Countdown Equity Analyses by country - 2014

This is a supplementary file to the Countdown 2014 Report, containing detailed equity profiles for each Countdown country with available information. For each country we present the coverage of selected maternal and child health indicators, according to wealth quintiles, maternal education, sex, area of residence, and country region. In addition, the slope index of inequality and the concentration index for each of the health indicators are presented. Four figures summarize the information presented in the table: (1) the coverage levels in the poorest and richest quintiles for selected interventions along the continuum of care; (2) coverage levels in the five wealth quintiles for these interventions; (3) the co-coverage of health interventions: percentage of children aged 1–4 years according to the number of key child-survival interventions received, by wealth quintile; (4) the composite coverage index of selected interventions and corresponding coverage gap (how much is needed to reach universal coverage), by wealth quintile.

Methods

Our overall approach to the study of inequalities is outlined in a recent article [1]. The primary data sources include the Demographic and Health Surveys (DHS) (http://www.measuredhs.com/aboutsurveys/dhs/start.cfm) and Multiple Indicator Cluster Surveys (MICS) (http://www.childinfo.org/). The analyses include phases 3 (2005 to 2007) and 4 (2009 to 2011) MICS surveys and DHS-3 and later, starting from 1993. Older versions of these surveys, such as MICS 1 and 2, and DHS 1 and 2, were carried out two decades ago and are not included because of lack of information on wealth quintiles, absence of data on most indicators studied, or both reasons. When the number of mothers or children in a specific subgroup (e.g. wealth quintile) was less than 25, results were omitted. Results based on samples of 25 to 50 children or mothers are highlighted in the table to signal their poor precision.

Stratifiers

The indicators studied were disaggregated by five stratifiers that are relevant for equity analysis: wealth quintiles, maternal education, sex, area of residence, and country region. Region of the country and urban or rural area of residence relate to where the household is located, following the classification used in the original surveys. Breakdowns by sex of the child are shown for relevant indicators, such as antenatal care, breastfeeding and vaccination, but not for others such as contraception and improved drinking water. Maternal education is based on the reported completed level of education of the mother, and classified as none, primary or secondary plus, according to each country's educational structure.

Wealth quintiles were derived from asset indices [1-3]. These are based on presence of household possessions (radio, television, refrigerator, etc.) and characteristics of the house (building materials, toilet, electricity, etc.). These variables are subjected to principal component analysis, a data reduction technique that produces linear combinations of the variables, the components. The first component, or factor, is extracted in a way that retains as much variability as possible from all of the variables [4] from which a continuous score is derived. Each household is then assigned a score that can be broken down into quintiles or other equal-sized groups of household. By convention, Q1 refers to the poorest and Q5 to the wealthiest quintile. Women and children are then classified into these quintiles on the basis of the wealth status of the household to which they belong. Because fertility is usually higher in the poorest households, the actual number of children for analyses tends to be higher in the poorer than in the richer quintiles.

Coverage Indicators

The sets of indicators presented include coverage of preventive interventions along the reproductive, maternal, newborn and child (RMNCH) continuum of care. Coverage indicators related to gestation and birth from DHS surveys are usually estimated from information on children born in the five years before the survey. However, some DHS surveys collected information only on children born in the previous three years. In contrast, MICS surveys collect data for such indicators for the children born in the two years before the surveys. The full definition of each indicator is presented in the last page of this document.

Data quality control (QC)

Data quality checks were carried out in order to ensure the quality of our estimates:

- Data reconciliation against published estimates: whenever possible, our national level estimates were validated against a set of published estimates in order to identify discrepant results. These comparisons were carried out using available data from DHS (www.statcompiler.com) and MICS (www.micscompiler.org) webpages and printed country reports. All discrepancies were investigated and corrected if applicable.
- Face validity: national and stratified estimates were checked individually to assess if they reflect the levels and inequality trends that one would expect. If not, the results were double-checked to ensure that there were no mistakes in the analyses or preparation of the tables and figures.

Analyses

This set of profiles was prepared by the International Center for Equity in Health (www.equidade.org), based at the Federal University of Pelotas, Brazil.

References

1. Barros, A.J. and C.G. Victora, *Measuring Coverage in MNCH: Determining and Interpreting Inequalities in Coverage of Maternal, Newborn, and Child Health Interventions.* PLoS Med, 2013. **10**(5): p. e1001390.
2. Filmer, D. and L. Pritchett, *Estimating wealth effects without expenditure data - or tears : with an application to educational enrollments in states of India*, in *Policy Research Working Paper*1988, The World Bank. p. 38.
3. Rutstein, S.O. and K. Johnson, *The DHS Wealth Index*, in *DHS Comparative Reports*2004, ORC Macro: Calverton, Maryland.
4. Jolliffe, I.T., *Principal Component Analysis*. Springer Series in Statistics. 2002, New York: Springer.

The first page provides guidance on how the profiles should be interpreted. The next pages present results for 62 Countdown countries. These countries are those for which at least one standard DHS or MICS survey is available, including information on wealth score.

These are the health indicators for which estimates are presented in this set of profiles. Detailed definitions are available in the last page of this document.

EXAMPLE PROFILE: BOLIVIA   DHS   2008

Table - Coverage of Countdown indicators at national level and by key equity stratifiers.

	Demand for family planning	Contraceptive prevalence rate	Antenatal care 1+ visits with skilled provider	Antenatal care 4+ visits, any provider	Skilled attendant at delivery	C-section rate	Early initiation of breastfeeding	Postnatal care for babies born at home	Postnatal care for all babies	BCG vaccine	DTP3 vaccine	Measles vaccine	Vitamin A in last 6 mos.	ORT and continued feeding	ORS (packet or pre-packaged)	Care seeking for pneumonia	ITN use by children	Improved drinking water source	Co-coverage (less than 3 interventions)	Co-coverage (6 or more interventions)	Composite coverage index
National	75.0	60.6	85.8	72.1	71.1	18.6	63.8	33.0	76.4	98.4	85.8	85.8	24.6	29.0	34.9	50.9	NO	85.5	2.9	63.5	70.7
Wealth quintiles																					
Q1		46.2	65.7	50.3	38.0	4.7	66.7	31.2	51.3	97.8	85.7	87.7	26.6	28.1	30.6	40.4	NO	55.7	6.4	34.8	58.4
Q2		54.8	82.8	66.0	9.9	69.7	38.5	74.4	98.3	84.4	84.8	25.3	27.8	34.8	49.0	NO	82.3	3.4	58.5	67.9
Q3		92.1	76.0	81.2	15.7	65.4	31.1	83.4	98.3	87.1	82.7	23.1	32.9	36.7	53.9	NO	93.8	72.7	73.9
Q4		96.2	83.2	92.1	30.7	59.7	25.9	91.0	99.5	85.9	86.5	23.3	27.6	40.3	54.5	NO	96.9	76.9
Q5		96.8	90.9	98.7	48.2	54.8	ND	96.6	98.6	35.1	70.3	NO	81.1
Equity indicators																					
ratio Q5/Q1		1.5		2.6	10.2	0.8	NO					1.7	NO	1.4
difference Q5 - Q1	24.6		7	43.5	-11.9	NO					NO	22.7
Concentration index	8.1		42.8	-4.0	5.6			NO	6.1
SII	36.0		48.6	-15.3	4.9			NO	27.0
Maternal education																					
none		71.7	23.8				4		0.4	NO	NA	37.1	59.5
primary		66.6	33.9	68.3			45.9	NO	NA	4.4	53.9	66.2
secondary+		59.6	35.3	89.1	59	37.2	59.6	NO	NA	0.5	80.3	77.9
Child's sex																					
male		63.0	35.0	76.4	98.6	86.9	84.6	25.2	27.5	33.7	50.1	NO	NA	2.5	64.0	NA
female		64.6	30.8	76.4	98.1	84.5	87.2	24.0	30.6	36.3	51.7	NO	NA	3.3	62.9	NA
Area of residence																					
urban		61.2	30.9	88.3	98.7	84.7	84.9	23.4	28.2	38.4	59.6	NO	94.1	1.3	76.3
rural		67.4	33.5	62.0	86.7	26.2	29.7	31.5	42.7	NO	72.9	7
Country region																					
01 chuquisaca			74.2	31.6	4	30.7	45.6	38.7	53.5	NO	79.5	84.3
02 la paz	7		64.1	23.2		23.6	29.4	27.0	37.0	NO	86.0
03 cochabamba	68		2	28.7		22.3	28.5	35.4	40.9	NO	79.9
04 oruro	67.4		70.8	46.4		30.9	38.6	23.0	46.5	NO	84.8
05 potosí	62.5		7.1	66.1	44.8	28.8	30.6	34.4		NO	85.4	1	64.3
06 tarija	83.6		23.1	67.9	42.2	5	28.0	31.8	NO	92.0	0.4	81.7	80.1
07 santa cruz	83.2	70	36.1	48.8	55.5	92.9	88.2	21.1	2	NO	95.3	0.5	81.7	78.5
08 beni	76.9	60.9	77.2	15.7	76.1	25.5	76.4	98.1	94.9	92.1	28.2	NO	1.5	64.6	75.3
09 pando	75.1	61.2	96.9	85.2	80.3	25.7	61.3	ND	86.9	100.0	80.3	92.1	26.2	NO	1.4	71.2	74.8

Wealth quintiles: Q1 = poorest 20%, Q5 = richest 20%

Each row presents a specific maternal or child health indicator estimate, according to five different stratifiers - wealth quintile, maternal education, child's sex, region of residence and country region. Additionally, the wealth quintile ratio or difference for these estimates (wealthiest quintile divided by or minus the poorest quintile), as well as the concentration index and the slope index of inequality, are presented.

ND = no data available to estimate this cell, or estimates were omitted because the denominator was less than 25 unweighted observations.

Cells painted yellow: the denominator of the estimate was 25-49 unweighted observations

NO = no observations for this variable as it was not collected in this survey

NA: this stratification is not applicable for the indicator

Trends in coverage of key interventions are presented if two surveys were available, with a minimum interval of five years
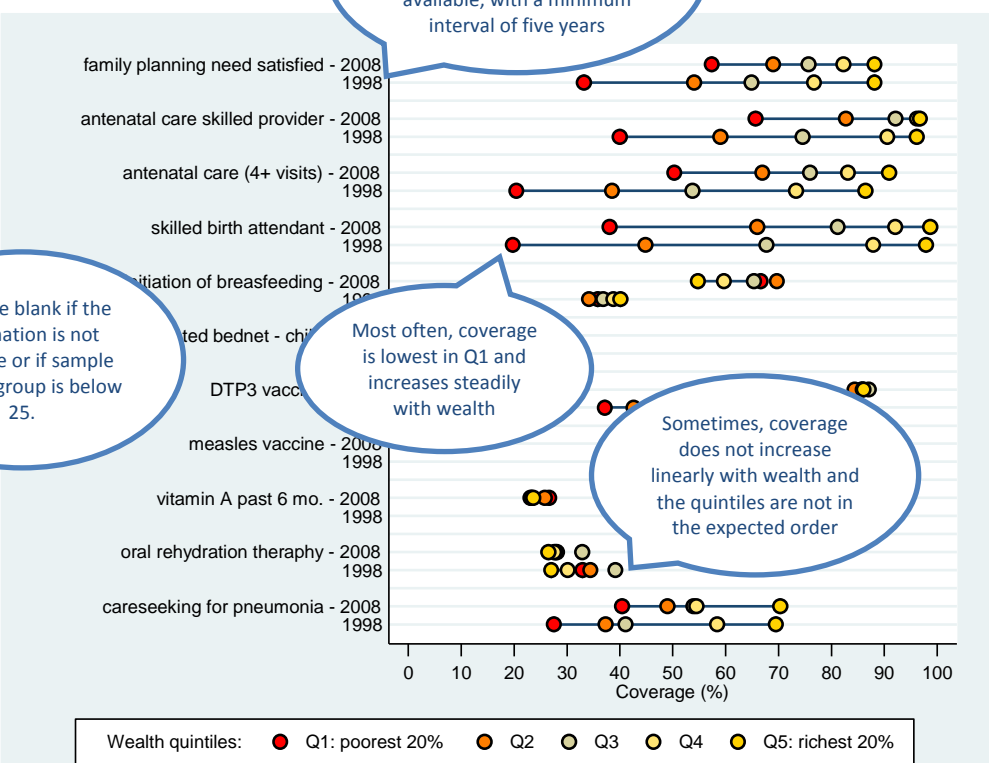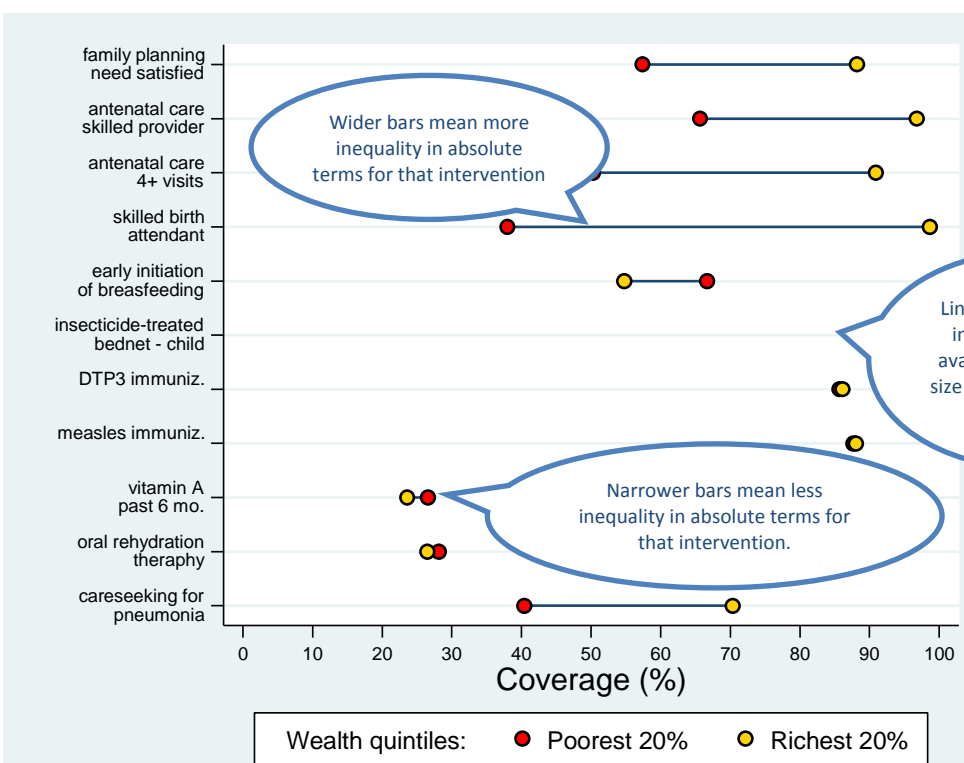

Figure 1 - Coverage levels in the poorest and richest quintiles for selected interventions along the continuum of care.

Wealth quintiles: Poorest 20% (red), Richest 20% (yellow)

Wider bars mean more inequality in absolute terms for that intervention

Lines are blank if the information is not available or if sample size in a group is below 25.

Narrower bars mean less inequality in absolute terms for that intervention.

Source: Bolivia DHS 2008
Coverage levels are shown for the poorest 20% (red circles) and the richest 20% (yellow circles).
The longer the line between the two groups, the greater the absolute inequality.
For quintiles with small sample sizes, estimates are not shown in the graphs.

Figure 2 - Coverage levels in the five wealth quintiles for selected interventions along the continuum of care.

Wealth quintiles: Q1: poorest 20%, Q2, Q3, Q4, Q5: richest 20%

Most often, coverage is lowest in Q1 and increases steadily with wealth

Sometimes, coverage does not increase linearly with wealth and the quintiles are not in the expected order

Source: Bolivia (DHS 1998 & DHS 2008)
The horizontal lines connect the richest (yellow circles) and poorest (red circles) quintiles.
The longer the line between the two groups, the greater the absolute inequality.
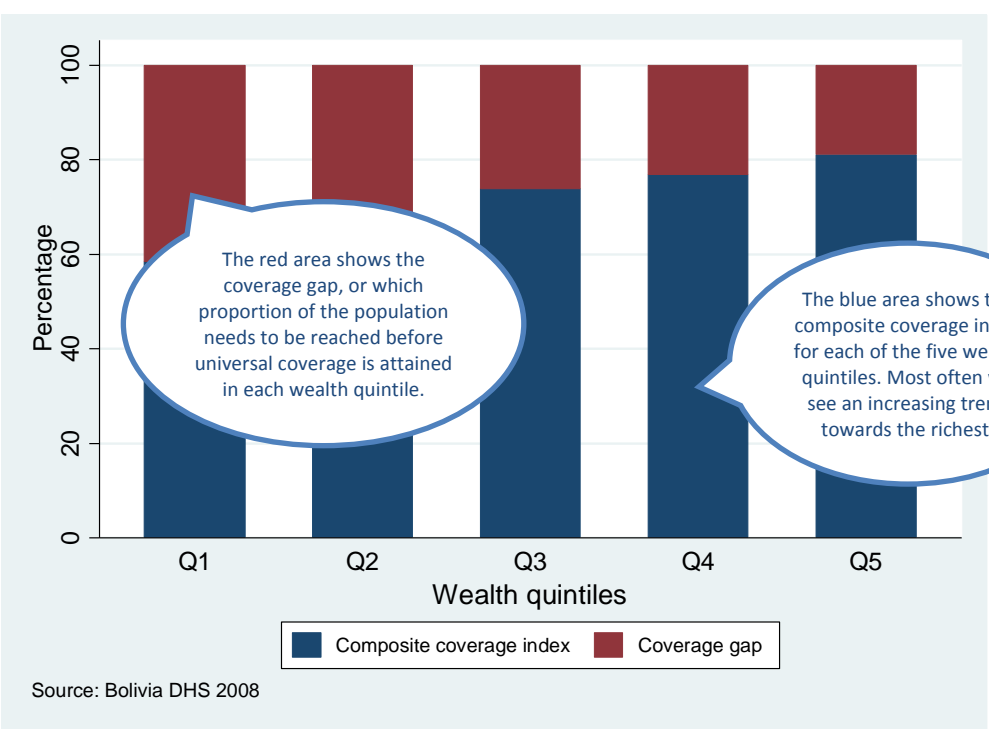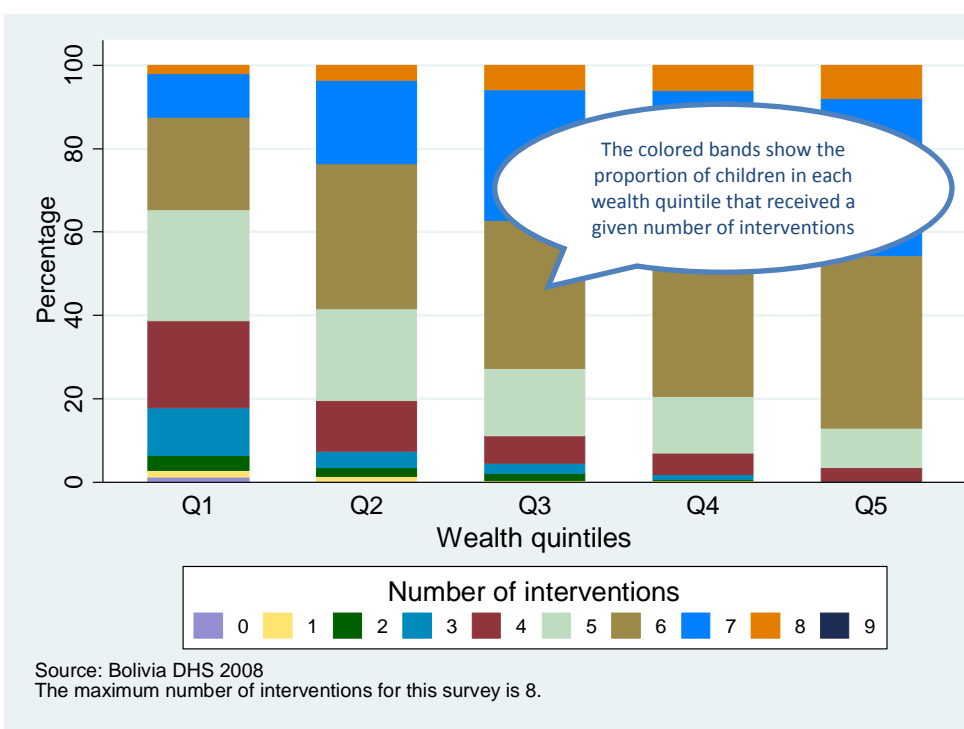For quintiles with small sample sizes, estimates are not shown in the graphs.

Figure 3 - Co-coverage of health interventions: percentage of children aged 1-4 years according to the number of key child-survival interventions received, by wealth quintile.

Number of interventions: 0, 1, 2, 3, 4, 5, 6, 7, 8, 9

The colored bands show the proportion of children in each wealth quintile that received a given number of interventions

Source: Bolivia DHS 2008
The maximum number of interventions for this survey is 8.

Interventions taken into account for the co-coverage analysis: (1) antenatal care, (2) mother immunized against tetanus, (3) skilled birth attendant, (4) BCG immunization, (5) 3 doses of DTP, (6) measles immunization, (7) vitamin A, (8) insecticide-treated bednet (for countries with endemic malaria), (9) household with improved drinking water source.

Figure 4 - Composite coverage of selected interventions and corresponding coverage gap (how much is needed to reach universal coverage), by wealth quintile.

Composite coverage index / Coverage gap

The red area shows the coverage gap, or which proportion of the population needs to be reached before universal coverage is attained in each wealth quintile.

The blue area shows the composite coverage index for each of the five wealth quintiles. Most often we see an increasing trend towards the richest.

Source: Bolivia DHS 2008

Composite coverage is a weighted mean of eight interventions selected to cover four domains: contraception, pregnancy and delivery, immunization and care of common childhood diseases. It was created to present an overall picture of intervention coverage for a given country. Please see details of the calculation in the last page of this annex.

Definitions of the indicators presented in the equity profiles, the accountability report or the time-trend equity analyses

Indicator	Definition
Sexual and reproductive health	
Contraceptive Prevalence (modern and traditional methods)	Percentage of women married or in-union aged 15 to 49 who are currently using, or whose sexual partner is using, at least one method of contraception, regardless of the method used
Demand for family planning needs satisfied	Proportion of all women aged 15-49 using contraception among those who are fecund, in union and in need of contraception. Women in need of contraception include those that do not want any more children or that want to wait two or more years before having another child
Antenatal care	
Antenatal care (at least one visit by skilled provider)	Percentage of women aged 15-49 with a live birth in a given time period that received antenatal care provided by a skilled health personnel (doctors, nurses, or midwives) at least once during pregnancy
Antenatal care (four or more visits)	Percentage of women aged 15-49 with a live birth in a given time period that had 4+ antenatal care visits by any provider
Delivery assistance	
Caesarean section	Percentage of live births delivered by caesarean section
Skilled attendant at delivery	Percentage of deliveries attended by health personnel trained in providing lifesaving obstetric care, including giving the necessary supervision, care and advice to women during pregnancy, labour and the post-partum period; conducting deliveries on their own; and caring for newborns
Postnatal care for babies who were born at home	The proportion of babies born outside of a health facility who received postnatal care within two days of birth
Postnatal care for all babies	Proportion of babies who received postnatal care within two days of birth. This indicator assumes that all babies born in an institution had postnatal care
Care of the child	
Early initiation of breastfeeding	Proportion of newborns put to the breast within one hour of birth
BCG immunization coverage	The percentage of children aged 12-23 months who have received one dose of Bacille Calmette-Guérin (BCG) vaccine in a given year
DPT 3 immunization coverage	The percentage of children aged 12-23 months who have received three doses of the combined diphtheria, tetanus toxoid and pertussis (DTP3) vaccine in a given year
Measles immunization coverage	The percentage of children aged 12-23 months who have received at least one dose of measles-containing vaccine in a given year
Vitamin A supplementation	Proportion of children aged 6–59 months who received at least one high dose of vitamin A supplement in the last six months
Case management of respiratory infection and diarrhoea	
Oral rehydration and continued feeding	Proportion of children aged 0–59 months who had diarrhoea in the two weeks prior to the survey and were treated with oral rehydration therapy (ORT) – oral rehydration salts or an appropriate household solution – and continued feeding.
Oral rehydration salts	Percentage of children aged 0-59 months with diarrhoea receiving oral rehydration salts
Care seeking for pneumonia	Proportion of children aged 0–59 months with suspected pneumonia taken to an appropriate health provider
Malaria prevention	
Insecticide-treated net coverage (children)	Percentage of children aged 0-59 months who slept under an insecticide treated mosquito net the night prior to the survey
Water and sanitation	
Use of improved drinking water source	Percentage of the population who use any of the following types of water supply for drinking: piped water into dwelling, plot or yard; public tap/standpipe; borehole/tube well; protected dug well; protected spring; rainwater collection and bottled water (if a secondary available source is also improved)
Combined indicators	
Co-coverage	Co-coverage is based on how many preventive interventions each mother/child pair received, ideally out of a set eight essential interventions: antenatal care (1+ visit with skilled provider); tetanus toxoid during pregnancy; skilled birth attendant; child received vitamin A supplementation, BCG vaccination, DTP3 vaccination, and measles vaccination; improved drinking water source. In malaria-endemic areas a 9th indicator is also included, the use of insecticide-treated bednets by the child. In some surveys from Latin America, information on vitamin A is not available. **Less than 3 interventions:** This indicator refers to the proportion of mothers/children with less than 3 essential interventions. **6+ interventions:** This indicator refers to the proportion of mothers/children with 6 or more essential interventions.
Composite coverage index	CCI is calculated as the weighted average of coverage of a set of eight preventive and curative interventions; it gives equal weight to four stages in the continuum of care: family planning, maternal and newborn care, immunization, and case management of sick children. The following expression is used to obtain the estimate: $$\frac{1}{4}\left(FPS + \frac{SBA+ANCS}{2} + \frac{2DPT3+MSL+BCG}{4} + \frac{ORT+CPNM}{2}\right)$$ where FPS is demand for family planning satisfied, SBA is skilled birth attendant, ANCS is antenatal care with skilled provider, DPT3 is three doses of DPT vaccine, MSL is measles vaccination, BCG is BCG vaccination, ORT is oral rehydration therapy and continued feeding for children with diarrhoea, and CPNM is care seeking for children with suspected pneumonia.