Determinants of coverage

Countdown recognizes the importance of health systems, the legislative framework, financial resources and contextual factors (such as education, water and sanitation, governance, conflict and other humanitarian emergencies, environment and socioeconomic factors, including the status of women) in determining country ability to achieve high and equitable coverage. This section provides an update on country progress in strengthening health systems and the policy environment for women and children; trends in official development assistance for maternal, newborn and child health; and examples of how context matters in maternal, newborn and child survival.

Strengthening policies and health systems: the building blocks for progress

Countdown monitors key health policy and health system indicators critical to the scale-up of essential reproductive, maternal, newborn and child health interventions. Selected indicators cover the continuum of care and the six health system building blocks (leadership and governance, health systems financing, access to essential medicines, health information systems, health workforce and health service delivery). The good news is that there has been progress in policy adoption and health system strengthening. But gaps remain and must be addressed for Countdown countries to achieve Millennium Development Goals 4 and 5.

Supportive legislation is a key first step in improving access to and quality of care; it must be followed by sustained political commitment and strong support from stakeholders so that policies are translated into action on the ground. In 2012, 30 of 68 Countdown countries with available data reported adopting a policy recommending postnatal home visits within the first week of life, critical for ensuring that newborn babies receive essential care when the risk of mortality is highest (figure 15). A recent WHO survey found that community health workers in Sub-Saharan African and Asian countries with this policy provide home visits for both mothers and newborns (box 11). The number of Countdown countries with a policy allowing community health workers to treat pneumonia, enabling access to timely lifesaving care at the community level, has more than doubled in four years, from 18 to 38. Sixteen countries have adopted a policy on pneumococcal vaccine, and nine a policy on rotavirus vaccine, demonstrating a strong commitment from governments to introduce these new and effective interventions for child survival. However, progress has been limited on protective policies for maternity leave for new and expecting mothers and on the International Code of Marketing on Breast-milk Substitutes, which are needed to create an environment that promotes maternal and newborn health.

Critical health systems input: human resources

Implementing supportive policies and programmes for reproductive, maternal, newborn and child health depends on adequate human resources. Health care workers can deliver quality services effectively only if sufficient funds are allocated to support the health care infrastructure, including supply chain management and health information systems. Increasing access to care also depends on reducing financial barriers to receiving care, particularly out-of-pocket costs.

A total of 53 Countdown countries (including South Sudan) have a severe shortage of health workers, defined as an aggregate density of physicians, nurses and midwives below 2.3 per 1,000 people. In many cases available health personnel have an inappropriate mix of skills relative to service needs on the ground. The human resources crisis is most pronounced in Countdown countries in West and Central Africa and in East and Southern Africa (figure 16).

Inequities in the distribution of health care workers within Countdown countries are also vast. Reasons include shortfalls in the number of trained workers...
available and reluctance on the part of health workers to serve in remote and rural areas because of unsatisfactory living and working conditions, lower status and levels of recognition, and a lack of opportunities for professional advancement.\textsuperscript{25} Seventeen \textit{Countdown} countries encourage health care providers to work in underserved areas by adopting WHO global policy recommendations for health worker education, regulation, financial incentives, and professional and personal support.\textsuperscript{26}

Addressing the human resources crisis for reproductive, maternal, newborn and child health is a major call to action in the Global Strategy for Women’s and Children’s Health.\textsuperscript{27} The Second Global Forum on Human Resources for Health in 2011 called on all stakeholders to combat the human resources crisis through widespread adoption of supportive policies (for example, on innovative skills mix approaches, deployment and retention schemes, and training), improvements in health workforce information systems and predictable long-term investments in health workforce development.\textsuperscript{28}

There are positive examples of innovative approaches to tackle health workforce challenges: evidence continues to accumulate on the effectiveness of nonphysician clinicians in delivering emergency obstetric care services in remote and rural areas (such as in Tanzania);\textsuperscript{29} countries such as Kenya are establishing bilateral agreements with other countries in the region to collaborate on health workforce training and promote circular migration of health workers;\textsuperscript{30} research is being conducted in a variety of settings from Ghana\textsuperscript{31} to Lao People’s Democratic Republic (discrete choice experiments)\textsuperscript{32} on the incentives most likely to improve health workforce deployment and retention.

Malawi has implemented an innovative emergency human resources programme that includes task-shifting approaches to enhance training, deployment and retention of health workers (box 16 later in the report). The initiative is credited with saving more than 13,000 lives, estimated using the Lives Saved Tool and based on increases in coverage between 2004 and 2009 in antenatal care, skilled attendant at birth, prevention of mother-to-child transmission of HIV and vaccinations.\textsuperscript{33} Continuing investment will be critical to sustain these gains.

By contrast, recent evidence shows that external assistance for human resources for health from leading global health initiatives is only partly aligned with national health workforce development priorities.\textsuperscript{34}

\textit{Financial resources for reproductive, maternal, newborn and child health in Countdown countries}

Policymakers need financial information to make informed decisions on setting priorities, efficiently allocating resources among competing health care needs and ensuring sustainable funding for programmes. There are three main sources of funding for reproductive, maternal, newborn and child health in \textit{Countdown} countries: government expenditures, external expenditures (resources provided by development partners as official development assistance) and private spending (of which out-of-pocket expenditure is typically the largest component).
The financial picture: paying for reproductive, maternal, newborn and child health services

Median per capita health expenditure in 68 Countdown countries with available data is $104 (in 2010 international dollars), including expenditure funded by external sources (figure 17), up from $80 in 2007. Government health expenditure as a share of total government expenditure is less than 10% in more than 40 Countdown countries and has not changed across Countdown countries since 2007, with those in Latin America and the Caribbean and West and Central Africa generally showing decreases. Out-of-pocket expenditures account for less than 15% of total health expenditure in just 5 countries, indicating that many households in Countdown countries are at increased risk of financial catastrophe and impoverishment due to health care costs.

Governments can increase access and reduce financial barriers for reproductive, maternal, newborn and child health services through pro-poor legislation (for example, expanding fully or partially subsidized prepayment schemes, removing user fees and other financial barriers to access, instituting conditional cash transfer schemes, creating universal health systems and the like) and adequate funding for reproductive, maternal, newborn and child health, including from domestic resources.

Many Countdown countries have introduced reforms and new financing mechanisms to improve service access and financial risk protection. For example, Ghana made maternal health services in accredited facilities free starting in 2008. Vietnam exempted fees for services for poor mothers in 2003 and for children in 2009. Both countries also introduced large scale prepayment schemes that emphasize cross-subsidization between different populations to reduce out-of-pocket payments and augment funding for improving the quality and availability of health services, including reproductive, maternal, newborn and child health services. These examples show how women and children can benefit directly from government commitment to achieving universal coverage.

The Commission on Information and Accountability for Women’s and Children’s Health’s (2011) Keeping Promises, Measuring Results highlighted the importance of tracking domestic expenditure on reproductive, maternal, newborn and child health. For many Countdown countries domestic spending exceeds official development funding.
assistance flows, especially when out-of-pocket expenditures are considered. Recent evidence on domestic spending on reproductive, maternal, newborn and child health in many Countdown countries is not readily available, however, and comparisons across large numbers of countries are still not possible. Several international agencies, including WHO and UNFPA, are working with countries to develop such evidence in different regions. Countdown is working with its partners to support countries and the international community in improving the tracking of both external and domestic resources for maternal, newborn and child health as part of the Accountability Agenda follow-up process. Countdown is committed to helping build the capacity of countries to estimate and use indicators of per capita expenditure on total health and maternal, newborn and child health expenditures by source of financing to accelerate progress towards Millennium Development Goals 4 and 5.

Countdown data on official development assistance to maternal, newborn and child health goes back to 2003, and this report presents updated data for 2009. Countdown expects to release data for 2010 and a new analysis of official development assistance for reproductive health later in 2012. Monitoring official development assistance supports evidence-based decisionmaking and strengthens accountability for commitments by development partners to maternal, newborn and child health. Data on actual spending provide a benchmark of the financial resources available and can be used to estimate the additional investments required to achieve Millennium Development Goals 4 and 5. Breakdowns of official development assistance by source and recipient that highlight whether funds are being allocated to the countries most in need of external support can improve allocation and efficient use (box 12). More detailed analyses, such as by programme (for example, malaria) or recipient group (for example, newborns), have been undertaken and are needed for accountability. These analyses rely on the quality data on official development assistance to maternal, newborn and child health, which goes back to 2003.
of donor reporting, suggesting that greater specificity in official development assistance tracking depends on improving and adhering to donor reporting mechanisms. For example, a recent analysis found that only 0.1% of total official development assistance for maternal, newborn and child health was used for projects whose description explicitly mentioned interventions to reduce neonatal deaths. The lack of specificity in official development assistance reporting makes it unclear whether this finding indicates a need for improvement in project descriptions, for increases in official development assistance for neonatal interventions or for a combination of both.

Official development assistance for maternal, newborn and child health in *Countdown* countries has increased steadily over the past decade and accounted for about 40% of official development assistance to health in 2009. The 2009 data suggest that the rate of increase is levelling off. Total official development assistance has been concentrated in Sub-Saharan Africa and South Asia, especially in countries with large numbers of mothers and children.

**From whom?**

In 2009 the United States was the largest source of official development assistance for maternal, newborn and child health, followed by the Global Fund to Fight AIDS, Tuberculosis and Malaria and the International Development Association of the World Bank (see figure 1).

**To whom?**

In 2009 approximately three-quarters of official development assistance for maternal, newborn and child health went to the 75 *Countdown* countries, with Nigeria and India receiving the most (see figure 2). The amount varies widely across countries and is not always in proportion to need. Total official development assistance has been concentrated in Sub-Saharan Africa and South Asia, especially in countries with large numbers of mothers and children.
Official development assistance for child and maternal and newborn health varies widely across Countdown countries, even after adjusting for the size of the vulnerable population. For example, in 2009 official development assistance per child ages 0–5 averaged $1.60 for the 10 countries receiving the least official development assistance and $38 for the 10 countries receiving the most (figure 18). Similarly, for maternal and newborn health the average was $4.18 per live birth for the 10 countries receiving the least official development assistance and $90 per live birth for the 10 countries receiving the most. Of the 10 countries that receive the most official development assistance for child health, 7 are also among the 10 countries that receive the most official development assistance for maternal and newborn health; 6 countries are among the 10 countries that receive the least official development assistance for both child health and maternal and newborn health.

Assessing the targeting of official development assistance relative to need reveals that factors other than need influence allocations to countries (see figure 18). More-populated Countdown countries often received more official development assistance for maternal, newborn and child health in absolute terms. When adjusted for the size of the vulnerable populations, however, received funds show a different picture. For example, in 2009 India received the third most official development assistance for child health in absolute terms, but the amount received per child ages 0–5 was $1.58, compared with $12.28 in Nigeria and $17.88 in Ethiopia, the two recipients of the most official development assistance for child health in absolute terms. For maternal and newborn health India received the most official development assistance in absolute terms but only $4.89 per live birth, compared with $14.24 in Nigeria, which received the second most official development assistance
for maternal and newborn health, and $27.24 per live birth in Ethiopia, which received the fourth most. Afghanistan received the third most official development assistance, or nearly $63.40 per live birth. These examples show that absolute values alone do not accurately portray how official development assistance flows benefit individual mothers, newborns and children in Countdown countries, a situation complicated by important subnational inequities by urban-rural location, region of the country and socioeconomic groups.

Context matters: coverage and mortality change in the real world

Changes in the coverage of essential interventions happen within specific political, social, economic, epidemiological and environmental contexts (see figure 1). Many contextual factors are modifiable and reflect current unfair and avoidable health and other inequities within and between countries. Poverty and poor environmental conditions, for example, place families at higher risk of mortality decades (99 deaths per 1,000 live births) than in countries with conflict during one

Conflict prevents progress in achieving high and equitable coverage

The Uppsala Conflict Data Program\(^1\) uses a definition of conflict as the use of armed force between two parties, at least one of which is the government of a state, resulting in at least 25 battle-related deaths to determine conflict status. The results for 1991–2000 and 2001–2010 indicate that of 58 Countdown countries:

- 21 had no conflict in either decade.
- 12 had one or more conflicts in one of the two decades.
- 25 had at least one conflict in both decades.

Countdown has used these data to investigate the relationship between conflict and country progress in achieving high and equitable coverage of proven interventions (as measured by the composite coverage index; see section on coverage). The figure shows both the median composite coverage score for groups of countries with no conflict, conflict in one decade and conflict in both decades as well as median scores for countries in each group on the concentration index, a widely used measure of inequity. Higher concentration index scores indicate greater inequity. Conflict is associated not only with lower coverage, but also with greater socioeconomic inequities in coverage. Longer conflicts (for example, those longer than two decades) may have compound negative effects on coverage and equity. In addition, average child mortality in 2010 was higher in countries with conflict during the two previous decades (93 deaths per 1,000 live births) than in countries without conflict had the lowest under-five mortality rate (70 deaths per 1,000 live births).

Note

1. \(\text{www.pcr.uu.se/research/ucdp/datasets/ucdp_prio_armed_conflict_dataset/}\).
through reduced ability to pay for health care services and increased exposure to inadequate housing, water and sanitation, food supplies, education and employment opportunities. Conditions of poverty can be compounded by natural disasters, conflict and other emergencies that destroy or increase pressure on already weak health care infrastructure and displace people (box 13). Gender discrimination and other societal factors such as early age at marriage and childbearing can also contribute to poor maternal, newborn and child health outcomes.

A range of cross-sectoral measures are available to remedy broader contextual challenges to progress. Expanding access to education, introducing gender-based affirmative action policies, adopting a human rights framework and adopting efforts to improve living and working conditions such as water and sanitation supplies (box 14) can all make a difference. Political commitment to reproductive, maternal, newborn and child health and strong leadership are also critical to ensuring access to care.

Other contextual factors that play a role in maternal and child health and nutrition include education, environmental factors, such as water and sanitation, pollution and climate. Countdown maintains data on coverage of water and sanitation (see box 14) but does not have direct indicators of the potential effects of education, pollution or climate change at present. Countdown recognizes their importance for the futures of women and children.42

It is notable that some countries—such as Pakistan (box 15)—have been able to maintain and even strengthen reproductive, maternal, newborn and child health programmes despite important contextual disruptions and challenges. In some situations the breakdown of existing systems can even provide an opportunity to create new and more supportive policies and programmes for women and children.

BOX 14
Water and sanitation: countries reach targets!

Good news! Median coverage of improved sources of drinking water in Countdown countries increased from 60% in 1990 to 76% in 2010 (see figure). Of 69 Countdown countries with available trend data, 23 have met the Millennium Development Goal target on proportion of the population using an improved drinking water source, and 16 are on track. However, 24 countries are not on track, and 6 are making insufficient progress. Coverage continues to be much higher in urban areas than in rural areas: in the 72 Countdown countries with available disaggregated data for 2010, median coverage was 91% in urban areas compared with 64% in rural areas.

Median coverage of improved sanitation facilities remains low across Countdown countries but has increased markedly, from 27% in 1990 to 40% in 2010 (see figure). Ten countries have achieved the Millennium Development Goal target on the proportion of the population using an improved sanitation facility, and ten are on track. But the majority are not on track (47 countries) or are making insufficient progress (3 countries). Urban-rural inequities in coverage of improved sanitation facilities are also pronounced. In 72 Countdown countries with available disaggregated data for 2010, median coverage was 55% in urban areas compared with 31% in rural areas.

These data show that it is possible for Countdown countries to achieve rapid gains in coverage of improved water sources and sanitation facilities. Countries need to continue efforts to reach households in rural and other underserved areas and to concentrate on scaling up access to improved sanitation facilities.

Coverage of improved drinking water sources and sanitation facilities has improved since 1990

<table>
<thead>
<tr>
<th>Median coverage in Countdown countries with available data (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1990</td>
</tr>
<tr>
<td>Drinking water</td>
</tr>
<tr>
<td>60%</td>
</tr>
<tr>
<td>Sanitation</td>
</tr>
<tr>
<td>25%</td>
</tr>
</tbody>
</table>

Pakistan lies at the centre of one of the most volatile geopolitical regions of the world. In its 65 year history the country has experienced three military coups and three full-scale wars with India, the most recent of which occurred in 1971 and ended in the breakup of the country into the current Pakistan and Bangladesh. The debilitating Afghan wars following the Russian invasion of 1979 and the U.S.-led invasion of 2001 have resulted in smouldering conflict and insurgency in the northwest and the federally administered tribal areas. Pakistan’s population has grown from 27 million at the time of independence in 1947 to an estimated 187 million people in 2011, a third (36.7%) of whom are under age 14. Pakistan has hosted millions of Afghan refugees over the last three decades and endured major humanitarian emergencies in recent years, including an earthquake (2005) and massive floods (2010 and 2011).

Progress in maternal, newborn and child health indicators in Pakistan has been insufficient to reach the Millennium Development Goals (see table 1 in the main text). There is considerable variation across provinces and the federally administered tribal areas in resources, access to services and development. The most recent Demographic and Health Survey (2006–07) did not have province-level specificity, but information from a series of provincial level surveys suggests huge differentials in infant mortality between districts (see map). Despite the country’s agrarian economy, a 2011 national nutrition survey suggests that a quarter to a third of households are moderate to severely food insecure and that rates of anaemia among women of reproductive age and of child stunting and wasting have remained static over the last three decades. Findings from the 2006–07 Demographic and Health Survey also indicate that despite some reduction in post-neonatal infant and child mortality since 1991, the number of newborn deaths has remained largely unchanged, and they now account for half of child deaths. Some 57% of neonatal deaths occurred within the first 72 hours after birth; the vast majority were within the first 24 hours. Coverage of many reproductive, maternal, newborn and child health interventions remain unacceptably low, as shown in the country profile. The composite coverage index, an average of eight essential reproductive, maternal, newborn and child health interventions, is only 56% for the country as a whole, with huge differentials between the poorest and richest subgroups (see figure). Insufficient vaccination coverage makes Pakistan one of the last three countries to have reported endemic polio, with 198 cases in 2011.

**Subnational variations in infant mortality illustrate diversity**

![Infant mortality rate per 1,000 live births](image)

Source: Pakistan Multiple Indicator Cluster Surveys.

**High socioeconomic inequity in coverage of interventions for maternal, newborn and child health in Pakistan**

![Composite coverage indicator by wealth quintile, Pakistan, 2005–06](image)

Source: Pakistan Demographic and Health Surveys 2005–06.

The recent disbandment of the federal health ministry following the 18th constitutional amendment has placed a huge responsibility on provinces for planning and action on public health, especially reproductive,
The bottom line: coverage gains but no room for complacency

In summary, the 2012 Countdown results on coverage are encouraging—and show that progress is possible! Some countries are setting an example of what can be achieved – for one or two interventions, or better yet for multiple interventions across the continuum of care and requiring functioning health systems. But much remains to be done, not only before 2015 but in the years that follow. Coverage is still much too low for interventions that require 24 hour access to trained health personnel; efforts to deliver these interventions at the community level are expected to increase rapidly in the next few years. Equity in coverage remains a challenge for many countries, and quality is only now beginning to receive the attention it deserves. The next section of the report builds on these findings to examine the kinds of progress needed to prevent unnecessary deaths among women and children.

Note
1. Khan and others forthcoming.