Countdown to 2015: a decade of tracking progress for maternal, newborn, and child survival

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Conceived in 2003 and born in 2005 with the launch of its first report and country profiles, the Countdown to 2015 for Maternal, Newborn, and Child Survival has reached its originally proposed lifespan. Major reductions in the deaths of mothers and children have occurred since Countdown's inception, even though most of the 75 priority countries failed to achieve Millennium Development Goals 4 and 5. The coverage of life-saving interventions tracked in Countdown increased steadily over time, but wide inequalities persist between and within countries. Key drivers of coverage such as financing, human resources, commodities, and conducive health policies also showed important, yet insufficient increases. As a multistakeholder initiative of more than 40 academic, international, bilateral, and civil society institutions, Countdown was successful in monitoring progress and raising the visibility of the health of mothers, newborns, and children. Lessons learned from this initiative have direct bearing on monitoring progress during the Sustainable Development Goals era.

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Introduction

10 years after the Countdown to 2015 for Maternal, Newborn, and Child Survival (Countdown) was launched, the world has become a healthier place for children and women. The Millennium Development Goals (MDGs) sparked those involved in the 2003 *Lancet* Child Survival Series to propose the Countdown initiative, who pledged to hold regular conferences for "ensuring that there is an overall mechanism for improving accountability, re-energising commitment, and recognising accomplishments in child survival".[1]

In response to this call to action, Countdown launched its first report in 2005,[2] which was followed by five others (2008,[3] 2010,[4] 2012,[5] 2013,[6] and 2014[7]). The final report is being released this week, on October 19, in Mexico City, Mexico. From its original focus on child survival, Countdown has expanded to track progress on reproductive, maternal, newborn, and child health indicators relevant to MDGs 4 (reduce child mortality) and 5 (improve maternal health). The heart of the Countdown reports are the two-page country profiles that summarise the most recent data for intervention coverage, maternal and child mortality, and nutrition. The country profiles also highlight socioeconomic inequalities in intervention coverage, and two of the main drivers of coverage: health systems and policies, and financing.

Countdown has evolved in many ways during the past decade. The partnership has grown from 11 to 43 institutional stakeholders, and the number of countries monitored from 60 to 75, comprising more than 95% of global deaths of mothers and children. As the scope shifted beyond child survival, and in response to new evidence, the number of indicators tracked expanded from 35 to 73. By including new, proven interventions in its profiles even before data were available for many countries, Countdown has contributed to the identification of data gaps and had arguably helped to raise the visibility of such new interventions. Countdown recognised the importance of engaging at country level, and from 2012 embarked on a set of case studies aimed at understanding how countries have achieved progress (appendix pp 1–2). Countdown is also the primary source of coverage information for the Commission on Information and Accountability for Women's and Children's Health and the Independent Expert Review Group[8] reports.

In the decade since Countdown's inception, the number of reports on specific reproductive, maternal, newborn, and child (RMNCH) health issues has grown rapidly. Countdown's particular niche has been its action-oriented focus on intervention coverage, and the user-friendly synthesis of information in the country profiles. Our principles have not changed over this period:[1] to focus on monitoring the coverage of evidence-based, cost-effective interventions; to maintain a country orientation; and to build on existing goals and monitoring efforts. Countdown's commitment to these principles and its products have helped to increase the global visibility of RMNCH, and has plausibly contributed to reversing the slow rate of progress in reducing child, newborn, and maternal mortality in the 1990s that was documented in early public health series in *The Lancet*.[1,9–11]

As the MDG era draws to a close, the global public health and development communities must take stock of progress over the past 15 years, and get ready for the

Key messages

- Countdown to 2015 is a unique example of a multistakeholder initiative of academic, international, bilateral, and civil society institutions focused on monitoring progress in the health of the world's women and children
- Over a decade, regular reports from Countdown showed important progress by many high-burden countries in increasing coverage with cost-effective, evidence-based health interventions, and in preventing deaths of mothers and children
- Yet, substantial, reliable investments are required to achieve global targets and reduce inequalities between and within countries
- Lessons learned from Countdown can inform global monitoring and accountability in the era of Sustainable Development Goals

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For more on **Countdown to 2015** see http://www.countdown2015mnch.org

See Online for appendix

For more on the **Commission on Information and Accountability for Women's and Children's Health and the Independent Expert Review Groups** see http://www.who.int/woman_child_accountability/about/coia/en/

For more on the **SDGs** see https://sustainabledevelopment.un.org/topics/sustainabledevelopmentgoals

Sustainable Development Goal (SDG) era. We assess changes in the evidence and in data availability over this period, and their implications for programme managers and decision makers. We conclude by turning a crucial lens on the SDG framework and future accountability efforts, drawing on Countdown's monitoring experience.

The 2015 Countdown Results

Data

We have previously reported on Countdown's data sources and methods,[12,13] and these are described in detail in the panel and the appendix (pp 3–4). In this section, we summarise findings for 2015 with an emphasis on time trends; the full results are available in the 2015 report.

Based on modelled estimates, the global maternal mortality ratio has decreased by around 45% over the past two decades, and the number of annual maternal deaths has dropped from around 523 000 to 289 000.[16] Although mortality reductions seem to have accelerated—three-quarters of Countdown countries reduced maternal mortality faster in 2000–13 than in the 1990s[13]—very few Countdown countries will achieve MDG 5. A 2009 analysis of maternal deaths worldwide reported that more than half of these were due to haemorrhage, hypertensive disorders, and sepsis—causes that are preventable through the provision of quality antenatal, delivery, and postnatal care.[17] Recognition of the role of contraception to reduce maternal and newborn deaths has led to a major increase in resources for family planning programmes.[18] Evidence of the importance of reaching adolescents with family planning and nutrition programmes for improving birth outcomes, as well as their own health, has also resulted in increased attention to this population group.[19,20]

The growing recognition of stillbirths as a public health problem—2·6 million annual third trimester stillbirths, with 1·2 million of these occurring in the intrapartum period—led Countdown to report on the stillbirth rate since 2010. Unfortunately, global visibility for stillbirths might remain limited in the SDG era in view of the absence of a specific target.[21]

The global under-5 mortality rate has dropped by 53% since 1990, from 91 deaths per 1000 livebirths to 43 per 1000 livebirths in 2015.[22] And, the global annual rate of reduction has steeply accelerated over time, suggesting that more progress can be expected in the coming years. In 2000, the leading causes of the 10·8 million under-5 deaths were neonatal conditions (33%), diarrhoea (22%), pneumonia (21%), malaria (9%), and AIDS (3%).[23] Estimates for 2015 indicate 5·9 million deaths a year[22] with a major shift in the causes of death: preterm birth complications cause 18% of all under-5 deaths, and along with other neonatal causes represent 45% of all deaths. Deaths due to pneumonia (16%), diarrhoea (9%), malaria (5%), and AIDS (1%) have declined in relative terms, and even more so in absolute terms.[24] The growing concentration of deaths in the newborn period and the improved understanding about causes of newborn deaths has sparked the scale-up of long-existing interventions and the development of new ones.

The past 10 years have also seen a growing understanding of the role of nutrition in mortality and human development.[25,26] Suboptimal nutrition, including fetal growth restriction, stunting, wasting, and deficiencies of vitamin A and zinc along with suboptimum breastfeeding, is an underlying cause of 45% of all deaths of children younger than 5 years.[25]

Progress in the Countdown countries in reducing maternal and under-5 mortality since 1990 is summarised in table 1. A third of the 75 countries achieved the annual rate of reduction of 4·4% or higher in under-5 mortality that was needed to reach MDG 4 in 2015, but only six countries have achieved the annual rate of reduction of 5·5% or higher in maternal mortality required by MDG 5. The successful countries are flagged in table 1. Four countries—Cambodia, Eritrea, Nepal, and Rwanda—have achieved both MDGs 4 and 5.

Table 1 also shows another measure of progress, based on whether each country has met the mortality thresholds originally set for inclusion as a Countdown country. There are two such thresholds. The first group of 60 countries was selected in 2005 for monitoring by Countdown based on their high levels of under-5 mortality—either an under-5 mortality rate of 90 per 1000 livebirths or greater, or an absolute annual number of deaths of 50 000 or more.

Panel: Countdown data sources and methods

Most coverage, equity, and nutrition data come from standardised population-based surveys (Demographic and Health Surveys [DHS], Multiple Indicator Cluster Surveys [MICS], or other nationally representative surveys that meet data quality standards). Mortality data are provided by United Nation's sources.

Intervention coverage was monitored for the 75 Countdown countries with data from 2009 to 2015. Coverage trends are derived from countries that had at least two datapoints, one from between 2000 and 2008, and the second from 2009 to 2014. The composite coverage index (CCI) is a weighted average of eight interventions along the continuum of care, all of which have been available in most countries for at least a decade.[14,15] Results on socioeconomic inequalities are based on wealth quintiles calculated on the basis of household assets.[15] Trends in CCI were estimated with 47 Countdown countries with at least two surveys (either DHS or MICS) where CCI was available, with survey years ranging from 1994 to 2014, using a multilevel model (appendix pp 3–4).

Health systems and policy indicators are derived from global databases maintained by the WHO and other UN organisations, and financing data are abstracted from datasets maintained by the Organization for Economic Co-operation and Development Assistance Committee.

	Year entered Countdown	Selection criteria, why entered	U5MR (2015)	% annual reduction (1990–2015)	Number of under-5 deaths (thousands; 2015)	Share of under-5 deaths occurring in neonatal period (2015)	MMR (2013)	% annual reduction (1990–2013)	Number of maternal deaths (2013)	Country graduated from Countdown (yes/no)
Afghanistan	2005	U5MR ≥90 and ≥50 000 deaths	91·1	2·7%	94 261	38·4	400	4·7%	4200	No
Angola	2005	U5MR ≥90 and ≥50 000 deaths	156·9	1·5%	169 310	31·4	460	4·9%	4400	No
Azerbaijan	2005	U5MR ≥90	31·7	4·4%*	7206	59·2	26	3·6%	43	Yes
Bangladesh	2005	≥50 000 child deaths	37·6	5·4%*	119 326	62·3	170	5·0%	5200	No
Benin	2005	U5MR ≥90	99·5	2·4%	37 092	32·2	340	2·4%	1300	No
Bolivia	2008	MMR >200 and ≥750 maternal deaths	38·4	4·7%*	9415	51·2	200	4·0%	550	Yes
Botswana	2005	U5MR ≥90	43·6	0·9%	2488	51·0	170	3·1%	83	Yes
Brazil	2005	≥50 000 child deaths	16·4	5·2%*	52 415	54·6	69	2·4%	2100	No
Burkina Faso	2005	U5MR ≥90 and ≥50 000	88·6	3·3%	60 477	30·3	400	2·9%	2800	No
Burundi	2005	U5MR ≥90 and ≥50 000	81·7	3·0%	36 970	35·8	740	2·3%	3400	Yes
Cambodia	2005	U5MR ≥90 and ≥50 000	28·7	5·6%*	10 257	51·5	170	8·1%†	670	Yes
Cameroon	2005	U5MR ≥90 and ≥50 000	87·9	1·8%	71 348	29·5	590	0·9%	4900	No
Central African Republic	2005	U5MR ≥90	130·1	1·2%	21 029	33·3	880	1·3%	1400	No
Chad	2005	U5MR ≥90 and ≥50 000	138·7	1·7%	82 728	28·8	980	2·3%	5800	No
China	2005	≥50 000 child deaths	10·7	6·5%*	181 574	51·5	32	4·7%	5900	No
Comoros	2011	Low income	73·5	2·1%	1897	46·9	350	2·6%	90	..
Congo	2005	U5MR ≥90	45·0	2·9%	7269	40·6	410	2·1%	690	Yes
Côté d'Ivoire	2005	U5MR ≥90 and ≥50 000	92·6	2·0%	75 393	41·7	720	0·1%	5300	No
Djibouti	2005	U5MR ≥90	65·3	2·4%	1429	51·6	230	2·4%	55	Yes
DR Congo	2005	U5MR ≥90 and ≥50 000	98·3	2·6%	304 558	30·9	730	1·5%	21 000	No
Egypt	2005	≥50 000 child deaths	24	5·1%*	65 775	54·5	45	4·1%	860	No
Equatorial Guinea	2005	U5MR ≥90	94·1	2·8%	2655	35·6	290	7·0%†	79	No
Eritrea	2008	MMR >200 and ≥750 maternal deaths	46·5	4·7%*	7764	39·4	380	6·2%†	880	No
Ethiopia	2005	U5MR ≥90 and ≥50 000	59·2	5·0%*	184 186	47·5	420	5·0%	13 000	No
Gabon	2005	U5MR ≥90	50·8	2·4%	2579	46·3	240	2·0%	130	Yes
Gambia	2005	U5MR ≥90	68·9	3·6%	5540	44·6	430	2·1%	340	Yes
Ghana	2005	U5MR ≥90 and ≥50 000	61·6	2·9%	54 061	47·0	380	2·9%	3100	No
Guatemala	2008	MMR >200 and ≥750 maternal deaths	29·1	4·1%	12 858	46·2	140	2·8%	660	Yes
Guinea	2005	U5MR ≥90 and ≥50 000	93·7	3·7%	42 073	34·0	650	2·2%	2800	No
Guinea-Bissau	2005	U5MR ≥90	92·5	3·6%	5883	44·0	560	2·2%	360	No
Haiti	2005	U5MR ≥90	69	3·0%	17 841	36·6	380	2·4%	1000	Yes
India	2005	U5MR ≥90 and ≥50 000	47·7	3·9%	1 200 998	57·9	190	4·5%	50 000	No
Indonesia	2005	≥50 000 child deaths	27·2	4·5%	147 162	50·2	190	3·5%	8800	No
Iraq	2005	U5MR ≥90 and ≥50 000	32	2·1%	38 682	58·1	67	2·0%	710	Yes
Kenya	2005	U5MR ≥90 and ≥50 000	49·4	2·9%	74 429	45·3	400	0·8%	6300	No
Kyrgyzstan	2011	Low income	21·3	4·5%	3644	54·5	75	0·5%	110	..
Laos	2008	MMR >550	66·7	3·6%	11 613	44·9	220	6·8%†	400	Yes
Lesotho	2008	MMR >550	90·2	−0·1%	5570	36·7	490	1·7%	280	Yes
Liberia	2005	U5MR ≥90	69·9	5·2%*	10 509	34·7	640	2·8%	980	Yes
Madagascar	2005	U5MR ≥90 and ≥50 000 deaths	49·6	4·7%*	40 075	40·4	440	2·3%	3500	Yes
Malawi	2005	U5MR ≥90 and ≥50 000 deaths	64·0	5·3%*	40 048	34·3	510	3·2%	3400	Yes
Mali	2005	U5MR ≥90 and ≥50 000 deaths	114·7	3·2%	82 710	33·2	550	3·1%	4000	No
Mauritania	2005	U5MR ≥90	84·7	1·3%	11 050	42·5	320	2·9%	430	No
Mexico	2005	>50 000 child deaths	13·2	5·0%*	31 278	53·1	49	2·5%	1100	Yes
Morocco	2008	MMR >200 + ≥750 maternal deaths	27·6	4·3%	19 759	64·3	120	4·1%	880	Yes
Mozambique	2005	U5MR ≥90 and ≥50 000 deaths	78·5	4·5%*	82 387	35·0	480	4·3%	4800	No

(Table 1 continues on next page)

	Year entered Countdown	Selection criteria, why entered	U5MR (2015)	% annual reduction (1990–2015)	Number of under-5 deaths (thousands; 2015)	Share of under-5 deaths occurring in neonatal period (2015)	MMR (2013)	% annual reduction (1990–2013)	Number of maternal deaths (2013)	Country graduated from Countdown (yes/no)
(Continued from previous page)										
Myanmar	2005	U5MR ≥90 and ≥50 000 deaths	50·0	3·2%	46 284	52·5	200	4·5%	1900	Yes
Nepal	2005	U5MR ≥90 and ≥50 000 deaths	35·8	5·5%*	19 900	61·6	190	6·0%†	1100	Yes
Niger	2005	U5MR ≥90 and ≥50 000 deaths	95·5	4·9%*	87 967	29·0	630	2·0%	5600	No
Nigeria	2005	U5MR ≥90 and ≥50 000 deaths	108·8	2·7%	750 111	32·0	560	3·1%	40 000	No
North Korea	2008	MMR >200 and ≥750 maternal deaths	24·9	2·2%	9271	54·9	87	–0·1%	310	Yes
Pakistan	2005	U5MR ≥90 and ≥50 000	81·1	2·1%	431 568	56·7	170	3·6%	7900	Yes
Papua New Guinea	2005	U5MR ≥90	57·3	1·8%	11 963	42·9	220	3·3%	460	Yes
Peru	2008	MMR >200 and ≥750 maternal deaths	16·9	6·2%*	10 483	48·7	89	4·4%	530	Yes
Philippines	2005	≥50 000 child deaths	28·0	2·9%	65 613	45·1	120	–0·6%	3000	No
Rwanda	2005	U5MR ≥90 and ≥50 000 deaths	41·7	5·2%*	14 207	44·3	320	6·1%†	1300	Yes
São Tomé and Príncipe	2011	Low income	47·3	3·4%	297	36·7	210	2·8%	14	..
Senegal	2005	U5MR ≥90 and ≥50 000 deaths	47·2	4·4%*	27 059	44·6	320	2·2%	1700	Yes
Sierra Leone	2005	U5MR ≥90 and ≥50 000 deaths	120·4	3·1%	26 466	28·8	1100	3·3%	2400	No
Solomon Islands	2011	Low income	28·1	1·4%	470	43·2	130	3·8%	23	..
Somalia	2005	U5MR ≥90 and ≥50 000 deaths	136·8	1·1%	60 537	29·2	850	1·8%	3900	No
South Africa	2005	≥50 000 child deaths	40·5	1·6%	41 930	26·6	140	0·4%	1500	Yes
Sudan	2005	U5MR ≥90 and ≥50 000 deaths	70·1	2·4%	89 488	43·1	360	3·8%	4600	No
South Sudan	2012	New, high burden country	92·6	4·0%	39 487	43·1	730	3·0%	3000	No
Swaziland*	2005	U5MR ≥90	60·7	0·8%	2221	23·4	310	2·5%	120	Yes
Tajikistan	2005	U5MR ≥90	44·8	3·5%	11 799	46·6	44	1·9%	120	Yes
Tanzania	2005	U5MR ≥90 and ≥50 000 deaths	48·7	4·9%*	98 180	39·3	410	3·5%	7900	No
Togo	2005	U5MR ≥90	78·4	2·5%	19 512	34·3	450	1·6%	1100	Yes
Turkmenistan	2005	U5MR ≥90	51·4	2·3%	5868	44·0	61	0·3%	68	Yes
Uganda	2005	U5MR ≥90 and ≥50 000 deaths	54·6	4·9%*	85 291	34·9	360	3·2%	5900	No
Uzbekistan	2011	Low income	39·1	2·4%	26 205	52·1	36	2·6%	220	..
Vietnam	2011	Low income	21·7	3·4%	34 191	52·4	49	4·4%	690	..
Yemen	2005	U5MR ≥90 and ≥50 000 deaths	41·9	4·4%*	34 351	53·1	270	2·3%	2100	Yes
Zambia	2005	U5MR ≥90 and ≥50 000 deaths	64·0	4·4%*	38 990	33·8	280	3·1%	1800	Yes
Zimbabwe	2005	U5MR ≥90 and ≥50 000 deaths	70·7	0·3%	38 087	33·7	470	0·4%	2100	Yes

Of note, 2004 is the baseline year during which Countdown assessed countries for monitoring on the basis of U5MR (U5MR ≥90 or ≥50 000 deaths). In 2008, eight additional countries were included on the basis of MMR using 2005 data (MMR >550 or MMR >200 and ≥750 maternal deaths). In 2012, six additional low-income countries were included to reconcile the Countdown and Global Strategy country lists: Comoros, Kyrgyzstan, São Tomé and Príncipe, and Solomon Islands. The 2005 report includes the U5MR but not the absolute number of deaths. U5MR=under-5 mortality rate per 1000 livebirths. MMR=maternal mortality rate per 100 000 livebirths. *Average annual rate of reduction of at least 4·4% for U5MR between 1990 and 2015. †Average annual rate of reduction of 5·5% or higher for MMR between 1990 and 2013.

Table 1: **Countdown countries and so-called graduation status based on original entry criteria**

Among these 60 countries, 28 have now graduated from Countdown by reducing child mortality below this threshold. In 2008, Countdown broadened its scope, by including eight additional countries with maternal mortality ratios of more than 550 per 100 000 livebirths, or a ratio of more than 200 plus an absolute annual number of maternal deaths of more than 750. Of the eight, seven have now graduated by reducing maternal mortality below this threshold. The remaining seven priority countries were added after 2008, to maintain consistency with the priority low-income countries listed in the Global Strategy for Women's and Children's Health, and to include South Sudan after it was formed in 2012.

Alternative estimates for maternal[27] and child[28] mortality are available from the Institute of Health Metrics and Evaluation. Although their estimates of levels and trends for specific countries might differ from those presented in table 1, the overall conclusions are the same: a small minority of low-income and middle-income countries will reach either MDG 4 or 5.

In the next four sections, we summarise recent results from Countdown's four streams of technical work: coverage, equity, health systems and policies, and financing. We also highlight progress in data availability and some of the most important data gaps that remain in each of these areas.

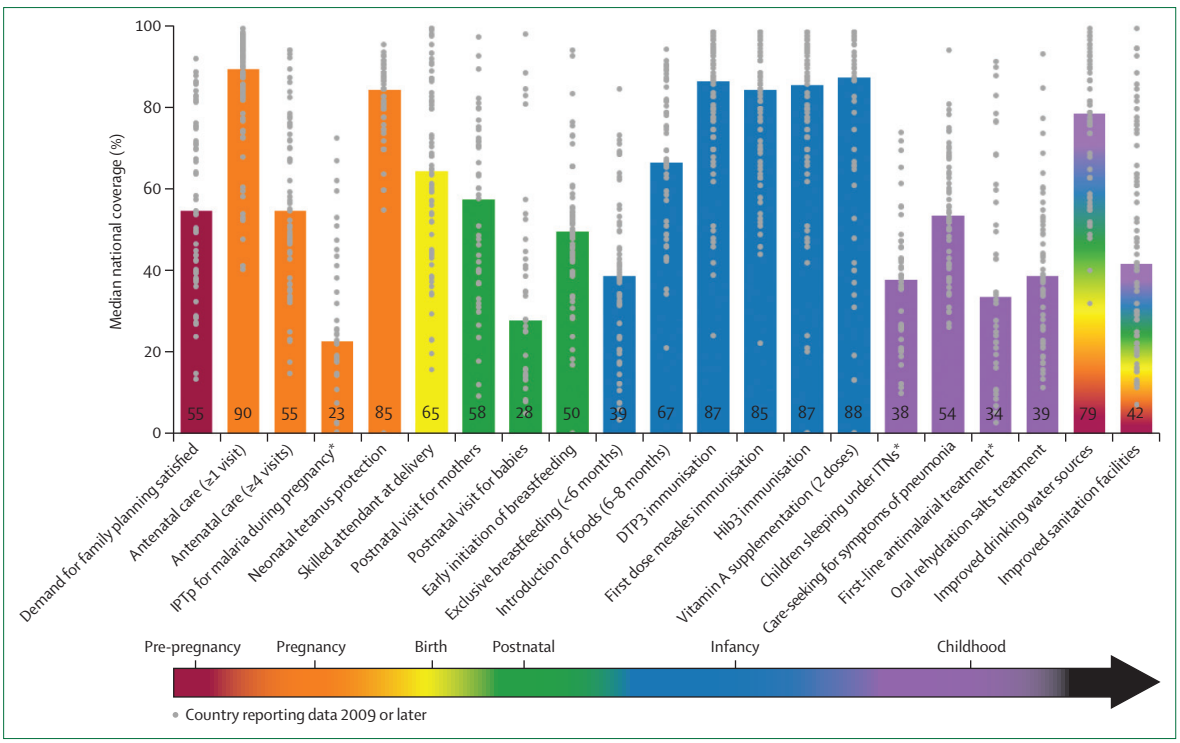

Figure 1: **Coverage of interventions varies across the continuum of care**
IPTp=intermittent preventive treatment of malaria during pregnancy. DTP3=three doses of combined diphtheria/tetanus/pertussis vaccine immunisation coverage. Hib3=three doses of *Haemophilus influenzae* type B immunisation coverage. ITNs=insecticide-treated net use. *Countries where at least 75% of the population is at risk of malaria and where a substantial proportion (50% or more) of malaria cases is due to *Plasmodium falciparum* (n=44) or where 50–74% of the population is at risk of malaria and where a substantial proportion (50% or more) of malaria cases is due to *P falciparum* (n=8). Source: Immunisation rates, WHO and UNICEF; postnatal visit for mothers and postnatal visit for babies, Saving Newborn Lives analysis of Demographic and Health Surveys; improved water and sanitation, WHO and UNICEF Joint Monitoring Programme for Water Supply and Sanitation; all other indicators, UNICEF global database, July 2015, based on Demographic and Health Surveys, Multiple Indicator Cluster Surveys and other national surveys; does not include 2014–15 Rwanda data.

For **WHO and UNICEF immunisation rates** see www.data.unicef.org

For more on the **Demographic and Health Surveys** see www.dhsprogram.com

Coverage

Figure 1 shows coverage across the continuum of care for selected high-impact interventions, and the service contacts through which these and other interventions can be delivered. The bars show the median coverage reported by all Countdown countries with data available in 2009 or later; the grey dots show the values for individual countries. Coverage levels are particularly low around the time of birth, and for case-management interventions for childhood illnesses. The list of coverage indicators tracked in Countdown has evolved with time. For example, indicators for rotavirus vaccine and pneumococcal conjugate vaccine were added in 2014 because of increased data availability following rapid policy adoption by countries. We no longer track the indicator of antibiotic treatment for childhood pneumonia, because validation studies have shown that this cannot be measured accurately in household surveys.[29] We have retained the indicator on oral rehydration therapy (oral rehydration salts), increased fluids, and continued feeding) to allow the examination of trends. However, WHO/UNICEF guidelines now recommend oral rehydration salts and zinc, and in the future it will be important to track coverage for both. In 2015, 37 countries had coverage data for zinc treatment of diarrhoea. The median coverage was 1%, with a high of 28% in Malawi. Results for the full set of Countdown coverage indicators are available in the appendix (pp 5–7) and appendix (pp 8–11) provides information about HIV and caesarean-section indicators.

Data availability (figure 1) has improved for all indicators measured through household surveys. For example, the number of countries with information about postnatal care visits for babies increased from five during the period 2000–06[3] to 35 in 2009–14. The rapid expansion of household surveys in the wake of the MDGs led to real progress in ensuring that all countries have recent, high-quality data to guide their programmes and policies.[30,31]

Our results continue to show unacceptably low coverage for most of these interventions and service contacts, with enormous ranges among countries around the global median values. Even interventions for the prevention of malaria, which have shown greater accelerations in coverage than any other indicators in recent years,[32] are not reaching their life-saving potential. In endemic countries with available data, only 23% of women report receipt of malaria prevention during pregnancy, and only 38% of children younger than 5 years were reported to be sleeping under an

	Countries with data (n)	Median coverage (%)		Change (% points)	Proportion of gap closed (%)
		2000–08	2009–14		
Hib3 immunisation*	13	84%	95%	11	69%
DTP3 immunisation*	74	77%	88%	11	47%
First-dose measles immunisation*	71	76%	85%	9	38%
First-line antimalarial treatment†	21	8%	43%	35	38%
Antenatal care (≥1 visit)	63	85%	90%	6	36%
Children sleeping under ITNs†	38	16%	40%	24	29%
Vitamin A supplementation (2 doses)	47	86%	90%	4	29%
Improved drinking water sources‡	73	73%	79%	6	22%
Demand for family planning satisfied	43	54%	64%	10	21%
Skilled attendant at delivery	66	55%	65%	9	21%
IPTp for malaria during pregnancy†	26	7%	25%	18	19%
Exclusive breastfeeding (<6 months)	58	33%	41%	9	13%
Care-seeking for symtoms of pneumonia	57	48%	54%	6	12%
Antenatal care (≥4 visits)	44	50%	56%	6	12%
Oral rehydration salts treatment	58	30%	38%	8	11%
Oral rehydration therapy with continued feeding	49	42%	48%	6	10%
Improved sanitation facilities‡	73	38%	42%	4	6%

To note, if more than one survey was conducted in a period, the most recent was used. Tables include only indicators for which trend data are available in the datasets shared by UNICEF to date. Hib3=three doses of *Haemophilus influenzae* type B immunisation coverage. DTP3=three doses of combined diphtheria/tetanus/pertussis vaccine immunisation coverage. ITNs=insecticide-treated net use. IPTp=intermittent preventive treatment of malaria during pregnancy. *2004 data used for first time period and 2012 data used for second time period. †Analysis includes countries where at least 75% of the population is at risk of malaria and where a substantial proportion (50% or more) of malaria cases is due to *Plasmodium falciparum* (n=44) or where 50–74% of the population is at risk of malaria and where a substantial proportion (50% or more) of malaria cases is due to *P falciparum* (n=8). ‡Includes 2015 data. Source: Immunization rates, WHO and UNICEF; improved water and sanitation, WHO and UNICEF Joint Monitoring Programme for Water Supply and Sanitation; all other indicators, UNICEF global database, July, 2015, based on Demographic and Health Surveys, Multiple Indicator Cluster Surveys, and other national surveys; does not include 2014–15 Rwanda data.

Table 2: **Changes in national coverage of Countdown interventions from 2000 to 2008 to 2009 to 2014 using most recent data in each period, and by percentage of the gap to 100% coverage closed between the two periods**

insecticide-treated net. Treatment interventions are still reaching fewer than 40% of children with malaria or diarrhoea, and only 54% of children with symptoms of pneumonia are taken outside the home for care. Immunisations continue to be an exception, with median coverage generally greater than 85%, although intercountry variation is still marked.

Time trends in intervention coverage were featured in an earlier publication[32] and are updated in table 2. Three broad patterns are evident. First, the three malaria interventions that started less than 20% in the earlier period showed substantial increases with time. HIV interventions are not shown in table 2 because baseline data were not available due to changes in the methods, but the prevention of mother-to-child transmissions with antiretrovirals reached 53% in the most recent period with a range of 1% to more than 95% across countries with data. Second, some interventions already showed high coverage around 2000, and increased modestly in absolute terms, partly because there was little scope for increase; these include antenatal care (at least one visit), improved drinking water sources, and the three vaccines. Nevertheless, a substantial proportion of the gap was closed for these interventions. The third group includes all other interventions, which had less than 60% coverage up to 2009 and increased by 10% points or less: family planning, four or more antenatal care visits, skilled birth attendance, improved sanitation facilities, exclusive breastfeeding, and all the case-management interventions against diarrhoea and pneumonia. These patterns suggest that rapid coverage increases are possible when interventions are prioritised and generously funded as in the case of the malaria or HIV indicators. On the other hand, very little progress was noted for interventions that require service contacts along the continuum of care and 24/7 service availability, particularly during pregnancy and childbirth, and for the management of childhood diarrhoea and pneumonia.

Further improvement is needed urgently in the quantity and quality of data for monitoring coverage. For example, there is no guarantee that women and children who report a service contact actually receive the full complement of interventions that should be delivered during that contact. Reported coverage for antenatal, delivery, and postnatal care therefore represent so-called best case scenarios for actual coverage of interventions that should be provided during those contacts. New Countdown secondary analyses of patterns of antenatal care in seven countries show widely varying patterns of drop-off between the first antenatal care visit and subsequent visits, with women reporting more visits having an increased probability of receiving recommended interventions. Redoubled efforts are needed to ensure that contact with health services results in the delivery of all recommended life-saving interventions. New approaches are also needed to link household surveys and health facility survey data to generate essential data for service quality that are currently lacking (appendix pp 12–13).

Equity

The equity dimension was noticeably absent from the MDGs.[33] Since its first report, Countdown has provided original analyses of inequalities in intervention coverage by wealth, sex of the child, place of residence, and other social determinants. These analyses consistently show systematic pro-rich inequalities for virtually all coverage indicators.[34] The gaps are wider for interventions, such as antenatal care (four or more visits) and skilled birth attendance, that require access to fixed health facilities, compared with interventions such as immunisation that can be delivered at community level.[34] Our analyses have also shown that countries that made rapid progress in coverage were those that effectively reached the poorest families.[35]

The growing availability of surveys allows disaggregated analyses of trends in coverage for the poorest and richest

quintiles of mothers and children, across a large number of countries. Figure 2 shows these results for the composite coverage index (CCI) in 47 Countdown countries with available information from several surveys. Globally, CCI coverage increased for both the richest and poorest quintiles, but the increase was steeper among the poorest (1·0% point per year [95% CI 0·8–1·1]) than for the richest (0·3% point [0·2–0·4]; figure 2A). The rich–poor gap declined from 28% points in 2000 to 19% points by 2014. This finding indicates an increase in coverage equity in both absolute and relative terms (both trends with p<0·0001; figure 2B).

Whereas the coverage gap between rich and poor mothers and children persists, inequalities are decreasing, at least for the eight long standing interventions that are part of the CCI.

Similar to coverage, data availability for equity analyses has improved, but there is still much scope for progress. Repeated surveys with consistent measurement of equity stratifiers, such as wealth, sex, residence, or ethnic origin, are required to identify priority groups and track subnational progress over time.

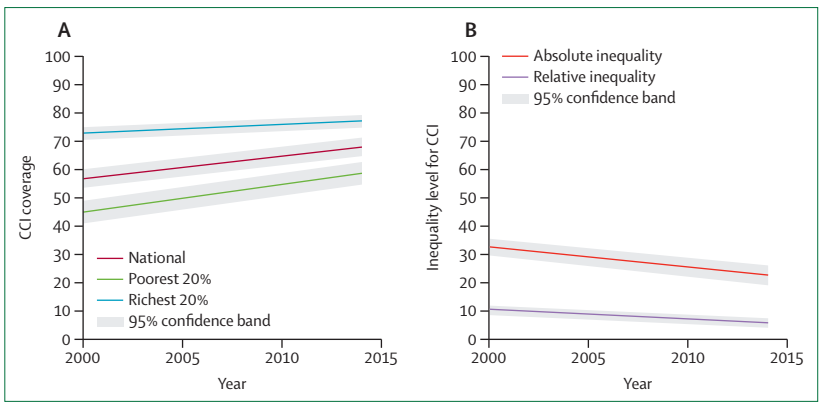

Figure 2: **Global trends in the composite coverage index at national level and for the poorest and richest 20% of the national samples in 47 countries and (A) global trends in absolute (slope index of inequality) and relative (concentration index) inequalities in the composite coverage index (B)**
CCI=composite coverage index.

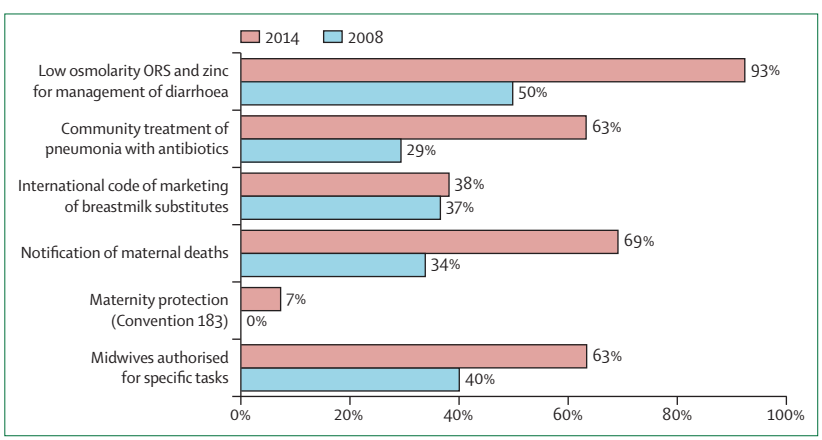

Figure 3: **Trends in the adoption of selected tracer policies at macropolicy and micropolicy level, 2008–14 (68 Countdown countries, %)**
ORS=oral rehydration salts.

Health systems and policies

Supportive policy environments and functional health systems with adequate human resources are prerequisites for high and equitable coverage. The number of policy and systems indicators tracked in Countdown has increased from five in 2005 to 11 in this year's 2015 report, including four measures of systems that are crucial to effective service delivery for women and children. These indicators are consistent with international frameworks.[36,37] Although further work is needed to develop comparable metrics for implementation strength at national and subnational levels, Countdown is finalising a set of instruments to describe relevant policies and aspects of RMNCH programme implementation across countries and over time.

Notable progress in adoption of supportive policies has occurred across the Countdown countries (appendix p 14 shows adoption rates for ten essential policies based on a 2013–14 WHO survey). Figure 3 shows that the number of countries that adopted each of six policies for which trend data are available increased substantially between 2008 and 2014. However, more progress is needed, particularly for policies that are lagging such as maternity protection in accordance with Convention 183 of the International Labour Organisation (including maternity leave and employment protection during pregnancy and the postnatal period) and the International Code of Marketing for Breastmilk Substitutes.

Increased investment in information systems has resulted in an expansion of available data for skilled health professionals.[38] Three-quarters of Countdown countries remain below 22·8 physicians, nurses, and midwives per 10 000 population, a threshold WHO considers necessary to achieve relatively high coverage of essential health interventions.[38] The most recent estimates show a median density of skilled health professionals of 10·2 per 10 000 population in the Countdown countries, ranging from 1·6 per 10 000 in Madagascar and Niger to 142 per 10 000 population in Uzbekistan.

Countdown has contributed to substantial increases in data availability on policies by helping to shape the contents of the WHO's biannual policy survey. More work is needed to overcome the limitations of the use of a survey-based approach, to ensure more timely and accurate information, and to explore associations between policies and changes in coverage levels. Efforts are under way to assess the feasibility of collection of data for selected tracer indicators of the quality of care (appendix pp 12–13).

Financing

The establishment of the MDG framework led to a major upswing in political prioritisation of women's and children's health,[39] and official development

assistance (ODA) surged after the MDG summit in 2000.[40] Although the growth in ODA slowed after the economic crisis in 2007–08, trends from 2003 to 2012 in Countdown countries show a tripling of ODA to maternal, newborn, and child health (from US$2 billion to $6 billion). Most of the investment was for general health care (including health systems support), reproductive health, malaria programmes, and immunisation programmes.[40] During this same time period, ODA for projects that mention newborns grew exponentially, from $33 million to $1 billion, reflecting the growing visibility of newborn health, yet far too little in view that neonatal causes represent almost half of under-5 deaths. A comparison of the present estimates with those produced by the Institute of Health Metrics and Evaluation, the Partnership for Maternal Newborn and Child Health, and United Nations Population Fund is available in the full Countdown report. Although these funding increases and the spike in high level commitments to RMNCH between 2010 and 2015 are encouraging, more is needed. In particular, better targeting of resources to countries with the greatest need could help to narrow equity gaps and help to achieve the next set of goals.

Each of the Countdown case studies include a detailed analysis of trends in financial flows to RMNCH, and show the complexity of the funding environment. The Peru and Ethiopia case studies, for example, both showed rapid recent growth in RMNCH expenditures. Yet the two countries used different resources and financing mechanisms to fund their programmes. Peru, an upper-middle-income country, relied mostly on domestic funding, whereas Ethiopia, a low-income country, relied heavily on external funding. Both countries have high levels of out-of-pocket spending, which must be addressed to make health care more affordable to disadvantaged population groups.

What about the future? The general consensus across the panoply of resource tracking efforts is that ODA expenditures for RMNCH are increasing.[40,41] For domestic spending there is insufficient data for RMNCH expenditure to estimate trends. The work of the *Lancet* Global Commission on Investing in Health, which emphasises the centrality of RMNCH to achieve global development, and the World Bank's recently announced Global Financing Facility for RMNCH, are signs that investments in RMNCH will continue to grow.[42,43] However, the multiplicity of goals and targets in the SDG framework could detract from a sustained and accelerated focus on RMNCH, leaving many donor-dependent countries short of funds. The most important future strategies could be those that shore-up the contribution of national sources to RMNCH, using mechanisms such as the establishment of concrete accountability procedures that strengthen the collaboration between citizens and governments and build more sustainable and efficient funding for RMNCH at local levels.

Monitoring and accountability: how can the Countdown experience inform the SDGs?

The MDGs encouraged global political consensus, provided a focus for advocacy and visibility, improved the targeting and flow of aid, and strengthened monitoring of process and outcome indicators.[39] Within the context of the health MDGs, Countdown played a unique part as a multistakeholder initiative. Countdown's success in monitoring and accountability at country level for MDGs 4 and 5[44,45] was complemented by other initiatives, such as the Independent Expert Review Group,[8] that relied heavily on our data to push for global level accountability. Our experience has inspired others. For example, advocates for the Non-Communicable Diseases Countdown 2025 wrote: "lessons from Countdown to 2015 include the importance of collaboration and inclusiveness; adaptation of global targets to the national situation; regular measurement; transparent review and publication of progress on priority interventions and outcomes; strong engagement of academia and civil society; regular reports based on fairly simple summaries of country progress; and adequate resources. Countdown to 2015, while retaining a core of basic information, has evolved to include detailed country reports and shows the value of a strong and independent partnership for global health."[46] Leaders of global initiatives developed to track physical activity (P C Hallal, personal communication) and nutrition (L Haddad, personal communication) also acknowledge that Countdown has inspired their work.

This final Countdown report focuses on time trends in the past 15 years. Intervention coverage increased for most interventions, and particularly for those that received substantial donor investment such as interventions against malaria and HIV.[7,13] The gap in coverage between rich and poor seems to be narrowing, at least for interventions that have been available in low-income countries for many years. More countries are adopting RMNCH policies, and financing for the health of mothers, newborns, and children has increased. Each of these statements about general trends, however, must be qualified. Cost-effective interventions are still failing to reach a large proportion of those who need them. Socioeconomic inequities in coverage are still rampant within virtually every Countdown country. Essential policies and sufficient and equitably distributed human resources and commodities are still lacking in most countries. And despite increased funding, there is still a huge shortfall of reliable resources for RMNCH.

The post-2015 SDGs are unquestionably much broader and more complex than the MDGs. Their adoption will bring about substantive challenges to monitoring and accountability. To conclude, we address how lessons learned from the Countdown process could be relevant to the SDG era.

The MDGs were launched in 2000 with a baseline of 1990, a peculiar choice implying that signatory countries were held accountable for trends during the preceding

10 years. Additionally, the absence of real-time data for births and deaths led to complex modelling procedures to estimate concurrent and past maternal and child mortality. Reliance on these methods meant that historical trends were revised every time new data became available. Baseline values therefore kept changing, and countries seemed to be aiming at moving targets. Fortunately, the SDG starting date is fixed in 2015, but substantial investments in data collection are urgently needed to provide valid and precise baseline levels.

Whereas child mortality estimates are based on actual data from censuses, surveys, or civil registration, maternal mortality is modelled for most low-income and middle-income countries on the basis of predictor variables such as gross domestic product per capita, fertility, HIV prevalence, and coverage of skilled birth attendants.[16] There are important problems with the acceptability of modelled estimates at country level, yet very few countries have invested in large-scale surveys or registration systems to actually measure maternal mortality.[47,48]

In summary, monitoring during the MDG era was largely dependent on modelled mortality estimates, coverage measurements derived from infrequent household surveys, and ad-hoc systems for tracking policies, health system measures, and funding flows. Additionally, the MDG framework has been largely criticised for its neglect of equity. If the international community is serious about achieving the SDGs, it must invest now in improvements and innovations in measurement.[49] The area of measurement of effective coverage and the quality of preventive and curative interventions deserves special attention.

There are other aspects of the SDGs that the Countdown experience suggests are likely to be problematic. For example, MDGs 4 and 5 were clearly defined, with quantitative goals for relative mortality reductions. The corresponding SDGs (3·1 and 3·2) propose absolute targets of 25 per 1000 livebirths at national level for under-5 mortality, 12 per 1000 livebirths for neonatal mortality, and a global maternal mortality ratio of 70 per 100 000 livebirths. According to 2013 estimates, six Countdown countries already have under-5 mortality rates less than 25 deaths per 1000 livebirths, and 11 have maternal mortality rates less than 70 deaths per 100 000 livebirths (table 1). What type of progress, if any, should these countries be aiming at? Based on the Countdown experience of interacting with countries regarding progress towards global goals, we believe that the provisional SDG targets must be urgently revisited.

It is also important for targets to be realistic. The fact that only 25 and six of the 75 Countdown countries will likely reach MDGs 4 and 5, respectively, suggests that the original targets were too ambitious in view of the reported progress in terms of financial flows and health systems factors such as human resources and policies.

The Countdown experience taught us the importance of identifying evidence-based interventions, and tracking coverage change over time on a country-by-country basis. Although monitoring of 73 coverage indicators is a huge task, it provides specific feedback on what needs to be improved, and where. This level of detail is essential, but we also felt a need for a summary measure—the CCI. We found this to be robust, stable, and highly associated with measures of mortality.[7] The CCI provides a promising approach to the measurement of universal health coverage, and includes a focus on equity, two pillars that lie at the heart of the health SDG.

The large number of SDG targets—169 at some stage—has brought about substantial criticism.[50,51] Although work is under way to trim down this list, the Countdown experience shows that an initially small list of goals and core indicators can rapidly expand with time, as new interventions become available, and as different interest groups lobby—often with strong justification—for inclusion of additional indicators. A rigorous technical process must be in place to ensure the validity and reliability of these new indicators, to make sure monitoring efforts stay coordinated and focused, and to minimise the reporting burden on countries.

Countdown found its niche in a plethora of global initiatives: a focus on intervention coverage at country level. Our focus does not overlook other drivers of women's and children's health, such as social or environmental determinants.[52] We recognise that biomedical interventions are one of the most important pathways through which distal, social determinants affect health. During the SDG era, tracking progress in social and environmental determinants and understanding how these affect health and development will be just as important as tracking progress in coverage or health status, and will likely face similar data availability challenges as were faced by Countdown.

Other aspects of the Countdown experience might be relevant to similar initiatives in the SDG era. Involvement of many stakeholders is essential to ensure that data lead to action. Retaining scientific independence in the midst of stakeholders with different interests and agendas was not always a smooth process, but Countdown managed to achieve and maintain consensus on indicators that should be monitored and disseminated. Positive pressure from stakeholders led to our expansion from child survival in 2003 to the full RMNCH continuum of care. Balancing focus with breadth is not easy, and will likely be even harder in the SDG era, both within the health goal and across all 17 SDGs.[53] Countdown engaged with civil society at the international level, as several of its stakeholders represent such constituencies. Engagement at national level, however, was mostly restricted to countries where case studies were done and disseminated. Nevertheless, several of the key Countdown stakeholders led activities at national level that were consistent with our mandate and harmonised with our main messages.

A Viewpoint[54] in this issue of *The Lancet* explores future directions for Countdown. Regardless of what lies ahead,

our experience in the past 10 years has established the importance and feasibility of a multistakeholder initiative, with independence and a strong technical component, in accelerating progress for the world's mothers and children. The auspicious launch of a Global Financing Facility[42] in support of the Every Woman Every Child initiative highlights the need for continued, independent monitoring and accountability in the future.

Contributors

CGV, JHR, and JB wrote the first draft of the Review. All authors contributed to revisions and writing.

Declaration of interests

We declare no competing interests.

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