	2.9%	847	2.9%	859	3.6%
Rattanakiri	669	0.8%	674	0.9%	783	1.0%	677	1.5%
Sihanoukville	171	1.4%	425	1.2%	691	1.3%	710	1.8%
Siem Reap	856	6.2%	973	7.1%	985	6.6%	943	6.5%
SteungTreng	178	0.6%	318	0.6%	489	0.9%	448	0.9%
SvayRieng	876	4.5%	828	3.9%	991	4.0%	822	3.7%
Takeo	958	7.2%	888	6.6%	901	6.3%	868	6.2%

*Includes TboungKhmum population in CDHS 2014.

The distribution of women by province is shown in Table 3.2. Each province is represented in each survey wave. Phnom Penh, the most populous city, and Kampong Cham, the most populous province, have the highest proportions of women. The 2014 CDHS included a sample of women from TboungKhmum, a new province created in 2013 by dividing Kampong Cham. For consistency, the population of TboungKhmum is reported together with the population of Kampong Cham.

Table 3.3.Additional characteristics of women, 2000 – 2014.

	2000		2005		2010		2014	
Background characteristics	**N**	**%**	**N**	**%**	**N**	**%**	**N**	**%**
# women	15351		16823		18754		17578	
Employment								
Currently employed	11481	73.5%	10435	64.2%	13219	70.2%	12453	70.8%
All year	3397	29.8%	4606	36.4%	7020	44.6%	8154	55.1%
Seasonally	8854	67.7%	8135	60.3%	7474	52.2%	5455	41.2%
Occasionally	297	2.6%	437	3.3%	523	3.1%	435	3.7%
Not employed, worked in last 12 months	1131	8.7%	2752	14.6%	1801	10.6%	1428	8.8%
Not employed, did not work in last 12 months	2739	17.8%	3568	20.9%	3730	19.3%	3530	20.5%
Decision-making power for use of earnings	N=5551		N=4906		N=7359		N=8858	
Self only	2586	48.5%	2999	60.1%	4868	67.6%	6169	73.6%
Jointly with husband/partner	2448	43.1%	1493	35.2%	2368	30.8%	2533	24.7%
Husband/partner or other person alone	517	8.4%	373	3.9%	112	1.5%	156	1.7%
Media exposure								
Reads a newspaper at least once per week	1738	12.3%	2205	13.4%	2649	11.5%	1518	7.9%
Watches television at least once per week	7646	56.3%	10310	68.0%	10710	57.5%	10380	60.5%
Listens to the radio at least once per week	6420	46.1%	8160	50.2%	6686	34.2%	5392	32.4%
All 3 media (at least once per week)	1161	9.0%	1497	9.5%	1521	6.3%	899	4.8%
No media exposure	5569	30.1%	4297	21.0%	6051	32.5%	5754	31.4%
% who lived elsewhere for at least one month of preceding year	-	-	1157	N=5393 19.1%	1410	N=7005 18.9%	1526	N=7330 21.7%

Women's employment, decision-making power, media exposure, and return migration status are reported in Table 3.3. The proportion of women employed is similar across years, although the proportion of women who work all year has increased over time. Television is the most popular media, followed by radio. A high proportion of women, around 30% except for CDHS 2005, have no media exposure at least once per week. Women's control over their earnings has increased over time. Finally, about 20% of women in 2005, 2010, and 2014 report living elsewhere for a portion of the preceding year, and are returned migrants.

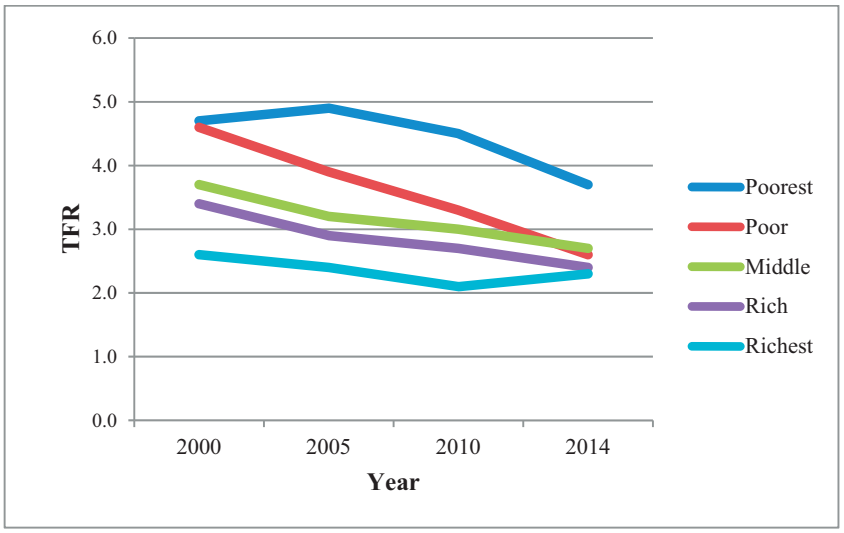
Chapter 4
Fertility

A population's fertility rates are important in understanding population dynamics, growth, and structure. The Cambodia DHS collects information about the fertility of women of reproductive age, as well as characteristics that influence women's fertility, such as age at marriage, first sexual intercourse, and first birth. This chapter assesses trends in fertility and its proximate determinants over time by location and wealth status.

The CDHS reports fertility rates for the three-year period preceding the survey, including the total fertility rate (TFR) and age-specific fertility rates (ASFR). The age-specific fertility rate is the number of births per 1,000 women in a specific age group. The total fertility rate is the number of children who would be born to a woman if that woman experienced the age-specific fertility rates at each age during her reproductive period, from age 15 to 49.

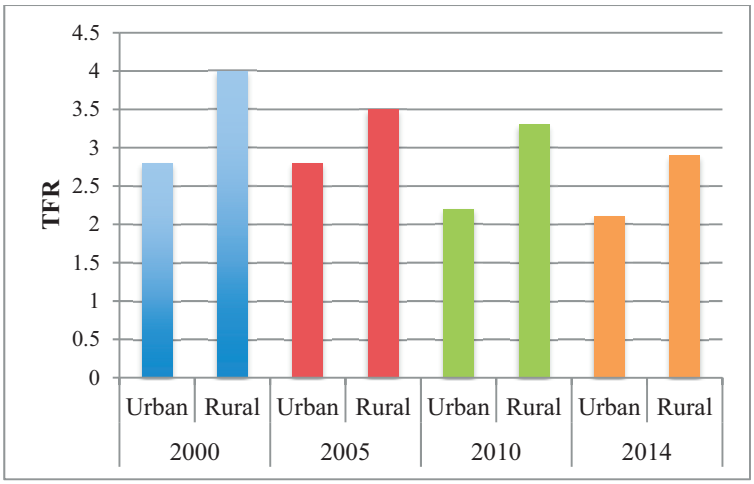
In Cambodia, the TFR has decreased over time. The TFR was 3.8 in 2000, 3.4 in 2005, 3.0 in 2010, and decreased to 2.7 in 2014. Figures 4.1 and 4.2 show the TFR over time by wealth quintile and type of location.

Figure 4.1. Total fertility rate (TFR) by wealth quintile over time.



The TFR has decreased among all groups over time, but it has decreased by the greatest amount among the poorest two wealth quintiles. In 2005, the poorest had a TFR of 4.9, which decreased to 3.9 by 2014. Among poor households, the TFR decreased from 4.6 in 2000 to 2.6 in 2014. The middle and rich households saw similar decreases over time, from 3.7 and 3.4 in 2000 to 2.7 and 2.3 in 2014, respectively. The richest households experienced the least change in TFR over time. While it decreased from 2.6 to 2.1 from 2000 to 2010, it increased to 2.3 in 2014. The difference in TFR between the richest and the poorest women decreased over time.

Figure 4.2. Total fertility rate (TFR) by location and survey year.



In each survey wave, the TFR in rural areas is higher than in urban areas. In both areas, it is decreasing over time. The rate of decrease in the TFR has been more consistent over time among rural women, whereas among urban women, the TFR was consistent from 2000 to 2005, decreased from 2005 to 2010, and has not decreased significantly since 2010. In urban areas, the TFR decreased from 2.8 in 2000 and 2005 to 2.1 in 2014. In rural areas, the TFR decreased from 4.0 in 2000 to 2.9 in 2014.

Figures 4.3 and 4.4 show the age-specific fertility rates (ASFRs) among urban and rural women, respectively, by five-year age groups.

Figure 4.3. Age-specific fertility rates (ASFR) among urban women.

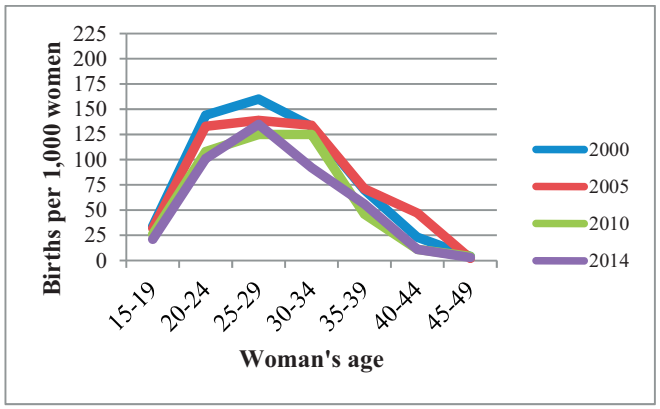
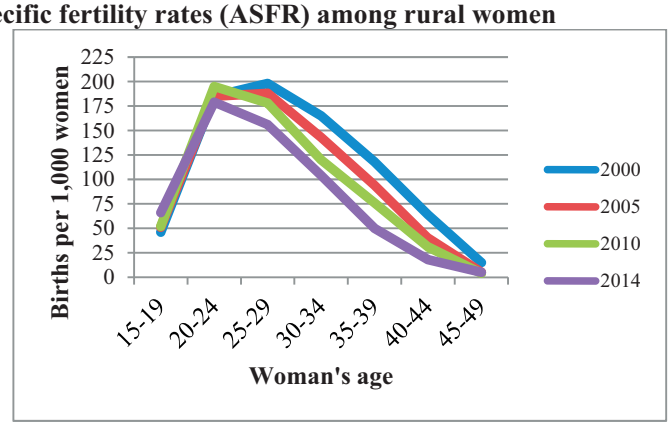


Figure 4.4. Age-specific fertility rates (ASFR) among rural women



Figures 4.3 and 4.4 highlight differences among urban and rural women in fertility across ages.In general, fertility is decreasing at all ages over time. This trend is especially evident among rural women beginning at ages 25 to 29. Among urban women, Figure 4.3 shows a trend towards delayed fertility, as fertility has decreased in younger age groups. Notably, the ASFR has increased over time among rural adolescents, ages 15 to 19. Among rural women, a trend towards earlier childbearing is shown in Figure 4.4, as the peak ASFR shifted from 25-29 in 2000 and 2005 to 20-24 in 2010 and 2014. Adolescent fertility is discussed in detail in Chapter 7.

Several factors are proximate determinants of fertility, and are associated with changes in fertility over time. These include the timing of marriage and first sexual intercourse, as well as the age at first birth is also associated with fertility. Where extra-marital childbirth is rare, such as in Cambodia, delayed marriage generally results in delayed childbearing and lower overall fertility rates.

The median age at first marriage has increased significantly over time among all women (p=.000).On average, urban women have delayed marriage significantly later compared to rural women across all survey years (p=.000). From 2000 to 2014, the median age at first marriage among urban women increased from 20.6 years to 21.7 years (Table 4.1). Disaggregating by wealth, the delay in marriage is more pronounced among the richest urban women compared to the poorest urban women. From 2005 to 2014, the median age at first marriage is significantly earlier among the poorest women compared to the richest (p=.000). Among rural women, the median age at first marriage increased from 19.9 years in 2000 to 20.3 years in 2014. The differences by wealth quintile among rural women are less pronounced compared to those among urban women, though the richest rural women delayed marriage significantly later on average compared to the poorest rural women (p=.000).

Table 4.1.Median age at first marriage for poorest vs. richest women ages 25 to 49 by location.

	Urban				Rural			
Background characteristics	2000 N=613	2005 N=926	2010 N=1466	2014 N=1516	2000 N=3470	2005 N=3124	2010 N=3422	2014 N=3293
Poorest (Q1)	19.7	19.9	20.2	20.5	20.0	19.4	20.1	20.4
Richest (Q5)	21.1	22.2	22.9	22.9	20.2	19.9	20.1	20.6

The median age at first sexual intercourse mirrors trends in the age at first marriage over time, and by wealth quintile (Table 4.2). It has increased significantly over time from 2000 to 2014 among both urban and rural women (p=.000). However, the median age at first sexual

intercourse decreased significantly from 2010 to 2014 (p=.01). In general, women report that the timing of first sexual intercourse is close to the time of marriage. Interestingly, in 2000, the median age at first sexual intercourse among the poorest urban and rural women, and the richest rural women, is about one month younger than the median age at first marriage. Since then, the median age at first sexual intercourse is delayed until the time of marriage or after for the richest and poorest urban and rural women, with the exception of the richest women in 2014. In both urban and rural areas, the richest women report a later age at first sexual intercourse on average, though the difference between the poorest and richest women is more pronounced in urban areas.

Table 4.2.Median age at first sexual intercourse for poorest vs. richest women by location.

Background characteristics	Urban				Rural			
	2000 N=613	2005 N=926	2010 N=1466	2014 N=1516	2000 N=3470	2005 N=3124	2010 N=3422	2014 N=3293
Poorest (Q1)	19.6	20.2	20.6	20.6	19.9	20.6	20.4	20.4
Richest (Q5)	21.1	22.2	23.4	22.8	20.1	20.2	20.5	20.7

The median age at first birth has risen significantly over time from 2000 to 2014 (p=.006). On average, Cambodian women in 2014 have their first birth about two years after marriage, though this interval is shorter for poorer women, comparing Table 4.1 and Table 4.3. Among all urban women, the median age at first birth has increased from 22.6 in 2000 to 23.9 in 2010, and decreased to 23.6 in 2014. For rural women, the median age at first birth increased over time from 21.7 in 2000 to 22.1 in 2014. Similar to the trend in median age at first sexual intercourse , the median age at first birth decreased significantly from 2010 to 2014 among urban women (p=.006), although it did not decrease in rural areas.

Table 4.3.Median age at first birth for poorest vs. richest women by location.

Background characteristics	Urban				Rural			
	2000 N=613	2005 N=926	2010 N=1466	2014 N=1516	2000 N=3470	2005 N=3124	2010 N=3422	2014 N=3293
Poorest (Q1)	21.7	21.9	22.3	22.5	21.9	22.3	22.2	22.2
Richest (Q5)	23.2	24.7	24.9	24.8	22.3	22.8	21.9	22.6

Among urban women, the urban poor had a significantly lower median age at first birth in 2005 (p=.000), 2010 (p=.000), and 2014 (p=.001). In 2014, the poorest urban women had a median age at first of 22.5 years, compared to 24.8 years among the richest women. The difference in median age at first birth by wealth quintile is less stark among rural women, though the difference by wealth status in median age at first birth is statistically significant in 2014 (p=.005).

Chapter 5
Family planning, reproductive health, and abortion

The CDHS reports women's knowledge and utilization of family planning methods, knowledge and prevalence of sexually transmitted infections including HIV/AIDS, and prevalence of abortion. Women report their use of both modern and traditional family planning methods. Modern methods include male and female condom, oral contraceptives, intra-uterine devices, male and female sterilization, implants, injections, emergency contraception, and locational amenorrhea (LAM). Traditional methods include the rhythm method (also called periodic abstinence or fertility awareness-based methods), withdrawal, or other non-hormonal, non-modern methods.

Knowledge of contraceptive methods is high across all groups, and has increased over time among both urban and rural women (p=.000). The proportion of women who can name at least one method, modern or traditional, is shown in Table 5.1. Across all years, a significantly higher proportion of urban women know at least one method versus rural women (p=.000), and a significantly higher proportion of richer women know at least one method compared to poorer women (p=.000). Among rural women, richer women have significantly higher knowledge of any method compared to poorer women across all survey years (p=.000). While richer urban women had significantly higher knowledge of any method compared to poorer urban women in 2000 and 2005, this difference was no longer statistically significant in 2010 or 2014.

Table 5.1.Proportion of women who know at least one family planning method by location.

Background characteristics	2000 (N=15351)		2005 (N=16823)		2010 (N=18754)		2014 (N=17578)	
	Urban	Rural	Urban	Rural	Urban	Rural	Urban	Rural
Poorest	90.0%	85.5%	97.3%	96.4%	99.1%	98.7%	99.4%	98.4%
Poor	97.6%	88.5%	98.5%	98.3%	99.7%	99.2%	99.8%	99.1%
Middle	96.1%	91.5%	99.9%	98.6%	99.8%	99.7%	99.8%	98.9%
Rich	98.4%	92.6%	99.9%	99.1%	99.9%	99.7%	100.0%	99.0%
Richest	98.0%	96.5%	100.0%	99.5%	99.7%	99.9%	99.6%	99.5%

The proportion of currently married urban and rural women currently using family planning is shown in Table 4.2, and includes both modern and traditional methods. Use of both modern and traditional methods has increased significantly among currently married urban and rural women over time (p=.000). In 2000, 23.8% of currently married women reported current use of any family planning method, which increased to 40.4% in 2005, 50.6% in 2010, and to 56.3% in 2014. From 2000 to 2010, use of any method was significantly higher among urban married women compared to rural (p=.000). Use of any method remained higher among urban women compared to rural women in 2014, though the difference is not statistically significant. Use of modern methods was significantly higher among urban women compared to rural women in 2000 and 2005 (p=.000), but in 2010 and 2014, rural women were significantly more likely to report using a modern method (p=.000). Urban women reported significantly higher use of traditional methods compared to rural women in all survey years (p=.000).

Table 5.2. Use of contraceptive methods by location type among currently married women.

Background characteristics	2000 (N=9332)		2005 (N=10309)		2010 (N=5626)		2014 (N=6493)	
	Urban	Rural	Urban	Rural	Urban	Rural	Urban	Rural
Any method	32.6%	22.1%	49.4%	38.2%	54.7%	49.6%	59.8%	55.7%
Any modern method	23.6%	17.9%	30.6%	26.5%	30.6%	35.8%	32.8%	39.9%
Any traditional method	9.0%	4.2%	18.8%	11.7%	24.0%	13.8%	27.0%	15.8%

Figures5.1 and 5.2show use of modern and traditional methods by wealth quintile among urban women and rural women, respectively.Among urban women, the use of modern methods has increased significantly since 2000 (p=.000). Since 2010, the poorest urban women are more likely to use a modern method than all other urban women except for the richest. The use of modern methods among the poorest and richest urban women is comparable in 2010 and 2014. The use of traditional methods, especially the rhythm method, has increased significantly among urban women since 2000 (p=.000). However, among the richest urban women, the use of traditional methods was highest in 2005, and has decreased significantly since then. The poorest urban women are significantly less likely than all other urban women to use traditional methods in all survey years except 2005 (p=.000).

Figure 5.1. Current use of FP by wealth status among currently married urban women.

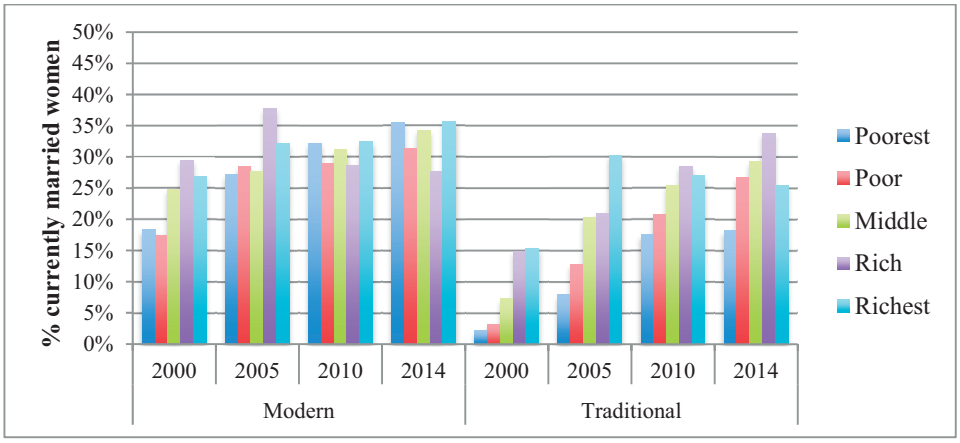
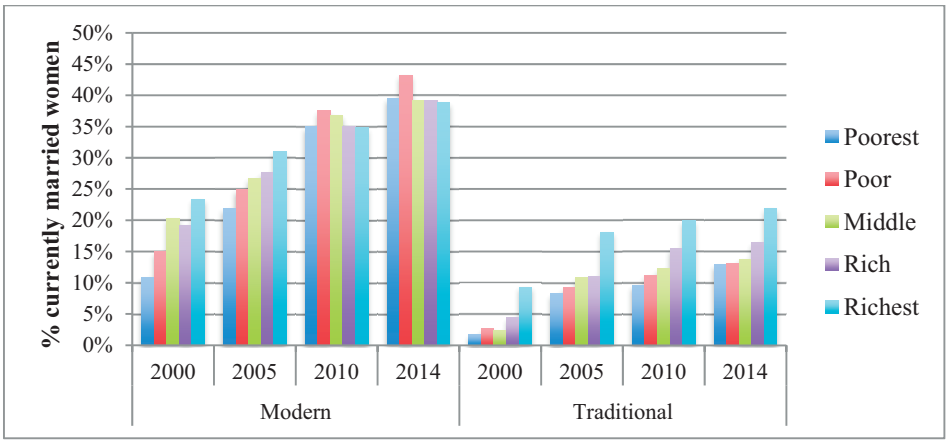


Figure 5.2. Current use of FP by wealth status among currently married rural women



Among rural women, the method mix in all years favors modern methods, though the use of both modern and traditional methods has increased significantly over time among rural women (p=.000). Richer rural women are significantly more likely to use modern methods compared to poorer rural women in all survey years (p=.000), and the use of traditional methods is significantly higher among wealthier rural women in all years, including 2014 (p=.036). The poorest rural women are significantly less likely to use any method compared to all other women, including in 2014 (p=.000). Use of both modern and traditional methods has increased significantly among both the poorest urban and rural women across survey years.

Among current users of modern family planning methods, the source of those methods has shifted over time in both urban and rural areas. In Cambodia, women can access modern family planning methods from a variety of sources. Public sector sources include national, provincial, and district hospital, health centers, health posts, and military hospitals. In the private sector, women may access family planning at private hospitals and clinics, pharmacies, or other private formal medical sources. However, in 2005, pharmacies were classified as an informal source. Informal sources of family planning include shops, community distributors, through friends or relatives, or other sources outside the formal public or private health sectors. As shown in Figure 5.3, the private sector has become the most common source of family planning for urban women beginning in 2005. Among rural women, the public sector is the most common source. In 2005, the high proportion of women accessing family planning in the informal sector is due to the different classification of pharmacies as part of the informal sector.

Figure 5.3. Source of current method among currently married women using a modern method by location.

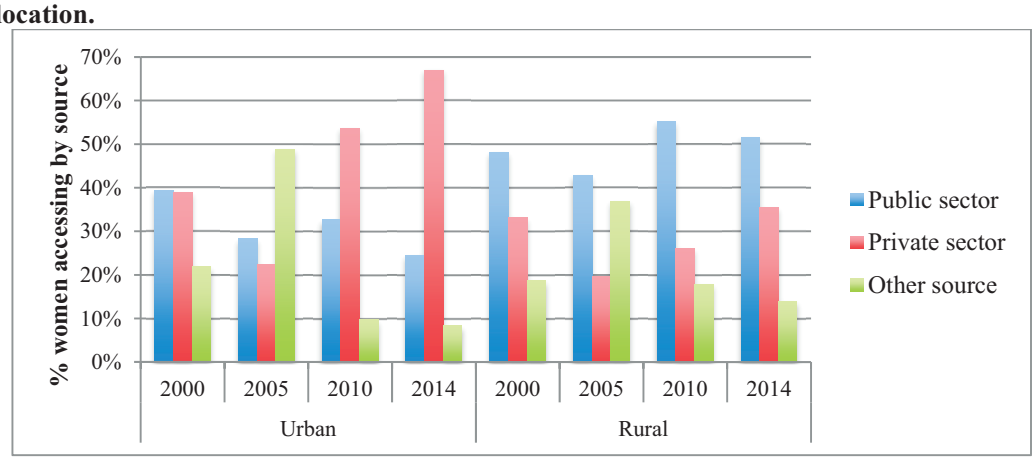


Table 5.3 further disaggregates sources of current methods by wealth quintile among currently married women in urban and rural areas. Among urban women, the private sector is a more common source in general, and this relationship is stronger among wealthier women. For example, in 2010, 40.1% of the poorest urban women accessed family planning in the private sector compared to 65.1% of richest urban women; in 2014, 48.2% of the poorest urban women accessed their method from the private sector, versus 83.8% of the richest urban women. There is a large increase in private sector usage for family planning between the poorest and the poor urban women. Poor urban women in 2014 were significantly more likely to use private sector sources, including pharmacies, than the poorest women (p=.000). However, use of the public sector increased significantly over time among the poorest urban

women (p=.03). Use of the public sector did not change significantly over time among the poorest rural women.

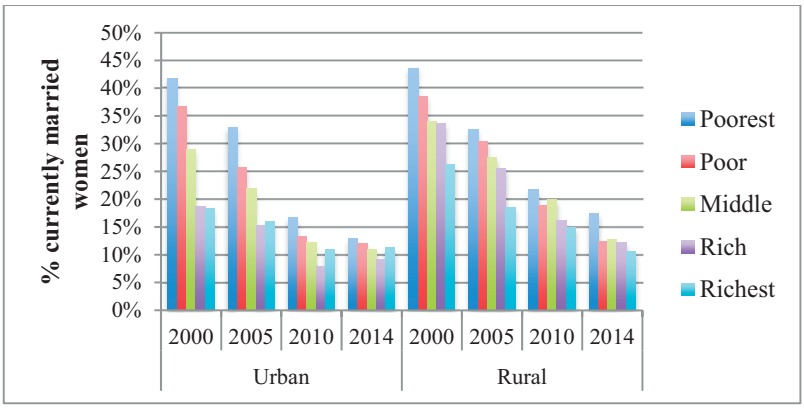
Table 5.3. Source of current method by wealth quintile and location among currently married women using a modern method.

Background characteristics	2000 (N=1624)		2005 (N=2840)		2010 (N=3997)		2014 (N=4512)	
	Urban	Rural	Urban	Rural	Urban	Rural	Urban	Rural
Public sector								
Poorest	25.3%	49.8%	31.8%	50.4%	45.2%	56.4%	41.4%	56.9%
Poor	45.6%	43.5%	36.6%	46.4%	28.4%	56.4%	27.4%	54.0%
Middle	38.4%	52.7%	36.0%	47.4%	32.4%	56.8%	27.8%	50.1%
Rich	45.8%	48.2%	16.8%	40.4%	36.5%	54.9%	21.2%	50.5%
Richest	35.3%	46.1%	12.8%	31.1%	20.0%	49.3%	10.9%	45.7%
Private sector								
Poorest	39.2%	29.9%	18.1%	12.4%	40.1%	20.4%	48.2%	27.4%
Poor	26.6%	34.4%	25.4%	14.2%	61.0%	24.2%	63.0%	32.0%
Middle	48.3%	30.1%	23.8%	20.1%	52.9%	27.0%	67.0%	33.6%
Rich	36.3%	35.7%	19.2%	19.5%	51.8%	25.7%	72.2%	37.4%
Richest	46.2%	34.3%	28.7%	29.7%	65.1%	34.4%	83.8%	47.3%
Other source								
Poorest	35.5%	20.3%	50.1%	36.3%	14.0%	23.0%	10.5%	16.1%
Poor	27.8%	22.2%	37.5%	39.4%	8.6%	18.5%	9.6%	13.9%
Middle	13.3%	17.1%	30.8%	32.0%	10.4%	15.1%	8.3%	16.3%
Rich	17.9%	16.2%	63.5%	38.6%	5.8%	18.3%	6.6%	12.2%
Richest	18.5%	19.2%	57.6%	38.9%	9.4%	14.5%	5.2%	7.0%

Among rural women, the public sector remains a more common source among currently married women in all wealth quintiles. In all survey years, richer rural women are significantly more likely to utilize the private sector versus the public sector, whereas rural poorer women are significantly more likely to use the public sector (p=.000). Among all wealth quintiles and in both urban and rural areas, accessing family planning outside the formal public or private sectors has decreased over time.

Understanding the proportion of need for family planning satisfied, that is, the proportion of women with met and unmet need for family planning, is useful for understanding which women are able to access to family planning, and what populations are disadvantaged. Unmet need has decreased significantly over time among both urban and rural women, including among the poorest urban and poorest rural women (p=.000).

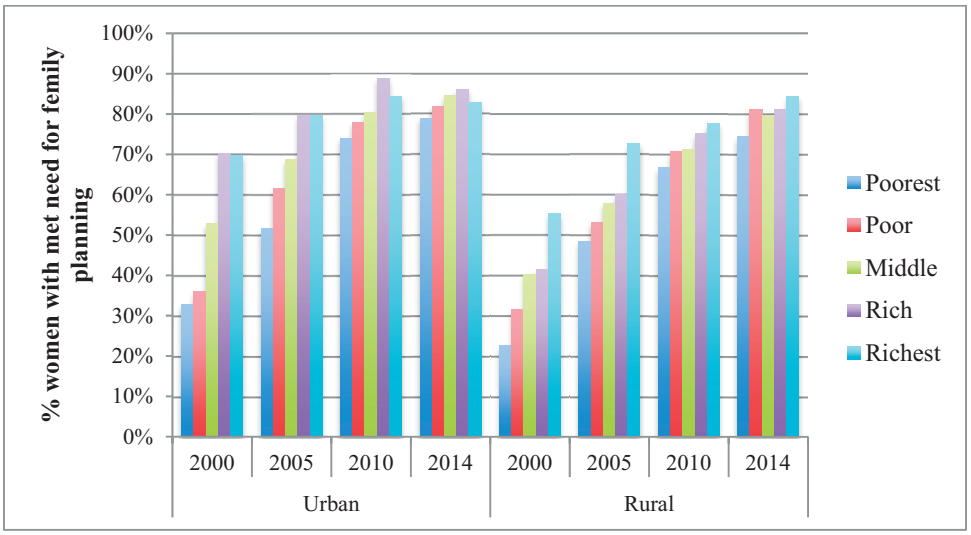
Figure 5.4.Unmet need among currently married women by location and wealth.



The proportion of currently married women with unmet need for family planning for either spacing or limiting is shown in Figure 5.4, disaggregated by wealth status among urban versus rural women. Across all survey years, rural women have significantly higher unmet need than urban women. In general, unmet need has greatly decreased over time among all groups, and in both urban and rural locations, an encouraging trend. Among all women, the poorest are disadvantaged in accessing family planning: unmet need is significantly higher among the poorest women compared to all other women (p=.000) across all survey waves. However, equity has increased in urban areas: among urban women, the poorest women no longer report significantly higher unmet need in 2014. Yet, this disadvantage continues in rural areas, where the poorest women continue to have significantly greater unmet need than other rural women (p=.000).

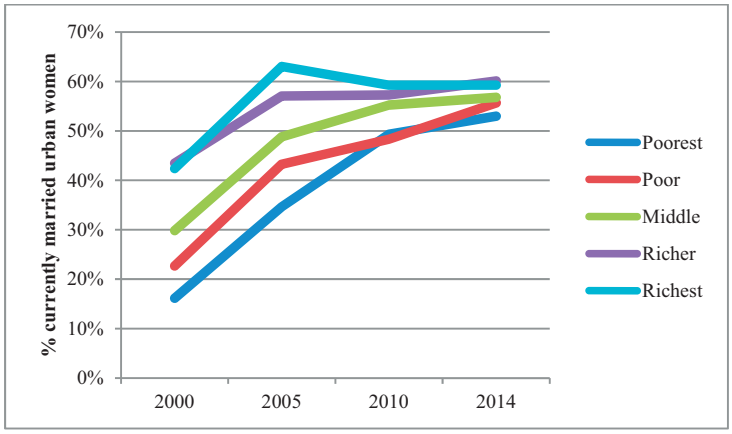
In parallel with decreases in unmet need, the proportion of women reporting their need for family planning is met has increased over time (Figure 5.5). In 2014, levels of met need were similar in urban and rural areas.

Figure 5.5. Demand satisfied among currently married women by location and wealth status.

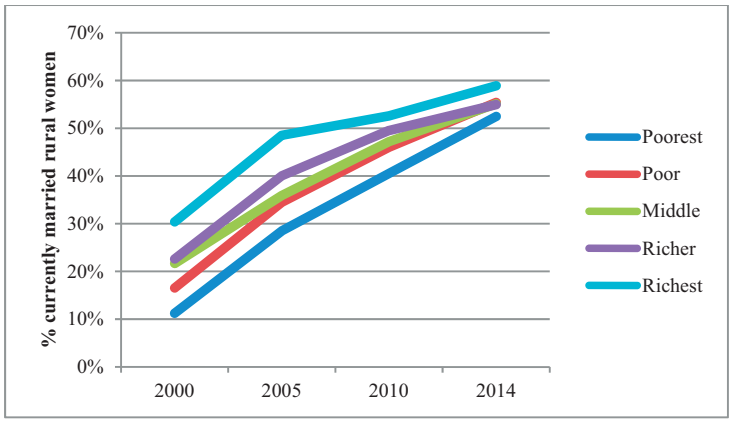


The contraceptive prevalence rate (CPR) shows the percent of currently married women of reproductive age who use, or have a partner who uses, any contraceptive method. It provides a population estimate of the prevalence of family planning methods. The CPR over time by wealth quintile is presented for currently married urban and rural women below, in Figures 5.6a and 5.6b.

Figures 5.6a.Contraceptive prevalence rate among currently married women in urban areas.



Figures 5.6b.Contraceptive prevalence rate among currently married women in rural areas.



The CPR has increased over time from 2000 in both urban and rural areas.As of 2014, the CPR is similar among urban and rural women. Notably, the difference in the CPR by wealth quintile has decreased over time in both urban and rural areas, demonstrating increased equity in access to family planning. In urban areas (Figure 5.6a), the CPR has continued to increase for the poorer and poorest women in each survey year. However, there has been little increase in the CPR for rich and richer women, as their unmet need has been relatively low for the last ten years. Among rural women, the CPR has increased over time for all wealth groups in tandem with increases in the proportion of women whose need for family planning is met.

Abortion is legal in Cambodia in the first trimester, or in the second trimester under specific circumstances.The CDHS asks women about whether they have ever had an abortion, and if so, where they accessed the abortion. Because abortion is stigmatized and unmarried women

may be unwilling to report abortion, the estimates presented in the CDHS and this report likely underestimate the true prevalence of abortion in Cambodia. Table 5.4 shows the proportion of women who report ever having an induced abortion in their lifetime by urban/rural location and wealth quintile. The prevalence of lifetime abortion increased significantly from 2000 to 2010 among urban and rural women, including the poorest urban and poorest rural women (p=.000). However, from 2010 to 2014, the proportion of rural women reporting that they ever had an abortion decreased significantly (p=.000), including among the poorest rural women (p=.000). The prevalence of lifetime abortion also decreased significantly among the poorest urban women from 2010 to 2014 (p=.007), although it did not change significantly among women in the middle three wealth quintiles. However, the prevalence of lifetime abortion increased among the richest urban women from 2010 to 2014.

Table 5.4. Prevalence of any lifetime induced abortion.

Background characteristics	2000 (N=15351)		2005 (N=16823)		2010 (N=18754)		2014 (N=17578)	
	Urban	Rural	Urban	Rural	Urban	Rural	Urban	Rural
Poorest	2.3%	3.1%	7.4%	6.1%	16.7%	13.7%	15.2%	9.1%
Poor	3.8%	3.5%	12.9%	6.7%	17.6%	14.3%	20.5%	10.3%
Middle	6.4%	3.9%	15.5%	9.2%	17.5%	15.4%	20.9%	11.1%
Rich	7.2%	5.2%	16.1%	10.0%	13.7%	15.1%	17.7%	10.8%
Richest	4.2%	6.0%	14.3%	12.5%	8.0%	14.4%	13.6%	13.8%
Total	4.9%	4.4%	13.7%	9.1%	14.3%	14.6%	17.5%	11.1%

.

In all survey years, the prevalence of abortion is higher among urban women compared to rural women. In most survey years, including in 2014, richer women are significantly more likely to report ever having an abortion than poorer women (p=.000). This trend occurs in both urban and rural areas, where the poorest women are significantly less likely to report abortion compared to all other women. This likely reflects disparities in access to abortion, as the urban and rural poor also have higher unmet need for family planning and are significantly less likely to report current use of any family planning method.

Information on the prevalence of abortions in the five years preceding the survey is available in CDHS 2010 and 2014. Table 5.5 shows the prevalence of women reporting that they had an abortion in five years preceding CDHS 2014, by age groups.

Table 5.5.Prevalence of abortion in the preceding five years by age and location.

	15-19	20-24	25-29	30-34	35-39	40-44	45-49
Urban	0.8%	6.9%	13.8%	16.0%	15.1%	11.1%	5.2%
Rural	0.8%	4.8%	9.1%	9.4%	10.6%	7.3%	3.0%
Total	0.8%	5.3%	10.1%	10.7%	11.3%	8.0%	3.3%

The likelihood of reporting an abortion in the past five years increases significantly with age to ages 30 to 39, then decreases; that is, women in the middle of their reproductive years are significantly more likely to have had an abortion in the five years before CDHS 2014 than younger or older women (p=.000). Additionally, urban women are significantly more likely than rural women to have had an abortion in the past five years (p=.000). Among rural women, there are no significantly differences in likelihood of abortion in the past five years by wealth status. However, among urban women, women in the middle three wealth quintiles are significantly more likely to report having an abortion in the past five years than the poorest or richest urban women (p=.025).

Knowledge of Sexually Transmitted Infections (STIs) and HIV/AIDS is high among all groups of women, and has increased slightly over time. In 2000, 95.0% and 94.9% of women had ever heard of STIs or HIV, respectively. By 2014, 98.4% and 98.1% of all women had heard of STIs and HIV, respectively. In all survey years, knowledge of STIs and HIV is significantly higher among urban women compared to rural (p=.000), and among wealthier women compared to poorer women (p=.000).

The prevalence of STIs has increased significantly over time. In 2000, 1.4% of women reported that they had experienced an STI in the year preceding the survey; by 2014, this increased to 4.2% of all women. In 2000 and 2010, the prevalence of STIs was higher among urban women, while in 2005 and 2014, STIs were more prevalent among rural women. Interestingly, among urban women, the prevalence by wealth quintile has reversed since 2000. In 2000, richer women were significantly more likely to report STI symptoms (p=.04), but by 2014, STIs were more prevalent among poorer women (p=.006). In 2014, among urban women, 4.5% of the poorest women reported an STI, while 1.8% of richest women reported an STI. The prevalence of STIs has increased significantly among urban women in general since 2000 (p=.043), and among the poorest urban women (p=.000).

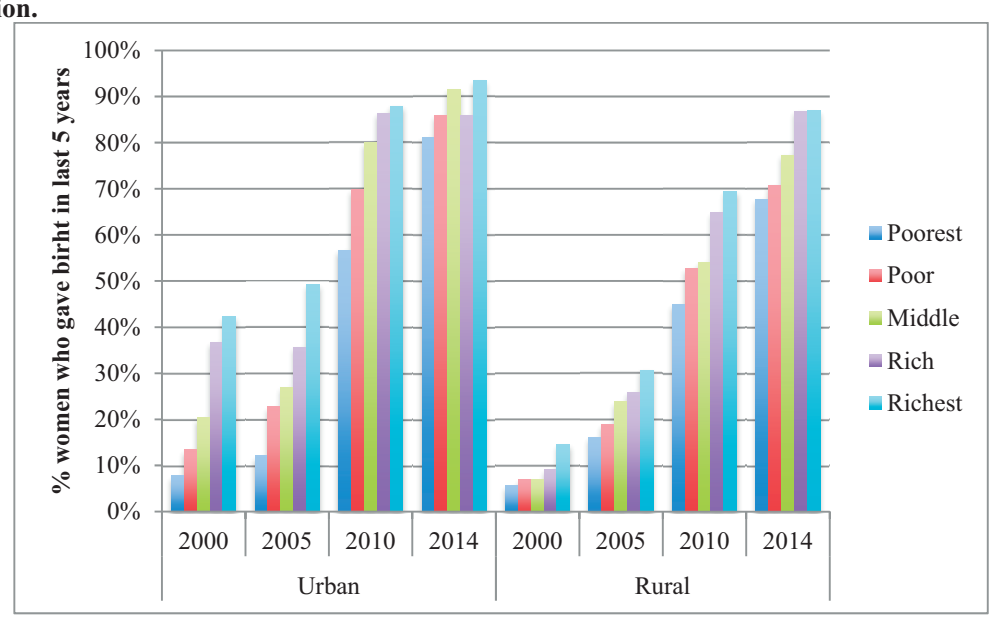
Among rural women, the prevalence of STIs does not vary significantly by income, with the exception of 2010, when richer women were significantly less likely to report an STI. However, the prevalence of STIs among rural women has increased significantly over time (p=.000), including among the poorest urban women (p=.000).

Chapter 6
Maternal health

Cambodia reported high rates of maternal mortality in the early and mid-2000s; since then, targeted efforts to reduce maternal mortality have resulted in improvements throughout the maternal health care continuum. This chapter examines indicators related to antenatal care, delivery, and postnatal care among women reporting a birth in the five years preceding the CDHS. These indicators illustrate access to and quality of maternal health care among women in Cambodia.

Antenatal care (ANC) is the first component of quality maternal health care: a skilled provider can monitor a woman and her baby throughout the pregnancy, address and prevent complications. The World Health Organization (WHO) recommends that women attend a minimum of four ANC visits throughout the pregnancy, and enter care in the first trimester(World Health Organization 2015).

Figure 6.1.Proportion of women entering antenatal care before 4 months by wealth quintile and location.

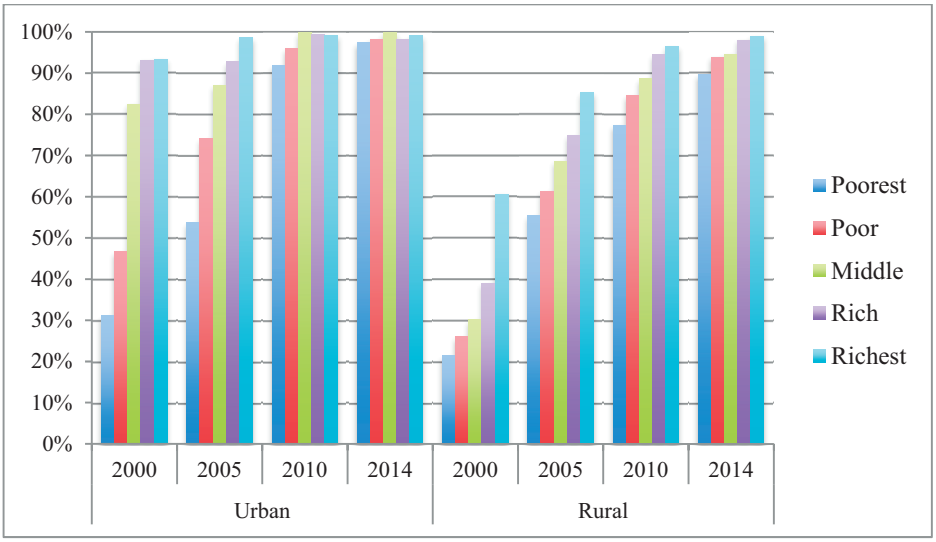


The proportion of women entering ANC in the first trimester has increased significantly since 2000 among all groups of women, including the poorest urban and rural women (p=.000). In urban areas, 10.0% of women attended ANC in the first trimester in 2000, compared to 79.0% percent of women in 2014. In rural areas, the proportion of women attending ANC in the first trimester increased from 8.3% to 77.5% in 2014. Nonetheless, disparities by location and wealth status remain. Urban women are significantly more likely than rural women to enter ANC in the first trimester across all survey years (p=.000). In both urban and rural areas, the poorest women are significantly less likely than all other women to enter ANC in the first trimester over all survey years (p=.000).

In addition to the timing of entry to ANC, it is important that a woman attend ANC with a skilled provider, such as a doctor or midwife. Figure 6.2 shows the proportion of women who

sought ANC with a skilled provider, disaggregated by location and wealth status. Access to ANC with a skilled provider has increased among all women over time, including both the urban and rural poor (p=.000).

Figure 6.2. Proportion of women who attended antenatal care with a skilled provider by wealth quintile and location.



By 2014, almost all pregnant women in Cambodia accessed ANC with a skilled provider. Overall, the proportion of women who saw a skilled provider for ANC increased from 37.7% in 2000 to 95.3% in 2014. Among urban women, the proportion increased from 62.3% in 2000 to 98.6% in 2014, and among rural women, from 33.8% in 2000 to 94.8% in 2014. Yet, important disparities remain in access to a skilled provider for ANC. Across all survey years, urban women are significantly more likely to attend a skilled provider for ANC than rural women (p=.000). The poor are significantly disadvantaged compared to other urban women, including in 2014 (p=.002). Among rural women, the poorest are significantly less likely attend a skilled provider for ANC (p=.000).

The quality of antenatal care can be assessed by examining whether women received recommended services or health examinations during antenatal care visits. These include measuring a women's height and weight, blood pressure, analyzing blood and urine samples, and providing counseling about pregnancy complications and danger signs. Of these components, measuring a women's weight and taking her blood pressure are almost universal among women in all location and income groups; in 2014, over 90% of women report that they received these components as a part of antenatal care for their most recent pregnancy. Urine analysis is the least commonly included component; in 2014, less than half of all women reported that this was included in their antenatal care. Table 6.1 shows the proportion of women who received all six recommended components of antenatal care during their most recent pregnancy.

Table 6.1.Proportion of women who received all recommended ANC components for most recent pregnancy by wealth quintile and location.

Background characteristics	2000 (N=6079)		2005 (N=6142)		2010 (N=6448)		2014 (N=5901)	
	Urban	Rural	Urban	Rural	Urban	Rural	Urban	Rural
Poorest	1.8%	0.5%	4.8%	2.2%	20.6%	11.1%	30.5%	29.5%
Poor	2.3%	0.9%	8.8%	2.2%	34.0%	12.7%	42.1%	31.2%
Middle	8.2%	1.7%	20.3%	3.7%	47.4%	12.6%	45.5%	35.7%
Rich	24.5%	2.0%	35.7%	4.0%	58.9%	14.8%	53.3%	33.9%
Richest	35.0%	6.9%	46.7%	14.1%	73.8%	20.7%	62.2%	38.0%

The proportion of women who receive quality ANC, that is, who receive all six recommended components, increased significantly from 2000 to 2014 in both urban and rural areas (p=.000). However, even in 2014, less than half of women access ANC that includes all six components; in 2014, this included 46.9% of urban women and 33.5% of rural women. There are significant disparities in the quality of care accessed by both location and wealth status. Table 6.1 demonstrated a clear gradient effect by wealth, where in both urban and rural areas, poorer women are significantly less likely to access quality ANC in all survey years (p=.000). Additionally, rural women are significantly less likely to access quality ANC than urban women across all survey years (p=.000). However, the proportion of the poorest urban and rural women who receive quality ANC has increased over time (p=.000).

Being informed of potential complications and warning signs in pregnancy is an important component of ANC, and is assessed as part of quality ANC in Table 6.1 (above). The proportion of women who were informed of pregnancy complications as a part of ANC increased from 40.4% in 2000 to 82.6% in 2014. In 2014, urban women were not significantly more likely to be informed of complications than rural women. However, significant disparities by wealth status remain; the poorest urban women and the poorest rural women are significantly less likely to be informed compared other urban women (p=.05) and other rural women (p=.003), respectively.

Delivering at a health facility is important for the health of both the mother and baby; it increases access to lifesaving interventions. Increasing facility delivery is critical to reducing maternal mortality in Cambodia, and is a key strategy in improving maternal and newborn health outcomes (Van de Poel et al. 2014). Table 6.2 shows the proportion of women who delivered at a health facility, either public or private, disaggregated by location and wealth status.

Table 6.2.Proportion of women delivering at a health facility by wealth status and location.

Background characteristics	2000 (N=6079)		2005 (N=6142)		2010 (N=6448)		2014 (N=5901)	
	Urban	Rural	Urban	Rural	Urban	Rural	Urban	Rural
Poorest	8.5%	1.6%	10.1%	7.3%	65.0%	36.8%	88.2%	70.7%
Poor	14.6%	2.7%	37.2%	8.6%	86.9%	43.4%	96.3%	76.7%
Middle	42.1%	3.7%	56.5%	15.3%	90.1%	50.3%	98.7%	84.2%
Rich	71.1%	6.1%	83.8%	16.8%	97.2%	58.2%	99.5%	90.8%
Richest	89.7%	23.8%	92.8%	43.6%	99.1%	72.4%	98.7%	92.6%

Overall, the proportion of women who deliver at a health facility has increased significantly in Cambodia since 2000, across all groups of women: urban and rural, and the poorest women (p=.000). In 2000, 10.7% of women delivered at a health facility, compared to 21.9%

in 2005, 56.8% in 2010, and 84.6% in 2014, a marked increased since 2005. The proportion of women delivering at a health facility is significantly greater in urban areas across all survey years (p=.000), and increases with increasing household wealth (p=.000). Both the urban and rural poor remain relatively disadvantaged compared to other women; they are significantly less likely to deliver in a facility compared to other women in urban and rural areas, respectively (p=.000).

Delivery by a skilled birth attendant (SBA), which includes doctors, nurses, midwives, and other health professionals, increases the likelihood of positive maternal and newborn health outcomes. Table 6.3 shows the proportion of women who delivered with a skilled birth attendant in the preceding five years, by location and wealth status.

Table 6.3.Proportion of women delivering with a skilled birth attendant by wealth status and location.

Background characteristics	2000 (N=6079)		2005 (N=6412)		2010 (N=6448)		2014 (N=5901)	
	Urban	Rural	Urban	Rural	Urban	Rural	Urban	Rural
Poorest	29.0%	13.7%	28.2%	20.6%	83.3%	47.2%	93.9%	75.5%
Poor	42.0%	21.3%	68.2%	27.7%	96.9%	59.1%	99.0%	84.2%
Middle	82.6%	26.1%	87.8%	37.8%	97.8%	69.6%	98.9%	90.2%
Rich	94.8%	34.7%	99.7%	50.2%	100.0%	76.6%	97.8%	94.8%
Richest	98.6%	64.7%	98.1%	81.1%	99.2%	91.3%	99.1%	97.1%

Delivery with SBAs has increased significantly for all women in Cambodia since 2000 (p=.000). In 2000, 34.3% of women delivered with a SBA, which increased 89.3% in 2014. The gap between richest and poorest has decreased for this indicator over time. In 2000, 29.0% of poorest urban women delivered with a SBA in 2000, while in 2014, 93.9% of this group delivered with a SBA. Rural poor women have experienced a similar increase, yet they remain the least likely to deliver with a skilled birth attendant. These groups remain significantly disadvantaged compared to all other women (p=.000), despite the fact that their likelihood of delivering with a skilled attendant has also increased over time (p=.000).

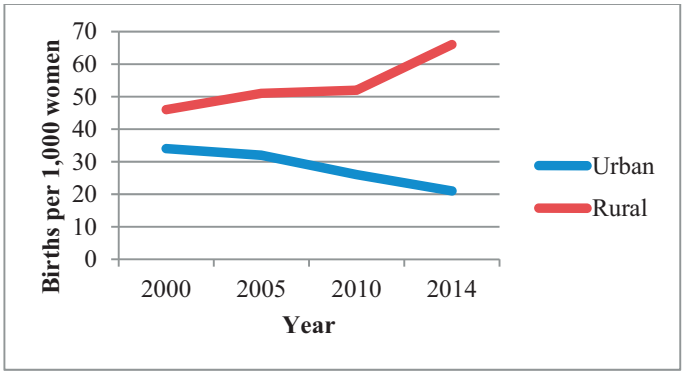
Chapter 7
Adolescent fertility, reproductive health, and maternal health

This chapter assesses fertility, reproductive health, and maternal health indicators for adolescents, ages 15 to 19. Because of the sample size of adolescents in each CDHS survey wave, data on adolescent health cannot be disaggregated to the same level of detail as for the full survey. Nevertheless, it is possible to examine trends in adolescent health and fertility, comparing urban and rural adolescents, and comparing all adolescents by wealth quintile.

Figure 7.1. Age-specific fertility rate (ASFR) among adolescents ages 15-19 by wealth quintile.

The age-specific fertility rate (ASFR) for adolescents ages 15 to 19 is the number of birth per 1,000 adolescents, and has increased among adolescents in all wealth quintiles over time, from 44births per 1,000 in 2000 to 57births per 1,000 in 2015, with most of the increase in the past four years. Figure 7.1 shows the ASFR for all adolescents over time by wealth quintile. Notable increases since 2010 are observed for all but the poorest adolescents, whose ASFR decreased in the last four years.

Figure 7.2. Age-specific fertility rate (ASFR) among adolescents ages 15-19 by location.



Disaggregating the adolescent ASFR by location provides further insight into trends in adolescent fertility. While the ASFR has actually decreased among urban adolescents over time, a parallel increase is observed among adolescents in rural areas. From 2000 to 2014, the

ASFR among urban adolescents decreased from 34 births per 1,000 to 21 births per 1,000 urban adolescents, while it increased from 46 to 66births per 1,000 rural adolescents.

Table 7.1 examines the ASFR by single year age groups, which shows at which ages adolescent fertility is concentrated. The ASFR increases with each additional year of age in each survey wave, and remains very low among 15 year olds. The absolute rate has increased over time for all one-year age groups except for 17 year olds. However, due to small sample sizes, trends in adolescent fertility by single year age groups should be interpreted with caution.

Table 7.1. Age-specific fertility rate (ASFR) by single age years among adolescents.

Age	2000	2005	2010	2014
15	4	3	3	6
16	15	27	16	21
17	41	44	39	35
18	79	65	73	93
19	106	124	113	130

In examining adolescent fertility, it is necessary to consider proximate determinants of fertility, such as age at first marriage. Table 7.2 shows the proportion of all adolescents currently married by location and by wealth status over time.

Table 7.2.Proportion of adolescents currently married by location and wealth status.

	Urban (N=3938)				Rural (N=10193)			
	2000	2005	2010	2014	2000	2005	2010	2014
Poorest	8.6%	13.4%	11.0%	13.8%	12.6%	14.3%	17.6%	22.6%
Poor	15.4%	13.4%	7.4%	10.5%	15.8%	12.8%	1.3%	20.6%
Middle	7.2%	11.4%	10.8%	7.2%	15.9%	10.7%	13.1%	19.0%
Rich	12.7%	7.4%	4.6%	12.2%	13.2%	10.8%	10.1%	15.0%
Richest	7.8%	4.3%	2.3%	2.4%	11.6%	9.7%	8.3%	15.9%

In 2000, there were no significant differences in the proportion of currently married adolescents by wealth status, but in 2010 and 2014, the poorest urban adolescents are significantly more likely to be married (p=.000). In rural areas, this relationship was significant in 2010, but the poorest rural adolescents are no longer significantly more likely than other rural adolescents to be married.

The age at first marriage among currently married adolescents has not changed significantly over time, and is not significantly different among urban versus rural adolescents. In 2000 through 2010, the median age at first marriage among all married adolescents was 17.1, and increased slightly to 17.2 in 2014. In 2014, the median age at first marriage was also 17.2 among both currently married urban and rural adolescents.

To prevent unwanted pregnancies among currently married adolescents, ensuring their access to quality, safe, and effective family planning methods is critical. Table 7.3 shows the proportion of currently married adolescents using any type of family planning, modern or traditional, by location over time.

Table 7.3.Current use of FP by type among urban and rural currently married adolescents.

	2000 (N=3564)		2005 (N=3646)		2010 (N=3915)		2014 (N=3006)	
	Urban	Rural	Urban	Rural	Urban	Rural	Urban	Rural
Current use any method	9.6%	8.8%	21.8%	20.7%	38.0%	25.3%	31.7%	28.8%
Current use any modern method	6.7%	7.1%	14.9%	13.5%	20.2%	18.6%	20.9%	20.1%
Current use any traditional	2.9%	1.7%	6.9%	7.2%	17.7%	6.7%	10.7%	8.7%

Utilization of family planning has increased significantly over time among currently married adolescents, especially the use of modern methods (p=.000). The use of any method only increased significantly among rural adolescents (p=.000), though the lack of significant increase among urban adolescents may be due to their small sample size.

In 2000, 9.6% of currently married adolescents used a modern family planning method, which increased to 20.9% in 2014; the proportion of currently married adolescents using a modern method increased from 7.1% in 2000 to 20.1% in 2014. This represents a significant increase over time (p=.000). The use of traditional methods has also increased significantly over time (p=.000). In 2014, the use of both modern and traditional methods is higher among urban married adolescents than rural, though not significantly so.

Figure 7.3. Current use of FP among currently married adolescents by wealth status.

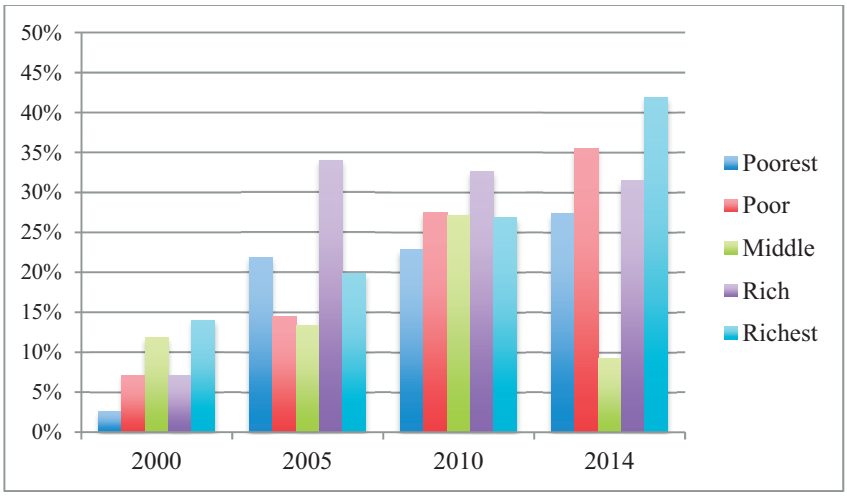


Figure 7.3 shows current use of any family planning method among currently married adolescents by wealth status. Similar to trends among all women, use of family planning methods increases with household wealth. Compared to all married women, use of family planning methods among married adolescents is significantly lower (p=.000).

Trends in where adolescents access family planning methods are similar to patters for women's overall use (Table 7.4). Urban married adolescents are significantly more likely to report accessing family planning methods at private sector facilities and pharmacies, while rural married adolescents are significantly more likely to access family planning through the private sector. However, use of the public sector for family planning increased significantly over time among rural adolescents (p=.002). The role of other sources, such as pharmacies or

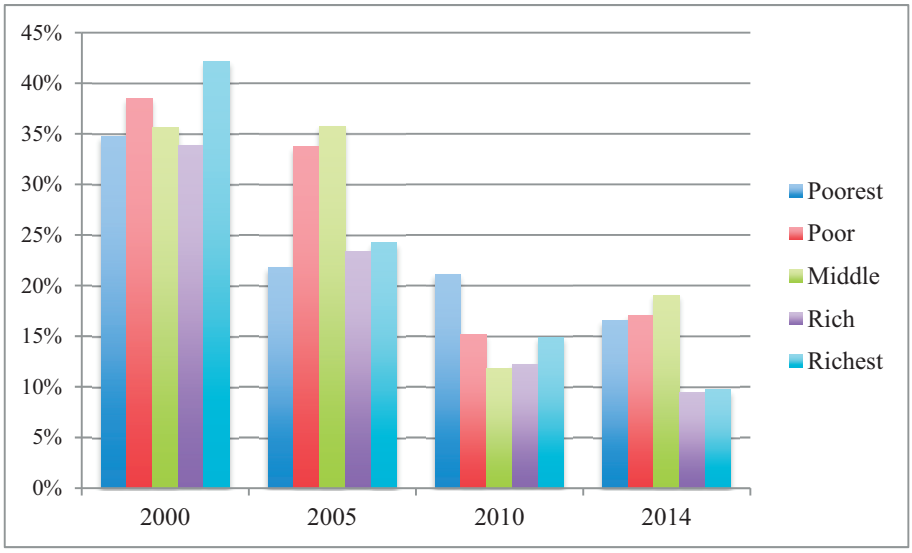
community distributors, has decreased over time in rural areas as public sector access has increased. The high use of other sources in 2005 by urban adolescents is due to how the DHS classified pharmacies in that survey, as part of the informal sector rather than the private sector as it is classified in 2000, 2010, and 2014.

Table 7.4.Source of family planning among adolescents by location.

Background characteristics	Urban (N=339)				Rural (N=1430)			
	2000	2005	2010	2014	2000	2005	2010	2014
Public sector	0.0%	27.4%	20.7%	17.6%	25.2%	30.2%	59.6%	66.6%
Private sector	76.1%	18. 8%	75.6%	64.9%	38.6%	31.1%	28.9%	25.9%
Other source	23.9%	53.8%	3.7%	17.6%	36.3%	38.7%	14.1%	7.4%

Examining unmet need among currently married adolescents can aid policymakers and programmers in increasing access to family planning for adolescents who wish to delay or prevent childbearing. Figure 7.4 shows unmet need for family planning among currently married adolescents disaggregated by wealth status.

Figure 7.4. Unmet need for FP among currently married adolescents by wealth status.



Unmet need among adolescents has decreased significantly over time (p=.000), though disparities by wealth status remain. Poorer and middle wealth adolescents are significantly more likely to report an unmet need for family planning in 2014 than richer adolescents. The rates of unmet need among currently married adolescents are higher than unmet need among all married women.

Adolescents who are pregnant require access to skilled antenatal care (ANC) and delivery. Among adolescents who are pregnant, access to antenatal care (ANC) with a skilled provider has increased significantly over time as shown in Table 7.5. Among pregnant adolescents in both urban and rural areas, increase to ANC with a skilled provider has increased significantly over time (p=.000).

Table 7.5.Proportion of pregnant adolescents attending ANC with a skilled provider.

Background characteristics	2000 N=206	2005 N=212	2010 N=197	2014 N=212
Poorest	18.3%	56.4%	87.1%	93.2%
Poor	35.0%	78.5%	87.1%	93.6%
Middle	41.2%	86.4%	95.8%	95.0%
Rich	61.7%	74.2%	97.0%	100.0%
Richest	79.0%	70.7%	91.9%	100.0%

In 2000, significant disparities in access to ANC existed, disadvantaged poorer married adolescents. However, by 2014, the rate of access to skilled ANC is high among all adolescents, and the poorest adolescents are no longer significantly disadvantaged, demonstrating an increase in equity of access. However, in all years, urban adolescents report significantly greater access to skilled ANC than rural adolescents, including in 2014 (p=.035).

Table 7.6 shows the proportion of pregnant adolescents who delivered at a health facility, disaggregated by wealth status. Over time, access to facility delivery has increased significantly among all adolescents (p=.000). About 12% of the poorest adolescents delivered at a health facility in 2000; in 2014, this increased to 76.0%.

Table 7.6.Proportion of pregnant adolescents delivering at a health facility.

Background characteristics	2000 N=202	2005 N=212	2010 N=197	2014 N=212
Poorest	11.7%	28.8%	63.8%	76.0%
Poor	15.7%	39.8%	83.2%	84.9%
Middle	30.9%	52.4%	84.5%	96.9%
Rich	50.3%	56.5%	79.8%	100.0%
Richest	65.8%	87.0%	93.3%	100.0%

Urban adolescents are significantly more likely than rural adolescents to deliver at a health facility in all survey years, including 2014 (p=.035). In all years except for 2010, richer adolescents were significantly more likely to deliver in a health facility compared to poorer adolescents (p=.000).

Chapter 8
Summary and recommendations

This report has presented a range of fertility, reproductive health, and maternal health indicators across the four waves of the Cambodia Demographic and Health Survey, presenting the situation of the urban and rural poor. It has assessed the role of urban and rural location, as well as household wealth, in women's fertility and health outcomes. The report also assesses select indicators for adolescent fertility, reproductive health, and maternal health over time.

Summary of findings

Since 2000, fertility has decreased in Cambodia, as measured by the total fertility rate (TFR), among both urban and rural women, and across all wealth quintiles. Women in the poorest two quintiles have experienced the greatest decrease in total fertility in this time. However, in 2014, the total fertility rate among the poorest women is higher than for all other women. The TFR among Cambodia's poorest women is 3.9 children, compared to 2.7 among the next highest group, women in middle-income households. Both the total fertility rate and age-specific fertility rates remain higher in rural areas than urban areas.

Proximate determinants of fertility, which include the age at which a woman marries and has intercourse for the first time, provide additional context to trends in fertility over time. The median age of marriage, first sexual intercourse, and first birth have increased over time since 2000 among Cambodian women, which contributes to the lower total fertility rate. These median ages remain significantly higher among urban women versus rural; on average, rural women have an earlier exposure to and begin childbearing at younger ages. While richer women are significantly more likely to delay marriage and first sexual intercourse compared to poorer women in 2014, there is no significant difference in the median age at first birth by wealth quintile. This likely speaks to reductions in improvements in use of family planning and a reduction in unmet need across all wealth groups.

Knowledge of modern and traditional family planning methods has increased significantly over time among all women, and has been universally high, over 96%, for all groups of women by location and wealth status, since 2005. Use of modern and traditional methods has increased significantly over time. Modern methods are preferred to traditional among both urban and rural women, though the difference in use is much more notable among rural women, where fewer women use traditional methods. Wealthier women report higher use of traditional methods. Ethnographic research in Cambodia suggests the rhythm method is preferred to hormonal contraception or other modern methods among educated Cambodian women, as it does not involve side effects inherent to hormonal methods (Hukin 2013).Source of method varies considerably by location: while urban women are most likely to access family planning in the private sector, especially at pharmacies, rural women are most likely to access family planning at public health facilities. As the contraceptive prevalence has increased significantly since 2000 among all married women, unmet need for family planning has decreased significantly. Currently, the contraceptive prevalence rate is similar among urban and rural women. Yet, unmet need remains higher among rural women and poorer women in both urban and rural areas. The prevalence of lifetime abortion increased significantly from 2000 to 2010, suggesting increased access to abortion services, although it decreased from 2010 to 2014 among rural women, which may be related to increases in access to family planning to prevent unwanted pregnancies. Finally, the prevalence of sexually transmitted infections (STIs) has increased over time among all

women. In 2014, in urban areas, poorer women were significantly more likely to report STIs than richer women, though there are no differences by wealth status in STI prevalence among rural women. Differences in the prevalence of STIs among urban versus rural women are not consistent over time.

Assessing fertility and reproductive health indicators in tandem allows for an examination of how trends in access to and utilization of family planning are related to trends in fertility and unmet need. Over time, lower unmet need and an increase in access to family planning has led to lower fertility, a trend also affected by social change and economic development in Cambodia in this period. The recent decrease in rural abortion prevalence is likely also related to increases in access to family planning, as women in rural areas are better able to prevent unwanted pregnancies. Increased access to family planning, coupled with delays in childbearing, will lead to further reductions in fertility over time among Cambodian women.

Consistent with recent improvements in the maternal mortality ratio in Cambodia, maternal health indicators have improved consistently over time since 2000. Examining antenatal care (ANC), a significantly higher proportion of women enter care in their first trimester, access care with a skilled provider, and receive quality ANC, that is, the six recommended components of care. However, the proportions of urban women who enter ANC care in the first trimester and who access a skilled ANC provider are significantly higher than rural women. The proportion of ANC care received that is of high quality is also significantly higher in urban areas. Disparities by wealth remain in these three ANC indicators as well. The proportion of women who deliver in a health facility has increased markedly and significantly over time, among all women. Delivery with a skilled attendant has also increased significantly with the rise of facility delivery. Yet, similar to disparities in ANC, disparities by location and wealth status remain in accessing facility delivery and skilled birth attendants.

Adolescent fertility has increased significantly since 2010. Thus, an examination of fertility, reproductive, and maternal health indicators specifically among adolescents is warranted to understand the determinants and consequences of this trend. Interestingly, age-specific fertility rates among adolescents have decreased among the poorest, and increased among all other wealth groups from 2010 to 2014. In this period, the age-specific fertility rates increased among rural adolescents, and decreased among urban adolescents. Childbearing among adolescents remains concentrated among 18- and 19-year olds in all survey years. The median age at first marriage has not increased over time among currently married adolescents. However, the proportion of currently married adolescents is significantly higher among poorer adolescents compared to richer, and higher in rural areas than urban. Use of family planning, especially modern methods, has increased significantly over time among currently married adolescents, however, it remains significantly lower among poorer adolescents. Use of any family planning in 2014, modern or traditional, is not significantly different among urban versus rural married adolescents. While unmet need among currently married adolescents has decreased significantly over time, it is higher among adolescents than older women. Disparities by wealth status remain, disadvantaging poorer adolescents. Similar to improvements over time for all women in maternal health, adolescents' likelihood of accessing skilled ANC and delivering at a health facility has increased significantly over time since 2000. For both indicators, however, wealthier and urban adolescents are significantly advantaged over poorer and rural adolescents.

The poorest Cambodian women face multiple disadvantages in reproductive and maternal health care compared richer women, across both urban and rural areas. A goal of this report is to examine the situation of the urban and rural poor. We find that urban advantage holds; that is, the urban poor are still better off than the rural poor for most indicators. Compared to all other urban women, the poorest urban women have a significantly higher total fertility rate, and a lower median age at first birth, more than two years younger than the richest urban women. In 2014, use of modern methods is comparable across urban wealth groups, an encouraging trend, and their unmet need is not significantly greater than richer women. Compared to richer urban women, the urban poor are significantly more likely to access family planning through the public sector. Despite gains in equity in access to family planning, the urban poor are especially disadvantaged in access to maternal health care. The urban poor are significantly less like to enter ANC in the first trimester, access ANC with a skilled provider, receive quality ANC, be informed of potential complications or danger signs, deliver with a skilled provider, or delivery in a health facility.

Compared to their richer counterparts, the rural poor also face challenges in accessing and utilizing reproductive and maternal health care. The 2014 TFR among the rural poor is 3.9 versus 2.7 for all other rural women. Although the difference in median age at marriage and first sexual intercourse did not differ significantly among the poorest rural women compared to other rural women in 2014, the poorest rural women give birth at a statistically significant younger age. This may be related to lower access to family planning methods: the poorest rural women are significantly less likely than other rural women to use any family planning method, modern or traditional, and have significantly higher unmet need. Among those who do use a method, similar to the urban poor, the rural poor are significantly more likely to access family planning through the public sector compared to richer women. As with the urban poor, rural poor women face disadvantage in all indicators related to ANC and delivery: they are significantly less like to enter ANC in the first trimester or access ANC with a skilled provider. The rural poor are also significantly less likely than richer rural women to receive quality ANC, be informed of potential complications or danger signs, or to deliver with a skilled provider, or in a health facility. Among pregnant adolescents, equity in access to ANC with a skilled provider and facility delivery has improved dramatically since 2000. Yet, rural adolescents continue to have lower access to these services than rural adolescents, and among both urban and rural adolescents, the poorest are significantly less likely to access ANC with a skilled provider or facility delivery.

Conclusions

This report assesses a range of fertility, reproductive, and maternal health indicators, with the aim of examining the situation of the urban and rural poor. Cambodia has witnessed targeted investments in improvements in reproductive and maternal health services in the past fourteen years. These include health equity funds, the maternal health voucher program, and numerous public health and health sector programs and efforts to increase access and uptake of services. The contributions of these programs are evident when examining change in reproductive and maternal health over time: across all areas and wealth quintiles, Cambodian women enjoy improved access to reproductive and maternal health services.

Ingeneral, we find marked improvements across reproductive and maternal health outcomes over time. Access to services has increased significantly for most Cambodian women over time. Notably, unmet need for family planning has decreased over time, while access to skilled providers for antenatal care and delivery have increased over time. These improvements are critical to improving women's health and reducing maternal mortality.The

findings in this report are consistent with other studies finding improvements in reproductive and maternal health equity and outcomes in Cambodia since 2000 (Dingle et al. 2013; Liljestrand and Sambath 2012; Wang and Hong 2015).

Yet, much work remains to increase equity in access and utilization. In general, rural women are consistently disadvantaged compared to urban women. Specifically, more efforts are necessary to further improve the situation of the urban and rural poor, as well as that of adolescents. Although their situation has improved over time in tandem with increases in access to care among all women, the urban and rural poor remain disadvantaged compared to wealthier women in many critical areas. They have higher fertility and higher unmet need than richer women, and are especially disadvantaged in maternal health care, where they are disadvantaged in antenatal care and delivery. Improvements to their access to maternal health care are critical to maintain gains in the reduction of maternal mortality in recent years.

Interest in adolescent reproductive and maternal health has increased with the recent rise in adolescent fertility. It is notable that fertility decreased from 2010 to 2014 among the poorest adolescents and urban adolescents, but increased among all other groups and among rural adolescents. Age-specific fertility rates are higher among 18- and 19-year olds than younger adolescents. Although the use of family has increased significantly over time among married adolescents, and unmet need among this group has decreased significantly, married adolescents remain significantly less likely to use family planning than older married women. It is encouraging that adolescents do not appear specifically disadvantaged in maternal health outcomes; compared to older women, adolescents are not significantly less likely to access ANC with a skilled provider or deliver at a health facility. However, disparities within adolescents mirror general trends in Cambodia, whereby rural and poorer adolescents are disadvantaged compared to their urban and richer peers.

Additionally, future research is needed to understand the drivers of the increase of adolescent fertility. A targeted study of adolescents would be especially useful to identify factors that place adolescents at risk of unwanted pregnancy, and factors that improve their access to effective family planning methods among adolescents with unmet need.

In conclusion, Cambodia has made important and commendable gains in reproductive and maternal health since 2000. However, this work must continue in order to protect these gains, and to continue to increase equity in women's health access and outcomes.

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