# Cambodia

## 2010 Demographic and Health Survey

## Key Findings

This report summarises the findings of the 2010 Cambodia Demographic and Health Survey (CDHS) conducted by the Directorate General for Health (DGH) of the Ministry of Health and the National Institute of Statistics of the Ministry of Planning. ICF Macro provided technical assistance for the survey through the USAID-funded MEASURE DHS program, which is designed to assist developing countries to collect data on fertility, family planning, and maternal and child health. Funding for the CDHS was received from USAID/ Cambodia, the United Nations Population Fund (UNFPA), the United Nations Children's Fund (UNICEF), the Japan International Cooperation Agency (JICA), and the Health Sector Support Program-Second Phase (HSSP-2). The opinions expressed in this report are those of the authors and do not necessarily reflect the views of the donor organizations.

Additional information about the survey can be obtained from the National Institute of Statistics; 386 Monivong Boulevard, Sangkat Beong Keng Kang 1, Chamkar Mon, Phnom Penh, Cambodia; Telephone: (855)-23-213650; E-mail: ssythan@hotmail.com; Internet: www.nis.gov.kh and the Directorate General for Health, Ministry of Health 151-153 Kampuchea Krom Boulevard, Phnom Penh, Cambodia; Telephone: (855)-23-722873; E-mail: webmaster@moh.gov.kh; Internet: www.moh.gov,kh..

Additional information about the DHS programme may be obtained from MEASURE DHS, ICF Macro, 11785 Beltsville Drive, Suite 300, Calverton, MD 20705, U.S.A. (Telephone: 1.301.572.0200; Fax: 1.301.572.0999; e-mail: reports@macrointernational.com).

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# About the 2010 CDHS

The 2010 Cambodia Demographic and Health Survey (CDHS) is designed to provide data for monitoring the population and health situation in Cambodia. The 2010 CDHS is the third Demographic and Health Survey conducted in Cambodia. The objective of the survey was to provide up-to-date information on infant and child mortality, fertility preferences, family planning behavior, maternal mortality, utilization of maternal and child health services, health expenditures, women's status, and knowledge and behavior regarding HIV/AIDS and other sexually transmitted infections.

## Who participated in the survey?

A nationally representative sample of 18,754 women age 15–49 in all selected households and 8,239 men age 15–49 in half of selected households were interviewed. This represents a response rate of 98% for women and 95% for men. This sample provides estimates for Cambodia as a whole, for urban and rural areas, and, for most indicators, an estimate for each of the 19 study domains (provinces or groups of provinces).

# Household Characteristics

## Household composition

Cambodian households consist of an average of 4.7 people. Thirty-five percent of the household members are children under age 15.

## Housing conditions

Housing conditions vary greatly based on residence. More than 90% of urban households have electricity compared with only 19% of rural households. Household access to an improved water source varies by season. Almost 80% of households have an improved water source during the rainy season (94% in urban areas and 76% in rural areas), while only 59% of households have improved water during the dry season (87% or urban households and 53% of rural households). About one-third of all households use an improved toilet facility. Fifty-seven percent of households have no toilet facility.

## Education of survey respondents

The majority of Cambodians have some education, although only 3% of female respondents and 6% of male respondents have more than secondary education. Urban residents and those living in Phnom Penh have the highest level of education. However, 46% of women and 22% of men in Mondol Kiri/Rattanak Kiri have no formal education at all. Overall, 74% of women and 83% of men are literate.

## Ownership of goods

Currently, more than 60% of Cambodian households own a television and 44% own a radio. Ninety percent of households in urban areas own a mobile phone compared with 56% of households in rural areas.

Two-thirds of households own a bicycle or cyclo and more than half (54%) own a motorcycle or scooter. Cars/trucks are owned by 22% of urban households but only 3% of rural households. Three-quarters of households in rural areas own agricultural land.

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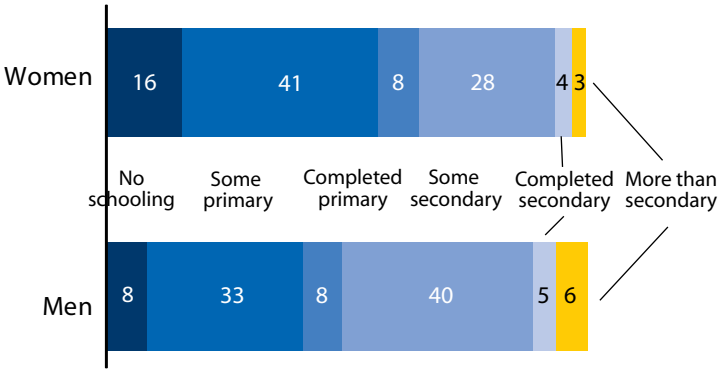
### Education

*Percent distribution of women and men age 15–49 by highest level of education*



# Utilization of Health Services

## Accidental injury and death

Approximately 2% of Cambodians were injured in an accident in the year before the survey. About 0.1% were killed in an accident. Injuries were most common among men and among those living in Kampong Speu and Siem Reap. Two-thirds (68%) of injuries were due to road accidents. Other common injury causes were falls from trees or buildings (12%), snake or animal bite (5%), violence (3%), and gun shots (2%).

About 2% of the Cambodian household population is physically impaired. Illness is the most common cause of impairment (34%), but birth (20%), other accidents (19%), landmine accidents (11%), and road accidents (10%) are also common.

## Treatment for illness and injury

About 10% of the household population was ill or injured in the month before the survey. Only about 2% had an illness/injury that was reported as "serious". The large majority (92%) of those who were ill or injured during the month before the survey sought a first treatment. Only 23% sought a second treatment, and 8% sought a third treatment. As expected, treatment seeking increased with severity of the illness/injury.

Injury/illness victims in both urban and rural areas were most likely to visit private sector facilities for their first treatment. In urban areas, private clinics (27%) and pharmacies (20%) were the most commonly used, followed by public national hospitals (12%). Those in rural areas received treatment from visiting trained health workers (18%), in private clinics (16%), or in public health centers, (18%).

## Cost of health care

Those seeking health care often have to pay for transportation as well as the health care treatment. The average cost of transportation for all treatments was US $2.38, while people paid an average of about US$30 for the health care itself. The cost of treatment rises with the severity of the illness/injury. The most serious cases cost an average of US$6 for transport and US$93 for the health care.

Health care costs vary by province. Health care expenditures were highest in Phnom Penh (US$167) and lowest in Kandal (US$13).

Health care costs were most commonly paid for out of savings (51%) and wages/pocket money (45%). Others borrowed money (18%) or sold assets to cover costs (8%).

# Fertility and its Determinants

## Total Fertility Rate (TFR)

Fertility in Cambodia has declined over the past ten years. Currently, women in Cambodia have an average of 3.0 children, a decrease of one child since 2000.

Fertility varies by residence and by province. Women in urban areas have 2.2 children on average, compared with 3.3 children per woman in rural areas. Fertility is highest in Mondol Kiri/Rattanak Kiri Province, where women have an average of 4.5 children, and lowest in Phnom Penh where women have an average of 2.0 children.

Fertility also varies with mother's education and economic status. Women who have secondary and higher education have an average of 2.4 children, while women with no schooling have an average of 3.7 children. Fertility increases as the wealth of the respondent's household* decreases. The poorest women, in general, have more than twice as many children as women who live in the wealthiest households (4.5 versus 2.1 children per woman).

## Age at first birth

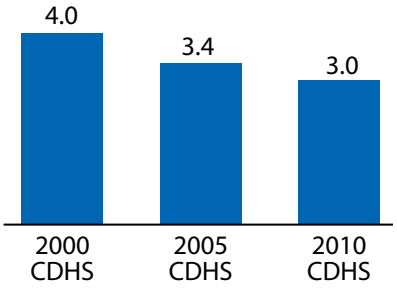
Women continue to wait until they are in their 20s to have their first birth. Only 10% of Cambodian women age 25-49 had given birth by the age of 18. The median age at first birth for all women age 25–49 is 22.3. Women in urban areas have their first births two years later than women in rural areas. On average, women with no education have their first birth at age 21.8 compared with 23.5 among women with secondary and higher education.

## Age at first marriage

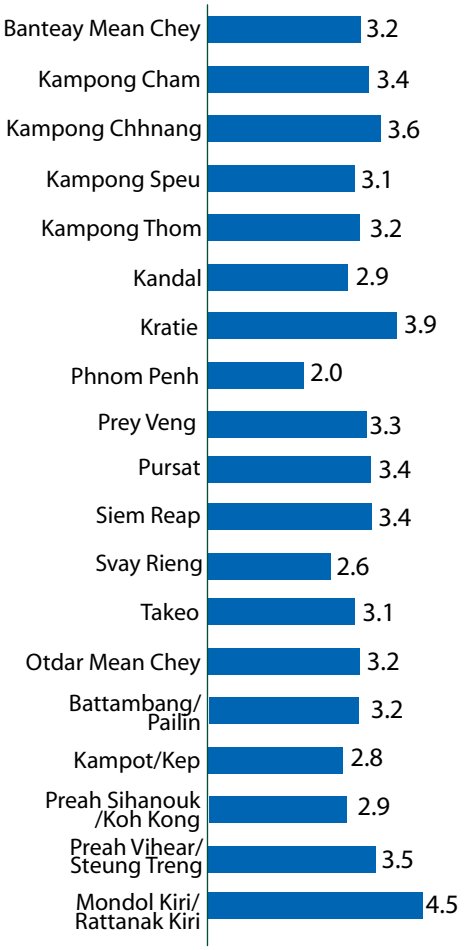
One-quarter of women in Cambodia age 25-49 are married by age 18. The median age at first marriage is 20.3 for women age 25–49 compared with men who marry later, at age 22.6. Age at first marriage increases with education; women with secondary and higher education get married two years later than those with no education (median age of 21.7 years versus 19.7 years for women age 25–49).

**Trends in Fertility**

*Births per woman*




**Total Fertility Rate**




* Wealth of families is calculated through household assets collected from DHS surveys—i.e., type of flooring; source of water; availability of electricity; possession of durable consumer goods. These are combined into a single wealth index. They are then divided into five groups of equal size, or quintiles, based on individuals' relative standing on the household index.

### Age at first sexual intercourse

In general, Cambodian women and men initiate sexual intercourse about the same time as their first marriage. Only 21% of women age 25-49 and 9% of men age 25-49 had their first sexual intercourse by the age of 18. The median age at first intercourse is 20.8 for women and 22.1 for men.

### Desired family size

Cambodian women want about three children, on average. Ideal family size is slightly higher among women in rural areas than urban areas (3.2 versus 2.9). Women with secondary and higher education desire fewer children than women with no schooling (2.8 versus 3.5).

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# ABORTION

### Frequency of abortion

Five percent of women age 15-49 in Cambodia report having had an abortion in the five years before the survey. This is a slight decrease from 8% reported in 2005.

Among women who have had an abortion, about one quarter have had two or more. The percentage of women who have had multiple abortions has also decreased since 2005.

Abortions are more common among women with many children and among older women (those age 35-44).

### Timing and place of abortion

Most abortions took place between the second and fourth month of the pregnancy. Only 3% of abortions took place at the fifth month or later.

Four in ten (43%) abortions took place in a private health facility. Another 25% occurred in the respondent's home and 14% took place in a public health facility.

Two-thirds of abortions were assisted by a doctor, nurse, midwife, or other health worker; 22% were assisted by no one. Surgical methods were used in 68% of abortions (60% vacuum aspiration, 9% curettage), while medical methods, such as pills or injectables, were used in 31% of abortions. Traditional methods were used in 3% of cases.

# Family Planning

## Knowledge of family planning

Knowledge of family planning methods in Cambodia is nearly universal; more than 99% of all women age 15–49 know at least one modern method of family planning. The most commonly known methods are the daily pill (98%), injectables (98%), IUD (96%), and male condom (96%).

## Current use of family planning

More than one-third of married women (35%) currently use a modern method of family planning. Another 16% are using a traditional method. The daily pill (15%) and injectables (10%) are the most commonly used modern methods, while 12% use withdrawal. Three percent of married women are using condoms.

Use of modern family planning methods is fairly high in both urban and rural areas (31% and 36%, respectively), but varies by province. Modern contraceptive use ranges from a low of 24% of married women in Kratie Province to a high of 44% in Otdar Mean Chey. About one-quarter of married women in Kampong Cham, Kandal, and Phnom Penh are using traditional methods.

Modern contraceptive use is fairly uniform across educational levels and wealth. However, use of traditional methods increases steadily with increasing education and wealth.

## Trends in family planning use

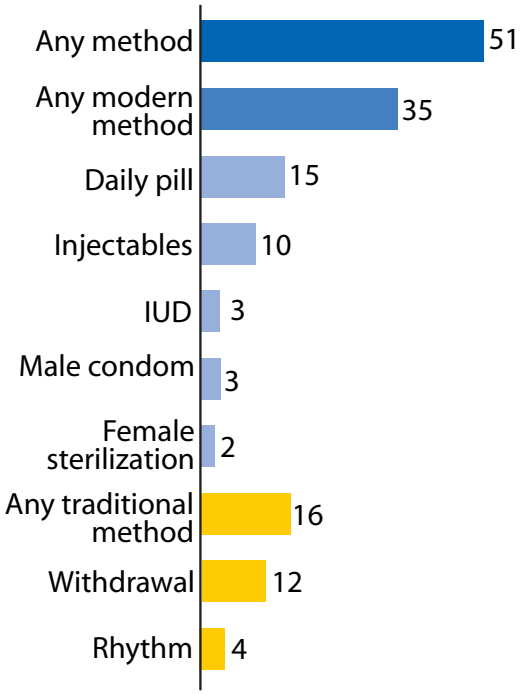
Family planning use has increased since the 2000 CDHS when only 19% of married women were using a modern method. Use of both modern and traditional methods has increased steadily since 2000. The pill has been the fastest rising modern method since 2000 (7% to 16%) while withdrawal has also become very popular (2% to 12%).

## Source of family planning methods

Public sources, such as government hospitals, government health centres, and clinics currently provide contraceptives to 52% of current users, while the private medical sector provides methods to 30% of users. Female sterilization, pills, IUDs, injectables, and implants are most commonly accessed at public facilities, while male condoms come primarily from the private sector.

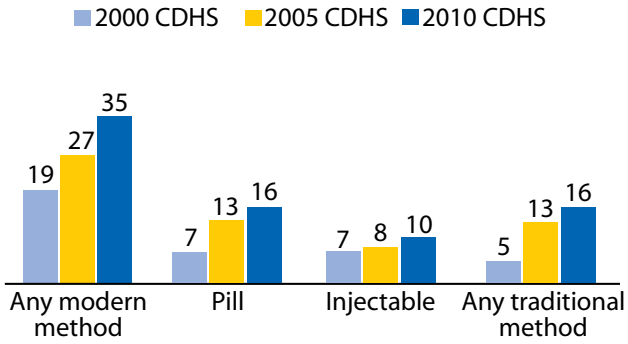
**Family Planning**

*Percent of married women age 15–49 using family planning*




**Trends in Use of Family Planning**

*Percent of married women currently using a method of family planning*



# Need for Family Planning

## Intention to use family planning

More than half of currently married nonusers (53%) intend to use family planning in the future.

## Desire to delay or stop childbearing

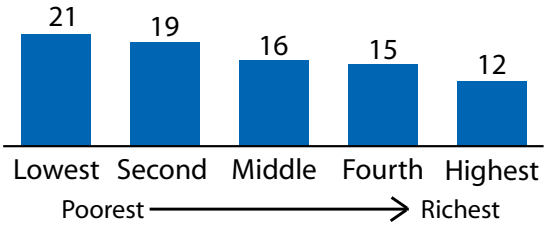
More than half (56%) of currently married Cambodian women want no more children. Another 25% want to wait at least two years before their next birth. These women are potential users of family planning.

## Unmet need for family planning

Unmet need for family planning is defined as the percentage of married women who want to space their next birth or stop childbearing entirely but are not using contraception. The 2010 CDHS reveals that 17% of married women have an unmet need for family planning—6% for spacing and 11% for limiting. Unmet need is highest in rural areas and among the poorest and less educated women. Unmet need is especially high (over 20%) in Kampong Chhnang, Kratie, Pursat, and Takeo provinces.

**Unmet Need by Wealth Quintile**

*Percent of married women 15–49 with unmet need for family planning*




## Missed opportunities

Overall, three-quarters of women were exposed to a family planning message on the radio, TV, or in the newspaper.

Among all women who are *not* currently using family planning, only 19% were visited by a field worker who discussed family planning, and only 12% of women visited a health facility where they discussed family planning. Overall, 75% of nonusers did not discuss family planning with any health worker.

## Informed choice

Family planning clients should be informed about the side effects of the method used and given options about other available methods. About three-quarters of Cambodian users of modern methods were informed about side effects and told what to do if they experienced side effects. Seventy-two percent were informed of other methods that could be used.

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# Infant and Child Mortality

## Levels and trends

Childhood mortality rates are decreasing in Cambodia. Currently, the infant mortality rate is 45 deaths per 1,000 live births for the five year period before the survey compared with 66 deaths reported in the 2005 CDHS. Under-five mortality rates have also decreased from 83 deaths per 1,000 live births in 2005 to 54 deaths per 1,000 in 2010..

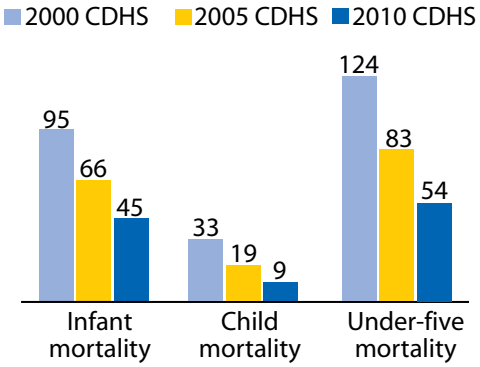
Childhood mortality decreases markedly with mother's education and wealth. Infant mortality, for example, is twice as high among children whose mothers have no schooling compared to those with secondary or higher education (72 versus 31). The association with wealth is even stronger. There are 77 deaths per 1,000 live births among infants from the poorest households compared to only 23 deaths per 1,000 live births among infants from the richest households.

Mortality rates are much higher in rural than urban areas. Infant mortality, for example, is 64 deaths per 1,000 live births in rural areas compared to only 22 in urban areas.

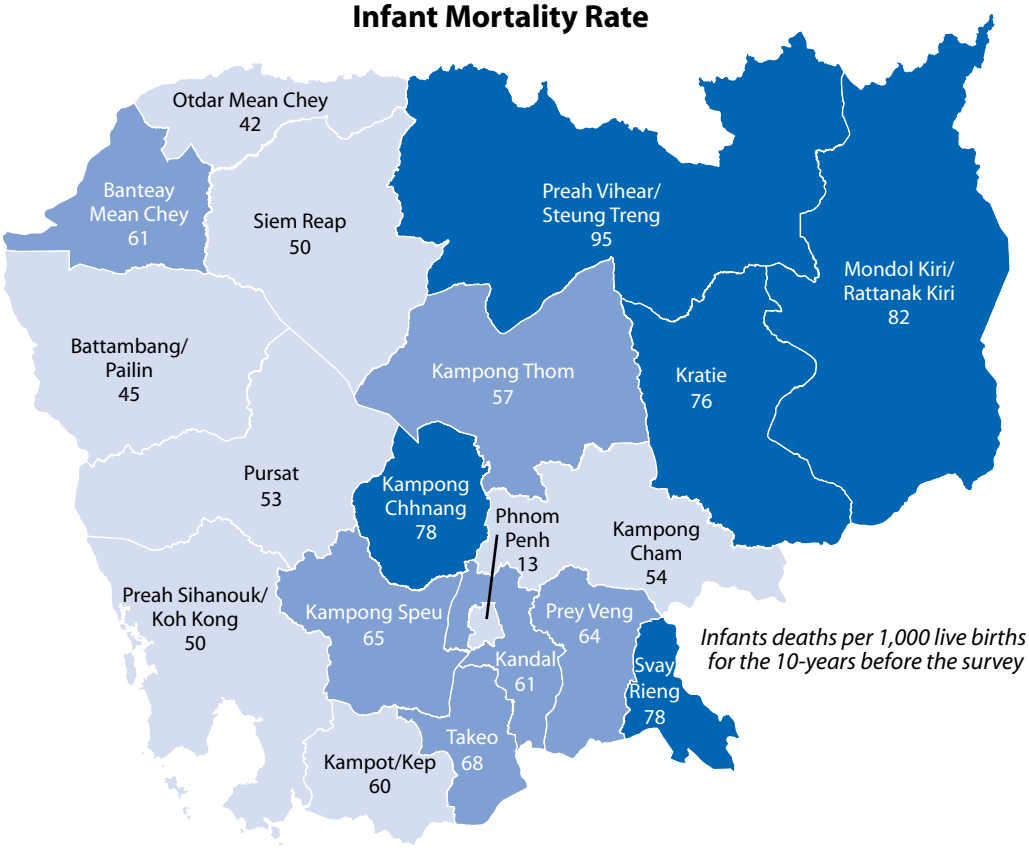
Mortality also differs by province. Infant mortality ranges from only 13 deaths per 1,000 live births in Phnom Penh to 78 deaths per 1,000 live births in Kampong Chhnang and Svay Rieng.

**Trends in Childhood Mortality**

*Deaths per 1,000 live births*




**Infant Mortality Rate**




*Infants deaths per 1,000 live births for the 10-years before the survey*

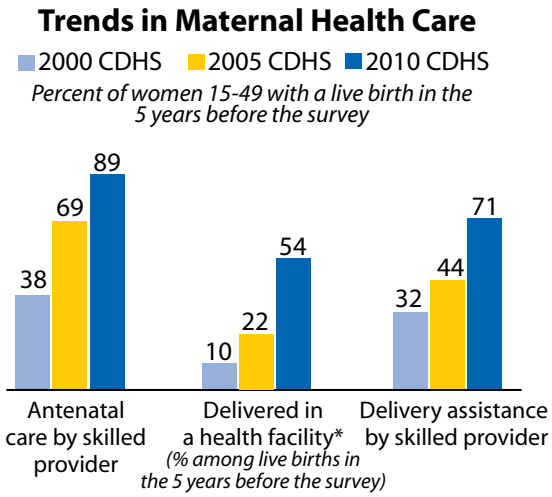
Spacing children at least 36 months apart reduces risk of infant death. In Cambodia, the median birth interval is quite long—40 months. Infants born less than two years after a previous birth have particularly high under-five mortality rates (130 deaths per 1,000 live births compared with 51 deaths per 1,000 live births for infants born four years after the previous birth). Sixteen percent of infants in Cambodia are born less than two years after a previous birth.

# Maternal Health

## Antenatal care

Nine in ten Cambodian women receive some antenatal care (ANC) from a skilled provider, most commonly from a midwife (79%) or doctor (9%). This marks continued improvement since 2005 when only 69% of women had any ANC.

Still, in 2010 only 59% of women had an antenatal care visit by their fourth month of pregnancy, as recommended. Six in ten women (59%) received the recommended four or more visits. Nine in ten women took iron supplements during pregnancy; only 45%, however, took intestinal parasite drugs. Most women (80%) were informed of signs of pregnancy complications during an ANC visit. Less than half of women who received ANC for their most recent birth had a urine or blood sample taken. Eighty-six percent of women's most recent births were protected against neonatal tetanus.




## Delivery and postnatal care

Just over half (54%) of births in Cambodia occur in health facilities, 44% in the public sector and 10% in private sector facilities. Facility-based births are most common in Phnom Penh (93%) and Takeo (72%). Forty-five percent of births occur at home. Home births are more common in rural areas (51%) than urban areas (14%). Facility-based births have become much more common in recent years, up from 10% in 2000 and 22% in 2005.

Seven in ten (71%) births are assisted by a skilled provider (doctor, nurse, or midwife). Another 28% are assisted by a traditional birth attendant. Skilled assistance at birth is almost universal in urban areas (95%) and less common in rural areas (67%). Women with more education and those from wealthier families are most likely to have their births attended by a skilled provider.

Postnatal care helps prevent complications after childbirth. Seventy percent of women received a postnatal checkup within two days of delivery. However, one-quarter of women did not have a postnatal checkup.

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# Maternal and Adult Mortality

## Adult mortality

The 2010 CDHS asked women about deaths of their siblings to determine adult mortality, and more specifically, about pregnancy-related deaths to their sisters to assess maternal mortality.

There were 474 deaths to women and 756 deaths to men reported for the six years before the survey. This results in an adult mortality rate of 2.5 per 1,000 for women and 4.1 per 1,000 for men.

## Maternal mortality

The maternal mortality ratio for Cambodia is 206 per 100,000 live births. This is markedly lower than the maternal mortality ratio reported in 2005 (472). While maternal mortality ratios are not precise measurements, the magnitude of the decrease is large enough to be confident that it represents a true decline in maternal mortality.

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# Child Health

## Vaccination coverage

According to the 2010 CDHS, 79% of Cambodian children age 12–23 months have received all recommended vaccines—one dose each of BCG and measles and three doses each of tetravalent or pentavalent and polio. Only 4% of children did not receive any of the recommended vaccines.

Vaccination coverage is higher in urban areas than rural areas (86% versus 77%). There is also variation in vaccination coverage by province, ranging from only 28% fully vaccinated in Mondol Kiri/Rattanak Kiri to 93% in Banteay Mean Chey. Coverage increases with mother's education; 58% of children whose mothers have no schooling were fully vaccinated compared with 88% of children whose mothers have secondary and higher education.

## Trends in vaccination coverage

Vaccination coverage has increased dramatically since the 2000 and 2005 surveys when only 40% and 67% of children were fully vaccinated.

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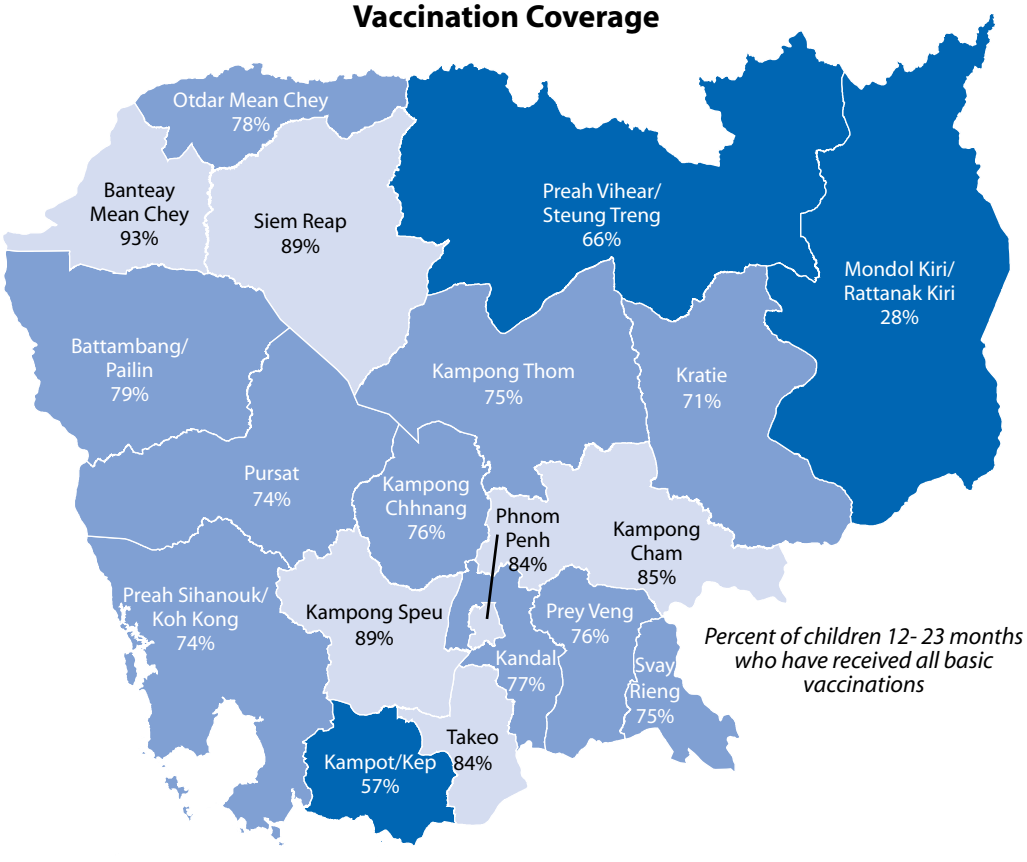
## Childhood illnesses

In the two weeks before the survey, 6% of children under five had symptoms of an acute respiratory infection (ARI). Of these, 64% received treatment at a health facility or from a health provider and 39% received antibiotics. Twenty-eight percent of children had a fever in the two weeks before survey. Of these children,63% received treatment from a facility or provider and 44% took antibiotics.

During the two weeks before the survey, 15% of Cambodian children under five had diarrhea. The rate was highest (26%) among children 6–11 months old. More than half (59%) of children with diarrhea were taken to a health provider. Children with diarrhea should drink more fluids, particularly through oral rehydration salts (ORS). Just over half (53%) of children with diarrhea were treated with ORS or increased fluids. One in five received no treatment (from a medical professional or at home) at all.

**Vaccination Coverage**



# Feeding Practices and the Nutritional Status of Women and Children

## Breastfeeding and the introduction of complementary foods

Breastfeeding is very common in Cambodia, with 96% of children ever breastfed. WHO recommends that children receive nothing but breast milk (exclusive breastfeeding) for the first six months of life. Three-quarters (74%) of children under six months in Cambodia are being exclusively breastfed. Infants should not be given water, juices, other milks, or complementary foods until six months of age, yet 26% of Cambodia infants under six months receive complementary liquids or foods. On average, children 0-35 months breastfeed until the age of 20 months and are exclusively breastfed for an average of 5 months.

Complementary foods should be introduced when a child is six months old to reduce the risk of malnutrition. In Cambodia, 82% of children ages 6–9 months are breastfeeding and eating complementary foods.

The Infant and Young Child Feeding (IYCF) practices recommend that breastfed children age 6–23 months also be fed four or more other food groups. Only one-third of breastfed children in Cambodia meet this recommendation. It is also recommended that nonbreastfed children be fed milk or milk products, and four or more food groups. However, only 31% of nonbreastfed Cambodian children receive milk or milk products, and only 48% were fed four or more food groups.

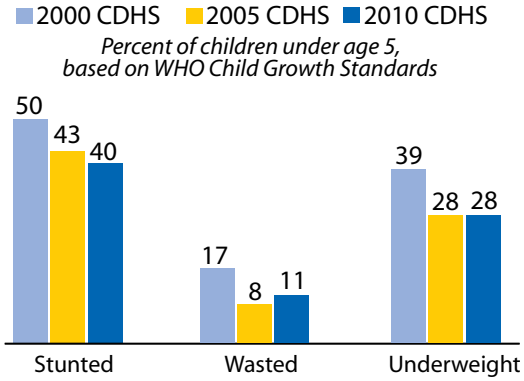
## Children's nutritional status

The CDHS measures children's nutritional status by comparing height and weight measurements against an international reference standard. According to the 2010 survey, 40% of children under five are stunted, or too short for their age. This indicates chronic malnutrition. Stunting is more common in rural areas (42%) than urban areas (28%). Stunting is least common among children of more educated mothers and those from wealthier families. Stunting ranges from 25% in Phnom Penh to more than 50% in Preah Vihear/Steung Treng and Mondol Kiri/ Rattanak Kiri.

Wasting (too thin for height), which is a sign of acute malnutrition, is far less common (11%). Underweight, or too thin for age, is more common—28% of Cambodian children under age 5 are underweight.

Stunting has declined in recent years, from 43% in 2005 and 50% in 2000. Wasting has increased slightly since 2005, and underweight has remained unchanged.

**Trends in Children's Nutritional Status**



## Women's nutritional status

The 2010 CDHS also took weight and height measurements of women age 15–49. One in five (19%) Cambodian women is too thin, while only 11% are overweight or obese. Overweight and obesity are higher in urban areas than in rural areas (16% compared with 10%) and increase with age and wealth.

The percentage of women who are too thin has remained relatively stable since 2000, while the proportion of women who are overweight or obese has increased from only 6% in 2000 to 11% in 2010.

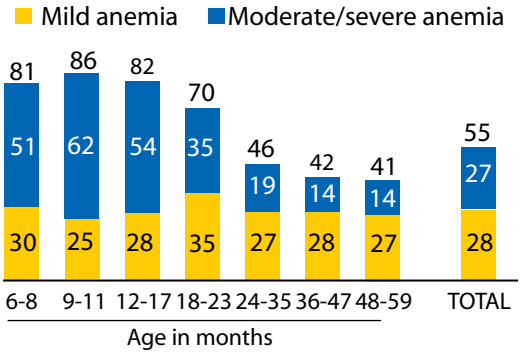
## Anemia in children and women

More than half (55%) of Cambodian children age 6-59 months are anemic. More than one in four children have moderate or severe anemia. More than 80% of children age 6-17 months are anemic compared with about 40% of children 36-59 months. Anemia is most common in Svay Rieng (66%) and Kampong Thom (65%) and least common in Pursat (39%)

The prevalence of anemia has decreased slightly from 62% in 2005. The decline is due mostly to a decrease in moderate/severe anemia from 33% in 2005 to 27% in 2010.

**Anemia Prevalence in Children**

*Percent of children age 6-59 months with anemia*




More than 4 in 10 women in Cambodia are anemic, although moderate and severe anemia are relatively rare (8%). Anemia in women continues to decrease, from 58% in 2000 and 47% in 2005.

## Vitamin A and iron supplementation

Vitamin A, which prevents blindness and infection, is particularly important for children and new mothers. In the 24 hours before the survey, 82% of children age 6–23 months ate fruits and vegetables rich in vitamin A. Seven in ten (71%) children age 6–59 months received a vitamin A supplement in the six months prior to the survey. Only 44% of women received a vitamin A supplement postpartum. Most children (76%) ate iron-rich foods in the day before the survey, but only 2% were given iron supplements in the week before the survey.

Pregnant women should take iron tablets or syrup for at least 90 days during pregnancy to prevent anaemia and other complications. More than half (57%) of women took iron tablets or syrup for at least 90 days during their last pregnancy.

## Use of Iodized Salt

Iodine is an important micronutrient for brain development, and maternal and child health. Iodine is commonly ingested through iodization of household salt.

More than 8 in 10 households in Cambodia have iodized salt. Iodized salt is more commonly found in urban (96%) than rural households (80%).

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# Women's Empowerment

## Employment

Eighty-five percent of married women age 15–49 interviewed in the CDHS are employed compared with almost all men (99%). About half of these women earn cash only, one-quarter earn cash and in-kind and one quarter earn in-kind payments only. Men are slightly more likely to earn cash only and less likely to earn only in-kind payment.

## Participation in household decisions

For the most part, Cambodian women have the power to make many decisions. More than 90% of women report that they have sole or joint decisionmaking power over their own health care, making major household purchases, and visits to her family or relatives. Only 2% of women do not participate at all in any of the three decisions asked about in the CDHS.

Women's decisionmaking varies by province. Less than half of women in Svay Rieng participate in all three decisions compared to more than 95% of women in Phnom Penh, Pursat, Siem Reap, and Preah Sihanouk/Koh Kong.

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# HIV/AIDS Knowledge and Behavior

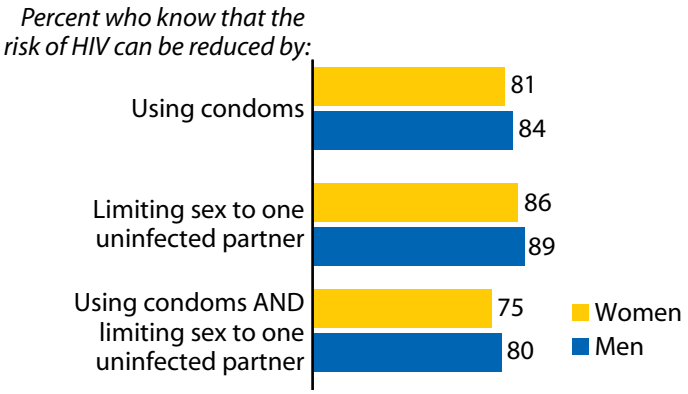
## Knowledge

According to the 2010 CDHS, almost all Cambodian adults have heard of HIV and AIDS, but knowledge of HIV prevention measures is slightly lower. Seventy-five percent of women and 80% of men know that the risk of getting HIV can be reduced by using condoms and limiting sex to one faithful, uninfected partner. Prevention knowledge is higher among those with higher levels of education.

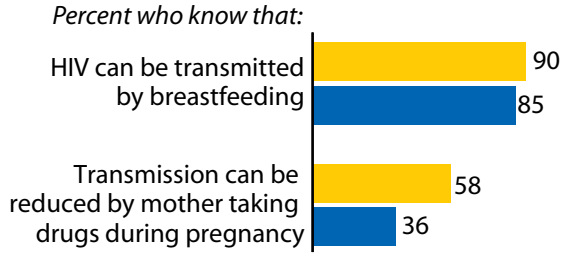
More than 85% of women and men know that HIV can be transmitted by breastfeeding. However, 58% of women and 36% of men know that the risk of mother-to-child transmission can be reduced by taking drugs during pregnancy.

Many Cambodians still have misconceptions about HIV/AIDS. Only 6 in 10 women (61%) and men (63%) know that a healthy-looking person can have HIV, and only 71% of women and 75% of men know that HIV/AIDS cannot be transmitted by mosquito bites.

**Knowledge of HIV Prevention**




**Mother-to-Child Transmission**




## Multiple sexual partners and condom use

Multiple sexual partnerships are very rare in Cambodia. No women and only 1.5% of men reported having had more than one sexual partner in the year before the survey. Women report having only one sexual partner during their lifetimes, while men report an average of almost three lifetime sexual partners.

More than one in ten (11%) men report having paid for sex in the year before the survey. Among these men, 82% report using a condom.

## Prior HIV testing

About 7 in 10 Cambodians know where to get an HIV test. Only 8% of women and 6% of men were tested for HIV in the year before the survey and received the results. While this is low, it is an increase from 2005 when only 3% of women had been tested in the past year.

The increase in testing is due primarily to testing during pregnancy. Among women who were pregnant in the two years before the survey, 32% were offered and received HIV testing during antenatal care. This is a marked increase from only 8% in 2005. HIV testing during antenatal care is much more common in urban areas (58%) than rural areas (27%) and is highest among women with secondary and higher education (46%). HIV testing during ANC differs dramatically by province, from less than 2% in Mondol Kiri and Rattanak Kiri to 58% in Phnom Penh.