



	Survey year	Prevalence of child malnutrition				Child immunization rate				Infant mortality rate		Under-five mortality rate	
		Moderate underweight % of children under age 5				% of children ages 12–23 months <sup>a</sup>				per 1,000 live births		per 1,000	
		New reference		Old reference		Measles		DTP3		Poorest quintile	Richest quintile	Poorest quintile	Richest quintile
		Poorest quintile	Richest quintile	Poorest quintile	Richest quintile	Poorest quintile	Richest quintile	Poorest quintile	Richest quintile				
Armenia	2000	3	2	3	1	68	74 <sup>b</sup>	89	84 <sup>b</sup>	52	27	61	30
Bangladesh	2004	36	19	41	24	60	91	71	91	90	65	121	71
Benin	2001	18	6	21	9	57	83	63	89	112	50	198	93
Bolivia	2003	7	1	10	1	62	74	64	85	87	32	119	37
Brazil	1996	7	2	10	3	78	90	66	82	83	29	99	33
Burkina Faso	2003	19	13	26	16	48	71	45	73	97	78	206	144
Cambodia	2000	27	23	35	28	44	82	39	75	110	50	155	64
Cameroon	2004	..	..	..	..	57	86	55	86	101	52	189	88
Central African Republic	1994–95	20	11	25	15	31	80	27	76	132	54	193	98
Chad	2004	24	16	27	19	8	38	5	42	109	101	176	187
Colombia	2005	7	2	11	3	70	91	73	91	32	14	39	16
Comores	1996	15	12	22	14	51	86	58	92	87	65	129	87 <sup>b</sup>
Côte d'Ivoire	1994	17	7	21	10	31	79	26	74	117	63	190	97
Dominican Republic	2002	7	1	9	1	83	94	46	66	50	20	66	22
Egypt, Arab Rep.	2000	4	2	5	2	95	99	94	93	76	30	98	34
Eritrea	1995	..	..	..	..	37	92	30	89	74	68	152	104
Ethiopia	2000	25	22	32	29	18	52	14	43	93	95	159	147
Gabon	2000	10	4	14	7	34	71	18	49	57	36	93	55
Ghana	2003	17	6	22	10	74	88	64	87	61	58	128	88
Guatemala	1998–99	21	9	26	10	80	91	74	76	58	39	78	39
Guinea	1999	17	9	22	13	33	73	30	69	119	70	230	133
Haiti	2000	14	4	18	6	43	63	31	58	100	97	164	109
India	1998–99	28	16	33	21	28	81	36	85	97	38	141	46
Indonesia	2002–03	..	..	..	..	59	85	42	72	61	17	77	22
Jordan	1997	..	..	..	..	90	93	98	93	35	23	42	25
Kazakhstan	1999	3	5	5	6	74	76 <sup>b</sup>	90	82 <sup>b</sup>	68	42	82	45
Kenya	2003	17	6	22	7	54	88	56	73	96	62	149	91
Kyrgyz Republic	1997	6	5	10	7	82	81	82	87	83	46	96	49
Madagascar	1997	24	18	29	24	32	79	32	81	119	58	195	101
Malawi	2000	18	9	24	12	80	90	79	93	132	86	231	149
Mali	2001	20	10	26	13	40	77	28	71	137	90	248	148
Mauritania	2000–01	18	11	23	15	42	86	18	61	61	62	98	79
Morocco	2003–04	11	2	13	3	83	98	89	98	62	24	78	26
Mozambique	2003	16	5	21	7	61	96	52	96	143	71	196	108
Namibia	2000	17	6	22	9	76	86	76	83	36	23	55	31
Nepal	2001	34	20	40	26	61	83	62	85	86	53	130	68
Nicaragua	2001	9	2	13	2	76	94	77	83	50	16	64	19
Niger	1998	27	18	30	26	23	66	9	68	131	86	282	184
Nigeria	2003	20	9	24	10	16	71	7	61	133	52	257	79
Pakistan	1990–91	28	14	33	19	28	75	24	64	89	63	125	74
Paraguay	1990	3	1	5	1	48	69	40	69	43	16	57	20
Peru	2000	9	1	13	1	81	92	76	93	64	14	93	18
Philippines	2003	..	..	..	..	70	89	64	92	42	19	66	21
Rwanda	2000	15	8	19	12	84	89	80	89	139	88	246	154
Senegal	1997	..	..	..	..	..	..	..	..	85	45	181	70
South Africa	1998	..	..	..	..	74	85	64	85	62	17	87	22
Tanzania	2004	14	8	20	11	65	91	34	36	88	64	137	93
Togo	1998	17	8	23	10	35	63	29	68	84	66	168	97
Turkey	1998	..	..	..	..	64	89	45	81	68	30	85	33
Turkmenistan	2000	..	..	..	..	91	80	97	86	89	58	106	70
Uganda	2000–01	16	7	21	10	49	65	35	55	106	60	192	106
Uzbekistan	1996	11	8	15	10	96	93	89	82	54	46	70	50
Vietnam	2002	..	..	..	..	64	98	53	94	39	14	53	16
Yemen, Rep.	1997	..	..	36	24	16	73	14	71	109	60	163	73
Zambia	2001–02	18	12	24	17	81	88	74	89	115	57	192	92
Zimbabwe	1999	10	5	16	6	80	86	81	86	59	44	100	62

a. Refers to children who were immunized at any time before the survey. b. The data contain large sampling errors because of the small number of cases.

# Health gaps by income and gender

# 2.21

PEOPLE

Survey year	Prevalence of child malnutrition		Child immunization rate				Infant mortality rate		Under-five mortality rate		
			Old reference		% of children ages 12–23 months <sup>a</sup>		per 1,000 live births		per 1,000		
	Moderate underweight % of children under age 5		Measles		DTP3		Male	Female	Male	Female	
	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	
Armenia	2000	2	3	71	79	90	89	46	42	51	45
Bangladesh	2004	34	35	76	76	81	81	80	64	102	91
Benin	2001	19	17	69	67	74	71	98	92	162	163
Bolivia	2003	6	6	65	63	70	73	71	64	94	91
Brazil	1996	6	5	87	87	82	80	52	44	60	53
Burkina Faso	2003	25	23	54	58	57	57	95	89	195	192
Cambodia	2000	32	33	57	54	50	47	103	82	133	110
Cameroon	2004	14	15	65	66	65	68	88	74	154	141
Central African Republic	1994–95	21	19	52	53	49	46	109	94	165	152
Chad	2004	23	23	23	23	20	21	122	108	207	198
Colombia	2005	6	6	83	82	84	81	26	18	30	21
Comores	1996	19	17	63	64	68	69	93	75	122	103
Côte d'Ivoire	1994	19	16	54	52	49	45	99	83	163	137
Dominican Republic	2002	5	5	89	88	54	61	38	31	46	40
Egypt, Arab Rep.	2000	4	3	97	97	94	94	55	55	69	70
Eritrea	1995	26	27	52	50	49	49	82	69	163	141
Ethiopia	2000	32	31	28	26	22	19	124	101	197	178
Gabon	2000	10	9	55	55	40	33	74	49	103	80
Ghana	2003	17	17	82	83	81	77	70	59	111	108
Guatemala	1998–99	21	18	82	87	73	74	50	48	64	65
Guinea	1999	17	19	52	52	46	47	112	101	202	188
Haiti	2000	14	13	54	54	43	43	97	83	143	132
India	1998–99	28	30	52	50	56	54	75	71	98	105
Indonesia	2002–03	..	..	73	71	58	59	46	40	58	51
Jordan	1997	4	5	90	90	96	96	34	23	38	30
Kazakhstan	1999	4	4	79	78	89	88	62	47	72	53
Kenya	2003	18	14	73	72	71	74	84	67	122	103
Kyrgyz Republic	1997	11	8	84	85	83	81	72	60	81	70
Madagascar	1997	27	27	47	45	48	49	109	90	176	152
Malawi	2000	20	19	83	83	84	85	117	108	207	199
Mali	2001	24	21	49	48	41	38	136	116	250	226
Mauritania	2000–01	22	22	61	63	39	41	74	59	110	94
Morocco	2003–04	9	8	88	92	95	95	51	37	59	48
Mozambique	2003	18	17	77	76	73	71	127	120	181	176
Namibia	2000	19	18	79	82	78	81	45	34	67	54
Nepal	2001	35	36	73	69	74	70	79	75	105	112
Nicaragua	2001	9	7	87	86	84	81	39	32	48	41
Niger	1998	29	30	36	34	25	25	141	131	299	306
Nigeria	2003	19	20	34	38	19	24	116	102	222	212
Pakistan	1990–91	27	27	55	46	45	40	102	86	122	119
Paraguay	1990	3	4	56	61	50	57	39	33	49	45
Peru	2000	6	6	84	85	85	84	46	40	64	57
Philippines	2003	..	..	78	81	78	80	35	25	48	34
Rwanda	2000	19	19	86	88	85	87	123	112	215	198
Senegal	1997	..	..	..	..	..	..	74	65	144	134
South Africa	1998	..	..	84	81	74	78	49	35	66	48
Tanzania	2004	18	18	80	80	37	33	83	82	135	130
Togo	1998	19	18	45	40	43	41	89	71	156	132
Turkey	1998	7	7	79	78	60	57	51	46	61	58
Turkmenistan	2000	11	10	87	88	93	92	83	60	101	76
Uganda	2000–01	18	17	56	57	45	48	93	85	164	149
Uzbekistan	1996	15	13	91	92	87	90	50	37	65	46
Vietnam	2002	..	..	84	82	72	73	25	25	34	31
Yemen, Rep.	1997	33	30	45	40	41	39	98	80	128	114
Zambia	2001–02	21	21	83	86	78	82	95	93	176	160
Zimbabwe	1999	12	11	77	81	80	82	63	56	95	85

a. Refers to children who were immunized at any time before the survey.



	Survey year	Pregnant women receiving prenatal care		Contraceptive prevalence rate		Births attended by skilled health staff <sup>a</sup>		Total fertility rate		Exclusive breastfeeding	
		%		modern methods % of married women ages 15–49		% of total		births per woman		% of children under 4 months	
		Poorest quintile	Richest quintile	Poorest quintile	Richest quintile	Poorest quintile	Richest quintile	Poorest quintile	Richest quintile	Poorest quintile	Richest quintile
Armenia	2000	85	97	16	29	93	100	2.5	1.6	..	..
Bangladesh	2004	25	81	45	50	3	39	4.1	2.2	62	31
Benin	2001	73	100	4	15	50	99	7.2	3.5	50	42 <sup>b</sup>
Bolivia	2003	62	98	23	49	27	98	6.7	2.0	79	31
Brazil	1996	72	98	56	77	72	99	4.8	1.7	33	60 <sup>b</sup>
Burkina Faso	2003	56	96	2	27	19	84	6.6	3.6	17	28
Cambodia	2000	22	80	13	25	15	81	4.7	2.2	14	18
Cameroon	2004	65	97	2	27	29	95	6.5	3.2	33	30 <sup>b</sup>
Central African Republic	1994–95	39	91	1	9	14	82	5.1	4.9	9	4
Chad	2004	9	77	0	7	1	51	5.1	6.0	1	2
Colombia	2005	84	99	60	72	72	99	4.1	1.4	60	64
Comoros	1996	67	95	7	19	26	85	6.4	3.0	3 <sup>b</sup>	..
Côte d'Ivoire	1994	62	98	1	13	17	84	6.4	3.7	0	5
Dominican Republic	2002	97	99	59	70	94	100	4.5	2.1	18	6
Egypt, Arab Rep.	2000	31	84	43	61	31	94	4.0	2.9	72	57
Eritrea	1995	34	90	0 <sup>c</sup>	19	5	74	8.0	3.7	64	73
Ethiopia	2000	15	60	3	23	1	25	6.3	3.6	63	46
Gabon	2000	85	98	6	18	67	97	6.3	3.0	6	5 <sup>b</sup>
Ghana	2003	83	98	9	26	21	90	6.4	2.8	62 <sup>b</sup>	..
Guatemala	1998–99	37	97	5	60	9	92	7.6	2.9	62	..
Guinea	1999	58	97	1	9	12	82	5.8	4.0	9	8
Haiti	2000	65	91	17	24	4	70	6.8	2.7	40	15 <sup>b</sup>
India	1998–99	44	93	29	55	16	84	3.4	1.8	64	37
Indonesia	2002–03	78	99	49	58	40	94	3.0	2.2	58	35
Jordan	1997	93	97	28	47	91	99	5.2	3.1	14	14 <sup>b</sup>
Kazakhstan	1999	97	91	49	55	99	99	3.4	1.2	..	..
Kenya	2003	75	94	12	44	17	75	7.6	3.1	22	17
Kyrgyz Republic	1997	96	99	44	54	96	100	4.6	2.0	18 <sup>b</sup>	..
Madagascar	1997	67	96	2	24	30	89	8.1	3.4	57	65
Malawi	2000	89	98	20	40	43	83	7.1	4.8	53	72
Mali	2001	42	92	4	18	22	89	7.3	5.3	38	18
Mauritania	2000–01	33	89	0 <sup>c</sup>	17	15	93	5.4	3.5	28	30
Morocco	2003–04	40	93	51	57	29	95	3.3	1.9	53	36
Mozambique	2003	67	98	14	37	25	89	6.3	3.8	47	27
Namibia	2000	81	96	29	64	55	97	6.0	2.7	100 <sup>b</sup>	85 <sup>b</sup>
Nepal	2001	30	80	24	55	4	45	5.3	2.3	76	67
Nicaragua	2001	69	97	50	71	78	99	5.6	2.1	53	15 <sup>b</sup>
Niger	1998	24	85	1	18	4	63	8.4	5.7	1	3
Nigeria	2003	37	96	4	21	13	85	6.5	4.2	15	34
Pakistan	1990–91	8	72	1	23	5	55	5.1	4.0	36	9
Paraguay	1990	73	98	21	46	41	98	7.9	2.7	7	0
Peru	2000	41	74	37	58	13	88	5.5	1.6	88	59
Philippines	2003	72	97	24	35	25	92	5.9	2.0	60	20
Rwanda	2000	90	95	2	15	17	60	6.0	5.4	89	79
Senegal	1997	67	97	1	24	20	86	7.4	3.6	13	19
South Africa	1998	96	94	34	70	68	98	4.8	1.9	15	11 <sup>b</sup>
Tanzania	2004	91	97	11	36	31	87	7.3	3.3	58	55
Togo	1998	69	97	3	13	25	91	7.3	2.9	7	34
Turkey	1998	38	96	24	48	53	98	3.9	1.7	10	4 <sup>b</sup>
Turkmenistan	2000	98	97	51	50	97	98	3.4	2.1	11	28 <sup>b</sup>
Uganda	2000–01	88	98	11	41	20	77	8.5	4.1	73	59
Uzbekistan	1996	93	96	46	52	92	100	4.4	2.2	..	..
Vietnam	2002	68	100	58	52	58	100	2.2	1.4	18	..
Yemen, Rep.	1997	17	68	1	24	7	50	7.3	4.7	20	13
Zambia	2001–02	89	99	11	53	20	91	7.3	3.6	39	70 <sup>b</sup>
Zimbabwe	1999	94	97	41	67	57	94	4.9	2.6	36	46 <sup>b</sup>

a. Based on births in the five years before the survey. b. The data contain large sampling errors because of the small number of cases. c. Less than 0.5.

## About the data

The data in the table describe the health status and use of health services by individuals in different socioeconomic groups and by sex within countries. The data are from Demographic and Health Surveys conducted by Macro International with the support of the U.S. Agency for International Development. These large-scale household sample surveys, conducted periodically in developing countries, collect information on many health, nutrition, and population measures as well as on respondents' social, demographic, and economic characteristics using a standard set of questionnaires. The data presented here draw on responses to individual and household questionnaires.

Socioeconomic status as displayed in the table is based on a household's assets, including ownership of consumer items, features of the household's dwelling, and other characteristics related to wealth. Each household asset on which information was collected was assigned a weight generated through principal-component analysis. The resulting scores were standardized in relation to a standard normal distribution with a mean of zero and a standard deviation of one. The standardized scores were then used to create break-points defining wealth quintiles, expressed as quintiles of individuals in the population rather than quintiles of individuals at risk with respect to any one health indicator.

The choice of the asset index for defining socioeconomic status was based on pragmatic rather than conceptual considerations: Demographic and Health Surveys do not collect income or consumption data but do have detailed information on households' ownership of consumer goods and access to a variety of goods and services. Like income or consumption, the asset index defines disparities primarily in economic terms. It therefore excludes other possibilities of disparities among groups, such as those based on gender, education, ethnic background, or other facets of social exclusion. To that extent the index provides only a partial view of the multidimensional concepts of poverty, inequality, and inequity.

Creating one index that includes all asset indicators limits the types of analysis that can be performed. In particular, the use of a unified index does not permit a disaggregated analysis to examine which asset indicators are more closely associated with health status or use of health services. In addition, some asset indicators may reflect household wealth better in some countries than in others—or reflect different degrees of wealth in different countries. Taking such information into account and creating country-

specific asset indexes with country-specific choices of asset indicators might produce a more effective and accurate index for each country. The asset index used in the table does not have this flexibility.

The analysis was carried out for 56 countries, with the results issued in country reports. The table shows the estimates for the poorest and richest quintiles and by sex only; the full set of estimates for up to 117 indicators is available in the country reports (see *Data sources*).

Demographic and Health Surveys try to collect internationally comparable data, but the age group of the reference population could differ across countries. Caution should be used when comparing the data. The estimates in the table are based on survey data, which refer to a period preceding the survey date, or use a definition or methodology different from the estimates in tables 2.17–2.19 and 2.22. Thus the estimates may differ from those in the other tables, and caution should be used in interpreting the data.

## Definitions

- **Survey year** is the year in which the underlying data were collected.
- **Prevalence of child malnutrition** is the percentage of children under age 5 whose weight for age is two to three standard deviations below the median reference standard for their age. The table presents malnutrition data using both the old reference standards and the new international child growth standards released in 2006 by the World Health Organization. For more information about the change in standards, see *About the data* for table 2.19.
- **Child immunization rate** is the percentage of children ages 12–23 months at the time of the survey who, at any time before the survey, had received measles vaccine and three doses of diphtheria, tetanus, and pertussis (whooping cough) vaccine (DTP3).
- **Infant mortality rate** is the number of infants dying before reaching one year of age, per 1,000 live births.
- **Under-five mortality rate** is the probability that a newborn baby will die before reaching age 5, per 1,000, if subject to current age-specific mortality rates.
- **Pregnant women receiving prenatal care** are the percentage of women with one or more births during the five years preceding the survey who were attended by skilled health personnel at least once during pregnancy for reasons related to pregnancy.
- **Contraceptive prevalence rate** is the percentage of women married or in-union ages 15–49 who are practicing, or whose sexual partners are practicing, any modern method of contraception.
- **Births attended by skilled health staff** are the percentage of deliveries attended by personnel trained to give the necessary supervision, care, and advice to women during pregnancy, labor, and the postpartum period; to conduct deliveries on their own; and to care for newborns. Skilled health staff include doctors, nurses, and trained midwives, but exclude trained or untrained traditional birth attendants.
- **Total fertility rate** is the number of children that would be born to a woman if she were to live to the end of her childbearing years and bear children in accordance with current age-specific fertility rates.
- **Exclusive breastfeeding** refers to the percentage of children ages 0–3 months who received only breast milk in the 24 hours preceding the survey.

## Data sources

Data on health gaps by income and gender are from Davidson R. Gwatkin and others' *Socio-Economic Differences in Health, Nutrition, and Population* (2007). Country reports are available at [www.worldbank.org/povertyandhealth/countrydata](http://www.worldbank.org/povertyandhealth/countrydata).