PROFILE OF HEALTH AND ITS DETERMINANTS IN CAMBODIA (2008)

PUBLIC HEALTH DEVELOPMENT

Contents

Health profile of Cambodia

Preface

The purpose of this paper is to provide background information for those on the South Central SHA Leadership Programme visiting Cambodia. It is hoped that this will

- Provide a context for the work in which they will be involved
- Help them see how their role fits within the bigger picture and how their work can align with the priorities of the country

A variety of on-line publicly available information sources have been used. Of particular importance has been

- Royal Government of Cambodia's National Strategic Development Plan accessed through http://www.mop.gov.kh#
- Department for International Development of the UK http:// www.dfid.gov.uk and
- http://www.dfid.gov.uk/countries/asia/cambodia.asp
- WHO Country Profile http://www.who.int
  and http://www.who.int/countries/khm/en/
- Health Sector Strategic Plan for Cambodia 2003 - 2007
  http://rc.racha.org.kh/docDetails.asp?resourceID=310&categoryID=77
- National Institute of Statistics, Cambodia http://statsnis.org/ or http://www.nis.gov.uk
- UN Millenium Development Goals http://www.un.org/millenniumgoals/goals.html

Other references are available in the text.

I am grateful to the public health trainees, Susan Hird and Dominque LeTouze, for their contributions to the sections on overseas aid and health behaviours.

John Acres
July, 2008

Summary

After many years of conflict, most of Cambodia's infrastructure was either destroyed or fell into disrepair and its people have been impoverished. The country lost most of its educated and trained staff such as teachers and doctors, life expectancy was low and maternal and infant mortality high. Cambodia's newly formed democracy has had to face enormous challenges of reconstruction, including that of the infrastructure upon which to do this – sound administration, governance, roads, power etc..

The country has slowly moved from a period of emergency support and rehabilitation to one of sustainable development based on consistent medium and long term policy directions. There is a long way to go, but co-ordinated plans are in place to take the country forward. Key outcomes of these are to develop its economy and take its people out of poverty. Co-ordination of foreign aid is essential and the major donors, including the Department for International Development, are now formally co-ordinating their work with other agencies.

This profile uses published reports to describe the health of the population and some of the main determinants of health. Its purpose is to provide a context for those on the NHS South Central Leadership Programme visiting a small rural project in Cambodia to help them set priorities for their work in ways that support the aspirations of the people of Cambodia and co-ordinate with the work already going on.

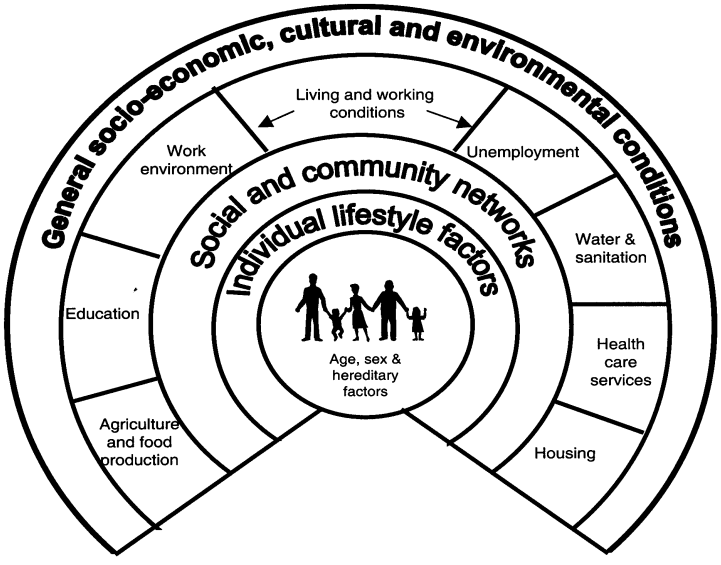
The Determinants of health in Cambodia

> *We are building socialism without a model. We do not wish to copy anyone; we shall use the experience gained in the course of the liberation struggle. There are no schools, faculties or universities in the traditional sense, although they did exist in our country prior to liberation, because we wish to do away with all vestiges of the past. There is no money, no commerce, as the state takes care of provisioning all its citizens. The cities have been resettled as this is the way things had to be. Some three million town dwellers and peasants were trying to find refuge in the cities from the depredations of war. We evacuated the cities; we resettled the inhabitants in the rural areas where the living conditions could be provided for this segment of the population of new Cambodia. The countryside should be the focus of attention of our revolution, and the people will decide the fate of the cities. (Pol Pot)*
>
> (Grant Evans and Kelvin Rowley, *Red Brotherhood at War*, 1984)
> (sourced from http://www.cambcomm.org.uk/holocaust.html)

The legacy of the Kmer Rouge and the conflict in Cambodia both before and after it was in power, have had a devastating and lasting effect on the health of the people of Cambodia. Cambodia illustrates in stark reality the determinants of health captured by the model of Dalgren and Whitehead.

The causes of health and ill health

Dahlgren, G. and Whitehead, M. Policies and Strategies to Promote Social Equity in Health. Copenhagen. WHO. 1992.



History, politics and governance

Most Cambodians consider themselves to be Khmer, descendants of the Angkor Empire that extended over much of South East Asia and reached its zenith between the 10th and 13th centuries. Conflict with neighbours led to a gradual decline, and the country was almost destroyed in the mid 1800s. King Norodom then signed a treaty to put the country under the protection of the French in 1863, and the country remained under French protection until the mid 20th century. It was part of what became known as Indo China

The country was occupied by the Japanese during the second world war, which was followed by the Indo-China war and independence in 1953. Initially there was a monarchy with Sihanouk as king. He abdicated, however, and started the People's Socialist Community that won a landslide victory in 1955. On the death of his father, who had become king, he was named head of state.

The cold war between America and the USSR was being played out at this time and until 1965 Cambodia remained neutral. Sihanouk then cut off relations with the USA and Communist Vietnamese started to develop bases on Cambodian soil as part of the Vietnam War. A coup d'etat, planned by the CIA when Sihanouk was abroad, replaced Sihanouk with General Lon Nol as prime minister. The Vietnam war spilt over into Cambodia and America bombed the Cambodian countryside. Sihanouk set up a government in exile, the Khmer Rouge, and eventually the leader of the Kmer Rouge forces, Pol Pot, overthrew Lon Nol in 1975, around the time that the North Vietnamese occupied South Vietnam.

Between 1975 and 1979 the Kmer Rouge rule led to devastation of the country as part of a policies of its leader Pol Pot. Probably between 1 million and 2 million people were killed. Intellectuals were massacred, technology and infrastructures destroyed and books were burned.

In 1979, after escalating border disputes Vietnam invaded/liberated Cambodia. Socialist block countries and India recognised the new Vietnamese supported People's Republic of Cambodia. Internal conflict continued, however, and this, together with famine, caused many Cambodians to flee to neighbouring Thailand. For 10 years there was a civil war between the Vietnamese backed government and the Khmer Rouge and this affected most of the country.

By the end of 1989 the cold war had ended and, without financial support from the Soviets, the Vietnamese withdrew. In 1991, the UN, Cambodia, and other interested parties came to an agreement to end the Cambodian conflict. A United Nations Transitional Authority and a Supreme National Council were formed and were comprised of members from different factions within Cambodia. The agreement in Paris and the UN protectorate started competitive politics in Cambodia, something they hadn't seen for about 40 years.

The 1991 Paris Peace Accord brought to an end the period of political isolation from the rest of the world. The country is now a multiparty democracy under a constitutional monarch. The first general elections were held in 1993 and Sihanouk became king once again. The government had a massive task of reconstruction.

- Governance and legal systems had been destroyed, and provided the environment for corruption
- Children born in refugee camps had had little formal education and only 7000 out of 20,000 teachers had survived the Kmer Rouge
- Trained medical staff and health facilities had been destroyed and after the Pol Pot regime there were less than 50 doctors left alive in Cambodia with no materials or drugs.
- Returning refugees finding their land now used by someone else or unusable as a consequence of landmines
- The physical infrastructure of housing, roads, bridges, drainage, water supply, electricity and industry in the country had been either destroyed or not maintained.

There were more elections in 1998 and 2003. The latter resulted in a stalemate with a hiatus in government until the formation of a coalition a year later. In the same year, 2004, Sihanouk abdicated and selected his son, Prince Norodom Sihamoni, to succeed him.

Fresh elections take place in 2008 the main political parties involved are the Cambodian People's Party and the National United Front for an Independent, Neutral, Peaceful and Co-operative Cambodia.

The country is now divided up into 24 provinces, 185 districts, 1,621 communes and 13,890 villages. Considerable effort is being put in to strengthening capability and governance, improving financial management and increasing the involvement of local people in the decision making process.

Geography

Cambodia is situated in South East Asia and is bordered on the West by Thailand, in the East by Vietnam and in the North by Laos. Its coastline is in the South West on the Gulf of Siam.

75% of the total land areas is made up of the central plan, which is 10 – 30 metres above sea level. These are bordered by high mountain ranges and high plateau.

The area is drained by the Mekong, Tonle Sap and Bassac Rivers through the Mekong Delta in Southern Vietnam. In Cambodia the Mekong can by up to 2 Km wide in places.

The rainy monsoon season, crucial to understanding local food production, stretches from around June to October. The maximum rainfall is in September and October, when severe flooding can take place, with major disruption and loss of life, homes and crops. Poor unmaintained drainage can leave surface water on the streets for days.

River flows during the late monsoon period increase so much that the silted up channels of the lower Mekong are unable to carry the river's floodwater and the flow of the Tonle River is reversed with water backing up into the Tonle Sap Lake. This lake covers around 135 sq km in the dry season with a maximum depth of only 1.5 metres. In the monsoon season the lake expands to around 1.025 sq km, with a depth of up to 12

metres. When the water recedes again there is left up to 30 mm of rich alluvial silt and shallow waters filled with fish.

Illegal logging has resulted in habitat loss and declining biodiversity, in particular the destruction for mangrove swamps that threatens natural fisheries. There is also illegal fishing and over-fishing with declining fish stocks. This is an important ecosystem where 1.7 million people depend on fishery based livelihoods. Despite its natural wealth it is one of the poorest regions in Cambodia.

The temperature varies little during both the year and the day, with an average in Phnom Penh of 27 degrees centigrade. Relative humidity averages around 80% throughout the year.

The Population

A Population Census in Cambodia is conducted once in ten years. The last Population Census 2008 was carried out on 3 May 2008 and the preliminary result of the census is scheduled to release on September, 2008.

The total population has been growing. It was estimated to be around 13.66 million in 2004 and is projected to reach 15.27 million by 2010.

The fertility rate has been falling and is now around 3.34, which is still almost twice that in England.

Fertility rates per woman in Cambodia over time and England rate for comparison

	1993	2004	2010	Rate in England, 2004
Total fertility rate	5.6 (1996)	3.34	3.4	1.74

(Total fertility rate is the average number of children that would be born per woman if women experienced the age-specific fertility rates of the year in question throughout their childbearing lifespan.)

In marked contrast to England, the population is young. Past destruction of the adult population together with a high fertility rate has left a very young population with around 39% under the age of 15 years.

In addition to this the next age group up is also large so that 63% of the population in 2004 was aged under 25 year. This compares with 31.1% in England.

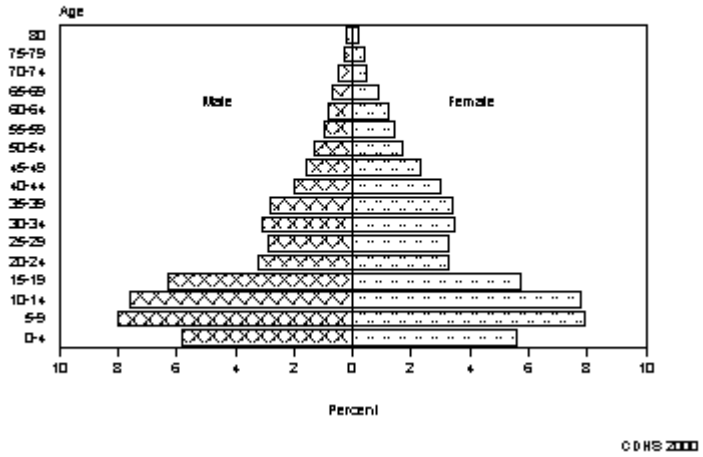
The effect of sustained conflict and the Pol Pot regime resulted in a higher proportion of women left in the population, but this is now similar to that in the UK.

Population structure in Cambodia

	1993	2004	2010	England 2001
Population (millions)	10.66	13.66	15.27	49.14
Male:Female (100) ratio	91.7	93.5	95.0	94.9%
% population 0 – 14	43.9%	39.0%	33.0%	18.9%
% population 15 - 59	50.8%	55.1%	61.0%	60.4%
% population 60+	5.3%	5.9%	6.0%	20.7%

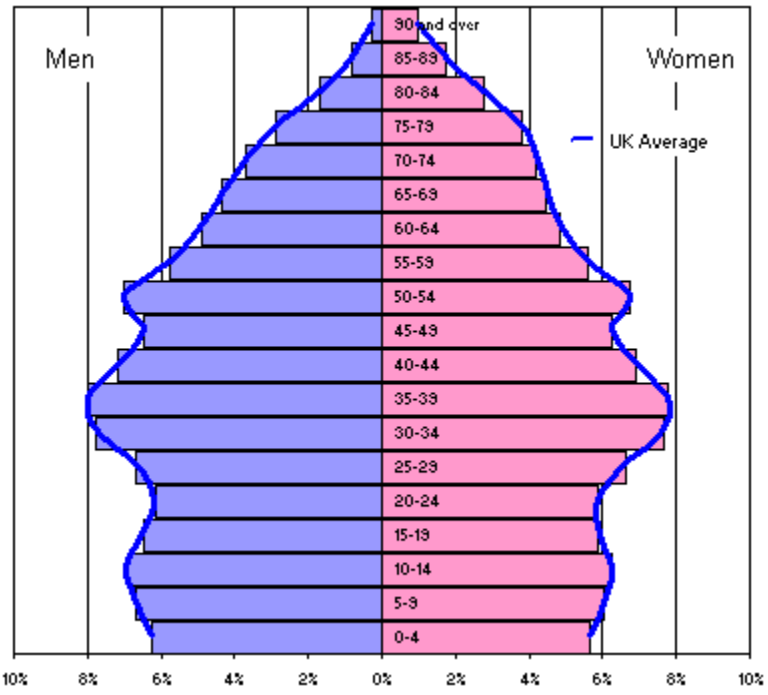
This produces very different population pyramids for the two countries.

Population Pyramid for Cambodia.



Source : Cambodia Demographic and Health Survey, 2000

ENGLAND, 2001



The percentages on the pyramid represent the percentage of 'all males' (to the left) and the percentage of 'all females' (to the right) that are in that age group

Source : Census, 2001, England.
http://www.statistics.gov.uk/census2001/pyramids/pages/64.asp

Marital Status

The proportion of people in Cambodia who are single (30.7%) is very similar to that in England and Wales (30.9%). There is more variation in the proportion married or divorced.

Marital status of people in Cambodia compared with that for England and Wales

	Single	Married	Widowed	Divorced
Cambodia, 2004	30.7%	60.6%	6.1%	2.0%
England and Wales, 2002	30.9%	52.5%	8.2%	8.4%

Sources : Source : National Institute of Statistics, Phnom Penh, Cambodia, Inter-Censal Population Survey, 2004. Marital Status Estimation for England and Wales, 2002. National Statistics. www.statistics.gov.uk/pdfdir/marr0204.pdf
Note : Figures for Cambodia are for people aged 15 and over. Figures for England and Wales are for people aged 16 and over.

More detailed information about Cambodia is given below and it will be noted that urban areas have a higher proportion of single people than rural areas.

Marital Status by Sex for Population Aged 15 and more in Urban and Rural Areas, Cambodia, 2004

Total/ Urban/ Rural			Never married	Currently married	Widowed	Divorced	Separated
Total	Both sexes	100	30.7	60.6	6.1	2.0	0.6
	Males	100	34.6	62.9	1.6	0.7	0.2
	Females	100	27.4	58.5	10.1	3.1	0.9
Urban	Both sexes	100	36.9	55.2	5.4	1.9	0.6
	Males	100	40.9	56.8	1.4	0.7	0.2
	Females	100	33.4	53.7	8.9	3.0	1.0
Rural	Both sexes	100	29.5	61.6	6.3	2.0	0.6
	Males	100	33.4	64.1	1.6	0.7	0.2
	Females	100	26.2	59.5	10.3	3.1	0.9

Source : National Institute of Statistics, Phnom Penh, Cambodia, Inter-Censal Population Survey, 2004.

Ethnic Backgrounds : 90% of the Cambodian population are Khmer, 5% Vietnamese, 1% Chinese and other ethnic groups, including Cham (Islamic) and some 30 hill tribes make around 4%. 90% of Cambodians are ethnic Khmer.

90% of Cambodians follow Theravada Buddhism, the other 10% follow either Islam or Christianity.

Urban/Rural Distribution : Around 85% of the population live in rural communities (Cambodia Socio-Economic Survey 2003-4). This is the opposite of the picture in Great Britain where most people live in urban areas, 83% living in communities of 5000 people or more. (The changing nature of urban and rural areas in the UK and other European countries. *Anthony Champion.* un/pop/egm-urb/2008/07, 14 January 2008.)

Language and culture

Most (95%) people speak Khmer, the rest mainly made up of French and English.

90% of Cambodians are Buddhists with the remaining 10% following either Islam or Christianity.

There are strong traditions and codes of behaviour, particularly for women. Sexual and social equality do not form part of the local tradition. For men it means having a responsibility for his family and maintaining the correct place in the social structure. For women it means speaking gently to her husband and catering to his needs.

Economy and Industry

Over the last 10 years, Cambodia has achieved economic growth of about 8% per annum. This compares with a annual UK rates of between 1.5% and 4% over the period 2003 – 2008.

The cornerstone of economic policy has been the promotion of the private sector as the main engine of economic growth. The garment industry (employing some 330,000 people, mainly women) has generated about 80% of exports (2004) and contributed 16% of GDP. Industrial output has grown very fast and contributed 29.6% of GDP in 2005.

Industry (manufacturing (including garments) and construction formed 27.7% of GDP and services (trade, hotels & restaurants, transport, communications and other services) formed 34.3%. Small and medium enterprises are key in promoting economic development and creating sustainable development and make up 99% of all enterprises and almost half of all employment in the private sector.

Employment

Among the economically active (excluding home-workers, students, income recipients, retired, invalids not working) the unemployment rate is less than 4%. However, there are high levels of under-employment

Of those employed about 62% are in agriculture, forestry and fisheries, 9.6% in manufacturing and 13.9% in wholesale and retail trade. Most of those in agriculture are poor farmer-headed households. Most households take part in crop production - 83% in the wet season and 34% in the dry season.

By contrast, only 1.8% of the 29 million workforce in the UK was employed in agriculture in 2007 (DEFRA).

Agriculture, Water and Irrigation

The total area under agricultural production rose from 1.8 – 2.3 million hectares between 1993 and 2004-5 and the yield per hectare also increased over that time from 1.31 tons to 1.97 tons. However, this is relatively low when compared with neighbouring countries with similar agro-climate conditions and there is the potential growth to the 3 – 5 tones/hectares that these countries have

Water management has always been a concern as irregular rains and dry spells have created times of flood and times of drought. The major constraint on crop production is substantial seasonal and year to year differences in water availability. This severely limits the ability of rural households consistently to provide for their own food needs, much less grow crops for sale.

Paddy rice is the most common crop produced. There are broadly three types of farming that have been inherited

Floodplain : in the Korat plateau and the Mekong River delta.
Bunded (dammed) field farming : where fields are constructed to retain water for planting rice transplanted from nursery beds.
Receding flood farming : where water from receding floods is retained to form areas for growing rice

During the Kmer Rouge regime the whole population was set to construct water management and irrigation systems, but these were carried out in a chessboard arrangement that did not follow contour lines. Much of the structure became useless and required considerable investment.

Managing the abundant wet season river and stream flows and developing storage systems that can deliver water mainly through gravity irrigation during the dry season is a major plank for development for large parts of the rural population.

The Government's priorities for water management set out in the National Strategic Development Plan, 2006 – 2010 have been to

- Rehabilitate and reconstruct the existing irrigation and drainage systems particularly in high poverty incidence areas and along the border areas;
- Expand surface water storage capacity and promote water harvesting technologies;
- Promote effective and sustainable development of ground water resources in areas with scarce surface water availability;
- Develop and apply measures on flood and drought mitigation and management;
- Strengthen and expand Farmer Water User Communities with increasing membership and participation of women;
- Promote investment by private sector in irrigation, drainage and other aspects of agricultural water management;
- Improve and install nationwide hydro-meteorological observing and monitoring systems to be able to provide to the public high quality, effective and real-time hydro-meteorological forecasts;
- Promote appropriate and effective river basin management and water allocation systems.

Landmines

It is estimated that in the early 1990s there were between 7 – 10 million land mines indiscriminately laid in many parts of the country. (The environmental situation in cambodia policy and instructions - Dr. Ung Phyrun, Deputy Director General, State Secretariat for Environment, Cambodia.)

The effect has been to prevent land from being used for agriculture and to cause death and disability in farmers, with their inevitable economic consequences for the family. The injury and death of a cow or buffalo is also a very serious matter economically.

Land that could not be used for agriculture on account of landmines and unexploded ordnance is gradually being released back into use. The land freed from landmines increased from 1,225 hectares in 1993 to 32,974 hectares (estimated) in 2005.

Targets for landmine reduction

	2000	**2005**	**2015 MDG**
Area affected cleared of mines and unexploded ordnance	50.3%	77%	100%

Source : National Strategic Development Plan, 2006 - 2010

Income and Poverty (from the Cambodia socio-Economic Survey 2003-4)

34.7% of the population are below the poverty line and 20% below the food poverty line.

> *(Poverty here is based on the income required to provide 2,100 calories per capita per day (food poverty) and adding a minimal non-food allowance.)*

According to the UN Human Poverty index, Cambodia ranks 73rd out of 78 developing countries with one of the lowest Human Development Index ranking (137 out of 174 globally in 1999). The mean daily per capita household consumption is low at 0.9 US$, being lower in rural areas (0.79US$/day) and higher in the cities.

Poverty is predominantly a rural issue, with poverty being recorded as 40 – 45% in rural areas and 10 – 15% in Phnom Penh. *(Two methods were used to survey poverty expenditure (recall and diary) and they arrived at similar results).*

As most people live in rural areas, 93.4% of the 4.4 million poor are found in rural areas of the country as a whole.

Besides living in the rural areas, the poor tend to

- have low levels of education,
- limited access to land and other productive assets,
- be highly concentrated in low-paying, physically demanding and socially unattractive occupations.

In both urban and rural areas, the poor

- have less access to modern amenities and services
- reside in houses of inferior quality
- have no or limited access to basic services like safe water and improved sanitation.
- are more likely to reside in households with large membership sizes,
- have more children,
- have a household head who is less educated
- have much less access to public services.

As in most other countries there is a wider variation in income levels. Almost half the country's total consumption is enjoyed by the richest 20% of the population. The expenditure share of the poorest quintile in the distribution of total expenditure per adult equivalent per day is 7.15% whereas the richest quintile's share is 48.7%.

The GINE coefficient, (http://en.wikipedia.org/wiki/Gini_coefficient) is a way of measuring inequality. The value of the GINI coefficient of consumption per equivalent adult per day was 0.403 for Cambodia as a whole. This shows a relatively high level of inequality when compared to many countries in the region.

Reductions in poverty : Reductions in poverty have been slow. Rural poverty has declined at a much slower rate than poverty in Phnom Penh or other urban areas. The fall in poverty in these areas has largely been due to strong urban bias in growth and

concentration of public investments in these areas. This also reflects "peace dividends" that Cambodia was able to derive through coming out of more than two decades of conflict and isolation resulting in fairly rapid initial rise in investment and growth, and consequently reduction in poverty. Nevertheless, growth has generally been unbalanced, centred in Phnom Penh and other urban areas, and is also narrowly based, driven by such activities as garments manufacturing, construction and tourism. (National Strategic Development Plan.)

To overcome this, the **National Poverty Reduction Strategy** has identified 8 priority poverty reduction outcomes each having details actions associated with this. The outcomes are

- Maintaining macroeconomic stability
- Improving rural livelihoods
- Expanding job opportunities
- Improving capabilities
- Strengthening institutions and improving governance
- Reducing vulnerability and strengthening social inclusion
- Promoting gender equality
- Priority focus on the population through maternal health, increased access to education and rural opportunities.

The changes and targets for poverty reduction that these aim to achieve are shown below.

Targets for poverty reduction

	2005	2010	2015 MDG
Poverty level % of population	34.7	25	19.5
People below food poverty line %	19.7	13	10

Source : National Strategic Development Plan 2006 - 2010

Food and food poverty
(from the Cambodia socio-Economic Survey 2003-4)

54% of child mortality has been thought to be associated with malnutrition, protein-energy malnutrition and micronutrient deficiencies (iron, iodine, vitamin A).

There is a slightly higher average calorie intake in rural areas. In rural areas both poverty and food poverty are greater, a higher proportion of people's income is spent on food and cereals form a higher proportion of expenditure on food.

The average daily calorie intake of the poorest quintile for income is 1,476 calories/adult./day, which is 37% that of those in the richest quintile. The poorest people can thus be expected to experience constant hunger.

Measures related to poverty	**Urban Phnom Penh**	**Rural**
Total poverty rate	2.4%	39.7%
Food poverty rate (20% in Cambodia as a whole)	11%	22.2%
Share of food in total expenditure (55% for Cambodia as a whole)	39%	59%
Cereals as % of all food item expenditure (31% in Cambodia as a whole)	11%	35%
Average calorie intake/day/adult	2,406	2,515

	Richest Quintile	**Poorest Quintile**
Average Calorie Intake/day/adult	4,006	1,476

The Cambodian Millenium Development Goal is to eradicate extreme poverty and hunger. This has been broken down into the following two targets.

1. **To halve, between 1993 and 2015, the proportion of people whose consumption is less than the national poverty line.**

	1993	2005	2015
People with consumption less than the national poverty line %	39	34.7	19.5
Share of poorest quintile in national consumption %	7.4(1999)	7	11

2. To halve between 1993 and 2015, the proportion of people who suffer from hunger

	2000	2005	2015
Prevalence of underweight for <2SD in children under 5 years of age %	45.2%	n/a	22
Population below the food poverty line	20% (1993)	19.7%	10%
Stunted (height for age <2SD children under 5 years of age %	44.6 (2000)	n/a	22
Wasted (weight for height <2SD children under 5 years of age %	15 (2000)	n/a	9
Households using iodised salt%	14 (2000)	31.5	90

Drinking water and sanitation

Good access to safe drinking water and to sanitation is key to reducing mortality and morbidity from diarrhoeal disease.

Access has been increasing slowly. 315 irrigation systems for rice cultivation covering an area of 153,149 ha; flood control dykes that provide protection for an area of 113,500 ha; prevention dykes protecting 16,680 ha of cultivable land from sea water intrusion. But levels are particularly low in rural areas.

The table below shows that changes that have taken place and the Millenium Development Goals for the future.

	1996/8	**2005**	**2010**	**2015 MDG**
Safe Drinking Water Access				
• Urban (% of urban population)	60 (1998)	75.8	85	80
• Rural (%rural population)	24 (1998)	41.6	45	50
Sanitation Access				
• Urban (access to improved sanitation: % urban population)	49 (1998)	55	67	74
• Rural (% rural population)	8.6% (1996)	16.4	25	30

Source : National Strategic Development Plan 2006 - 2010

Further development to achieve these targets will, at least in part, be part of a rural development programme that covers important cross-sectoral issues. Support to commune councils will continue to be provided to undertake rural

infrastructure projects such as road rehabilitation and construction including small bridges and culverts, water supply wells, sanitation structures, schools, water gates, and small scale irrigation systems. These efforts along with those planned for agricultural development will also provide employment and income earning opportunities in rural areas and thus also stem internal migration to urban centres.

Education

People who were young at the time of Pol Pot and subsequent civil war missed out on education. 43% of women and 20% of men aged 25 and over have had no or only some education i.e. not completed first grade. The difference in gender rates reflects, at least in part, social attitudes about the status of women.

The number of primary schools has been increasing (5,468 in 2000 and 6,180 in 2005 (National Strategic Development Plan)) and the longest distance to primary schools has fallen from 2 to 1.5 km over this period).

93% of boys and 91% of girls now enrol in primary school and the literacy rate for young people aged 15 – 24 is now around 83%.

51% of boys and 53% of girls continue through from grade 1 to grade 6 in primary school and a third of those starting primary school complete to the end of lower secondary school.

The number of lower-secondary schools has increased from 367 – 800 over the 2000 – 2005 period and the longest distance to lower-secondary schools has fallen from 8km to 4 km. Net enrolment to these schools is 26.1% it being 27.1% for boys and 24.8% for girls.

	2000	**2005**	**2015 expected or MDG**
PRIMARY SCHOOLS			
Number of primary schools (1-6)	5,468	6,180	-
Longest distance to primary schools	-	2.0 km	1.5 km
Enrolment, Primary schools %			
• Total;Boys;Girls	-	91.9;93.0;90.7	100
• Total;rural;remote	-	91.6;92.4;82.5	-
LOWER SECONDARY SCHOOLS			
Number of lower secondary schools (7-9)	367	800	-
Longest distance to lower secondary schools	-	8km	4km
Net enrolment : Lower secondary schools %	26.1	75	100
Total;Boys;Girls	19;21;16	26.1;27.1;24.8	100
Urban;rural;remote		41.3;23.7;3.9	-
Survival rate % 1 – 6	51.0	53.1	100
Survival rate % 1 – 9	33	30.2	100
6 – 14 years out of school %	18.7	11	-
Literacy 15 – 24 year olds	82 (1999)	83.4	100

Source : National Strategic Development Plan 2006 - 2010

The following set out the goals and plans to achieve these goals that are set out in the National Strategic Development Plan, 2006 – 2010.

Education Goals

- Reduce the distance children have to travel to primary and lower secondary schools by providing schools as close as possible to villages, especially those in remote areas.
- Facilitate attendance of girls at lower secondary and higher levels.
- Reduce costs to parents to ensure enrolment and attendance of poor children, thereby also reducing child labour.
- Improve quality of education up to and beyond basic levels, including revised curriculum and introduction of minimum standards of student achievement and a system of assessing student performance for grades 3, 6 and 9; teacher development and posting; quality assurance; and an accreditation system.

Strategies and Actions 2006 – 2010

- Increase the coverage of pre-school children attending early childhood education programmes organised in schools, communities and homes.
- Increase the number of primary and lower-secondary schools, especially those in remote and underserved areas.
- Increase the number of both male and female teachers at these levels to improve teacher student ratios and proportion of female teaching staff, especially by providing incentives to work in remote areas.
- Upgrade teachers' qualifications by professional development linked to performance incentives.
- Pay special attention to increasing the salaries of teachers (already being undertaken) and making salaries available on time.
- Ensure quality of education through improved provision of educational materials, equipment, libraries, and laboratories.
- Develop quality standards for all levels and a national assessment system for basic education.
- On the basis of pilot projects already being taken up, increase the number of safe places (dormitories) for young girls coming from distant areas to attend the nearest lower secondary schools.
- Reduce burden on poor students (especially girls) by targeted scholarships (at primary, secondary and tertiary levels) and exemption from the rather widely prevalent informal payments to teachers.
- Expand and better target the primary school feeding program and grades 7- 9 incentives program.
- Continue to assure adequate allocation and timely release of current budgets for education especially targeted towards basic education.
- Increase and improve adult literacy programmes, especially for women

Health

Health indicators, especially maternal and infant mortality, are poor when compared to ASEAN neighbours. Capacity including trained manpower is also poor. Polio has, however, been eliminated and, following major investment with donors. The prevalence of HIV in adults who have been tested has been falling, but is still a major cause of death. A summary of health indicators with UK comparisons is given in appendix 1.

Life Expectancy

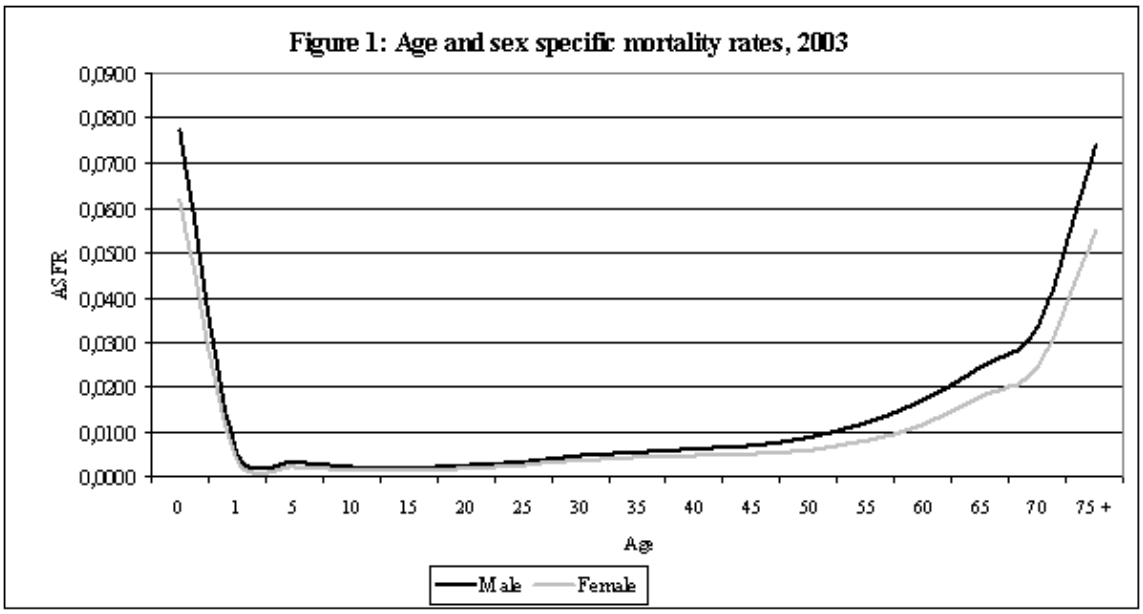
Life expectancy has been increasing and is now in the order of 59 years for men and 64 years for women. It is expected to increase by another 3.5 years for men and 3.5 years in women by 2011.

Life expectancy	1998	2005	2011	UK 2004
Men	51.8	61.0	64.5	76.9
Women	55.8	65.4	68.9	81.3

Sources : National Institute of Statistics, Phnom Penh, Cambodia and National Statistics, UK, http://www.statistics.gov.uk

In 2004, the adult mortality rate was recorded as 430/1,000 for men and 276/1,000 for women. (Source : World Health Statistics, WHO, 2006).

The pattern of mortality at different ages shows a high rate of death in young children, as can be seen from the graph below.



Source : http://statsnis.org/areaname/area_name.htm National Institute of Statistics, Phnom Penh, Cambodia.

Main causes of death

In Cambodia infectious diseases make up 36% of all deaths and perinatal conditions are responsible for 7%. Ischaemic heart disease, cerebrovascular disease and hypertensive heart disease together represent 11% of all deaths.

This picture is in marked contrast that that in the UK, where Ischaemic Heart Disease and Cerbrovascular Disease are responsible for around a third of all deaths.

Main causes of death in all ages, 2002

Cause of death	Cambodia			UK	
	Deaths		Years of life lost	Deaths	Years of life lost
	000's	%	%	%	%
HIV/AIDS	15	10	11	<1	<1
TB	12	8	6	<1	<1
Diarrhoeal diseases	11	7	10	<1	<1
Perinatal conditions	11	7	10	<1	<1
Lower respiratory tract infections	8	5	5	11	6
Ischaemic heart disease	7	5	2	20	17
Meningitis	6	4	5	<1	<1
Cerebrovascular disease	5	4	2	10	7
Hypertensive heart disease	3	2	1	<1	<1
Malaria	3	2	3	0	0
All other	79	46	45	59	69
Total	160	100	100	100	100

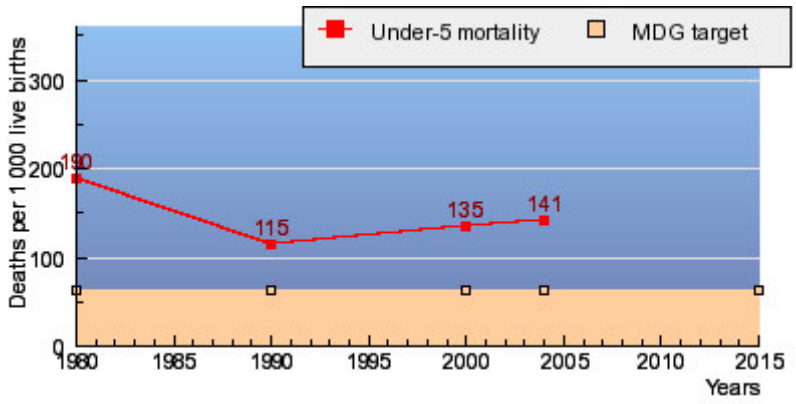
Source : World Health Statistics, 2006.

Rounding has resulted in percentage of deaths (000's) not adding up to 100.
Add comparison for Hampshire PCT

Deaths in Children Under 5

During the 1980s the mortality rate for children under 5 appeared to fall and then to rise again to 141 deaths/1,000 live births between 1990 and 2004.

Trend in under 5s mortality rates/1000 births in Cambodia 1980 - 2004



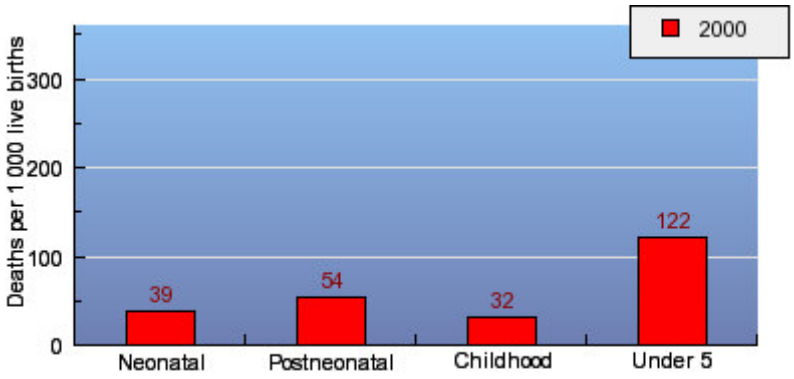
Source: WHO Country Statistics, Cambodia :

However, most recent figures that that rate in 2006 had fallen to 82 deaths per 1,000 live births (WHO World Health Statistics, 2008),

Age at death in the Under 5s

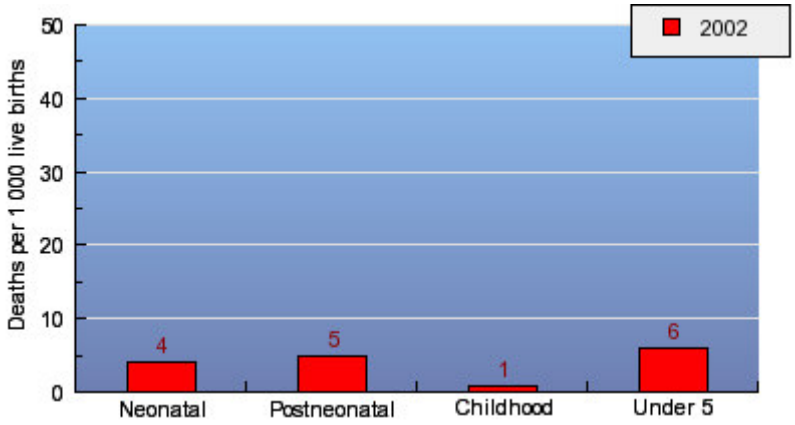
Most of the deaths in under 5s in 2000 occurred within the first year of life, which is the same as in the UK. However, the death rates in the UK are far below those in Cambodia as is shown by the WHO country profiles shown below

Profile of under 5s mortality in Cambodia in 2000



(Note : rates are for 5 years preceding the survey)
(Source : WHO country profile)

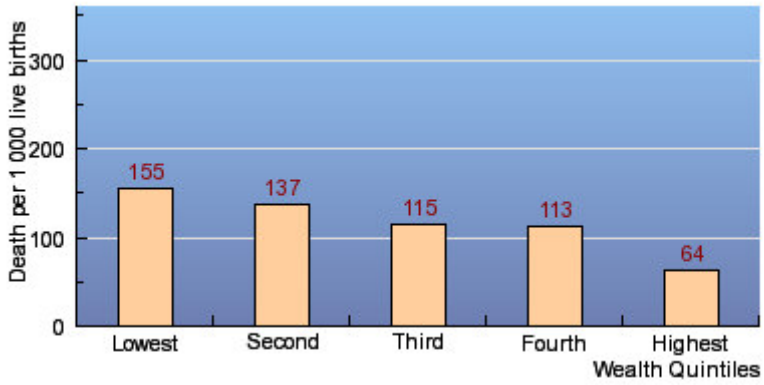
Profile of under 5s mortality in UK in 2002



Under 5 mortality : Age specific mortality rates, UK,
(Source : WHO country profile)

Inequalities in death rates

In the 1990s the better off had a much lower death rate than those who were poor. In fact, a poor child was 2.4 times more likely to die that someone who was rich. (See below).



Under 5s Mortality rates by wealth quintiles, Cambodia, DHS, 2000
(Rate for 10 year period preceding the survey, 2000).

By 2005, the deaths rates had fallen for both the rich and the poor. However, the rate fell proportionately less for the poor than it did the rich and the chances of dying for poor children became 3 times greater than children in a rich family. Education levels of the mother were also important.

Under 5 Mortality rate/deaths aged less than 5 years per 1,000 live births (2005)

Status of mother	Mortality rate
Highest wealth quintile	43.0
Lowest wealth quintile	127.0
Highest education level of mother	53.0
Lowest education level of mother	135.7
Rural	111.0
Urban	75.7

Source : WHO Core Health Indictors published 2008.

In summary a child is

- 3 times as likely to die under the age of 5 if his/her mother is poor,
- 2.6 times more likely to die if his/her mother is poorly educated
- 1.5 times more likely to die if his/her mother lives in a rural area.

Immunisation rates

Immunisation rates are generally quite good. It will be noted, however, (see below) that there is also a lower uptake of immunisation in lower income and educational groups, but the differences are smaller than for mortality. Education level seems to be more important than rurality in immunisation uptake.

Immunisation coverage among one year olds in Cambodia

Status of mother	Immunisation rate %
Highest wealth quintile	82.4
Lowest wealth quintile	69.9
Highest education level of mother	91.2
Lowest education level of mother	64.3
Urban	79.1
Rural	76.6

Source : WHO Core Health Indictors published 2008.

(See appendix 2 for information about the reported cases of vaccine preventable diseases and the immunisation schedules used.)

Causes of death in the Under 5s

Cambodia : In the under 5s as a whole, 30% of deaths are neonatal. Pneumonia (21%) and diarrhoeal diseases (17%) are other major causes of death.

UK : The picture in the UK is quite different. Pneumonia and diarrhoeal diseases contribute only 2% and 1% respectively as causes of death. 59% of under 5 deaths are neonatal. More detailed information for England and Wales is given in appendix 3)

Distribution of causes of death among children under 5 years of age, 2002 - 2003

Cause of death	Cambodia %	Regional average %	UK % 2000 - 03
Neonatal causes (includes diarrhoea during neonatal period)	30	47	59
HIV/AIDS	2	0	0
Diarrhoeal diseases	17	12	1
Measles	2	1	0
Malaria	1	0	0
Pneumonia	21	14	2
Injuries	2	7	4
Other	26	18	33
All causes	100	100	100

(Sum of individual proportions may not add up to 100% due to rounding.
Source : World Health Statistics, 2006

Neonatal Deaths

It has already been noted that

- most deaths under 5 occur in the first year of life
- perinatal conditions are responsible for 7% of all deaths and 10% of all years of life lost (Table xxxx)

It will also be noted that in Cambodia

- Deaths in the first month of life (neonatal deaths) are responsible for a third of all deaths under 5

The three main causes of neonatal death in Cambodia that together make up 78% of deaths and are

- Severe infections 29% (UK = 7%)
- Birth asphyxia 27% (UK = 10%)
- Preterm birth 22% (UK = 56%)

Annual estimated proportions of deaths by cause for neonates, 2000

Cause of Death	Cambodia %	Regional Average %	UK % 2003-05
Neonatal tetanus	6	3	0
Severe infection (includes deaths from pneumonia, meningitis, sepsis/septicaemia and other infections)	29	21	7
Birth asphyxia	27	26	10
Diarrhoeal diseases	3	1	0
Congenital abnormalities	5	8	24
Preterm birth	22	32	56
Other	8	8	4
Total	100	100	100

Sum of individual proportions may not equal 100 due to rounding.
Source : World Health Statistics, 2006

Maternal Mortality

Context

Extracts from the DFID Maternal Health Strategy – Third progress report, June 2008

- The health of women is critical to a country's social, economic and political development. In rural Africa it is women who carry two-thirds of all goods that are transported – not trucks or planes. In South East Asia it is women who provide 90% of the labour for rice cultivation.
- A newborn baby is three to ten times more likely to die within its first two years without its mother
- The survival of women in childbirth reflects the overall development of a country and whether or not the health services are functioning.
- Despite a decline in the worldwide abortion rate between 1995 and 2003, the proportion of abortion that is unsafe remains the same.

Maternal mortality and Millenium Development Goal 5

The Millennium Development Goal 5 is to improve maternal health. This has recently been refined and updated. The Targets now are : -

5A To reduce by three quarters, between 1990 to 2015, the maternal mortality ratio

5B *To achieve, by 2015, universal access to reproductive health*

Indicators used to measure these are :

5.1 Maternal mortality ratio
5.2 Proportion of births attended by skilled health personnel
5.3 Contraceptive Prevalence Rate
5.4 *Adolescent birth rate*
5.5 *Antenatal care coverage (at least one visit and at least four visits)*
5.6 *Unmet need for family planning*

(new additions in italics)

Maternal Mortality in Cambodia

Whereas a maternal death is rare in England and the maternal mortality rate 2003 – 2005 is low at around 7/100,000 maternities in Cambodia recorded as 472 per 100,000 in 2005.

DFID's summary of progress in Cambodia is that "the most recent figures show a slight increase in maternal deaths, from 427 per 100,000 live births in 2000, up to 472 per

100,000 in 2005. However, since levels were much higher in 1990 (at 900 per 100,000 live births), it is possible to say that, over the longer time frame, the Maternal Mortality Ratio in Cambodia is possibly reducing fast enough to reach the MDG target by 2015, though there is no room for complacency. Only 22% women deliver in a health institution."

Cambodia's plans for reducing maternal mortality

There was an increase in percentage of pregnant women with at least 2 antenatal care visits from 29% in 2002 to 47% in 2004.

The National Strategic Development Plan, 2006 – 2010 noted that that

> *In 2000, 32% of births were attended by a skilled attendant at that time. It is predicted that this figure will rise to 70% by 2010.*
>
> *The intention is that this will help to reduce maternal mortality to 243/100,000 live births by 2010 and 140/100,000 live births by 2015. (National Strategic Development Plan, 2006 – 2010.)*

Elements of the National Strategic Development Plan 2006 – 2010 particularly relevant to this include

> • Increase recruitment and training of midwives and ensure their appointment to areas of need.
> • Increase the proportion of deliveries attended by skilled health personnel; and improve emergency obstetric care (EOC).
> • Improve child health through universal coverage of the Child Survival Scorecard interventions, including nutrition interventions and Integrated Management of Childhood Illnesses (IMCI).
> • Improve reproductive health services and information, including maternal child health and birth spacing; address youth sexual and reproductive health issues and services.

The evidence base : We know what works to reduce maternal mortality : *(DFID Maternal Health Strategy)*

- ***Health systems strengthening :*** To provide the life-saving emergency obstetric care that an estimated 15% of all pregnant women will need requires a functioning health system. This includes: human resources (particularly midwifery but also referral level skills such as obstetric surgery and anesthesia); essential drugs and supplies; infrastructure (hospitals, clinics); transport and communications for referral; power, water and sanitation. Our support to health

system strengthening is increasingly funded through budget support in stable environments and through a range of instruments in fragile states. There is an opportunity to maximise our investments by improving data availability and using progress on maternal health as an indicator of overall health systems improvement.

- **Family planning**: An estimated 32% of maternal deaths could be averted through family planning. It is one of the most cost-effective interventions in public health. Research has shown that every US$ 1 million spent on family planning can avert 360,000 unwanted pregnancies, prevent 150,000 induced abortions and save the lives of 800 mothers and 11,000 infants

Sexual and reproductive health (SRH): Universal access to SRH services (particularly for adolescents) would significantly improve maternal health. Maternal death is the leading cause of death for girls aged 15-19 in the developing world. The integration of SRH with HIV and AIDS services would also reduce maternal mortality. An HIV-infected pregnant woman is four to five times more likely to die in childbirth than one who is not infected.

- **Preventing unsafe abortion**: 13% of all maternal deaths are caused by unsafe abortion – this means that around 70,000 women (often the youngest and most vulnerable) are dying needlessly each year. Abortion remains one of the most politically contentious issues of our time and extreme divisions of views on women's reproductive rights have constrained an effective global response. DFID is one of the few donors to actively support efforts to prevent unsafe abortion and plays a leading role in focussing attention – and challenging policies – on the issue; most recently at the Global Safe Abortion Conference in October 2007. DFID has provided £4m to the Safe Abortion Action Fund (SAAF) and a £6.5 million contribution to IPAS**.**

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Further information about maternal mortality can be found in appendix 4 together with definitions and brief summary of the position in UK.

DFID's approach to reducing Maternal Mortality

DFID's general approach is consistent with the evidence of effectiveness and the 1999 Joint Statement of the World Health Organization (WHO), the United Nations Population Fund (UNFPA), the United Nations Children's Fund (UNICEF), and The

World Bank based on 12 years of implementing Safe Motherhood. (See appendix 4.) The general approach is :

Health systems strengthening

Priority 1 – increase aid to build up effective health services and systems.

Priority 2 – increase investment in the health workforce to ensure there are at least 2.3 trained health workers per 1,000 population by 2015 – this will enable 80% of deliveries to be attended by a skilled birth attendant (SBA).

Complementary targeted investments

Priority 3 – increase international efforts to halve unmet need for family planning (including for male and female condoms) by 2010, and provide universal access to family planning by 2015.

High level advocacy

Priority 4 – scale-up global efforts to register every birth and death and certify every cause of death.

Maternal mortality and the poor

The burden of maternal mortality is borne disproportionately by the poor. The removal of financial barriers to delivery and emergency care is essential if MDG 5 is to be attained and the UK government is committed to helping these to be abolished. The removal of fees for delivery and emergency obstetric care – when addressed alongside out of pocket expenses and poor quality of care – is urgently needed (IMMPACT 2007).

DFID's specific support to Cambodia

This includes :

- the Health Sector Support Project (£15 million 2002-2008), jointly with WB, AsDB and UNFPA);

- the Reduction in Maternal Mortality Project (£2.3 million DFID funding). This is a sub-component of the Health Sector Support Project aiming to increase the quality of services, improve access (using equity funds), remove demand side barriers, improve abortion care and provide voluntary surgical contraception; It works with the Cambodian Midwives Associated to ensure midwives and provincial officials understand the implications of the 1997 Cambodian Abortion Law that legalized abortion.

- an additional £0.5million allocated to extend the health equity funds to cover maternal and reproductive health services.

Abortions

As indicated above, reducing unsafe abortions is an important element of reducing maternal mortality. Informed family planning will be a major contributor to reducing mortality from abortions.

A Demographic and Health Survey was carried out in 2000 and from this (appendix 5) it appears that around 5% of all women of child bearing years have had at least one induced abortion. The proportion of women who have had an abortion increases with increasing age, but stabilizes to around 9% after the age of 35.

As a general finding, the more children a woman has had the higher the proportion who have had at least one abortion. A slightly lower proportion of women who have completed secondary education or higher have had an abortion.

It has not been possible to calculate the crude abortion rate in Cambodia for this paper.

MOVE The crude abortion rate per 1000 women aged 15 – 44 in England and Wales in 2001 was 16.2. (Source : Office of National Statistics, Dataset pa01t1)

Specific Health Problems

HIV/AIDS

(From WHO country profile (December 2005)) :

The picture overall

HIV/AIDS is the most common cause of death in Cambodia. It is responsible for 10% of all deaths and 11% of all years of life lost

Cambodia has had one of the most rapidly growing HIV/AIDS epidemics in the Region. The 1999 estimate for prevalence in the sexually active population was 3.75%.

However, the overall prevalence fell to 1.9% in 2003 (WHO country profile), when it was estimated by the Ministry of Health/National Centre for HIV/AIDS estimate that 19,814 adults had AIDS and would have been eligible for antiretroviral therapy. Unprotected heterosexual intercourse still represents the main route of HIV transmission.

The picture in subgroups of the population

In blood donors it increased from 0.1% in 1991 to nearly 4% in 1996, and in commercial sex workers, from 9% to 40% over the same period. In brothel sex workers, however, the level has fallen to 21% in 2003; indirect sex workers (beer and bar girls from 18% in 1998 to 12% in 2003, and male police officers from 4% in 1998 to 3% in 2003. These changes have been ascribed to the government programme to promote 100% condom use and the availability of services for the care and treatment of sexually transmitted infections in the commercial sex industry.

The major vulnerable and affected groups include sex workers, male police officers, garment factory workers, mobile populations (cross-border and road construction workers, clients of sex workers and the client's partners, and men who have sex with men.

Children born to infected mothers are at high risk of HIV transmission and injecting drug users are an emerging vulnerable group.

WHO is deeply involved in work to reduce HIV/AIDS and indicates that the challenges ahead for HIV are to maintain progress and devise strategies to curb the spread of transmission to families.

Trends and the Millenium Development Goals

Trends in HIV and the Cambodian Millenium Development Goals for HIV/AIDS can be summarised as follows :

	2000	2005	2010	2015
HIV prevalence rate among adults, 15 – 49 %	3.0 (1997)	1.9	2	1.8
HIV prevalence rate among pregnant women, 15 – 24 visiting ANC clinic %	2.5 (1998)	2.1	2.0	1.5
Condom use rate among commercial sex workers during last commercial sexual intercourse %	91 (2002)	96.7	98	98 **
Young people 15 – 24 reporting use of condom during sexual intercourse with a non-regular sexual partner %	82 (2002)	n/a	90	95
Condom use reported by married women identified themselves at risk %	1 (2000)	n/a	5	10
HIV infected pregnant women attending ANC receiving complete course of antiretroviral prohylaxis to reduce risk of MTCT %	2.7 (2002)	3.8	35	50 **
People with advanced HIV infection receiving antiretroviral combination therapy %	3 (2002)	45	60	75

** Unlikely to be achieved on current trends

To achieve the Millenium Development Goals for HIV/AIDS the National Strategic Development Plan aims to :

- Promote the male and female condom programme in order to widely encourage and actively pursue use of condom by general population who are sexually active, including women, adolescents and youth.
- Through information, education, communication programs and personal counseling arrest transmission of HIV/AIDS to families.
- Increase and improve care and support services to those infected by HIV/AIDS

Tuberculosis (TB)
(*From WHO core healt37h indicators, published 2008, strategy and country profile.)*

TB is the second most important cause of death in Cambodia.

The death rate for TB is around 92/100,000 per year and is responsible for around 12,000 deaths each year – around 8% of all deaths and 6% of all years of life lost.

Incidence and prevalence of TB in Cambodia, 2006

Incidence of TB/100,000 population	500.0
Prevalence of TB/100,000 population	665.0

10% of TB cases (new and re-treatment) have been tested for HIV. 9.6% of new cases were fond to be positive, but virtually none of these are multiple drug resistant.

In contrast, 3.1% previously of treated TB cases are multiple drug resistant.

TB trends and the Cambodia Millenium Development Goals for TB are as follows : -

	2000	2005	2010	2015
Prevalence of smear positive TB cases per 100,000 population	428 (1997)	n/a	214	135
TB death rate per 100,000 population	90 (1997)	n/a	45	32
All estimated new smear-positive TB cases detected under DOTS %	57 (2002)	61	>70	>70 **
Registered smear-positive TB cases successfully treated under DOTS %	89 (2002)	n/a	85	85

** Unlikely to be achieved under current trends

(For information about the WHO strategy for tackling TB, go to http://www.who.int/tb/dots/whatisdots/en/index.html)

In 2006, notifications of new cases fell for the first time since 1995. It is not yet possible to say whether this is a result of declining incidence or an indication of problems with case-finding. The use of community members to refer suspects for diagnosis and to supervise treatment, and collaboration with the private sector, are likely to improve case-finding.

All referral hospitals and health centres with hospital beds provide Directly Observed Treatments Short courses (DOTS) to treat TB patients. There are around 186 laboratories, with 3 able to culture and 1 performing Drug Sensitivity Testing (DST).

In 1998, the case detection ratio in Cambodia reached 50%, (8% higher than the average for the Western Pacific Region). The cure rate is high at 89% for sputum

positive patients, consistent since 1995, and the treatment success rate is more than 93%.

Collaborative TB/HIV activities are being introduced in more districts each year as collaboration between the National Treatment Programme and national AIDS control programme improves.

The treatment of Multi Drug Resistant -TB has begun on a small scale; in order to treat more patients the National Treatment Programme (NTP) will need to ensure that culture and Drug Sensitivity Testing (DST)are available and of high quality.

Malaria (From WHO country profile for Cambodia)

Malaria is responsible for 2% of all deaths and 3% of years of life lost.

The number of reported cases fell from 123,796 in 1990 to 46,902 in 2002. In 2003 the number rose to 71,258. This rise has been ascribed to increased reporting arising from the increased services that have been put in place. In 2003, there wee 492 deaths from malaria.

The malaria case fatality rate fell from 0.7% in 1996 to 0.4% in 1998, and the target to lower leprosy prevalence to fewer than 1 case among 10,000 people by the year 2000 was reached in 1998.

Malaria is a major concern for people living in Cambodia's hilly forested environments and forest fringes. Of particular concern is the high level of multi-drug resistance present in affected areas. A survey in 2002 showed problems of delayed treatment-seeking behaviour, widespread use of many antimalarial drugs for the same malaria episode and non-adherence to malaria treatment. There has also been evidence of the use of counterfeit and substandard drugs.

	2000	**2005**	**2010**	**2015**
Malaria case fatality rate reported by the public sector %	0.4	0.36	0.25	0.1 **
Population at high risk who slept under insecticide-treated bed nets during previous night %	24	49	95	98 **
Number of malaria cases treated in public health sector per 1,000 population	11.4	7.3	7	4
Public health facilities able to confirm malaria diagnosis according to national guidelines with 95% accuracy %	60 (2002)	n/a	80	95
Number of dengue cases treated in the public sector per 1,000 population	1 (2001)	0.84	0.6	0.4 **
Dengue case fatality rate reported by public health facilities	1.5 (2003)	0.74	0.5	0.3

** Unlikely to be achieved on present trends

The National Malaria Strategy targets people living within 200m of forest areas where malaria generally occurs. It aims to strengthen clinical management of malaria cases, provide surveillance and health education and promote the use of Insecticide-treated mosquito nets (ITNs), which form the mainstay of malaria prevention. In 2003, ITN coverage was estimated to be 49% in areas at risk of malaria.

For treatment, there is an attempt to increase access to early diagnosis and treatment through the adoption of a three-pronged approach i) standardized malaria diagnosis and treatment based on rapid diagnostic tests or microscopy and prepackaged ASU + MQ combination treatment through both a) the public health system and b) the private sector and ii) social marketing of rapid diagnostic tests and ACT through the private sector.

Landmines and casualties

In the early 1990s it was estimated that there were between 30,000 and 40,000 amputee victims of land mines, the biggest group being aged 20 – 30, 90% of whom were males, who were among the most economically active in the population. The aim is to reduce the number of deaths and casualties to zero by 2015 by the programme of landmine and unexploded ordnance clearance.

Targets for landmine reduction

	2000	2005	2015 MDG
Casualties (deaths and injuries) Numbers	797	200	0
Area affected cleared of mines and unexploded ordnance	50.3	77	100

Source : National Strategic Development Plan, 2006 - 2010

Health services and health seeking behaviour in Cambodia

State health care

- Reforms to the health sector since 1993 have seen an increase in the number of health facilities with the aim of improving efficiency, effectiveness and quality of care, especially for the poor.
- In 2004 there were 71 operational districts, each with one referral hospital optimally serving 100,000 people. Each hospital has a number of affiliated health centres serving around 10,000 people.
- A small fee, based on recommended national standards, is charged for using public health sector services.
- The number of students completing medical training is increasing.
- There has been a brain drain of trained personnel from public to private care, including Non-Governmental Organisations (NGOs), in recent years due to better pay in the latter sector. A strategic priority for the government is to increase pay for health workers.

Private health care

- Since reforms in 1993 that limited state provided health services, private provision has increased.
- A government aim is to promote private sector health care provision in urban and rural areas.
- Many government providers also have private practices.

NGOs

- The number of NGOs providing health care increased rapidly from 1993, following the end of a period of isolation from other nations.
- In 1988 there were 23 such NGOs, rising to 324 in 1995.

Traditional care

- Indigenous health practitioners include *Kru Teay* (fortune tellers) and *Arak* (spiritual healers), and are usually based in the community in which they work, Research with villagers suggests that this engenders trust and understanding (Bristow et. al.).
- *Kru Teay* and *Arak* are chosen by spirits for the role, and this moment is often preceeded by an illness.
- *Kru Teay* and *Arak* diagnose problems by liaising with spirits via a series of rituals. Rites are then performed to cure the patient following advice from the spirit.
- Rites can include the sacrifice of an animal such as a chicken, pig or buffalo.
- A popular home remedy for many illnesses is *koh khcol* (coining). It involves scoring the skin with a coin edge using *preng khcol*, a balm with menthol, camphor and other ingredients, until red sores appear.
- An *Arak* charges around 20,000 riels (US$5) for services, compared to 500 riels ($0.13) for one visit to the public health centre and 3 days medication.

Drug-sellers

- Small shops called *phteah team* are prevalent in rural areas. Such shops sell various goods including sugar, salt and oil, often used in traditional remedies.
- Other drug sellers are known as *phteah chin* (Chinese houses), often owned by Chinese vendors, which sell wind medicine (*thnum khchol)*, menthol, camphor and other products.
- Drug-sellers also sell Western medicines including vitamins, anipyretics and sometimes steroids.

Utilisation of healthcare

- Ill people tend to use a combination of traditional and allopathic treatments, using each pragmatically according to personal circumstance, the nature of the complaint and how effective each successive treatment is.
- One study in a rural area of Cambodia (Yanagisawa et. al., 2004) found that villagers were most likely use home remedies when a family member became ill, followed by self-medication. If the first action was not successful, people used self-medication or nearby private health centres.
- The study found that very poor people used the public health more often than the better-off as a first step.
- Another study of reproductive health care use with women of high socio-economic status (Huff-Rouselle & Pickering, 2001), found that less than a quarter of the sample had heard of any service other than the one they used. This would imply that they had not chosen the health setting (public or private), but were concerned with the service available; in this case contraceptive methods.

Factors influencing health-seeking behaviour

Beliefs

Individuals' religious and spirtual beliefs about the cause of the illness may affect the treatment they choose. For example if an angered spirit is causing the illness, it may be necessary to perform a sacrifice to appease it.

Cost

In the study by Yanagisawa and colleagues, the fee charged by public health centres did not prevent poor people from accessing services. In fact, very poor people used health centres more than those better off.

Accessibility

Accessibility of health centres in the same study did affect utilisation. While poor people living close to the centres used it more than the better-off, there was no difference between these two groups when they lived more than 2km away.

Distance increased the opportunity costs, such as travelling fees and the loss of wages, which could offset the low cost of the service.

Knowledge

Knowledge of the existence of a service can affect uptake. For example, reproductive health services were not well known in the study by Huff – Rouselle & Pickering, with most information on clinics being passed between friends, family and neighbours.

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Government policies and plans for health

Rectangular Strategy : Cambodia's Rectangular Strategy (RS) "for growth, employment, equity and efficiency" provides the framework to move the country forward on the path to fast socio-economic development. The elements of the strategy are

> **Good governance** - fighting corruption, legal and judicial reform, public administration reform, armed services reform and demobilisation.
> **Enhancement of the agricultural sector** – improving production and diversification, land reform and mine clearance, fishery and forestry reform.
> **Further rehabilitation and construction of the physical infrastructure** – transport, water and irrigation, development of the energy sector and electricity network
> **Private sector development and employment generation** – strengthening the private sector and attracting investment, creating jobs and ensuring good working conditions, promoting small and medium enterprises, ensuring social safety nets
> **Capacity building and human resource development** – enhancing quality education, improving health services, fostering gender equality, implementing population policy.

The National Strategic Development Plan sets out how these will be achieved and the Health Sector Strategic Plan provides the detail in relation to specific health issues.

The Cambodian National Strategic Development Plan(1)

The National Strategic Development Plan (NSDP) was developed by the Cambodian Ministry of Planning with participation and consultation from all stakeholders including government ministries and institutions, external development partners (EDPs), and civil society. The NSDP was officially launched on 15th of August 2006 by the Prime Minister after approval by the National Assembly, the Senate, the Royal Government of Cambodia, and the King.

The NSDP is the single, overarching document containing the Royal Government of Cambodia's priority goals and strategies. It directs all public policy to the reduction of poverty and the achievement of other MDGs along with other socioeconomic development goals for the benefit of all Cambodians. It synthesises and prioritises the goals of the National Poverty Reduction Strategy (NPRS) and the MDGs and is intended to align sector strategies and planning cycles to overall long term vision, as well as guide external development partners (EDP) to align and harmonise their efforts towards better aid-effectiveness and higher net-resources transfer than hitherto. There are 43 targets within the following major goals mentioned in NSDP:

- eradicate poverty and hunger
- develop the agriculture sector and enhance agricultural production and productivity
- implement the Education Sector Strategic Plan
- implement the Health Sector Strategic Plan
- implement population policies

1 http://www.mop.gov.kh/Home/NSDP/tabid/83/Default.aspx

- further advance rural development
- ensure environmental sustainability
- promote gender equity
- implement good governance reforms
- sustain high macroeconomic growth
- improve budget performance
- accelerate industrial growth
- further develop the private sector
- increase trade (i.e. export)
- develop tourism
- make progress in de-mining & provide victim assistance
- rehabilitate the physical infrastructure
- further develop the energy sector

The Health Sector Strategic Plan
(From the National Strategic Development Plan (2006 – 2010)

Government approach is to extend to 2010 the Health Sector Strategic Plan (2003 – 2007). This provides the framework to achieve the priorities in regards to

- Health service delivery
- Behavioural change
- Quality improvement
- Human resource development
- Health financing
- Institutional development

The policies and actions are to

- Accelerate reforms wherever needed.
- Try and achieve better and cost-effective coordination among vertical disease control programmes and mainstream health service delivery.
- Expand and strengthening health equity funds to help poor avail of public health services, and explore to find out more sustainable ways of helping the poor to easily access the health care system without paying fees or through targeted monetary assistance.
- Rationalise the cost-recovery system to ensure best practices.
- Find ways and means to improve better ways of hospital financing.
- Increase recruitment and training of midwives and ensure their appointment to areas of need.
- Increase the proportion of deliveries attended by skilled health personnel; and improve emergency obstetric care (EOC).
- Improve child health through universal coverage of the Child Survival Scorecard interventions, including nutrition interventions and Integrated Management of Childhood Illnesses (IMCI).
- Improve reproductive health services and information, including maternal child health and birth spacing; address youth sexual and reproductive health issues

and services.

- Explore the possibility of expanding the existing scheme of village health volunteers for malaria control to one of low-cost village level health workers (VHWs), chosen by the community and imparted essential minimum knowledge to provide preventative and prophylactic health care.
- Construct and/or rehabilitate and upgrade more health centres (sub-district or commune level) and referral hospitals, especially in areas of high poverty.
- Improve educational and emergency services.
- Strengthen health laws and regulations and their enforcement, including those relating to medicines and drugs as well as food safety.
- Ensure adequate allocation and timely release of budget funds to health sector.
- Elicit, encourage and involve private sector in provision of health care, both in urban and rural areas

Assistance to the Government and the Millennium Development Goals

The eight Millennium Development Goals (MDGs) have been a way of focusing international effort in support of developing countries. They were agreed at the United Nations Millennium Summit in September 2000. Nearly 190 countries have subsequently signed up to them.

- The eight Millennium Development Goals are:
- Eradicate extreme poverty and hunger
- Achieve universal primary education
- Promote gender equality and empower women
- Reduce child mortality
- Improve maternal health
- Combat HIV and AIDS, malaria and other diseases
- Ensure environmental sustainability
- Develop a global partnership for development

Since 2000, huge progress has been made in the global effort to tackle poverty. For example:

- Twenty-six million more children are now in school in Ethiopia and Bangladesh.
- Drinking water is available to 45 million more people in India and Pakistan.
- Free health care is being provided to 5 million more Zambians.

However seven years later and halfway to 2015 it's clear that not all the MDGs will be achieved:

- Seventy-two million children still don’t go to school.
- Almost 10 million children die each year before their fifth birthday of disease.
- More than half a million women die each year due to complications during pregnancy or childbirth.

- Every day over 6,800 people become infected with HIV and over 5,700 people die from AIDS.

In July 2007, Prime Minister Gordon Brown, speaking alongside the UN Secretary General, Ban Ki-moon, launched the MDG Call to Action, with the support of 14 heads of state or governments and 21 private sector leaders. With many of the MDGs still off-track at the halfway point to the target year of 2015, this seeks to accelerate progress on achieving them. The Call to Action is an international effort to accelerate progress on the MDGs and help make 2008 a turning point in the fight against poverty. Its supporters will push for an action plan which helps to accelerate progress on the MDGs at key moments in 2008, particularly the EU and G8. A pivotal moment will be 25 September 2008, when the UN hosts an MDG summit in New York.

International assistance to Cambodia

In 2002 $470 million overseas development aid was disbursed and was equivalent to almost 8% of Cambodia's GDP. On a per capita basis, Cambodia has received significantly more overseas development aid (ODA) than other low income countries during the past decade or so, reflecting its post-conflict transition needs. Aid was used mainly to improve health and education, rebuild physical infrastructure and for institutional capacity building. Cambodia will have to rely heavily on ODA in the medium term. Despite some recent progress in reducing HIV infection rates and infant and child deaths, the country is still a long way from reaching the Millennium Development Goals on health.

As a report by the World Bank (Cambodia Second Health Sector Support Programme, Report No AB3790) indicates, the country has moved from a period of emergency support and rehabilitation to one of sustainable development based on consistent medium and long term policy directions.

A co-ordinated approach : In 2006 there were 22 donors providing $109 million of support to Cambodia's health sector, through 109 separate projects. However it was recognised that if the country's health system was to meet the needs of its citizens, the Ministry of Health needed to spend more of its time carrying out real improvements, and less of its time managing all of these projects. The International Health Partnership2 (IHP), launched in September 2007, aims to coordinate the efforts of donors by getting them behind national priorities and freeing the Ministry of Health to go about its key business of providing better healthcare to Cambodians. Evidence suggests that donor coordination can be a great boost to development.3

2 On September 05 2007 Cambodia became one of seven "first wave" countries to join the IHP. The IHP aims to improve the way that international agencies, donors and poor countries work together to develop and implement health plans, creating and improving health services for poor people and ultimately saving more lives. The IHP consists of the UK, Norway, Germany, Canada, Italy, The Netherlands, France, Portugal, World Health Organisation, European Commission, World Bank, UNAIDS, UNFPA, GAVI Alliance, UNICEF, Bill and Melinda Gates Foundation, African Development Bank, Global Fund to Fight HIV and AIDS, Tuberculosis and Malaria, and the UN Development Group

3 http://www.dfid.gov.uk/casestudies/files/asia/cambodia-ihp.asp

In recent years the Government of Cambodia has worked with four major development partners - the United Nations Population Fund, the World Bank, the Asian Development Bank and Department For IInternational Development (UK) - on a programme designed to address some of the country's most pressing health problems. The programme hires international medical groups to help manage health facilities, and sets specific goals to work towards. Effective donor coordination has meant that its efforts have been spread widely over the country, covering 12 districts and serving 1.4 million people - a tenth of the population. One major achievement of the programme has been to increase the number of children born either in a clinic, or at home with a professionally trained midwife. Between 2000 and 2005, the proportion of deliveries attended by skilled health personnel rose from 31.8 to 43.8%, contributing to a rapid reduction in infant and child deaths.

The need for further co-ordination : Donors not working in a co-ordinated way create massive complications for the Ministry of Health. With so many separate projects, review missions, implementation units and technical support initiatives there is a huge burden on the Ministry and its staff. An entire floor of the Ministry is set aside for separate donor project offices, and much time is taken up here, rather than on core jobs elsewhere.

Better coordinated assistance and more support for the health system will help to improve healthcare for all Cambodians. The IHP will provide technical support for the development of a new eight-year health plan for the country, and will ensure that donors follow the priorities set out in this plan. It will also ensure that more money goes through Government health systems, which should help to strengthen them over time. If donors put into practice in Cambodia the commitments they have made globally on working together, their assistance will be more effective on the ground, and the Ministry of Health will be able to focus on its major duty: making Cambodia a healthier, and therefore more productive and better-off nation.

The Contributions of Department for International Development (UK) and WHO to Cambodia

DfID Country Assistance Plan

DfID's Country Assistance Plans set out how DfID aims to contribute to the achievement of the Millennium Development Goals in various countries. Country Assistance Plans start from the basis of the partner country’s poverty reduction strategy and sets out in detail how DfID will work as part of the international development effort to support a country’s strategy for reducing poverty.

DFID’s Country Assistance Plan for Cambodia sets out the support DFID will provide from 2005-2008 to support the Royal Government of Cambodia's National Strategic Development Plan. It was produced as part of a four-donor partnership with the World Bank, the UN system, and Asian Development Bank, based on shared analysis and consultations.

Cambodia receives significant external development resources, so the DfID focus is on working with government and donors to achieve greater impact from those resources. In

2007/8 DfID assistance will total £13m. DfID plans to begin providing poverty reduction budget support in 2007 and to increase the share of assistance through budget support over time.

DfID is focusing its assistance by reducing the number of projects and sectors it supports, and harmonising with others by channelling all its assistance through other development partners by 2011. The Country Assistance Plan focuses on four priority objectives:

- Contribute to a rapid increase in the impact of development resources
- Responsive, accountable and effective local government
- Support government and civil society to strengthen the livelihoods of poor people
- Increase access to heath services and information

DfID Country Strategy Plans

Country Strategy Papers (CSPs) are prepared for all countries where DfID provides development assistance programmes, and are normally produced every three years. CSPs set out how DfID aims to contribute to achieving the international development targets in the country in question. Progress is assessed against strategic objectives set out the CSP. In preparing CSPs, DfID consults closely with governments, business, civil society, and others within both the partner country and the UK.

Types of projects receiving DfID funding in Cambodia(4)

Poverty and hunger

DFID has been a significant funder of the Government's 'Seila' Rural development programme. Four million of the poorest Cambodians in all 24 provinces have benefited from the construction of roads, bridges, schools, wells and other essential infrastructure as well as having a greater say in local decision making processes.

Child mortality

DFID is co-financing the Health Sector Support Project (HSSP) with the Asian Development Bank (ADB) and the World Bank alongside the United Nations Population Fund (UNFPA) and WHO.

The Project supports the implementation of the Government's Health Sector Strategic Plan, which aims to strengthen health sector development to increase access to quality health services especially for mothers and children. Project components include: increasing the availability of essential health care services, support for equity funds to help the poor access health care and support to the Ministry of Health to plan, manage, finance and monitor progress in the sector.

4 http://www.dfid.gov.uk/countries/asia/cambodia.asp

Maternal health

Reducing maternal mortality is a priority for DFID, and in 2006 it launched a new £2.3 million programme to reduce the number of women dying from unsafe abortion.

DFID also supports a £7.5m contribution to a social marketing programme through USAID. This aims to increase knowledge and use of condoms and other family planning methods as well as increase knowledge, awareness and supportive attitudes to help reduce high risk behaviour associated with HIV transmission;

Diseases

DFID is currently supporting a 5-year programme, worth £15.6m, to support the Government's multi-sectoral response to HIV. This supports the Ministries of Health and Education Youth and Sport, the National AIDS Authority and previously the BBC World Service Trust for a mass media campaign. It supports initiatives such as HIV and AIDS education, prevention, testing, treatment, care and stigma reduction.

HIV/AIDS: The current programme of Social Marketing of Condoms aims to increase knowledge by Cambodian women and men on HIV/AIDS and improve access to quality condoms for high risk groups. The programme has been judged to have contributed to the reversal of the progress of the epidemic.

Malaria: DFID provides $1.24m through HSSP to support the implementation of the national program to control and prevent malaria.

Environmental sustainability

DfID has contributed £13 million to an innovative five year rural livelihoods programme managed by the Danish development agency Danida. This will strengthen the planning and sustainable use of natural resources (particularly land, fisheries and forests) as well as improving the livelihoods of some of the poorest people in Cambodia.

DfID is also working with the Ministry of Rural Development to design a 3 year £1 million project to support improved leadership, management and financing of the sanitation sector. The project aims to help the Ministry increase awareness of the benefits of improved sanitation increase demand for sanitation services, and develop a sanitation strategy and institutional framework.

WHO and Cambodia
(Source : WHO)

Cooperation between the World Health Organization and Cambodia is extensive. It began in 1953, focusing on such projects as malaria control and maternal and child health. The programme expanded but was then suspended from 1975 until 1980 during the Pol Pot regime.

Then, periodic technical consultation and other forms of support were provided for some programmes – for example

- rehabilitation of the water and sanitation works in Phnom Penh
- prevention and control of diseases such as malaria, diarrhoea, tuberculosis
- development of human resources with specific focus on medical education and nursing

These were then extended by WHO to the country under the auspices of UNICEF or the International Committee for the Red Cross (ICRC) and iIn March 1991 a WHO office was re-established in Phnom Penh and a new programme of support was initiated.

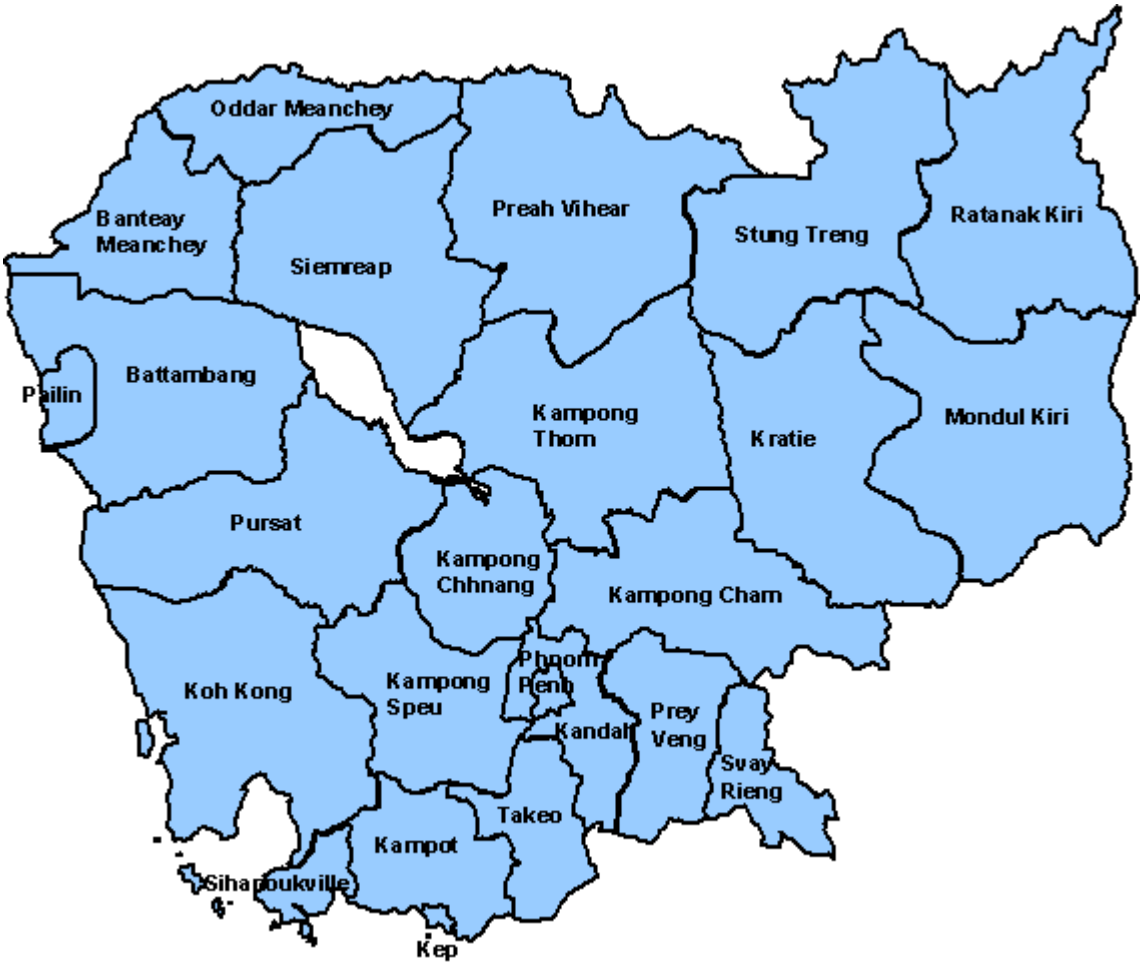
In May 2000 the WHO team consisted of 70 people, including 20 internationally recruited professional staff members and 10 volunteers. In 2000/01 the country budget is US$ 6.7 million, including an estimated US$ 3.7 million in extrabudgetary funds. About 60% of the budget is for technical assistance and other personnel.

In 2007, WHO and the Royal Government of Cambodia carried out a joint study to assess progress towards the Millenium Development Goals and has recommended ways in which efforts to achieve them could be scaled up (WHO/HDS/2007.1).

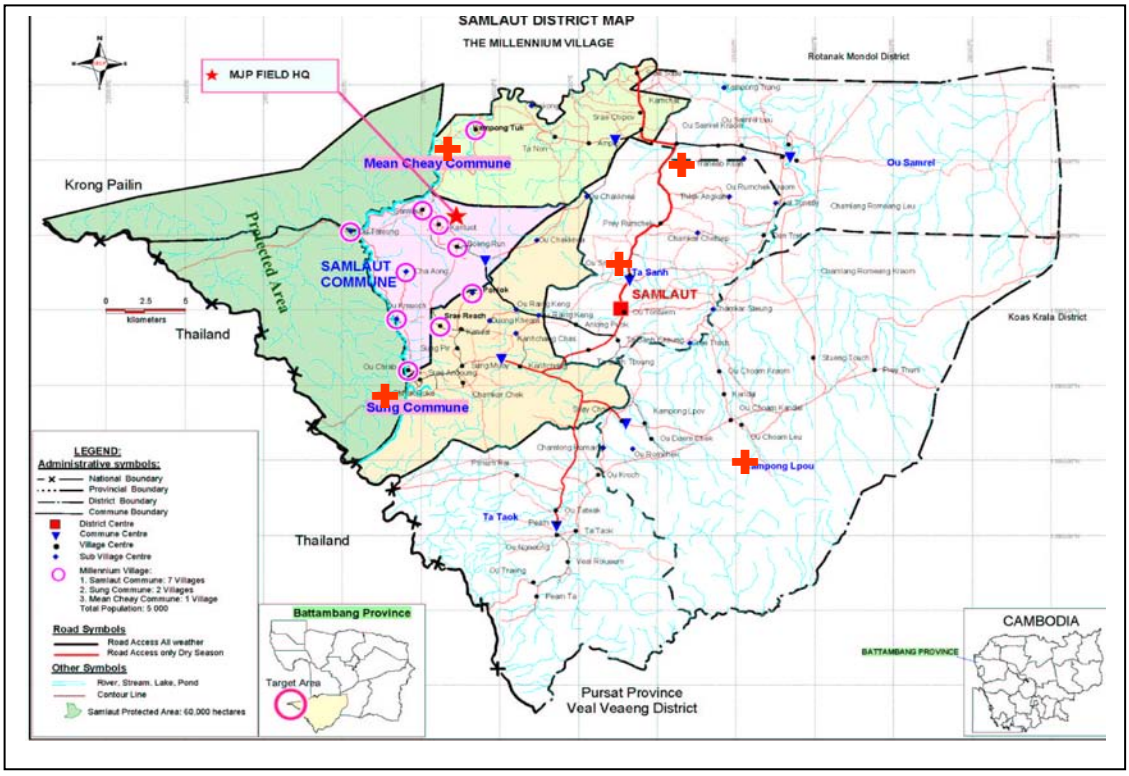
Samlaut District and the Madox Jolie Pitt Project Area

Samlaut District is in the West of Cambodia in the Province of Battambang and just a few kilometres from the border with Thailand.

Map of Cambodia to show Provinces



Map of Samlaut District



Battambang Province

The 2005 population of Battambang Province was just under a million with an expectation that it will rise to around 1.2 million by 2015. The age distribution is similar to that of the population of Cambodia as a whole. Life expectancy is also similar, though the fertility rate appears higher.

The table below provides some information about Battambang with the position for Cambodia as a comparison.

	Battambang (2005)	Cambodia (2004)
Total Population	997,840	13.66 million
Female (100):Male ratio	97.1	93.5
Population 0 – 14	388,667 39.0%	39.0
Population 15 - 59	557,801 55.8%	55.1
Population 60+	51,572 5.2%	5.9
Total fertility rate	4.12	4.0 (2000) 3.34 (2004)
% of women of child bearing age who had had at least one induce abortion (2000)	10%	5% (2000)
% women aged 15 – 49 who could not read (2000)	25.8%	32.4% (2000)
Life Expectancy M (years) F	57.3 63.3	57.9 64.1

Source : National Institute of Statistics, Cambodia

Samlaut District

The district is divided into 7 communes and has a population just over 31,000 people. There are thought to be 5,706 families who live in 49 villages. This suggests a family size of around 5.4 people per family This is a little higher than the average household size for the rural population in Cambodia, which is 5.0.

An average household size of 5.4 people suggests an average of around 3.4 children per couple.

Information about the classification of districts and communes in Battambang and villages in Samlaut is provided in appendix 6.

Area covered by the Maddox Jolie Pitt Foundation Project

The area being covered by the Maddox Jolie Pitt Foundation and visited by representatives in NHS South Central in January, 2008, is something in the order of 5,500 population. This is equivalent to a group practice of 3 General Practitioners in the UK.

Routine data is not available for the area covered by the project and the following has been taken from the report made by the NESC visitors and a presentation make by Stephan Bognar, the MJP Project Leader, whilst visiting Southampton.

Health facilities

The health facilities in the West of the Samlaut District are (NHS site visit to Samlaut District, January, 2008),

- Kampong Tuk Health Post (run by the Maddox Jolie Pitt foundation)
- Champong Kuoy Health Centre (run by the Government)
- Samlaut Health Centre at Ou Chrab (currently Government run but MJP will be taking this over)
- A mobile Outreach Service
- Boeng Run Health Centre – not yet running, but expected to start in the summer of 2008)
- The emergency Hospital is in Battambang.

- An MJP survey indicated that about half the population use government facilities and almost half private medical facilities. The remainder, a small minority of around 4%, would treat themselves.
- Government staff are poorly paid and have had limited training. However, they follow government guidelines and there is a monitoring process for this. Diagnostic facilities are very limited and drugs are in limited supply.
- It is reported that all mothers are advised to attend a health post or health centre for an antenatal check at 20 weeks and then monthly thereafter, though it is not entirely clear what the uptake of this service is. It is reported that in one area 70% of routine deliveries are carried out at a health post or health centre, 20% at home and 10% in private clinics. However, it is also reported that in another area only a small proportion of antenatal patients deliver at a health post.
- Recording of patient information appears to vary between clinics.
- Health education in schools is very limited.
- Family Planning Services are provided by the NGO “The Reproductive Association of Cambodia”.
- There is an extended programme of child immunisation together with vitamin clinics.

Health problems

Routine data is not available, but the problems perceived by local people when asked by the visitors in January 2008 were respiratory infections, malaria and gastrointestinal disorders.

The health problems the MJP see affecting the areas are : -

- Primary Care, Essential Medicines, Basic medical equipment/materials
- Maternal and Child Health (including family planning)
- Malaria
- Typhoid
- Dengue Fever
- Trauma/Metal Health
- Nutrition

Appendix 1

	2000	2005	2010 Projected	Target 2015
Infant mortality rate/1,000 live births	95 (1998)	66	60	50
Under 5s Mortality rate/1,000 live births	124 (1998)	82	85	65
Maternal Mortality Ratio per 100,000 live births	437 (1997)	472**	243	140
Births attended by a skilled health personnel %	32 (2000)	Not available	70	80
Under 1 year-olds immunised against DPT3%	43	83	85	90
Under 1 year olds immunised against measles	41.4	80	85	90
Malaria cases treated at public health sector per 1000 population	11.4	7.3	6.0	
Malaria cases: fatality rate %	0.4	0.36	0.25	0.1
TB smear positive cases/100,000	428	Not available	214	135
TB death rate/100,000 population	90 (1997)	-	60	
Adult HIV prevalence rate (of 15-49 age)	2.8	1.9	1.9	1.8
Married women using modern birth spacing methods %	18.5% (2000)	n/a	44	60
Births attended by skilled personnel %	32 (2000)	n/a	70	80
Pregnant women with 2 or more ANC consultations with skilled health personnel	30.5 (2000)	n/a	75	90
Pregnant women delivered by Caesarean section %	0.8 (2000)	0.8	3	4 **
Pregnant women with iron deficiency anaemia %	66 (2000)	n/a	39	33
Total fertility rate	4(1998)	3.3	3.4	3.0
Women 15 – 49 with BMI <18.5 Kg/sq m %	21 (2000)	n/a	12	8
Women 15 – 49 with iron deficiency anaemia %	58 (2000)	n/a	32	19
Number of Health Centres	942 (2002)	965		
Number of operational District Hospitals	68 (2002)	69		
% of health facilities providing Referral Hospital services	-	33	45	70

** Unlikely to be achieved on present trends

** Source : National Strategic Development Plan, 2006 - 2010

	Cambodia	UK
Population 2005	14,197,000	60,512,000
Gross national income per capita (ppp international $)	2,920	35,580
Life expectancy at birth male/female	59/65	77/81
Probability of dying under 5 years (per 1000 live births)	82	6
Probability of dying between 15 – 60 years m/f (per 1000 population)	314/207	98/61
Total expenditure of health care per capita (Intl $, 2005)	167	2,597
Total expenditure on health as % of GDP (2005)	6.4%	8.2%

Source : Mortality Country Fact Sheet, 2006. WHO Statistics, Published in World Statistics, 2008.

Appendix 2

Reported cases (from WHO vaccine-preventable diseases monitoring system) in 2000 and 2006

Type of case	2000	2006
Diphtheria	0	0
Measles	12,237	188
Mumps	-	-
Pertussis	2,068	474
Polio*	0	1
Rubella	-	508
Tetanus (neonatal)	295	69
Yellow fever	-	-

- Polio refers to all polio cass (indigenous and imported), including polio cases caused by vaccine derived polio viruses. It does not include vaccine associated paralytic polio and cases of non polio acute flaccid paralysis.
- Cambodia was certified as polio free in October 2000, with no cases of poliomyelitis since March 1997, and a surveillance system for acute flaccid paralysis (AFP) which meets the required international standard.

The immunisation schedule is

Vaccine	When given
BCG	Birth
DTwP (Diptheria and tetanus toxoid with whole cell pertussis vaccine)	6, 10 and 14 weeks
Hep B (sequelae of hepatoma and cirrhosis)	1 – 7 days
Measles	9 – 11 months
OPV (Oral Polio Vaccine)	6, 10 and 14 weeks
TT (tetanus toxoid)	1st contact; + 1 + 6 months + 1, + 1 year
Vitamin A supplementation	6 – 59 months

Appendix 3

Underlying causes of death in children under 1 year and 1 – 4 years in England and Wales, 2005

	Number	%
Deaths under 28 days	2227	68.3%
Deaths 28 days to under 1 year	1032	31.7%
Total deaths	3259	100%

Source : ONS, Series DH2, No. 32,

Live births, still births and infant deaths by ONS cause groups, 2005

	Births Number		Rates (1)				
Cause group	Live births	Still-births	Still-birth	Perinatal	Neonatal	Post-neonatal	Infant
All causes	645,881	3,484	5.4	7.9	3.4	1.5	4.9
Congenital anomalies		493	0.8	1.4	0.9	0.4	1.3
Antepartum infections		32	0.0	0.1	0.1	0.0	0.1
Immaturity related conditions		-	-	1.6	2.0	0.2	2.2
Asphyxia, anoxia or trauma (intrapartum)		101	0.2	0.4	0.3	0.0	0.3
External conditions		7	0.0	0.0	0.0	0.1	0.1
Infections		-	-	0.0	0.0	0.2	0.3
Other specific conditions		208	0.3	0.3	0.0	0.0	0.1
Asphyxia, anoxia or trauma (antepartum)		930	1.4	1.4	-	-	-
Remaining antepartum deaths		1,630	2.5	2.5	-	-	-
Sudden infant deaths		-	-	0.0	0.0	0.2	0.3
Other conditions		83	0.1	0.1	0.0	0.3	0.3

Stillbirths and perinatal deaths per 1000 live births and stillbirths.
Neonatal, postneonatal and infant deaths per 1,000 live births

Source : Table 7, Dataset HSQ32PTZ

Causes of death in children under 5 in England and Wales, 2005

Source : Mortality Statistics, Series DH2, No. 32 for 2005, Office of National Statistics

Causes of death in children aged 28 days to <1 year and 1 – 4 years.		
	Age 28 days - 1 year	**1 – 4 years**
Total Deaths	**1032**	**501**
Infection	60 5.8%	52 10.4%
Diseases of nervous system	75 7.3%	58 11.6%
Neoplasms	13 1.3%	65 13.0%
Circulatory	41 4.0%	35 7.0%
Respiratory	62 6.0%	21 4.2%
Perinatal	192 19.6%	6 1.2%
Congenital Malformations	231 22.4%	41 8.2%
Symptoms, signs, abnormal biochemistry	234 22.7%	12 2.4%
External	44 4.3%	65 13.0%
Other	98 7.7%	146 29.1%

Appendix 4

Reducing Maternal Mortality

The 1999 Joint Statement of the World Health Organization (WHO), the United Nations Population Fund (UNFPA), the United Nations Children's Fund (UNICEF), and The World Bank based on 12 years of implementing Safe Motherhood that identified the following as the main causes of death in developing countries.

Key elements of this were : -

80% of all maternal deaths world-wide are the direct result of complications arising during pregnancy, delivery, or the first six weeks after birth.

- The five main causes of maternal mortality are haemorrhage – responsible for about a quarter of all maternal deaths –infections, high blood pressure, obstructed labour and unsafe abortion. The last condition, unsafe abortion, accounts for more than a third of maternal deaths in some parts of the world.

20% of maternal deaths are the result of pre-existing health conditions that are exacerbated by pregnancy or its management.

- One of the most significant of these indirect causes of death is anaemia. Other important indirect causes of death include malaria, hepatitis, heart disease and, increasingly in some settings, HIV/AIDS.

It went on to identify three key areas for action.

Social status of women :

Safe motherhood can be advanced through respecting existing human rights, through empowering women to make choices in their reproductive lives with the support of their families and communities.

> *The report noted that the low social status of women in developing countries is an important factor underlying maternal mortality. Low social status limits women's access to economic resources and basic education, impeding their ability to make informed decisions on childbearing, health and nutrition. Poor nutrition before and during pregnancy contributes to poor health, obstetric problems, and poor pregnancy outcomes for both women and their newborns*.

Attended skilled delivery :

The access to and quality of maternal health services need to be improved. All deliveries should be overseen by skilled attendants and essential care should be available when obstetric complications arise.

The joint Statement indicated that a ready supply of health providers with essential midwifery skills, backed up by referral services for complications, is critical in preventing maternal deaths.

> *When the joint Statement was made only 53% of deliveries in developing countries were attended by a health professional, and only 40% took place in a hospital or health centre. Some 15% of women who become pregnant experience life-threatening complications that require emergency care. Some 40% of pregnant women need professional care for a pregnancy-related complication.*

Preventing unwanted pregnancies :

Women need to be able to choose if and when to become pregnant, through ensured access to voluntary family planning information and services.

> *As many as half of all pregnancies are unplanned and a quarter are unwanted. Prevention of unwanted pregnancies is one of the key strategies for reducing maternal mortality. Thus, in addition to midwifery and referral services, there is also a need to provide client-centred family planning services with safe and effective contraceptive methods and counselling.*
>
> *"Motherhood cannot be safe until women are allowed to be more than mothers and properly valued and respected by their families and by society," said Dr Nafis Sadik, Executive Director of UNFPA. "Discrimination against women and girls in terms of nutrition, health care, education, and employment opportunities must be eliminated, and access to reproductive health, including family planning information and services, must be guaranteed."*

Reducing Maternal Mortality

Information about the position in the UK comes from the "Seventh Report of the Confidential Enquiries into Maternal and Child Health, December 2007. "Saving Mothers Lives : Reviewing maternal deaths to make motherhood safer 2003-2005"

Definitions

Maternity : Maternities are defined as the number of pregnancies that result in a live birth at any gestation or stillbirths occurring at or after 24 weeks' completed gestation

Maternal Mortality : The ninth and tenth revisions of the International Classification of Diseases, Injuries and Causes of Death, (ICD9/10) define a maternal death as "the death of a woman while pregnant or within 42 days of termination of pregnancy, from any cause related to or aggravated by the pregnancy or its management, but not from accidental or incidental causes".

Maternal Mortality Ratio : The international definition of the maternal mortality ratio (MMR) is the number of *Direct* and *Indirect (see below)* deaths per 100,000 live births.

Other related definitions

Direct* Deaths resulting from obstetric complications of the pregnant state (pregnancy, labour and puerperium), from interventions, omissions, incorrect treatment, or from a chain of events resulting from any of the above.

Indirect* Deaths resulting from previous existing disease, or disease that developed during pregnancy and which was not due to direct obstetric causes, but which was aggravated by the physiologic effects of pregnancy.

Late* Deaths occurring between 42 days and one year after abortion, miscarriage or delivery that are due to *Direct* or *Indirect* maternal causes.

Coincidental* (Fortuitous)** Deaths from unrelated causes which happen to occur in pregnancy or the puerperium.

Pregnancy-related deaths** Deaths occurring in women while pregnant or within 42 days of termination of pregnancy, irrespective of the cause of the death.

† This term includes delivery, ectopic pregnancy, miscarriage or termination of pregnancy.
* ICD 9
** ICD 10
*** ICD 9/10 classifi es these deaths as *Fortuitous* but the Enquiry prefers to use the term *Coincidental* as it is a more accurate description. The Enquiry also considers deaths from *Late Coincidental* causes.

Maternal Mortality in England

A maternal death is rare in England and the maternal mortality rate 2003 – 2005 is low at around 7/100,000 maternities. (The rate used here is that recorded from death certification).

In the UK important causes of maternal death were : -

- More than half of all the women who died from *Direct* or *Indirect* causes, for whom information was available, were either overweight or obese. More than 15% of all women who died from *Direct* or *Indirect* causes were morbidly or super morbidly obese.
- The commonest cause of *Direct* death was again thromboembolism. Despite apparent slight rises in rates of death from thromboembolism, pre-eclampsia/ eclampsia and genital tract sepsis and apparent slight declines in rates of death from haemorrhage and direct uterine trauma, none of these differences were statistically significant. There has also been an apparently inexplicable rise in deaths from amniotic fl uid embolism, a rare and largely unavoidable condition.
- Cardiac disease was the most common cause of *Indirect* deaths as well as of maternal deaths overall. In the main this reflects the growing incidence of acquired heart disease in younger women related to less healthy diets, smoking, alcohol and the growing epidemic of obesity.

Maternal mortality and its causes in developing countries

In many countries of the world the Maternal Mortality Ratio is difficult to measure due to the lack of death certificate data (should it exist at all) as well as a lack of basic denominator data, as baseline vital statistics are also not available or unreliable. The recent World Health Organisation publication “Beyond The Numbers (http://www.who.int/reproductive-health/publications/btn/) reviewing maternal deaths and disabilities to make pregnancy safer”4 contains a more detailed examination and evaluation of the problems in both determining a baseline MMR or interpreting what it actually means in helping to address the problems facing pregnant women in most developing countries.

Appendix 5

Induced Abortions in Cambodia

Source : Cambodia Demographic and Health Survey 2000

Table 6.1 Number of induced abortions.

Percent distribution of women by number of induced abortion during their lifetime, according to background characteristics, Cambodia 2000

Background Characteristic	No abortion	Number of abortions					Total	Number
		1	2	3	4+	Missing		
Age								
15 - 19	100.0	0.0	0.0	0.0	0.0	0.0	100.0	3,618
20 - 24	98.4	1.5	0.1	0.0	0.0	0.0	100.0	1,982
25 - 29	95.8	3.0	0.6	0.1	0.0	0.4	100.0	2,118
30 - 34	92.8	5.3	0.9	0.1	0.2	0.6	100.0	2,195
35 - 39	90.9	5.6	1.7	0.2	0.5	1.1	100.0	2,168
40 - 44	91.0	5.2	1.8	0.9	0.3	0.8	100.0	1,847
45 - 49	91.3	4.7	1.7	0.7	0.4	1.2	100.0	1,425
Number of living children (including current pregnancy)								
0	99.8	0.2	0.1	0.0	0.0	0.0	100.0	5,576
1	96.0	3.3	0.6	0.0	0.0	0.1	100.0	1,648
2	93.3	5.0	1.2	0.1	0.0	0.2	100.0	1,972
3	92.0	4.7	1.5	0.2	0.4	1.1	100.0	1,783
4	89.6	6.3	1.5	0.8	0.4	1.4	100.0	1,437
5	91.1	5.4	1.8	0.4	0.4	0.9	100.0	1,130
6+	91.0	5.4	1.5	0.6	0.4	1.2	100.0	1,805
Residence								
Urban	94.4	3.4	0.9	0.3	0.3	0.7	100.0	2,692
Rural	95.2	3.2	0.9	0.2	0.1	0.5	100.0	12,659
Region								
Banteay Mean Chey	95.3	2.6	0.8	0.0	0.1	1.2	100.0	672
Kompong Cham	93.8	4.5	1.2	0.1	0.1	0.2	100.0	1,961
Kompong Chhang	97.4	1.6	0.5	0.2	0.2	0.1	100.0	583
Kompong Spueu	99.3	0.4	0.1	0.0	0.0	0.1	100.0	725
Kompong Thum	98.8	0.5	0.0	0.0	0.0	0.7	100.0	777

Kandal	95.3	3.6	0.2	0.5	0.1	0.2	100.0	1,469
Kaoh Khong	96.0	2.9	0.2	0.1	0.1	0.7	100.0	147
Phnom Penh	93.3	4.8	1.0	0.4	0.2	0.3	100.0	1,657
Prey Veang	96.1	2.7	0.5	0.4	0.1	0.2	100.0	1,272
Pousat	95.2	3.2	0.9	0.1	0.0	0.6	100.0	433
Svay Rieng	89.7	6.6	1.5	0.1	0.5	1.6	100.0	688
Takaev	96.7	2.3	0.3	0.1	0.0	0.5	100.0	1,107
Bat Dambang/Krong Pailin	90.0	6.1	2.7	0.5	0.6	0.0	100.0	1,084
Kampot /Krong Kaeb/ Krong Preah Sihanouk	95.7	1.6	0.9	0.1	0.0	1.7	100.0	999
Preah Vihear/Stueng Straeng/Kracheh	94.9	2.9	1.2	0.5	0.1	0.4	100.0	582
Mondol Kiri /Rotanak Kiri	98.0	1.0	0.2	0.2	0.3	0.4	100.0	161
Siem Reap/Otadar Mean Chey	96.6	1.5	0.8	0.0	0.4	0.7	100.0	1,036
Education								
No education	94.5	2.8	1.0	0.2	0.2	0.4	100.0	4,338
Primary	94.4	3.7	0.8	0.2	0.2	0.7	100.0	8,376
Secondary and higher	96.2	2.6	0.6	0.4	0.1	0.0	100.0	2,637
Specific project area								
CDCP	95.2	3.0	0.9	0.3	0.2	0.4	100.0	8,319
BHSP	94.8	3.6	0.8	0.2	0.2	0.5	100.0	5,610
Total	95.0	3.2	0.9	0.2	0.2	0.5	100.0	15,351

Appendix 6

Districts and Communes in Battambang and Villages in Samlaut as classified by the National Institute for Statistics

Code	Name
0201	Banan
0202	Thma Koul
0203	Bat Da,bang
0204	Bavel
0205	Aek Phum
0206	Moung Ruessei
0207	Rotanak Mondal
0208	Sangkee
0209	Samlout
0210	Sampov Lun
0211	Phum Proek
0212	Kamrieng
0213	Koas Krala

Communes in Samlaut District

Code	Commune Name
020801	Ta Taok
020902	Kampong Lpov
020903	Ou Samrei
020904	Sung
020905	Samlaut
020906	Mean Chey
020907	Ta Sanh

Villages in Samlaut District

Code	Name of Village
020901901	Peam Ta
020901902	Ou Traeng
020901903	Veal Rolueum
020901904	Ta Taok
020901905	Ou Nonoung
020901906	Peam
020901907	Ou Tateak
020901908	Ou Krouch
020901909	Phnum Rai

Source : http://statsnis.org/areaname/area_name.htm National Institute of Statistics, Phnom Penh, Cambodia.