TRACKING PROGRESS IN CHILD SURVIVAL
THE 2005 REPORT
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<tr>
<td>AARR</td>
<td>Average annual rate of reduction</td>
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<td>ARV</td>
<td>Anti-retroviral treatment</td>
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<td>CHERG</td>
<td>Child Health Epidemiology Reference Group</td>
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<td>DHS</td>
<td>Demographic and Health Surveys</td>
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<td>GAVI</td>
<td>Global Alliance for Vaccines Initiative</td>
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<td>GFATM</td>
<td>Global Fund for AIDS, TB and Malaria</td>
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<td>Hib</td>
<td><em>Haemophilus influenzae</em> type B</td>
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<td>ILO</td>
<td>International Labour Organization</td>
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<td>IMCI</td>
<td>Integrated management of childhood illness</td>
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<td>ISCO</td>
<td>International Standard Classification of Occupations</td>
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<td>ITNs</td>
<td>Insecticide-treated nets</td>
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<td>LSHTM</td>
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<td>JMP WHO/UNICEF</td>
<td>Joint Monitoring Programme on Water Supply and Sanitation</td>
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<td>NMR</td>
<td>Neonatal Mortality Rate</td>
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<td>OECD</td>
<td>Organisation for Economic Co-operation and Development</td>
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<td>PMNCH</td>
<td>Partnership for Maternal, Newborn and Child Health</td>
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<td>SWAps</td>
<td>Sector-Wide Approaches</td>
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<td>USMR</td>
<td>Under-five mortality rate</td>
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<td>UNGASS</td>
<td>United Nations General Assembly Special Session</td>
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<td>UNICEF</td>
<td>United Nations Children’s Fund</td>
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<td>WFFC</td>
<td>World Fit for Children</td>
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A brief history of the Countdown effort

Ten years from now, in 2015, the governments of the world will meet to assess if we have achieved the Millennium Development Goals (MDGs), the most widely ratified set of development goals ever, signed onto by every country in the world (http://www.un.org/millenniumgoals/). MDG-4 commits the global community to reducing under-five child deaths by two-thirds from a baseline in 1990. MDG-5 has as its target reducing maternal mortality by three-quarters in the same time period.

Almost three years ago, in 2003, the Bellagio Lancet Child Survival Series helped to raise global awareness that each year over 10 million children under five die in the world, mainly from preventable conditions that rarely kill children in rich countries. This year, a second Lancet series focused on a previously neglected subset of child deaths – the almost 40% of all under-five deaths which occur among newborn babies. Together, these two series provided the necessary evidence to revitalise efforts to reduce child and newborn deaths and to achieve MDG-4. Both series demonstrated that the majority of child deaths could be prevented with simple, low-cost interventions feasible now, yet not reaching poor children. Massive increases are required in coverage of essential interventions to reach MDG-4.

What has happened in the intervening years since the Bellagio series was published in 2003? Has there been a renewed interest in child and newborn survival? Has this interest led to meaningful change in efforts to improve coverage? Have there been increases in the financial commitments to child and newborn survival?

These three years have seen real progress in advocacy for child and newborn survival. The leaders of both WHO and UNICEF have made public commitments to reducing child mortality. A global child survival partnership was formed, and in 2005 joined forces with related efforts in maternal and newborn health to form an expanded group called the Partnership for Maternal, Newborn and Child Health (PMNCH). PMNCH will focus on high-level
advocacy, acceleration of action at the country level, and strengthening global mechanisms for accountability. An annual financial road map for reaching universal coverage with newborn and child health interventions in 75 countries has been developed, and the running costs of averting six million child deaths annually in the 42 countries that accounted for 90% of child deaths in 2000 were estimated as a follow up to the *Lancet* child survival series.

There have also been encouraging efforts to strengthen child survival policies and programmes. UNICEF is fast-tracking a new strategy for child survival that encompasses both health and nutrition (http://www.unicef.org/about/execboard/files/H&Nstrategy/oralreport_5_May_rev.pdf). The Child Health Epidemiology Reference Group (CHERG) and the *Lancet* Neonatal Survival Steering Team have improved understanding of the causes of child and newborn deaths. Some countries, working in collaboration with the Child Survival Partnership, have moved ahead to translate the recommendations of the two *Lancet* series into concrete situation analyses and reassessments of program priorities. These countries include Cambodia, China, Ethiopia, India, Mozambique, Pakistan and Tanzania. All Regional Offices of WHO are working with governments and partners to develop new strategies for child survival that provide a basis for reinforced efforts to increase coverage with effective interventions, to strengthen health systems in their delivery, and to track key intermediate outcomes and eventual impact on child nutrition and mortality. In response to the *World Health Report 2005* and accompanying policy briefs, Ministers of Health at the 2005 World Health Assembly passed a resolution putting maternal and child health and survival at the top of their list of health priorities (http://www.who.int/mediacentre/news/releases/2005/prwha06/en/).

This is encouraging progress, and demonstrates that saving child lives is a cause that can unite partners and mobilize policymakers in a relatively short time period. But there is much more to be done in moving from advocacy and policy to country-led and country-owned action for newborn and child survival. Indeed much more can be done because of this strengthened support.

Initiated by the Child Survival Partnership and on behalf of a broad and growing group of institutions and agencies, the series of rolling conferences on child survival called for by the Bellagio Child Survival Study Group (Panel 1) and endorsed by the *Lancet* Neonatal Survival Steering Team will begin in December, 2005 and continue through 2015. Every two years, this “Countdown to 2015” will bring together scientists, policy makers, activists and programme personnel committed to action for child and newborn survival.

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* Recent analytic efforts in child survival over the past few years have focused on different sets of countries. The 2003 Lancet series on child survival focused on the 42 countries that together accounted for over 90% of under-five child deaths in 2000. These same 42 countries were used in later estimates of the price tag associated with achieving universal coverage for the interventions proposed in the 2003 Lancet series. The 2005 *World Health Report* and the Lancet series on neonatal survival focused on a broader subset of 75 countries with high numbers and rates of maternal as well as child deaths in 2000. A new selection of countries was made for the Countdown effort, drawing on 2004 mortality estimates and using criteria of ≥50,000 under-five deaths in that year or an under-five mortality rate of ≥90 per 1000 as reported in *The State of the World’s Children 2006*. 
Our common purpose will be to share new evidence and experience, to take stock of progress in preventing child deaths, to hold international and national level institutions accountable if the rate of progress is not satisfactory, to identify any major gaps in knowledge or existing processes that are hindering progress, to propose new actions as appropriate and to advocate for greater investment in child survival. The Countdown has focused to date on child survival including neonatal survival; the recently formed PMNCH will strengthen links with maternal health so that future Countdown activities can address maternal mortality as well. Further information on Tracking Progress in Child Survival: Countdown to 2015 may be obtained at www.childsurvivalcountdown.com.

One important barrier to progress in child survival, and especially to efforts to increase accountability, is the scarcity of timely information on intervention coverage. Nationally representative coverage surveys are carried out only about every five years in most countries, and even less frequently in others.

Governments and their partners need information about coverage levels at much shorter intervals, to enable them to improve and target the reach of their programmes. This report is one part of the Countdown effort, providing a mechanism for ensuring that the best and most recent information on country-level progress in achieving intervention coverage is widely available to serve as a basis for documenting accomplishments and revitalizing efforts where needed.
A commitment to building on existing goals and monitoring efforts

Countdown indicators and measurement approaches build on work that started in the 1990s in the context of monitoring progress toward the World Summit for Children goals. This work resulted in rapid increases in the availability of data on intervention coverage, due in large part to the development and implementation of the UNICEF Multiple Indicator Cluster Survey (MICS). Current child survival indicators reflect a united effort to remain consistent in the definition and measurement of indicators, thereby permitting the assessment of trends over time. In some cases (notably the definition and measurement of indicators for oral rehydration therapy for the prevention of dehydration during diarrhoea episodes) changes have been made in an effort to retain indicator validity as public health recommendations have changed.

The Countdown aims to sharpen and reinforce efforts already under way to support countries in meeting their commitments to global goals, and to further the effective use of information collected through existing monitoring mechanisms. This section describes some of the most important existing goals and monitoring efforts upon which the Countdown will build.

A World Fit for Children goals

The World Fit for Children (WFFC) goals were adopted at a Special Session on Children of the United Nations Assembly in 2001. Countries are expected to report on progress towards these goals and targets in 2007, and UNICEF will be reporting on global progress. These targets served as a basis for the development of the list of consensus indicators for monitoring progress toward the MDGs, and both the indicators and the data sets used to track progress are fully harmonized and assessed using identical data sets.

The Millennium Development Goals

The Millennium Development Goals (MDGs) are the world’s time bound and quantified targets for dramatically reducing the world’s poverty by 2015, including income poverty, hunger, disease, lack of adequate shelter, and exclusion – while promoting gender equality, education and environmental sustainability. The Goals also recognize basic human rights – the rights of each person on the planet to health, education, shelter, and security, as pledged in the Universal Declaration of Human Rights and the UN Millennium Declaration. There are a total of 8 goals and 18 specific targets with an agreed upon set of indicators to track progress. The MDGs with a direct focus on child and maternal survival are MDGs 4 and 5 (see Panel 2). Most if not all of the other MDGs will also have a direct or indirect

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1Much of this section was adapted from an earlier unpublished report prepared for the High Level Meeting on Maternal, Newborn and Child Health, held in India on 7-9 April 2005. The report title was “Background Paper on Monitoring of Child, Newborn and Maternal Survival”. Tessa Wardlaw and Nancy Terreri of UNICEF wrote the document with Vincent Fauveaux and Stan Bernstein of UNFPA. Judith Standley and Wendy Graham also contributed. Sources for the earlier document included public documents of UNICEF, UNFPA, WHO and the Saving Newborn Lives Initiative of Save the Children. Material was also taken from the Report of the UN Millennium Project Task Force on Child Health and Maternal Health.
impact on the survival and well being of newborns and children. For example, one of the
targets for MDG-6 is to halt and reverse the incidence of malaria and other major diseases.
The Countdown indicators for malaria prevention and treatment are among those being
tracked in the United Nations Statistics Division MDG data base

Regular monitoring of progress toward the MDGs is an important part of ensuring their
achievement. Different mechanisms have been developed for monitoring progress at global,
regional and country levels. The United Nations system provides both technical and
financial support to this process, but the primary responsibility remains with national
governments.

The Secretary General commissioned the UN Millennium Project in 2002 to serve as an
independent advisory body to propose the best strategies for meeting the MDGs. One of ten
thematic task forces focused on maternal and child health. The report of this group included
specific recommendations for a greater focus on equity and additional targets and
indicators (http://www.unmillenniumproject.org/ who/task04.htm). Several follow-up
meetings have now been held to agree on the changes that will be incorporated into the
MDG reporting process.

The indicators for MDG-4 on child survival are infant and under-five mortality rates and
measles immunization coverage. However, a wider range of indicators will be required to
adequately track progress. Toward this end, UNICEF, WHO and other experts and partners
(e.g., The World Bank, groups involved in measurement such as Macro International and
Saving Newborn Lives, and those that support these efforts including the Bill and Melinda
Gates Foundation and the United States Agency for International Development) met in June
2004 to reach interagency consensus on a minimal set of key indicators for monitoring
progress in child survival." The list of indicators agreed upon by this group is available in
Annex 1. The meeting focused on coverage and impact indicators that can be measured through household surveys. The framework for this indicator discussion was the set of prevention and treatment interventions outlined in the 2003 *Lancet* series on child survival.

**A focus on effective interventions**

A limited set of known and effective interventions, if implemented together and at universal coverage, can save over six million child lives each year. These interventions have been proven to reduce mortality from the major causes of child deaths worldwide, and are feasible for implementation at high levels of population coverage in poor countries. The cost of providing these interventions to all children who need them is affordable, estimated as about US$1.05 to $1.48 per inhabitant for the high-child-mortality countries in the analyses.

The focus on coverage should not mask the importance of broader health system characteristics or the quality with which each intervention is delivered. These are also critically important in the effort to achieve the MDGs and must be addressed. We explain in the next section of the report why monitoring of intervention quality is more suited to national- than to global-level efforts.

**Why focus on intervention coverage?**

**What is coverage?**

Coverage is defined as the proportion of individuals who need an intervention who actually receive it. For the purposes of the *Countdown*, coverage refers to target populations for specific interventions, and is always measured at the population level rather than in health facilities or other settings.

**Why track coverage at global level in preference to other possible indicators?**

1. **Timely data on intervention coverage is essential for good programme management.** Governments and their partners need up-to-date information on whether their programmes are reaching mothers, newborns and other children under five years of age.

2. **Coverage indicators are good proxies for monitoring mortality reduction.** Increases in coverage show that policies and delivery strategies are being successful in reaching children and mothers. A failure to increase coverage, assuming adequate resources and good planning have been applied, is a cause for urgent concern. District and national managers, as well as their partners, should respond to low coverage rates by examining how interventions are being delivered and by removing bottlenecks or developing revised plans for delivery.
How is coverage currently measured, and how often?
The primary source of data on intervention coverage in most low-income countries is household surveys. These surveys are often carried out in collaboration with one of two international population-based survey initiatives – the UNICEF-supported Multiple Indicator Cluster Surveys (MICS, http://www.childinfo.org/index2.htm) or the USAID-supported Demographic and Health Surveys (DHS, http://www.measuredhs.com). Programme reports are also used as a data source in the development of coverage estimates for immunization, vitamin A and the prevention of mother-to-child transmission (PMTCT) of the human immunodeficiency virus (HIV).

In collaboration with countries, these household surveys are currently planned at about five-year intervals. This made sense in the past, especially because coverage was changing slowly, but needs to be reconsidered now given renewed attention to child survival and the rapid changes in coverage that will be needed to achieve the MDGs.

What are the limitations of focusing on coverage?
The most important limitation of focusing on coverage is that coverage indicators alone cannot capture the quality with which interventions are delivered. The assessment of quality is essential, and requires assessment efforts at national level and below that can determine whether or not an intervention is being delivered at levels of quality that are adequate to ensure its effectiveness.

A second limitation is that coverage monitoring cannot answer questions about why there is progress, or especially why not. Monitoring coverage, as a stand-alone effort, will never be sufficient to improve newborn and child survival. More comprehensive efforts to monitor aspects of the health system and specific policies, programme management processes, service availability and accessibility as well as utilization and demand are essential supports to sound public health decision making. The results of the monitoring must be used at all levels to improve programme coverage and effectiveness. The Countdown aims to contribute to these broader efforts by promoting coverage as a key measure of progress, signalling areas that need to be accelerated.
Improving the availability, quality and use of information at country level is a goal shared by WHO and UNICEF, and through partnerships with the Health Metrics Network and other projects and institutions. The Countdown seeks to stimulate and direct these efforts to maternal and child health programmes in countries most in need. The next section describes some of the most important links between the Countdown and other activities at global level.

**Links to other monitoring efforts**

Countdown tracking of intervention coverage will build on and complement other efforts to strengthen the information base for sound programming in newborn and child survival. For example, the Countdown has made use of previous work undertaken by Columbia University in cooperation with USAID, UNICEF and others to develop a “Scorecard” to track policy and programme activities and provide an indication of whether progress was being made in reducing child mortality at country level.

The information presented in this and future Reports require no new data collection, although we hope it will make clear the need for more timely efforts to monitor coverage. The Countdown Reports seek instead to bring together in one place information that is both available and needed for evidence-based review and planning efforts in newborn and child health, primarily at the global level. We describe some of the most important Countdown links below.

- **Links to country-level monitoring** of newborn and child health programmes. As shown in Figure 1, country-level monitoring focuses on ensuring that needed policies, plans and resources are in place, and that programmes and strategies are implemented fully and at adequate levels of quality. Key outcomes needed to assess programme implementation include access, quality, coverage and equity. Monitoring indicators and methods must reflect country-level needs and decisions, and must provide timely information to improve programmes.

Figure 1: National and global monitoring should complement and reinforce one another

Global monitoring complements country-level efforts, but currently focuses on indicators that are closer to impact and that can be measured in ways that permit cross-country comparisons and estimates of global trends. Many indicators of coverage meet these criteria, as do some indicators of the impact of programme activities on the nutritional and health status of newborns and children. Efforts to identify and define indicators of policies, financial flows and human resources that are sufficiently valid and reliable for global
monitoring have begun, and will continue with the aim of inclusion in the 2007 Countdown Report.

Years of experience have demonstrated that monitoring efforts are more likely to be sustained and to produce valid data if they produce information useful at the level at which they are collected. The implication for Countdown efforts is that all data incorporated into the country profiles should first have been reviewed and used to improve programme functioning in districts and countries.

• The State of the World’s Children. Almost all of the population-based coverage data used in the Countdown are available from this annual publication by UNICEF (http://www.unicef.org/sowc/). The coverage figures reported in The State of the World’s Children are subject to rigorous quality controls, and reflect the best and most recent estimates available in a given year. In cases where quality data become available after the closing of The State of the World’s children databases, the quality control committee will hold special sessions to ensure that these data are included in the Countdown report.

• World Health Report. This annual publication by the World Health Organization, and the statistical tables and resources that lay behind it, is a good source of information on health system characteristics and expenditures although at present these are not specific to newborn and child survival. Data reported here on per capita expenditures on health were taken from the 2005 World Health Report. We expect country-specific cause-of-death profiles to be available from this source in the future (http://www.who.int/whr/en/).

• Health Metrics Network. This global collaboration focuses on strengthening country health information systems to generate sound data for decision making at country and global levels (http://www.who.int/healthmetrics/en/). The Countdown seeks to complement these efforts with a particular focus on newborn and child survival.

There are also a number of interagency working groups on monitoring and evaluation that can contribute to and benefit from the efforts of the Countdown. These include the Child Health Epidemiology Reference Group (CHERG), the Roll Back Malaria Monitoring and Evaluation Reference Group (MERG), the WHO/UNICEF Joint Monitoring Programme on Water Supply and Sanitation (JMP) Technical Advisory Group, the HIV/AIDS Monitoring and Evaluation Reference Group (MERG) and the GAVI Monitoring and Evaluation Task Force.
Constraints

This is the first report in the Countdown series. It includes information available through late 2005. Future reports will be expanded to include both additional indicators (e.g., for newborn health and determinants of coverage) and more complete or additional data for the existing indicators (e.g., trend data, country-specific cause-of-death data). The Report is a “living” document, expanding over time as more and better data become available.

Important constraints affecting this first Report include:

• Some indicator data are outdated – drawn from household sample surveys conducted three to five years ago. The need for more frequent assessments at country-level and below is a key finding of this first report.

• Indicator data are not available at all for some countries and for some indicators.

• The availability of data is but one of many health system features reflected in the results of the coverage monitoring; further developmental work on how best to monitor health system strength is needed urgently.

• Standard methodological approaches for estimating uncertainty around indicator estimates have not yet been finalized.

Overview of the Report

As indicated above, all data presented in this report are available elsewhere. The added value of the Countdown is to bring together in one place the basic information needed to determine whether reductions in newborn and child mortality can be expected, in a context (the rolling conferences held every two years) that will support sound decision making and maximize the probability that barriers to further progress will be noticed and acted upon by policymakers, development agencies, and donors.

Chapter 2 explains how and why the 60 priority countries were selected, and summarizes the major programmatic aims for newborn and child survival and associated indicators.

Chapter 3 focuses on the preliminary findings of the 2005 Report. Specific note is taken of settings with demonstrated progress in raising coverage levels, and areas where intensified effort is needed. This preliminary discussion of the state of affairs with respect to child survival provided a starting point for more in-depth review discussion and action planning that took place at the Countdown conference during December 2005 in London, UK.

Chapter 4 introduces the individual country profiles. These profiles were the raw material analysed at the 2005 conference, and the starting line for continuing Countdown assessments of progress. Each report presents the most recent available information on selected demographic measures of newborn and child survival and nutritional status,
coverage rates for priority interventions, and selected indicators of policy support for and financial flows to child survival.

The information summarized in these pages is intended to help policymakers and their partners assess progress and prioritise actions in the effort to reduce child mortality. Because the Countdown reports are a work in progress, and especially because the Countdown represents an informal affiliation of individuals and agencies committed to reducing child mortality, we encourage readers to engage with this material critically and to make suggestions about how its utility in promoting and guiding action can be improved. Comments, critiques and suggestions can be proposed through communication with any of the many Countdown co-sponsors, or sent directly to Nancy Terreri (nterreri@unicef.org).


This chapter begins with a description of how the 60 priority *Countdown* countries were selected. In the second section we introduce five major programmatic components within newborn and child survival, and identify the indicators that will be used to track coverage for the specific interventions within each. In the third section we introduce developmental efforts to define indicators and tracking mechanisms for three important determinants of coverage: (1) policies and political commitment; (2) human resources; and (3) financial flows to newborn and child survival. Finally we introduce the 2005 country profile template and explain the information it contains.

**Selecting the 60 priority countries**

In an ideal world, all countries would track deaths and intervention coverage among children. In today’s world, far from ideal, the *Countdown* seeks to track coverage for a subset of countries that represent the greatest burden in child mortality.

The 60 priority countries represent those with the highest numbers and/or rates of under-five mortality. They were selected from two lists of all developing countries. The first list rank-ordered countries by the total number of child deaths in 2004. All countries with at least 50,000 child deaths were selected from this list for inclusion in the *Countdown*. The second list rank-ordered countries by under-five mortality rate (U5MR). Any country not already selected from the first list, but with a rate of 90 under-five deaths per thousand live births or higher was selected from this second list for inclusion in the *Countdown*. The addition of the second list ensured that countries with small populations but high mortality rates, most of which are located in sub-Saharan Africa, were included in the *Countdown*. The 60 priority countries are shown in Figure 2; a list that includes country-specific U5MRs and ranks is presented in Chapter 3 (Table 1).

Together, the 60 *Countdown* priority countries represent almost 500 million children – over 75% of all children under five alive in 2004. They also represent 94% of all deaths among children under five in that year.
Programmatic aims and associated coverage indicators

A “good” indicator for monitoring coverage is one that provides a valid measure of whether the target population for a given intervention receives that intervention at the time it is needed and biologically effective. Each coverage indicator must therefore be directly related to a programmatic aim and a specific intervention.

We have grouped newborn and child survival interventions into five component areas for the purpose of global Countdown monitoring: (1) nutrition interventions including breastfeeding; (2) vaccination; (3) other prevention interventions; (4) case management of illness; and (5) newborn health. In this section we summarize the programmatic aims and priority interventions within each component area, and identify the associated coverage indicators. Related policies tracked by the Countdown in 2005 are also identified where appropriate.

Most of the Countdown coverage indicators have already been agreed to at a joint UNICEF/WHO meeting in June 2004 and incorporated into the questionnaires for the 2005-2006 round of the UNICEF-supported Multiple Indicator Cluster Surveys (MICS) and the USAID-supported Demographic and Health Surveys (DHS). The list of consensus indicators for child survival is available in Annex 1.

Some indicators have not yet been fully developed, field tested or agreed upon. For the purpose of the Countdown, a coverage indicator is considered fully available once it has been incorporated into the MICS and DHS survey questionnaires, thereby ensuring that country-level estimates will be widely available.

**Nutrition, including breastfeeding**
Undernutrition is an underlying cause of more than half of all child deaths worldwide. Undernourished children have lowered resistance to infection, they are more likely to die from common childhood ailments like diarrhoeal diseases and respiratory infections, and for those who survive, frequent illness can have longer-term detrimental effects on healthy growth and development.

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**Coverage indicators**

**NUTRITION**

1. Exclusive breastfeeding < 6 months
2. Breastfeeding with complementary food at 6-9 months
3. Continued breastfeeding at 20-23 months

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**Figure 2: The 60 Countdown countries include those with more than 50,000 annual deaths among children under age five or an under-five mortality rate of 90 per thousand live births or greater in 2004.**

Countdown country profiles will include three measures of nutritional status abstracted from The *State of the World’s Children*. They are the proportion of children:

- with low birth weight (infants who weigh less than 2,500g);
- who are stunted (moderate & severe – below minus 2 standard deviations from median height-for-age of reference population); or
- who are underweight (moderate & severe – below minus 2 or 3 standard deviations from median weight-for-age of reference population).4

There are many contributors to childhood undernutrition, including distal determinants such as poverty, low levels of education, and poor access to health services. At the individual level, the most important intervention is educating families and supporting good practices such as exclusive breastfeeding to six months of age and the timely introduction of appropriate complementary foods. The *Countdown* indicators in the nutritional area move one step beyond intervention coverage (e.g., exposure to educational interventions) to assess behavioural outcomes. Thus the indicators in this case are the proportion of children who are exclusively breastfed up to six months, who are still being breastfed at six to nine months in addition to receiving appropriate complementary foods, and who are still breastfeeding at age 20-23 months. A fourth indicator, timely initiation of breastfeeding (within one hour), is addressed below in the section on newborn health.

A coverage indicator related to the Baby-Friendly Hospital Initiative, which promotes early and exclusive breastfeeding through support from health providers and community members, has not been included in the 2005 *Countdown* Report. Measures of exposure to baby-friendly interventions are not currently included in the standard household survey protocols. This may be considered for inclusion as a policy indicator in future reports.

A key policy support for child nutrition is national endorsement of the International Code of Marketing of Breastmilk Substitutes (International Code). This has been included in the policy section of the *Countdown* country profiles.

**Vaccination**

Vaccination, leading to immunization, is one of the most important and cost-effective interventions that health systems can provide. All 60 *Countdown* countries seek to achieve and sustain high (90%) levels of immunization coverage for five major vaccine-preventable diseases - pertussis, tuberculosis, tetanus, polio, measles and diphtheria. Vaccines to protect against these diseases are given to the child in the first year of life. Two *Countdown* indicators track progress in reaching children with these essential vaccines. The first is *measles immunization*. The second is *coverage with the third dose of the combined vaccine for the prevention of diphtheria, pertussis and tetanus (DPT3)*. In addition, tetanus toxoid vaccine is administered to the mother before or during pregnancy to prevent maternal and neonatal tetanus, and is included as a
Countdown indicator under the section on newborn health below.

*Haemophilus influenzae* type B (Hib) is a leading cause of pneumonia and other bacterial infections among children under five years of age. An increasing number of low- and middle-income countries are incorporating Hib vaccine into their national immunization programmes. Countdown tracking should show increases over time in coverage rates for children under one year of age who received three doses of Hib vaccine.

**Other prevention interventions**

Four additional prevention interventions have been included in the 2005 *Countdown* report: vitamin A supplementation, interventions to improve access to safe drinking water and sanitation, and the use of insecticide-treated nets (ITNs) to prevent malaria. Each is described briefly below. Coverage indicators for other proven preventive interventions may be considered in future years.

**Vitamin A supplementation.** Vitamin A is essential for the functioning of the immune system. A Vitamin A-deficient child faces blindness as well as a 25% greater risk of dying from a range of childhood ailments such as measles, malaria or diarrhoea. Vitamin A enhances a child’s chances of survival, reduces the severity of childhood illnesses, eases the strain on health systems and hospitals, and contributes to the well being of children, their families and communities.

Vitamin A is found in milk, liver, eggs, red and orange fruits, red palm oil and green leafy vegetables. In some parts of the world, food staples like sugar and oils are fortified with vitamin A and other micronutrients. Nevertheless, at least 100 million of the world’s under-fives are vitamin A deficient and the majority of these children live in countries with the highest burden of under-five deaths.

Providing young children with two high-dose vitamin A capsules a year is a safe, cost-effective, efficient strategy for eliminating vitamin A deficiency and improving child survival. Among the 60 child survival priority countries, 56 have national vitamin A supplementation programs. The coverage indicator used in the *Countdown* is the proportion of children aged six to 59 months who received at least one dose of Vitamin A. Over time, the aim is to refine the *Countdown* indicator to assess the proportion of children who receive two doses each year.

**Water and sanitation.** Access to safe drinking water is not only a fundamental need and human right, it also has considerable health and economic benefits to households and individuals. For *Countdown* purposes, a lack of access to safe drinking water is important because it contributes to deaths and illness, especially in children.
Lack of sanitation is another major public health problem that causes disease, sickness and death, especially among children. Dehydration from diarrhoea kills about 2.2 million people each year, most of them children under five. Improvements in water supply, hygiene and sanitation have an estimated potential to reduce the incidence of diarrhoea by about one fifth and the number of deaths due to diarrhoea by more than half.5,6

**Insecticide-treated nets for the prevention of malaria.** Trials have shown that use of insecticide-treated nets (ITNs) can reduce all-cause mortality among children under five, either by killing mosquitoes or preventing them from biting.7,8 Countries with endemic malaria are working hard to increase ITN use among children as one part of their strategy to reduce child deaths.

The *Countdown* coverage indicator is *the proportion of children reported to have slept under an insecticide-treated net the night previous to the survey interview.* This is also an MDG indicator and was reconfirmed in the WHO/UNICEF consensus meeting (see Annex 1) as well as by the Roll Back Malaria Monitoring and Evaluation Reference Group (MERG). Data on this indicator are being collected in both the MICS and DHS, as well as in malaria-specific household surveys.

**Newborn Health**

About 40% of all children who die each year do so in the first month of life. Among these four million newborn deaths, two-thirds die in the first week, and two-thirds of these in the first 24 hours.9

The 2005 Lancet series on neonatal mortality defined a set of efficacious interventions to prevent newborn deaths.10 One is giving

**Coverage indicators**

**NEWBORN HEALTH**

11. Skilled attendant at delivery
12. Neonatal tetanus protection
13. Timely initiation of breastfeeding
14. Postnatal visit within three days of delivery
15. Prevention of mother-to-child transmission of HIV
tetanus toxoid vaccine to the mother before or during pregnancy. Others include tasks that can be performed either by the family or by a trained caregiver, including immediate skin-to-skin contact and the initiation of breastfeeding within one hour of birth, drying and wrapping the baby, and proper cord care. In addition, receiving a postnatal check up by a trained worker at home or at the clinic within the first three days is important for assessing the health and providing any necessary care to the young infant.

MDG-6 includes the goal of reversing the spread of HIV/AIDS. The UNGASS Declaration on HIV/AIDS defined the target for the prevention of mother-to-child transmission of HIV (PMTCT) as reducing the proportion of infants infected with HIV by 20% by 2005, and 50% by 2010. Interventions include provision of information, counselling and other HIV prevention services to pregnant women during antenatal care contacts, and providing HIV-positive mothers with effective treatment to reduce the transmission of HIV to their children. In this first Countdown report we include data on the proportion of all HIV-positive pregnant women who received anti-retroviral therapy (ART) prophylaxis. This indicator uses the estimated number of all HIV positive pregnant women (as estimated by Spectrum) and the reported number of HIV positive pregnant women given ART prophylaxis. Data come from the PMTCT Report Card.

Several of the Countdown indicators for newborn health are still in development and field-testing, and have not yet been incorporated into major household survey protocols (MICS and DHS). Panel 4 provides a summary of this developmental work.
Case management of childhood illness

The three major diseases that lead to death among children after the first month of life are pneumonia, diarrhoea, and in some geographic areas, malaria. Currently recommended interventions for the management of these diseases as well as nutrition are delivered via the Integrated Management of Childhood Illness (IMCI) strategy. Achieving high coverage with the recommended treatment interventions would prevent the majority of child deaths from these causes. The current treatment guidelines are listed below, and accompanied by the relevant coverage indicator(s) to be used in the Countdown.

Pneumonia

Treatment guidelines: A child who has a cough and fast or difficult breathing may have pneumonia and should be taken to a trained health care provider. If these clinical signs are confirmed, the child should be given an antibiotic and the caregiver instructed on how to complete the full dose, and to return for follow-up and reassessment if the child does not improve.

Coverage indicator: Proportion of children with cough and fast or difficult breathing who report that they received an antibiotic. This indicator was included in the standard MICS and DHS surveys only in 2005, so as a proxy indicator the Countdown will also report the proportion of children with cough and fast or difficult breathing who were taken to a trained health care provider for care.

Diarrhoea

Treatment guidelines: A child who has diarrhoea should be given oral rehydration therapy (oral rehydration salts solution or an appropriate household solution) as defined in the national policy in order to prevent dehydration, and should continue to be fed throughout the episode.

Coverage indicator: Proportion of children with diarrhoea receiving oral rehydration and continued feeding.

Malaria

Treatment guidelines: A child living in an area endemic for malaria who has a fever should be assumed to have malaria, and a treatment course of the nationally-recommended first-line antimalarial should be started within 24 hours of fever onset.

Coverage indicator: Proportion of children under five years old with fever in last 2 weeks who received antimalarial treatment according to national policy within 24 hours from onset of fever.
Tracking key determinants of coverage: Work in progress

As shown in Figure 1 (page 16), the Countdown seeks to extend global monitoring to a limited number of indicators of broader systems issues that play a major role in determining coverage levels at country level. The choice of these three areas reflected assumptions made by the Countdown Programme Committee about the most important factors determining coverage levels at country level; in later meetings the Committee has discussed the need to add community mobilization as a fourth determinant (Figure 3).

Countdown technical working groups were formed in early 2005 to assess options and issues related to tracking for each of three determinants of coverage: (1) policies and political commitments; (2) health systems with a focus on human resources; and (3) financial flows. Brief summaries are presented below; more detailed progress reports from two of the three groups are available in Annex 2.

Policies and political commitment

Effective policies provide the foundation for programmatic efforts, although adoption of a policy does not guarantee its implementation. The 2005 Report includes information on a small number of policies selected on the basis of their relevance to essential programmatic action. Long-standing policies that have already been adopted by all or most countries have not been included. The focus is on policies that represent relatively new advances in the evidence base – their adoption signals that a country has considered the evidence and agreed that the policy will be implemented. Other policies that would be useful, but cannot easily be defined or tracked at this point, include the incorporation of specific newborn interventions into national health plans, or the availability of an overarching national plan for scaling up maternal, newborn, and child health interventions.

Policies tracked in 2005

- International Code of Marketing of Breastmilk Substitutes adopted as national policy
- New ORS formula adopted as national policy
- Use of zinc in diarrhoea management adopted as national policy
- Hib vaccine incorporated into immunization schedule as of 31 December 2004
- Management of pneumonia in the community by trained health workers adopted as national policy.
A country’s progress in adopting each of the policies is reflected in one of three levels: “Yes”, indicating full adoption; “Partial”, indicating that there has been some progress in adopting at least part of the policy, or that the policy has been fully adopted in only some parts of the country; and “No”, meaning that no action has been taken.

Political commitment has proven more difficult to track than policies. The Working Group responsible for this area, led by Gill Walt of the London School of Hygiene & Tropical Medicine (LSHTM), has started by developing an overview of issues that arise in holding politicians to account. Over the coming two years, these and other approaches will be developed and field tested, yielding a reliable measure suitable for global tracking by the time of the 2007 Report.

**Health systems/Human resources**

Several recent reviews have highlighted the critical role of human resources in meeting the MDGs, and the many challenges that remain. Under the leadership of Andy Haines of LSHTM, one Working Group has begun to assess the specific human resource needs and issues related to child survival, with the aim of identifying indicator(s) and feasible monitoring mechanisms for use in the *Countdown* effort. A summary of their thinking to date is available in Annex 2. The World Health Report 2006 will be devoted to human resource issues, and will shed further light on current situation and challenges in countries.

**Financial flows**

The availability of adequate financial resources is a prerequisite for scaling up effective child survival interventions to achieve the child mortality Millennium Development Goal (MDG-4). Although the challenge of achieving universal coverage of priority interventions is more complex than simply adequate financing, insufficient funding remains, for many countries, the major factor limiting their ability to reduce child mortality. Alternative methods for tracking financial flows to child survival at national and international levels are under investigation by a Working Group led by Anne Mills of LSHTM (see Annex 2 for a summary of progress to date).

The Working Group recommended that a placeholder indicator be included in the 2005 Report. The indicator is: *per capita total expenditure on health at average exchange rate* (USD) 2002. Country-specific values for this indicator are computed by WHO to ensure comparability, and have been abstracted from the 2005 *World Health Report* for use in this document.

**Tracking improvements in equity**

Coverage rates for known and effective newborn and child survival interventions are not only low in most developing countries — they are inequitable. Children belonging to the poorest families are consistently less likely to receive preventive and curative interventions than those from other families. The *Countdown* must therefore track not only national coverage rates, but also inequities in coverage within countries.
Cesar Victora and his colleagues recently published the first application of a summary measure reflecting the joint distribution of key preventive interventions in children younger than five years across wealth quintiles at country level, drawing on existing DHS surveys. This measure capitalizes on the fact that in most low-income countries a number of child-survival interventions are being implemented simultaneously. These include preventive interventions such as vaccines, insecticide-treated mosquito nets, micronutrient supplementation, nutrition counseling (breastfeeding and complementary feeding), growth monitoring, and appropriate newborn care. Additionally, health systems in most countries provide many case-management interventions, including oral rehydration therapy, antibiotics, and antimalarials. The co-coverage score, by collating information on several different child survival interventions, provides a more robust measure of inequalities than would be obtained by studying each intervention in isolation.

The Countdown will report on the proportion of children under five receiving six or more child survival interventions for the poorest and least poor quintiles of the population. The 2005 Report includes data for countries with a recent DHS survey; this will be expanded to include countries with MICS by 2007.

**Data Sources**

**Sources of data for demographic and nutrition indicators**

All data in these two sections were abstracted from tables prepared by UNICEF for *The State of the Worlds Children 2006* (SOWC 2006), with the exception of the neonatal (0-27 days) mortality rate, which was abstracted from the *World Health Report 2005* and some nutrition indicators which were further updates from the *Progress for Children, A Report Card on Nutrition*. The two source documents provide further information on original data sources and their dates.

**Epidemiological profiles**

The interpretation of country-specific information on intervention coverage requires an understanding of the major causes of death. The 2005 *World Health Report* included regional estimates of the proportional distribution of under-five deaths by cause. In 2006, WHO plans to publish country-specific cause-of-death distributions for children under five, which will serve as a source for future Countdown reports.

In the meantime, the 2005 *Countdown* Report includes for each country one of five epidemiological profiles that reflect the distribution of under-five deaths characteristic of the country. Full details about how countries were grouped into one of these five patterns are available elsewhere. These charts should not be confused with country-specific cause-of-death estimates. Four of the 60 priority countries did not have enough data available to support assignment to one of the epidemiological profiles: Congo, Djibouti, Gabon and Liberia.
Sources of data for coverage indicators
Almost all of the country-specific coverage estimates included in the country profiles were abstracted from the SOWC 2006. Estimates of national immunization coverage are developed in a joint process between WHO and UNICEF, described at http://www.childinfo.org/areas/immunization/database.php. For PMTCT data was abstracted from the PMTCT Report Card. Other exceptions are noted in the text. http://www.unicef.org/uniteforchildren/knowmore/files/ufc_PMTCTreportcard.pdf

Household surveys are the primary source of data for tracking progress in maternal and child survival related indicators and the coverage estimates presented in the SOWC. The two most important sources of household survey data are the Multiple Indicator Cluster Surveys (MICS) and the Demographic and Health Surveys (DHS). The latest protocols for these two surveys permit the collection of information on most Countdown coverage indicators.

Multiple Indicator Cluster Surveys (MICS).
The MICS is a household survey programme developed by UNICEF to assist countries in filling data gaps for monitoring the situation of children and women. It is capable of producing statistically sound data that are internationally comparable.

The MICS was developed after the World Summit for Children to measure progress towards an internationally-agreed-upon set of mid-decade goals. The first round of MICS was conducted around 1995 in more than 60 countries. A second round of about 65 surveys was conducted in 2000. The 2005-2006 round of MICS was planned to provide a monitoring tool for the MDGs and other major international commitments including the publication of *A World Fit for Children*, the UN General Assembly Special Session on HIV/AIDS, and the Abuja targets for malaria. It will now also serve as a monitoring tool for the *Countdown*.

MICS surveys are usually carried out by government organizations, with the support and assistance of UNICEF and other partners. Results from the different rounds of MICS surveys, as well as related technical background materials, are available at www.childinfo.org.

Demographic and Health Surveys (DHS). The USAID-supported DHS surveys have been conducted in many countries over the last 20 years. DHS surveys provide national and sub-national data on family planning, maternal and child health, child survival, HIV/AIDS/sexually transmitted infections, infectious diseases and reproductive health and nutrition. More information is available at www.measuredhs.com.
The MICS and DHS programmes have coordinated efforts both in terms of standardizing survey questions and methods for data analysis, as well as data collection on the ground. Coordinating both the countries surveyed and the questions included in the questionnaire modules ensures maximum coverage of countries and provides comparability across surveys.

Other household surveys. Many countries obtain national-level data for a range of different indicators by conducting nationally representative surveys. Results from these surveys are included in global estimates after they have been cleared by the country Government and reviewed by the quality control committee.

As shown in Figure 4, 43 of the 60 Countdown priority countries have conducted or are planning to conduct a MICS, DHS or other nationally-representative survey that included most or all of the Countdown coverage indicators in 2005-2006, in time for updated results to be available for the 2007 Countdown report. Among the remaining 17 priority countries, UNICEF records indicate that eight conducted household surveys in 2004, some being of the “other household survey” type described above. For the purposes of the Countdown, in the future, those countries who plan to implement a household survey other than MICS or DHS should review the protocol carefully to ensure that all Countdown indicators are included and measured using the MICS/DHS survey questions. In addition, at least the six countries where no survey is currently planned (Afghanistan, Brazil, Gabon, Mexico, Myanmar and the Philippines), should begin preparations now to ensure that the Countdown coverage indicators are assessed and the results analyzed and cleared at country level in time for inclusion in the 2007 Countdown Report.
Estimating uncertainty for the *Countdown* coverage indicators

The 2005 Report presents point estimates, and makes no attempt to estimate precision or provide uncertainty ranges. The aim in future reports will be to include estimates of uncertainty.

Sources of information about policies

Information on country-specific policies related to child survival was obtained from staff of the UNICEF offices in the 60 priority countries in November 2005. These reports were then reviewed and confirmed with technical staff in the relevant programme area at UNICEF headquarters in New York.

Sources of data for the assessment of equity

The 2005 Report includes equity assessments only for those priority countries in which a recent DHS survey including data on family assets was available. We hope that future reports will also be able to include equity assessments drawing on MICS data.

CHAPTER 2 REFERENCES


This 2005 Report is the first in a series of Countdown reports that will be issued every two years, just in advance of the Conference itself. Figure 5 shows the schedule for Countdown Reports and Conferences. The arrow moving from 2005 to 2003 highlights the necessary time lag between data collection and reporting. This lag means that the data reported in this 2005 Report are in some ways a baseline – not for the MDG itself, but for the intensified programmatic efforts that began in 2003 after publication of the Lancet series on child survival.

Reports on coverage will be prepared every two years, as background for the Countdown conferences. The first Report represents a baseline for intensified newborn and child survival efforts, because the time lag between measurement and reporting is about two years for most indicators.

The most important findings are those presented in the individual country profiles. The country-level data answer basic questions about child survival, such as “What proportion of newborns and children has benefited from known and life-saving interventions?” “Are there gaps in coverage?” “Are supportive policies in place?” and “How equitable is the coverage that exists?” Aggregated statistics often mask the answers to such questions, making it difficult to understand where the problems are and the next steps needed to address them.

Table 1 summarizes information about under-five mortality rates (U5MRs) in each of the 60 priority countries relative to the achievement of MDG-4. Under "Current status", the two leftmost columns present U5MRs for 1990 and 2004, and the third column presents the average annual rate of reduction (AARR) in
the U5MR for the period 1990 to 2004. The rightmost column identifies countries as “on track” in which the average AARR between 1990 and 2004 was 4.4% or more between 1990 and 2004, the percent reduction needed to achieve the MDG. (Note a margin of error of 5% was used in classifying countries as “on track”.) In addition, countries that have an under-five mortality rate of less than 30 are also classified as “on track”. Similar analyses were conducted by Wagstaff and Claeson in 2004, and can provide a useful guide to their interpretation.1

Only seven of the 60 countries report trends in under-five mortality that suggest they will meet the MDG for child survival: Bangladesh, Brazil, Egypt, Indonesia, Mexico, Nepal and the Philippines. The most important part of this document is the country profiles in Chapter 4; real action to achieve MDG-4 will happen country-by-country, and that is where the focus of Countdown monitoring should lie.

The data in Table 1 provide a good example of the limitations of aggregated results as a basis for action. As a group, these sixty countries must reduce their U5MR by 8.4 deaths per thousand live births each year between now and 2015 to achieve the target U5MR of 38 per thousand. This represents a reduction of two-thirds from the average U5MR for the group of 115 under-five deaths per thousand in 1990. Hidden within these figures, however, is the fact that seven of the 60 countries are “on track” to achieve the MDG (Bangladesh, Brazil, Egypt, Indonesia, Mexico, Nepal and the Philippines). Seventeen countries, on the other hand, can only meet the goal if they achieve annual reductions in U5MR of 10 per thousand live births or greater. In Iraq, the U5MR has risen from an estimated 50 per thousand live births in 1990 to 125 per thousand in 2004; the Iraqis and their partners will need to reverse this increase and then work toward a further two-thirds’ reduction from 1990 levels. In summary, the most important part of this document is the country profiles in Chapter 4; real action to achieve MDG-4 will happen country-by-country, and that is where the focus of Countdown monitoring should lie.

Our aims for this chapter are humble. We hope to summarize selected aspects of the country profiles in ways that raise questions and spur more careful attention to the individual reports, or that allow gross assessments of whether efforts are addressing the biggest problems. Even the limited findings we present are provisional, and intended as a basis for discussion and further action rather than conclusions in and of themselves.

As an aid to analysis, we have grouped countries into three rough categories, using threshold levels for coverage that reflect international goals.

1 “On track” indicates that coverage for this indicator, in this country, is high relative to that of other priority countries;
2 “Watch and act” indicates that coverage for this indicator, in this country, falls in the middle range relative to the other countries (but in most cases falls far short of either the stated target or the broader goal of universal coverage); and
3 “High alert” indicates that coverage for this indicator, in this country, is very low relative to the target and to the rest of the priority countries.

We present summaries based on this three-prong categorization for selected indicators in each of the five components of the Countdown effort.
Table 1. Under-five mortality rates in 1990 and 2004 in the *Countdown* priority countries, and annual rates of reduction in under-five mortality needed to achieve a two-thirds reduction by 2015.

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<td>44</td>
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<td></td>
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<tr>
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<td>140</td>
<td>0.6</td>
<td>51</td>
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<td>53</td>
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<tr>
<td>Zimbabwe</td>
<td>80</td>
<td>129</td>
<td>-3.4</td>
<td>27</td>
<td>14.3</td>
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</tr>
</tbody>
</table>

UNICEF 60 priority countries for Child survival

| UNICEF 60 priority countries for Child survival | 115 | 97 | 1.2 | 38 | 8.4 |

Nutrition, including breastfeeding

Exclusive Breastfeeding

The prevalence of exclusive breastfeeding across all developing countries is reported as 41% for 2004.² Trend data for a subset of countries indicate there has been a significant increase in this indicator during the 1990’s.³ As shown in Figure 6, there have been large increases in West and Central Africa, as well as in East and Southern Africa. Results for this indicator should be interpreted with care, because breastfeeding behaviour is influenced by many sociocultural factors that extend beyond whether or not mothers received an educational intervention. There are important concerns about the reliability of this indicator across both different surveys and different cultural settings.

Among the 57 priority countries with data on this indicator, 10 have coverage levels categorized as “on track” at 50% or higher, and 23 as “high alert” with rates of 20% or lower. Nine countries reported exclusive breastfeeding rates of under 10% (see Table 2).

The International Code of Marketing of Breastmilk Substitutes has been fully adopted in 15 of the 60 priority countries, and partially adopted in 40 countries. Somalia, Chad and the Central African Republic have not yet made significant progress toward the adoption of the Code. No information was available for Equatorial Guinea and Liberia.

Other Breastfeeding Indicators

The Countdown country profiles include two other breastfeeding indicators: (1) breastfeeding at 6-9 months with complementary feeding; and (2) continued breastfeeding at 20-23 months. For the first, 25 countries have rates of 70% or above, including four countries with rates above 90% (Congo – 94%, Malawi – 93%, Tanzania – 91%, and Zimbabwe – 90%). Another 16 countries have rates between 50-70%. These rates are higher than those for exclusive breastfeeding, although the surveys do not capture sufficient information to assess the frequency or quantity of feeding. Sixteen countries report that fewer than 50% of infants between the ages of six and nine months are both breastfeeding and receiving complementary foods. Somalia is particularly alarming with a coverage rate of only 13%.

Figure 6: Trends in exclusive breastfeeding by UNICEF region, 1990 and 2004.

**Excludes China

Source: UNICEF 2005 (NNL). Trend analysis based on a subset of 27 countries, covering 60% of the developing world’s population.
A review of the country profiles for continued breastfeeding at 20-23 months shows that 23 of the Countdown countries have coverage levels under 50%, and only Nepal and Bangladesh report continued breastfeeding rates of greater than 90%, at 92% and 94%, respectively.

### Vaccination

The 2002 United Nations General Assembly Special Session (UNGASS) on Children set a national coverage target of ≥90% for the full immunization of children under one year of age.\(^4\) Here we summarize the findings for two of the basic vaccines: measles and DPT3. Estimates of coverage for measles for all developing countries have risen from 71% in 1990 to 74% in 2004.\(^2\) The 2004 estimate of DPT3 coverage for all developing countries is also 74%.\(^2\) Levels of coverage in the 60 priority countries are summarized in Figure 7 using upper cut-offs of 90% or more for “on track” and a lower cut-off of 50% or less for “high alert”.

The findings indicate that coverage rates exceeded the 90% international target for measles and DPT3 in 10 of the 60 priority countries. Twenty-three of the 60 countries reported increases in measles coverage of 10% or more between 2000 and 2004, and 22 reported increases of the same magnitude for DPT3.\(^3\) On the other hand, six countries reported measles coverage of 50% or lower (Central African Republic, Côte d’Ivoire, Liberia,

### Table 2: Priority countries with the highest and lowest rates of exclusive breastfeeding, 2004.

<table>
<thead>
<tr>
<th>Proportion of infants under six months of age who are exclusively breastfed</th>
<th>Country</th>
<th>%</th>
<th>Survey year</th>
<th>Country</th>
<th>%</th>
<th>Survey year</th>
</tr>
</thead>
<tbody>
<tr>
<td>Highest (&gt;50%)</td>
<td>Rwanda</td>
<td>84</td>
<td>2000</td>
<td>Azerbaijan</td>
<td>7</td>
<td>2000</td>
</tr>
<tr>
<td></td>
<td>Nepal</td>
<td>68</td>
<td>2000</td>
<td>Chad</td>
<td>2</td>
<td>2004</td>
</tr>
<tr>
<td></td>
<td>Madagascar</td>
<td>67</td>
<td>2004</td>
<td>Congo</td>
<td>4</td>
<td>1999</td>
</tr>
<tr>
<td></td>
<td>Uganda</td>
<td>63</td>
<td>2001</td>
<td>Côte d’Ivoire</td>
<td>5</td>
<td>2004</td>
</tr>
<tr>
<td></td>
<td>Burundi</td>
<td>62</td>
<td>2000</td>
<td>Gabon</td>
<td>6</td>
<td>2000</td>
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<tr>
<td></td>
<td>Papua New Guinea</td>
<td>59</td>
<td>1996</td>
<td>Niger</td>
<td>1</td>
<td>2000</td>
</tr>
<tr>
<td></td>
<td>Ethiopia</td>
<td>55</td>
<td>2000</td>
<td>Sierra Leone</td>
<td>2</td>
<td>2000</td>
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<tr>
<td></td>
<td>China</td>
<td>51</td>
<td>2003</td>
<td>Somalia</td>
<td>9</td>
<td>1999</td>
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<td></td>
<td>Ghana</td>
<td>53</td>
<td>2003</td>
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<td>7</td>
<td>1998</td>
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<td></td>
<td>Tajikistan</td>
<td>50</td>
<td>2003</td>
<td></td>
<td></td>
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</tbody>
</table>

*Source: The State of the World’s Children, 2006*
Nigeria, Papua New Guinea and Somalia). The same six countries also reported DPT3 coverage rates of under 50%, along with four additional countries (Chad, Equatorial Guinea, Gabon and Haiti). Three countries (Côte d’Ivoire, Liberia, and Papua New Guinea) had decreases of 10% or more for both measles and DPT3. These findings should trigger immediate action to identify and address the reasons for these failures.

Other prevention interventions

This component includes coverage indicators for four interventions: Vitamin A supplementation; interventions to improve access to safe drinking water and sanitation; and the use of insecticide-treated nets (ITNs) to prevent malaria. We have selected Vitamin A and ITNs for summary here.

Vitamin A supplementation

Among the 60 priority countries, 56 have national vitamin A supplementation programmes. Coverage rates for at least one round of vitamin A supplementation met or exceeded 70% for 26 of these countries in 2003 (Figure 8). These high coverage rates were achieved through a combination of child health days, linkages with immunization campaigns, and distribution through routine services. Seven countries are classified as “high alert”, with vitamin A supplementation coverage rates of 40% or below (Gabon – 30%, Haiti – 25%, Kenya – 33%, Nigeria – 27%, Papua New Guinea - 1%, Sudan – 34%, and Yemen – 36%). Across all developing countries with vitamin A deficiency, the proportion of children who received two doses of vitamin A in the previous year increased three-fold between 1999 and 2003, from 14% to 51%.

Insecticide-treated nets

The 2000 summit on Roll Back Malaria, held in Abuja, set a target for 2005 for African countries to achieve 60% coverage for those at risk of malaria of an appropriate combination of personal and community protective measures, such as insecticide-treated nets (ITNs). The recently-released Roll Back Malaria Global Strategic Plan 2005-2015 sets new coverage targets of 80% for achievement by the year 2010. The Countdown indicator, which is also an indicator for Target 8 on malaria of MDG-6, is the proportion of children under five...in malaria-risk areas sleeping under an ITN.

Forty-five of the 60 Countdown priority countries are endemic for malaria and have plans to increase ITN coverage nationwide. Scale-up is taking time, although most countries now have plans and have identified resources for acceleration.
As shown in Figure 9, four Countdown countries have documented national ITN coverage rates of 10% or above: the Gambia (15%), Malawi (36%), Tanzania (26%) and Togo (44%). In Malawi, 1 million insecticide-treated mosquito nets were distributed in 2003 alone, boosting coverage from 5 per cent of households in 2000 to 43% by the end of 2003. The same survey reported 36% of under-fives sleeping under an ITN. Togo was able to include ITN distribution with a measles campaign and as reported above has the highest coverage among the 45 priority countries. Large increases in resources for ITN purchase provided by the Global Fund (GFATM) and other sources (e.g., the World Bank Booster Programme, The Bill and Melinda Gates Foundation and the President’s Malaria Initiative) should result in much higher coverage in the next two years.

Newborn Health

Skilled attendant at delivery

The 2005 Countdown country profiles include five indicators related to newborn health: skilled attendant at delivery; TT protection at birth; timely initiation of breastfeeding; postnatal visits; and preventing mother to child transmission of HIV (PMTCT). In this summary we focus on coverage levels for a skilled attendant at delivery.

In developing countries, the proportion of deliveries at which a skilled attendant was present has increased from 41% in 1990 to 57% in 2003. Coverage rates in sub-Saharan Africa have remained low in the same 13-year period, increasing only 1% from 40% in 1990 to 41% in 2003.

Figure 10 shows the categorization of priority countries on this indicator. Thirteen of the 59 Countdown priority countries with data for this indicator report delivery by a skilled attendant in at least 70% of births. Eleven countries in five UNICEF regions reported skilled attendants at 30% or less of deliveries (Afghanistan, Bangladesh, Burundi, Ethiopia, Chad, Haiti, Nepal, Niger, Pakistan, Somalia, Yemen). Extraordinary efforts are needed in these countries to save the lives of mothers and their infants and to progress toward national and international targets.

*Estimates differ from those in SOWC 2006 because a recent household survey was cleared by the country and passed by the quality control committee for inclusion in the global estimate since the closing date for SOWC 2006 estimates.
**Other Newborn Health Indicators**

**Tetanus Toxoid (TT) protection at birth.** Many countries are making good progress on protecting newborns and mothers from maternal and neonatal tetanus. Seventeen countries reported greater than 70% coverage of mothers with two or more doses of TT immunization within the necessary time to give protection. In a few countries (e.g., Zimbabwe and Zambia), TT coverage is higher than coverage for routine child vaccinations. In two other countries with moderately high coverage for routine child vaccinations, coverage for TT protection at birth is very low: Nepal reports 80% DPT3 coverage and 42% coverage for TT protection; and Pakistan reports 65% DPT3 coverage and 45% coverage for TT protection. For these countries and the eight countries with coverage rates under 40%, further exploration of the constraints in delivery strategies for TT would be useful.

**Timely initiation of breastfeeding.** Data for this indicator are available for only 38 countries at this time. Two of these 38 countries report that over 70% of newborns are breastfeeding within one hour of birth: Gabon (71%) and Malawi (72%). This indicator should be included in future household surveys, and additional attention must be directed to this and other newborn practices.

**PMTCT.** Among the 34 countries for which indicator data are available from the 2005 UNICEF PMTCT survey, 11 report that fewer than five percent of HIV-positive women receive anti-retroviral (ARV) prophylaxis to prevent mother-to-child transmission of the virus. High levels of coverage are reported for only two countries: Brazil (49%) and Botswana (50%). Rapid scale-up is required, especially in countries with generalized HIV epidemics.

**Case management of childhood illness**

In this section we summarize data on three of the four case management coverage indicators. We have not included a summary of oral rehydration therapy for the prevention of dehydration during episodes of diarrhoea because the indicator has changed numerous times, making cross-country comparisons and trends difficult to interpret.
Careseeking for suspected pneumonia

A new pneumonia report by UNICEF shows that only one in five caregivers in developing countries know the danger signs of pneumonia, and only about half of children with signs of pneumonia are taken to an appropriate health care provider. Among the 60 Countdown priority countries, six report that 70% or more of children with suspected pneumonia are taken to an appropriate provider for care (see Figure 11). Four of the 60 priority countries report that 20% or less of families seek care for pneumonia danger signs: Bangladesh (20%), Botswana (14%), Ethiopia (16%), and Rwanda (20%).

This indicator is serving as a proxy for the proportion of children with pneumonia who actually receive antibiotic treatment, which is addressed below.

Antibiotic Treatment of Pneumonia

Few countries have recent data for this indicator. DHS surveys conducted in several countries in the early 1990’s found antibiotic treatment rates of about 20%, and trend data from Egypt and Columbia show rapid increases that merit further investigation. The DHS and MICS questionnaires being used in 2005-2006 include an additional question to explore what treatment was given to a child with signs of pneumonia. These new data will support expanded reporting on this indicator in the 2007 Report.

The Countdown will also track the adoption of policies promoting delivery of antibiotics for the treatment of pneumonia at community level. WHO and UNICEF have recommended that well-trained and supervised community workers be permitted to diagnose and treat probable pneumonia cases with antibiotics as a strategy to improve coverage. The 2005 country profiles indicate that 17 of the 60 priority countries now have policies that allow for community management of pneumonia. In two additional countries, community-based management of pneumonia is being assessed in pilot areas, reflected in the country profiles as “partial” adoption of the policy.

Treatment of Malaria

Among the 45 priority countries with endemic malaria, there are 31 with national data on antimalarial coverage among children with fever/presumed malaria. As shown in Figure 12, the Abuja target of 60% coverage by 2005 has been met by only 6 countries to date with respect to this treatment indicator: Angola (63%), Benin (60%), Central African Republic (69%), Ghana (63%), Sierra Leone (61%) and Togo (60%). An additional 16 priority countries have achieved over 30% coverage for antimalarial treatment of children under five with suspected malaria. Unfortunately, the majority of these children were treated with...
chloroquine, to which resistance has increased in most of these countries to the point where it can no longer be considered an effective treatment for *falciparum* malaria. However, if these same mechanisms can be used to deliver the more effective artemisinin-based combination therapies (ACTs), it should be possible to increase effective coverage rapidly.

More than 40 countries, including 33 in Africa, have amended their policies to require the use of these more effective antimalarial treatments.

**Coverage equity**

The *Countdown* equity indicator is the proportion of children under five receiving six or more child survival interventions, reported for the poorest and least poor quintiles of the population. The 2005 Report includes data for 24 countries with a recent DHS survey that included an assessment of family assets; this will be expanded to include countries with MICS by 2007. The specific child survival interventions assessed in these surveys, and thus available to serve as a denominator for the *Countdown*, varied. Figure 13 summarizes the results for 28 countries in two groups. In figure 13a, we report on the proportion of children receiving six or more interventions in 15 countries out of a possible total of eight interventions: antenatal care; tetanus toxoid during pregnancy; skilled attendant at delivery; safe water; BCG vaccination, DPT vaccination, measles vaccination and vitamin A supplementation. In figure 13b, we report on an additional 13 countries in which the total possible number of child survival interventions was nine: all those listed above plus ITNs. The remaining four countries (Ethiopia, Gabon, Guinea and Togo) are difficult to summarize because the surveys assess coverage for different combinations of either seven or eight interventions.

Figures 13a and 13b show the magnitude of the gap between children receiving six or more essential interventions in the lowest (poorest) and highest (least poor) wealth quintiles. The bars start at the coverage level among the poorest, and end at the level for the least poor. There are substantial gaps in every country. The smallest gap is observed in Chad, where only 0.2% of the poorest received 6 or more interventions, compared to 22.8% of the least poor – resulting in a gap of 22.6 percentage points (Figure 13a). The widest gap was found in the Philippines – 58.7 percentage points. Monitoring the width and the relative position of the bars in figures 13a and 13b will allow tracking inequalities over time in a way that is easier to interpret and present than more complex summary indicators of inequality (e.g. concentration indices).
Figure 13: Gap between the proportion of children receiving 6+ child survival interventions in the first and fifth socio-economic quintiles.

**Figure 13a: Countries with a total of eight child survival interventions**

![Graph showing countries with a total of eight child survival interventions.]

**Figure 13b: Countries with a total of nine child survival interventions**

![Graph showing countries with a total of nine child survival interventions.]

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Tracking Progress in Child Survival: The 2005 Report
Some preliminary findings

One of the important objectives of the Countdown conference in December 2005 was to review and discuss the information presented in the country profiles, and together synthesize the most important findings and their implications for policies and actions at national and international levels. In this section we proposed some preliminary findings for consideration in these discussions and debates.

1. The data show just how much remains to be done.
Most of the country profiles included here reflect coverage levels in 2002–2004. The renewed attention and energy to newborn and child survival generated by the 2003 and 2005 series in The Lancet and the World Health Report 2005 were only beginning at the time these assessments were made. In fact, then, the 2005 Report presents a starting line for the Countdown to 2015 effort.

2. But they also show that we are on the brink of unprecedented opportunities.
In a very short time, some countries have made giant leaps in coverage, increasing the proportion of mothers and children who have access to life-saving interventions by as much as 10%.

3. Other countries are struggling, and have been ranked as “high alert” on numerous indicators.
The report highlights these countries so that Governments and their partners can work together to overcome barriers.

4. Countdown 2005 results should stimulate hard questions about why there is progress in coverage for some countries, for some interventions, and not in others.
The determinants of progress vary by programme component, by indicator and from country to country. More careful analysis drawing on a broader range of information is needed. For example,

- Global and national consensus, technical assistance and resource mobilization can be effective in supporting government systems, such as with immunization programmes.
- National legislation, consistent messaging and local commitment seem likely to have contributed to increases in exclusive breastfeeding in Ghana, Madagascar, and Tanzania.
- National commitment and partner convergence in support of national programmes may be responsible for relatively higher rates of coverage for specific interventions, such as the national programme on ARI control in Egypt (incorporated into IMCI in 2000) and the PMTCT efforts in Brazil.
• Some countries, such as Rwanda, show very high coverage on the indicators for nutrition, prevention, and newborn health, but much lower coverage on indicators reflecting case management of diseases.

• Building on existing programme opportunities to introduce new interventions has probably contributed to relatively higher coverage with ITNs in Togo, Tanzania and Malawi.

• Conflict disrupts health systems and families, and offers a ready explanation for the slowing or even reversal of coverage rates for newborn and child survival interventions. Countries emerging from conflict, such as Angola and Mozambique, are now making rapid progress but have a long way to go to “catch up”. The next tracking report in 2007 will show whether this trend continues.

5. **None of the 60 countries has achieved even minimal coverage levels for all or most child survival interventions appropriate to their settings.**

All parties – Governments, partners, researchers, and individuals – must work toward the common goal of achieving high, sustainable and equitable coverage for maternal, newborn and child survival interventions.
6. Inclusion of selected newborn indicators in household surveys will support better tracking of progress in future reports.

Improving coverage with neonatal interventions is an urgent priority. Reductions in mortality can be achieved by eliminating all lingering pockets of neonatal tetanus deaths, incorporating essential newborn care into ongoing maternal and child health efforts, and improving home care practices. Postnatal visits to the home by a trained community worker are recognized as one approach likely to result in less newborn illness and death. Few data on coverage for these interventions are available now, but we can assume that these interventions are reaching few of the mothers and children who need them.

7. The Countdown renews its pledge to increase accountability by tracking intervention coverage for newborn and child survival.

The 2005 Report is a starting point for continued and strengthened tracking of progress, and for holding Governments and their many partners in child survival to account. Future reports will include more complete data for the indicators reported on this year, as well as additional indicators. The scope of the Countdown effort may also be broadened by participation of those committed to reducing maternal mortality.
CHAPTER 3 REFERENCES


3. Trend analyses in this chapter draw on UNICEF global data bases other than those published in The State of the World’s Children. These data bases are used to track progress toward the World Fit for Children goals described in Chapter 2, as well as the MDGs. Further information on the estimation of trends is available [need location, or if necessary we will need to add full description of trend analyses in the methods].


# Annex 1

## Summary List of Child Survival Indicators

<table>
<thead>
<tr>
<th>Category</th>
<th>A List (primary)</th>
<th>B List (secondary)</th>
<th>Research List</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Mortality</strong></td>
<td>Under 5 mortality rate [MDG]</td>
<td>Infant mortality rate</td>
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</tr>
<tr>
<td></td>
<td>Neonatal mortality rate</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Infant feeding</strong></td>
<td>**Exclusive breastfeeding (&lt; 4 and &lt; 6 months) *</td>
<td>Frequency of feeding</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Continued breastfeeding (12-15 and 20-23 months)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Timely complementary feeding rate (6-9 months)</td>
<td>% of children 0-11 months who were properly fed</td>
<td>Dietary diversity</td>
</tr>
<tr>
<td><strong>Vitamin A</strong></td>
<td>Vitamin A supplementation (under fives)</td>
<td></td>
<td>Vitamin A supplementation (post-partum mothers)</td>
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<td>Household availability of ITNs</td>
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</tr>
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<td>ITN use (under fives) [MDG]</td>
<td>ITN use (pregnant women)</td>
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</tr>
<tr>
<td></td>
<td>**Anti-malarial treatment (under fives) [MDG]</td>
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<tr>
<td><strong>Water and Sanitation</strong></td>
<td>Use of improved drinking water sources [MDG]</td>
<td>Access to hand washing supplies</td>
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</tr>
<tr>
<td></td>
<td>Use of adequate sanitary means of excreta disposal [MDG]</td>
<td>Hand washing after defecation</td>
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<td><strong>Newborn care</strong></td>
<td>Timely initiation of breastfeeding</td>
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<td><strong>Diarrhoea</strong></td>
<td>ORT (ORS or appropriate household solution) use</td>
<td></td>
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<td>[ORT (ORS or appropriate household solution) or increased fluids] and continued feeding offered</td>
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<tr>
<td><strong>Immunization</strong></td>
<td>Neonatal tetanus protection at birth</td>
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<tr>
<td></td>
<td>Measles immunization coverage [MDG]</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>DPT3 immunization coverage</td>
<td>Hib coverage</td>
<td></td>
</tr>
<tr>
<td><strong>ARI</strong></td>
<td>**Antibiotic treatment of pneumonia *</td>
<td></td>
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<tr>
<td></td>
<td>Care seeking for pneumonia</td>
<td></td>
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<tr>
<td><strong>Malnutrition</strong></td>
<td>Use of solid fuels for cooking [MDG]</td>
<td>Solid fuels for heating [MDG]</td>
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<td></td>
<td>Birth weight below 2500 grams</td>
<td>Proportion of babies weighed at birth</td>
<td></td>
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<td><strong>Maternal health</strong></td>
<td>Skilled attendant at delivery</td>
<td>Maternal BMI</td>
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<td><strong>Other child health</strong></td>
<td>Birth spacing indicator</td>
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<td></td>
<td>Care seeking knowledge of danger signs</td>
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Annex 2

Global monitoring of the major determinants of coverage for child survival interventions: Work in progress

Human Resources

Working Group Chair: Andy Haines, LSHTM

The processes for assessing human resource requirements are complex and include both (1) the technical aspects of estimating numbers, skills and distribution of health personnel to meet population health needs, and (2) political choices that reflect the values and resource constraints in individual countries.1 Logically, then, indicators used to monitor progress in human resource policies and practices should be based on systematic analyses of the requirements for the country in question. There are currently few examples of such country-specific indicators, but WHO has outlined criteria for their selection and proposed several within a general framework for assessing health system performance.2

The choice of indicators, however, depends on the purpose for which they are to be used. Earlier in this Chapter, we described some of the most important characteristics of indicators to be used in global monitoring. These characteristics include not only the general criteria proposed by others,3 but more specifically the indicator’s reliability and validity across time and across a range of epidemiological, cultural and health systems contexts. In the area of human resources, the need for international comparisons will inevitably lead to the use of those indicators that are available across a range of countries, but the final selection must be made with care.

One example of an indicator for which country-specific data are widely available is the density of health professionals (doctors, nurses and midwives) per 1000 population. A recent analysis has shown that there are 10-fold differences in health professional density between sub-Saharan Africa and more developed regions such as Western Europe and North America.4 The findings also document a significant and consistent inverse relationship between health professional density and mortality among infants, children under the age of five, and mothers, even after taking into account socioeconomic and potential confounders. One problem with the use of health professional density as a global indicator associated with the coverage of interventions, however, is that the International Labour Office’s (ILO) revision of the International Standard Classification of Occupations (ISCO) aggregates data into a hierarchical four-digit system. Different health professions can only be distinguished at the four digit level, and the minimum level of detail necessary for sound analysis of human resources is the three-digit level which allows distinctions, for example, between ‘nursing and midwifery professionals’ and ‘nursing and midwifery associate professionals’. 5 These distinctions are needed not only to assess human
resources in a specific country context; they are also needed to develop global indicators of the skill levels of personnel available to deliver key newborn and child health interventions.

The “skill mix” of health care providers is often expressed as a ratio between professional subgroups in terms of skills or specialisation. These measures have limited validity or reliability when used in cross-country comparisons. For example, in some countries associate professionals such as clinical/medical assistants and nursing and midwifery associate professionals fulfil some of the tasks of their professional counterparts, while in others there are strict policies governing the tasks able to be performed by various cadres.

Other relevant indicators could include data on in- and out-migration, participation (proportion with relevant skills in the labour force), employment opportunities (proportion in employment) and retention within the health sector, as well as comparative earnings in relation to national norms. The balance of health personnel between state, private for profit and not-for-profit NGOs may also be relevant to decisions about availability of personnel for national health priorities. Whilst in many countries the poorest rely disproportionately on the private health care sector, the quality of care may be poor and regulation weak.

It is difficult to interpret the results of any one indicator of human resources in isolation. For example, interpreting any one indicator of human resources in terms of its effect on intervention coverage might require information about such things as:

• the distribution of the available health workforce across disease specific and other programmes in order to determine, for example, whether the expansion of funding for programmes to deliver anti-retroviral drugs for HIV/AIDS is resulting in increased recruitment of staff at the expense of existing programmes such as child health, for which there may not be dedicated streams of international funding;
• the balance between primary, secondary and tertiary sectors of the health system to determine the potential for scaling-up access to interventions at the community level;
• the distribution between urban and rural areas as a basis for assessing equity of access to services;
• the rate and methods through which health workers are trained, including attrition rates during training which indicate efficiency of use of resources.

Potential sources of data on indicators encompass a diverse range of sources including routine administrative records, such as those of professional associations and registers, as well as training institutions. However these are often fragmented and incomplete. They may be supplemented by data from population censuses, but these are conducted at long intervals and may not include sufficient detail on occupation. Household, labour force and facility surveys may provide useful additional information. Facility surveys can provide information about absenteeism, which can be very high in some settings. In many countries, however, facility surveys exclude private sector facilities and provide only a partial picture of the human resources available for newborn and child survival. In summary, it seems unlikely that a single source of data will suffice to capture the
complexity of requirements to monitor progress in human resources for child survival at global level. The forthcoming WHO report on Human Resources for Health will review many of these issues, and together with ongoing projects designed to address the need for more and better data may lead to pragmatic solutions that can be adopted by the Countdown effort. For example, the World Health Survey includes questions on occupations relevant to the health field in more than 70 countries. (http://www.who.int/whs). Another initiative is the development of the Global Directory of Health Training Institutions. More comprehensive information of better quality is needed both to strengthen human resource policies and practices and for the development of meaningful indicators for use at national and international levels.

References

Financial flows
Working Group Chair, Anne Mills

The availability of adequate financial resources is a prerequisite for scaling up effective child survival interventions to achieve the child mortality Millennium Development Goal (MDG-4). Although the challenge of achieving universal coverage of priority interventions is more complex than simply adequate financing, insufficient funding remains, for many countries, the major factor limiting their ability to reduce child mortality.

Recent studies estimate the likely cost of reducing under-five mortality sufficiently to attain MDG-4. Bryce and her colleagues recently estimated that US$ 5.1 billion in additional funds is needed annually to prevent the deaths of 6 million children in the 42 countries which account for the overwhelming majority of global under five deaths.1 Similarly, WHO estimates an additional annual cost of $2.2 billion in 2006 rising to $7.8 billion by 2015 to implement the scale-up of child survival interventions in 75 countries.2

However, little is known about how much is currently being invested in interventions or activities to improve child health, or whether levels are changing, despite considerable efforts by development agencies, governments and research institutions to track health resource flows. Specifically, we do not know the extent of financial resource flows from
external sources to priority recipient governments for child health, nor how much is being channelled to child health within recipient countries. Only with this information will it be possible to assess the extent of the resource gap between what is currently being invested and what is actually required, as well as the structure of the gaps. For these reasons, tracking child health resource flows is viewed as a critical tool for advocating effectively for additional funds and monitoring progress in reducing child mortality. Given that adequate funding is a necessary condition for the attainment of the MDG for child survival, financial flows are a good indicator of the genuine commitment of developing country governments and the international community.

Current routine data collection systems offer potential sources of information to track resources to child health. However, the methods used and level of detail rarely allow child health funds to be disentangled from general health investments. In particular, most child health expenditure flows through multi-purpose health services, and thus is not accounted for separately. Furthermore, problems of completeness and timeliness of data put limitations on the overall usefulness of existing sources. With respect to Official Development Assistance (ODA), most donors are unable to report thematic breakdowns of contributions to recipient countries. Moreover, the multitude of donors, using different aid modalities to provide support often in a poorly coordinated manner, poses additional problems. The most comprehensive database on ODA is the Creditor Reporting System (CRS) of the Development Assistance Committee in the OECD, which provides project-by-project information for the majority of all commitments (for example the CRS data is now 98% complete for Africa in 2003). The CRS database has its limitations and was not designed with the intention of tracking funds by functional categories, such as child health. Again, the accounting systems of national governments in developing countries make it hard to identify funds as child health expenditures since funds are typically accounted for within input categories. At the same time, these systems are often underdeveloped, which means data collection at the country level can be a lengthy and overly burdensome process.

Any future efforts to track child health financial resources are likely to face similar difficulties to those faced by existing data collection methods. In particular, a shift by many donors from individual projects to general budget support and Sector Wide Approaches (SWAs) poses new challenges in tracking resources to specific areas of the health sector. As the share of budgetary and sector-wide support rises and more funds are channelled through recipient country governments, it becomes increasingly difficult to track external financial flows in the absence of robust and flexible accounting systems.

There is currently scarce information on child health expenditures. Methods for tracking child health funds are being explored and tested with a view to assessing the feasibility of collecting such information in the future. At the country level, a Child Health sub-analysis is being piloted using the framework of the National Health Accounts, while methods are also being tested to track ODA for child health at the global level. The findings of this ongoing research will guide future methods to track resources for child health. Therefore, in the meantime, the 2005 coverage report has selected per capita total expenditure on health at
average exchange rate (USD) 2002 as a proxy indicator for measuring financial flows to child health. Country-specific estimates for this indicator have been taken from the 2005 World Health Report. It is likely to be a reasonably good reflection of the average amount spent on health per child within a country. The country specific values are computed by WHO to ensure comparability.

In the 2007 coverage report, it is expected that there will be sufficient data to report on one or two child health financial indicators for those countries that have carried out Child Health sub-analyses. One possible indicator is the “child health resource gap,” which measures the difference between the estimated resource requirement and current child health expenditure. For this indicator to be valid, the interventions and services captured by the cost and expenditure estimates will have to be closely aligned to ensure consistency and comparability. A second appropriate indicator that could be monitored is per capita (aged 0 to 5 years) child health expenditure, which measures how much is being invested in the health of an average child in a country.

References
2. WHO. Methodology and Assumptions used to estimate the Cost of Scaling Up selected Child Health Interventions. Geneva, WHO CAH: 2005
<table>
<thead>
<tr>
<th>NO.</th>
<th>CHILD SURVIVAL INTERVENTION</th>
<th>INDICATOR</th>
<th>NUMERATOR</th>
<th>DENOMINATOR</th>
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<td><strong>NUTRITION</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>Exclusive breastfeeding (&lt; 6 months)</td>
<td>Percentage of infants aged 0-5 months who are exclusively breastfed</td>
<td>Number of infants aged 0-5 months who are exclusively breastfed</td>
<td>Total number of infants aged 0-5 months surveyed</td>
</tr>
<tr>
<td>2</td>
<td>Breastfeeding plus complementary food (6-9 months)</td>
<td>Percentage of infants aged 6-9 months who are breastfed and receive complementary food</td>
<td>Number of infants aged 6-9 months who are breastfed and receive complementary food</td>
<td>Total number of infants aged 6-9 months surveyed</td>
</tr>
<tr>
<td>3</td>
<td>Continued breastfeeding (20-23 months)</td>
<td>Percentage of children aged 20-23 months who are currently breastfeeding</td>
<td>Number of children aged 20-23 months who are currently breastfeeding</td>
<td>Total number of children aged 20-23 months surveyed</td>
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<tr>
<td></td>
<td><strong>VACCINATION</strong></td>
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<tr>
<td>4</td>
<td>Measles immunization coverage</td>
<td>Percentage of children aged 12-23 months who are immunized against measles</td>
<td>Number of children aged 12-23 months receiving measles vaccine before their first birthday</td>
<td>Total number of children aged 12-23 months surveyed</td>
</tr>
<tr>
<td>5</td>
<td>DPT3 immunization coverage</td>
<td>Percentage of children aged 12-23 months who received 3 doses of DPT vaccine</td>
<td>Number of children aged 12-23 months receiving 3 doses of DPT vaccine before their first birthday</td>
<td>Total number of children aged 12-23 months surveyed</td>
</tr>
<tr>
<td>6</td>
<td>Hib immunization coverage</td>
<td>Percentage of children aged 12-23 months who are immunized against Hib</td>
<td>Number of children aged 12-23 months immunized against Haemophilus influenza type B (Hib) before their first birthday</td>
<td>Total number of children aged 12-23 months surveyed</td>
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<td></td>
<td><strong>OTHER PREVENTION</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>Vitamin A supplementation coverage</td>
<td>Percentage of children aged 6-59 months who received at least one high dose vitamin A supplement within the last 6 months</td>
<td>Number of children aged 6-59 months receiving at least one high dose vitamin A supplement in the 6 months prior to the survey</td>
<td>Total number of children aged 6-59 months surveyed</td>
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<tr>
<td>8</td>
<td>Use of improved drinking water sources</td>
<td>Percentage of the population using improved drinking water sources</td>
<td>Number of household members living in households using improved drinking water sources (including household connections, public standpipe, borehole, protected dug well, protected spring, rainwater collection)</td>
<td>Total number of household members in households surveyed</td>
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<tr>
<td>NO.</td>
<td>CHILD SURVIVAL INTERVENTION</td>
<td>INDICATOR</td>
<td>NUMERATOR</td>
<td>DENOMINATOR</td>
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</tr>
<tr>
<td>9</td>
<td>Use of improved sanitation facilities</td>
<td>Percentage of the population using improved sanitation facilities</td>
<td>Number of household members using improved sanitation facilities (including connection to a public sewer, connection to a septic system, pour-flush latrine, simple pit latrine, or a ventilated improved pit latrine)</td>
<td>Total number of household members in households surveyed</td>
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<td>10</td>
<td>Insecticide treated net coverage</td>
<td>Percentage of children aged 0-59 months sleeping under an insecticide treated mosquito net</td>
<td>Number of children aged 0-59 months who slept under an insecticide treated mosquito net the night prior to the survey</td>
<td>Total number of children aged 0-59 months surveyed</td>
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**NEWBORN HEALTH**

<table>
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<tr>
<td>11</td>
<td>Skilled attendant at delivery</td>
<td>Percentage of births attended by skilled health personnel (doctor, nurse, midwife or auxiliary midwife)</td>
<td>Number of women aged 15-49 years with a live birth in the X years prior to the survey who were attended during childbirth by skilled health personnel (doctor, nurse, midwife or auxiliary midwife)</td>
<td>Total number of women aged 15-49 years surveyed with a live birth in the X years prior to the survey (Note: This reference period may differ between surveys)</td>
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<td>12</td>
<td>Neonatal tetanus protection</td>
<td>Percentage of newborns protected against tetanus</td>
<td>Number of mothers with a live birth in the year prior to the survey who received at least 2 doses of TT within the appropriate interval prior to the infants birth</td>
<td>Total number of women aged 15-49 years surveyed with a live birth in the year prior to the survey</td>
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<td>13</td>
<td>Timely initiation of breastfeeding</td>
<td>Percentage of newborns put to the breast within one hour of birth</td>
<td>Number of women with a live birth in the X years prior to the survey who put the newborn infant to the breast within 1 hour of birth</td>
<td>Total number of women with a live birth in the X years prior to the survey (Note: This reference period may differ between surveys)</td>
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<td>14</td>
<td>Postnatal visit within 3 days of delivery</td>
<td>Percentage of newborns receiving a postnatal visit by a trained worker within 3 days of delivery.</td>
<td>Among last children born in the 5 years prior to the survey, the number receiving a postnatal visit by a trained worker within 3 days of delivery.</td>
<td>Total number of last children born in the five years prior to the survey.</td>
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<tr>
<td>15</td>
<td>Prevention of mother-to-child transmission of HIV</td>
<td>Percentage of all HIV-positive pregnant women who received ART prophylaxis</td>
<td>Number of HIV-positive pregnant women given ART prophylaxis in the preceding 12 months</td>
<td>Estimated number of HIV-positive pregnant women giving birth in the preceding 12 months</td>
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<td>NO.</td>
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<tr>
<td>16</td>
<td>Careseeking for pneumonia</td>
<td>Percentage of children aged 0-59 months with suspected pneumonia taken to an appropriate health provider</td>
<td>Number of children aged 0-59 months prior to the survey who were taken to an appropriate health provider</td>
<td>Total number of children aged 0-59 months with suspected pneumonia in the 2 weeks prior to the survey</td>
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<td>17</td>
<td>Antibiotic treatment for pneumonia</td>
<td>Percentage of children aged 0-59 months with suspected pneumonia receiving antibiotics</td>
<td>Number of children aged 0-59 months prior to the survey receiving antibiotics</td>
<td>Total number of children aged 0-59 months with suspected pneumonia in the 2 weeks prior to the survey</td>
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<tr>
<td>18</td>
<td>Oral rehydration and continued feeding</td>
<td>Percentage of children aged 0-59 months with diarrhoea receiving oral rehydration and continued feeding</td>
<td>Number of children aged 0-59 months prior to the survey receiving oral rehydration therapy (oral rehydration solution and/or recommended homemade fluids) or increased fluids and continued feeding</td>
<td>Total number of children aged 0-59 months with diarrhoea in the 2 weeks prior to the survey</td>
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<tr>
<td>19</td>
<td>Antimalarial treatment</td>
<td>Percentage of children aged 0-59 months with fever receiving appropriate antimalarial drugs</td>
<td>Number of children aged 0-59 months reported to have fever in the 2 weeks prior to the survey who were treated with an appropriate anti-malarial within 24 hours of onset of symptoms</td>
<td>Total number of children aged 0-59 months reported to have fever in the 2 weeks prior to the survey</td>
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**Note:** "-" refers to through (i.e. "0-59 months" should be read as "0 through 59 months")
## Annex 4

### Category Definitions

<table>
<thead>
<tr>
<th>Indicators</th>
<th>On Track</th>
<th>Watch &amp; Act</th>
<th>High Alert</th>
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<tr>
<td>Exclusive breastfeeding to 6 months</td>
<td>≥50%</td>
<td>&gt;20 and &lt;50%</td>
<td>≤20%</td>
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<tr>
<td>Breastfeeding 6-9 mos. w/ complementary feeding</td>
<td>≥70%</td>
<td>&gt;50 and &lt;70%</td>
<td>≤50%</td>
</tr>
<tr>
<td>Continued breastfeeding at 20-23 months</td>
<td>≥70%</td>
<td>&gt;50 and &lt;70%</td>
<td>≤50%</td>
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<tr>
<td>Measles immunization rate</td>
<td>≥90%</td>
<td>51-89%</td>
<td>≤50%</td>
</tr>
<tr>
<td>DPT3 coverage</td>
<td>≥90%</td>
<td>51-89%</td>
<td>≤50%</td>
</tr>
<tr>
<td>Hib</td>
<td>≥90%</td>
<td>70-89%</td>
<td>No national programme</td>
</tr>
<tr>
<td>Vitamin A</td>
<td>≥70% for one dose</td>
<td>41-69%</td>
<td>≤40% for one dose</td>
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<td>Drinking water</td>
<td>≥80%</td>
<td>51-79%</td>
<td>≤50%</td>
</tr>
<tr>
<td>Sanitation</td>
<td>≥70%</td>
<td>51-69%</td>
<td>≤50%</td>
</tr>
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<td>ITN use</td>
<td>≥10%</td>
<td>&gt;60% or more</td>
<td>&lt;10%</td>
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<tr>
<td>Skilled attendant at delivery</td>
<td>≥70%</td>
<td>31-69%</td>
<td>≤30%</td>
</tr>
<tr>
<td>TT protection at birth</td>
<td>≥70%</td>
<td>41-69%</td>
<td>≤40%</td>
</tr>
<tr>
<td>Timely initiation of breastfeeding</td>
<td>&gt;70%</td>
<td>50-70%</td>
<td>&lt;50%</td>
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<td>Postnatal visits</td>
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<td>PMTCT</td>
<td>≥40%</td>
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<td>Careseeking for Pneumonia</td>
<td>≥70%</td>
<td>31-69%</td>
<td>≤30%</td>
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<td>ORT for diarrhoea</td>
<td>≥50%</td>
<td>31-49%</td>
<td>≤30%</td>
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<tr>
<td>Antimalarials</td>
<td>≥60%</td>
<td>&gt;30 and &lt;60%</td>
<td>≤30%</td>
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