Progress towards Millennium Development Goals 4 and 5



Improving maternal, newborn and child survival across *Countdown* countries depends on each country's ability to reach women, newborns and children with effective interventions along the continuum of care. Reproductive, maternal, newborn and child health is inextricably interconnected: improving maternal health and nutrition will reduce newborn and young child deaths. In turn, reducing stunting, improving child health and lowering adolescent and total fertility rates will reduce the risk of a maternal death among the next generation of women.

Under-five mortality is declining! A huge reduction in global deaths among children under age 5 has been achieved, from more than 12 million in 1990 to 7.6 million in 2010, the latest year for which estimates are available.³ Countdown countries account for over 95% of these deaths. The decline has accelerated in the past decade—from 1.9% a year in the 1990s to 2.5% a year over 2000–10—showing that focused goals and attention make a difference. Despite the remarkable progress, much work remains. The majority of the 7.6 million unacceptable child deaths that occur each year could be prevented using effective and affordable interventions. Mortality is not being reduced uniformly, and reductions in neonatal mortality lag behind survival gains among older children. As a result, the share of neonatal deaths in all deaths among children under age 5 has increased from 36% to 40% over the past decade.⁴ Faster reductions in neonatal mortality are critical for achieving Millennium Development Goal 4. Lessons can be taken from Bangladesh, Nepal and Rwanda, Countdown countries that have reduced their neonatal mortality rate by more than 30% in the last decade.

Modelled estimates of maternal mortality for 2010 based on socioeconomic determinants⁵ show a substantial decline in maternal deaths over the last two decades. The number of women who die during pregnancy or childbirth has decreased

nearly 50% globally since 1990—from 543,000 deaths to around 287,000 in 2010.6 The majority of maternal deaths are concentrated in *Countdown* countries in Sub-Saharan Africa and South Asia, an indication of global disparities in women's access to needed obstetrical care and other services, including family planning and quality antenatal and postnatal care. Data on a woman's lifetime risk of a maternal death accentuate these disparities—for example, a woman in Chad has a 1 in 15 chance of dying from a maternal cause during her life time and a woman from Afghanistan has a 1 in 32 chance, compared with 1 in 3,800 for a woman in a developed country.

The maternal mortality ratio and lifetime risk of a maternal death are important measures of health system functionality. For every woman who dies due to a pregnancy or childbirth complication, approximately 20 others suffer injuries, infection and disabilities. The millions of women experiencing adverse pregnancy outcomes are a critical marker of the world's commitment to improving maternal health and achieving Millennium Development Goal 5.

Table 1 shows country specific progress towards Millennium Development Goals 4 and 5, including estimated under-five mortality rates and maternal mortality ratios for 1990, 2000 and 2010; the average annual rate of reduction for 1990–2010 for the two measures; and a summary assessment of progress. Criteria for judging which countries are on track to achieve Millennium Development Goal 4 were developed by the Inter-agency Reference Group on Child Mortality Estimation and include three categories (on track, insufficient progress and no progress); criteria for judging which countries are on track to achieve Millennium Development Goal 5 were developed by the Maternal Mortality Estimation Inter-agency Group and include four categories (on track, making progress, insufficient progress and no progress). See the footnote to table 1 for more details on these criteria.

Country progress towards Millennium Development Goals 4 and 5

	Under-five mortality rate				Maternal mortality ratio, modelled					
		aths per 1, live births		Average annual rate of reduction (%)	Assessment		hs per 100 live births		Average annual rate of reduction (%)	Assessment
Countries and territories	1990	2000	2010	1990-2010	of progress ^a	1990	2000	2010	1990-2010	of progress ^b
Afghanistan	209	151	149	1.7	Insufficient progress	1,300	1,000	460	5.1	Making progress
Angola	243	200	161	2.1	Insufficient progress	1,200	890	450	4.7	Making progress
Azerbaijan	93	67	46	3.5	Insufficient progress	56	65	43	1.3	Insufficient progress
Bangladesh	143	86	48	5.5	On track	800	400	240	5.9	On track
Benin	178	143	115	2.2	Insufficient progress	770	530	350	3.9	Making progress
Bolivia (Plurinational State of)	121	82	54	4.0	On track	450	280	190	4.1	Making progress
Botswana	59	96	48	1.0	Insufficient progress	140	350	160	-0.7	No progress
Brazil	59	36	19	5.7	On track	120	81	56	3.5	Making progress
Burkina Faso	205	191	176	8.0	No progress	700	450	300	4.1	Making progress
Burundi	183	164	142	1.3	Insufficient progress	1,100	1,000	800	1.5	Insufficient progress
Cambodia	121	103	51	4.3	On track	830	510	250	5.8	On track
Cameroon	137	148	136	0.0	No progress	670	730	690	-0.2	No progress
Central African Republic	165	176	159	0.2	No progress	930	1,000	890	0.2	Insufficient progress
Chad	207	190	173	0.9	No progress	920	1,100	1,100	-0.7	No progress
China	48	33	18	4.9	On track	120	61	37	5.9	On track
Comoros	125	104	86	1.9	Insufficient progress	440	340	280	2.2	Making progress
Congo	116	104	93	1.1	Insufficient progress	420	540	560	-1.5	No progress
Congo, Democratic Republic	181	181	170	0.3	No progress	930	770	540	2.7	Making progress
Côte d'Ivoire	151	148	123	1.0	Insufficient progress	710	590	400	2.8	Making progress
Djibouti	123	106	91	1.5	Insufficient progress	290	290	200	1.9	Insufficient progress
Egypt	94	47	22	7.3	On track	230	100	66	6.0	On track
Equatorial Guinea	190	152	121	2.3	Insufficient progress	1,200	450	240	7.9	On track
Eritrea	141	93	61	4.2	On track	880	390	240	6.3	On track
Ethiopia	184	141	106	2.8	Insufficient progress	950	700	350	4.9	Making progress
Gabon	93	88	74	1.1	Insufficient progress	270	270	230	0.8	Insufficient progress
Gambia	165	128	98	2.6	Insufficient progress	700	520	360	3.4	Making progress
Ghana	122	99	74	2.5	Insufficient progress	580	550	350	2.6	Making progress
Guatemala	78	49	32	4.5	On track	160	130	120	1.5	Insufficient progress
Guinea	229	175	130	2.8	Insufficient progress	1,200	970	610	3.4	Making progress
Guinea-Bissau	210	177	150	1.7	Insufficient progress	1,100	970	790	1.7	Insufficient progress
Haiti	151	109	165	-0.4	No progress	620	460	350	2.7	Making progress
India	115	86	63	3.0	Insufficient progress	600	390	200	5.2	Making progress
Indonesia	85	54	35	4.4	On track	600	340	220	4.9	Making progress
Iraq	46	43	39	0.8	On track	89	78	63	1.7	Insufficient progress
Kenya	99	111	85	0.8	No progress	400	490	360	0.5	Insufficient progress
Korea, Democratic People's Republic	45	58	33	1.6	On track	97	120	81	0.9	Insufficient progress
Kyrgyzstan	72	52	38	3.2	On track	73	82	71	0.2	Insufficient progress
Lao People's Democratic Republic	145	88	54	4.9	On track	1,600	870	470	5.9	On track
Lesotho	89	127	85	0.2	No progress	520	690	620	-0.9	No progress
Liberia	227	169	103	4.0	On track	1,200	1,300	770	2.4	Making progress
Madagascar	159	102	62	4.0	On track	640	400	240	4.7	Making progress
Malawi	222	167	92	4.7	On track		840	460	4.7	
Mali	255	213	178	1.8		1,100	740	540	3.5	Making progress
					Insufficient progress	1,100				Making progress
Mauritania	124	116	111	0.6	No progress	760	630	510	2.0	Making progress
Mexico	49	29	17	5.3	On track	92	82 170	50	3.0	Making progress
Morocco	86	55 177	36	4.4	On track	300	170	100	5.1	Making progress
Mozambique	219	177	135	2.4	Insufficient progress	910	710	490	3.1	Making progress
Myanmar	112	87	66	2.6	Insufficient progress	520	300	200	4.8	Making progress
Nepal	141	84	50	5.2	On track	770	360	170	7.3	On track

(continued)

TABLE 1 (CONTINUED)

Country progress towards Millennium Development Goals 4 and 5

		Under-five mortality rate				Maternal mortality ratio, modelled				
		Deaths per 1,000 live births		Average annual rate of reduction (%) Assessment		Deaths per 100,000 live births			Average annual rate of reduction (%)	Assessment
Countries and territories	1990	2000	2010	1990-2010	of progress ^a	1990	2000	2010	1990-2010	of progress ^b
Niger	311	218	143	3.9	Insufficient progress	1,200	870	590	3.6	Making progress
Nigeria	213	186	143	2.0	Insufficient progress	1,100	970	630	2.6	Making progress
Pakistan	124	101	87	1.8	Insufficient progress	490	380	260	3.0	Making progress
Papua New Guinea	90	74	61	1.9	Insufficient progress	390	310	230	2.6	Making progress
Peru	78	41	19	7.1	On track	200	120	67	5.2	Making progress
Philippines	59	40	29	3.6	On track	170	120	99	2.8	Making progress
Rwanda	163	177	91	2.9	Insufficient progress	910	840	340	4.9	Making progress
São Tomé and Príncipe	94	87	80	0.8	No progress	150	110	70	3.8	Making progress
Senegal	139	119	75	3.1	Insufficient progress	670	500	370	3.0	Making progress
Sierra Leone	276	233	174	2.3	Insufficient progress	1,300	1,300	890	1.8	Insufficient progress
Solomon Islands	45	35	27	2.6	On track	150	120	93	2.2	Making progress
Somalia	180	180	180	0.0	No progress	890	1,000	1,000	-0.7	No progress
South Africa	60	78	57	0.3	No progress	250	330	300	-0.9	No progress
Sudan ^c	125	114	103	1.0	Insufficient progress	1,000	870	730	1.6	Insufficient progress
Swaziland	96	114	78	1.0	Insufficient progress	300	360	320	-0.3	No progress
Tajikistan	116	93	63	3.1	Insufficient progress	94	120	65	1.8	Insufficient progress
Tanzania, United Republic of	155	130	76	3.6	Insufficient progress	870	730	460	3.2	Making progress
Togo	147	124	103	1.8	Insufficient progress	620	440	300	3.5	Making progress
Turkmenistan	98	74	56	2.8	Insufficient progress	82	91	67	1.0	Insufficient progress
Uganda	175	144	99	2.8	Insufficient progress	600	530	310	3.2	Making progress
Uzbekistan	77	63	52	2.0	Insufficient progress	59	33	28	3.7	Making progress
Viet Nam	51	35	23	4.0	On track	240	100	59	6.9	On track
Yemen	128	100	77	2.5	Insufficient progress	610	380	200	5.3	Making progress
Zambia	183	157	111	2.5	Insufficient progress	470	540	440	0.4	Insufficient progress
Zimbabwe	78	115	80	-0.1	No progress	450	640	570	-1.2	No progress

- a. "On track" indicates that the under-five mortality rate for 2010 is less than 40 deaths per 1,000 live births or that it is 40 or more with an average annual rate of reduction of 4% or higher for 1990–2010; "insufficient progress" indicates that the under-five mortality rate for 2010 is 40 deaths per 1,000 live births or more with an average annual rate of reduction of 1%–3.9% for 1990–2010; "no progress" indicates that the under-five mortality rate for 2010 is 40 deaths per 1,000 live births or more with an average annual rate of reduction of less than 1% for 1990–2010.
- b. "On track" indicates that the average annual rate of reduction of the maternal mortality ratio for 1990–2010 is 5.5% or more; "making progress" indicates that the average annual rate of reduction of the maternal mortality ratio for 1990–2010 is between 2% and 5.5%; "insufficient progress" indicates that the average annual rate of reduction of the maternal mortality ratio for 1990–2010 is less than 2%; "no progress" indicates that the average annual rate of reduction of the maternal mortality ratio for 1990–2010 is negative—that is, that the maternal mortality ratio has increased. Countries with a maternal mortality ratio below 100 deaths per 100,000 live births in 1990 are not categorized by the Maternal Mortality Estimation Inter-agency Group. *Countdown to 2015* calculated the assessment of progress for *Countdown* countries that fall into this group.
- c. Data refer to Sudan as it was constituted in 2010, before South Sudan seceded. Data for South Sudan and Sudan as separate states are not available.

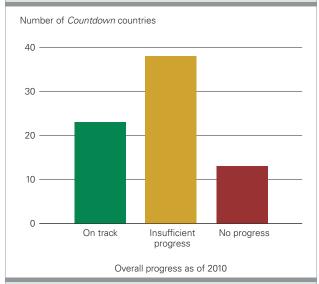
Source: Under-five mortality, UNICEF, WHO, World Bank and UNDESA 2011; maternal mortality, WHO, UNICEF, UNFPA and World Bank 2012.

Of 74 *Countdown* countries with available data, 23 are on track to achieve Millennium Development Goal 4 (figure 3). Bangladesh, Brazil, Egypt and Peru reduced the under-five mortality rate 66% or more, and China, Lao People's Democratic Republic, Madagascar, Mexico and Nepal reduced it 60%–65%. But much remains to be done: 13 countries made no progress, and 38 made insufficient progress. Countries and their development partners must

continue prioritizing child survival efforts to maintain forward momentum beyond 2015 and to prevent reversals.

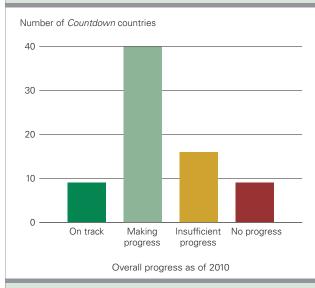
Only 9 of 74 *Countdown* countries with available data are on track to achieve Millennium Development Goal 5 (figure 4). Eight of them (Bangladesh, Cambodia, China, Egypt, Eritrea, Lao People's Democratic Republic, Nepal and Vietnam) are also on track to achieve Millennium

Progress towards Millennium Development Goal 4 in Countdown countries



Source: Countdown to 2015 analysis based on UNICEF, WHO, World Bank and UNDESA 2011.

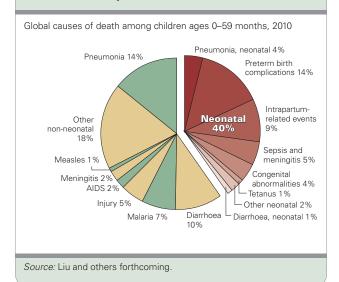
Progress towards Millennium Development Goal 5 in Countdown countries



 $\label{eq:source:countdown} \textit{Source: Countdown to 2015} \ \text{analysis based on WHO, UNICEF, UNFPA} \\ \text{and World Bank 2012.}$

Development Goal 4. Only three countries (Equatorial Guinea, Nepal and Vietnam) reduced the modelled maternal mortality ratio 75% or more from 1990 to 2010, though Cambodia, Bangladesh, Egypt, Eritrea and Lao People's Democratic Republic came close, reducing it 70%–74%.

Roughly 40% of child deaths occur during the neonatal period



Causes of child deaths

New analyses for 2010 show that 64% of child deaths are attributable to infectious diseases in newborns and children, and 40% occur during the neonatal period (figure 5). Undernutrition contributes to over a third of child deaths. The leading causes of neonatal deaths are complications of preterm birth (box 5), intrapartum-related events, and sepsis and meningitis; the leading causes of death among older children remain pneumonia, diarrhoea (box 6) and malaria (31%).

Causes of maternal deaths

Haemorrhage and hypertension together account for more than half of maternal deaths—deaths of women while pregnant or within 42 days of termination of pregnancy, regardless of the site or duration of pregnancy, from any cause related to or aggravated by the pregnancy or its managementand sepsis and unsafe abortion (box 7) combined account for 17% (figure 6). Indirect causes, including deaths due to conditions such as malaria, HIV/AIDS and cardiac diseases, account for about 20%. Indirect maternal deaths attributable to AIDS in 15 Countdown countries with HIV prevalence above 5% ranges from 8% to 67%, with a median of 27%.8 The categories of maternal deaths are based on a WHO classification system that considers obstructed labour and anaemia to be contributing conditions rather than direct causes. Deaths related to these two conditions are classified under haemorrhage or sepsis. Clear programmatic actions linked to obstructed labour

Preterm births and stillbirths: making them count

Preterm births and stillbirths have been overlooked on the global health agenda. *Countdown* is reporting preterm birth estimates and stillbirth rates for the first time to raise their visibility and promote their prioritization for action. Many of the interventions for preventing preterm births and stillbirths are effective in improving other maternal and newborn health outcomes.

15 million preterm births a year

Preterm birth complications are the leading cause of newborn deaths and the second-leading cause of deaths in children under age 5. More than 1.1 million children a year die due to complications of being born too soon, and many others experience a lifetime of disability. Approximately 80% of preterm births occur between 32 and 37 weeks of gestations, and most of these babies survive when they receive essential newborn care; 75% of deaths of preterm babies can be prevented without intensive care.

According to the first national estimates of preterm birth (before 37 completed weeks of pregnancy), approximately 14.9 million babies a year—more than 1 in 10—are born too soon. Of the 65 countries in the world with reliable trend data, only 3 have shown substantial reductions over 1990–2010. About 84% of all preterm births occur in *Countdown* countries. The preterm birth rate in *Countdown* countries ranges from 7% in Papua New Guinea and Iraq to 18% in Malawi, with a median of 12%.

There is a stark survival and care gap for premature babies between low- and high-income countries. Yet many preterm babies can be saved through feasible, low-cost interventions such as breastfeeding support, thermal care and basic care for infections and breathing difficulties. An analysis using the Lives Saved Tool found that universal coverage of kangaroo mother care could prevent 450,000 deaths a year alone.³ Nurses, midwives and community-based workers providing postnatal care need training in kangaroo mother care, breastfeeding support and other preterm baby care skills as well as access to reliable supplies of key commodities and equipment. Effective care before, during and between pregnancies and childbirth is also important for preventing preterm births and improving the survival chances of preterm babies. Antenatal corticosteroid injections, a priority

medicine of the United Nations Commission on Life-Saving Commodities for Women and Children, delivered to women in preterm labour, reduce the risk of death and respiratory distress in preterm babies. Coverage of antenatal corticosteroids is low in the few *Countdown* countries with estimates. Scaling up to universal coverage across *Countdown* countries could save an estimated 400,000 preterm babies a year.

Investment in research is essential for better understanding the causes of preterm birth in order to develop preventive interventions for universal application. Research to improve implementation of proven interventions in low-resource settings and on low-cost technological solutions to address complications of prematurity is needed.

The May 2012 Born Too Soon: The Global Action Report on Preterm Births³—supported by Countdown and around 50 organizations—sets a new goal of halving deaths due to preterm birth by 2025.

Almost 3 million stillbirths a year

An estimated 2.7 million third-trimester stillbirths occur every year, a drop of 1.1% a year over 1995-2009. *Countdown* countries accounted for 93% of stillbirths in the 193 countries with data for 2009, with rates ranging from 5 per 1,000 total births in Mexico to 47 in Pakistan and a median of 23.

Worldwide, approximately 1.2 million stillbirths occur during labour; these are known as intrapartum stillbirths. The risk of intrapartum stillbirth is 24 times higher for an African woman than for a woman in a high-income country. Yet these deaths are largely preventable. The most important strategy to reduce stillbirths is improved care at birth, which also saves maternal and newborn lives, giving a triple return on investments in training skilled birth attendants and increasing the number of functional basic and comprehensive emergency obstetric care facilities.⁴

Other interventions proven to reduce stillbirths are family planning, supportive policies protecting women from harmful working conditions and exposure to environmental toxins (such as indoor air pollution from cookstoves and tobacco smoke) and quality antenatal care services (such as early recognition and treatment of intrauterine growth restriction; protection from malaria

(continued)

BOX 5 (CONTINUED)

Preterm births and stillbirths: making them count

through insecticide-treated net use and delivery of intermittent preventive treatment for pregnant women; and identification and treatment of hypertension, diabetes and sexually transmitted diseases, particularly syphilis). Stillbirths can also be reduced by inducing post-term pregnancies (at 41 weeks and later) and by conducting newborn resuscitation. Scaling up of effective care, especially quality childbirth services, could halve stillbirth rates by 2020.⁵

Notes

- 1. Liu and others forthcoming.
- 2. Blencowe and others forthcoming.
- 3. March of Dimes, PMNCH, Save the Children and WHO 2012.
- 4. Lawn and others 2011: Bhutta and others 2011.
- 5. Pattinson and others 2011.

BOX 6

Pneumonia and diarrhoea: neglected killers

According to UNICEF's (forthcoming) Pneumonia and Diarrhoea: Tackling the Deadliest Diseases for the World's Poorest Children, fewer children under age 5 are dying due to pneumonia and diarrhoea than a decade ago. However, these two diseases combined still account for close to 2 million deaths a year. Of the 7.6 million deaths among children under age 5 in 2010 (including neonatal deaths), 18% were due to pneumonia and 11% to diarrhoea (see figure 5 in the main text). Approximately 90% of these deaths were in Sub-Saharan Africa and South Asia, and the five countries with the most deaths are all Countdown countries: India, Pakistan, Nigeria, Democratic Republic of the Congo and Ethiopia.

Preventive interventions, some of which reduce the incidence of both diseases, include optimal breastfeeding practices and adequate nutrition, immunizations, hand washing with soap and access to improved water and sanitation facilities. Lifesaving treatment options after a child gets sick include antibiotics for bacterial pneumonia and oral rehydration salts and zinc for diarrhoea. However, coverage of these interventions remains low, particularly among the most vulnerable.

In *Countdown* countries the median coverage of exclusive breastfeeding (for the first six months of life), antibiotic use for pneumonia and oral

rehydration therapy with continued feeding are all less than 50% (see figure 9 in the main text). Only 39 Countdown countries have policies for community case management of pneumonia that could expand treatment access to the underserved (see figure 15 in the main report). Although the number of countries adopting policies on low-osmolarity oral rehydration salts and zinc for managing diarrhoea is increasing, zinc treatment remains unavailable in nearly a third of Countdown countries. Median coverage of access to an improved water source is 76% in Countdown countries, but access to an improved sanitation facility hovers at an unacceptable 40%. Most Countdown countries report high coverage of measles and Haemophilus influenzae type b vaccines, but only 9 are implementing policies for rotavirus vaccine and 16 for pneumococcal conjugate vaccines. Expanding vaccine uptake is essential to realize the full potential of these interventions in reducing deaths due to pneumonia and diarrhoea, particularly as vaccines against rotavirus and pneumococcus are being introduced in more countries.

A global action plan for pneumonia has been in place since 2009. A consortium of partners including academic universities, UN agencies and the Clinton Health Access Initiative is developing an integrated global action plan for diarrhoea and pneumonia to scale up proven interventions and increase commitment to addressing these two leading killers of children.

Source: UNICEF forthcoming.

Unsafe abortion: a preventable cause of maternal deaths

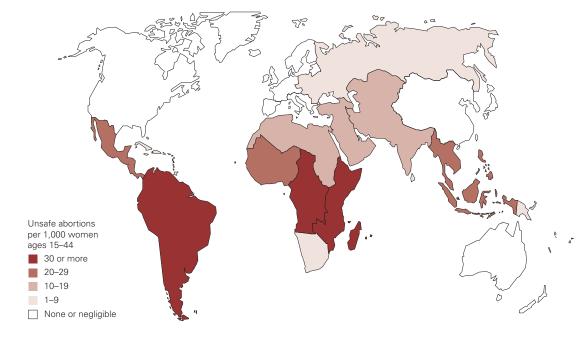
Worldwide approximately 22 million unsafe abortions, half of all induced abortions, occur each year, resulting in the deaths of 47,000 women and temporary or permanent disability among an additional 5 million women. Almost all these deaths and disabilities occur in developing countries. An abortion is defined as unsafe when performed by an individual who lacks the necessary skills or in an environment that does not meet minimal medical standards. Deaths due to unsafe abortion result mainly from severe infections, bleeding and organ damage caused by the procedure. Preventing unsafe abortions would contribute substantially towards achieving Millennium Development Goal 5.

Countdown countries represent a wide spectrum of public health consequences of unsafe abortion, ranging from little or none in some countries (Central and Southeast Asian countries and those in Far East Asia) to about 1 in 5 maternal deaths due to unsafe abortion in Countdown countries in East Africa (see map). In general, maternal deaths due to unsafe abortions are high in Countdown countries with high overall maternal mortality.

Globally the abortion rate fell between 1995 and 2003 from 35 per 1,000 women of reproductive age (ages 15–44) to 29 but has since stagnated at 28 in 2008. Over 2003-2008 the total number of abortions rose, reflecting increased global population. The proportion of abortions that were unsafe increased from 44% in 1995 to 49% in 2008.²

More than 80% of unintended pregnancies in developing countries occur to women who have an unmet need for modern contraception. Given the extent of unintended pregnancy and the high levels of unsafe abortion around the world, continuing efforts to provide family planning services (see box 9), education and information to prevent unsafe abortions are essential public health interventions.³ Effective, high-quality family planning services are characterized by a variety of affordable commodities, complete information for women about potential benefits and side effects and attention to social and cultural factors to expand women's access to contraception.4 WHO estimates that 75% of unsafe abortions could be avoided if the need for family planning were fully met.5

Unsafe abortions are concentrated in Latin America and the Caribbean and Central Africa



Source: WHO 2008.

(continued)

BOX 7 (CONTINUED)

Unsafe abortion: a preventable cause of maternal deaths

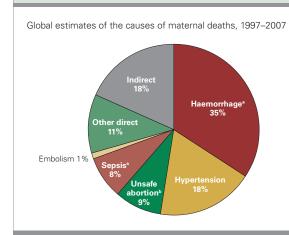
As stated by the Inter-Agency Group for Safe Motherhood, "Unsafe abortion is the most neglected—and most preventable—cause of maternal death. These deaths can be significantly reduced by ensuring that [maternal health] programmes include client-centered family planning services to prevent unwanted pregnancy, contraceptive counseling for women who have had an induced abortion, the use of appropriate technologies for women who experience abortion complications, and, where not against the law, safe services for pregnancy termination." 6

Where unsafe abortions occur, comprehensive postabortion care for women is important to address complications and ensure access to contraception. Skilled health workers, appropriate pain control management, follow-up care including identification and treatment of bleeding or infection, removing health worker stigma for caring for women after an abortion, and increasing and improving family planning counselling and services are all necessary components.⁷

Notes

- 1. World Health Organization 2011.
- 2. Sedgh and others 2012.
- 3 WHO 2005
- 4. WHO 2009.
- 5. WHO 2011.
- 6. Inter-Agency Group for Safe Motherhood 1998.
- 7. Singh and others 2009.

FIGURE 6 Haemorrhage and hypertension account for more than half of maternal deaths



- a. Includes deaths due to obstructed labour or anaemia.
- b. Nearly all (99%) of abortion deaths are due to unsafe abortion.

 Source: Preliminary data from the World Health Organization.

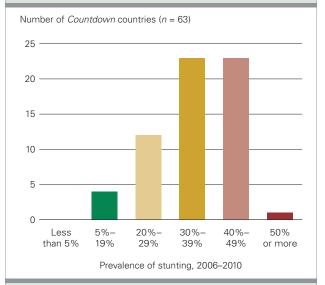
and anaemia include increasing women's access to comprehensive emergency obstetric care and nutrition interventions, respectively.

Undernutrition: grave crisis—a call for action

Undernutrition contributes to over a third of child deaths globally. The result of inadequate energy or micronutrient intake and often rooted in poverty, undernutrition increases the risk of death and ill-health for both mother and baby during

FIGURE 7

Two-thirds of *Countdown* countries have stunting prevalence of 30% or more



Source: UNICEF global databases, April 2012, based on Demographic and Health Surveys, Multiple Indicator Cluster Surveys and other household surveys

pregnancy, childbirth and the postnatal period through early childhood. Stunting prevalence is a critical indicator of progress in child survival, reflecting long-term exposure to poor health and nutrition, especially in the first two years of life. 10 Children under age 5 around the world have the same growth potential, and stunting prevalence above 3% indicates the need for remedial actions.

Poorer children are more likely to be stunted Median prevlance of stunting by wealth quintile, Countdown countries with data (%) 50 40 90 Poorest Second Middle Fourth Richest

All 63 *Countdown* countries with available data since 2006 have stunting prevalence above this threshold (figure 7). In the majority of these countries more than a third of children are stunted, a situation requiring urgent attention, and prevalence is particularly high among the poorest populations (figure 8). In a fifth of these countries

more than half of children in the poorest 20% of

Source: Demographic and Health Surveys and Multiple Indicator

Cluster Surveys

that emphasize reaching the poor must continue to be a major priority in *Countdown* countries.

Wasting, or low weight for height, in children under age 5, is the most reliable indicator of acute food insecurity and signals an urgent need for action. The short-term mortality risk is much higher for a wasted child than for a stunted child. In 62 *Countdown* countries with available data since 2006 the prevalence of wasting ranges from 0.8% in Swaziland to 21% in the last survey in pre-secession Sudan, with a median of 7%. Niger (16%), Chad (16%), Bangladesh (18%) and India (20%) also have high prevalence of wasting. The median prevalence is 10% in the nine *Countdown* countries in the Sahel region prone to severe drought and famine.

Maternal undernutrition is a risk factor for poor maternal, newborn and child health outcomes, and interventions to improve women's nutritional status before, during, after and between pregnancies are essential (box 8). The Scale Up Nutrition road map, the Global Alliance for Improved Nutrition, the Renewed Efforts Against Child Hunger, the U.S. and Irish–led 1,000 days: Change a Life, Change the Future campaign and similar initiatives are under way to address maternal and child undernutrition;¹¹ the challenge is to ensure that these are fully integrated with country-level reproductive, maternal, newborn and child health programmes.¹²



A new focus on maternal undernutrition

Key indicators of maternal nutrition are maternal stature, body mass index and micronutrient deficiency. Poor maternal nutrition contributes to at least 20% of maternal deaths, and increases the probability of other poor pregnancy outcomes, including newborn deaths. Maternal undernutrition is particularly severe in South Asian *Countdown* countries. In Pakistan, for example, more than 25% of women ages 15–19 have a low body mass index (below 18.5 kilograms per square metre) and 10% had short stature (less than 145 centimetres).²

In this report *Countdown* tracks for the first time the prevalence of low body mass index among women of reproductive age, an important risk factor for intrauterine growth restriction, low birthweight and neonatal mortality. Less data are available on the nutritional status of women than on the nutritional status of children. In 24 *Countdown* countries with a recent Demographic and Health Survey the median prevalence of low body mass index among women of reproductive age is 11%, with a low of 0.7% in Egypt. Four countries report extremely high prevalence: Nepal (26%), Madagascar (28%), Bangladesh (33%) and India (40%).

Short maternal stature, often a result of childhood stunting, is also a risk factor for obstructed labour and caesarean delivery due to a disproportion between the baby's head and the maternal pelvis. Prolonged obstructed labour combined with no or delayed access to caesarean delivery can result in maternal

mortality, debilitating long-term health consequences such as obstetric fistula and neonatal mortality due to birth asphyxia. Many *Countdown* countries with high maternal undernutrition also lack readily available emergency caesarean sections.

Limited information is available on maternal micronutrient deficiencies. A WHO review of nationally representative surveys from 1993 to 2005 found that 42% of pregnant women worldwide are anaemic, more than half of them due to iron deficiency.² Prenatal folic acid deficiency, also widespread, is associated with increased risk of neural tube defects.

Further research is needed to understand the relationships between maternal undernutrition and short- and long-term maternal and child health outcomes. More and better data are also needed on measures of maternal nutritional status and on coverage of evidence-based interventions, including folic acid supplementation in the periconceptional period, iron and folic acid uptake among women at risk of iron deficiency anaemia and nutrition programmes to address food insecurity and low maternal body mass index.

Notes

- 1. Black and others 2008; Stoltzfus, Mullany and Black 2004.
- 2. Zulfigar A. Bhutta and others, Aga Khan University, National Nutrition Survey, Pakistan, 2011.
- 3. WHO and CDC 2008.



Coverage along the continuum of care

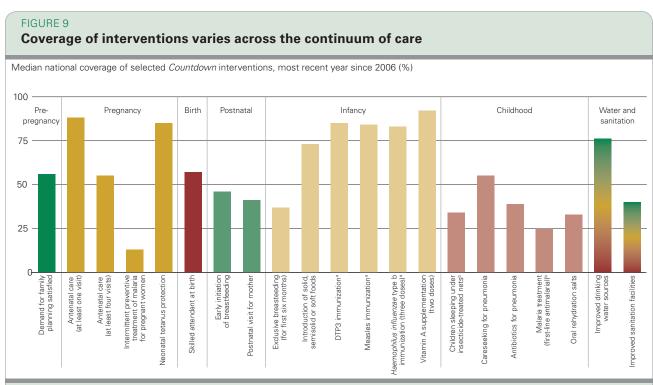


This section presents levels and trends in the *Countdown* coverage indicators, including measures of equity in coverage. It reviews the number of countries with coverage data available for *Countdown* indicators, discusses new indicators included for the first time in 2012 and summarizes coverage trends since 2000.

Figure 9 shows median coverage values based on the latest available estimates since 2006 for 21 *Countdown* indicators. Table 2 shows the number of countries with available data for each *Countdown* indicator, the median coverage values and the range in coverage across reporting countries. Figure 9 and table 2 do not include the

caesarean section rate, prevention of mother-tochild transmission of HIV and eligible HIV-positive pregnant women receiving antiretroviral treatment for their own health, which are reported on separately.

New coverage indicators for 2012 reflect advancements in family planning and infant feeding: demand for family planning satisfied (an indicator of met need for family planning; box 9) and introduction of solid or semisolid foods. Coverage is reported both for the compound measure of oral rehydration therapy with continued feeding and for oral rehydration salts alone. Information on oral rehydration salts use



a. Data are for 2010.

b. Analysis is based on countries with 75% or more of the population at risk of p. falciparum transmission.

Source: Immunization rates, WHO and UNICEF; postnatal visit for mother, Saving Newborn Lives analysis of Demographic and Health Surveys; improved water and sanitation, WHO and UNICEF Joint Monitoring Programme 2012; all other indicators, UNICEF global databases, April 2012, based on Demographic and Health Surveys, Multiple Indicator Cluster Surveys and other national surveys.

TABLE 2
National coverage of *Countdown* interventions, most recent year since 2006 (%)

Indicator	Number of countries with data	Median coverage (%)	Range (%)
Pre-pregnancy		(**)	(1.7)
Demand for family planning satisfied	46	56	17–97
Pregnancy			
Antenatal care (at least one visit)	69	88	26–100
Antenatal care (at least four visits)	49	55	6-97
Intermittent preventive treatment of malaria for pregnant women ^a	39	13	0-69
Neonatal tetanus protection	66	85	60-94
Birth			
Skilled attendant at birth	67	57	10-100
Postnatal			
Early initiation of breastfeeding	55	46	18-81
Postnatal visit for mother	22	41	22-87
Postnatal visit for baby ^b	4	50	8–77
Infancy			
Exclusive breastfeeding	57	37	1–74
Introduction of solid, semisolid or soft foods	39	73	16-94
Diphtheria-tetanus-pertussis (three doses)	74	85	33-99
Measles immunization	73	84	46-99
Haemophilius influenzae type b immunization (three doses)	58	83	45-99
Vitamin A supplementation (two doses)	56	92	0-100
Childhood			
Children sleeping under insecticide-treated nets ^a	36	34	3–70
Careseeking for pneumonia	57	55	13-83
Antibiotic treatment for pneumonia	45	39	3-88
Malaria treatment (first-line antimalarial) ^a	31	25	0-91
Oral rehydration therapy with continued feeding ^b	53	45	7–68
Oral rehydration salts	57	33	10-77
Water and sanitation			
Improved drinking water sources (total)	70	76	29-99
Improved sanitation facilities (total)	71	40	9–100

a. Number of countries is based on the 50 countries with 75% or more of the population at risk of p. falciparum transmission.

Source: UNICEF global databases, April 2012, based on Demographic and Health Surveys, Multiple Indicator Cluster Surveys and other national surveys.

alone has considerable programme relevance but is not captured in the oral rehydration therapy with continued feeding measure.

These results demonstrate what is possible. All four vaccines (neonatal tetanus protection, DTP3, measles and *Haemophilius influenzae* type b [three doses]) and vitamin A supplementation (two doses) have median coverage of 80% or more in *Countdown* countries with available data. In most *Countdown* countries vaccines and vitamin A are provided in health facilities as well as during campaigns such as child health days, when outreach teams can reach a high proportion of the population. Median coverage of at least one antenatal visit is also very high, at 88%, but coverage of four or more antenatal visits is only 55%.

At least one country has achieved coverage above 80% for each of 17 interventions, and at least one country has reached coverage of 70%–80% for each of four other interventions (postnatal visit for baby, exclusive breastfeeding, children sleeping under insecticide-treated nets and diarrhoea treatment with oral rehydration salts). For intermittent preventive treatment of malaria for pregnant women and oral rehydration therapy with continued feeding coverage is below 70% in the highest performing country. Substantial progress is still needed. The median coverage of interventions related to case management of childhood illnesses, demand for family planning satisfied, early initiation of breastfeeding and exclusive breastfeeding hover at or below 50%.

b. Not listed in figure 9.

BOX 9

Family planning: what does it take to succeed?

Expanding access to family planning is an effective strategy for saving women's and children's lives and improving their health. Family planning empowers women and households to make decisions about whether and when to have children as well as desired family size. This is critical because more than 40% of all pregnancies worldwide are unintended.

Family planning reduces maternal deaths due to unsafe abortions (see box 7). Spacing pregnancies at least two years apart and limiting the total number of pregnancies improves the survival chances and health outcomes of women, newborns and children.

Family planning offers an opportunity to strengthen human capital and enhance progress in poverty reduction and sustainable economic development. Effective family planning programmes require strong government leadership, commitment and investment and must be part of a comprehensive approach that includes activities at the policy, service delivery and community levels.

The experience of Niger illustrates a successful approach to increasing delivery and uptake of family planning services. Contraceptive prevalence increased from 8.2% in 1998 to 16.5% in 2009 (see figure). The percentage of service delivery points offering at least three modern methods of contraceptives grew from 58% in 2008 to 80% in 2010–12, with more than 85% reporting no stockout of commodities in the latter period.

Niger's progress can be attributed in part to its 2007 adoption of a comprehensive approach to increasing access to family planning. This approach is linked to the national poverty reduction strategy and to the national health sector policy and development plan. Strong leadership led to the development and implementation of supportive policies and plans, a

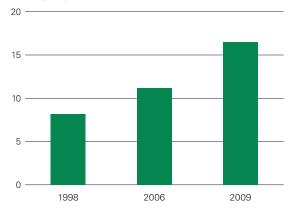
focus on improving access to high-quality services and community mobilization. A dedicated national budget line for procuring contraceptives was established and has increased over the last four years.

The country is also working to improve the supply chain management system and the competency and supervision of health workers. On the demand side several initiatives have been introduced to involve male partners in women's reproductive health, engage religious and other community leaders and mobilize communities to advocate for higher quality services.

Although more progress is needed in Niger, its comprehensive approach, which addresses supplyand demand-side constraints to the scale-up of family planning services, offers a promising model for others to adopt.

The contraceptive prevalence rate in Niger has nearly doubled since 1998





Source: 1998 and 2006 Demographic and Health Surveys; Niger Ministry of Health 2010; United Nations Population Fund Reproductive Health Commodity Security surveys.

Source: WHO and others 2009; Singh and others 2009; Singh and Ashford 2009.

Delivering for women and babies: caesarean section rates and coverage of needed HIV services

Data on caesarean section rates are presented separately because the target coverage value is not 100%. Rates below 5% signal a lack of access to emergency obstetric care, and rates above 15% suggest overuse, which may increase poor maternal and neonatal health outcomes.¹³ Of the 47 *Countdown* countries with available data for

2006–2011, 18 report caesarean section rates below 5%, and 8 report rates above 15%. Rates range from 1% (Niger, Ethiopia and South Sudan) to 50% (Brazil), with a median of 5%. Of 42 *Countdown* countries with available disaggregated data, 23 have caesarean section rates below 5% in rural areas, while only 5 have such low rates in urban areas; this reflects the concentration of emergency obstetric care services in cities. Caesarean sections are one component of comprehensive emergency

obstetric care, which also includes blood transfusions and other interventions to manage life-threatening complications of pregnancy and childbirth (such as those requiring a health facility adequately equipped and staffed to administer parental antibiotics, oxytocin for the prevention of postpartum haemorrhage, magnesium sulfate for convulsions, basic neonatal resuscitation, active management of the third stage of labour and assisted vaginal delivery).

The Commission on Information and Accountability for Women's and Children's Health selected one HIV indicator with two components to encourage countries to increase provision of antiretroviral medicines to HIV-positive pregnant women in order to reduce the risk of transmission of HIV to their baby and improve their health. These indicators are important measures of progress towards achieving Millennium Development Goal 6. New reporting on coverage for the most effective antiretroviral drug regimens will now enable monitoring of country progress in scaling up these regimens.

Coverage of the most effective regimens for preventing mother-to-child transmission of HIV in the 21 *Countdown* countries considered priority countries for eliminating mother-to-child transmission shows a wide range (table 3), with three countries reporting coverage of 10% or less and five countries reaching 75% or more of the eligible population in need.¹⁴

Coverage of antiretroviral therapy for HIV-positive pregnant women who are treatment eligible also varies substantially. Of the 17 priority countries with data for 2010, coverage ranges from 0% in Ghana to 39% in Botswana and Chad.

Coverage trends since 2000

Examining coverage trends is essential for assessing country progress. Information on trends requires at least two separate and comparable measures at two points in time. For nine *Countdown* indicators at least 20 countries had two measurements at least three years apart, one between 2000 and 2005 (median 2002) and the other between 2006 and 2011 (median 2008).

In absolute terms the largest increase in coverage of indicators along the continuum of care was for children sleeping under insecticide-treated nets (35 percentage points) followed by exclusive breastfeeding (14 percentage points), at least one antenatal care visit and DTP3 vaccination (both with 12 percentage points; table 4). The smallest

TABLE 3

Estimated antiretroviral coverage for the prevention of mother-to-child transmission using the most effective regiment, 2010 (%)

Country	Point estimate	Range
Congo, Dem. Rep.	1	<1–1
Chad	7	5–9
Nigeria	9	7–10
Angola	20	15–28
Burundi	36	32-49
Uganda	42	36-51
Kenya	43	37-49
Zimbabwe	46	40-52
Ghana	48	40-57
Mozambique	52	44-62
Cameroon	53	43-65
Tanzania	59	52-68
Côte d'Ivoire	66	54-79
Zambia	75	67-85
Lesotho	89	77->95
Botswana	>95	>95>95
South Africa	>95	85->95
Swaziland	>95	88->95

Note: The ranges around the levels of coverage are based on the uncertainty ranges around the estimates of need. Point estimates and ranges are given for countries with a generalized epidemic. Ethiopia, India and Malawi are also priority countries for eliminating mother-to-child transmission of HIV but do not have disaggregated data on type of treatment regimen for 2010.

Source: WHO, UNAIDS and UNICEF 2011.

absolute gains were for diarrhoea treatment with oral rehydration salts and early initiation of breastfeeding, both with 4 percentage points. Absolute gains should be interpreted with caution because increases are harder to achieve when baseline levels are already high. For example, median coverage of measles and DTP3 vaccination was 71% during 2000–05, limiting the maximum possible absolute increase in coverage to 29 percentage points.

An alternative measure of progress is the coverage gap, or how much coverage would need to increase from the 2000–05 level to reach universal coverage. The change from 2000–05 to 2006–11 can then be expressed as a percentage of this gap. At least one antenatal care visit, DTP3 and measles immunization and children sleeping under insecticide-treated nets progressed the fastest in closing the gap (see table 4). Early initiation of breastfeeding and diarrhoea treatment with oral rehydration salts showed the least progress, consistent with their slow progress in absolute coverage gains.

TABLE 4

Trends in *Countdown* indicators, countries with data from at least two surveys, 2000–05 and 2006–11

	Number of		coverage %)	Change _ (percentage	Proportion of gap closed	
Indicator	countries with data	2000-05	2006-11	points)	(%)	
Antenatal care (at least one visit)	61	76	88	12	50	
Skilled attendant at birth	61	49	57	8	16	
Early initiation of breastfeeding	21	49	53	4	8	
Exclusive breastfeeding (for first six months)	48	26	40	14	19	
DTP3 immunization ^a	73	71	83	12	41	
Measles immunization ^a	73	71	79	8	28	
Children sleeping under insecticide-treated nets ^b	26	2	37	35	36	
Careseeking for pneumonia	45	44	51	7	13	
Oral rehydration salts treatment	46	29	33	4	6	

a. Based on the interagency estimates from 2002 and 2008, the average reference years for calculating trends for the nonvaccine indicators in table 3.

Source: UNICEF global databases, April 2012, based on Demographic and Health Surveys, Multiple Indicator Cluster Surveys and other national surveys.

Figure 10 shows progress in coverage for selected interventions to illustrate the "cap" affecting interventions that had already achieved coverage of 70% or higher by 2005 (at least one antenatal care visit and DTP3 and measles immunization) and the potential for rapid growth among new interventions backed by high levels of resources and political commitment (children sleeping under insecticide-treated nets). Interventions requiring strong health systems (skilled attendant at birth) or requiring behaviour change (early initiation of breastfeeding, careseeking for pneumonia) appear stalled at coverage levels of 30%–50%, suggesting that more effective ways are needed to reach women and children with these and similar interventions.

Progress in improving coverage must also be assessed in relation to demographic factors such as population growth. Many Countdown countries are experiencing escalating population growth, increasing the absolute number of women and children in need of services (box 10).

Rapid progress is possible!

The 2012 *Countdown* results show that rapid progress in increasing coverage of single interventions is possible. To reach sustainable and equitable gains in reproductive, maternal, newborn and child health, however, coverage must increase simultaneously across multiple interventions. To compare country progress in increasing coverage of multiple interventions, *Countdown* uses the composite coverage index, a weighted average of coverage levels for eight widely available

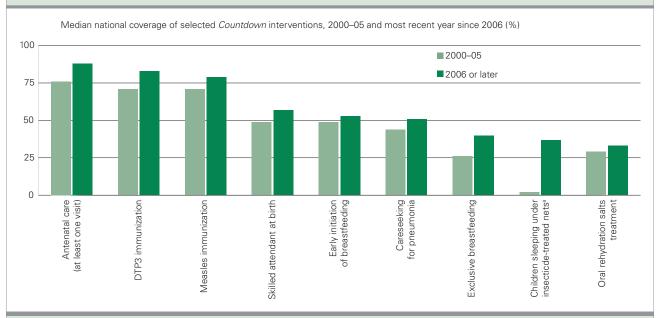
indicators along the continuum of care covering four groups of interventions (preconception, pregnancy and delivery, immunizations and case management of childhood illnesses). The difference between universal coverage and the index value is the coverage gap; the higher the index value, the closer a population is to universal coverage and closing the coverage gap.¹⁵

Countries with at least two household surveys, one from 2000–05 and one from 2006–11, were examined. The mean interval between the two surveys was 5.8 years but varied by country. Coverage change is expressed as an increase or reduction in percentage points of the composite coverage index, standardized for a five-year period.

For countries with two surveys the mean composite coverage index was 59% in the earlier period and 64% in the later period, an increase of 5 percentage points over five years or 0.8 percentage point a year, though there was wide variability in progress across this subset of Countdown countries (figure 11). Bangladesh, Cambodia, Rwanda and Ethiopia had substantial increases of about 15 percentage points over five years or 3 percentage points a year. Mozambique, Uzbekistan, Côte d'Ivoire and Cameroon, however, showed declines of 5 percentage points or more, indicating that some countries are experiencing reversals in coverage of key interventions. Efforts are under way to increase the frequency and availability of household survey data in *Countdown* countries, so that future analyses will include more countries.

b. Analysis is based on countries with 75% or more of the population at risk of p. falciparum transmission with trend data available.





a. Data are for 26 countries with data available for both time periods and with at least 75% of the population at risk of *p. falciparum* transmission.

Source: UNICEF global databases, April 2012, based on Demographic and Health Surveys, Multiple Indicator Cluster Surveys and other national surveys.

BOX 10

Scaling up and reaching more people: swimming against the population growth tide

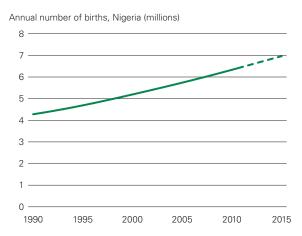
Global fertility rates are declining, but the population continues growing rapidly in many *Countdown* countries, particularly Sub-Saharan African and Middle East and North African countries. Larger populations translate into more people in need of health services, increasing the challenge for reaching universal coverage in *Countdown* countries with resource constraints and weak health systems.

The impact of population growth on the demand for reproductive, maternal, newborn and child health services can be illustrated by comparing coverage trends in skilled attendant at birth with birth rates in Nigeria, where the annual number of births is projected to explode from 4.3 million in 1990 to 7 million in 2015, an increase of 63% (see figure). The proportion of births attended by skilled health personnel in Nigeria increased modestly from 31% in 1990 to 39% in 2008, while the absolute number of births attended by a skilled health provider doubled, from approximately 1.3 million in 1990 to 2.7 million in 2008. Had the number of births remained stable each year between 1990 and 2008, coverage would have reached around 63% in 2008, 24 percentage points higher than the actual figure of 39%.

The example shows that focusing on coverage alone

can mask important progress in delivering services to women, newborns and children. Nigeria's slow progress in increasing coverage of skilled attendant at birth despite doubling the number of births attended by a skilled health provider is also a clear indication of the considerable challenges posed by population pressure on country efforts to deliver interventions at scale.

Explosion in births in Nigeria: a challenge for delivering services

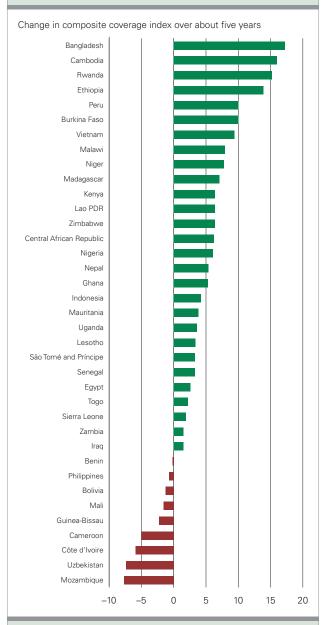


Source: UNDESA 2011.

Equity in coverage—new findings from Countdown analyses

National estimates of intervention coverage often mask important subnational inequities. The country profiles include a summary graph showing socioeconomic inequities in coverage for a set of key interventions across the continuum of care. Intervention coverage is substantially

FIGURE 11 Most countries have increased coverage of eight interventions across the continuum of care

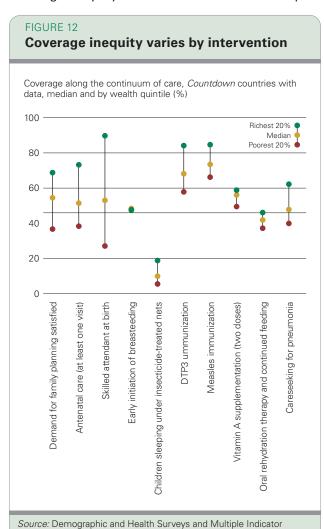


Source: Demographic and Health Surveys and Multiple Indicator Cluster Surveys.

higher among women and children from richer households, but inequities in coverage vary by intervention (figure 12). Interventions that require a functional health system, such as skilled attendant at birth, are particularly inequitable, while interventions that do not, such as vaccines, are more equitable. The composite coverage index also reveals important inequities. The overall median value across 54 countries with data is 60%, but the median value ranges from 48% in the poorest quintile to 74% in the richest.

Figure 13 shows the subnational composite coverage index for one country in Latin America, Africa and Asia. Bolivia shows little variability across regions, while Ethiopia and India show far greater variability. Subnational data are essential for deciding whether geographic targeting of interventions is necessary.

Another important geographic dimension of coverage inequity is urban-rural location. Ethiopia

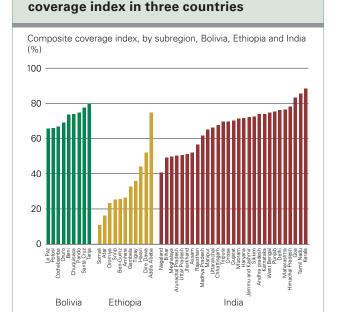


Cluster Surveys.

has the widest urban-rural gap in the composite coverage index, with an urban value 37 percentage points higher than the rural value, followed by Niger (28 percentage points), Chad (27 percentage points), Nigeria and Yemen (24 percentage points for both; figure 14). Only two countries, São Tomé and Príncipe and Uzbekistan, have a higher value for rural areas than for urban areas, though the differences were small. The average urbanrural gap across all *Countdown* countries is 13.8 percentage points.

These results highlight the importance of disaggregating national results by multiple dimensions of inequities, including wealth, region of the country and urban-rural location. Subnational data can be used to target interventions where they are most needed by identifying population groups at higher risk. Countries that made the most rapid progress in improving coverage did so by reaching out to the poorest households and to households in remote areas.

FIGURE 13 **Subnational variations in the composite**



Source: Demographic and Health Surveys and Multiple Indicator Cluster Surveys.



