

**Child  
Survival**



# Contents

<b>Introduction .....</b>	<b>1</b>	Republic of Korea: Reaching the levels of an industrialized country; The challenge for Eastern Asia	
Mixed prospects and challenges for child survival in Asia-Pacific			
<b>Figure</b>		<b>Panels</b>	
1.1: Subregions and regions of Asia-Pacific		Mongolia: Involving the community	
<b>1 Child survival in Asia-Pacific: Where we stand .....</b>	<b>3</b>	<b>Figures</b>	
The current situation; Child survival and the Millennium Development Goals in Asia-Pacific; The main causes of child deaths; Progress towards the other health-related MDGs is mixed; Accelerating progress towards the health-related MDGs; Creating a supportive environment for child survival strategies; Rising to the challenge		3.1 Child mortality rates in China dropped sharply in 1970–1990, but reductions have since slowed	
<b>Panels</b>		3.2 Mongolia has made strong progress in reducing child deaths, but still requires improved and expanded environmental health services	
Newborn survival in Asia-Pacific; Pneumonia: The forgotten killer of children in Asia-Pacific and the world		3.3 The Republic of Korea has achieved remarkable reductions in its under-five and infant mortality rates	
<b>Figures</b>		<b>4 South-Eastern Asia: On track, but a few countries are lagging .....</b>	<b>35</b>
1.2 Trends in child mortality in Asia-Pacific		The low-performing countries: Cambodia, Lao People's Democratic Republic, Myanmar and Timor-Leste; The moderate-performing countries: Indonesia, the Philippines and Viet Nam; The high-performing countries: Brunei Darussalam, Malaysia, Singapore and Thailand; The challenge for South-Eastern Asia	
1.3 Asia-Pacific has seen a remarkable reduction in annual numbers of under-five deaths since 1970		<b>Panels</b>	
1.4 Strong gains in child survival are evident in some of Asia-Pacific's poorest countries		How Cambodian mothers embraced exclusive breastfeeding practices	
1.5 Distribution of under-five deaths by cause in Asia-Pacific, 2000–2003		<b>Figures</b>	
1.6 Pneumonia is a major cause of child deaths in Asia-Pacific		4.1 Classifying South-Eastern Asia's countries by rates of child mortality	
1.7 South Asia has the highest rate of underweight children under five among the world's regions		4.2 Child nutrition in South-Eastern Asia	
1.8 Skilled attendance at delivery is key to decreasing maternal and neonatal mortality rates		4.3 Poor children across South-Eastern Asia are much more likely to die before age five than their wealthier peers	
1.9 Geographical disparities in access to improved drinking water sources are pronounced in Asia-Pacific		<b>5 The Pacific: Falling behind .....</b>	<b>42</b>
<b>2 South Asia: Improving, but faster progress is required .....</b>	<b>19</b>	Child survival in Fiji, Papua New Guinea and the Solomon Islands; The challenge for the Pacific	
Undernutrition: The underlying cause of child mortality in South Asia; The impact of discrimination and disparities on child survival; Low access to public health-care services and the rise of private health care; The challenge for South Asia		<b>Panels</b>	
<b>Panels</b>		Papua New Guinea: Creating a home fit for children; Climate change and its potential effect on the Pacific and other small island developing states	
Lady Health Workers and their cultural acceptability in traditional societies; India: Taking a closer look at disparities in child survival; Sri Lanka: A long-term commitment to health and education; Integrated Management of Neonatal and Childhood Illnesses in India		<b>Figures</b>	
<b>Figures</b>		5.1 Progress towards MDG 4 is mixed across the Pacific islands	
2.1 South Asia's share of under-five deaths in Asia-Pacific has grown, despite falling mortality rates		5.2 Papua New Guinea accounted for more than 90 per cent of the Pacific's under-five deaths in 2006	
2.2 Global achievement of MDG 4 and other health-related MDGs depends on India's progress		5.3 In the Pacific, more than 1 in 5 infants are missing out on annual routine immunization coverage	
2.3 Wasting, stunting, underweight and low birthweight in South Asia are at the highest rates in the world		<b>6 Uniting for child survival in Asia-Pacific ..</b>	<b>48</b>
2.4 Subnational breakdown of India's gains and losses in infant mortality by population group and state of residence		Creating demand within a community; Health financing and an equity approach to health-care provision; Strengthening data collection and monitoring; The way ahead	
2.5 Disparities in access to immunization are wide across caste, ethnic, geographical, gender and wealth divides in India		<b>Panels</b>	
<b>3 Eastern Asia: On track, but requiring momentum .....</b>	<b>29</b>	Malaysia: Political will and long-term commitment; Creating demand for childhood immunization in the Lao People's Democratic Republic; India: A private-public approach to addressing inequities; Future challenges for Asia-Pacific	
China: Child survival at a crossroads; Mongolia: On track for MDG 4, but facing widening disparities; The Democratic People's Republic of Korea: Facing resource constraints; The		<b>Figure</b>	
		6.1 Priority interventions for Asia-Pacific countries classified by progress on child survival	
		<b>References.....</b>	<b>56</b>
		<b>Statistics.....</b>	<b>59</b>

## Acknowledgements

This report was prepared by *The State of the World's Children* team in New York with contributions and guidance from the UNICEF Regional Offices for South Asia and East Asia and the Pacific, and from UNICEF country offices in these regions. Patricia Moccia was the editor-in-chief and David Anthony was the editor. Megan Cossey was the principal writer and researcher.

Contributions from the regional and country offices were coordinated by Madeline Eisner and Teresa Stuart. Policy guidance and comments on the text were provided by Stephen Atwood, Anatoly Abramov, Aboudou Karimou Andele, Richard Bridle, Bill Fellows, David Hipgrave, Rudi Luchmann, Pankaj Mehta, Ian Pett and Siping Wang.

Editorial support was provided by Amy Lai, Catherine Rutgers, Charlotte Maitre, Emily Goodman, Gabrielle Mitchell-Marell, Hirut Gebre-Egziabher, Kristin Moehlmann, Marilia di Noia and Michelle Risley. Regional statistical tables were prepared by the Strategic Information Section of the Division of Policy and Planning, with thanks to Nyein Nyein Lwin. Production was led by Jaclyn Tierney and Edward Ying Jr. Design and pre-press production were undertaken by Choon Sim and Patrick Lafleur of Creatrix.

---

## Photo credits

**COVER PHOTO:** © UNICEF/HQ05-0018/Jim Holmes

**INSIDE PHOTOS:** p. 1, © UNICEF/HQ06-2693/Shehzad Noorani; p. 3, © UNICEF/HQ04-1261/Giacomo Pirozzi; p. 5 © UNICEF/HQ07-0370/Dan Thomas; p. 10, © UNICEF/HQ05-2379/Anita Khemka; p. 12, © UNICEF/HQ06-2474/Giacomo Pirozzi; p. 15, © UNICEF/HQ07-1505/Anita Khemka; p. 17, © UNICEF/HQ07-1126/Shehzad Noorani; p. 19, © UNICEF/HQ05-0773/Pallava Bagla; p. 21, © UNICEF/HQ07-1159/Shehzad Noorani; p. 22, © UNICEF/HQ06-0951/Shehzad Noorani; p. 27, © UNICEF/HQ07-1405/Anita Khemka; p. 28, © UNICEF/HQ05-2395/Anita Khemka; p. 29, © UNICEF/HQ07-0363/Dan Thomas; p. 31, © UNICEF/HQ06-1036/Palani Mohan; p. 32, © UNICEF/HQ03-0533/Thomas Kelly; p. 35, © UNICEF/HQ05-0643/Irwin Ferdiansyah; p. 37, © UNICEF Cambodia/2007/Johanna Laurila; p. 40, © UNICEF/HQ05-0412/Palani Mohan; p. 42, © UNICEF/HQ06-2556/Giacomo Pirozzi; p. 44, © UNICEF/HQ04-1269/Giacomo Pirozzi; p. 46, © UNICEF/HQ06-2515/Giacomo Pirozzi; p. 48, © UNICEF Bangladesh/2007/Madhuri Banerjee; p. 50, © UNICEF/HQ05-1654/Palani Mohan; p. 53, © UNICEF India/2007/Gurinder Gulati; p. 55, © UNICEF Timor-Leste/2007/Bridgette See

For an electronic version of this report, with additional multimedia material, please visit [www.unicef.org](http://www.unicef.org) and click on *The State of the World's Children 2008*. This report can be found under the 'Full Report' icon.



Bangladesh: A father plays with his five-month-old son as his wife looks on outside their home.

## Introduction

### Mixed prospects and challenges for child survival in Asia-Pacific

Every year, the United Nations Children's Fund (UNICEF) publishes *The State of the World's Children*, the most comprehensive and authoritative report on the world's youngest citizens. *The State of the World's Children 2008*, published in January 2008, examines the global realities of child survival and the prospects for meeting the health-related Millennium Development Goals (MDGs) – the targets set by the world community in 2000 for eradicating poverty, reducing child and maternal mortality, combating disease, ensuring environmental sustainability and providing access to affordable medicines in developing countries.

This year, UNICEF is publishing the first annual edition for the Asia-Pacific region, which encompasses half of the world's population, under the title of *The*

*State of Asia-Pacific's Children 2008*. This volume and other regional editions complement *The State of the World's Children 2008*, sharpening from a worldwide to a regional perspective the global report's focus on trends in child survival and health and outlining possible solutions – by means of programmes, policies and partnerships – to accelerate progress in meeting the Millennium Development Goals. A particular focus is reducing inequity in access to primary health care both between countries and within countries in the region. Challenges in child survival for China and India, which dominate the region's population, also receive considerable attention.

The report begins by examining broad trends in child and maternal survival and health for the Asia-Pacific

region as a whole, and setting out the main challenges for both countries and subregions in the run up to 2015. It then explores trends in child health and primary health-care provision in Asia-Pacific's four main subregions: Eastern Asia, South Asia, South-Eastern Asia and the Pacific. While Eastern Asia, and to a lesser extent, South-Eastern Asia, are on track to meet most of the health-related MDGs, including MDG 4, which seeks to reduce under-five mortality rates by two thirds between 1990 and 2015, South Asia and the Pacific have much to do to achieve the goals. The analysis underlines a fundamental truth that is becoming increasingly clear: Global attainment of the health-related MDGs will depend, in no small part, on India's achievements in improving health, nutrition, water and sanitation, education and child protection, gender equality and women's empowerment in the coming years.

*The State of Asia-Pacific's Children 2008* outlines a broad agenda of actions that are required to accelerate progress in Asia-Pacific. These include:

- Grouping countries by health-service needs and adapting service delivery strategies accordingly.
- Creating demand for quality health-care services within communities.
- Addressing health financing and inequities in access to primary health care.
- Strengthening data collection, monitoring and evaluation.
- Consolidating political will and identifying future threats and opportunities.

A call for unity between key stakeholders pursuing improvements in child survival and health permeates the report from beginning to end. The base for action – data, research, evaluations, frameworks, programmes and partnerships – is already well established. The report concludes that it is time to rally behind the goals of maternal, newborn and child survival and health with renewed vigour and sharper vision, to fulfil the tenets of social justice and to honour the sanctity of life for half of the world's children who live in the vast Asia-Pacific region.

## Figure 1.1 Subregions and regions of Asia-Pacific

### Eastern Asia

China; Democratic People's Republic of Korea; Mongolia; Republic of Korea

### South-Eastern Asia

Brunei Darussalam; Cambodia; Indonesia; Lao People's Democratic Republic; Malaysia; Myanmar; Philippines; Singapore; Thailand; Timor-Leste; Viet Nam

### The Pacific

Cook Islands; Fiji; Kiribati; Marshall Islands; Micronesia (Federated States of); Nauru; Niue; Palau; Papua New Guinea; Samoa; Solomon Islands; Tonga; Tuvalu; Vanuatu

### South Asia

Afghanistan; Bangladesh; Bhutan; India; Maldives; Nepal; Pakistan; Sri Lanka

### East Asia and the Pacific

Brunei Darussalam; Cambodia; China; Cook Islands; Democratic People's Republic of Korea; Fiji; Indonesia; Kiribati; Lao People's Democratic Republic; Malaysia; Marshall Islands; Micronesia (Federated States of); Mongolia; Myanmar; Nauru; Niue; Palau; Papua New Guinea; Philippines; Republic of Korea; Samoa; Singapore; Solomon Islands; Thailand; Timor-Leste; Tonga; Tuvalu; Vanuatu; Viet Nam

**NOTE:** The standard UNICEF regional classification for East Asia and the Pacific encompasses the countries of three subregions examined in this report: Eastern Asia, South-Eastern Asia and the Pacific. The Asia-Pacific region combines the countries of East Asia and the Pacific with the countries of South Asia.

The Republic of Korea is a UNICEF donor country. UNICEF is not active in Brunei Darussalam and Singapore.

For the purposes of discussion, the narrative of this report concentrates on those countries where particular challenges relating to maternal and child survival, or progress in achieving the child and health-related MDGs, have been recorded. All countries in the region are included in the tables of indicators at the end of this report.



Papua New Guinea: A woman unfurls an insecticide-treated mosquito net over a child's bed in the village of Pari.

# 1 Child survival in Asia-Pacific: Where we stand

## The current situation

The Asia-Pacific region\* spans 37 countries and two hemispheres – from the arid mountains of Afghanistan and Pakistan bordering Iran in the west to the frigid upper reaches of China and Mongolia in the north to the tiny island archipelago state of Tonga in the South Pacific. Over half the world's inhabitants, totalling approximately 3.5 billion people, live in this vast region, with around 2.5 billion of them concentrated in the world's two most populous countries, China and India. These two population giants complicate efforts to aggregate Asia-Pacific's progress

and challenges, since their absolute numbers and rates for key indicators tend to dominate and skew regional and subregional trends.

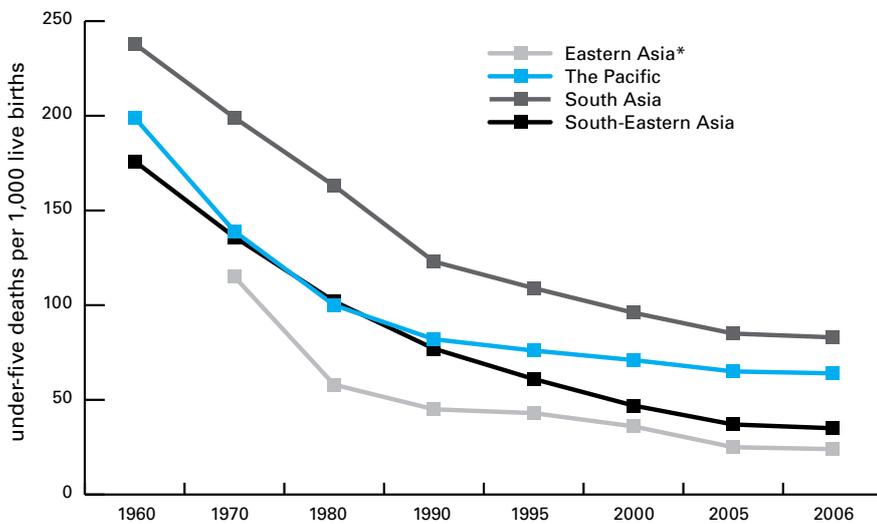
The Asia-Pacific region also defies aggregation in terms of its culture, history and economic trends. For example, 9 of the world's 50 least developed countries – Afghanistan, Bangladesh, Bhutan, Cambodia, the Lao People's Democratic Republic, Maldives, Myanmar, Nepal and Timor-Leste – are located in South and South-Eastern Asia; five more – Kiribati, Samoa, the Solomon Islands, Tuvalu and Vanuatu – are found in the Pacific subregion.

At the same time, economic growth in Asia-Pacific has been the fastest in the world since 1990, with a GDP per capita average annual growth rate of 3.9 per cent for South Asia and 6.7 per cent for East Asia and the Pacific, which encompasses the subregions of Eastern Asia, South-Eastern Asia and the Pacific. This growth has been accompanied by a strong reduction in poverty as measured by the proportion of people living on less than US\$1 per day.

Although rapid economic growth in much of Asia-Pacific has resulted in far fewer people living in poverty and raised average living standards in many parts

\* For a complete list of countries in the region and subregions, see page 2.

**Figure 1.2**  
**Trends in child mortality in Asia-Pacific**



\*The subregional estimate for the under-five mortality rate in Eastern Asia is not available for 1960.

Source: UNICEF estimates based on the work of the Inter-agency Group for Child Mortality Estimation.

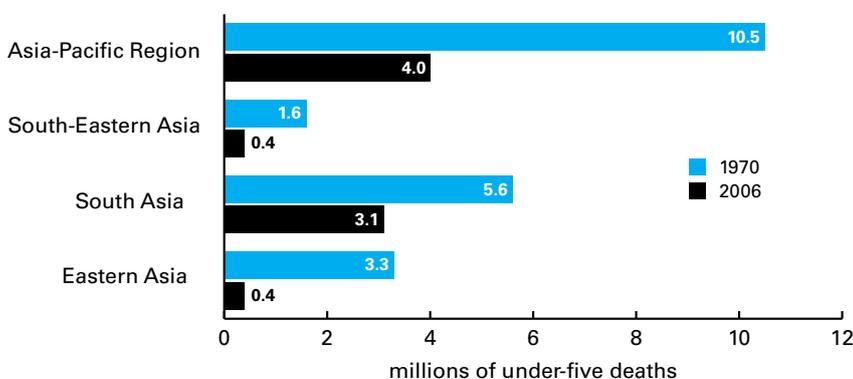
of the region, it has not ameliorated the harsh economic and social realities faced by hundreds of millions of Asian children and families. This is particularly true in South Asia where, despite rising average per capita incomes and declining poverty rates, almost 500 million people still live on less than US\$1 a day.

Child survival, long championed by UNICEF as a key barometer of progress in human development and child rights, has improved along with stronger economic growth in Asia-Pacific. A far smaller proportion of under-five children are dying in the Asia-Pacific region today than in 1970, the earliest year for which the annual number of

child deaths for this region as a whole is available. Between 1970 and 1990, Asia-Pacific as a whole managed to reduce its annual number of under-five deaths from 10.5 million to 6.7 million, driven by an annual average rate of reduction of 4.7 per cent in Eastern Asia, which is dominated by China. Since 1990, Asia-Pacific has experienced a 34 per cent reduction in its overall under-five mortality rate, lowering this ratio to 59 per 1,000 live births in 2006, the latest year for which firm estimates are available. Moreover, the region also saw a steady fall in its annual number of under-five deaths over the period, from 6.7 million in 1990 to around 4 million in 2006. This achievement is due, in no small part, to the reduction of around 1.6 million child deaths in South Asia over the period, along with falls in annual deaths of 500,000 or more in both Eastern Asia and South-Eastern Asia.

Despite these attainments, major challenges for child and maternal survival remain. Asia-Pacific's absolute numbers of child deaths, though falling, remain high. The figures speak for themselves. Worldwide, of the 9.7 million children who died before their fifth birthday in 2006, more than 40 per cent were from this region. Of the six countries accounting for half of all deaths of children under age five worldwide, three are in the Asia-Pacific region: China, India and Pakistan. India alone accounts for one fifth of under-five deaths worldwide, with 2.1 million in 2006. Thirteen of the 68 developing countries identified in April 2008 as 'priority countries' for maternal, newborn and child survival by the Countdown to 2015 – a coalition of scientists, policymakers, activists and health programme managers tackling progress in maternal, newborn and child mortality across the globe – were in Asia-Pacific. (The Countdown to 2015 initially identified priority countries according to two criteria: countries with more than 50,000 deaths of children under five, and countries with an annual under-five mortality rate of at least 90 per 1,000 live births. It recently

**Figure 1.3**  
**Asia-Pacific has seen a remarkable reduction in annual numbers of under-five deaths since 1970**



Note: The annual number of deaths in the Pacific subregion remained well below 100,000 in 1970–2006.

Source: UNICEF estimates based on the work of the Inter-agency Group for Child Mortality Estimation.

also added criteria based on maternal deaths, which has led to the inclusion of the Democratic Republic of Korea and the Lao People's Democratic Republic as priority countries.)

The current focus of the development community on the issue of child survival is Millennium Development Goal 4, which aims to reduce the global rate of under-five mortality by two thirds between the benchmark year of 1990 and the target year of 2015. Since under-five child mortality in Asia and the Pacific in 1990 stood at 90 deaths per 1,000 live births, the target rate for 2015 is set at 30 deaths per 1,000 live births. Given that the under-five mortality rate stood at 59 per 1,000 live births in 2006, it is clear that the region as a whole will have to reduce the number of child deaths between 2007 and 2015 at a far faster rate than it has managed since 1990 to meet MDG 4.<sup>1</sup>

This challenge should not be underestimated. There are signs that although many countries in the region are on track to meet Millennium Development Goal 4 at the national level, pockets of poverty and marginalization within countries, and among countries within subregions, are

leaving vast numbers of mothers and children at risk of increasing relatively poverty and continued exclusion from quality primary-health-care services. The divide between rich and poor is rising at a troubling rate in Eastern Asia, South-Eastern Asia and South Asia with an especially alarming widening of the gap in Eastern Asia: Between 1990 and 2004 the poorest 20 per cent of the population in this subregion saw their share of national income drop from 7.1 per cent to 4.5 per cent.<sup>2</sup> As this report will attest, disparities in health are also prevalent across geographical areas, ethnic groups, class structures and income groups.

Since key indicators of child health, including neonatal, infant and child mortality rates, access to clean water and basic sanitation, nutritional status of mothers and infants, and levels of immunization are often better for the wealthier population groups than for poorer ones, increasing relative poverty in the region is likely to have a negative impact on the health of its poorest children. In Asia-Pacific – like much of the rest of the world – children born in the poorest 20 per cent of households are much more likely to die of preventable diseases

than children in the wealthiest 20 per cent. In South Asia in particular, these inequalities are further exacerbated by widespread gender disparities and inequities for women and girls, many of whom are routinely discriminated against in terms of nutritional status and access to primary health services and education. Of particular concern in South Asia, especially in India, and also in China, is the disproportionate male to female ratio. Gender disparities are also prevalent in the other subregions of Asia-Pacific: for example, in the Pacific subregion, for every 100 literate males there are only 82 literate females.

Another factor that risks undermining gains in children's health and well-being is the growth of sprawling and under-served peri-urban communities. East Asia and the Pacific, encompassing Eastern Asia, South-Eastern Asia and the Pacific, has seen a sharp rise in its urban population since 1970, with 43 per cent now living in urban centres. Although only 29 per cent of South Asia's population lives in urban areas, the sheer size of this subregion's population, and that of Eastern Asia and South-Eastern Asia, has resulted in roughly half the world's slum population living in the Asia-Pacific



Democratic People's Republic of Korea: Orphans learn to walk at a state-run orphanage in Wonsan City.

region. Rapid urbanization is exerting constraints on the provision of quality essential services that governments must address urgently. For example, soaring urbanization rates are proving challenging for both Indonesia and the Philippines in meeting the MDG 7 target of providing safe water for their urban conurbations. Concurrently, the transition by many countries to more market-based health-care systems is having a marked effect on those with the lowest incomes, further entrenching their poverty and encouraging the migration of health workers from the underfunded public sector to the private sector, and from rural to urban areas.

These trends suggest that in the coming years, the bulk of Asia-Pacific's efforts to accelerate progress on child survival will need to be focused on the most difficult situations and circumstances: in the poorest countries, among the most impoverished, isolated, uneducated and marginalized districts and communities, within countries afflicted by civil strife and political instability, and in the context of an uncertain global economic outlook.

Yet there is hope in the fact that Asia-Pacific is a region in which several

countries have defied poverty and instability by reducing child mortality rapidly in recent decades. In South Asia, Bangladesh and Nepal, among the world's least developed countries, have made tremendous strides in reducing child deaths. Mongolia and Sri Lanka, both with gross national income per capita of less than \$1,500 per year in 2006, have managed to reduce under-five mortality by 61 per cent and 59 per cent respectively since 1990. Of the 68 countries given priority for maternal, newborn and child initiatives in 2008 by Countdown to 2015, 16 are considered to be on track to meet the targets of MDG 4; 6 of those – Bangladesh, China, Indonesia, the Lao People's Democratic Republic, Nepal and the Philippines – are in Asia-Pacific.

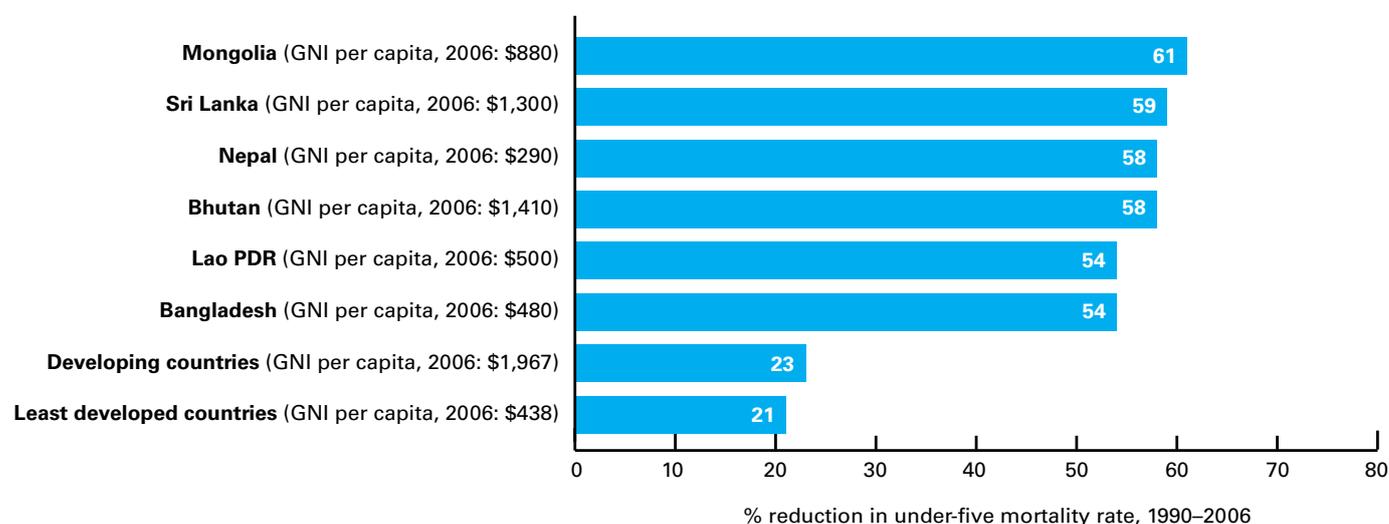
The experience of the region's two population behemoths, China and India, in recent years, also provides a source of hope. China, the world's most populous country, managed to reduce its under-five mortality rate by 80 per cent between 1970 and 2006; the corresponding decline for India was 60 per cent over the same period.

All these gains suggest that remarkable progress is possible when evidence,

sound strategies, sufficient resources, political will and an orientation towards results are consciously harnessed to improve children's lives.

The challenge for Asia-Pacific in child survival is therefore clear: Recent achievements must not be taken for granted. They must be consolidated and deepened. Sustaining gains in child health and extending the essential services that underpin these achievements to the poorest and most marginalized groups and provinces within countries, and to the least developed countries within the region, will require learning from evidence and experience, addressing growing disparities and planning for the future. Without such actions, the Asia-Pacific region in general and South Asia in particular may miss out on the benefits of reaching the health-related MDGs. The cost in terms of children's lives will be marked if these actions are not undertaken; according to UNICEF estimates, if current trends in child survival persist, 1 million child deaths in Asia-Pacific will occur in 2015 that could have been averted in that year alone had MDG 4 been met.

**Figure 1.4** Strong gains in child survival are evident in some of Asia-Pacific's poorest countries



Source: UNICEF, *The State of the World's Children 2008*, Statistical Tables, pp. 114–117, 150–153.

## Child survival and the Millennium Development Goals in Asia-Pacific

Given the vast differences in culture, economic development, political structure and geography, to name but four factors, between countries in Asia-Pacific, tracking the region's progress towards the health-related MDGs is perhaps most usefully assessed on a subregional basis. South Asia's still large numbers of under-five deaths and high mortality rate stand out in the Asia-Pacific region, where 24 of the 37 countries are on track to meeting MDG 4. Eastern Asia and South-Eastern Asia are on track to meet MDG 4. The Pacific is making insufficient headway

in improving child survival rates. Of greatest concern are the 11 countries – Afghanistan, Cambodia, the Democratic People's Republic of Korea, Myanmar, India, Pakistan, Papua New Guinea, the Solomon Islands and three of the smaller Pacific islands – that are either making very slow progress or have stalled.

### The main causes of child deaths

The greatest causes of under-five deaths in Asia-Pacific relate to the neonatal period – those deaths occurring within the first 28 days of life. This is not entirely surprising; it is well accepted that as child mortality rates fall, neonatal mortality often accounts for a higher

proportion of under-five deaths. This is true of middle-income regions such as the CEE/CIS and Latin America and the Caribbean as well as the industrialized countries. Evidence suggests, however, that in the case of Asia-Pacific, the high burden of neonatal deaths is also related to insufficient maternal health-care services, maternal undernutrition and cultural practices surrounding the birth process and disease. A successful strategy for lowering the neonatal death rate, then, is imperative to achieve MDG 4, particularly in South Asia.

Other key causes of child deaths include pneumonia and diarrhoeal diseases, which account for around one third of deaths in Eastern Asia, South-Eastern Asia and the Pacific, rising to 39 per cent in South Asia. Measles is one of the

### Newborn survival in Asia-Pacific

The neonatal mortality rate of Asia-Pacific has decreased at a far slower rate than the overall under-five mortality rate in recent decades. Between 1980 and 2000, the latest year for which comprehensive figures are available for neonatal mortality, infant deaths in the first month of life declined by one quarter, while deaths between one month and five years declined by one third. Because the reduction of neonatal mortality has been slower than that of under-five mortality as a whole, neonatal deaths have become proportionally much more significant.

Most neonatal deaths occur within 24 hours of birth – a child is about 500 times more likely to die in the first day of life than at one month of age. Globally, neonatal mortality accounted for almost 40 per cent of all under-five deaths in 2000; in Asia-Pacific that rate increases to 60 per cent. The largest absolute number of newborn deaths in the world occurs in South Asia – India contributes around one quarter of the global total. In fact, of the 10 countries in the world that account for the highest number of newborn

deaths, 6 of them – Afghanistan, Bangladesh, China, India, Indonesia and Pakistan – are in the Asia-Pacific region.

A common factor in these deaths is the health of the mother – in 2005 more than 240,000 women in Asia-Pacific died in childbirth or from complications during pregnancy. Babies whose mothers have died during childbirth have a much greater chance of dying in their first year than those whose mothers remain alive.

Even these figures understate the vast scale of the problems that can undermine child health during the neonatal period. For example, globally more than 1 million children who survive birth asphyxia each year go on to suffer such problems as cerebral palsy, learning difficulties and other disabilities. For every newborn baby who dies, another 20 suffer birth injury, complications arising from preterm birth or other neonatal conditions.

Significant improvements in the early neonatal period will depend on essential interventions for mothers and babies before, during and immediately after birth. According to the latest estimates, which span the period 2000–2006, one quarter of pregnant women in Asia-Pacific do

not receive even a single visit from skilled health worker (doctor, nurse or midwife); only 61 per cent of births take place with the assistance of a skilled attendant; and just half take place in a health facility.

*The Lancet* Neonatal Survival Series, published in 2005, estimated that most neonatal deaths can be averted if high coverage (90 per cent) is achieved for a package of proven, cost-effective interventions that are delivered through outreach, community partnerships and facility-based clinical care. While increasing skilled care is essential, interim solutions can save almost 40 per cent of newborn lives in community settings. Expanding programmes that prevent mother-to-child transmission of HIV is also crucial. Actions required to save newborns include setting evidence-based, results-oriented plans at the national level with specific strategies to reach the poorest, increased funding, agreed targets for neonatal mortality reduction, and promotion of greater harmonization and accountability on the part of stakeholders at the international level.

*See References, page 56.*

biggest single killers among vaccine-preventable diseases for children under-five, and routine immunization coverage is vital to averting measles deaths. The disease remains a significant cause of death in South Asia, accounting for around 4 per cent of under-five deaths in 2000–2003.

Preventive measures and treatments for pneumonia, diarrhoea and measles are still lacking across the region. In East Asia and the Pacific, around one third of children under five with suspected pneumonia are not taken to an appropriate health-care provider, almost 40 per cent of under-fives with diarrhoea do not receive the recommended treatment – oral rehydration therapy and continued feeding – and around 11 per cent were not immunized against measles in 2006. These coverage ratios are worse still in South Asia.

## Progress towards the other health-related MDGs is mixed

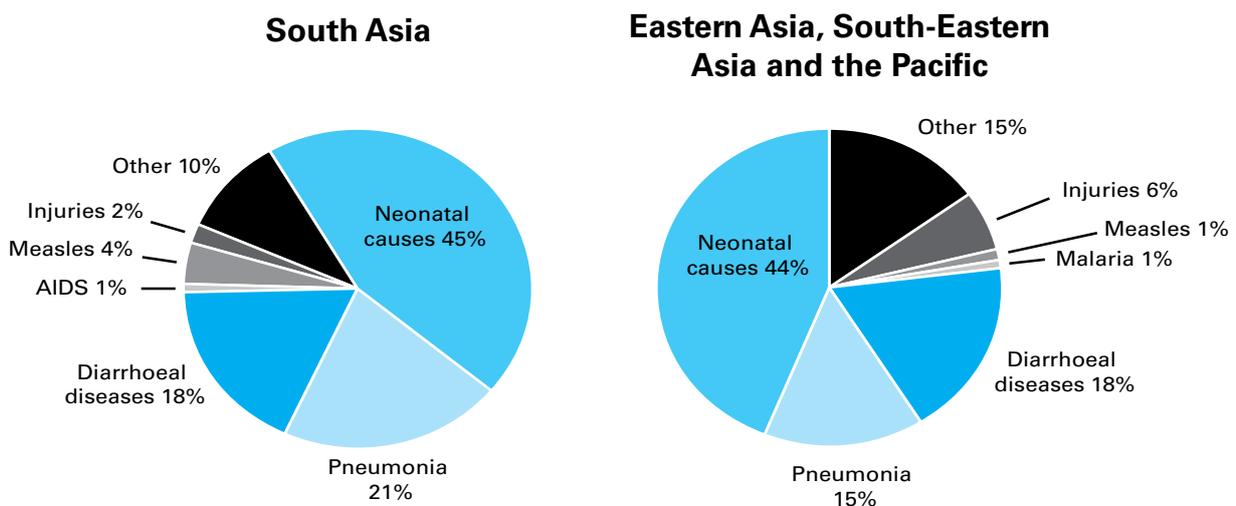
Although progress towards all eight Millennium Development Goals is important to the survival and well-being of children, MDGs 1, 5, 6, and 7 have targets that directly affect children’s health and therefore the achievement of MDG 4. Progress in the four areas targeted by these goals is briefly assessed below for Asia-Pacific.

### Enhancing nutritional status (MDG 1)

Asia-Pacific is well on its way to achieve the first target of MDG 1, which aims to reduce extreme income poverty by half between 1990 and 2015, thanks to rapid economic growth that has lifted millions above the international poverty

line of US\$1 per day in recent years. As for the second target of MDG 1 – reducing hunger by half over the same period – gains have been less marked. Underweight prevalence among under-fives is a serious concern in South Asia, which has the highest levels of this condition among the world’s regions. More than 42 per cent of South Asia’s under-fives are moderately or severely underweight, and Bangladesh, India and Pakistan together account for half of the world’s underweight children, despite being home to just 29 per cent of the developing world’s under-five population. Undernutrition in East Asia and the Pacific, which encompasses Eastern Asia, South-Eastern Asia and the Pacific, is much lower than in South Asia but still double that of Latin America and the Caribbean. Currently, only 13 out of the 19 countries in the Asia-Pacific region with data are on track in terms of reducing rates of underweight prevalence by 2015.

**Figure 1.5** Distribution of under-five deaths by cause in Asia-Pacific, 2000–2003



Source: Child Health Epidemiology Reference Group (CHERG) estimates available in World Health Organization, *World Health Report 2005*.

## Pneumonia: The forgotten killer of children in Asia-Pacific and the world

Pneumonia kills more children than any other illness. Globally, around 2 million children under five die from pneumonia each year, accounting for almost 20 per cent of child deaths; this number does not take into account the 1 million neonatal deaths that are believed to be due to sepsis or pneumonia. South Asia and sub-Saharan Africa together bear the burden of half of the pneumonia-related deaths worldwide among children under five. Altogether, more than a third of under-five deaths in South Asia can be attributed either directly or indirectly to pneumonia; that number is roughly a quarter for the rest of Asia-Pacific. Moreover, three quarters of global childhood pneumonia cases occur in just 15 countries, 8 of them in Asia-Pacific: Afghanistan, Bangladesh, China, India, Indonesia, Pakistan, the Philippines and Viet Nam. Utilization of health facilities remains low in many parts of the region, and children are treated at home through the informal sector or by traditional healers. Studies consistently confirm that many sick children do not reach health facilities, and children from

poorer families are even less likely to obtain care. In Bangladesh, for example, only 30 per cent of sick children are taken to appropriate health facilities.

More than 1 million lives could be saved if both prevention and treatment interventions for pneumonia were implemented universally. Around 600,000 children's lives could be saved each year through universal treatment with antibiotics alone, costing around \$600 million. Prompt treatment with a full course of antibiotics like cotrimoxazole and amoxicillin can be life-saving. Two vaccines – pneumococcal conjugate vaccine (PCV) and the vaccine against Hib (*Haemophilus influenzae* type b) – are relatively new interventions that prevent the two most common causes of bacterial pneumonia. Many children never make it to the treatment stage, often because their caregivers are not aware of the symptoms of pneumonia. Indeed, only 1 out of 4 caregivers in the developing world are aware of the two tell-tale signs of pneumonia: fast breathing and difficult breathing.

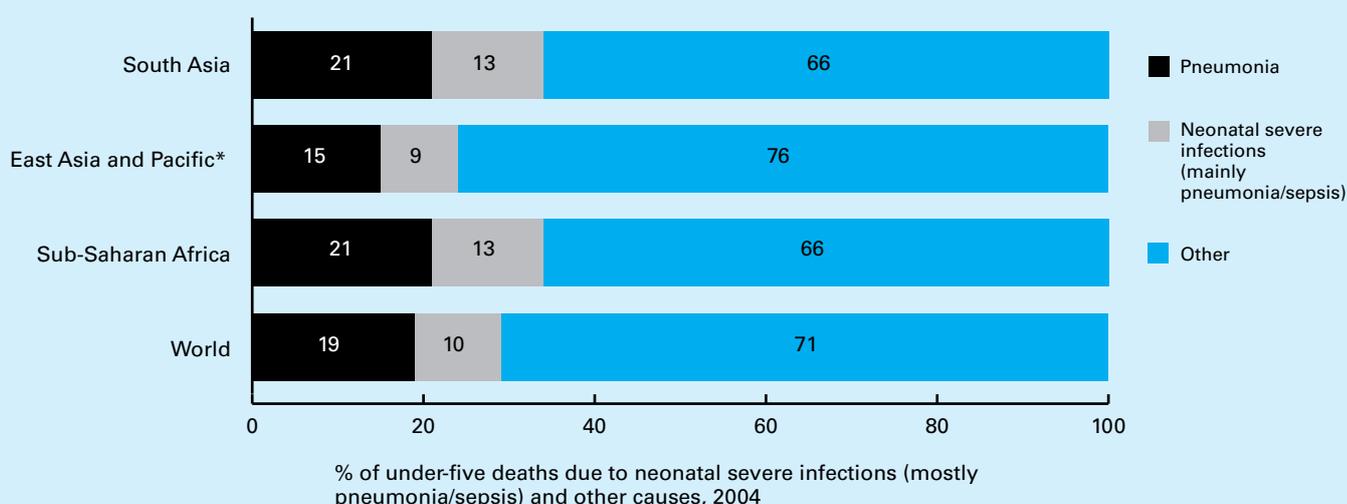
A recent study has shown that community-based case management

of pneumonia is key to tackling this global child killer. By arming caregivers and health workers with a simple set of diagnosis and treatment guidelines, mortality from pneumonia in nine trials was reduced by 42 per cent, 36 per cent and 36 per cent among neonates, infants and children 0–4 years, respectively. In addition, total mortality in nine trials was reduced by 27 per cent, 20 per cent and 24 per cent for neonates, infants and children aged 1–4, respectively, underlining the important indirect role of pneumonia as a cause of death among under-fives.

Preventing a child from developing pneumonia in the first place is key to reducing deaths. Among measures to prevent pneumonia are adequate nutrition, including breastfeeding and zinc intake; raising immunization rates (including PCV and the vaccine against Hib where affordable); promoting hand washing; and reducing indoor air pollution, including household smoke. Additionally, since pneumonia is a common and serious consequence of pandemic influenzae, any preparedness strategies for such an outbreak should include the prevention and control of pneumonia.

See References, page 56.

**Figure 1.6** Pneumonia is a major cause of child deaths in Asia-Pacific



\* East Asia and Pacific comprises the subregions of Eastern Asia, South-Eastern Asia and the Pacific.

Source: UNICEF, *Pneumonia: The forgotten killer of children*, p. 5.



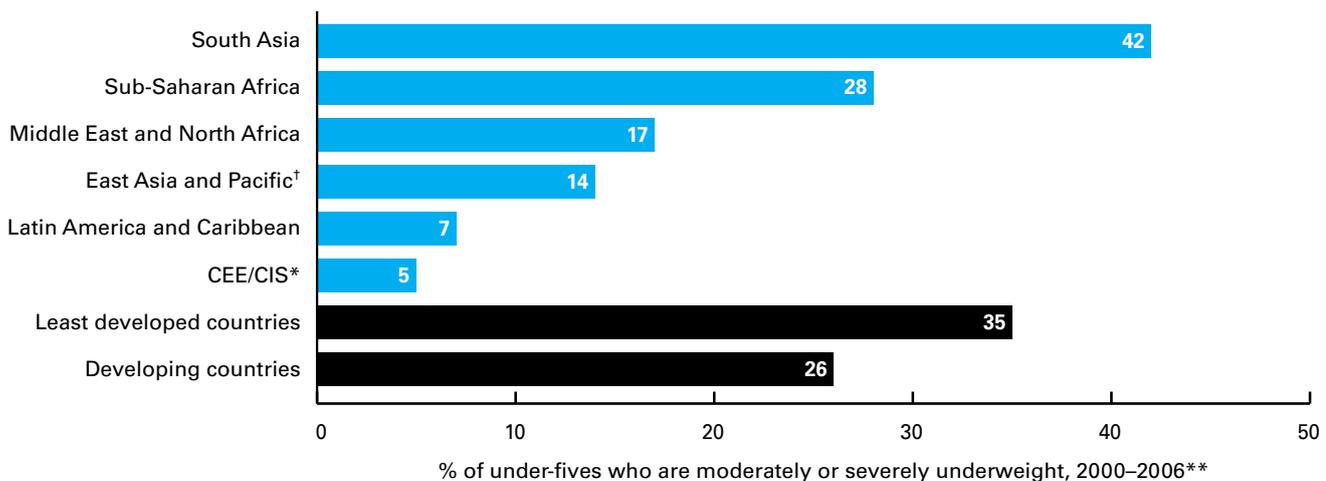
India: A mother feeds her child a high protein and carbohydrate mix of lentils and rice at an *anganwadi* (community health) centre.

The standard indicators used to measure MDG 1, however, do not reveal the full extent of undernutrition among children. One of the indicators focuses on hunger, as measured by the proportion of children under five who are underweight. But that captures only one dimension of nutrition. A child may die from a weakened immune system when vitamin A is lacking, for example, without being apparently hungry or underweight. In addition, stunting – or low height for age – is not included as an indicator, but is found in high proportion throughout Asia-Pacific. Stunting usually occurs before the age of two, and its effects, which include delayed motor development and impaired cognitive function, are largely irreversible.

Improving maternal and child nutrition would not only improve the region's prospects of meeting MDG 1; it would also help to avert child deaths from diarrhoea, pneumonia, malaria, AIDS and measles, and to reduce neonatal mortality. In other words, better child nutrition is a requisite for achieving

Figure 1.7

### South Asia has the highest rate of underweight children under five among the world's regions



† East Asia and Pacific includes the subregions of Eastern Asia, South-Eastern Asia and the Pacific.

\* Central and Eastern Europe and Commonwealth of Independent States.

\*\* Data refer to the most recent year available during the period specified.

Source: Demographic and Health Surveys, Multiple Indicator Cluster Surveys, World Health Organization and UNICEF.

MDG 4. According to a recent study, more than a third of under-five deaths and 11 per cent of the world's overall burden of disease are related to maternal and child undernutrition.<sup>3</sup>

Adequate nutrition must begin in the womb and continue when a child is born. Immediate and exclusive breastfeeding is the best source of nutrition for a child, providing physical warmth and strengthening the immune system. Yet countries in Asia-Pacific have some of the lowest rates of exclusive breastfeeding and early introduction of breastmilk in the world. Half of Asia-Pacific's infants were not exclusively breastfed during the first six months of life, and almost one quarter lacked full coverage (two doses) of vitamin A supplementation in 2005.

Micronutrients such as iron, vitamin A and iodine can also have a profound impact on a child's development and a mother's health. In cases of severe acute undernutrition, highly fortified therapeutic foods are advised. Although these remedies are low-cost and highly effective, only 69 per cent of households in Asia-Pacific consume iodized salt in their diet; in South Asia that number drops precipitously, with only one out of six households in Pakistan, and one out of two in India, consuming iodized salt.

### Improving maternal health (MDG 5)

Improving the health of pregnant women and new mothers is critical to their prospects of surviving pregnancy and childbirth and to their long-term health. It is also pivotal to improving the survival and health of children. In 2005, more than 240,000 women died in Asia-Pacific as a result of causes related to pregnancy or childbirth. More than 80 per cent of these deaths – totalling around 200,000 – occurred in South Asia.<sup>4</sup> Many more pregnant women and young mothers suffer

debilitating long-term effects such as fistula that could be easily avoided through adequate maternal care.

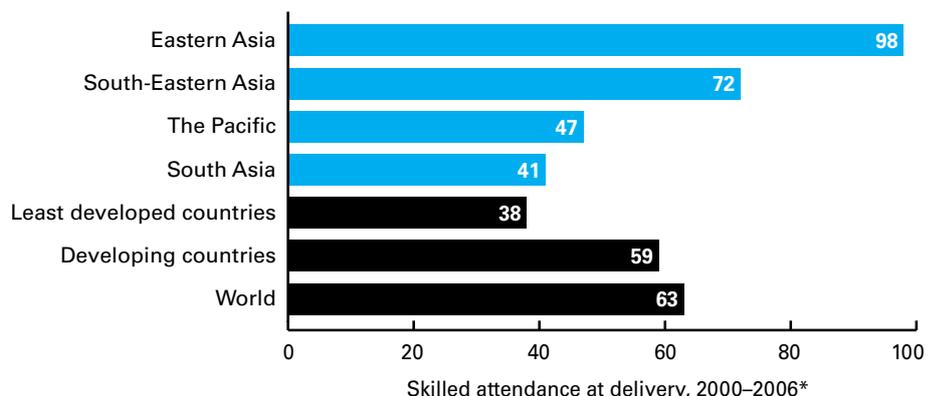
Children's survival prospects may be compromised if their mothers die soon after giving birth. Evidence shows that a motherless child is more likely to die before reaching age two than a child whose mother is alive. The situation is particularly grave in South Asia, where the lifetime risk of maternal death was 1 in 59 in 2005 – compared with 1 in 8,000 in industrialized countries – and in parts of South-Eastern Asia, including Cambodia and the Lao People's Democratic Republic.

Improving the health and nutrition of mothers-to-be and providing quality reproductive health services are pivotal to addressing many underlying causes of child and maternal mortality. A skilled attendant present at delivery, backed by emergency obstetric care, decreases the risk of a woman dying in childbirth and can help prevent and treat infections and complications. Poor nutrition in women can result in preterm births and babies with

low weight at birth, which in turn has a high correlation to neonatal and infant death. Visits to, or from, a trained health-care provider during pregnancy can help avert early deliveries and neonatal tetanus, which is almost always fatal. Despite the vital importance of maternal health, however, the available data reflect strikingly inadequate access to care. Across the region, 25 per cent of pregnant women receive no antenatal care, and 39 per cent give birth without the assistance of a skilled attendant.

Postnatal care, in addition to reducing maternal deaths from post-partum haemorrhage, has a central role in encouraging new mothers to breastfeed, in the resuscitation of newborns, if necessary, and in averting hypothermia and pneumonia. Sri Lanka has reduced its maternal mortality rate to one of the lowest in the developing world by training large numbers of midwives who attend deliveries both in health facilities and at home. Simple solutions like peer counsellors, birth spacing and fortified food are all proven, low-cost methods of saving women's lives.<sup>5</sup>

**Figure 1.8** Skilled attendance at delivery is key to decreasing maternal and neonatal mortality rates



\* Data refer to the most recent year available during the period specified.

Source: Demographic and Health Surveys, Multiple Indicator Cluster Surveys, World Health Organization and UNICEF.



Kiribati: A health worker administers vitamin A drops to a child at a health-care centre.

## Combating AIDS, malaria and other major diseases (MDG 6)

Millennium Development Goal 6 focuses on reducing the enormous burdens caused by AIDS, malaria and other major diseases including measles, tuberculosis and pneumonia. While few of the indicators focus on children specifically, the direct and indirect impact of major diseases on children can be profound. These diseases kill or may weaken a child's health to the point where she or he is susceptible to a host of other life-threatening ailments. For example, a mild respiratory illness like the common cold is much more likely to develop into pneumonia if it coincides with malaria or diarrhoea. In addition, malaria is more common and more dangerous for pregnant women

because of reduced immunity during pregnancy.<sup>6</sup>

Malaria accounts for 1 per cent of deaths in children under five in Eastern Asia, South-Eastern Asia and the Pacific and measles for another 1 per cent. In South Asia, 4 per cent of under-five deaths were attributable to measles in 2000–2003.

In Asia, an estimated 4.9 million people were living with HIV in 2007, according to the latest estimates published by the Joint United Nations Programme on HIV/AIDS (UNAIDS).<sup>7</sup> Although the HIV prevalence rates for the combined South Asia and South-Eastern Asia subregions is a relatively low 0.3 per cent, this still implies that 4 million are living with HIV in these two regions. Estimates for India are

lower than previously projected, but still suggest that 2.5 million people were living with HIV in 2006. China's HIV-positive population is estimated at around 700,000 in 2006.<sup>8</sup>

The latest UNAIDS estimates do not disaggregate the number of the children living with HIV in 2007. Figures from 2005 indicate paediatric infections (children less than 14 years) at around 180,000, although these estimates will be subject to revision. Most of the HIV-positive children were infected through mother-to-child transmission during pregnancy, labour, delivery or breastfeeding. Once a pregnant woman is infected, there is a 35 per cent chance that without intervention she will pass the virus on during pregnancy, birth or breastfeeding.

Antiretroviral drug therapy can greatly reduce the chances that transmission from mother to child will occur and is essential to keeping down child mortality rates in countries and districts where AIDS is prevalent. However, preventing new infections is the first line of defence against AIDS and the best way to protect the next generation.

### Increasing access to safe water and decent sanitation (MDG 7)

Asia-Pacific as a whole is on track to meet the MDG for improved access to safe water, and of the countries with trend data all but seven are on track to halving the rate of people without access to safe drinking water between 1990 and 2015. Both the rate and the absolute number are higher for those who lack access to improved sanitation. Little more than a third of the population in

South Asia uses adequate sanitation facilities and half the population in Asia-Pacific as a whole has no access to sanitary facilities that minimize contact with human excreta.

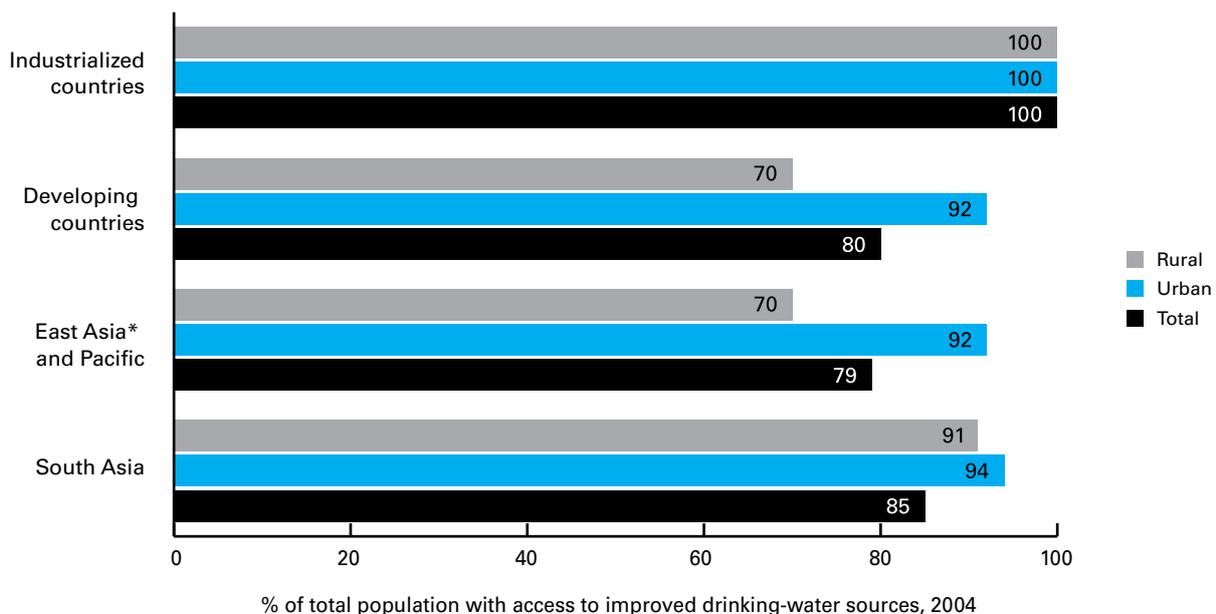
Among the starkest disparities in safe water and basic sanitation are those between urban and rural populations, with 93 per cent of urban dwellers but only 75 per cent of the rural population likely to have access to improved drinking water sources in 2004. In Eastern Asia, access to improved sanitation facilities is the most disparate in the world, with 69 per cent of urban residents versus 28 per cent of rural residents enjoying adequate sanitation. The same, however, may not be true for rapidly growing peri-urban slums, and given that the Asia-Pacific region will have the greatest number of megacities by the year 2015, this is a significant cause for concern.

The repercussions of lack of access to adequate environmental health facilities are often deadly. Water is fundamental to life and yet it can act as a poison if it is not free from pollution and infection, usually in the form of human faeces that have not been disposed of properly. Young children are more vulnerable than other age groups to the effects of polluted water and poor sanitation, which contribute to the leading killers of children under age five: diarrhoeal diseases, pneumonia, neonatal disorders and undernutrition. Diarrhoea is a particularly deadly illness for young children, with acute diarrhoea liable to cause death within a day or less if left untreated.<sup>9</sup> Additionally, undernutrition is closely linked to diarrhoea.

Safe drinking water and basic sanitation have the potential to transform children's lives. Better sanitation alone could reduce diarrhoea-related morbidity by more than a third;

Figure 1.9

### Geographical disparities in access to improved drinking-water sources are pronounced in Asia-Pacific



\* East Asia and Pacific comprises the subregions of Eastern Asia, South-Eastern Asia and the Pacific.

Source: UNICEF, World Health Organization, Multiple Indicator Cluster Surveys, and Demographic and Health Surveys.

improved sanitation combined with hygiene awareness and behaviour change could reduce it by two thirds.

## Accelerating progress towards the health-related MDGs

The proximate causes of – and solutions to – child deaths in Asia-Pacific are well known. Evidence shows that a limited number of simple, affordable interventions could reduce up to 72 per cent of global newborn deaths, if they were made available to large numbers of children and mothers. In 2006, UNICEF and the World Health Organization released an adapted version of that list as part of its joint Regional Child Survival Strategy for East Asia and the Pacific. The seven most basic, yet important, services and practices identified include:

- Attendance of skilled health personnel during pregnancy, delivery and the immediate postpartum period.
- Care of the newborn, including clean cord care, newborn resuscitation, newborn temperature management, initiation of breastfeeding within one hour of delivery, weighing the baby to assess for low birthweight, kangaroo mother care for low birthweight babies and case management of neonatal pneumonia and sepsis. Postnatal care should also be ensured.
- Breastfeeding and complementary feeding, including the promotion and support of exclusive breastfeeding up to six months of age, continued breastfeeding up to two years of age or beyond and adequate and safe complementary feeding from six months onwards.
- Micronutrient supplementation, especially doses of Vitamin A every six months for children aged 6–59 months.

- Immunization of children and mothers, including the vaccinating of children against measles, tetanus, diphtheria, pertussis, polio, tuberculosis (with bacille Calmette-Guérin vaccine) and hepatitis B; additionally, mothers should receive two doses of the tetanus toxoid vaccine during pregnancy or have received at least three doses of it in the past to protect their newborns against tetanus.
- Integrated management of sick children, which requires assessing the whole child during a consultation to allow the identification and treatment of all major conditions such as pneumonia, diarrhoea, malaria and undernutrition.
- Use of insecticide-treated mosquito nets (in malaria-endemic areas) as a preventive intervention for malaria.

The challenge is to ensure that these remedies – integrated into a continuum of maternal, newborn and child care across time and place – reach the millions of children and families who so far have been overlooked. Additionally, birth spacing should be promoted, since evidence has shown an increased risk of infant mortality after short preceding birth intervals. Children born three to five years after a previous birth are about 2.5 times more likely to survive their infancy than children born with less time in between.<sup>10</sup>

Several priorities have been identified by UNICEF as pivotal to providing these services and generating the impetus needed to achieve the health-related Millennium Development Goals.

### Focusing on areas where the burden of child mortality is highest

Attention must be given to promoting equity in health by focusing on

subnational populations and provinces with rates of child mortality far higher than the national average. In particular, while disparities occur in low-income countries, the successes of such middle-income nations as China, the Philippines and Viet Nam in reducing child mortality at the national level can mask pockets of disenfranchised communities characterized by high rates of child and maternal mortality. Such communities and provinces are often unable or unwilling to access primary health-care services, whether because of poverty, geographical remoteness or societal and political exclusion based on factors like ethnicity, religion and caste.

In order for the essential package identified by WHO and UNICEF to reach excluded children and families in Asia-Pacific, a universal approach is appropriate to increase coverage of quality primary health-care services in areas where the majority of children are underserved. In cases where a minority of children and mothers are underserved, a system of targeting should be used to boost coverage. Such a strategy requires the monitoring of under-five mortality among different socioeconomic groups to ensure that society-wide improvements do not obscure the plight of the poorest.<sup>11</sup>

### Strengthening health systems through community involvement

Delivering comprehensive health care for children requires preventive measures as well as treatment of illness. Prevention typically requires behaviour changes that start in the household and gain support through the community. As an integral part of the larger health system, community partnerships in maternal and child health can serve a dual function: actively engaging community members as health workers and mobilizing the community in support of improved health practices.

They can also stimulate demand for quality health services from governments.

Community involvement can foster community ownership of child survival efforts. It can also add vitality to a bureaucracy-laden health system and is essential for reaching those who are the most isolated or excluded. Many countries, ranging from the small island developing states such as Maldives to India and China, have implemented successful community-based health programmes. The challenge now is to learn from their experiences, take the programmes to scale, focus on equity issues and reach the millions of children whom the health system, so far, has passed by.

### **Providing for a continuum of care throughout the life cycle**

Astonishing results have been achieved by some child health programmes that target such diseases and conditions

as polio and smallpox, among other preventable childhood illnesses, with specific treatments and programmes. There is a growing consensus that even greater progress may be possible if these 'vertical' life-saving interventions, which often take the form of one-off or disease-specific interventions such as immunization campaigns, are integrated into packages of care and administered at key points in the life cycle.

An effective continuum of care connects essential maternal, newborn and child health services through pregnancy, childbirth, the postnatal and newborn periods and into childhood and adolescence. The advantage is that each stage builds on the success of the previous stage. For example, providing integrated services to adolescent girls means fewer unintended or poorly timed pregnancies. Visits to a health-care practitioner before conception and throughout pregnancy can prevent problems during pregnancy and make it more likely that mothers will get the appropriate care at birth. Skilled

care before, during and immediately after birth reduces the risk of death or disability for both the mother and the baby. Continued care for children supports their right to essential services.

A continuum of care also addresses the gaps in care, whether in the home, community, health centre or hospital. For instance, babies with birth asphyxia, sepsis or complications from a preterm birth can die within hours or even minutes if appropriate care is not provided. Because roughly 50 per cent of mothers in Asia-Pacific give birth outside of institutional care, it is critical that a skilled attendant be present at birth with strong backup by a local health clinic or other first-level facility. Quality of care at all levels in the continuum is crucial.

### **Ensuring adequate health-care financing to support child survival**

As many of the countries in the Asia-Pacific region shift to a market-based



Nepal: A midwife checks the blood pressure of a woman who is waiting to go into labour in her home.

health-care system, attention must be paid to challenges posed by a privatized health system operating in parallel to the public one. The ability of the poorest to afford formerly free or low-cost primary care services is an urgent issue; so is the lack of health workers in rural areas, as they increasingly abandon government posts for higher-paid jobs in the private sector. Considerations of health financing are also under discussion, including user fees, at least as they affect the poorest, as are issues of public-private cooperation in health-care coverage.

There is an urgent need to increase public spending on health care, as many governments in Asia-Pacific set aside only limited amounts in their budgets for health. A recent joint WHO-UNICEF report has recommended that low and middle-income countries in Eastern Asia, South-Eastern Asia and the Pacific seek to raise their budgetary spending on health by at least 2 per cent by 2015, based on 2001 spending levels.<sup>12</sup>

Decisions on where and how money should be spent are just as important as decisions on the size of the overall health-care budget. Governments, particularly ministries of health, and donors must ensure that communities have the skills and equipment needed to promote child and maternal health. This involves increasing the financial and human resources available to local level health providers, as well as ensuring that communities are taken seriously when they identify their health-care needs. Special attention should also be paid to the challenges posed by government decentralization, an ongoing process undertaken by a number of Asia-Pacific central governments.

## Creating a supportive environment for child survival strategies

Prospects for child survival are shaped by the institutional and environmental context in which children and their families live. Several of Asia-Pacific's countries with very high rates of child mortality – Afghanistan, Myanmar and Papua New Guinea – have suffered some form of major armed conflict or violent civil unrest in recent years. Similarly, fragile states, characterized by weak institutions with high levels of corruption, political instability and a shaky rule of law, are often incapable of providing basic services to their citizens.

Institutional and environmental factors can sometimes be the dominant factor in child survival. South Asian countries including Bangladesh, India and Pakistan are prone to droughts and other natural disasters and regularly suffer from food insecurity. The inability to diversify diets leads to chronic malnutrition for children, increasing their vulnerability to ill health and, ultimately, death. In Papua New Guinea, a dietary imbalance and lack of supply has contributed to high rates of child undernutrition and death, especially in poor and isolated communities unable to supplement their diets with imported food.<sup>13</sup>

## Educating and empowering women

Empowering women socially and economically is a crucial step towards improving the prospects for child survival. It is well known that when women have influence in key household decisions, including finances, they tend to direct a substantial portion of household resources towards food and

other necessities for children. For the same reasons, giving women the means to become more economically self-reliant can have benefits for children.

Analysis of the data from recent Demographic and Health Surveys in 30 countries suggests that in many households across the world's regions, women have little influence in health-related decisions, whether concerning their own health or that of their children. In Bangladesh and Nepal, nearly half of women surveyed reported that their husbands alone make the decisions about their health. In Indonesia, this occurred among 13 per cent of the households surveyed. Furthermore, interventions that have enhanced women's empowerment and leadership at the community level have been equally important in improving the health status of women and children.

Low levels of education, particularly among women and girls, represent a major obstacle to child and maternal survival throughout much of the Asia-Pacific region. The consequences of female illiteracy can be devastating for women and children. Compared to women with a basic education, uneducated women are more likely to remain trapped in poverty, marry and get pregnant at a young age, and face a higher risk of newborn and maternal mortality. Women without a basic education also less likely to benefit from antenatal care or have a skilled attendant present at birth. Research also shows the impact of maternal education on child survival, even when taking other factors into account: Data indicate that children born to uneducated mothers – meaning those with no education at all – are more than twice as likely to die or to be undernourished as children born to mothers with at least a

secondary education.<sup>14</sup> This correlation is particularly clear in South Asia, where women have the lowest literacy rate in the world and their children are the most undernourished. Evidence shows that a child born to a mother with primary education is about 20 per cent more likely to survive than a child born to a mother with no education; the odds increase to 80 per cent when the mother has obtained a secondary education.

### Creating and enforcing laws to protect children from violence

Where deaths are not recorded or investigated, the extent of fatal violence to children is not accurately known and may become obscured by the high rates of under-five mortality generally. It is widely agreed that violence against children by family members results in deaths far more often than official records suggest. A policy of zero tolerance of violence against children

must be adopted by countries seeking to create an environment in which children can survive and thrive.

Forced marriage is another form of violence and discrimination with implications for child survival. When girls give birth before their bodies are fully developed, there is a much higher risk of death for both mother and child. Pregnancy-related deaths are the leading cause of mortality for girls 15–19 years old worldwide, whether they are married or not. In South Asia, women have a 1 in 59 lifetime risk of maternal death; the subregion also has the highest rate of child marriage in the world. Pregnant girls between the ages of 15 and 19 are five times more likely to die in childbirth than those in their twenties. Their children are also less likely to survive. If a mother is under 18, her baby's chances of dying during the first year of life are 60 per cent higher than those of a baby born to a mother older than 19.

Another critical form of protection is the registration of all children at birth. This legal acknowledgement of the child's existence may be required to access essential services, such as vaccinations and vitamin A supplementation. It also establishes family ties where inheritance is an issue. The right to a name and a nationality is well established by the Convention on the Rights of the Child, which explicitly calls in Article 7 for the registration of a child immediately after birth. Yet in 2006, 22.6 million births in South Asia and 5.1 million in the rest of Asia-Pacific went unregistered.<sup>15</sup> These children are almost always from poor, marginalized or displaced families or from countries where systems of registration are not functional, and the consequences for their health and well-being are often severe and long-lasting. For example, in Cambodia, civil registration records were completely destroyed under the Khmer Rouge; a recent government campaign, carried out with support from Plan Cambodia



Afghanistan: Women attend a UNICEF-assisted adult literacy class in the northern province of Balkh.

and the Asian Development Bank, has succeeded in registering millions of people, helping to push up the percentage of children under-five who are registered from 22 per cent in 2000 to 66 per cent in 2006.

## Promoting social equity

Because they are poor and disenfranchised, millions of women and children in Asia-Pacific have been excluded from progress in recent decades. The disparities in child survival prospects between poor and better-off children are stark, not only among countries in the region but within them. On average, a child born into the poorest 20 per cent of households in South Asia is twice as likely to die before her or his fifth birthday, and three times more likely in the rest of Asia-Pacific, than a child born into the richest quintile of the population.<sup>16</sup> Indeed, income inequity in many Asian countries is heading towards Latin American levels, with Cambodia, China and Nepal showing the highest jump in income inequity between 1993 and 2004 as measured by each country's Gini coefficient. India, Pakistan, the Philippines and Viet Nam all show a clear increase in inequity as well, as measured by consumption expenditure.<sup>17</sup>

In countries shifting to a market economy rising inequalities are transformed into debilitating inequity, with the poorest quintile paying an inordinate amount of their salary for basic and emergency health services. A single, catastrophic health event can wipe out a poor household's savings and ensure that it stays poor; it can also tip the relatively better off into poverty. Policy interventions to eliminate such socio-economic inequity – that is, bringing child mortality rates in the poorest 80 per cent of the population up to par with those of the richest 20 per cent – would have a dramatic effect on the under-five mortality rate

for a country as a whole.<sup>18</sup> Successful approaches used to tackle social inequities include programmes that bring health interventions to those who are hardest to reach. Subsidizing health care for the poor and those who have been excluded is another option; the impact of user fees should be examined.

## Rising to the challenge

The main challenge for child survival is less about determining the proximate causes of, or solutions to, child mortality than it is about ensuring that the services and education required for these solutions reach the most marginalized countries and communities. Almost 40 per cent of under-five deaths occur in the neonatal period, and in many places, new mothers form a population that has proven difficult to reach. Effective scaling up of services, however, requires learning from the lessons of recent decades – with a particular emphasis on strengthening integrated approaches to child health at the community level.

For example, the Integrated Management of Childhood Illness (IMCI), an approach used in a number of countries in Asia-Pacific, including Bangladesh, Cambodia, India and Mongolia, aims to reduce child mortality and illness by improving health worker skills and strengthening health systems while simultaneously improving the capacity of communities to raise healthy children through basic household practices. Health workers trained in this programme may use immunization visits as an opportunity not just to give a child a shot but to deliver a package of preventative interventions, including discussing healthy practices with the family, weighing and measuring the child and encouraging follow-up care. However, evidence has shown that, in many countries, few health workers providing child care have been trained

– a situation that will limit coverage in the foreseeable future. As long as staff turnover remains high – as high as 40 per cent in a two-year period in some countries – and investment in training remains low, scale up of these programmes will be also constrained.<sup>19</sup>

In the following chapters, we take a look at the Asia-Pacific region on a subregional basis, analyzing the successes and challenges of South Asia, where undernutrition, disease and maternal health are undermining efforts to achieve MDG 4 in several countries; of Eastern Asia and South-Eastern Asia, where the economic success stories of countries like China and Malaysia are obscuring the realities of countries and subnational populations that are not sharing in the boom; and of the Pacific, which is at risk of being forgotten in the greater narrative of Asia. There will be added focus on China and India in these chapters because of the significant impact their populations have on regional and global numbers: in 2006, almost 2.5 million of the world's under-five deaths occurred in China (415,000) and India (2,067,000) alone. Indeed, global achievement of the health-related MDGs depends in large part on India's success. Finally, we will introduce a regional strategy for addressing Asia-Pacific's child mortality problem, and discuss the importance of equity, political will and community partnerships.



India: A mother takes her son to a health outreach centre to be treated for undernutrition.

## 2 South Asia: Improving, but faster progress is required

South Asia is a region of contrasts. Dominated by India, with a population of 1.2 billion, the region also includes two other countries with populations in excess of 150 million – Bangladesh and Pakistan. At the other end of the population scale lie the tiny island state of Maldives and landlocked Bhutan, whose combined population is just under 1 million.

Such contrasts also extend to trends and rates of child survival among countries in South Asia. The region includes Afghanistan, a conflict-afflicted country that has the third highest rate of under-five mortality anywhere in the world, with 257 deaths per 1,000 lives in 2006, according to the latest estimates by the UN Inter-agency Group for Child

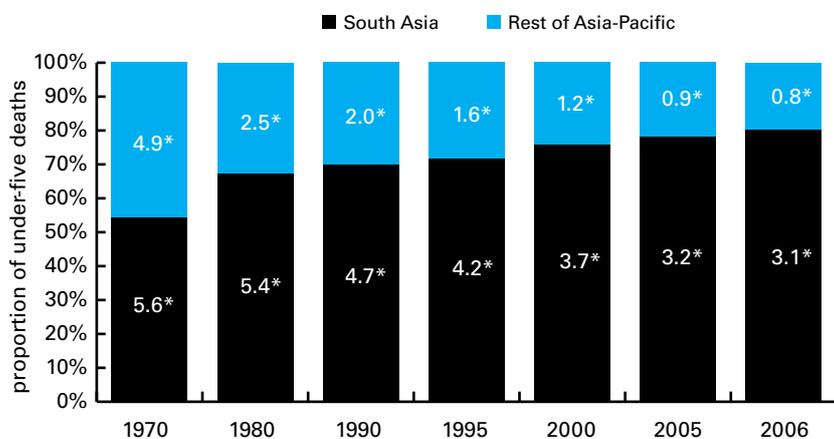
Mortality Estimation published in *The State of the World's Children 2008*. South Asia is also home to Sri Lanka, which has among the lowest rates of child mortality among countries outside of the industrialized countries, with just 13 under-five deaths per 1,000 live births in 2006. In India, the region also has the country with the largest population of under-fives (127 million), and the greatest number of under-five deaths (2.1 million) in 2006.

Over the decades, South Asia has experienced a substantial reduction in its numbers and rates of under-five deaths. In 1970, the region accounted for 5.6 million under-five deaths, with an under-five mortality rate of 238 deaths per 1,000 live births. By 1990,

this number had fallen to 4.7 million, and by 2006, it had declined further to 3.1 million, lowering the under-five mortality rate to 83 per 1,000 live births. These declines, though significant, represent moderate rather than rapid gains in child survival. Indeed, compared with the rest of the Asia-Pacific region, South Asia's share of under-five deaths has grown, from 53 per cent of the region's total in 1970 to almost 80 per cent in 2006 – largely owing to much faster progress on reducing child mortality in Eastern Asia and South-Eastern Asia.

In relation to MDG 4, South Asia is making insufficient progress towards the goal, having only managed to lower its under-five mortality rate by

**Figure 2.1**  
**South Asia's share of under-five deaths in Asia-Pacific has grown, despite falling mortality rates**



\* Figures in bars represent millions of child deaths.

Source: UNICEF estimates based on UNICEF global databases, 2007.

33 per cent between 1990 and 2006. Given its sheer number of births, at 38 million in 2006, or 28 per cent of the global total, moderate advances in reducing child mortality have sustained a high burden of child deaths – in 2006, almost one third of the world's total of 9.7 million under-five deaths occurred in this region alone.

Accelerating progress on child survival in South Asia in general, and India in particular, is pivotal to achieving meaningful and lasting progress towards the health-related MDGs in Asia-Pacific, and at the global level. But ensuring that children survive is only part of the challenge for improving health and human rights in the region. South Asia faces entrenched structural disparities – by caste, ethnicity, gender, geography and income, among other factors – that exacerbate the effects of widespread poverty and food insecurity. These disparities must be confronted and overcome to advance the rights of women and children. Without progress on reducing disparities and ending discrimination, efforts to enhance the provision of essential primary

health-care services to the millions of children and women currently missing out may ultimately founder.

A central threat to child and maternal survival and health, and one that requires urgent and immediate attention, is the high incidence of undernutrition among South Asia's women and children. This has long been one of the principal factors underlying the region's high rates and numbers of child and maternal deaths. Undernutrition exacerbates the effects of deficiencies in the provision of such essential primary health-care services as immunization, adequate sanitation facilities and skilled health personnel.

South Asia has seen – and continues to experience – its fair share of conflict-related and natural disasters. Internecine conflict in Afghanistan and Sri Lanka, civil strife in Nepal and violent agitation in Bangladesh, combined with droughts, floods, earthquakes and landslides, have resulted in millions of marginalized and vulnerable children living in emergency conditions.<sup>1</sup> In times of conflict, social networks can break down, children and their mothers are often further removed from access to basic primary health-care

services, food security may be further jeopardized, and sources of clean water and adequate sanitation facilities can become scarce. The lingering effects of conflict, including the destruction of physical and administrative infrastructure and the physiological and psychological scars borne by individuals and the population as a whole, may constrain efforts to enhance service delivery.

The landscape of child survival in South Asia is dominated by trends and levels of under-five mortality in **India**, which accounts for 72 per cent of the region's under-five population. Any consideration of South Asia, therefore, should take into account that successes and challenges in other countries may be overshadowed by India's narrative. For example, while South Asia looks on track to meet Target 1 of MDG 1, which aims to halve extreme income poverty by 2015, this is mostly due to India's rapid economic growth in recent years. Conversely, if India does not meet the health-related MDGs, the region, and the developing world as a whole, will risk missing the targets as well. In addition, it is often equally useful to examine progress in child survival and other health-related MDGs in India on a subnational level (*see Panel, India: Taking a closer look at disparities in child survival, p. 24*) as health and economic indicators tend to vary widely by geographical location and between population groups.

In addition to India, an examination of under-five mortality rates across South Asia reveals another troubling country with extreme problems in child survival. For the past three decades, conflict has raged in **Afghanistan**. While the rest of South Asia has shown an upwards – if not always rapid – trend in many of its health and economic indicators, estimates for Afghanistan have remained virtually stagnant. In 1990, 1 in every 8 South Asian children died before age five; by 2006, the ratio had decreased to 1 in every 12. Meanwhile, in Afghanistan in 1990, it was estimated

that one quarter of all children did not reach their fifth birthday; 16 years later, that ratio remains stubbornly intractable.

According to the latest UN inter-agency estimates on child mortality, Afghanistan has the third highest rate of under-five mortality in the world, after Sierra Leone and Angola, at 257 under-five deaths per 1,000 live births in 2006. Similarly, with only 14 per cent of births attended by a skilled attendant and a similarly low rate of antenatal care, Afghani women face a 1 in 8 lifetime risk of death due to pregnancy-related causes. Recent developments, however, may offer hope: With parts of Afghanistan now enjoying a relative – albeit very fragile – peace, the country has seen the rebuilding of its health-service infrastructure. Moreover, a forthcoming study by the Ministry of Public Health, with the support of John Hopkins University and the Indian Institute of Health and Management Research, indicates that some progress in reducing under-five deaths has been made since 2000.<sup>2</sup>

The remainder of this chapter examines four key issues related to child survival in South Asia. These include:

- Undernutrition, one of the primary causes of child mortality in the region.
- Discrimination and disparities and their impact on child survival.
- Low levels of access to primary health care services.
- The challenge of accelerating progress on child survival in South Asia.

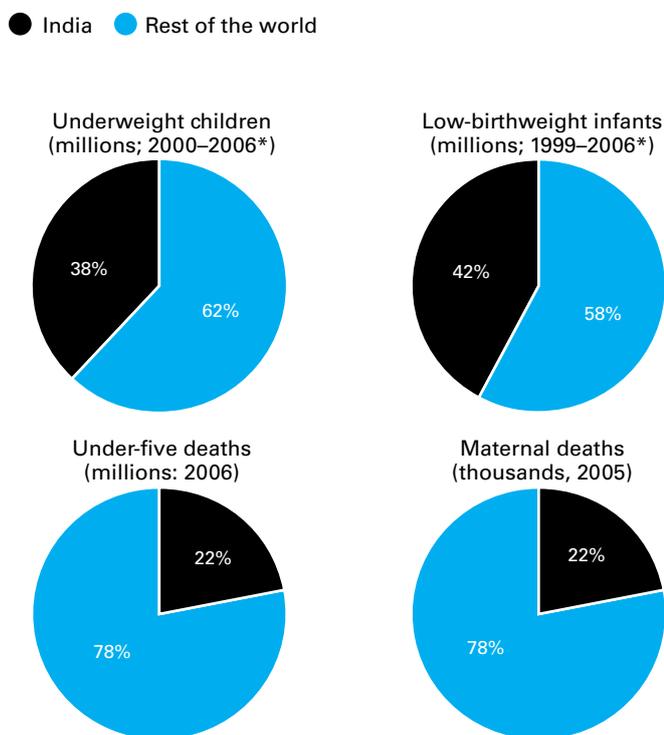
## Undernutrition: The underlying cause of child mortality in South Asia

Undernutrition of both women and children underlies South Asia's moderate progress towards meeting MDG 4, and is associated with a host of deadly child illnesses, including diarrhoea, pneumonia and perinatal complications.<sup>3</sup> Food security can rarely be taken for granted in this region, with agricultural yields falling



Afghanistan: A woman holds her infant while a health worker vaccinates the child against tetanus.

**Figure 2.2** Global achievement of MDG 4 and other health-related MDGs depends on India's progress



\* Data refer to the most recent year available during the period specified.

Source: Compiled for *The State of Asia-Pacific's Children* by DevInfo, January 2008.

well below those of other regions and a rate of per capita agricultural output that is either declining or stagnating. Indeed, despite the rapid growth in the region's gross domestic product in recent years, its food insecurity and the poor nutritional status of many of its inhabitants has partly offset the gains that higher incomes can confer on households' living standards.

Furthermore, inefficiency and discrimination in the public food distribution systems and in emergency assistance are preventing large numbers of people from securing adequate food, even when it is available. As a result of these impediments, South Asia has an estimated 300 million undernourished people.<sup>4</sup> Bangladesh, India and Pakistan together account for half the world's underweight children, while hosting only 29 per cent of the developing world's under-five population.<sup>5</sup>

Food insecurity alone, however, does not fully account for the startlingly high rates of undernutrition in South Asia.

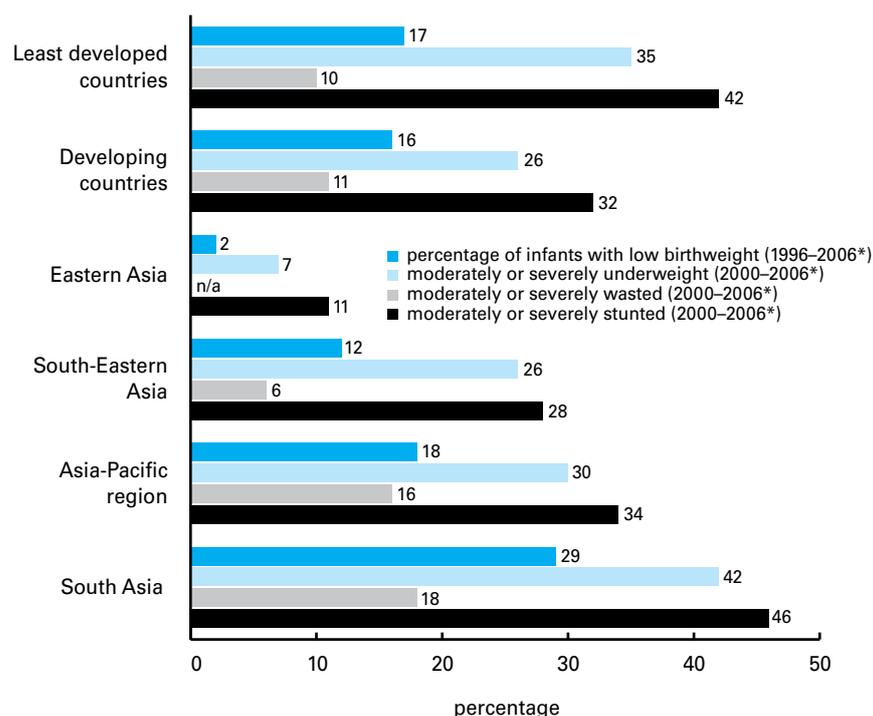
Breastfeeding is a vital component of child nutrition and provides protection against diseases. Several countries in South Asia exhibit low rates of exclusive breastfeeding, with only a third of children exclusively breastfed for six months or longer in the region as a whole. In India, although breastfeeding is nearly universally practised, it is rarely exclusive, and very few children begin immediately after birth. In the first three days following delivery, more than half of mothers feed their children foods other than breast milk, and by around five months of age only 28 per cent of children are exclusively breastfed.<sup>6</sup> In Pakistan, the second most populous country in South Asia after India, only 16 per cent of infants under four months are exclusively breastfed.<sup>7</sup>

More than 40 per cent of the 19 million low birthweight infants in the developing world are born in South Asia, with 8.3 million of them in India alone – owing mostly to the poor nutritional status of pregnant

women across the region. Low-birthweight babies are around 20 times more likely to die in infancy than healthy babies, underscoring the clear link between the nutritional status and health of mothers – which in this region is often undermined by systemic gender discrimination – and the survival of children.<sup>8</sup>

Child undernutrition in South Asia extends well beyond birthweight, however. The region registers the worst indicators for child nutrition among the world's regions, as *Figure 2.3* plainly illustrates. Tackling undernutrition and food security will be imperative, therefore, to meet the health-related MDGs and to underpin the recent gains in child survival. With the world facing the threat of global food shortages and rising food prices in 2008 and possibly beyond, governments in South Asia will need to adopt sound strategies to ensure that children and women are adequately nourished, and that undernutrition does not escalate.

**Figure 2.3**  
**Wasting, stunting, underweight and low birthweight in South Asia are at the highest rates in the world**



\* Data refer to the most recent year available during the period specified.

Source: UNICEF estimates based on UNICEF global databases, 2007.



Bangladesh: A woman breastfeeds her infant in the eastern Ajmeriganj Subdistrict.

## The impact of discrimination and disparities on child survival

Discrimination against women and girls in key aspects of health, nutrition, economic activity and social empowerment is prevalent across South Asia. Its results are plainly evident in child and maternal health outcomes for the region and its principal countries. These include:

- Female life expectancy in South Asia is lower than male life expectancy, in contrast to other regions of the world.
- South Asia is the only region of the world in which girls are more likely to be underweight than boys.
- The region has a massive gender imbalance in population numbers, with around 50 million more men than women.
- In India, 1 out of every 3 women is underweight, putting them at risk of delivering babies with low birthweight.<sup>9</sup>
- In Pakistan, boys aged five or under are more likely to be immunized than girls of the same age and are more likely to have greater access to health care.
- With one fifth of fertility occurring among girls aged 15 to 19 – and a quarter of those girls giving birth to babies at less than 18-month intervals – India in particular is suffering from a pregnancy pattern of ‘too early, too many and too close together’.
- More than 20 million girls are deprived of an education every year in South Asia.

Unless discrimination against women and girls is addressed as part of overall strategies to improve child and maternal health, the ‘discontinuum of care’ – whereby inadequate care for mothers, newborns and children, followed by early marriages; multiple, closely spaced births; and low access to education and primary health-care services result in high rates of maternal and child mortality – will remain stubbornly entrenched, in spite of high rates of economic growth and slowing fertility rates.

## Lady Health Workers and their cultural acceptability in traditional societies

Training village health workers to dispense medicines, make referrals in case of serious illness and spread information about the importance of vaccines and adequate nutrition is not unique to South Asia. What is unique is that in this subregion most of these community health workers are women.

Strict adherence to social and religious customs has long hampered women’s ability to work as health workers and seek health care in many parts of South Asia. Long distances between communities and formal health centres, widespread illiteracy that limits educational and employment aspirations of women, and tribal customs that forbid women to work or be visited by male health workers impede access to health care for millions of women and children. In Afghanistan, for example, a 2002 survey found that only 40 per cent of basic health facilities employed female health-care providers. The lack of skilled attendants at birth is closely tied to high rates of maternal death in the region.

Female health workers are therefore pivotal to improving maternal mortality rates in South Asia, especially in remote areas. Evidence has shown that perinatal and maternal deaths decreased significantly when female health workers helped train birth attendants and connected them to formal health services.

In **Pakistan**, these community health workers are known as Lady Health Workers. Pakistan’s programme draws on the vastly underutilized strengths of South Asia’s female population to expand preventive and curative health-care interventions to women and children. The first official Lady Health Worker scheme was launched by the Pakistani Government’s National Programme for Family Planning and Primary Health Care in 1994 in order to reach out to remote, tribal communities. Pakistan has been tackling the barriers to women receiving basic health care by training Lady Health Workers to raise health awareness among communities that are cut off from hospitals and health centres by social barriers and distance. The campaign started with 8,000 workers in 1994 and now numbers 92,000 across the country. Prospective

workers undertake three-month inclass training to learn how to provide basic health services such as birth spacing, hygiene and immunization. After a year’s work experience, they are sent to a village in the area or province of their origin. The Lady Health Workers programme provides at least one worker to every village with a population of at least 1,000 (or 150 households).

A similar programme exists in **Afghanistan**, where maternal and under-five child mortality are extremely high. The rate of women dying from causes related to pregnancy or childbirth – an estimated 1,800 per 100,000 live births – is higher than in any other country in the world except Sierra Leone. Afghanistan’s Ministry of Public Health, with the support of partners including the World Health Organization and UNICEF, has started to deploy female doctors along with trained midwives and female community health workers into the country’s most remote and rural areas, where 77 per cent of the population lives.

*See References, page 57.*

## India: Taking a closer look at disparities in child survival

More than for any other single nation, India's progress on child survival is pivotal to meeting the health-related MDGs: The country by itself accounts for 20 per cent of the world's under-fives. India has made great strides in reducing child deaths since 1960, when its under-five mortality rate stood at 236 per 1,000 live births; by 2006, the rate had fallen by roughly two thirds, to 76 per 1,000 live births. Since 1990, the country has managed to reduce its under-five mortality rate by around one third.

Despite these gains, at its current rate of progress, India is unlikely to meet the targets of the Millennium Development

Goals related to enhancing nutrition (MDG 1), reducing child mortality (MDG 4), improving maternal health (MDG 5) and ensuring environmental sustainability through improved sanitation facilities (MDG 7). This is due, in no small part, to the continued lack of adequate and comprehensive primary health-care services and facilities, and to undernutrition. More than 50 per cent of this country's under-five deaths are associated with undernutrition and anaemia, while another 30 per cent are caused by pneumonia. In 2004, the latest year for which comprehensive figures are available, only 30 per cent of India's population had access to adequate sanitation; in rural areas that proportion was just 22 per cent.

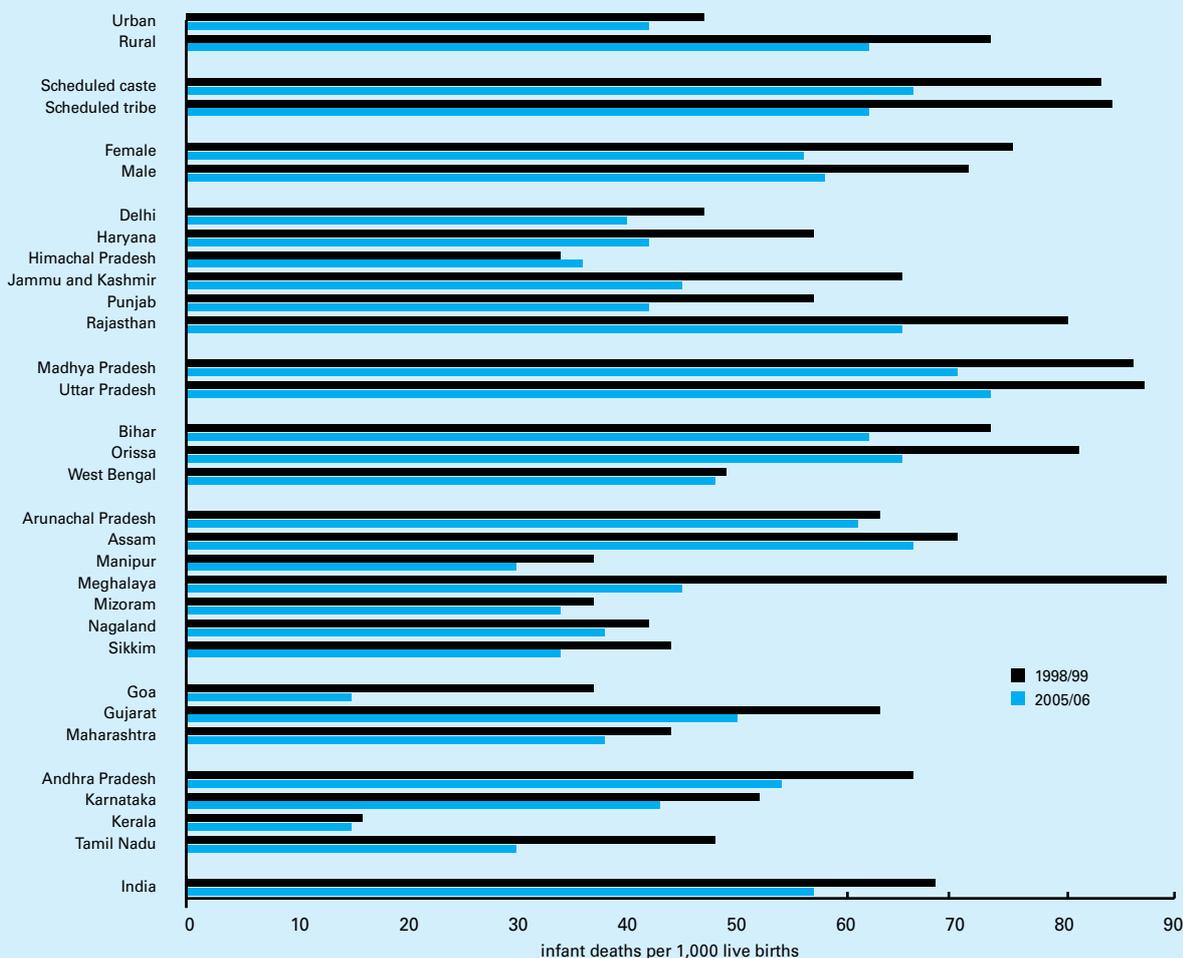
Although under-five and infant mortality rates are continuing to decline, most noticeably in the northeast state of Meghalaya, in the

southern state of Tamil Nadu and among the rural population access to quality health-care services remains limited. More than half of children between one and two years old are not receiving all recommended vaccinations. Diarrhoeal diseases remain a serious threat to child survival, with an estimated 9 per cent of India's children are suffering from this condition. India also has the highest rate of severely underweight children of any country in the Asia-Pacific region.

The difficulty of addressing India's primary health-care needs is compounded by wide variations in health-care provision and health outcomes between the country's states and among its many population and social groups. This panel examines some of the key disparities in child and infant mortality prevalent in India today.

Figure 2.4

### Subnational breakdown of India's gains and losses in infant mortality by population group and state of residence



Source: National Family Health Survey [NFHS-3] 2005–2006, pp. 181–187; and National Family Health Survey [NFHS-2] 2000, pp. 186–194.

### Income and geographical disparities in child survival

At the state level, infant mortality rates range from as high as 73 per 1,000 live births in Uttar Pradesh to as low as 15 per 1,000 live births in the wealthier southern states of Kerala and Goa. Meanwhile, although India has managed to reduce poverty levels significantly as measured by gross domestic product per capita, poverty rates range from less than 10 per cent in the richest states to more than 40 per cent in its two poorest, Orissa and Bihar.

In fact, income disparities are key determinants of a child's risk of mortality in the first five year of life. As Figure 2.5 aptly demonstrates, a child born to a family in the wealthiest quintile of the population is around three times more likely to receive all basic vaccinations than a child born the country's poorest quintile.

### Caste disparities in child survival

National numbers for infant and child mortality have also been disaggregated by wealth, religion and caste. Nineteen per cent of India's households belong to scheduled castes and 8 per cent belong to scheduled tribes.

An entrenched social structure based on caste has made it difficult or impossible for 167 million Dalit – the term for the country's outcaste or

untouchable communities – to access basic primary health and educational services. According to one study, Dalit children are often served inferior meals at school; their parents, meanwhile, are barred from most employment and from owning land, keeping them in abject poverty, and they are discouraged from using medical services. As a result, Dalit children have fallen below other Indian children in their development indicators. More than three fourths of low-caste children in India are anaemic, and they are much more likely to die than their compatriots. Almost three fourths of Dalit women continue to have their deliveries at home, unattended by a trained health worker. Steady improvement in overall child mortality rates in India and indeed South Asia will require addressing the inequities faced by members of marginalized populations, such as rural tribes in Pakistan, low-caste communities in Nepal and river gypsies in Bangladesh.

### Gender disparities in child survival

Female and male children face alarmingly different rates of morbidity and mortality in India. The under-five mortality rate for girls (79 per 1,000) in 2005–2006 was substantially higher than for boys (70 per 1,000 live births). At birth, girl babies have an only marginally higher mortality rate (58 per 1,000 live births) than boy babies (56 per 1,000 live births.) However,

from age 1–4 years, the mortality rate for girls is 61 per cent higher than for boys, contributing to India's overall male-female population imbalance. The female-to-male sex ratio has declined substantially during the past decade, resulting in a substantial female deficit in the population.

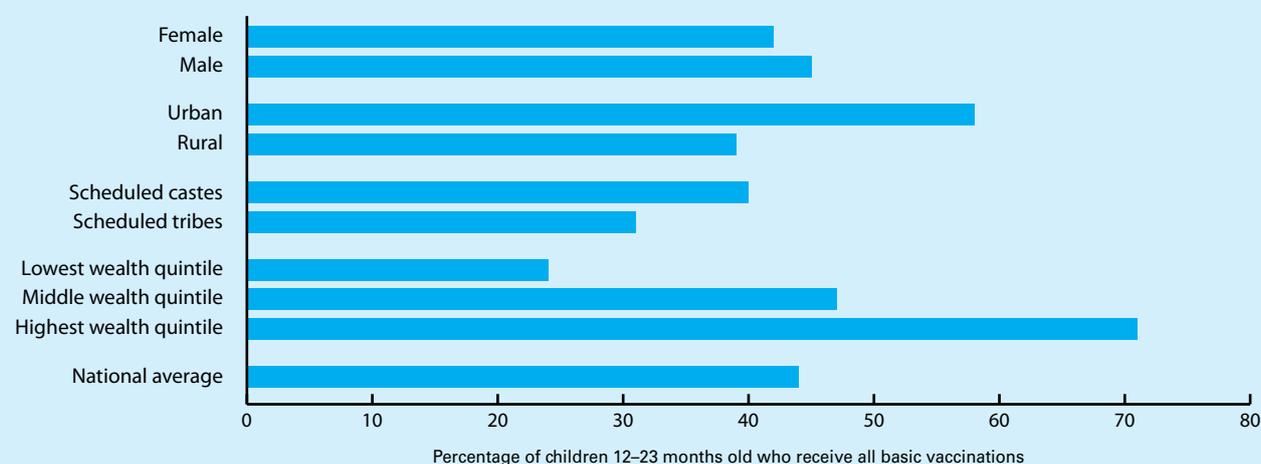
Shortages of human resources for the health sector also undermine efforts to improve maternal and child health. In the public sector there are only 1.5 physicians per 10,000 inhabitants, while the number of nurses is a quarter of the world average, at 8 per 10,000 inhabitants. Even when facilities exist in remote or underserved areas, posts often remain unfilled, as higher salaries draw more and more health workers from the government to the private sector every year.

Given the low level of services in remote areas, it is little surprise that the infant mortality rate is 50 per cent higher in rural areas than in urban locations. Almost two thirds of all households in India utilize private medical services, primarily because of the poor quality or total lack of public services within the community. Again, these numbers must be disaggregated to a subnational level in order to gain a fuller picture of the state of access to health services for India's poorest and most marginalized.

*See References, page 57.*

Figure 2.5

### Disparities in access to immunization are wide across caste, ethnic, geographical, gender and wealth divides in India



Source: National Family Health Survey [NFHS-3] 2005–2006, p. 229.

Research has shown repeatedly that the empowerment of women and girls is inextricably linked to improved maternal and child survival rates. At a most basic level, women are unable to or prohibited from seeking health care, and girl children in most countries – with the exception of Maldives and Sri Lanka – are often denied food to the benefit of their brothers. Exclusion from essential maternal health-care services and inadequate nutrition are two of the reasons the subregion has the second highest rate of maternal mortality after sub-Saharan Africa. For example, only 41 per cent of births are attended by a skilled health worker. High levels of maternal death contributed to an elevated neonatal mortality rate of roughly 1 in 23 live births in 2000, the latest year for which firm estimates are available. In most South Asian countries, early neonatal mortality constitutes nearly 75 per cent of all neonatal deaths, highlighting the importance of the first seven days for child survival.

A second pattern that emerges is the income gap between rich and poor that is widening at an alarming rate, even as most of the region's countries enjoy

high rates of economic growth – India alone experienced an average annual real GDP growth rate of 9 per cent in 2007.<sup>10</sup> At the same time, the country's Gini coefficient – a reliable measure of relative income inequity – has risen over the past decade, denoting a widening gap between rich and poor. The gap in expenditures between the richest and the poorest 20 per cent has soared. Both India and Pakistan register extremely inequitable outcomes for health status between the richest and poorest households, with as many as 28 per cent of severely underweight children found in India's poorest 20 per cent and around 5 per cent in its richest.<sup>11</sup>

This disparity is mirrored by a corresponding lack of access for the poor to decent sanitation, health services, nutritional supplements and immunization. Caste and ethnicity also play key roles in keeping primary health-care services to some populations well below national averages; for example, in India only 18 per cent of births to women belonging to the scheduled tribes are delivered in an institutional facility.<sup>12</sup>

The inequities between urban and rural populations in South Asia are also increasing. The South Asian countries with the highest rates of underweight children – Bangladesh, India, Nepal and Pakistan – also exhibit the sharpest geographical disparities. In Nepal, for example, more than 55 per cent of children are underweight throughout much of the country's western region, while infant and child mortality rates are 50 per cent higher in rural areas in India than in urban.

Lastly, although data remain irregular or imprecise, AIDS has the potential to become an epidemic in the region. Following a 2006 household survey, India, which has the highest number of cases in South Asia, readjusted its estimate of people living with HIV from 5.2 million down to 2.5 million. However, low rates of testing, little education about prevention, scarce data and a culture of stigmatization all contribute to the current rate of HIV infection in South Asia and constitute risks to the future.

### Sri Lanka: A long-term commitment to health and education

Sri Lanka's experience has shown definitively that a low level of per capita income need not be a barrier to high-quality care for pregnant women and their children. Though having endured more than two decades of civil war, Sri Lanka has the best health indicators in the region, with an under-five mortality rate of 13 per 1,000 in 2006 and a maternal mortality rate of 58 per 100,000 live births 2005, well below the regional average of 500 per 100,000 live births. Almost all infants receive all routine vaccines by age one, 94 per cent of households consume iodized salt, and 91 per cent of the population has access to adequate sanitation.

Shortly after independence in 1948, the Government made a strong

financial and legislative commitment to education and health, and today 97 per cent of women give birth in institutions and almost 100 per cent of children receive a full course of recommended immunizations. Health services are free, and most people live within walking distance of a health centre. Governments have promoted a policy of agrarian reform, ending feudal land holdings; this, in turn, has mitigated poverty and social inequities. One of its consistent health strategies has been a focus on primary care, especially maternal and child health, ensuring adequate provision of basic services at the community level. Sri Lanka may not have expensive medical equipment or offer a state-of-the-art tertiary care system compared to other countries in Asia-Pacific, but its high funding of primary and rural care has resulted in the best health indicators in South Asia.

In recent years, however, Sri Lanka has faced a shortage of health

workers, and services have deteriorated as financial resources have tightened; expenditure on health is low at 2 per cent of GDP. In 2006, the country had only one doctor per 2,000 people and only one nurse per 1,000 people. At the same time, there is evidence of rising inequity in health between socio-economic groups. A study shows that in the 1987–2000 period, children born to mothers with a primary education or less were twice as likely to die before the age of five between 1987 and 2000 than those whose mothers had a higher education; they are also more likely to suffer from undernutrition. Sri Lanka's experience should serve as both an inspiration and a cautionary tale as many countries in the Asia-Pacific region continue to improve their numbers and draw closer to achieving MDG 4.

*See References, page 57.*

## Low access to public health-care services and the rise of private health care

Health care and sanitation services are struggling to keep pace with rapid expansion of urban and peri-urban communities in the region. More than half of India's urban population currently lives in slums, while the corresponding slum rates for urban populations in Afghanistan, Bangladesh, Nepal and Pakistan exceed 74 per cent in all four countries. Access to safe drinking water is now worsening in the region's urban areas.<sup>13</sup> Such a trend remains a threat to the recent gains in child survival, as children under age five are most vulnerable to the diseases caused by polluted and infected water and inadequate sanitation and living conditions.

Compounding the problems faced in South Asia is the rising incidence of private health care, especially in India. Skilled health workers are leaving the

government sector, where low salaries and little investment in resources in remote areas compare poorly to the well paid jobs with room for advancement offered by private hospitals and clinics in urban areas. As a result, in India, most specialist positions in rural areas remain vacant and 68 per cent of hospitals are in the private sector; many public hospitals are barely functional because of staff shortages and the lack of drugs and equipment. Private care, however, remains well out of reach for many households in a country where 26 per cent live below the poverty line.

## The challenge for South Asia

To reach Millennium Development Goal 4 and the other health-related goals will necessitate a mighty effort on the part of South Asian countries, especially India. It will require a massive upscaling of primary health-care interventions at all levels – household and community, outreach and outpatient and facility-based care – and an expansion of efforts

targeted towards particularly vulnerable provinces and population groups. It will demand that the region adopt a determined stance in both examining and addressing the entrenched gender, ethnic and caste discrimination that magnifies other disparities related to such factors as income and geography.

But though the challenge is great, the region has already proved on many occasions that it is able to overcome constraints by employing innovative strategies and political and popular will. The panels on Sri Lanka's commitment to health care, India's advancement of Integrated Management of Neonatal and Childhood Illnesses and Pakistan's Lady Health Workers illustrate just three of the many ongoing initiatives in South Asia to improve child and maternal health. Community partnerships in health in this region have demonstrated the effectiveness of practical, simple solutions applied to scale and supported by sustainable financing and inclusive participation.



Afghanistan: A health worker uses a traditional stethoscope to listen for the heartbeat of a foetus.

## Integrated Management of Neonatal and Childhood Illnesses in India

In 2006, India's infant mortality rate was 57 per 1,000 live births, according to the latest estimates by the UN Inter-agency Group for Child Mortality Estimation. Although the national average does not reflect the vast disparities between states and regions in the country, the figure is still very high compared to many other countries in the developing world. Significantly, an estimated two thirds of all infant deaths are neonatal deaths, occurring within the first 28 days of life. Thirty-seven per cent of these deaths occur within the first week of life and most of these, in turn, happen on the first day. A significant underlying cause of these deaths is poor foetal growth and low birthweight, the end result of several deficiencies, notably maternal undernutrition and incorrect breastfeeding practices. A low-birthweight baby has reduced immunity and is extremely vulnerable to all diseases. The vicious cycle of undernutrition and infection, combined with poor infant and young child feeding practices, heighten the challenge of infant and young child survival and development.

One of the most promising approaches to addressing these glaring gaps is the Integrated Management of Neonatal and Childhood Illnesses (IMNCI), the Indian adaptation of Integrated Management of Childhood Illness, a global model currently used in more than 100 countries worldwide. The Indian version is an innovative, evidence-based package that brings essential skilled care and counselling to the household's doorstep and to facilities. It is the outcome of a collective effort by India's scientists, paediatricians, policymakers and the Government to target the infant mortality challenges unique to India, specifically the high proportion of neonatal and under-three mortality within communities.

Four key components of the IMNCI Package for Newborn Care include a home visitation programme to promote best practices for the young infant. Three home visits are to be provided to every newborn starting with the first visit on the day of birth (day one) followed by visits on day three and day seven. Low-birthweight babies receive three more visits on days 14, 21 and 28 before the baby is one month old. There is a special provision to follow-up with low-birthweight babies at the village level. Reinforcement occurs through meetings of women's groups and other community-level activities. Through referrals, a link is created between the village and home and a facility-based assessment at a primary health centre, subcentre or hospital.

IMNCI strategies strengthen the skills set of community-based child health and nutrition workers in home visits, counselling, and the detection and early classification of the main childhood illnesses in India: diarrhoeal diseases, acute respiratory infections, undernutrition, anaemia and malaria. The Government of India's vision of child health comes under the overarching policy framework of the National Rural Health Mission and Reproductive and

Child Health Programme. First piloted in selected blocks in six districts in as many states (Maharashtra, Gujarat, Rajasthan, Madhya Pradesh, Orissa and Tamil Nadu) from 2002–2004, IMNCI is currently implemented in 25 districts across the country, including the Andaman and Nicobar Islands.

IMNCI is not an instant remedy for reducing infant mortality, and it still needs to strengthen the connection between neonatal and maternal survival. But feedback from primary health centres and district health authorities where the strategy is being implemented is encouraging. Newborns are being regularly monitored by trained health and nutrition workers, low-birthweight children are getting extra attention, and rural mothers are now more aware of correct breastfeeding practices and timely referrals. The most powerful evidence of IMNCI's potential is the energized child development and nutrition worker – *anganwadi* workers and Auxiliary Nurse Midwives whose confidence has surged since they realized they now have the skills to save babies. These retrained health workers and midwives are saving many newborn lives.

*See References, page 57.*



India: A nurse records the weight of a three-month-old baby at a primary health-care centre.



Democratic People's Republic of Korea: A baby sits on his mother's lap in the Tanchon City Hospital while being treated with oral rehydration salts.

## 3 Eastern Asia: On track, but requiring momentum

Eastern Asia presents a challenge to any attempt to aggregate regional or subregional social or economic trends. The region as defined here includes four very different countries:

- *China*, the world's most populous nation, with a booming rate of export-led GDP growth and a strong track record in reducing child deaths, although progress has slowed in recent years.
- *The Democratic People's Republic of Korea*, a country that is not integrated into the global economy and which exhibits a high prevalence of moderate and severe stunting.
- *The Republic of Korea*, a rapidly industrializing country with one of the lowest rates of child mortality in the world.
- *Mongolia*, a poor, landlocked country that has, nevertheless, achieved some significant gains in its health indicators thanks, in part, to sound strategies and a recent mining boom whose economic benefits have trickled down to its population.

Three of the four countries in the region – China, the Republic of Korea and Mongolia – have achieved strong gains in child survival in recent decades, and all are on track to meet MDG 4. The fourth, the Democratic Republic of Korea, faces unique challenges related to its geopolitical situation and the relative lack of comprehensive information on the state of women and children in the country. And, while this subregion has seen among the highest rates of economic growth and transition in the world in recent decades, this has

been accompanied by a dramatic rise in income inequality, with the share of income of the poorest 20 per cent declining from 7.1 per cent in 1990 to 4.5 per cent in 2004.<sup>1</sup>

This chapter briefly examines the state of, and prospects for, child survival in each of the subregion's four countries, beginning with China.

### China: Child survival at a crossroads

Policies, population and developmental shifts in **China** have the potential to affect more than one fifth of the world's people. At the same time, as a rapidly growing, developing country, it has come remarkably far in the last few decades in reducing child and

maternal mortality, but is also facing the challenges of a socio-economic and demographic transition.

Since 1970, China's child and infant mortality profile has greatly improved. Infant mortality rates have fallen from 84 per 1,000 live births in 1970 to 20 per 1,000 live births in 2006, while the under-five child mortality rate has dropped from 118 per 1,000 live births to 24 per 1,000 live births over the same period. Indeed, maternal and child health services were among the first public health institutions established following the founding of the Chinese state, and they have played a vital role in improving the overall health of the population. The drop in under-five and infant mortality rates started to level off in the 1990s, however, and the rate of reduction has slowed significantly and even stalled in some parts of the country.

Today, China's under-five mortality rate is not only much higher than those of industrialized countries, but it is also higher than those of other developing countries in Asia-Pacific that are at similar or lower levels of economic

development, including Sri Lanka and Viet Nam. China's overall disease profile now resembles that of an industrialized country, but inequities in access to quality health care and huge disparities in health outcomes remain prevalent and entrenched.

China ranked fifth in absolute number of deaths of children under five in 2006, with 415,000 – accounting for 4.3 per cent of the global total. In 2004, two thirds of China's under-five deaths were neonatal, and most of those neonatal deaths – 79 per cent of the total – occurred during the first week of life.<sup>2</sup> The principal cause of maternal mortality is post-partum haemorrhaging – in China's rural areas it accounts for a third of all maternal deaths – followed by pregnancy-induced hypertension, embolism and antepartum haemorrhaging.

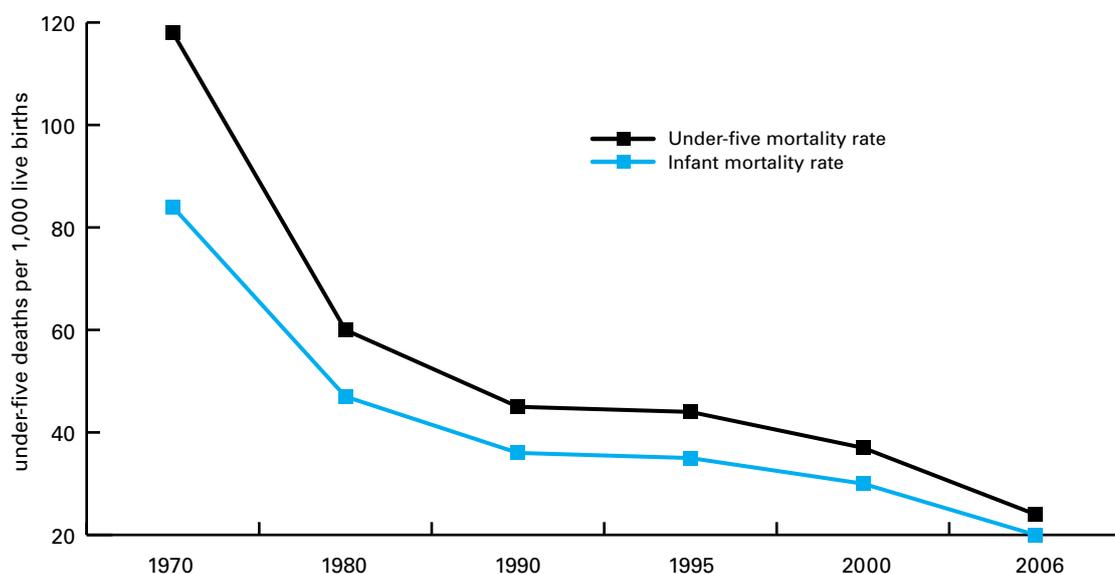
Taken as a whole, this means that the main causes of maternal, child and neonatal deaths are closely related to the accessibility and quality of maternal and child health services (as opposed to more systemic causes such as undernutrition

in South Asia). With improvement of essential obstetric services, up to 75 per cent of all neonatal and maternal deaths could have been avoided.

Within China, meanwhile, there are wide disparities in maternal and child health between rural and urban areas, within and among regions, and across population groups, including members of the country's 56 official minority groups and among its 150 million migrants. For example, while the percentage of underweight children in Beijing and Shanghai hovers at close to zero, this ratio rises to almost 6 per cent in other provinces and is worsening in Hebei province.<sup>3</sup> Furthermore, key indicators such as undernutrition and child mortality are especially acute in China's western provinces. Children of migrants, or floating populations, also have a much lower rate of immunization.

Stunting and underweight prevalence are three times higher in rural areas than in urban areas, with rural children aged 3–12 around four times more likely to suffer from vitamin A deficiency than their urban counterparts. While

**Figure 3.1** Child mortality rates in China dropped sharply in 1970–1990, but reductions have since slowed



Source: UNICEF global databases, 2007.



China: A mother carries her daughter on her back.

death from severe infection occurs infrequently in urban infants, it is the third leading cause of neonatal mortality in rural areas. Pneumonia, meanwhile, is the leading cause of post-neonatal death in China's most rural areas, and acute diarrhoea, virtually unheard of now in China's wealthier areas, is the third leading cause of death for post-neonatal children under five in rural areas, signifying a lack of adequate sanitation facilities.

Although the incidence of HIV has been registered in all of the country's provinces, the available evidence makes it difficult to assess its impact on child and maternal mortality.

While China is not unique in the Asia-Pacific region for its regional, ethnic and economic disparities, the impact of these inequities in terms of absolute numbers is. Although only 9 per cent of its population belong to minority groups, this still translates into roughly 100 million people. With the urban, middle class population reaping the benefits of convenient, good-quality health services, China's best hope of once again jump-starting its past success

in bringing down child mortality rates depends almost completely on reaching its significantly underserved populations.

### **The growing role of private health care in China**

More than two decades ago, China began its switch to a market-oriented system that included health care. As a result, the rural-collective health system disappeared and health services became decentralized, all of which increased costs while decreasing the number and quality of health institutions. The central government reduced the public funds available to the health sector – covering only wages and new capital investments – leaving a funding gap that was filled by private resources such as user fees and co-payments, which are prohibitively expensive for the poor.<sup>4</sup> This leaves poor and rural Chinese unable either to afford or access quality health care. There is evidence that in addition to increasing the urban-rural health divide, the health privatization process is contributing to gender-related health inequities as well, as a result of economic disparities

and the collapse of employment and community-based health insurance.<sup>5</sup>

In addition, investment in the public-health sector is focused mainly on tertiary care and facilities located in urban and suburban areas, in direct contrast to the community-based health system of China's recent, post-revolutionary past. Only 20 to 50 per cent of women in China's rural areas have access to basic emergency obstetric care; evidence shows that as the level of hospital deliveries and access to skilled obstetric services falls below 50 per cent, there is a substantial increase in maternal mortality rates. Since most of the country's 100 million minority population live in the most remote and mountainous hinterlands of the country – especially in the western and central provinces – this shift in health accessibility is having a disproportionate impact on these communities.

However, the emphasis on urban coverage does not necessarily translate into better services for the floating population of rural people unofficially migrating to urban areas. China controls the movement of its populace between

## Mongolia: Involving the community

In years past, government attempts to address Mongolia's poverty problem had been mostly top-down, with little community consultation or involvement. In contrast, the introduction of the Integrated Management of Childhood Illness (IMCI), a community-based strategy to reduce infant and child mortality and morbidity in 2000 by the Ministry of Health, in partnership with UNICEF and WHO, has produced dramatic results. In Mongolia's case, IMCI is used especially to reach the most disadvantaged and remote women

and children, who live among the world's most isolated communities. For example, programme workers educate local people about health issues so that they can demand better services from the authorities; in another scheme, outpatients contribute to the payment of drugs and local committees manage the revenue generated, keeping local drug stocks continuously replenished. With this system of active community participation operating in about 90 per cent of the country, the sustainability of primary health-care services has been ensured.

*See References, page 57.*



Mongolia: A roving doctor is handed a portable cold box of vaccines by a nurse at a vaccination post.

geographical locations and, as a result, many of its migrants are unregistered workers living on the fringes – socially and economically – of its flourishing cities. As such, they are impeded from accessing government health services and unable to afford paid services, leading to high rates of neonatal, maternal and under-five mortality. With out-of-pocket expenditures accounting for 64 per cent of China's total spending on health, the poor of all ethnicities and geographical locations will continue to

be vulnerable to high rates of maternal and neonatal deaths. User fees and the lack of a safety net continue to limit their access to health services.

Taken together, it is evident that the growing rate of inequity in economic development and access to quality health care for the poor and minority groups is stalling China's progress in lowering child mortality. Poorer households are paying a disproportionate share of their non-subsistence income to the health

system through user fees compared to their wealthier counterparts.

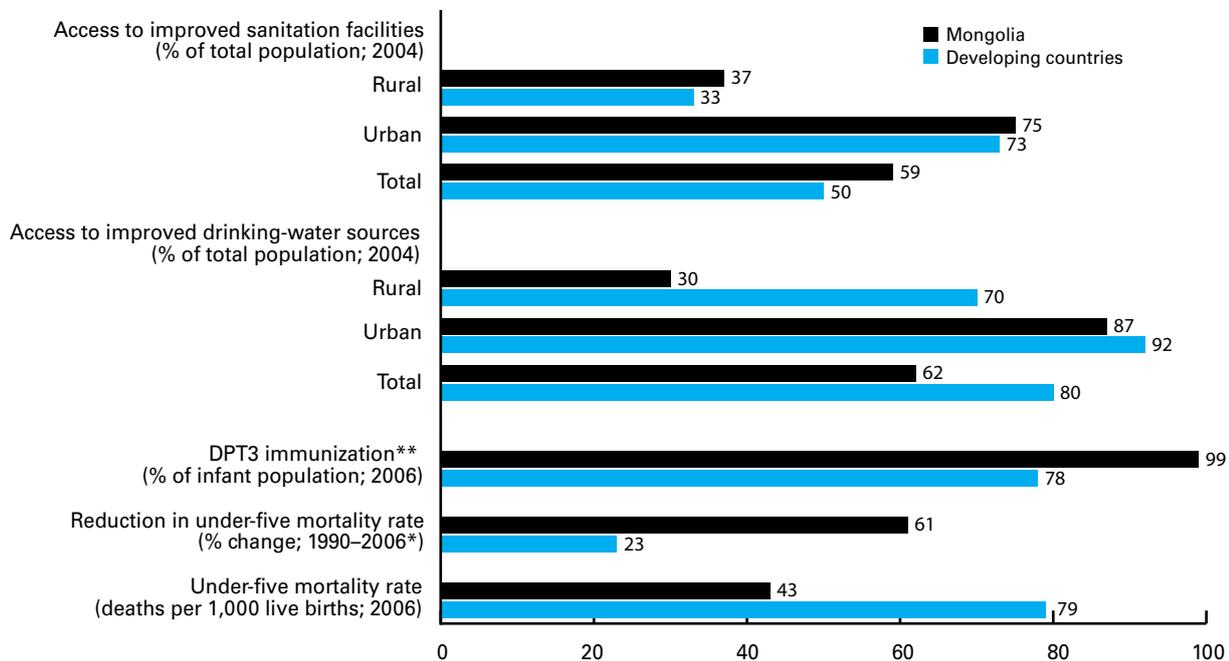
## Mongolia: On track for MDG 4 but facing widening disparities

Mongolia has, through a number of government and non-government initiatives, managed steadily to improve child survival rates, despite a high rate of poverty, especially in rural areas. Its under-five mortality rate fell from 109 per 1,000 live births in 1990 to 43 per 1,000 live births in 2006. At its current rate of progress, Mongolia is set to meet Millennium Development Goal 4; even so, child mortality rates in the landlocked country are high in comparison to other countries in the subregion, and 45 per cent of its population lives on less than US\$2 per day.<sup>6</sup> Disparities between urban and rural populations are wide, with almost three times as many people in urban areas having access to clean water as people in rural areas, and twice as many having access to improved sanitation. The lack of access to safe water in Mongolia is one cause of the high incidence of diarrhoea, which is closely connected to child undernutrition and mortality. Mongolia is 57 per cent urbanized, making it one of the most urbanized countries in Asia-Pacific, especially when compared to countries of similar geographic size, and leaving it with problems of urban and peri-urban slums not encountered before in its history.

Mongolia has kept investment in, and attention to, child and maternal mortality rates in step with its economic growth, thanks partly to its smaller population and partly to the efforts of the Government and international partners. Additionally, because its child mortality rates are much higher than China's – close to twice the rate – large-scale efforts are still having a marked impact on reducing the number of child deaths. Like China, Mongolia switched

Figure 3.2

## Mongolia has made strong progress in reducing child deaths but still requires improved and expanded environmental health services



\* Data refer to the most recent year available during the period specified.

\*\* Refers to the percentage of infants who received three doses of diphtheria, pertussis and tetanus vaccine.

Source: UNICEF, *The State of the World's Children 2008*, Statistical Tables, pp. 113–153.

to a market-oriented economic system, which has had an adverse effect on access to the health-care system, with affordable or free coverage no longer consistently available for the country's poorest. Mongolia suffered initially, but subsequently the Government began to reform its practices in terms of child and maternal health care, helped by partnerships with non-governmental organizations and the international donor community, and by a recent mining boom that has translated into real economic gains for its people.

## The Democratic People's Republic of Korea: Facing resource constraints

The Democratic People's Republic of Korea (DPRK) has stalled in its rate

of progress towards achieving MDG 4. Acute food shortages and the limited capacity of the health system to manage childhood illness – caused by shortages of essential drugs and the degraded quality of health services and water and sanitation systems – resulted in stagnating child and infant mortality rates during the 1990s. While there has been considerable progress in combating child undernutrition over the past decade, rates are still considered quite high, especially in the northern provinces and in rural areas in general. The latest estimates suggest that 23 per cent of children under age five are moderately or severely underweight and 37 per cent of children under five suffer from stunting.

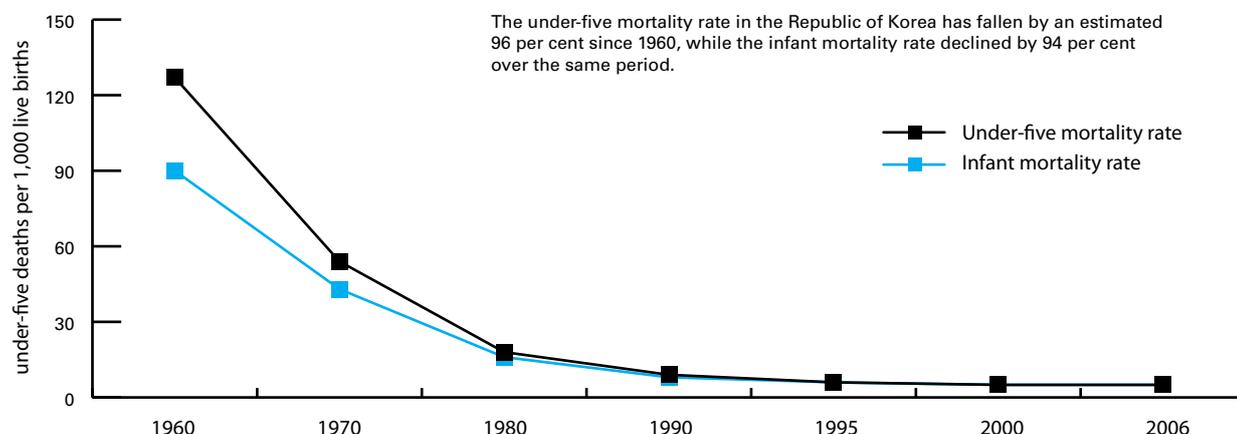
This situation is worsened by the decline in medical services and shortages of medicine and electricity. Tuberculosis is widespread. The Government, along

with the Global Alliance for Vaccines and Immunizations (GAVI), has focused on improving immunization rates, and currently DPRK has one of the highest levels of vitamin A coverage in Asia-Pacific. There are no official cases of AIDS, although the reality could be quite different. One third of mothers are anaemic and undernourished.

As in many other countries in Asia-Pacific, natural disasters are taking an increasing toll on the country's food security, with severe flooding in 2006 causing a food deficit of 1 million tons. But this alone does not account for the high, if certainly improved, numbers of underweight and stunted children. Stunted children are more likely to get sick and die than underweight or wasted children, so solving this problem is crucial to improving the DPRK's child survival rates.

Figure 3.3

## The Republic of Korea has achieved remarkable reductions in its under-five and infant mortality rates



Source: UNICEF global databases, 2007.

## The Republic of Korea: Reaching the levels of an industrialized country

The Republic of Korea was once one of the world's poor agrarian societies, but today it boasts a gross national income per capita of almost US\$18,000, with less than 2 per cent of its population living on less than US\$1 a day. Thanks to improvements in a host of socioeconomic areas, including income, education and health and medical care, the country's rates of infant and under-five mortality have decreased dramatically, with an average annual reduction rate of 9 per cent for under-five mortality between 1970 and 1990. These gains were consolidated in the 1990–2006 period, allowing the country to reduce its under-five mortality rate to just 5 per 1,000 live births in 2006.

The Republic of Korea currently has one of the lowest rates of under-five mortality in the world – and is second only to Singapore in the Asia-Pacific region. Almost all children receive

necessary immunizations and all women give birth accompanied by a skilled birth attendant.

Today, the focus of its child survival efforts is not just further reducing child mortality – particularly early neonatal mortality – but also prolonging and improving the quality of life through early public health interventions like free pre- and post-pregnancy check-ups. Like other countries at its level of human development, there must also be an emphasis on reaching socially and economically marginalized populations in addition to promoting childhood safety and introducing new or underused vaccines.

## The challenge for Eastern Asia

As a subregion, Eastern Asia is on track to meet MDG 4, having posted a 47 per cent reduction in its under-five mortality rate in the 1990–2006 period. Each of the countries faces a unique challenge in child survival. For

China, the challenge lies in ensuring that equity in health-care provision improves in line with continued strong economic growth, in order to reduce the marked and rising geographical disparities in access to essential services that have accompanied the country's economic boom.

For the Republic of Korea, having reached low levels of child mortality, its challenge is to maintain these rates and improve the quality of maternal and child health care. The Democratic People's Republic of Korea is the only country in the region not deemed on track to meet MDG 4, and faces the tasks of enhancing service provision, particularly in rural areas. Mongolia performed well in the 1990–2006 period, but now has the task of bridging gaps in essential services, notably to improve water and sanitation for the rural areas that are home to more than 40 per cent of the country's population.



Indonesia: Two women stand with their children, who have just been immunized against polio.

## 4 South-Eastern Asia: On track, but a few countries are lagging

Fifty-five million children under the age of five live in South-Eastern Asia, which ranges from the small nascent country of Timor-Leste in the south to the string of countries along China's south-western border that include the Lao People's Democratic Republic, Myanmar and Viet Nam. While this subregion is not dominated by a population and geographical behemoth like India in South Asia and China in Eastern Asia, some of its countries have sizeable numbers of inhabitants, notably Indonesia (229 million), the Philippines and Viet Nam (both 86 million).

South-Eastern Asia's economic boom has been headline news since the 1990s, with patterns of explosive, export-driven growth experienced by several

of its countries, including Singapore, Malaysia and Thailand. For most of the 11 countries in this subregion, the economic upsurge has contributed to rising living standards. This, in turn, has exerted a positive impact on child survival, contributing to a halving of the under-five mortality rate from 77 deaths per 1,000 live births in 1990 to 35 per 1,000 live births in 2006. As a whole, the subregion is on track to meet the MDG 4 target of reducing the under-five mortality rate by two thirds between 1990 and 2015.

The strong performance at the subregional level, however, risks masking wide variations between countries in reducing child mortality. There are those countries that have made remarkable

and sustained progress in lowering child deaths in recent years. Nearly half of the subregion's countries, including Indonesia, Singapore, Thailand and Viet Nam, registered a decline in the under-five mortality rate of 60 per cent or more between 1990 and 2006. The Lao People's Democratic Republic, Malaysia and the Philippines also managed to lower their under-five mortality rates by 45 per cent or more over the same period.

Several countries in the subregion have reduced their under-five mortality rates to levels found in industrialized countries. Singapore has the lowest rate of child mortality in the world, a position that it shares with Andorra, Iceland, Liechtenstein, San Marino

and Sweden. Under-fives in Thailand, which had a child mortality rate of 8 per 1,000 live births in 2006, have the same risk of dying as they do in the United States or Slovakia. In the same year, Brunei Darussalam, Malaysia and Viet Nam registered under-five mortality rates of 9, 12 and 17 per 1,000 live births, respectively, according to the latest figures from the UN Inter-agency Group for Child Mortality Estimation.<sup>1</sup> Indonesia and the Philippines have child mortality rates similar to the average for Latin America and the Caribbean, at 34 and 32 per 1,000 live births, respectively.

At the other extreme, South-Eastern Asia also includes countries where the rate of child mortality is more akin to levels prevalent in the least developed countries. Cambodia, the Lao Democratic People's Republic and Myanmar have child mortality rates of 75 per 1,000 live births or more; in Myanmar, the probability of a child dying before age five is roughly 1 in 10.

This chapter examines the challenges facing three groups of countries:

- *Low-performing* (with an under-five mortality rate of 40 per 1,000 live births or more).
- *Moderate-performing* (20–40 under-five deaths per 1,000 live births).
- *High-performing* (fewer than 20 under-five deaths per 1,000 live births). Particular attention is given to how the experiences of the strongest performers might be used to guide interventions and policies for those countries that are at greatest risk of missing MDG 4 and other health-related MDGs.

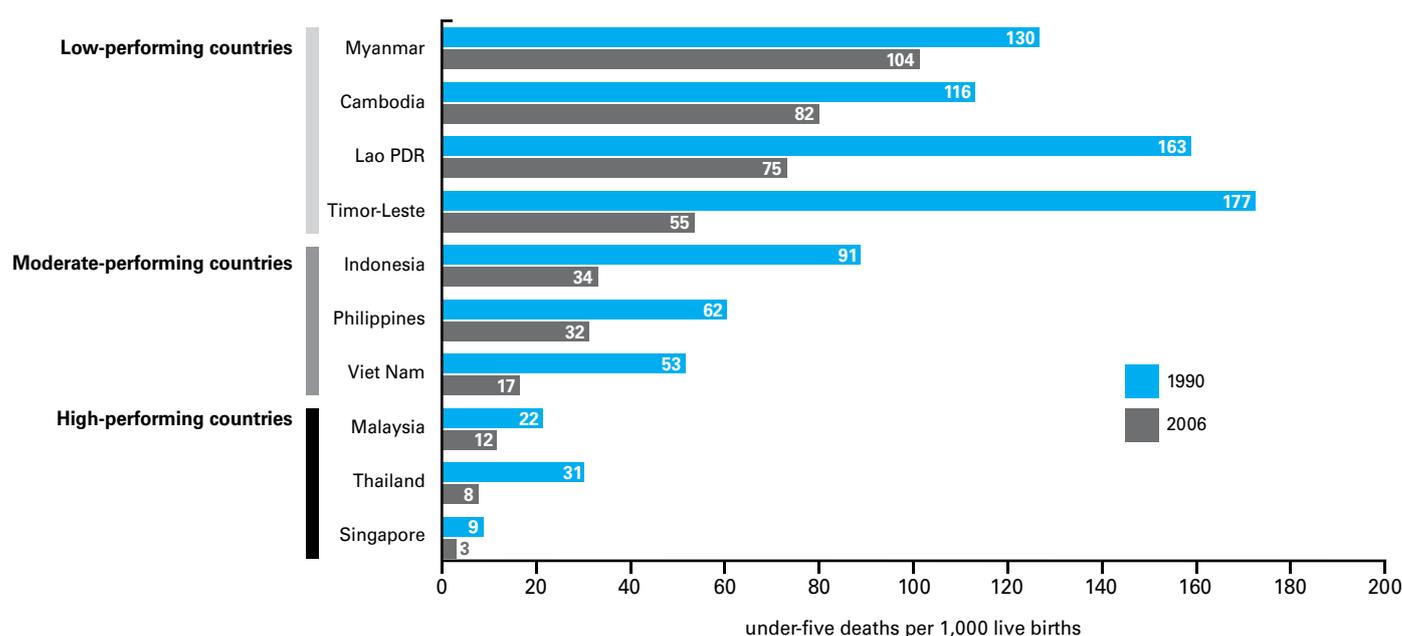
### The low-performing countries: Cambodia, the Lao People's Democratic Republic, Myanmar and Timor-Leste

The four countries in the region with the highest rates of child mortality are also by far the poorest and the least integrated into the global economy. Of these, the most isolated is **Myanmar**. Its

remote border areas, where many of its more marginalized ethnic communities reside, suffer the worst health problems in the country, with children and mothers at risk from undernutrition, tuberculosis and malaria. Almost one third of Myanmar's under-fives are moderately or severely underweight, and only 15 per cent are exclusively breastfed for up to four months. While immunization rates are moderately high, at 82 per cent for three doses of diphtheria, pertussis and tetanus vaccine in 2006, other health services are less utilized or available – only 66 per cent of under-fives with suspected pneumonia are taken to an appropriate health-care provider, and around one third of under-fives with diarrhoea do not receive the recommended treatment of oral rehydration with continued feeding.

**Cambodia**, although more open than Myanmar, has its own series of challenges. Extreme poverty is widespread, with more than one third of the country's population living on less than US\$1 per day in 2006. Undernutrition is a serious threat to the health of under-fives, with more than

**Figure 4.1** **Classifying South-Eastern Asia's countries by rates of child mortality**



Source: UNICEF estimates based on the work of the UN Inter-agency Group for Child Mortality Estimation.

## How Cambodian mothers embraced exclusive breastfeeding practices

In June 2004, during a high-level consultation on child survival, the Government of Cambodia declared early and exclusive breastfeeding as the top priority intervention to reduce child mortality. A national breastfeeding movement followed, and for the next 18 months a flurry of diverse advocacy activities and messages underscored the importance of breastfeeding. A special breastfeeding week was set aside for nationwide social mobilization efforts, during which supporters from the Prime Minister to a mother from a village advocated exclusive breastfeeding. National television and radio channels frequently aired spots on breastfeeding, and even soap operas tackled the subject. Many of the national media campaigns concentrated on a simple message of “do not give water to breastfed infants,” since in Cambodia it is believed that babies cry because they are thirsty for water and that they need water for survival. Often the drinking water is unsafe, or it is mixed with sugar and inappropriate for infant consumption.

Breastfeeding practices were established in the major hospitals while community-based volunteers travelled house-to-house, convincing mothers-to-be and new mothers to breastfeed their infants. Additional breastfeeding training was provided to cadres of health-care providers, and the Government made announcements on the subject of infant and young child feeding products.

These concerted efforts have yielded significant achievements, with exclusive breastfeeding rates for babies under six months moving up from 7 per cent in 2000 to 60 per cent in 2006. The number of infants younger than six months who received both breast milk and plain water decreased from 67 per cent in 2000 to 28 per cent in 2005.

## Mother Support Groups

Along with these efforts, a large share of the Cambodian model's breastfeeding success rests on community-based groups, including the previously unheralded Mother Support Groups. In each village, Mother Support Groups actively promote breastfeeding. Each group comprises the village chief, village group volunteers, a traditional birth attendant and two model mothers. Each of these members plays an important role in the success of the group. The village chief lends the necessary authority to the group, while the two village health support group volunteers (a man and a woman) act as health messengers between the villagers and health centre staff. They also mobilize the community for monthly outreach services.

As most births still take place in the home, the traditional birth attendant is in close contact with mothers and babies in most villages. The most pivotal members of this group, however, are the ‘model mothers’, who have had a positive experience with early and exclusive breastfeeding. Their role is to encourage families to seek early antenatal care and support new

mothers to initiate and sustain exclusive breastfeeding.

One model mother at a recent Mother Support Group meeting stated that it is challenging to sustain exclusive breastfeeding during the rainy season, especially for poor mothers. This is the season when rice cultivation demands the most attention, and poor mothers must work in the rice fields. In the poorer areas of Cambodia, farmers need to work hard to make a modest living. One solution has been to reach out to pregnant women or mothers during traditional festivals, when the villagers gather together for celebrations. The model mother revealed another tip she has discovered: It is useful to remind the families that breast milk is not only the best, but is also the cheapest way to feed babies.

On a broader level, challenges and other feedback are discussed in quarterly meetings of the Mother Support Group at the health centre. Monitoring and reporting on breastfeeding status to health centres, operational districts and provincial health departments also take place on a quarterly basis.

*See References, page 57.*



Cambodia: Members of a Mother Support Group.

one third either moderately or severely underweight. As in many countries of the Asia-Pacific region experiencing high rates of under-five deaths, the leading causes of childhood death in Cambodia are vaccine-preventable diseases, diarrhoeal diseases and respiratory infections after the neonatal period. Cambodia also exhibits a disturbingly high urban-rural divide in child mortality. In the capital, Phnom Penh, the under-five mortality rate is around 50 per 1,000 live births, while two provinces in the north-east have rates higher than 220 per 1,000 live births – approaching the rate found in the worst-performing countries in the world.<sup>2</sup> Environmental health facilities are also in short supply, with only 41 per cent of the population having access to improved drinking-water sources and just 17 per cent having access to improved sanitation facilities in 2004, the latest year for which firm estimates are available.

**The Lao People's Democratic Republic** is on track to meet Millennium Development Goal 4, having reduced its under-five mortality rate by 54 per cent between 1990 and 2006. However, the country is facing serious child survival challenges, particularly undernutrition – its rate of underweight prevalence among under-fives is similar to the aggregate for South Asia – and immunization. Coverage of essential vaccines against measles and polio has fallen over the past decade, and in 2006 only 48 per cent of the country's infants under one were immunized against measles – the lowest rate in the Asia-Pacific region. Currently, roughly 1 in 13 Lao children dies before his or her fifth birthday, and more than 40 per cent of infants receive three doses of diphtheria, pertussis and tetanus vaccine, the benchmark indicator of annual routine immunization coverage. Outside of the neonatal period, pneumonia is the leading cause of death for under-fives; the second leading cause of child mortality is diarrhoeal diseases, indicating serious problems of access to clean water and adequate sanitation.<sup>3</sup> Furthermore, 15 per cent of children

under five in Lao PDR are considered to be wasted as result of food shortages and disease.

Child survival data on **Timor-Leste** are only available since 1990, owing to its nascent status as a sovereign nation. Although the latest available indicators suggest that Timor-Leste has made some strides in reducing under-five deaths, improved data quality is required to more fully assess the state of child survival in the country. Undernutrition is certainly a pressing challenge; Timor-Leste is the second most undernourished country in the Asia-Pacific region, with almost half of children below age five underweight. Fifteen per cent are severely underweight.

In addition, the country also faces the task of raising immunization rates; coverage of three doses of diphtheria, pertussis and tetanus vaccine, the benchmark for annual routine immunization coverage, stood at 67 per cent in 2006, well below the subregional aggregate for South-Eastern Asia of 82 per cent. Like the other three low-performing countries, the population of Timor-Leste also has low rates of access to improved drinking-water sources (58 per cent) and adequate sanitation facilities (36 per cent), according to the latest estimates dating from 2004.

## The moderate-performing countries: Indonesia, the Philippines and Viet Nam

In between the low-performing countries on child survival (Myanmar, Cambodia, Lao PDR and Timor-Leste) and the high-performing nations (Brunei Darussalam, Malaysia, Singapore and Thailand) lie Indonesia, the Philippines and Viet Nam. These three countries share complex stories of uneven economic development, sometimes violent conflict, the threat of

AIDS and – despite noteworthy progress on child survival – still moderately high rates of child and maternal mortality. All three countries are on track to meet MDG 4, having reduced child mortality by 48 per cent or more between 1990 and 2006. But in spite of this achievement, all three also face significant threats to sustaining and deepening these gains.

**Indonesia**, with 22 million under-fives in 2006, has unique challenges in providing quality primary health care services, owing to its distinct geography – the country is spread across a vast archipelago that includes thousands of inhabited islands. In this country, it is often the poorest and most remote communities that have the hardest time accessing essential services. A series of natural and human-made disasters and civil disturbances has increased child mortality and morbidity rates and created large populations of displaced persons in several provinces, including Maluku, North Maluku, West Timor, Aceh, Sulawesi, Papua and Kalimantan.

Undernutrition remains a serious cause for concern in Indonesia, especially given the significant portion (28 per cent) of underweight children under five. At the same time, Indonesia has seen a sharp increase in its urban population, from 31 per cent in 1990 to 48 per cent in 2005, and this rapid migration has raised difficulties in ensuring adequate safe water supplies, sanitation facilities and health access for the urban population. As a result, some urban areas have significantly higher rates of child mortality than the national average.

Disparities between the more centralized and wealthier provinces and the outlying, poorer islands of Indonesia have led to severe shortages in coverage as well. In 2002–2003, for example, the measles immunization coverage rate was as high as 91 per cent in Yogyakarta and as low as 44 per cent in Banten. The maternal mortality rate has been much higher in outlying provinces like Maluku, Papua and West Java than in the rest of the country.<sup>4</sup>

However, the challenges to and constraints on Indonesia's efforts to bring down child mortality rates cannot be attributed only to natural disasters and geographical disparities. The Government has increased spending on health facilities like hospitals and public health centres and subcentres, but at the same time the number of physicians and nurses is decreasing as fewer graduate from medical school. The country is also undergoing a decentralization process that includes the health system, and not all provincial governments make health a budgetary priority. In addition, the Government supplies only 34 per cent of the country's total expenditure on health, significantly lower than the corresponding shares for Thailand (65 per cent) and Malaysia (59 per cent). As a result, the private health-care system is heavily utilized, with the Government taking more of a regulatory role.

Periodic bouts of conflict and social unrest in **the Philippines** have undermined the supportive environment needed for child survival, disrupting the lives of children and often forcing families to flee their homes. **Viet Nam** and the Philippines, like Indonesia, show significant inequities in access to primary health-care services and child mortality rates between urban and rural populations; for example, in Viet Nam, under-five children living in rural areas are more than twice as likely to die as those who live in cities.<sup>5</sup> This inequity extends to economic status as well: for example, while Viet Nam has already surpassed its Millennium Development Goal 4 target by reducing its under-five mortality rate to 17 deaths per 1,000 live births, the ratio of child mortality rates between the richest and poorest 20 per cent has increased, signifying that much

of the success is due to gains among the more affluent sector of society.<sup>6</sup> Like Indonesia's indigenous communities, ethnic minorities in Viet Nam and Muslim communities in the southern Philippines have often missed out on many of the benefits of the past decade's development.<sup>7</sup>

Undernutrition remains a cause for concern in moderate-performing countries. In 2006, roughly 30 per cent of children under five in the Philippines were either stunted or underweight; about a quarter were underweight in Indonesia and Viet Nam. Viet Nam is still on track to meet target 2 of MDG 1, which requires halving, between 1990 and 2015, the proportion of people who suffer from hunger. However, exclusive breastfeeding for the first six months is low, at 17 per cent, with marginalized

Figure 4.2

### Child nutrition in South-Eastern Asia

	% of infants with low birthweight 1999–2006*	% of children (2000–2006*) who are:			% of under-fives (2000–2006*) suffering from:				Vitamin A supplementation coverage rate (6–59 months) 2005		% of households consuming iodized salt 2000–2006*
		exclusively breastfed (<6 months)	breastfed with complementary food (6–9 months)	still breastfeeding (20–23 months)	underweight		wasting	stunting	at least one dose (%)	full coverage** (%)	
					moderate and severe	severe	moderate and severe	moderate and severe			
Cambodia	11	60	82	54	36	7	7	37	79	65	73
Indonesia	9	40	75	59	28	9	–	–	76	76	73
Lao PDR	14	23	10	47	40	13	15	42	63	62	75
Malaysia	9	29 <sup>x,k</sup>	–	12 <sup>x</sup>	8	1	–	–	–	–	–
Myanmar	15	15 <sup>k</sup>	66	67	32	7	9	32	95	95	60
Philippines	20	34	58	32	28	–	6	30	85	85	56
Singapore	8	–	–	–	3	0	2	2	–	–	–
Thailand	9	5	43	19	9	0	4	12	–	–	58
Timor-Leste	12	31	82	35	46	15	12	49	91	35	72
Viet Nam	7	17	70	23	25	3	7	35	99	99 <sup>w</sup>	93

\* Data refer to the most recent year available during the period specified.

\*\* Refers to the percentage of children reached with two doses.

<sup>k</sup> Refers to exclusive breastfeeding for a period of less than six months.

<sup>w</sup> Identifies countries with national vitamin A supplementation programmes targeted towards a reduced age range. Coverage figures are reported as targeted.

<sup>x</sup> Data refer to years or periods other than those specified in the column heading, differ from the standard definition or only refer to a part of the country.

Source: UNICEF estimates based on data from Demographic and Health Surveys, Multiple Indicator Cluster Surveys, World Health Organization, UNICEF, other national household surveys and data from routine reporting systems.



Thailand: A woman speaks to a health worker in a health clinic set up in a tent.

communities particularly deficient in nutrition. One of Viet Nam's rural provinces in the central highlands, Dac Nong, reported a much higher rate of malnutrition than Ho Chi Minh City, the capital, with 35 per cent of under-five children underweight in the former and only 10 per cent in the latter.

Other threats to child and maternal survival remain considerable. While HIV prevalence has declined in Cambodia, Myanmar and Thailand, the latest figures from the Joint United Nations Programme on HIV/AIDS indicate a rising rate of the epidemic in Indonesia (especially in the Papua province) and Viet Nam.<sup>8</sup> Indonesia's HIV epidemic is among the fastest

growing in Asia, while Viet Nam's number of cases more than doubled between 2000 and 2005.

The vast majority of people infected with HIV in Asia-Pacific are unaware of their status. This makes it difficult to launch prevention campaigns and to provide AIDS treatment. Lack of access to HIV testing and counselling, as well as stigma, prevent many from going for help. The burgeoning epidemic has an indirect effect on child survival as well, since infant and child mortality rates are six to seven times greater in parentless households. In Cambodia, for example, the number of orphans grew by nearly a quarter between 1990 and 2005. Twenty per cent of those

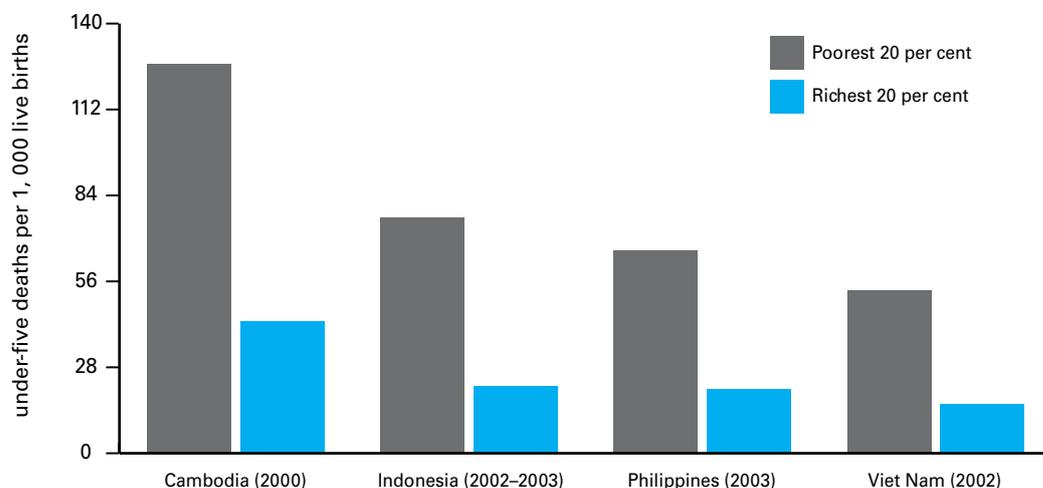
cases were due to AIDS, which almost doubled between 2001 and 2005.

### The high-performing countries: Brunei Darussalam, Malaysia, Singapore and Thailand

Child mortality rates in these four high-performing countries are close to, or on par with, those in many industrialized countries. These countries have achieved high levels of literacy and primary education, immunization levels against most major vaccine-preventable diseases are very high, and they are on track to achieving

Figure 4.3

### Poor children across South-Eastern Asia are much more likely to die before age five than their wealthier peers



Source: World Health Organization, *World Health Statistics 2007*, p. 74; and United Nations Development Programme, *Human Development Report 2007/08: Fighting climate change – Human solidarity in a divided world*, p. 255.

the health-related Millennium Development Goals. Despite these gains, they still face challenges and risks in child survival. The prevalence of HIV is a cause for concern, particularly in Thailand, with growing numbers of HIV-positive women. A further challenge for these countries is addressing disparities. Malaysia, for example, is facing a growing gap in consumption between the rich and the very poor. Urban and rural divides are also widening in the country, and there is a risk that with 80 per cent of Malaysia's population concentrated in peninsular Malaysia, populations in Malaysian Borneo remain relatively underserved, along with migrants and their children.

### The challenge for South-Eastern Asia

Unlike neighbouring South Asia, many countries in the South-Eastern Asian subregion have been able to translate strong economic growth into sustainable gains in child and

maternal health. The impressive strides this subregion has made in child and maternal survival, reducing poverty, improving nutrition and combating disease should not be underestimated. In 2006, 35 children under five died for every 1,000 live births, compared with 176 in 1960, a dramatic 80 per cent decrease. The infant mortality rate, which is linked to the level of care pregnant women are receiving, fell by a corresponding 75 per cent.

At the same time, the rate of decline in under-five child mortality in the subregion has slowed in the past two decades, accompanied by rising economic inequality within many of its countries. In part, this is likely due to the greater difficulty faced by some countries in further reducing an already moderate or low rate, which underlines the need to reach populations marginalized by geography and socio-economic status. Since the 1990s, Lao PDR, Viet Nam and the Philippines, in particular, have been experiencing a marked rise in inequality between

the wealthy and the poor in terms of expenditure distribution.<sup>9</sup> This is of concern in terms of health equity, since evidence has shown that the poor often experience much higher rates of child mortality than the wealthy.<sup>10</sup>

Bolstering government expenditure on health is part of the challenge of extending services to remote and marginalized communities. Most of the subregion's countries show a far lower expenditure on public health as a percentage of GDP than the global average of 5.1 per cent.<sup>11</sup> User fees are threatening to keep many of the most vulnerable away from vital primary care services.<sup>12</sup> In addition, the subregion must also face the task of training and especially retaining skilled health professionals to stem the migration of health workers leaving for jobs abroad.<sup>13</sup>



Solomon Islands: A two-year-old child lies ill with a respiratory infection.

## 5 The Pacific: Falling behind

While child survival prospects have improved markedly in much of the Asia-Pacific region in recent decades, several of the tiny island states of the Pacific trail behind. Although the reduction in this subregion's average under-five mortality rate roughly kept pace with South-Eastern Asia in the 1970–1990 period, it has slowed sharply since then. Between 1990 and 2006, the Pacific only managed to lower its under-five mortality rate by 22 per cent, to 64 deaths per 1,000 live births – a far smaller reduction than those recorded in Asia-Pacific's three other subregions.

Regional analysts attribute this slowdown to a host of interrelated

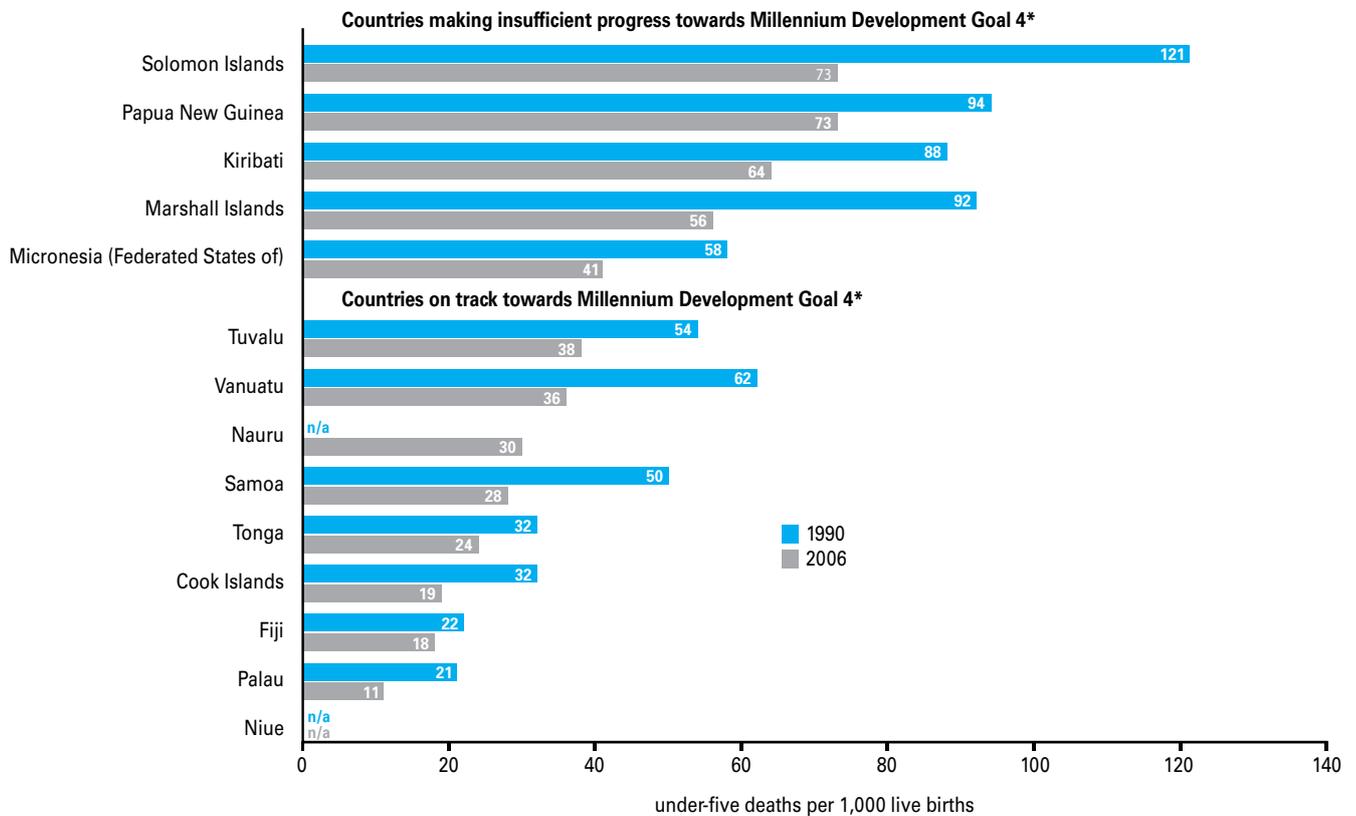
factors, ranging from the subregion's remote geographical location and limited resources to a lack of political will. In addition, the increasingly grim effects of environmental degradation and climate change are also threatening to undermine the gains in human development in the area achieved during past decades.

None of the subregion's countries have managed to lower under-five mortality rates at a pace commensurate with achieving MDG 4, which entails reducing the rate by two thirds between 1990 and 2015. But distinctions can be drawn between them. In terms of child mortality, the Pacific's countries can

be broadly divided into two categories: those with moderate to low mortality rates (40 or fewer under-five deaths per 1,000 live births in 2006) and those with higher rates (more than 40 deaths per 1,000 live births).

Countries in the first category – which include the Cook Islands, Fiji, Nauru, Palau, Samoa, Tonga, Tuvalu and Vanuatu – are considered to be on track to achieving MDG 4, even though their progress in reducing child mortality since 1990 has been limited. Five countries are included in the second category, including Papua New Guinea, the subregion's

**Figure 5.1**  
**Progress towards MDG 4 is mixed across the Pacific islands**



\* **On track:** Under-five mortality rate (U5MR) is less than 40 per 1,000 live births, or U5MR is 40 or more and the average annual rate of reduction (AARR) in the U5MR observed for 1990–2006 is 4.0 per cent or more.

**Insufficient progress:** U5MR is 40 or more and AARR is between 1.0 per cent and 3.9 per cent.

**Source:** UNICEF estimates based on the work of the UN Inter-agency Group for Child Mortality Estimation.

largest country, the Federated States of Micronesia, Kiribati, the Marshall Islands and Solomon Islands.

This chapter examines briefly the challenges to improving child survival in the subregion, with a particular emphasis on Papua New Guinea, Fiji and the Solomon Islands, which together account for 88 per cent of the subregion’s under-five population. Special attention will be given to the high rates of under-five mortality in Papua New Guinea, since 14,000 of the 15,000 child deaths in the Pacific in 2006 occurred in that country.

## Child survival in Fiji, Papua New Guinea and the Solomon Islands

With 6.2 million inhabitants and 75 per cent of the subregion’s under-fives, **Papua New Guinea** is the Pacific’s most populous country. The nation is diverse in languages, which number around 800, tribal groups and geography, and is spread out across 463,000 square kilometres of land that cover mountains, dense rainforests and swampland. Papua New Guinea is among the least urbanized countries in the world, with

just 13 per cent of its population living in cities in 2006. It is particularly prone to natural disasters, having experienced multiple earthquakes, tsunamis, volcanic eruptions, floods, droughts and severe frosts in the past decade that have resulted in fatalities and casualties; displaced families; destroyed crops, property and livelihoods; and disrupted social services such as health and education.

Although a decade-long civil war ended in 2001, the years of violent conflict have undermined the country’s health and education infrastructure. Furthermore, violence against women and children is prevalent in Papua New

Guinea and presents a major obstacle to improving their health and survival.

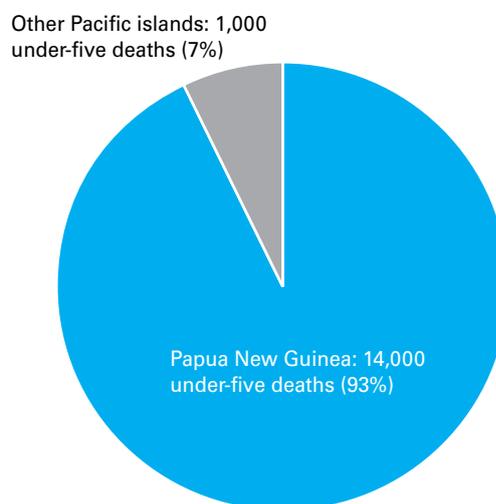
Inadequate and deteriorating infrastructure and the difficulty of accessing essential services are hindering human development in Papua New Guinea, which is currently making insufficient progress towards achieving Millennium Development Goal 4 and other health-related MDGs. Children in Papua New Guinea continue to die from such highly preventable or treatable illnesses and conditions as diarrhoeal diseases, malaria, measles, undernutrition, low birthweight and pneumonia. Provision of basic health services remains very limited, particularly in rural areas. In 2006, one quarter of infants did not receive three doses of diphtheria, pertussis and tetanus vaccine, the benchmark indicator for annual routine immunization coverage. Almost 20 per cent of newborns were not protected against tetanus in 2006, and 25 per cent of under-fives with suspected pneumonia were not taken to an appropriate health-care provider in the 2000–2006 period. Even higher numbers of young children and mothers are denied access to essential environmental health services, with just 39 per cent of the country's population using improved drinking-water sources – the lowest rate in the world in 2004, along with Afghanistan – and only 44 per cent had access to adequate sanitation facilities in that year. Skilled health workers attend less than half of all births in the country.

Solving the problem of child undernutrition and stunting could go far in alleviating the under-five child mortality rate in Papua New Guinea. There is little variation in the local diet because of over reliance on cash crops and limited arable land. The remoteness of many villages and lack of roads makes transporting goods to market very difficult and expensive. This, in turn, has a measurable effect on undernutrition in the country, as one additional hour of transport corresponds to a 10 per cent decrease in food consumption. The deterioration of transport systems and roads also means that some communities must travel up to four days just to receive medical aid. The current situation compares unfavourably to 1990, when most people lived within two to four hours walking distance of a rural health outpost.

Major diseases present a further threat to child and maternal survival in Papua New Guinea. The number of people living with

Figure 5.2

### Papua New Guinea accounted for more than 90 per cent of the Pacific's under-five deaths in 2006



Source: UNICEF estimates based on the work of the UN Inter-agency Group for Child Mortality Estimation.



Papua New Guinea: A boy steps out of a latrine at a playground in the village of Pari.

HIV in the country is still increasing, although the prevalence rate is now believed to have been 1.3 per cent in 2007, which is somewhat lower than previous estimates from the Joint United Nations Programme on HIV and AIDS (UNAIDS).<sup>1</sup> Young women and girls are particularly vulnerable, with HIV prevalence among women aged 15–29 twice as high as among men of the same age cohort, according to Papua New Guinea's National AIDS Council Secretariat in 2006.

Widespread violence and abuse, including rape, together with a weak health system, high levels of poverty and socio-economic inequity and AIDS-related stigma are stern obstacles to halting and reversing the spread of HIV. Risky behaviour and little knowledge about the transmission of the disease, combined with a lack of testing, have contributed to the rise in HIV transmission. The country has made some strides in the direction of counselling and testing, with 75 sites being set up since 2002, and treatment provision has been increasing, but much more needs to be done to halt the epidemic.

The incidence of malaria has also increased, and the disease is now endemic in every province in the country. Malaria and pneumonia together account for one third of all deaths in Papua New Guinea, and tuberculosis incidence is also rising. Malaria prevention systems that were in place 10 to 15 years ago have almost completely broken down, and inexpensive drugs are no longer working.

With few development partners and overall government health spending decreasing, Papua New Guinea's health system is suffering from a shortage of resources, infrastructure and commitment.<sup>2</sup> The country's total health expenditure as a percentage of GDP was just 4.2 per cent in 2005, and the large-scale migration of its few qualified physicians is causing severe shortages of skilled health personnel.<sup>3</sup> As in other countries in Asia-Pacific, a decentralization process

has taken its toll on health financing and risks undermining the linkages between different levels of the health system in Papua New Guinea. The central government sets policy but has no control over its implementation, and most of the budget allocated to provincial governments does not trickle down to local government councils.

At the same time, the country is deeply fragmented along tribal and linguistic lines, compounding the difficulty of addressing child and maternal health via national programmes.<sup>4</sup> Hundreds of rural health stations have yet to be reopened or to begin functioning properly, with the result that basic primary care services simply do not exist for a large percentage of the rural population. Perhaps most crucially, many local communities are not involved in any kind of health-promoting activities, and there is very little knowledge about health risks and improved health and hygiene practices.

Fiji is the subregion's second most populous country, with 833,000 inhabitants in 2006. Like Papua New Guinea and other countries in the Pacific subregion, economic development has been slow, with annual GDP per capita expanding by little more than 1 per cent in 1990–2006, compared to rates in excess of 6 per cent for other subregions of Asia-Pacific over the same period. The country is also recovering from civil and political conflict.

The country's marked progress in lowering child mortality in 1970–1990, at an average annual rate of 5.4 per cent for that period, has since slowed sharply. Indeed, its annual rate of reduction slowed to 1.3 per cent in 1990–2006. Fiji has also experienced significant migration of skilled health workers, and faces the challenge of raising its health expenditure from its rate of 4.1 per cent of gross domestic product in 2005, the lowest rate in the Pacific.

One of Fiji's strengths is its high level of maternal care, epitomized by the fact that 99 per cent of births are attended by skilled health personnel, and that 93 per cent of newborns are protected against tetanus through vaccination of

## Papua New Guinea: Creating a home fit for children

An initiative of the Papua New Guinea Government and UNICEF called 'A Home Fit for Children' is attempting to educate and mobilize individual families to create a safe, healthy and hygienic environment for infants and young children. Started by a Catholic priest, the programme initially trained 30 families from the Kieta District in better health practices in the home.

After the success of this pilot, the programme was expanded to 10 districts, often through village-level workshops. It consists of a package of community-based interventions designed to address a wide range of child survival issues through interventions such as promotion of antenatal visits and health facility delivery; breastfeeding and complementary feeding; use of antimalaria mosquito nets and iodized salt; and improved hygiene practices.

Actions range from counselling women to breastfeed, to handing out tens of thousands of insecticide-treated mosquito nets to families, and encouraging backyard gardens in urban areas where greens and pumpkin, a very nutritious food for weaning babies, can grow. Family support groups are created on a ward level by local people, who are pivotal in ensuring the day-to-day success of the programme.

*See References, page 58.*

pregnant women. Other challenges in health care provision remain, however. Immunization levels, as measured by the share of infants receiving three doses of diphtheria, pertussis and tetanus vaccines (DPT3), are inadequate, with 19 per cent of infants missing out in 2006. Environmental health facilities are still limited, with more than 50 per cent of the population not using improved

drinking-water sources and 28 per cent lacking access to adequate sanitation facilities in 2004, the latest year for which firm estimates are available.

With a population approaching half a million inhabitants, the **Solomon Islands** is the third largest country in the subregion. The country has made moderate progress in reducing child deaths, with a 40 per cent reduction in its under-five mortality rate between 1990 and 2006. However, this has only managed to lower the rate to 73 per 1,000 live births, a rate similar to that of Papua New Guinea. A contraction in per capita GDP in the 1990–2006 period has contributed to rising poverty, while 70 per cent of the population do not have access to adequate sanitation. Access to improved drinking water sources, at 70 per cent of the population, is better than in Fiji and Papua New Guinea, but disparities in environmental health are marked between rural and urban areas. Immunization levels exceed 80 per cent in all of the major vaccines, but are far below levels of other countries in the Asia-Pacific region.



Vanuatu: A health worker immunizes a child at a mobile health clinic.

## Climate change and its potential effect on the Pacific and other small island developing states

A recent study by the World Health Organization estimated that climate change directly or indirectly contributes to about 150,000 deaths annually in the world, with a disproportionately large impact on Africa, Asia and the Pacific. Climate variability and change cause death and disease through natural disasters, such as heat waves, floods and droughts. Increases in extreme weather events or natural disasters can affect health through injury, undernutrition or impoverishment.

In addition, many widespread diseases are highly sensitive to changing temperatures and precipitation. These include common vector-borne diseases such as malaria and dengue as well as other

major killers such as undernutrition and diarrhoeal diseases. A recent report of the Intergovernmental Panel on Climate Change highlighted a wide range of implications for human health. Evidence is growing that climate change is contributing to the burden of disease. According to the World Health Organization, in 2000, climate change was estimated to be responsible for approximately 2.4 per cent of worldwide diarrhoeal diseases and 6 per cent of malaria in some middle-income countries – illnesses that disproportionately affect young children in developing countries.

The impacts of climate on human health are not evenly distributed around the world. Developing country populations, particularly in small island developing states such as those of the Pacific, in arid and high mountain zones and in densely populated coastal areas are considered to be particularly vulnerable. There is a pressing

need to protect the inhabitants of small island developing states from the adverse consequences of climate change, which has the potential to make some atoll islands such as Kiribati and Tuvalu in the Pacific and Maldives in South Asia uninhabitable. Changes are caused by several factors:

- *Precipitation* – causing drought, which affects drinking water directly and food security through disrupted farming.
- *Sea surface temperatures* – generating coral bleaching, which affects artisan fisheries and reduces storm surge protection.
- *Extreme events* – affecting infrastructure and agriculture and causing salt water intrusion into the freshwater lens.

*See References, page 58.*

## The challenge for the Pacific

The Pacific subregion has stalled in its efforts to improve child survival, and the five countries with under-five mortality rates in excess of 40 per 1,000 live births will need to significantly accelerate progress in the remaining years to 2015. Papua New Guinea in particular faces multiple challenges to expanding primary health-care services to its geographically disparate population, especially to the rural areas where the vast majority of the population live. The diversity of languages and cultures makes administering national programmes – whether for education or primary health care – especially difficult.

Increasing the resources assigned to primary health care will need to

form a central part of strategies to reduce child mortality in Papua New Guinea and other countries, such as Fiji and the Solomon Islands. Given the geographical characteristics of the Pacific islands, local and community partnerships in health care will also be critical to enhancing service provision and to strengthening linkages between households and communities and facility-based care and outreach services. Special attention must be paid to raising essential environmental health services from very low levels in rural areas, and to extending immunization to the 20 per cent of infants that are currently missing out on such essential vaccines as three doses of diphtheria, pertussis and tetanus vaccine.

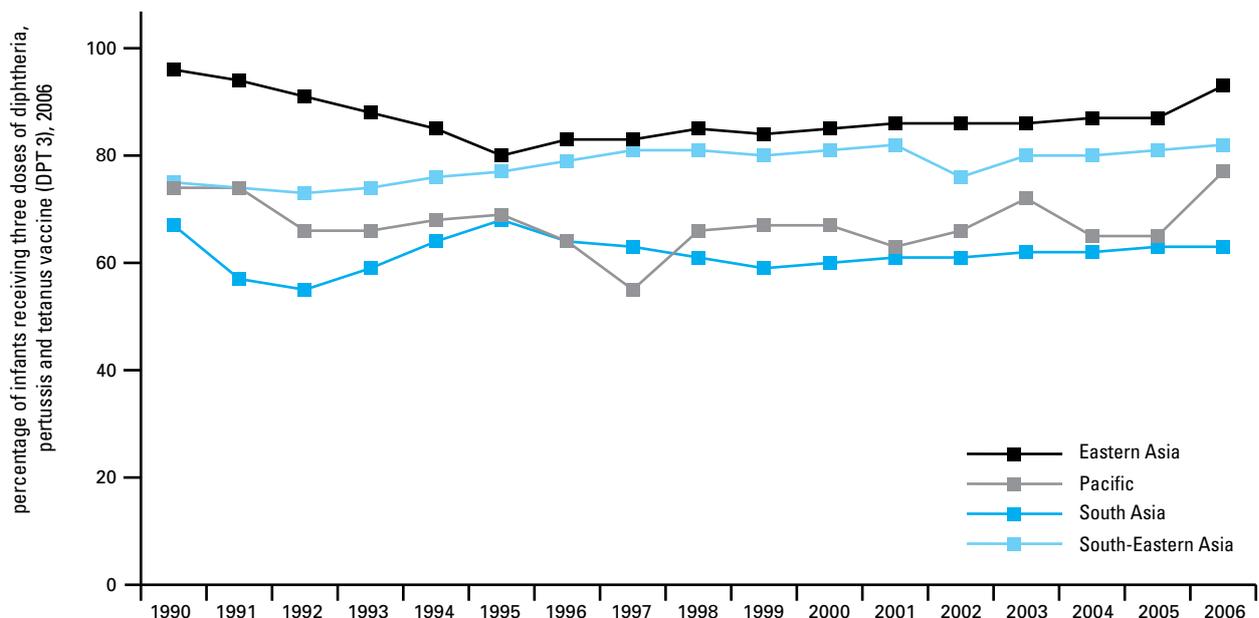
Increasing urbanization and internal migration will become a greater challenge for the future in Papua New Guinea and other islands, as people in

the more isolated rural villages begin to migrate closer to urban areas or into peri-urban squatter camps.<sup>5</sup> Addressing gender-based violence, discrimination and inequities is imperative to underpinning future gains in maternal and child health. Raising education from low levels – only 68 per cent of Papua New Guinea's primary school entrants complete grade 5, according to administrative data from the period 2000–2005 – is also necessary to improve literacy and life skills in that country and in the Solomon Islands, whose net primary attendance rates for boys and girls are below 70 per cent.

On a broader level, economic development, which is also essential to enhancing living standards in the Pacific, will require these countries to address issues of land ownership, public infrastructure, human resource development and good governance.

Figure 5.3

### In the Pacific, more than 1 in 5 infants are missing out on annual routine immunization coverage\*



\* Annual routine immunization coverage is measured by the percentage of children receiving three doses of diphtheria, pertussis and tetanus vaccine (DPT3).

Source: UNICEF global databases, 2007.



Bangladesh: Children learn how to check the nails of their peers as part of a hygiene behaviour practice.

## 6 Uniting for child survival in Asia-Pacific

The subregional analysis of Asia-Pacific undertaken in the preceding chapters has revealed some startling differences in progress towards Millennium Development Goal 4 and other health-related MDGs. Eastern Asia and South-Eastern Asia are broadly on track to meeting MDG 4, although there are several countries in the latter area that will need to markedly expand primary health-care interventions in the coming years if they are to keep pace with the rest of the subregion. South Asia and the Pacific, meanwhile, are currently making insufficient progress towards MDG 4 and several other health-related MDGs; to meet the goal, they have the task of stepping up efforts significantly in the coming years.

The analysis has also revealed some clear similarities in the challenges that many of the countries of the region face in improving maternal and child health. Common impediments to better health outcomes include widespread gender discrimination and inequities, as well as disparities in primary health-care interventions across geographical locations, between rich and poor, and among ethnic and other social groups. Education, too, is a pressing issue in many of the region's countries, with advances in gender equality in primary education needing to be supported by improved attendance and completion of secondary schooling, an increase in literacy rates, the promotion of life skills,

and enhanced information on sexual and reproductive health.

Other obstacles to achieving the health-related MDGs common to almost all of Asia-Pacific's countries include the region's high exposure to natural disasters; difficulties in providing services to the region's still large rural population; strains on physical and environmental health infrastructure posed by rapid urbanization; shortages of skilled health personnel due in part to migration; and the need to strengthen public expenditure on health to alleviate the burden of health costs on the poor in particular.

While these challenges are pertinent to almost all Asia-Pacific's countries, it is

Figure 6.1

## Priority interventions for Asia-Pacific countries classified by progress on child survival

GROUP	COUNTRIES	INTERVENTIONS
Group 1: Low-performing countries	Afghanistan, Cambodia, Democratic People's Republic of Korea, India, Kiribati, Lao People's Democratic Republic, Marshall Islands, Myanmar, Pakistan, Papua New Guinea, Solomon Islands, Timor-Leste, Vanuatu	<ul style="list-style-type: none"> <li>• WHO-UNICEF Joint Regional Child Survival Strategy – Essential Package of Services</li> <li>• Focus on water and sanitation for prevention of communicable diseases</li> <li>• Deworming of all children under five years of age</li> <li>• Universal salt iodization</li> <li>• Focus on parenting and child care</li> <li>• Strengthening of birth spacing and prevention of adolescent pregnancies</li> </ul>
Group 2: Moderate-performing countries	Bangladesh, China, Fiji, Indonesia, Micronesia (Federated States of), Mongolia, Nauru, Philippines, Samoa, Sri Lanka, Tonga, Tuvalu, Viet Nam	<ul style="list-style-type: none"> <li>• WHO-UNICEF Joint Regional Child Survival Strategy – Essential Package of Services</li> <li>• Deworming services in schools and for children under five</li> <li>• Comprehensive perinatal and newborn care</li> <li>• Adolescent and reproductive health, including primary prevention of HIV transmission</li> <li>• Introduction of new or underused vaccines: rotavirus, conjugate pneumococcal vaccine, <i>Haemophilus influenzae</i> type b</li> <li>• Promotion of childhood safety</li> <li>• Use of developmental screening tools and timely response to developmental delays</li> </ul>
Group 3: High-performing countries	Brunei Darussalam, Cook Islands, Malaysia, Niue, Palau, Republic of Korea, Singapore, Thailand	<ul style="list-style-type: none"> <li>• WHO-UNICEF Joint Regional Child Survival Strategy – Essential Package of Services</li> <li>• Identification and targeting of underserved, unregistered populations</li> <li>• Emphasis on institutional deliveries for all pregnancies and comprehensive newborn care</li> <li>• Emphasis on developmental screening and timely response to childhood developmental delays</li> <li>• Promotion of childhood safety</li> <li>• Adolescent and reproductive health</li> </ul>

**Source:** Adapted from World Health Organization and United Nations Children's Fund, *WHO-UNICEF Regional Child Survival Strategy: Accelerated and sustained action towards MDG 4*, WHO/UNICEF, 2006, p. 24; and UNICEF East Asia and Pacific Regional Office, 'Strategy to Improve Child Survival, Growth and Development for the Most at-Risk', Working Paper, Bangkok, 2005, p. 14.

clear that some are doing far better than others in reducing child mortality and providing quality health-care services. Within each of the four subregions, there are countries that are performing well, some making moderate reductions and others struggling to lower child deaths. Consequently, in attempting to indicate the way forward for this kaleidoscopic region, it is logical to group countries by performance as opposed to geography. By grouping countries according to a combination of infant, child and maternal mortality rates, access to water and sanitation, and undernutrition, it becomes easier to formulate practical strategies and frameworks with broad applicability.

**Group 1** consists of countries with the weakest indicators in these categories, where infectious diseases and undernutrition remain prominent risks for mothers, newborns and children.

Most of these countries are making insufficient progress towards the health-related Millennium Development Goals at the national level, and also exhibit significant deficiencies in the provision of core primary health-care services. They also show broad disparities among different social, ethnic and geographical groups in service provision and health outcomes.

**Group 2** consists of countries that have made steady progress in reducing child deaths at the national level, but retain sizeable pockets of disparity. These countries are often in a transitional phase, with significant population groups still facing health and nutrition conditions similar to those of Group 1 countries, even as other groups are moving away from high rates of infectious diseases. Infant and neonatal deaths account for a higher share of

under-five deaths than in Group 1 countries.

**Group 3** includes countries that are on track to meet MDG 4, having either achieved low rates of child mortality or having made strong reductions since 1990. But pockets of disparity in child survival and access to essential services persist, and economic inequities between socioeconomic groups can be marked. High levels of quality primary-health-care services, such as institutional deliveries, skilled attendance at birth and immunization, have led to fewer infant and child deaths. As a result, neonatal deaths account for a large proportion of infant and child mortality in these countries. Another key challenge for these countries is addressing injuries, accidents, congenital and genetic abnormalities, and other non-infectious causes of childhood deaths.

Delineating countries by their progress in child survival and in providing essential primary health care to mothers and children allows those with higher rates of child mortality to learn from the successes of countries that have made greater advances, and to adapt those strategies to their own needs.

Figure 6.1 on page 49 lists the countries in each category with the proposed interventions required to accelerate progress at the national level and diminish inequities at the subnational level. An essential package of services appropriate for most of the region's countries is outlined in the joint WHO-UNICEF Regional Child Survival Strategy mentioned briefly in Chapter 1. This essential package represents priority actions likely to have the highest impact on child health in each of the three groups. The remaining interventions stated in the figure are more appropriate for adoption by individual countries, districts and communities.

For Group 1 and 2 countries, the priority interventions outlined in the joint regional strategy would ideally reach universal coverage. While striving to provide services to all children, Group 2 countries will need to target these interventions towards the most difficult-to-reach communities, those with high rates of maternal, newborn and child mortality, undernutrition and fertility, and poor access to clean water and adequate sanitation. Group 3 countries, which have achieved generally good coverage of health services, will need to give special emphasis to systematically identifying the remaining at-risk populations.

A brief review of the indicators for two countries in South-Eastern Asia, Cambodia and Indonesia, illustrates the health differences between Group 1 and Group 2 countries and the strategies



Thailand: A mother and child of the Moken ethnic minority.

most effective in addressing child mortality rates. Not only is Cambodia's under-five mortality rate more than twice that of Indonesia, its neonatal mortality rate is a much smaller proportion of overall child mortality, indicating that most of Cambodia's children die because of factors such as undernutrition, disease, and poor water and sanitation. This suggestion is confirmed, for example, by the fact that 77 per cent of Indonesians have access to safe water and 55 per cent have access to improved sanitation, while the corresponding figures are 41 per cent and 17 per cent, respectively, in Cambodia.

Overall, Indonesia's human development indicators show a country in transition from Group 1 to Group 2; at the same time, disturbing disparities exist among its population groups. Although the number of newborns delivered under the care of a doctor or trained midwife increased by two thirds between 1991 and 2003, babies of mothers who have no education are three times more likely

to be delivered at home than those of mothers who have secondary and higher educations. Differences extend geographically as well, with more than 80 per cent of children in the provinces of Bali and Yogyakarta having received all their vaccinations in 2002–2003, compared to less than 40 per cent of children in poorer and more remote provinces such as Banten, North Sumatra and West Kalimantan.

Addressing environmental safety in the context of child survival is a good example of the way a country's needs might change as it transitions from Group 1 into Group 2. Environmental safety – for example, cutting

down on indoor pollution caused by cooking fires and tobacco smoke, or addressing the problem of industrial and agricultural pollution – can be folded into basic water and sanitation programmes in Group 1 countries. But for Group 2 countries, as resources become increasingly available, a more comprehensive programme may be required that includes public education, law and policy development, and the development of models that prioritize environmental changes designed to reduce injuries.<sup>1</sup>

Unregulated privatization of health systems, the institution of user fees, the rapid growth of public-private partnerships and the loss of public health workers to the private sphere are all pressing issues in Asia-Pacific and must be addressed in all three country groups, especially since these factors have a disproportionate effect on the poor. Until these issues are tackled, strong intersectoral partnerships will be needed to ensure equitable access to health care. Addressing wide-ranging though frequently subnational

challenges calls for innovative, creative and community-based programmes that often need careful planning as much as financing.

National governments and local and international NGOs must work in strategic partnerships to develop and sustain grassroots, community-based, horizontal programmes that package a number of interventions, preventions and treatments. The joint WHO-UNICEF Regional Child Survival Strategy is a good example of such an approach. It is an evidence-based approach to child health care that packages nutritional intervention with immunization against, and treatment for, deadly childhood diseases.

## Creating demand within a community

The list of interventions for all three groups of countries includes programmes that require local-level cooperation in addition to approaches that package a number of interventions together. The Asia-Pacific region requires more programmes based on community understanding and a participatory assessment of health-care needs and local desires. Without these crucial elements in place, health-care providers run the risk of offering services that are unsustainable or will never be used because recipients do not consider them necessary or helpful.

The importance of household and community participation in health care, nutrition, water and sanitation services, and improved hygiene practices goes beyond the direct benefits to community members as they engage in activities that can positively affect their health: It forms the heart of a rights-based approach to human progress. Participation is critical to enabling Asia-Pacific's people to achieve their full capabilities, exercise their rights to engage in public and community affairs, and foster equity, equality and empowerment – characteristics that are fundamental to sustainable human development and to the objectives of such compacts as the Universal Declaration of Human Rights, the Convention on the Rights of the Child and many others.

### Malaysia: Political will and long-term commitment

Sustained improvements in maternal, newborn and child health among the most vulnerable populations will require long-term commitments that go well beyond the political lifespan of many decision makers. Thailand and Malaysia rooted their impressive results in a step-by-step extension of health-system coverage and nutrition services over many years. They built a cadre of professional health workers, developed an accessible network of community-based primary care, improved the quality of care overall, and prioritized social safety nets that ensured equal access to health, nutrition and education.

As **Malaysia's** particular success suggests, a proactive stance towards health promotion – one that includes prevention as well as treatment – combined with national anti-poverty and pro-poor strategies can lead to dramatic and sustainable reductions in child and maternal mortality. Beginning in the 1980s,

the Malaysian Government focused on the poorest and most vulnerable, with nutrition education in both health clinics and the community, provision of nutrient and food supplements, and treatment of anaemia in women. Rural health services, especially those connected to maternal and child health, are provided for free or at very low cost. A single visit to a Malaysian clinic results in multiple services, whether the visit occurs in an urban hospital or a rural health centre outpost staffed by post-graduate nurses and midwives. A reliance on trained nurses in child health services has meant that the Government could sustain these programmes while expanding coverage and reaching the most underserved communities. In addition, many of these health centres feature separate blocks for women and children, allowing for a more child- and woman-friendly environment.

Additionally, Malaysia is enjoying the benefits of universal primary-health-care coverage combined with universal school enrolment for both boys and girls. This increase in education levels – and in particular female literacy – has resulted in later marriages and fewer and less closely

spaced births, which in turn has helped lowered child mortality rates.

Most significant, perhaps, was the Government's decision to restructure primary health care in Malaysia from a three-tier to a two-tier system, beginning in the late 1960s, a move that has brought child care much closer to the communities it aims to serve.

Midwife clinics, for example, were given more space to accommodate new child health services, and midwives were retrained to become community nurses. This led to a 'nurse conversion programme' that introduced a new category of auxiliary nurses who eventually replaced single-purpose midwives and assistant nurses at health centres. These community nurses are trained in basic child and maternal health care, ranging from newborn screening and care to immunization, growth monitoring and treatment of common childhood illnesses such as diarrhoea, one of the leading causes of child mortality in Malaysia up to the 1980s.

*See References, page 58.*

Among the most successful interventions are those that reach underserved populations through their own village systems, peer groups, culture and language, and that empower communities to make their own health-based decisions for their children through training, peer education and other methods of their choosing. Most importantly, health services must be reoriented to the special needs of underserved populations in order to increase demand. A good, evidence-based example of such an approach is the recently completed Revitalizing Community Demand for Immunization project in the Lao People's Democratic

Republic, which contributed to the doubling of immunization rates in less than one year of field interventions (see *Panel below*).

Better still are programmes that not only help people to understand and accept the services provided but to initiate change themselves. For example, a programme initiated by UNICEF, the World Bank, United Nations Development Programme and the Government of India in the 1980s to provide latrines to rural villages backfired when local people either ignored them or converted them into storage sheds. Research quickly showed that installing a brand new

latrine into a village without instilling an accompanying change in attitude or feeling of ownership by its recipients was a waste of time and money.

Subsequent initiatives improved success rates by training local educators to visit families multiple times, by shifting from subsidized facilities to low-cost latrines partly paid for by the community – a move that increases sense of ownership – and by taking women's specific sanitary needs into account. In the end, the most successful programmes were those that were requested by and supported by the community and that persuasively linked sanitation with broader health and economic concerns.<sup>2</sup>

### Creating demand for childhood immunization in the Lao People's Democratic Republic

A research project recently undertaken in the Lao People's Democratic Republic – Revitalizing Community Demand for Immunization – found that the country's vaccination rates vary markedly across population groups. Factors influencing access include economic status, ethnicity, literacy levels and health status. Poorer ethnic minority families who spoke a different language from district health staff were among the least immunized of all. The Lao Government, in partnership with UNICEF, the Asian Development Bank and GlaxoSmithKline Biologicals, supported the project, a community-based trial that used a child-centred, rights-based approach and lasted from September 2006 to December 2007.

The project aimed to create demand for immunization in underserved areas in addition to mobilizing other sectors to advocate and communicate about immunization. Researchers found that many parents worried about the side effects of immunization,

such as fever, swelling and pain, and assumed that caring for their children after immunization would keep them from working in the rice fields. Parents also did not recognize the need for immunization itself. Immunization cards were not in their language, and immunization occurred during the peak agricultural production period of April to September. Parents also noted that immunization teams arrived with little notice and stayed only briefly in their villages, communicating little information about immunization and child health.

Health-service providers, for their part, said they received little support, training and recognition for their work and stated that they perceived ethnic minority villagers especially to have little interest in learning more about immunization. Indeed, from the outset of the project, there was a widely held belief that the poor and ethnically marginalized, or those living in remote areas, would not accept immunization services. However, the project proved the contrary.

Based on the results of research, the project began a series of initiatives that involved multiple levels of society. These included educating village leaders on the importance of immunization through radio broadcasts in their language; using

well-organized peer-education and small group learning forums for parents – again conducted in their own language; and providing additional support and motivation to health-service providers through training in social marketing (such as advertisements posted throughout villages, coordinating immunization outreach with the agricultural calendar and distributing branded jackets and bumper stickers to health workers).

Along with the radio programming, a competition set up between district and village leaders to achieve 85 per cent coverage was especially effective. For health-service workers, the 'immunization-brand' jackets proved to be a strong motivator. Low-cost advertising, permanent notice of services at a fixed health centre, and offering reliable and quality services were especially successful in creating demand among parents. As a result, the four pilot districts saw their average coverage rates for three doses of combined diphtheria, pertussis and tetanus vaccine – the benchmark indicator for annual routine immunization coverage – almost double from 2006 to 2007, and in the case of one district, nearly triple.

*See References, page 58.*

## Health financing and an equity approach to health-care provision

Many countries in Asia-Pacific, including Bangladesh and Sri Lanka in South Asia, and Malaysia, Thailand and Viet Nam in South-Eastern Asia, have introduced innovative strategies for child health and nutrition on a primary-care level that includes neonatal care, basic immunization and prompt treatment of diarrhoea and respiratory infections. They have also followed through on policies that support good food and diet, breastfeeding, vitamin A supplementation, caring parenting and good hygiene. Additionally, these national governments set aside substantial amounts of their budgets for health and social welfare; for example, by 2005, 27 per cent of Viet Nam's total government expenditure was invested in social welfare; 23 per cent of Malaysia's central government expenditure is set aside for education and 6 per cent for health.<sup>3</sup>

Child-centred investments are most cost-effective when they are poverty-targeted and contribute to equitable and sustained economic growth, because the vast majority of under-five deaths occur among the poor.<sup>4</sup> This is an especially important consideration in South Asia, South-Eastern Asia and Eastern Asia, where rapid economic gains in some countries have rarely translated into an equitable distribution of resources and access to services. Evidence has shown that, in low- and middle-income countries, a decrease in the under-five child mortality rate does not necessarily result in reduced disparities in mortality rates between the richest and poorest 20 per cent.<sup>5</sup>

To be effective, child and maternal survival programmes must also reach particular populations that are at risk because of poverty or ethnicity, religion, geographical remoteness or gender, among other factors. Gender-based

### India: A private-public approach to addressing inequities

A successful and innovative government programme to reduce maternal and infant mortality rates in India's northern province of Gujarat has been taking an intersectoral private-public approach that addresses the geographical and social inequities faced by the region's scheduled castes and tribes. A major reason behind high maternal mortality rates in Gujarat, one of the most economically developed states in India, is the large percentage of home deliveries: 43 per cent of births in the province are conducted by traditional birth attendants with no access to obstetric care.

In 2005, the Gujarat provincial government launched Chiranjeevi Yojna, or A Scheme for a Long and Healthy Life, in five districts. This government-financed programme offers free maternity services at private hospitals for pregnant women living below the poverty line, particularly members of the scheduled castes and tribes. As a result, these women do not have to travel long distances to public facilities or resort to home deliveries

with unprofessional attendants; even if they do travel, their travel expenses are reimbursed. Already, there has been a surge in demand for deliveries at private hospitals in far-flung rural areas, and so far, 95,000 deliveries have been conducted under the scheme. Because of its success, the programme has now been expanded to all 25 districts of Gujarat.

*See References, page 58.*



India: A mother with her newborn, safely delivered under the Chiranjeevi Yojna.

approaches are of particular importance because a significant impact on child mortality rates can be achieved by concentrating on interventions that reach women, especially adolescent girls before marriage and those already actively engaged in childbearing and child rearing.

Health is a fundamental human and child right. As such, health-care facilities, commodities and services should be affordable to all. Payment for health-care services should be based on the principle of equity, ensuring that poorer households are not

disproportionately burdened with health expenses in comparison to wealthier households. In addition to increasing budgetary spending for health by at least 2 per cent of their gross national product by 2015, governments have been called upon to introduce health-care financing mechanisms that aim to reduce financial barriers to health care, such as tax-based systems, social health insurance or private health insurance that includes a component of community-based health insurance. Guaranteed health services must include a package of essential child survival interventions.

In many countries in the region, user fees and the dismantling of government-run health care are building a substantial barrier between economically and socially marginalized people and access to adequate primary health care. By eliminating the equity gap, countries in Eastern Asia, South-Eastern Asia and the Pacific could reduce their under-five mortality rates by more than 50 per cent, saving the lives of between 500,000 and 850,000 children a year.

Although decentralization can help accelerate progress on child survival, central governments cannot always leave budget decisions and administration to the state or provincial level while taking a more supervisory role. Households must be able to afford access to quality health-care services, taking into account their socio-economic level. This may be ensured through transport subsidies

and the elimination or reduction of user fees, for at least the poorest, and through government partnerships with private health entities. Additionally, scaling up community health-worker programmes is an essential component that requires financial support for salaries, training, and opportunities for advancement and strategic deployment of these workers. The local primary health-care system requires sufficient resources, organization and supervision in order to deliver services with consistent – and sustainable – quality.

Looking forward, it is vital that the economic growth occurring in most of the region's countries be channelled into social development, particularly in terms of strengthening the region's delivery of health services and information about nutrition, basic sanitary practices and skilled birth

attendance. This will require increased investment on a national level; the region's countries currently set aside too little of their gross national income for public health expenditures – an average of 1.1 per cent of GDP in South Asia and 1.9 per cent in the rest of Asia-Pacific, well below the world average of 5.1 per cent.

Jump-starting reductions in maternal and neonatal mortality rates does not, however, require huge financial investments, lavish tertiary institutions or expensive equipment. By providing certified village midwives to assist with pregnancy and birth in villages during the 1960s, for example, Thailand was able to halve its maternal mortality rate in seven years from 200 per 100,000 live births in 1974 to 100 per 100,000 live births in 1981, and then halve it again by 1985.<sup>6</sup>

## Future challenges for Asia-Pacific

Beginning in 2007, the world's urban population became larger than its rural population. Much of this rapid urbanization is happening in the Asia-Pacific region, as peri-urban communities, or slums, expand in many countries. Today, the urban populations of Asia-Pacific have much better access to safe water and adequate sanitation than rural dwellers; tomorrow that scenario could change. Already, 10 per cent of countries worldwide – including China, Indonesia, Maldives, the Marshall Islands, Myanmar and the Philippines – have seen their urban drinking-water coverage decline by two percentage points since 1990.

As urbanization continues, unabated, driven in part by rapid migration towards urban centres, the risk of epidemic respiratory and diarrhoeal diseases, among other threats, will increase due to overcrowding and lack of sanitary facilities, safe water and basic waste disposal.

Global climate change and environmental degradation are already having had a marked impact on the economies, livelihoods, health and well-being of families in Asia-Pacific, with scant chance of relief during the near future. Warmer climates have led to the spread of disease vectors such as malaria-carrying mosquitoes.

The World Health Organization estimates that climate change is responsible for approximately 2.4 per cent of worldwide diarrhoea and 6 per cent of malaria in some middle-income countries, many of them in this region. These diseases have a disproportionate effect on young children in the developing countries of Asia-Pacific, which are often located in warmer climates and are dependent on an agricultural economy.

Climate change has increased the frequency of extreme events such as drought – which diminishes water supplies for drinking, hygiene and the watering of crops – and coastal flooding, which has a similar effect on food security and safe water. Coastal areas in Asia as well as the

small developing island nations of the Pacific are especially vulnerable to rising sea levels and, in the mega deltas of Asia, flooding from rivers.

As for environmental degradation, contamination and an overall decline in fresh water because of industrial and agricultural needs are increasing problems for many countries in Asia-Pacific. The widespread loss of trees has resulted in soil erosion, avalanches and desertification. Asia's economic boom has resulted in precarious health conditions for many of its children as a result of emissions from factories and vehicles.

At current rates, it is estimated that there could be 100 million more people with asthma – the most common chronic childhood disease in the world – by 2025, with Thailand and the Philippines currently showing the highest prevalence in the Asia-Pacific region, followed by Singapore, Malaysia, Pakistan and the Republic of Korea, in that order. China has one of the highest rates of fatal asthma cases in the world.

*See References, page 58.*

## Strengthening data collection and monitoring

The emphasis on reaching marginalized populations points to the necessity of collecting reliable subnational data, a vital tool in identifying vulnerable populations. As countries in the region show increasing levels of economic and health inequality, disaggregated data are crucial for identifying the geographic and socio-economic communities left behind as child mortality rates are reduced. Too often, national averages conceal the adverse health conditions disproportionately experienced by the poor, and a lack of reliable statistical data disaggregated by geography and socio-economic groupings makes analysis of the Asia-Pacific region difficult.

In such countries as the Lao People's Democratic Republic and Timor-Leste, for example, the maternal mortality ratio for specific populations could range from under 200 per 100,000 live births to as high as 1,200 per 100,000 live births, making it necessary to extrapolate more accurate figures by tallying the number of skilled birth attendants. But even the definition of 'skilled birth attendant' is not uniform across and within countries.<sup>7</sup> Data on HIV and AIDS are also incomplete, and determining the prevalence of HIV and AIDS presents one of the greatest challenges in data collection in Asia-Pacific. An epidemic has been considered a possibility for several years, but its likelihood in Asia-Pacific countries is difficult to predict, considering the sparse data available from many countries.<sup>8</sup>

### The way ahead

Where does the Asia-Pacific region find itself today, just past the midway point between the inauguration of the MDGs in 2000 and their target date for fulfilment in 2015? On balance, two of its subregions – Eastern Asia and



Timor-Leste: A mother brings her infant to a health post for immunization.

South-Eastern Asia – are on track to meet MDG 4 and reduce child mortality by two thirds between 1990 and 2015. In the two remaining subregions – South Asia and the Pacific – 12 of 22 countries are on track. This is without doubt an extraordinary accomplishment, reflecting advances in maternal and child health during the past century and the commitment of both donors and national governments to unite to ensure that children survive and thrive.

Many of the region's countries have made great strides in promoting child survival, and a few have managed to boost survival rates to levels at or approaching those in industrialized countries. Eastern and South-Eastern Asia have increased child survival rates substantially since 1960, despite bouts of economic and political instability. This success provides hope that child survival will continue to improve at an even faster rate across the region, particularly if ways can be found to enhance access to quality care and nutrition for mothers, newborns and children, to address the problem of growing rates of inequity and to increase currently low government spending on – and donor contributions to – health. Additionally,

governments and aid organizations must focus on solving the region's pronounced gender bias, especially in South Asia.

Among the many initiatives, programmes and policies that have proliferated in the Asia-Pacific region since the first year of the new millennium, the opportunity to increase survival among children under five has never been better. What needs to be done to advance progress is clear. When it needs to be done and who needs to be involved are also clear. The need to be united – in both word and deed – to ensure the right of mothers, newborns and children to quality primary health care is perhaps clearest of all. At the midpoint between the inauguration of the Millennium Development Goals in 2000 and their target date for fulfilment in 2015, much has already been achieved. The basis for action – data, research, evaluation – is already well established. It is time to rally around the goals of maternal, newborn and child survival and health with renewed energy and sharper vision, and to fulfil the tenants of social justice by positioning these goals at the heart of the Asia-Pacific agenda.

## REFERENCES

### CHAPTER 1

- <sup>1</sup> Data derived from UNICEF global databases, 2007.
  - <sup>2</sup> United Nations, 'The Millennium Development Goals Report 2007', UN, New York, 2007, p. 8.
  - <sup>3</sup> Black, Robert E., et al., 'Maternal and Child Undernutrition: Global and regional exposures and health consequences', *The Lancet*, vol. 371, 19 January 2008, pp. 243–260.
  - <sup>4</sup> World Health Organization, United Nations Children's Fund and United Nations Population Fund, *Maternal Mortality in 2000: Estimates developed by WHO, UNICEF and UNFPA*, WHO, Geneva, 2004, pp. 27–32.
  - <sup>5</sup> Save the Children, *State of the World's Mothers 2006: Saving the lives of mothers and newborns*, Westport, Connecticut, May 2006, pp. 23–24.
  - <sup>6</sup> UNICEF East Asia and Pacific Office, 'Strategy to Reduce Maternal Deaths', *Health and Nutrition Working Paper*, UNICEF EAPRO, Bangkok, 2003, p. 5.
  - <sup>7</sup> Joint United Nations Programme on HIV/AIDS, *2007 UNAIDS Epidemic Update*, UNAIDS, Geneva, November 2007, p. 21.
  - <sup>8</sup> Joint United Nations Programme on HIV/AIDS, *Asia: 2007 AIDS epidemic update Regional Summary*, Geneva, March 2008, p. 1.
  - <sup>9</sup> United Nations Children's Fund, *Progress for Children: A report card on water and sanitation, Number 5*, UNICEF, New York, September 2006, pp. 2–3.
  - <sup>10</sup> Population Information Program of the Johns Hopkins Bloomberg School of Public Health, 'Birth Spacing: Three to five saves lives', *Populations Reports*, Series L, Number 13, Johns Hopkins, Baltimore, 2002, p. 1.
  - <sup>11</sup> Moser, Kath A., David A. Leon and Davidson R. Gwatkin, 'How Does Progress towards the Child Mortality Millennium Development Goal Affect inequalities between the Poorest and Least Poor?: Analysis of Demographic and Health Survey data', *British Medical Journal*, vol. 331, 11 November 2005, p. 1181.
  - <sup>12</sup> World Health Organization and United Nations Children's Fund East Asia and Pacific Office, 'Regional Child Survival Strategy: Accelerated and sustained action towards MDG 4', WHO/UNICEF EAPRO, Bangkok, 2006, p. 21.
  - <sup>13</sup> Allen, Bryant, et al., 'Poor Rural Places in Papua New Guinea', *Asia Pacific Viewpoint*, vol. 46, no. 2, August 2005, pp. 212–213.
  - <sup>14</sup> The Basic Education Coalition, *Teach a Child, Transform a Nation*, Basic Education Coalition, Washington, D.C., 2004, p. 8.
  - <sup>15</sup> Data derived from United Nations Children's Fund, *The State of the World's Children 2008: Child survival*, UNICEF, New York, January 2008, Statistical Tables.
  - <sup>16</sup> United Nations Children's Fund, *The State of the World's Children 2006: Excluded and invisible*, UNICEF, New York, December 2005, p. 18.
  - <sup>17</sup> Asian Development Bank, 'Inequality in Asia: Key indicators 2007 special chapter highlights', ADB, Manila, 2007, p. 8; and Asian Development Bank, 'Key Indicators 2007', Manila, 2007, pp. 1, 32, 76, 87, 119.
  - <sup>18</sup> Victora, Cesar G., et al., 'Applying an Equity Lens to Child Health and Mortality: More of the same is not enough', *The Lancet*, vol. 362, 19 July 2003, p. 234.
  - <sup>19</sup> Bryce, Jennifer, et al., 'Reducing Child Mortality: Can public health deliver?', *The Lancet*, vol. 362, 12 July 2003, p. 160.
- Organization and United Nations Children's Fund, 'Global Action Plan for the Prevention and Control of Pneumonia', WHO/UNICEF, France, March 2007, p. 1.

### CHAPTER 2

- <sup>1</sup> United Nations Children's Fund and Regional Office for South Asia, 'The Economic and Social Environment in South Asia 2006: Implications for children', UNICEF ROSA, Kathmandu, 2006, pp. 8–9.
- <sup>2</sup> Johns Hopkins University Bloomberg School of Public Health, and Indian Institute of Health Management Research, *Afghanistan Health Survey 2006*, forthcoming, p. xiii.
- <sup>3</sup> World Health Organization and United Nations Children's Fund, 'Regional Child Survival Strategy: Accelerated and sustained action towards MDG 4', WHO/UNICEF, Bangkok, 2006, p. 1.
- <sup>4</sup> Food and Agriculture Organization, *The State of Food and Agriculture: Food aid for food security?*, FAO, Rome, 2006, p. 83.
- <sup>5</sup> United Nations Children's Fund Regional Office for South Asia, *The Millennium Development Goals: Progress and challenges in South Asia 2006*, UNICEF ROSA, Kathmandu, 2006, p. 7.
- <sup>6</sup> International Institute for Population Sciences and Macro International, 'National Family Health Survey [NFHS-3] 2005–2006, India: Vol. I', Mumbai, September 2007, p. xxxviii.
- <sup>7</sup> United Nations Children's Fund, *The State of the World's Children 2008: Child survival*, UNICEF, New York, December 2007, p. 120.
- <sup>8</sup> United Nations Children's Fund, *Progress for Children: A World Fit for Children statistical review, Number 6*, UNICEF, New York, December 2007, p. 7.
- <sup>9</sup> United Nations Children's Fund, *Progress for Children: A report card on nutrition, Number 4*, UNICEF, New York, May 2006, p. 12.
- <sup>10</sup> World Bank, *Global Economic Prospects 2008: Technology diffusion in the developing world*, Washington, D.C., December 2007, p. 189.
- <sup>11</sup> Asian Development Bank, *Inequality in Asia: Key indicators 2007*, ADB, Manila, 2007, pp. 4–5.
- <sup>12</sup> International Institute for Population Sciences and Macro International,

### CHAPTER 1 PANELS

#### Newborn survival in Asia-Pacific

Lawn, Joy E., Simon Cousens and Jelka Zupan, '4 Million Neonatal Deaths: When? Where? Why?', *The Lancet*, vol. 365, no. 9462, 3 March 2005, p. 894; World Health Organization, United Nations Children's Fund and United Nations Population Fund, *Maternal Mortality in 2000: Estimates developed by WHO, UNICEF and UNFPA*, WHO, Geneva, 2004, p. 27; United Nations Children's Fund, *The State of the World's Children 2007: Women and Children – The double dividend of gender equality*, UNICEF, New York, December 2006, pp. 4–5.

#### Pneumonia: The forgotten killer of children in Asia-Pacific and the world

United Nations Children's Fund, *Progress for Children: A World Fit for Children statistical review, Number 6*, UNICEF, New York, December 2007, pp. 22–23; Mulholland, Kim, 'Childhood Pneumonia Mortality: A permanent global emergency', *The Lancet*, vol. 370, pp. 285–289; United Nations Children's Fund and World Health Organization, *Pneumonia: The forgotten killer of children*, UNICEF/WHO, New York, 2006, pp. 9–10, 24–25; World Health

## REFERENCES

'National Family Health Survey [NFHS-3] 2005–2006, India: vol.I', Mumbai, September 2007, p. xxxvi.

- <sup>13</sup> United Nations Economic and Social Commission for Asia and the Pacific, Asian Development Bank and United Nations Development Programme, *The Millennium Development Goals: Progress in Asia and the Pacific 2007*, ESCAP/ADB/UNDP, Bangkok, October 2007, p. 17–18.

### CHAPTER 2 PANELS

#### Lady Health Workers and their cultural acceptability in traditional societies

United Nations Children's Fund, *The State of the World's Children 2007: Women and Children – The double dividend of gender equality*, UNICEF, New York, 2007; Garwood, Paul, 'Pakistan, Afghanistan look to women to improve health care', *Bulletin of the World Health Organization*, vol. 84, number 11, November 2006, pp. 845–847.

#### India: Taking a closer look at disparities in child survival

United Nations Children's Fund, *Progress for Children: A World Fit for Children statistical review, Number 6*, UNICEF, New York, December 2007, pp. 50–67; World Health Organization India: National Health System Profile 2006, pp.11, 32, 34; International Institute for Population Sciences and Macro International, 'National Family Health Survey [NFHS-3] 2005–2006, India: Vol.I', Mumbai, September 2007. Namala, Annie, 'Children and Caste-Based Discrimination: Policy concerns', United Nations Children's Fund, Research Institute for Social Development and the Indian Institute of Dalit Studies, Delhi, Kathmandu, May 2006.

#### Sri Lanka: A long-term commitment to health and education

United Nations Children's Fund, *The State of the World's Children 2007: Women and Children – The double dividend of gender equality*, UNICEF, New York, 2007; Bhutta, Zulfiqar, Samiran Nundy and Kamran Abbasi, 'Is There Hope for South Asia?', *British Medical Journal*, vol. 328, 3 April 2004, pp. 777–778; Houweling, Tanja A. J., et al., 'The Social Determinants of Childhood Mortality in Sri Lanka: Time-trends and comparisons across South Asia', *Indian Journal of Medical Research in Health*, October 2007, pp. 239, 247.

#### Integrated Management of Neonatal and Childhood Illnesses in India

United Nations Children's Fund, *The State of the World's Children 2007: Women and Children – The double dividend of gender equality*, UNICEF, New York, 2007; United

Nations Children's Fund, 'Integrated Management of Neonatal and Childhood Illnesses: Making change possible for India's newborns', Working Paper, January 2007.

### CHAPTER 3

- <sup>1</sup> United Nations, *The Millennium Development Goals Report 2007*, UN, New York, 2007, p. 8.
- <sup>2</sup> Ministry of Health of China, United Nations Children's Fund, World Health Organization, United Nations Population Fund, *Joint Review of Maternal and Child Survival Strategies in China*, Ministry of Health/UNICEF/WHO/UNPFA, Beijing, December 2006, p. 55.
- <sup>3</sup> United Nations Economic and Social Commission for Asia and the Pacific, Asian Development Bank and United Nations Development Programme, *The Millennium Development Goals: Progress in Asia and the Pacific 2007*, ESCAP/ADB/UNDP, Bangkok, October 2007, p. 22.
- <sup>4</sup> Grigoriou, Christopher, Patrick Guillaumont and Wenyan Yang, 'Child Mortality under Chinese Reforms', *China Economic Review*, vol. 16, no. 4, 2 March 2005, p. 451.
- <sup>5</sup> Global Health Watch, 'Global Health Watch 2005–2006: An alternative world health report', Zed Books Ltd., London, p. 19.
- <sup>6</sup> United Nations Development Programme, *Human Development Report 2007–2008: Fighting climate change – Human solidarity in a divided world*, UNDP, New York, 2007, p. 239.

### CHAPTER 3 PANEL

**Mongolia: Involving the community**  
UNICEF Mongolia reporting.

### CHAPTER 4

- <sup>1</sup> Data derived from United Nations Children's Fund, *The State of the World's Children 2008: Child survival*, UNICEF, New York, January 2008.
- <sup>2</sup> World Health Organization Western Pacific Region and United Nations Children's Fund East Asia and Pacific Regional Office, 'Regional Child Survival Strategy: Accelerated and sustained action towards MDG 4', WHO Western

Pacific Region/UNICEF EAPRO, Bangkok, 2007, p. 6.

- <sup>3</sup> World Health Organization, *World Health Statistics 2007*, WHO, Geneva, 2007, p. 22–30.
- <sup>4</sup> World Health Organization Western Pacific Region, 'Indonesia: National health system profile', WHO Western Pacific Region, Bangkok, 2006, p. 29.
- <sup>5</sup> World Health Organization, *World Health Statistics 2007*, WHO, Geneva, 2007, pp. 74–76.
- <sup>6</sup> Moser, Kath A., David A. Leon and Davidson R. Gwatkin, 'How Does Progress towards the Child Mortality Millennium Development Goal Affect Inequalities between the Poorest and Least Poor? Analysis of Demographic and Health Survey data', *British Medical Journal*, vol. 331, 11 November 2005, pp. 1181–1182.
- <sup>7</sup> Economist Intelligence Unit, *Philippines Country Profile: Main Report*, EIU, London, September 2007; and Economist Intelligence Unit, *Viet Nam Country Profile: Main Report*, EIU, London, October 2007.
- <sup>8</sup> Joint United Nations Programme on HIV/AIDS, *2007 AIDS Epidemic Update*, UNAIDS, New York, November 2007, p. 21.
- <sup>9</sup> Asian Development Bank, *Inequality in Asia: Key indicators 2007*, Special Chapter Highlights, ADB, Manila, 2007, p. 8.
- <sup>10</sup> Victora, Cesar G., et al., 'Applying an Equity Lens to Child Health and Mortality: More of the same is not enough', *The Lancet*, vol. 362, 19 July 2003, p. 233–234.
- <sup>11</sup> World Health Organization, *World Health Statistics 2007*, WHO, Geneva, 2007, pp. 74–76.
- <sup>12</sup> United Nations Economic and Social Commission for Asia and the Pacific, *Statistical Yearbook for Asia and the Pacific 2007*, ESCAP, Bangkok, 2007, p. 51.
- <sup>13</sup> Nelson, Roxanne, 'The Nurse Poachers', *The Lancet*, vol. 364, no. 9447, 13 November 2004, pp. 1743–1744.

### CHAPTER 4 PANEL

**How Cambodian mothers embraced exclusive breastfeeding practices**  
UNICEF Cambodia reporting.

## REFERENCES

### CHAPTER 5

- 1 Joint United Nations Programme on HIV/AIDS, *2007 AIDS Epidemic Update: Oceania*, UNAIDS, Geneva, November 2007, p. 3.
- 2 World Health Organization Western Pacific Region, 'Papua New Guinea', WHO Country Health Information Profiles Report, December 2005, p. 255.
- 3 Pincock, Stephen, 'Papua New Guinea Struggles to Reverse Health Decline', *The Lancet*, vol. 368, no. 9530, 8 July 2006, p. 108.
- 4 Amnesty International, *Papua New Guinea, Violence against women – never inevitable, never acceptable!*, September 2006, pp. 3–4.
- 5 Rupali, P., et al., 'Prevention of Mother to Child Transmission of HIV Infection in Pacific Countries', *Internal Medicine Journal*, vol. 37, no. 4, April 2007, pp. 216–223.
- 6 World Health Organization Western Pacific Region, 'Country Health Information Profiles: Fiji', WHO Western Pacific Region, Bangkok, p. 69.
- 7 Pincock, Stephen, 'Papua New Guinea Struggles to Reverse Health Decline', *The Lancet*, vol. 368, no. 9530, 8 July 2006, p. 108.

### CHAPTER 5 PANELS

#### Papua New Guinea: Creating a home fit for children

United Nations Children's Fund, *A World Fit for Children + 5: Papua New Guinea*, UNICEF Pacific New Guinea, 2007, pp. 9, 12; United Nations Economic and Social Council, 'Draft Country Programme Document: Papua New Guinea', UN ECOSOC, New York, p. 9; UNICEF internal documents.

#### Climate change and its potential effect on the Pacific and other small island developing states

McCarty, James J. et al., *Climate Change 2001: Impacts, adaptation, and vulnerability*, Cambridge University Press, New York, 2001, pp. 393, 414; United Nations Children's Fund, *Climate Change and Children*, UNICEF, New York, 2007, p. 4; United Nations Framework Convention on Climate Change, *Vulnerability and*

*Adaptation to Climate Changes in Small Island Developing States*, background paper for the expert meeting on adaptation for small island developing states, 2007; Patz, Jonathan A., et al., 'Impact of regional climate change on human health', *Nature*, vol. 438, pp. 311–312.

### CHAPTER 6

- 1 United Nations Children's Fund, 'Strategy to Improve Child Survival, Growth and Development for the Most At-Risk', EAPRO Health and Nutrition working Paper, UNICEF, Bangkok, 2005, pp. 15, 22.
- 2 United Nations Children's Fund, 'Learning From Experience: Water and environmental sanitation in India', UNICEF, New York, 2002, pp. 8–12.
- 3 United Nations Children's Fund. *The State of the World's Children 2008*, UNICEF, New York, January 2008, Table 7, pp. 139, 141.
- 4 Bellagio Study Group on Child Survival, 'Child Survival V: Knowledge into action for child survival', *The Lancet*, vol. 362, 26 July 2003, p. 325.
- 5 Moser, Kath A., David A. Leon and Davidson R. Gwatkin, 'How Does Progress towards the Child Mortality Millennium Development Goal Affect Inequalities between the Poorest and Least Poor? Analysis of Demographic and Health Survey data', *British Medical Journal*, vol. 331, 11 November 2005, pp. 1181–1182.
- 6 United Nations Population Fund, *Maternal and Neonatal Health in East and South-East Asia*, UNFPA, Bangkok, 2006, p. 9.
- 7 Ibid, pp. 3–4.
- 8 Nepal, Binod, 'AIDS Denial in Asia: Dimensions and roots', *Health Policy*, 2 June 2007, p. 3.

### CHAPTER 6 PANELS

#### Malaysia: Political will and long-term commitment

United Nations Children's Fund, *The State of the World's Children 2008: Child survival*, UNICEF, New York, January 2008; UNICEF Malaysia reporting.

#### Creating demand for childhood immunization in the Lao People's Democratic Republic

Katz, Che, et al., 'Creating Demand for Childhood Immunisation in Lao People's Democratic Republic: The power of social marketing, innovation and knowledge networks', *Asian Development Bank*, draft document supplied by UNICEF Lao.

#### India: A private-public approach to addressing inequities

UNICEF India reporting.

#### Future risks in Asia-Pacific region

World Health Organization and United Nations Children's Fund, *Meeting the MDG Drinking Water and Sanitation Target: The urban and rural challenge of the decade*, WHO/UNICEF, Geneva, 2006, pp. 9, 15; United Nations Children's Fund, *Climate change and children*, UNICEF, New York, December 2007, pp. 4, 8, 10, 14; Intergovernmental Panel on Climate Change, 'Impacts, Adaptation and Vulnerability', Fourth Assessment Report, Working Group II, Summary for Policymakers, New York, April 2007, pp. 13, 15; Global Initiative for Asthma, 'Global Burden of Asthma', 2004, pp. 1, 9, 11, 60, 62–63, 67–68, 73.

## STATISTICS<sup>+</sup>

INDICATOR	SOUTH ASIA	EAST ASIA AND PACIFIC	EASTERN ASIA	SOUTH-EASTERN ASIA	THE PACIFIC	WORLD
<b>Demographic indicators</b>						
Total population (thousands), 2006	1,542,571	1,968,675	1,395,227	564,723	8,726	6,577,236
Population under 18 (thousands), 2006	612,647	566,804	366,554	196,310	3,940	2,212,024
Population under 5 (thousands), 2006	174,830	144,870	88,598	55,068	1,202	625,781
<b>Survival</b>						
Life expectancy at birth (2006)	64	72	–	–	–	68
Annual number of births (thousands), 2006	37,943	29,764	18,134	11,381	249	135,163
Annual number of under-five deaths (thousands), 2006	3,149	863	437	405	15	9,733
Neonatal (under 28 days), mortality rate per 1,000 live births (2000)	44	20	21	19	27	30
Infant (under 1), mortality rate per 1,000 live births (2006)	62	23	20	27	48	49
Under-5 mortality rate, per 1,000 live births (2006)	83	29	24	35	64	72
Under-5 mortality rate, average annual rate of reduction (1990–2006)	2.5	4.0	3.9	4.9	1.5	1.6
Maternal mortality ratio, per 100,000 live births (2005, adjusted)	500	150	50	300	410	400
<b>Health and nutrition</b>						
Percentage of infants with low birthweight (1990–2006*)	29	6	2	12	–	15
Percentage of under-5s who are moderately or severely underweight (2000–2006*)	42	14	7	26	–	25
Percentage of population using improved drinking-water sources (2004)	85	79	78	82	46	83
Urban	94	92	93	94	78	95
Rural	81	70	67	81	39	73
Percentage of population using adequate sanitation facilities (2004)	37	51	45	67	50	59
Urban	63	73	69	81	77	80
Rural	27	36	28	56	42	39
Percentage of 1-year-old children immunized (2006) against:						
Tuberculosis (BCG)	82	91	92	88	78	87
Diphtheria/pertussis/tetanus (DPT 1)	82	92	94	90	82	89
Diphtheria/pertussis/tetanus (DPT 3)	63	89	93	82	77	79
Polio (polio3)	66	89	94	82	78	80
Measles	65	89	93	82	71	80
Hepatitis B (hepB3)	25	86	91	78	74	60
<i>Haemophilus influenzae</i> type b (Hib3)	–	2	–	4	11	22
<b>Education</b>						
Percentage of primary school entrants reaching grade 5 (administrative data, 2000–2006*)	72	84**	–	83	73	78**
Net primary school attendance ratio (2000–2006*)			–	–	–	
Male	81	91	–	91	–	80
Female	79	92	–	92	–	78
Net secondary school attendance ratio (2000–2006*)			–	–	–	
Male	55	60**	–	60	–	50**
Female	50	63**	–	63	–	47**
Adult literacy rate (percentage, adults 15+, 2000–2006*)	58	91	91	89	61	78

## STATISTICS<sup>±</sup>

INDICATOR	SOUTH ASIA	EAST ASIA AND PACIFIC	EASTERN ASIA	SOUTH-EASTERN ASIA	THE PACIFIC	WORLD
<b>Economic indicators</b>						
Gross national income per capita (US\$, 2006)	777	2,371	2,557	1,896	1,154	7,406
GDP per capita average annual growth rate (%), 1990–2006	3.9	6.7	7.8	2.8	0.2	2.3
Percentage of population living on less than US\$1 a day (1995–2005*)	32	9	10	9	–	19
Percentage share of central government expenditure (1995–2005*) allocated to:						
Health	2	1	0	4	8	14
Education	3	7	5	15	21	5
Defence	14	11	12	10	5	11
Percentage share of household income (1995–2004*) received by:						
Lowest 40 %	19	17	21	15	12	20
Highest 20 %	46	46	39	49	57	42
<b>HIV/AIDS</b>						
Adult prevalence rate (15–49 years, end 2007)	–	–	–	–	–	0.8
Estimated number of people (all ages) living with HIV (thousands), 2007	–	–	–	–	–	33,200
Estimated number of children (0–14 years) living with HIV (thousands), 2007	130 <sup>±</sup>	50 <sup>±</sup>	–	–	–	2,100
Estimated number of children (0–17 years) orphaned by AIDS (thousands), 2005	–	–	–	–	–	15,200
<b>Child protection</b>						
Birth registration (percentage, 1999–2006 <sup>±</sup> )	36	72**	–	71	–	–
Urban	52	80**	–	79	–	–
Rural	30	67**	–	66	–	–
Child marriage (percentage, 1987–2006*)	45	19**	–	–	–	–
Urban	30	12**	–	–	–	–
Rural	53	25**	–	–	–	–
Child labour (5–14 years, percentage, 1999–2006*)	13	10**	–	–	–	–
Male	–	11**	–	–	–	–
Female	–	10**	–	–	–	–
<b>Women</b>						
Adult literacy parity rate (females as a percentage of males, 2000–2006*)	66	92	91	–	82	86
Antenatal care coverage (percentage, 2000–2006*)	65	89	90	87	–	75
Skilled attendant at delivery (percentage, 2000–2006*)	41	87	98	72	47	63
Institutional deliveries (percentage, 2000–2006*)	36	69	83	48	–	53
Lifetime risk of maternal death (2005), 1 in:	59	350	1,200	130	65	92

### Notes:

<sup>±</sup> Statistics for UNICEF standard regional classifications and notes on the data can be found in *The State of the World's Children 2008*, pp. 109–153.

\* Data refer to the most recent year available during the period specified.

\*\* Excludes China.

◇ The global and regional estimates for birth registration included in this table are based on the subset of countries for which data are available for the period 1999–2006. Global and regional estimates for a wider set of countries are available for the period 1997–2006 and can be found at [www.childinfo.org/areas/birth\\_registration](http://www.childinfo.org/areas/birth_registration).

\* Data on HIV and AIDS for 2007 are derived from the *2007 AIDS Epidemic Update*, released in November 2007 by the Joint United Nations Programme on HIV/AIDS. Those indicators that are reported here but do not have a corresponding figure in the *2007 AIDS Epidemic Update* refer to the year 2005 and correspond to figures published in UNICEF's *The State of the World's Children 2008*, p. 129.



**For every child**  
**Health, Education, Equality, Protection**  
**ADVANCE HUMANITY**

**UNICEF East Asia and the Pacific Regional Office**

P.O. Box 2-154  
19 Phra Alit Road  
Bangkok 10200, Thailand  
Telephone: 662-356-9499  
Email: [eapro@unicef.org](mailto:eapro@unicef.org)

**UNICEF South Asia Regional Office**

P.O. Box 5815  
Lekhnath Marg  
Kathmandu, Nepal  
Telephone: 977-1-441-7082  
Email: [rosa@unicef.org](mailto:rosa@unicef.org)

ISBN: 978-92-806-4249-0

© United Nations Children's Fund (UNICEF)  
May 2008