Supplementary Material:
A systematic analysis of global anemia burden from 1990 to 2010

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Supplementary Methods

The starting point of our strategy was calculation of an anemia envelope – a determination of mean hemoglobin as well as sum total of anemia prevalence by severity for each country, age group, year (1990, 2005 and 2010) and both sexes. Our goal in creating an envelope of anemia prevalence was to create a set of global results that would restrict the overall distribution of anemia disability among specific causes. Cause-specific attribution was performed on the anemia envelope using information on cause-specific prevalence and hemoglobin shift from GBD 2010 results when available and other modeling exercises when such information was not available.

We selected categories of anemia severity in accordance with the WHO definitions used in GBD 2000[1]. These definitions are based on hemoglobin thresholds that vary by sex, age, and pregnancy status and include five groups: male adults, female adults (non-pregnant and pregnant), male children and female children.

Data sources

We used population-based surveys of hemoglobin concentration as the primary data input for envelope calculations. These data were not only the most reliable and comparable measures of anemia, coming from national and sub-national measurement surveys, but also spanned the most countries and time-periods. Citation counts are shown in **Table S1** for each group. A total of 409 separate datasets from 150 countries were used to inform the envelope. We used data from 175 sources contained in the WHO Vitamin and Mineral Nutrition Surveys (VMNIS)[2], as well as multiple national health datasets[3–15], and multiple DHS studies listed in **Table S2**.

Table S1: Data sources used to calculate anemia envelope

We used all publicly available datasets in envelope calculations. A majority of our data came from Demographic and Health Surveys and from the World Health Organization Vitamin and Mineral Nutrition Information System (VMNIS). VMNIS data was compiled from sub-national and national reports as well as published studies. Abbreviations: DHS = Demographic and Health Survey, ENDS = Encuesta Nacional de Demografia y Salud, ENSANUT = Encuesta Nacional de Salud y Nutricion, IFLS = Indonesia Family Life Survey, MICS3 = Multiple Indicator Cluster Surveys Round 3, NHANES = National Health and Nutrition Examination Survey, RHS = Reproductive Health Survey, NHES = National Household Examination Survey, HSE = Health Survey for England

Data Source		Adults			Children	
	Country	Males	Females (non-pregnant)	Females (pregnant)	Males	Females
DHS	Multiple	18	70	49	74	74
ENDS	Colombia	1	1	0	1	1
ENSANUT	Mexico	1	1	1	1	1
IFLS 2, 3, 4	Indonesia	3	3	0	3	3
MICS3	Georgia, Laos, Vanuatu	0	3	0	1	1

NHANES (1999-2008 and III)	United States	6	6	0	6	6
RHS	El Salvador, Guatemala, Honduras	4	3	0	6	6
Scottish Health Survey (1995, 1998)	Scotland	2	2	0	0	0
NHES 2	Thailand	1	1	0	0	0
HSE (1991-2006)	United Kingdom	14	14	0	0	0
VMNIS	Multiple	64	95	25	90	90
TOTAL		**114**	**199**	**74**	**182**	**182**

Table S2: Demographic and Health Survey (DHS) study data sources for anemia envelope

This table tabulates the countries, years, and citations of all DHS studies used in calculation of our anemia envelope. A total of 80 countries and 207 country-years are represented in these studies.

Country	Year	Citation
Albania	2008-2009	Institute of Statistics (INSTAT), ICF Macro, Institute of Public Health (IShP). Albania Demographic and Health Survey 2008-2009. Calverton, United States, ICF Macro, 2009.
Armenia	2000, 2005	Ministry of Health Armenia, National Statistical Service (NSS), ORC Macro. Armenia Demographic and Health Survey 2000, 2005. Calverton, United States, Macro International, Inc.
Azerbaijan	2006	State Statistical Committee of Azerbaijan, Macro International, Inc. Azerbaijan Demographic and Health Survey 2006. Calverton, United States, Macro International, Inc.
Bangladesh	1993, 1996, 1999, 2004, 2007	National Institute of Population Research and Training (NIPORT), Mitra and Associates, Macro International, Inc. Bangladesh Demographic and Health Survey 1993, 1996, 1999,2004, 2007. Calverton, United States, Macro International, Inc.
Benin	1996, 2001, 2006	National Institute of Statistics and Economic Analysis (INSAE) (Benin), Macro International, Inc. Benin Demographic and Health Survey 1996, 2001, 2006. Calverton, United States, Macro International, Inc.
Bolivia	1993, 1998, 2003, 2008	National Institute of Statistics (Bolivia), Macro International, Inc. Bolivia Demographic and Health Survey 1993, 1998, 2003, 2008. Calverton, United States, Macro International, Inc.
Brazil	1986, 1991, 1996	Brazilian Society for Family Welfare (BEMFAM), Macro International, Inc. Brazil Demographic and Health Survey 1986, 1991, 1996. Calverton, United States, Macro International, Inc.
Burkina Faso	1992, 1998, 2003	National Institute of Statistics and Demography (INSD) (Burkina Faso), Macro International, Inc. Burkina Faso Demographic and Health Survey 1992, 1998, 2003. Calverton, United States, Macro International, Inc.
Burundi	1987	Population Department, Ministry of the Interior (Burundi), Westinghouse; Institute for Resource Development. Burundi Demographic and Health Survey 1987. Columbia, United States, Westinghouse; Institute for Resource Development.
Cambodia	2000, 2005	National Institute of Statistics (Cambodia), Ministry of Health (Cambodia), Macro International, Inc. Cambodia Demographic and Health Survey 2000, 2005. Calverton, United States, Macro International, Inc.

Cameroon	1991, 1998, 2004	Central Bureau of the Census and Population Studies (Cameroon), Macro International, Inc. Cameroon Demographic and Health Survey 1991, 1998, 2004. Calverton, United States, Macro International, Inc.
Central African Republic	1994-1995	Division of Statistics and Economic Studies (Central African Republic), Macro International, Inc. Central African Republic Demographic and Health Survey 1994-1995. Calverton, United States, Macro International, Inc.
Chad	1996, 2004	National Institute of Statistical, Economic and Demographic Studies (Chad), Macro International, Inc. Chad Demographic and Health Survey 1996, 2004. Calverton, United States, Macro International, Inc.
Colombia	1986, 1990, 1995, 2000, 2004, 2009	Regional Population Center (CCRP) (Colombia), Ministry of Health (Colombia), Westinghouse; Institute for Resource Development. Colombia Demographic and Health Survey 1986, 1990, 1995, 2000, 2004, 2009. Columbia, United States, Westinghouse; Institute for Resource Development.
Comoros	1996	National Centre of Documentation and Scientific Research (CNDRS) (Comoros), Macro International, Inc. Comoros Demographic and Health Survey 1996. Calverton, United States, Macro International, Inc.
Congo, DR	2007	Ministry of Planning (Congo, DR), Macro International, Inc. DR Demographic and Health Survey 2007. Calverton, United States, Macro International, Inc.
Congo, Rep.	2005	National Center for Statistics and Economic Studies (Congo, Rep.), Macro International, Inc. Congo, Rep. Demographic and Health Survey 2005. Calverton, United States, Macro International, Inc.
Côte d'Ivoire	1994	National Institute of Statistics (Côte d'Ivoire), Macro International, Inc. Côte d'Ivoire Demographic and Health Survey 1994. Calverton, United States, Macro International, Inc.
Côte d'Ivoire	1998	National Institute of Statistics (Côte d'Ivoire). Côte d'Ivoire Survey on Living Standards 1998. .
Dominican Republic	1986, 1991, 1996, 1999, 2002, 2007	Center for Social and Demographic Studies (CESDEM), Macro International, Inc. Dominican Republic Demographic and Health Survey 1986, 1991, 1996, 1999, 2002, 2007. Calverton, United States, Macro International, Inc.
Egypt	1988, 1992, 1995, 1996, 2000, 2003, 2005, 2008	National Population Council (Egypt), Macro International, Inc. Egypt. Arab Rep. Demographic and Health Survey 1988, 1992, 1995, 1996, 2000, 2003, 2005, 2008. Calverton, United States, Macro International, Inc.
El Salvador	1987	Center for Population Studies and Responsible Parenthood (CEPAR) (El Salvador), Westinghouse; Institute for Resource Development. Ecuador Demographic and Health Survey 1987. Columbia, United States, Westinghouse; Institute for Resource Development.
Eritrea	1995, 2002	National Statistics Office (Eritrea), Macro International, Inc. Eritrea Demographic and Health Survey 1995, 2002. Calverton, United States, Macro International, Inc.
Ethiopia	2000, 2005	Central Statistical Agency (Ethiopia), ORC Macro. Ethiopia Demographic and Health Survey 2000, 2005. Calverton, United States, ORC Macro.
Gabon	2000-2001	General Directorate of Statistics and Economic Studies (Gabon), Macro International, Inc. Gabon Demographic and Health Survey 2000-2001. Calverton, United States, Macro International, Inc.
Ghana	1988, 1993, 1998, 2003, 2008	Ghana Statistical Service, Ministry of Health (MOH) (Ghana), Macro International, Inc. Ghana Demographic and Health Survey 1988, 1993, 1998, 2003, 2008. Calverton, United States, Macro International, Inc.

Guatemala	1987, 1995, 1998	National Statistics Institute (Guatemala), Macro International, Inc. Guatemala Demographic and Health Survey 1987, 1995, 1998. Calverton, United States, Macro International, Inc.
Guinea	1999, 2005	National Statistics Directorate (Guinea), Macro International, Inc. Guinea Demographic and Health Survey 1999, 2005. Calverton, United States, Macro International, Inc.
Guyana	2009	Bureau of Statistics (Guyana), Ministry of Health (Guyana), ICF Macro. Guyana Demographic and Health Survey 2009. Calverton, United States, ICF Macro, 2011.
Haiti	1994, 2000, 2005	Haiti Child Health Institute (CHI), Macro International, Inc. Haiti Demographic and Health Survey 1994, 2000, 2005. Calverton, United States, Macro International, Inc.
Honduras	2005-2006	Ministry of Health (Honduras), National Institute of Statistics (Honduras), Macro International, Inc. Honduras Demographic and Health Survey 2005-2006. Calverton, United States, Macro International, Inc.
India	1992, 1998, 2005	International Institute for Population Sciences (IIPS) (India), Macro International, Inc. India Demographic and Health Survey 1992, 1998, 2005. Calverton, United States, Macro International, Inc.
Indonesia	1987, 1991, 1994, 1997, 2002, 2007	Central Bureau of Statistics (Indonesia), National Family Planning Coordinating Board (Indonesia), Ministry of Health (Indonesia), Macro International, Inc. Indonesia Demographic and Health Survey 1987, 1991, 1994, 1997, 2002, 2007. Calverton, United States, Macro International, Inc.
Jordan	1990, 1997, 2002, 2007, 2009	Department of Statistics (Jordan), Macro International, Inc. Jordan Demographic and Health Survey 1990, 1997, 2002, 2007, 2009. Calverton, United States, Macro International, Inc.
Kazakhstan	1995, 1999	National Institute of Nutrition (Kazakhstan), Macro International, Inc. Kazakhstan Demographic and Health Survey 1995, 1999. Calverton, United States, Macro International, Inc.
Kenya	1988, 1993, 1998, 2003, 2008	National Council for Population Development (NCPD), Macro International, Inc, Central Bureau of Statistics (Kenya). Kenya Demographic and Health Survey 1988, 1993, 1998, 2003, 2008. Calverton, United States, Macro International, Inc.
Kyrgyzstan	1997	Research Institute of Obstetrics and Pediatrics (Kyrgyzstan), Ministry of Health (Kyrgyzstan), Macro International, Inc. Kyrgyzstan Demographic and Health Survey 1997. Calverton, United States, Macro International, Inc.
Lesotho	2004, 2009	Ministry of Health and Social Welfare (Lesotho), ICF Macro. Lesotho Demographic and Health Survey 2004, 2009. Calverton, United States, ICF Macro.
Liberia	2006-2007	Liberia Institute for Statistics and Geo-information Services (LISGIS), Macro International, Inc. Liberia Demographic and Health Survey 2006-2007. Calverton, United States, Macro International, Inc.
Liberia	1986	Mininstry of Planning and Economic Affairs, Westinghouse; Institute for Resource Development. Liberia Demographic and Health Survey 1986. Columbia, United States, Westinghouse; Institute for Resource Development.
Madagascar	1992, 1997, 2003, 2008	Department of Applied Research for Development (Madagascar), Macro International, Inc. Madagascar Demographic and Health Survey 1992, 1997, 2003, 2008. Calverton: United States, Macro International, Inc.

Malawi	1992, 2000, 2004	National Statistical Office (Malawi), Macro International, Inc. Malawi Demographic and Health Survey 1992, 2000, 2004. Calverton, United States, Macro International, Inc.
Maldives	2009	Ministry of Health (Maldives), ICF Macro. Maldives Demographic and Health Survey 2009. Calverton, United States, ICF Macro.
Mali	1987, 1995, 2001, 2006	National Directorate of Statistics and Information Technology (Mali), Macro International, Inc. Mali Demographic and Health Survey 1987, 1995, 2001, 2006. .
Mauritania	2000-2001	National Office of Statistics (Mauritania), Macro International, Inc. Mauritania Demographic and Health Survey 2000-2001. Calverton, United States, Macro International, Inc.
Mexico	1987	Ministry of Health (Mexico), Macro Systems, Inc.; Institute for Resource Development. Mexico Demographic and Health Survey 1987. Columbia, United States, Macro Systems, Inc.
Moldova	2005	National Scientific and Applied Center for Preventive Medicine (NCPM) (Moldova), Macro International, Inc. Moldova Demographic and Health Survey 2005. Calverton, United States, Macro International, Inc.
Morocco	1987, 1992, 2003	Ministry of Public Health (Morocco), Macro International, Inc. Morocco Demographic and Health Survey 1987, 1992, 2003. Columbia, United States, Macro International, Inc.
Mozambique	1997, 2003	National Statistical Institute (INE) (Mozambique), Macro International, Inc. Mozambique Demographic and Health Survey 1997, 2003. Calverton, United States, Macro International, Inc.
Namibia	1992, 2000, 2006	Ministry of Health and Social Services (Namibia), Macro International, Inc. Namibia Demographic and Health Survey 1992, 2000, 2006. Columbia, United States, Macro International, Inc.
Nepal	1996, 2001, 2006	Ministry of Health and Population (Nepal), Macro International, Inc., New ERA. Nepal Demographic and Health Survey 1996, 2001, 2006. Calverton, United States, Macro International, Inc.
Niger	1992, 1998, 2006	Department of Statistics and National Accounts (Niger), Macro International, Inc. Niger Demographic and Health Survey 1992, 1998, 2006. Calverton, United States, Macro International, Inc.
Nigeria	1997, 2001	National Population Commission (Nigeria), Macro International, Inc. Nicaragua Demographic and Health Survey 1997, 2001. Calverton, United States, Macro International, Inc.
Nigeria	2003, 2008	National Population Commission (Nigeria), Macro International, Inc. Nigeria Demographic and Health Survey 2003, 2008. Calverton, United States, Macro International, Inc.
Pakistan	1990, 2006	National Institute of Population Studies (NIPS) (Pakistan), Macro International, Inc. Pakistan Demographic and Health Survey 1990, 2006. Calverton, United States, Macro International, Inc.
Paraguay	1990	Paraguayan Center for Population Studies (CEPEP), Macro Systems, Inc.; Institute for Resource Development. Paraguay Demographic and Health Survey 1990. Columbia, United States, Macro Systems, Inc.
Peru	1986, 1991, 1996, 2000, 2004	National Institute of Statistics (Peru), PRISMA, Macro International, Inc. Peru Demographic and Health Survey 1986, 1991, 1996, 2000, 2004. Columbia, United States, Macro International, Inc.

Philippines	1993, 1998, 2003, 2008	National Statistics Office (Philippines), Macro International, Inc. Philippines Demographic and Health Survey 1993, 1998, 2003, 2008. Calverton, United States, Macro International, Inc.
Rwanda	1992, 2000, 2005, 2007	National Office of Population (Rwanda), Macro International, Inc. Rwanda Demographic and Health Survey 1992, 2000, 2005, 2007. Calverton, United States, Macro International, Inc.
São Tomé and Príncipe	2008-2009	National Statistics Office (São Tomé and Príncipe), Ministry of Health (São Tomé and Príncipe), ICF Macro. São Tomé and Príncipe Demographic and Health Survey 2008-2009. Calverton, United States, ICF Macro.
Senegal	1986, 1992, 1997, 1999, 2005	Directorate of Forecasting and Statistics (Senegal), Macro International, Inc. Senegal Demographic and Health Survey 1986, 1992, 1997, 1999, 2005. Calverton, United States, Macro International, Inc.
Sierra Leone	2008	Statistics Sierra Leone, Macro International, Inc. Sierra Leone Demographic and Health Survey 2008. Calverton, United States, Macro International, Inc.
South Africa	1998	Department of Health (South Africa), South African Medical Research Council, Macro International, Inc. South Africa Demographic and Health Survey 1998. Calverton, United States, Macro International, Inc.
Sri Lanka	1987	Department of Census and Statistics (Sri Lanka), Westinghouse; Institute for Resource Development. Sri Lanka Demographic and Health Survey 1987. Columbia, United States, Westinghouse; Institute for Resource Development.
Sudan	1989-1990	Ministry of Finance and Economic Planning, Department of Statistics, Macro Systems, Inc.; Institute for Resource Development. Sudan Demographic and Health Survey 1989-1990. .
Swaziland	2006-2007	Central Statistical Office (Swaziland), Macro International, Inc. Swaziland Demographic and Health Survey 2006-2007. Calverton, United States, Macro International, Inc.
Tanzania	1991, 1996, 1999, 2004, 2009	Tanzania Bureau of Statistics, Macro International, Inc. Tanzania Demographic and Health Survey 1991, 1996, 1999, 2004, 2009. Calverton, United States, Macro International, Inc.
Thailand	1987	Institute of Population Studies (Thailand), Chulalongkorn University, Westinghouse; Institute for Resource Development. Thailand Demographic and Health Survey 1987. Columbia, United States, Westinghouse; Institute for Resource Development.
Timor-Leste	2009-2010	National Statistics Directorate (Timor-Leste), Ministry of Finance (Timor-Leste), ICF Macro. Timor-Leste Demographic and Health Survey 2009-2010. Calverton, United States, ICF Macro.
Togo	1988, 1998	Department of Statistics (Togo), Macro International, Inc. Togo Demographic and Health Survey 1988, 1998. Calverton, United States, Macro International, Inc.
Trinidad and Tobago	1987	Family Planning Association (Trinidad and Tobago), Westinghouse; Institute for Resource Development. Trinidad and Tobago Demographic and Health Survey 1987. Columbia, United States, Westinghouse; Institute for Resource Development.
Tunisia	1988	National Office for Family and Population (Tunisia), Macro Systems, Inc.; Institute for Resource Development. Tunisia Demographic and Health Survey 1988. Columbia, United States, Macro Systems, Inc.
Turkey	1993, 1998, 2003	Institute of Population Studies, Hacettepe University (Turkey), Macro International, Inc. Turkey Demographic and Health Survey 1993, 1998, 2003. Calverton, United States, Macro International, Inc.

Uganda	1988, 1995, 1996, 2000, 2006	Uganda Bureau of Statistics, Macro International, Inc. Uganda Demographic and Health Survey 1988, 1995, 1996, 2000, 2006. Calverton, United States, Macro International, Inc.
Ukraine	2007	Ukranian Center for Social Reforms (UCSR), Macro International, Inc., Ukranian State Statistics Committee (USSC). Ukraine Demographic and Health Survey 2007. Calverton, United States, Macro International, Inc.
Uzbekistan	1996	Institute of Obstetrics and Gynecology, Ministry of Health (Uzbekistan), Macro International, Inc. Uzbekistan Demographic and Health Survey 1996. Calverton, United States, Macro International, Inc.
Viet Nam	1997, 2002	General Statistics Office (Viet Nam), Macro International, Inc. Viet Nam Demographic and Health Survey 1997, 2002. Calverton, United States, Macro International, Inc.
Yemen	1991-1992	Central Statistical Organization (Yemen), League of Arab States, Macro International, Inc. Yemen Demographic and Health Survey 1991-1992. Calverton, United States, Macro International, Inc.
Zambia	1992, 1996, 2001, 2007	University of Zambia, Central Statistical Office (Zambia), Macro International, Inc. Zambia Demographic and Health Survey 1992, 1996, 2001, 2007. Columbia, United States, Macro International, Inc.
Zimbabwe	1988, 1994, 1999, 2005	Central Statistical Office (Zimbabwe), Macro International, Inc. Zimbabwe Demographic and Health Survey 1988, 1994, 1999, 2005. Calverton, United States, Macro International, Inc.

Data processing and predictive model development

Surveys generally presented the proportion of the population with hemoglobin below sequentially decreasing thresholds, e.g fraction below 130 g/L, 110 g/L and 70 g/L. All data were incorporated into compatible 5-year age-groups and 10 g/L hemoglobin intervals. Some of the surveys only included the proportion of the population with hemoglobin levels below a single threshold (e.g. 110 g/L or 120 g/L). When this was the case, we performed a forward cross-walk from these data to measures of mean hemoglobin level by age based on the assumption that this relationship was reliably linear for total prevalence of anemia (not separated by severity). There was a 0.9085 correlation coefficient between the predicted values of hemoglobin that came from this regression and the measured values pre-existing in our dataset.

To predict mean hemoglobin for every population group, we ran a time series of multilevel mixed effects regressions, with fixed effects on age and whether or not the data was from a national or subnational survey. Random effects were added on GBD super-region, region, and country using prevalence of severely underweight children as a covariate. We tried several covariates that we hypothesized would be related to hemoglobin, including GDP per capita, Total Fertility Rate (in the case of pregnant women), and the country-year specific prevalence of underweight children (the proportion of children under-five whose weight-for-age measurements were lower than two standard deviations

below the WHO standard). The best predictor of mean hemoglobin was the country-year specific prevalence of underweight children obtained from the IHME causes of death database and had been previously calculated for every year between 1970 and 2011 by using spatial-temporal regression of data from national and subnational measurement surveys.

There is a generally negative relationship between prevalence of underweight children and mean hemoglobin. In children the effect coefficient was -25.1 g/L (95% CI -11.7 – 38.5 g/L) of hemoglobin for every percentage increase in prevalence of severely underweight children ($p = 0.0008$). There is also a distinctive age pattern which differs by sex. In adult males, the highest values were in ages 20 through 45, steadily decreasing thereafter (net correlation coefficient = 0.9094). In adult females, the highest hemoglobin levels were estimated in post-menopausal women aged 55 to 70 (net correlation coefficient = 0.9012). For pregnant women we dropped fixed effects by age because we found that hemoglobin did not differ by five-year age-groups when we pooled 28,913 individual level data points from 49 DHS studies (net correlation coefficient = 0.9011). The geographic pattern for pregnant women was similar to that of non-pregnant female adults, but hemoglobin levels were as expected much lower. **Figure S1** maps our findings for mean hemoglobin level in adults.

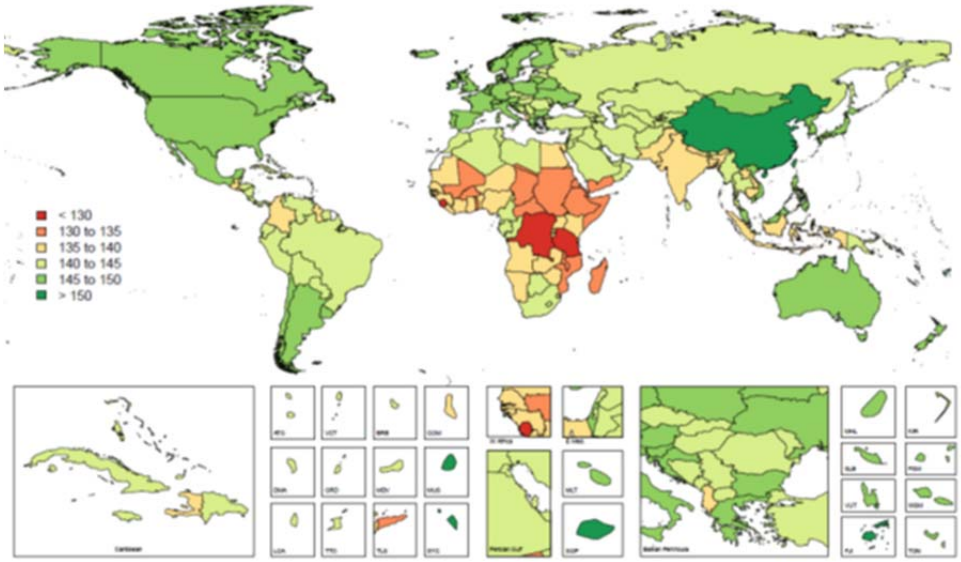
In the predictive models for children—males and females—we estimated population-level mean hemoglobin in two parts. First, we found the average mean hemoglobin for all children under-five in each country-year population. Then, using all of the micro-data available for children under-five in the DHS, we calculated an age-pattern to differentiate levels of hemoglobin concentration among early neonates (under 7 days of age), late neonates (7 to 28 days of age), post neonates (29 to 365 days of age), and children (ages 1 to 4). For the first of these two steps, the male and female models both utilized the prevalence of underweight children as a covariate with random effects for super-region, region, and country.

Once we had obtained mean hemoglobin concentrations for all children under five, we found an age pattern by aggregating micro-data from 49 DHS into four age-groups—early neonatal, late neonatal, post neonatal, and child—with predicted mean hemoglobin data from the above models, which were denoted as a fifth age-group of all children under five years. We ran two separate regressions—one for female children and one for male children—with fixed effects on age-group, keeping the under-five group as the reference, and with random effects on super region and country. **Figure S2** illustrates our findings for mean hemoglobin levels in children less than 5 years of age.

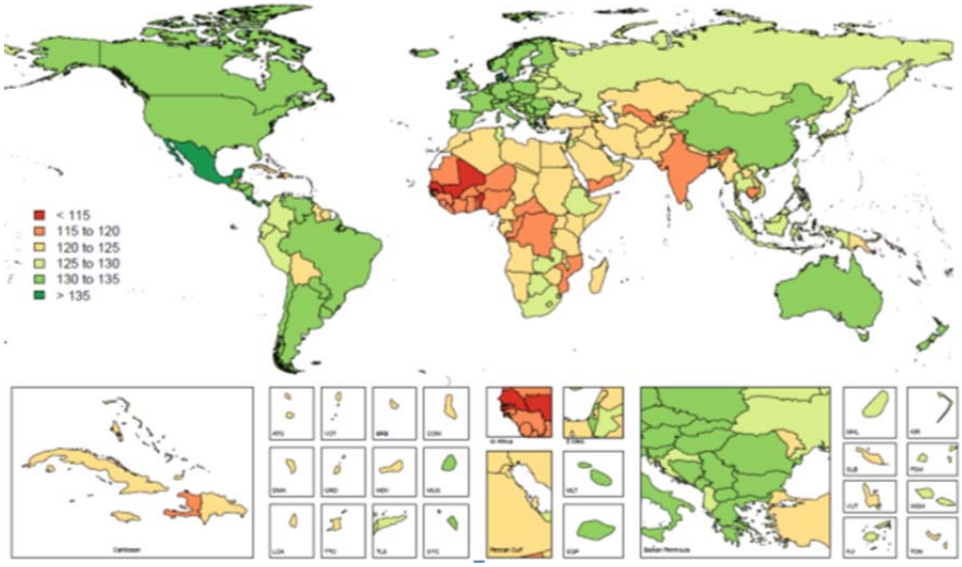
Figure S1: Age-standardized mean hemoglobin for adults ages 5-80 in 2010

These maps illustrate country-level predictions for mean hemoglobin for (a) males, (b) non-pregnant females and (c) pregnant females over age 5.

(a) Predicted mean HgB of males > 5 years old



(b) Predicted mean HgB of females > 5 years old, not pregnant



(c) Predicted mean HgB of females > 5 years old, pregnant

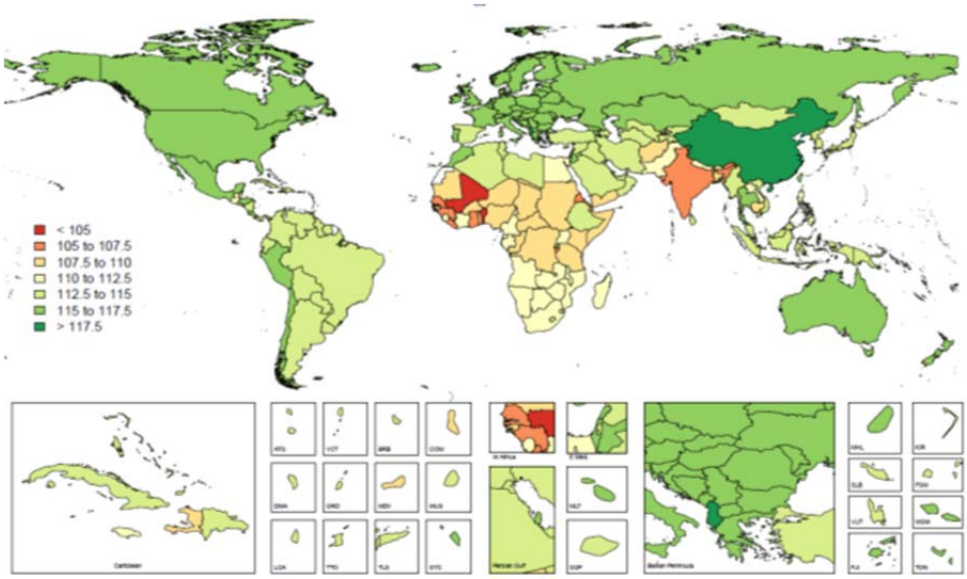
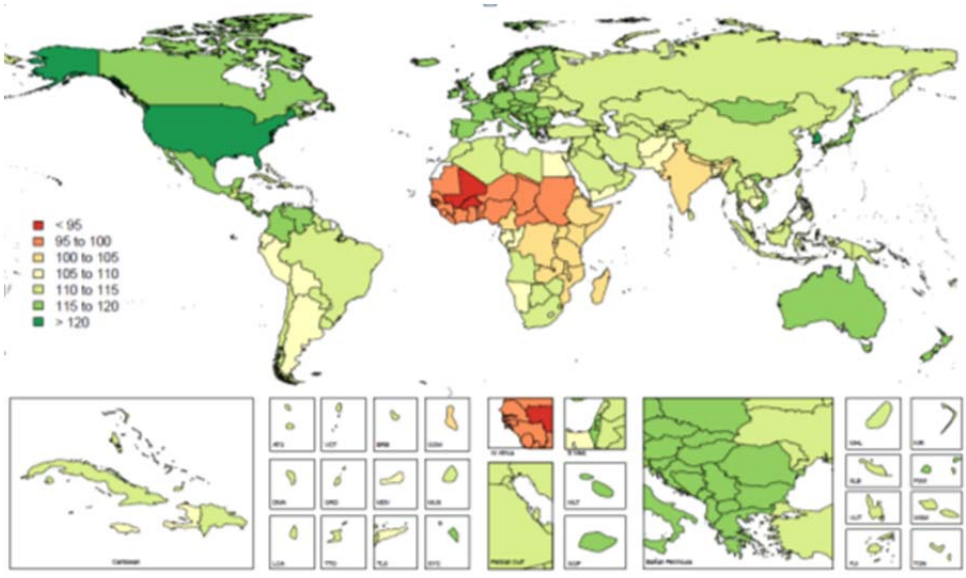


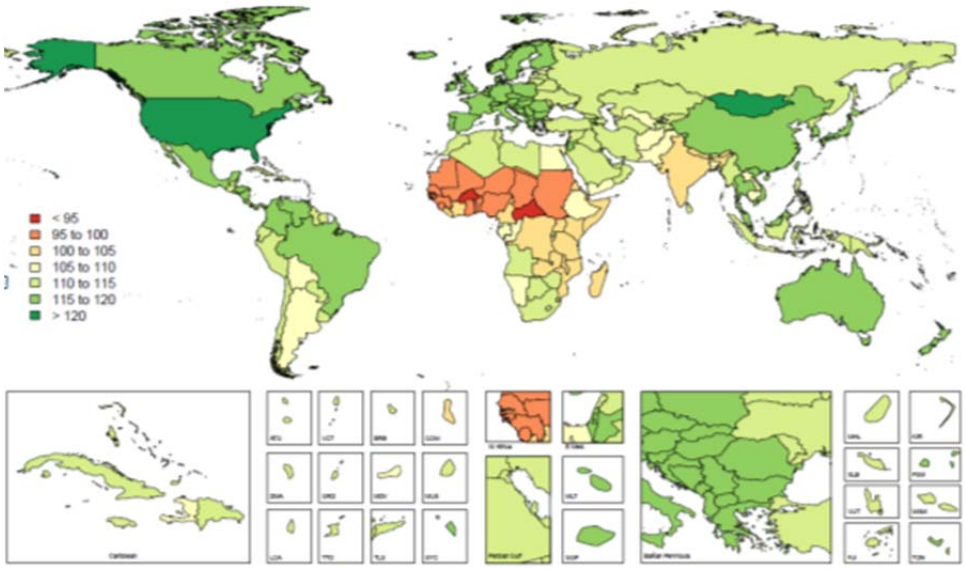
Figure S2: Age-standardized mean hemoglobin for children under 5 in 2010

These maps illustrate country-level predictions for mean hemoglobin for (a) males and (b) females under age 5.

(a) Predicted mean HgB of Males, Age <5



(b) Predicted mean HgB of Females, Age <5



Our next step was to use our predicted mean hemoglobin datasets and data available on the proportion of a population that had hemoglobin below each of our threshold definitions. The linear relationship between mean hemoglobin level and prevalence breaks down when total anemia is split into individual severities. We therefore performed a linear regression of logit-transformed prevalence on the orthogonal random effects of categorical hemoglobin and super-region, predicting the hemoglobin random effects using a LOWESS (local tri-cubic weighted regression) model in R on the midpoint of each categorical bin. We then added super-region, country-level, and newly created continuous hemoglobin random effects to our linear prediction, back-transforming to predict total, mild, moderate and severe anemia. We rescaled the prevalence of each severity to the prevalence of total anemia at the population group level to make sure our separately modeled results were internally consistent.

To refine the anemia envelope for adult females, the anemia prevalence in pregnant women (equation in **Figure S3**) was multiplied by the estimated pregnancy prevalence in each population group[16]. We then multiplied prevalence of anemia in non-pregnant women by the remaining proportion of women, adding the two together to obtain the prevalence of total, mild, moderate, and severe anemia among all women.

Figure S3: Equation for prevalence of pregnancy

We estimated prevalence of pregnancy in each country, age, sex and year to adjust the population size of adult females in calculation of the anemia envelope. Abbreviations: %YSP = percent of year spent pregnant, ASFR = age-specific fertility rate, NMR = neonatal mortality rate. 46/52 represents the fraction of a year on average that is taken up during a normal pregnancy plus the 6 post-partum weeks included in the risk period for maternal mortality. In the absence of age-specific data on stillbirth rates for each country-year, we use an approximation based on the neonatal mortality rate. On average, the late fetal death rate is approximately equal to the neonatal mortality rate; this provides an approximate correction for time spent pregnant that does not end in a live birth.

$$\%\boldsymbol{YSP} = \boldsymbol{ASFR} * \frac{\mathbf{46}}{\mathbf{52}} * (\mathbf{1} + \boldsymbol{NMR})$$

Disability Weights

For all causes, disability weights (DWs) fall between 0 (full health) and 1 (equivalent to death). The relationship among each category of severity and its disability weight is not linear. There was a separate DW calculated for mild, moderate and severe anemia by the IHME Disability Weights Survey, which conducted a query of population-representative samples of persons in five countries (Peru, Tanzania, Bangladesh, Indonesia and USA) and >31,000 persons in an open online survey[17]. Respondents answered a series of paired comparisons of health states' lay descriptions where they indicated which description described a "healthier" person, then completed a series of population health equivalence (PHE) questions designed to anchor a subset of health states on the 0 to 1 scale. Probit regression of the paired comparisons data found mostly similar responses between all demographic subgroups of participants. Results of those regressions were used to quantitatively place each health state between the PHE health states on the DW scale. Like all parameters, DWs were calculated and stored as 1000 draws. Results are reported as the mean, 2.5th and 97.5th centile, which can be interpreted as an uncertainty interval. We multiplied prevalence of each severity by corresponding DW to finalize the envelope of years of life lived with disability (YLDs) for each severity of anemia.

Envelope Attribution Part I: Prevalence of underlying causes of anemia

We apportioned the anemia envelope for each population group to seventeen unique causes in the GBD cause list: malaria; schistosomiasis; hookworm disease; other neglected tropical diseases; other infectious diseases; maternal hemorrhage; uterine fibroids; other gynecological disorders; sickle cell diseases; thalassemias; G6PD deficiency; other hemoglobinopathies and hemolytic anemias; iron-deficiency anemia; other endocrine, nutritional, blood, and immune disorders; gastritis and duodenitis; peptic ulcer disease; and chronic kidney diseases stage III. Mapping of ICD-9 and ICD-10 codes is contained in **Table S3**.

Table S3: Mapping of ICD-9 and ICD-10 codes to GBD cause list for anemia

Within the Global Burden of Diseases, Injuries, and Risk Factors (GBD) 2010 Study, each cause on the GBD Cause List was given a unique name. Codes from the International Classification of Diseases versions 9 (ICD-9) and 10 (ICD-10) were uniquely mapped to a GBD Cause. This method was of primary importance in utilizing hospital data for GBD 2010 calculations and gives an indication of where causes of anemia not specifically listed are being captured in our modeling process.

GBD Name	ICD10 Code	ICD9 Code	ICD9 BTL Code
Malaria	B50-B54, P37.3, P37.4	084,	B052
Schistosomiasis	B65	120,	B072
Hookworm disease	B76	126,	B075,
Other neglected tropical diseases	A68, A69.2, A75-A79, A92-A94, A96,A98, B58-B64,B72,B74.3-B7.9, B83, P37.1, B70-B71, B78, B80-B81	065-066, 080-083, 087-088, 125.4-125.7, 123,123.0, 123.2-124, 127.1-127.2, 127.4-127.9, 128-129	B050-B051,
Other infectious diseases	A20-A28, A31-A32, A38, A42-A49 (except A48.0, A48.3, A49.9),A65-A70(except A68), A74 (except A74.0), A81, A88-A89, A99, B04, B25, B27-B49(except B35-B36), B58-B64, P35.1, P35.2, P35.8, P35.9 P37.2, P37.5-P37.9, B03,B26 B06, P35.0, A80, B91	020-027, 031, 034-035, 039-041(except040.0) , 046, 051, 054(excep 054.1), 057, 073-075, 077(except 077.0) 078.5-078.8, 100-104, 136.0-136.2, 136.9, 323.0, 730.9, 771.1-771.2, 50, 72,056, 771.0,045, 138, 323.2, 730.7	B030-B031, B035, B039, B070, B041, B043, B040, B078
Maternal hemorrhage	O20, O44-O46, O67, O72	640-641, 666	B390
Uterine fibroids	D25	218	
Other gynecological diseases	N60**, N61-N64, N75-N76, N82-N83, N84**-N92 , N93-N94(Except N94.3), N98, N46**	610**, 611, 616.5-616.9, 619-624, 625.0-625.3**, 625.5-625.9** 626-627**, 629	
Sickle cell disorders	D57	282.5-282.6	
Thalassemias	D56	282.4	
G6PD deficiency	D55	282.2-282.3	
Other hemoglobinopathies and hemolytic anemias	D58-D64.8	282.0-282.1, 282.7-285.8	
Iron-deficiency anemia	D50, D62, D64.9	280, 285.1, 285.9	B200
Other endocrine, nutritional, blood, and immune disorders	D66-D89 (except D84.9, D86.0, D86.2, D86.9), E03-E07, E15-E34, E65-E67, E70-E85 (except E85.3, E85.4, E85.8, E85.9), E88 (except E88.9), E89-E96, D60-D64(except D64.9)	240-242.9, 244(except 244.2) , 245-246, 251-259(except 256.4), 270-273, 275, 277-278, 286-289.9(except 286.6)	
Gastritis and duodenitis	K29	535-535.6	
Peptic ulcer disease	K25-K27	531-533	B341
Chronic kidney diseases	E10.2, E11.2, E12.2, E13.2, I12.0, I12.9, I13.1, I13.2, I13.9, N02-N07, N15.0	250.4, 403-404, 581-583, 589	

Ten of seventeen conditions (all except uterine fibroids and “other” categories) had corresponding prevalence results from GBD 2010 modeling efforts. We estimated prevalent cases in two ways: 1) we found the prevalent cases of schistosomiasis and hookworm infection by adjusting estimates provided by expert groups and 2) we found the prevalent cases of thalassemia, sickle cell disease, G6PD deficiency, chronic kidney disease, gastritis and duodenitis, peptic ulcer disease, and maternal hemorrhage through DisMod-MR analyses. We generated consistent estimates of disease

prevalence, incidence, remission, and mortality using DisMod-MR, an integrative systems model of disease in a population. DisMod-MR combines a compartmental model of disease progression with an age-integrating mixed-effects negative-binomial model of all relevant epidemiological data. It has been described in detail previously[18,19].

For schistosomiasis, we estimated national prevalence in 70 countries by combining the most recent estimates from published Bayesian geostatistical models[20,21]. We found an age-pattern for these prevalence estimates through conducting a single-parameter DisMod-MR analysis of incidence and prevalence data gathered by Charles King. Finally, we used a function that relates community prevalence of *Schistosoma* infection with prevalence of morbidities to find symptomatic cases[22]. We used the total of all symptomatic cases, by country, year, sex, and age-group as the anemia-causing prevalence of schistosomiasis.

For hookworm, we used estimates provided by Brooker and colleagues, which were calculated differently for countries within Africa and those outside of the continent because of geographic variability in data availability and the predictive power of environmental factors. For within Africa, we used the model-based geostatistics model for 2010 and obtained 1990 and 2005 values by incorporating adjustments based on data from recently administered lymphatic filariasis treatment campaigns. For outside of Africa, we used the non-predictive approach in which prevalence estimates (from a thorough literature search of published and unpublished survey results) were aggregated hierarchically, first at a district level, and then if data were lacking, at a provincial or national level. The estimates were calculated for two time periods: 1990 and 2005, and then extended into 2010 using the treatment campaign information. Age-standardization was applied on a district-by-district basis. Most importantly, using a function published by Chan et al. in 1994, prevalent cases were divided into low, medium, and heavy infection, based on egg-count, which impacts infection intensity and also the disease effects on hemoglobin[23].

For malaria, we used *Plasmodium falciparum* parasite rate (Pfpr) to determine the at risk population[24–26]. PfPR is a commonly used index of malaria transmission intensity. It is the proportion of the population that carries asexual blood-stage parasites and is related to the entomological inoculation rate (EIR), or the number of bites on a person by anopheline mosquitoes that carry sporozoites. We used a population-weighted national dataset based on 7,953 *Plasmodium falciparum* surveys that were age-standardized to 2-10 years. This was important because PfPR changes as a function of age and transmission intensity, rising during infancy and early childhood, and plateauing in older children. We thus had a PfPR value for all 85 countries endemic for malaria and for all years between 1980 and 2011.

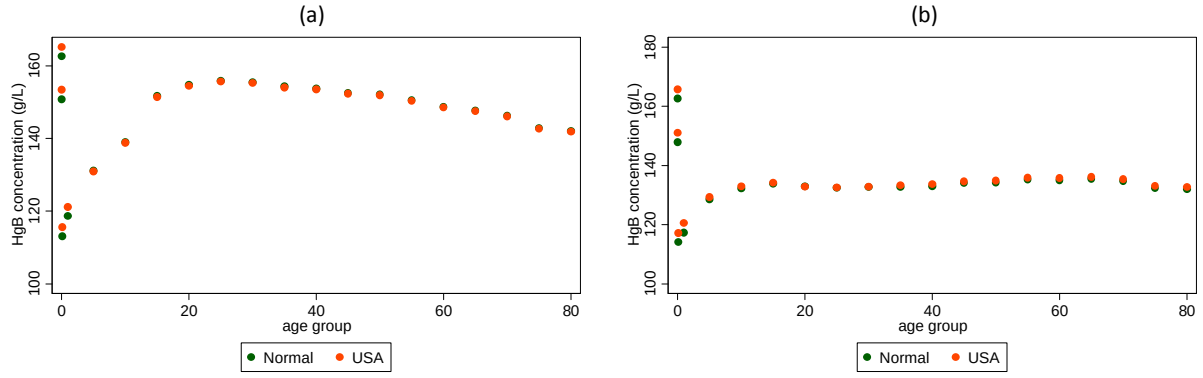
We decided to use PfPR because in our literature review, we came upon hemoglobin shifts that were based on HgB levels in people in endemic areas and people in non-endemic areas rather than HgB levels in people with malaria and people without.

Sickle cell disorders models included separate results for homozygous sickle cell disease, compound heterozygous hemoglobin SC disease and sickle cell-beta thalassemia. Thalassemias likewise had separate models for homozygous beta-thalassemia major, compound heterozygous hemoglobin E-beta disease and hemoglobin H disease. We estimated prevalence of heterozygosity for hemoglobin S, C, E and Beta assuming Hardy-Weinberg equilibrium. Our estimates of anemia from chronic kidney diseases included three causative states: diabetes mellitus, hypertension, and other or unspecified.

Envelope Attribution Part II: Hemoglobin shift and cause-specific attribution

Total "hemoglobin shift" (in g/L) was taken as the difference between the normal and predicted mean hemoglobin for each population group. Our model of attribution followed that, because the shift is a disease state experienced by 100% of the population, then the sum of cause-specific hemoglobin shifts times the prevalence of each contributing cause should add up to the total. We denoted the normal hemoglobin level as the global 95th percentile of the distribution of mean-hemoglobin within each age-group, sex, and year. We then determined a total shift for each country in the corresponding age-group, sex and year by finding the difference between the global "normal" and the country-specific predicted mean hemoglobin. We cross-checked that this was a reasonable assumption by comparing these percentile values with the mean hemoglobin in the United States (**Figure S4**) and United Kingdom, countries from which we have reliable and ample data and where severe anemia is almost zero. This shift defined the magnitude of each population group's total hemoglobin shift, which served as the denominator for the entire process of causal attribution.

Figure S4: Comparison of 95th percentile of global hemoglobin to mean hemoglobin in United States for a) males and b) females.



As can be seen from the graph, our comparison of statistical "normal" matched very well at most age groups. In the youngest four age groups (early-, late-, and post-neonatal; 1-4 years), our predictions for normal hemoglobin were lower than that seen in the USA and UK. As this step was used solely as a basis for etiologic attribution and most age groups matched so well, we elected to not make any adjustment for this difference. This decision would not have affected the magnitude of our anemia burden estimates, but would have diminished the proportion of the envelope available for etiologic attribution to residual causes (described below). The result may be a mild underestimation of iron deficiency anemia with accompanying overestimation of non-residual causes. Furthermore, as described above, the age pattern in under 5 years was derived from the limited number of DHS studies that contained detail on these age groups. The uncertainty in this data ensured that any differences in etiology-specific anemia attribution flowing from a decision to not adjust the total shift value were not statistically significant.

Cause-specific hemoglobin shifts are listed in **Table S4**. We obtained them by performing systematic literature reviews and meta-analysis of hemoglobin changes in those with hemoglobinopathies[27–43], gastric and duodenal bleeding[44,45], and chronic kidney diseases[46–52]. We used the pooled results of treatment trials published in recent meta-analyses to determine shifts for hookworm[53,54] and schistosomiasis[55]. For hookworm, we concluded that anemia disability should be attributed to all three intensities—*light*, *medium*, and *heavy* – based on observations studies included in the same review. We updated the literature review and meta-analysis for schistosomiasis in September 2011. Maternal hemorrhage shift figures were based on observational studies in women 6 months post-partum[56]. We multiplied shift by disease prevalence to determine population- and cause-specific shift-times-prevalence. For malaria, we determined performed multilevel mixed effects linear regression of predicted mean hemoglobin by gender and age against national, regional and super-regional *Plasmodium falciparum* parasite rate (PfPR) figures generated previously using data from the WHO and Malaria Atlas Project. Predicted hemoglobin shifts for each population group were then multiplied by the mean national PfPR of each country to determine population-specific malaria shift-times-prevalence.

Table S4: Hemoglobin shifts by GBD cause

Cause-specific hemoglobin shifts were determined largely via systematic literature review and meta-analyses. Maternal hemorrhage shift figures were provided by WHO VMNIS staff and are based on observational studies 6 months post-partum. Malaria shifts were modeled using Plasmodium falciparum parasite rate (PfPR) from figures generated previously using data from the WHO and Malaria Atlas Project. For each GBD Cause, prevalence for each country, age, sex and year was multiplied by corresponding shift. This product was compared to the total shift to determine the proportion of the envelope attributable to that cause. Abbreviations: Hb = Hemoglobin

Cause	Sub-group of cause	Hemoglobin shift (g/L)	
		Males	Females
Malaria [24,25]	*Plasmodium falciparum* parasite rate (*Pf*PR)	8.37	8.37
Hookworm [53,54]		2·08	2·08
Schistosomiasis [55]		2·80	2·80
Maternal hemorrhage[56]		6·80	6·80
Hemoglobinopathies [27–43]			
Sickle cell disorders	Homozygous Sickle Cell Disease (HbS-HbS)	54·00	54·00
	Heterozygous Sickle Cell (HbS-HbA)	5·00	5·00
	Hemoglobin SC Disease	36·00	36·00
	Compound heterozygous Sickle-Thalassemia (HbS-Hbβ)	52·00	52·00
Thalassemia	Beta Thalassemia Major (Hbβ-Hbβ)	70·00	70·00
	Heterozygous Beta Thalassemia (Hbβ-HbA)	19·00	19·00
	Compound heterozygous "E-β" Thalassemia (HbE-Hbβ)	64·00	64·00
	Heterozygous hemoglobin E (HbE-Normal)	6·00	6·00
	Hemoglobin H disease (- - / - α)	56·00	56·00
G6PD deficiency	Homozygous Class I	22·00	22·00
	Homozygous Class II	9·00	5·00
	Heterozygous (female only)	--	5·00
	Homozygous Class III-V	--	--
Gastritis and Duodenitis[44]		34·00	34·00
Peptic Ulcer Disease[45]		34·00	34·00
Chronic kidney disease[46–52]	Due to diabetes mellitus	4·52	2·07
	Due to hypertension	17·03	11·92
	Other and unspecified	17·03	11·92

Envelope attribution Part III: Assigning the envelope residual

Data on hemoglobin shift due to isolated iron deficiency do not exist. Quantification has instead relied on hemoglobin shift after iron supplementation as a proxy for the effects of iron deficiency. While such an approach may not be strictly accurate from a biological perspective (iron supplementation will increase hemoglobin levels in many anemic but non-iron deficient persons), we felt that from within the context of our hierarchical cause-attribution model, data on hemoglobin shift after fortification was our best alternative for accurately estimating iron deficiency anemia. A recent meta-analysis by Ahmed and colleagues from the Global Nutrition Review Team at the International Centre for Diarrheal Disease Research, Bangladesh systematically reviewed a series of well-designed studies in which iron fortification alone was studied[57–65]. The pooled shift calculated from these studies was 6.05 g/L (95% CI 3.53 – 8.57 g/L). We paired the observed hemoglobin shift from each component study with a calculated envelope residual from the matching country, age, sex and year in a sample-weighted meta-regression

to find the hemoglobin shift per unit of residual, which we was then attributed to iron deficiency anemia. We determined approximately 80.5% (95% CI 79.0 – 82.0%) of the residual could be ascribed to iron.

The final envelope portion was split amongst six categories of "other" anemia for which we had no separate prevalence figures. For some of these conditions such as uterine fibroids, anemia is the most important long term outcome. Population level studies most often simply rename the residual category "other", "unknown" or allocate it to iron-deficiency anemia. Studies of these conditions may show the proportion of the affected with anemia, but to our knowledge there is no study with sufficient data to guide cause-specific attribution at a population level. We instead developed **Table S5** based on an expert panel review convened in January 2012 to allocate the remainder of the residual anemia envelope. We applied these proportions equally across all parts of the anemia envelope.

Table S5: Redistribution proportion of residual to "other" causes of anemia

The remaining portion of the residual anemia envelope was split amongst the remaining six causes of anemia according to this table. The proportion varied by age and sex, but was consistent across all countries and years.

GBD Cause	Age <15	Age 15-60		Age >60
		Males	Females	
Other infectious diseases	0·26	0·20	0·04	0·10
Other neglected tropical diseases	0·40	0·20	0·04	0·10
Other hemoglobinopathies and hemolytic anemias	0·15	0·40	0·05	0·50
Uterine fibroids	·	·	0·58	·
Other gynecological disorders	·	·	0·20	·
Other endocrine, nutrition, blood and immune disorders	0·19	0·20	0·09	0·30

Envelope Attribution Part IV: Mild, moderate and severe envelopes and rescaling to total anemia envelope

We attempted to further estimate mild, moderate and severe anemia prevalence for each cause using a series of relationships illustrated by the equations in **Figure S5**. We had already calculated which proportion of each population group's total anemia envelope was attributable to each cause (**Figure S5a**). We used this, with total YLD and total prevalence figures from that population group to calculate a mean disability weight (DW) for each condition (**Figure S5b**). Total prevalence and YLDs are necessarily the sum of their mild, moderate and severe components (**Figure S5c** and **d)**. Needing a third equation to solve for mild, moderate, and severe anemia prevalence, we defined the ratios and relationships in **Figure S5e** and **f**, finding ratios of mild vs. moderate and moderate vs. mild anemia for all causes together in each population group. Our assumption followed that, if a given cause had a calculated mean DW in the mild-to-moderate range, most of the anemia from that cause would be either mild or moderate. We assumed the ratio of moderate-to-severe anemia for that cause would then be the same

as for the entirety of anemia in that population group. For those causes in the moderate-to-severe range, we assumed the converse, i.e. the ratio of moderate to mild anemia prevalence was constant. The final step in the process was completed when we again rescaled the totals for each severity for each population group.

Figure S5: Equations for cause-specific attribution of anemia envelope by severity

We used this series of equations to predict which proportion of mild, moderate and severe anemia was due to each cause. (a) The proportion of the anemia envelope due to a given cause is as previously described. (b) We calculated the weighted, or mean, disability weight (DW) for each cause within each population group given that we knew the proportion due to a given cause, the total YLDs for all anemia, the prevalence of all anemia and the population size. Equations (c) and (d) together have three unknown quantities: mild, moderate and severe prevalence. For a third equation, we calculated the ratios of moderate to severe and moderate to mild anemia for all causes within a population group. If the weighted DW we calculated above was less than the DW for moderate anemia, we assumed that cause had a propensity for causing mild anemia. We therefore used equation (e) and assumed the ratio of moderate to severe anemia for that cause was the same as for the general population. (f) was used instead of (e) if the weighted DW was higher than the DW for moderate anemia. This process was implemented for 12 causes independently. All "other" causes were treated as a single group.

a. $$Proportion = {HgBshift * Prev}/{\sum HgBshift}$$

b. $$DW_{weighted} = Proportion * \left[{YLD}/{(Prev * Population)}\right]$$

c. $$\frac{(DW_{weighted} * Prev_{total})}{Population} = (DW_{mild} * Prev_{mild}) + (DW_{moderate} * Prev_{moderate}) + (DW_{severe} * Prev_{severe})$$

$$(DW_{weighted} * Prev_{total}) = \frac{YLD_{total}}{Population}$$

d. $$Prev_{total} = Prev_{mild} + Prev_{moderate} + Prev_{severe}$$

e. $$Prev_{mod} = Prev_{severe} * Ratio_{mod/severe} \quad \text{if } DW_{weighted} < DW_{moderate}$$

f. $$Prev_{mod} = Prev_{mild} * Ratio_{mod/mild} \quad \text{if } DW_{weighted} > DW_{moderate}$$

Supplemental Results

The residual proportion of the envelope varied widely by region and to a lesser extent by age and sex as shown in **Figure S6**. Most of this part of the envelope was attributed to iron-deficiency anemia, with the remainder redistributed to the six "other" categories of conditions that cause anemia. This differential therefore largely reflects differences in prevalence of iron-deficiency anemia. The remainder of what follows are a series of tables and figures referenced, described and discussed in the body of the main manuscript.

Figure S6: Residual proportion of anemia envelope after initial etiologic attribution

The residual component of the anemia envelope varied in sized by gender, age and region, though did not change appreciably between 1990 and 2010 in most population groups. Regions are ordered by mean age of death.

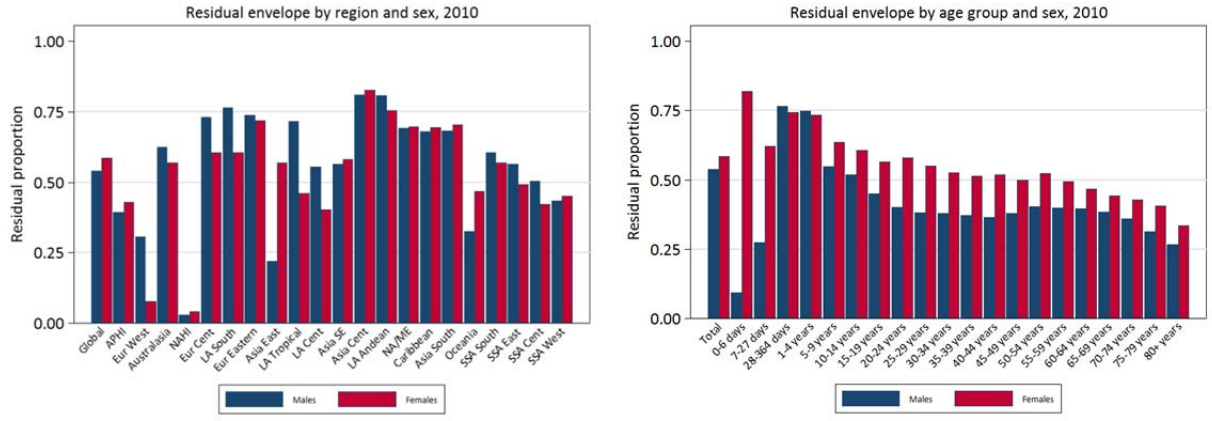
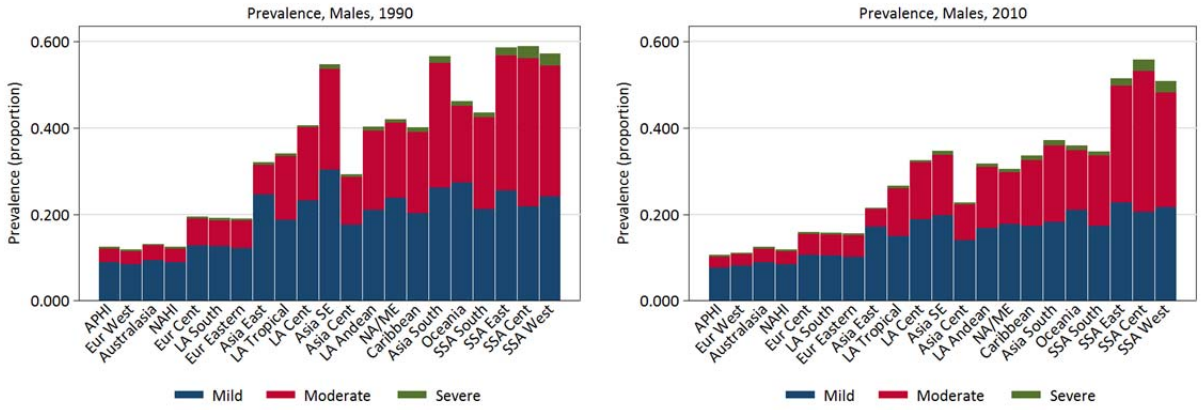
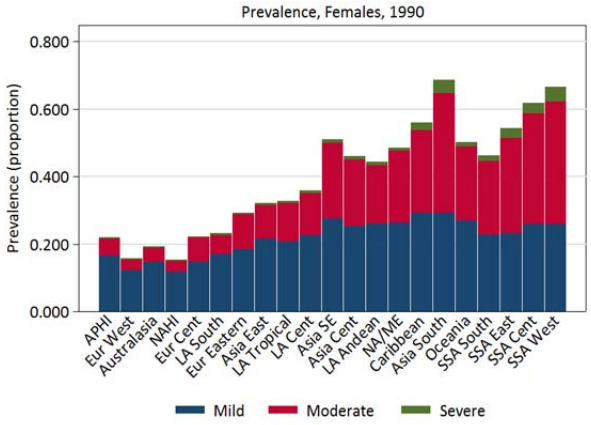


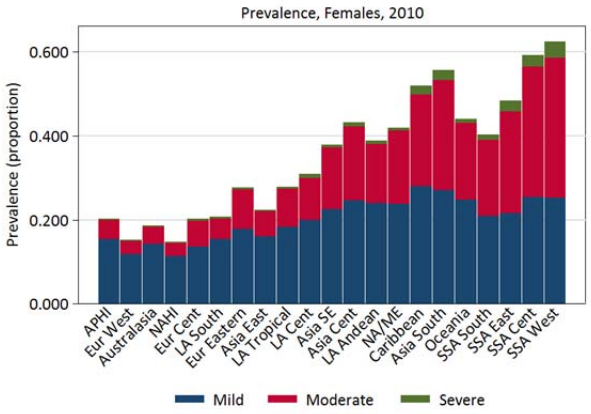
Figure S7: Regional anemia burden by sex and year.

Anemia by severity (mild, moderate and severe) is presented for each region for (a) age-standardized prevalence, (b) total number of cases, and (c) total YLDs. (d) Mean disability weight of cases for 1990 and 2010 are also displayed. Females showed a trend toward higher prevalence, burden, and severity in both time periods. The overall burden decreased between 1990 and 2010 for all regions, though the amount of decrease varied substantially. Regions are ordered by mean age of death. Abbreviations: APHI = Asia Pacific, High Income, Eur = Europe, NAHI = North America, High Income, LA = Latin America, SE = Southeast, NA/ME = North Africa/ Middle East, SSA = Sub-Saharan Africa

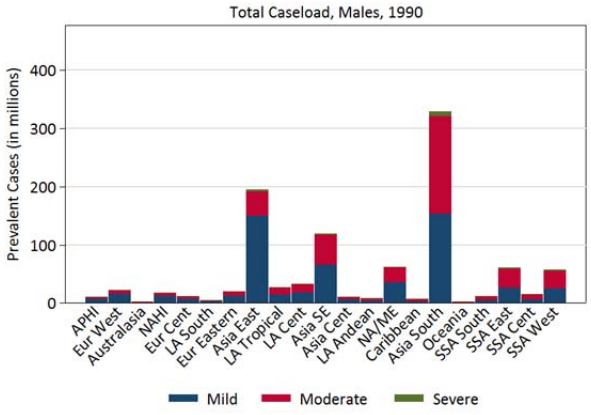
(a) Age-standardized prevalence by sex, year and region

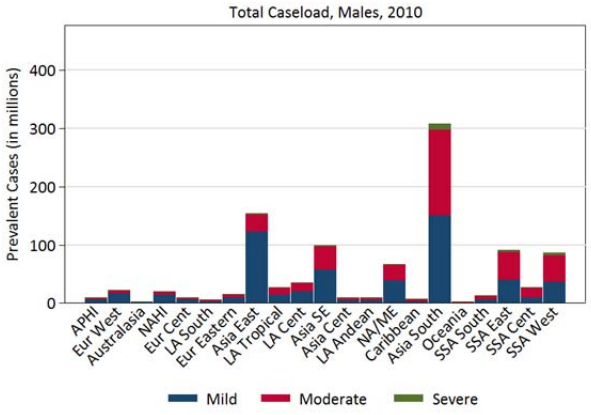


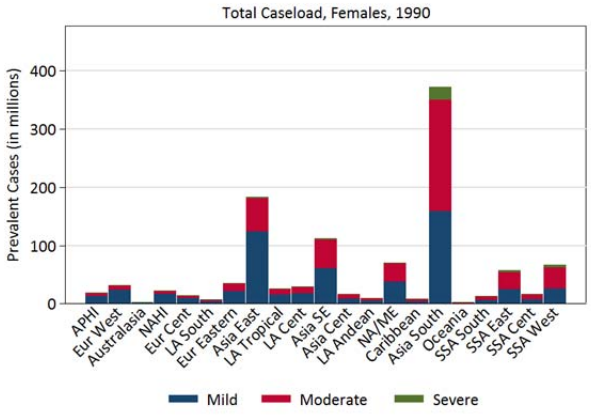


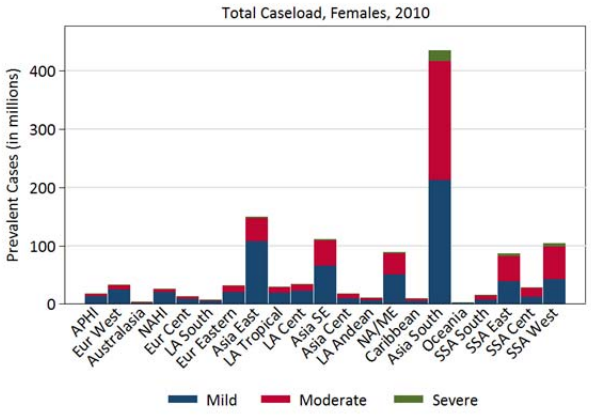


(b) Total anemia caseload by sex, year and region

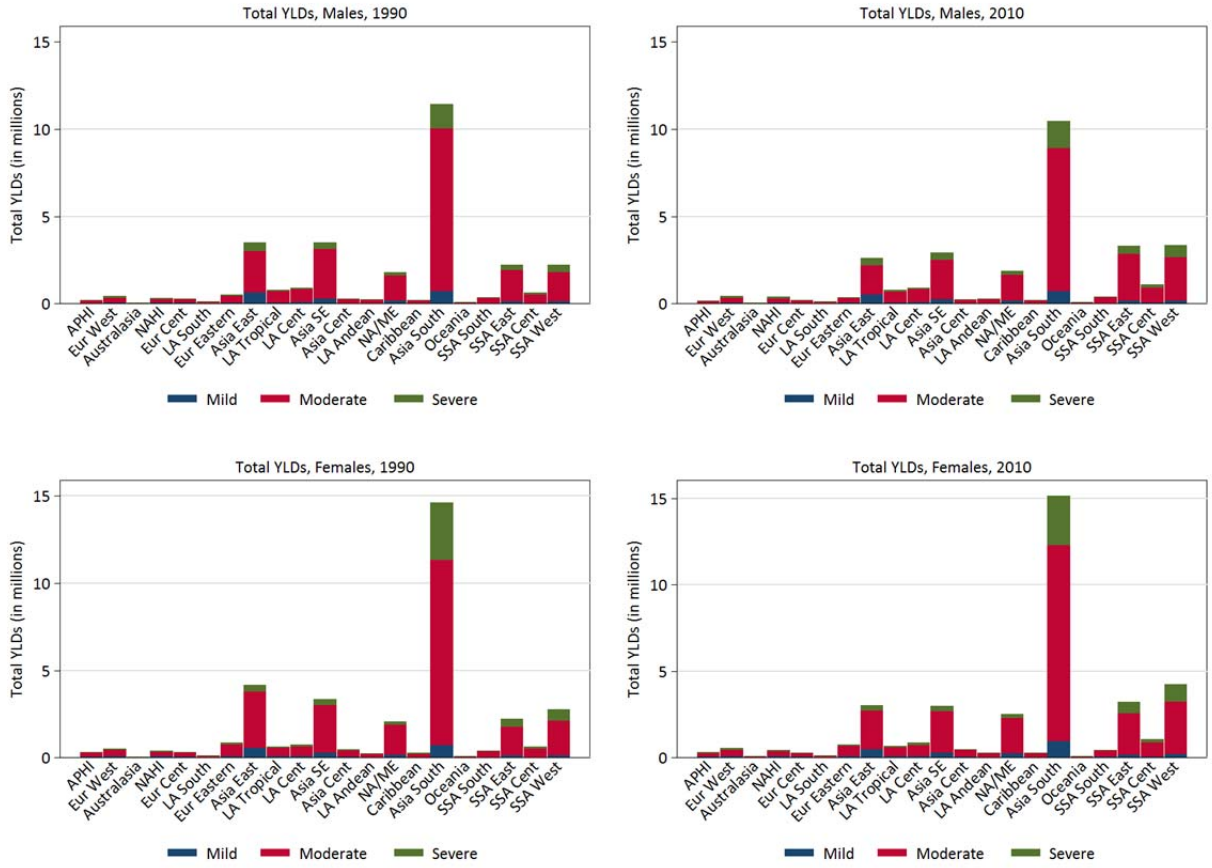








(c) Total anemia YLDs by sex, year and region



(d) Mean disability weight of cases for both sexes, by year and region

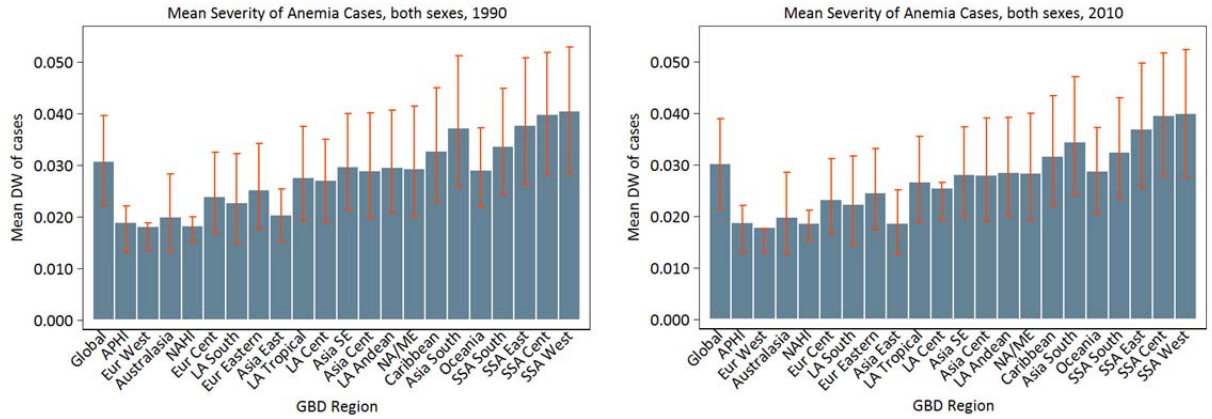


Table S6: Decomposition analysis of regional anemia burden changes.

Changes between 1990 and 2010 in regional anemia (a) prevalence, (b) caseload in millions, (c) total anemia YLDs in millions and (d) mean disability weight were decomposed into changes in population growth, population aging, and changes in age-, sex- and cause-specific disease rates.

(a) Decomposition of changes in anemia prevalence (proportion) by region and sex

Region	Males							
	1990 Actual	Isolated Pop Growth	Isolated Pop Aging	2010 Actual	% Δ Due to Pop Growth	% Δ Due to Aging	% Δ Due to Δ Rates	% Δ Actual
Global	0.382	0.382	0.353	0.292	**0.0%**	-7.6%	-16.0%	-23.6%
Asia Pacific, High Income	0.118	0.118	0.103	0.100	**0.0%**	-12.5%	-2.4%	-14.9%
Europe, Western	0.118	0.118	0.114	0.111	**0.0%**	-3.4%	-2.3%	-5.6%
Australasia	0.131	0.131	0.126	0.124	**0.0%**	-4.3%	-0.9%	-5.2%
North America, High Income	0.125	0.125	0.119	0.118	**0.0%**	-4.7%	-0.8%	-5.4%
Europe, Central	0.195	0.195	0.165	0.159	**0.0%**	-15.6%	-3.1%	-18.7%
Latin America, Southern	0.191	0.191	0.162	0.157	**0.0%**	-15.1%	-2.4%	-17.5%
Europe, Eastern	0.190	0.190	0.159	0.155	**0.0%**	-16.7%	-1.7%	-18.3%
Asia, East	0.319	0.319	0.280	0.215	**0.0%**	-12.3%	-20.5%	-32.8%
Latin America, Tropical	0.340	0.340	0.297	0.265	**0.0%**	-12.6%	-9.4%	-22.0%
Latin America, Central	0.384	0.384	0.346	0.308	**0.0%**	-10.0%	-9.9%	-19.9%
Asia, Southeast	0.519	0.519	0.482	0.329	**0.0%**	-7.1%	-29.5%	-36.6%
Asia, Central	0.293	0.293	0.248	0.228	**0.0%**	-15.2%	-6.9%	-22.2%
Latin America, Andean	0.403	0.403	0.365	0.318	**0.0%**	-9.3%	-11.7%	-21.0%
North Africa / Middle East	0.405	0.405	0.341	0.294	**0.0%**	-15.7%	-11.5%	-27.3%
Caribbean	0.383	0.383	0.355	0.320	**0.0%**	-7.3%	-9.0%	-16.3%
Asia, South	0.565	0.565	0.536	0.371	**0.0%**	-5.1%	-29.2%	-34.3%
Oceania	0.463	0.463	0.443	0.359	**0.0%**	-4.3%	-18.1%	-22.4%
Sub-Saharan Africa, Southern	0.434	0.434	0.389	0.344	**0.0%**	-10.5%	-10.3%	-20.8%
Sub-Saharan Africa, East	0.587	0.587	0.574	0.514	**0.0%**	-2.2%	-10.1%	-12.3%
Sub-Saharan Africa, Central	0.589	0.589	0.582	0.558	**0.0%**	-1.2%	-4.0%	-5.3%
Sub-Saharan Africa, West	0.573	0.573	0.561	0.509	**0.0%**	-2.2%	-9.0%	-11.1%
Region	Females							
	1990 Actual	Isolated Pop Growth	Isolated Pop Aging	2010 Actual	% Δ Due to Pop Growth	% Δ Due to Aging	% Δ Due to Δ Rates	% Δ Actual
Global	0.421	0.421	0.402	0.366	**0.0%**	-4.6%	-8.4%	-13.1%
Asia Pacific, High Income	0.210	0.210	0.201	0.194	**0.0%**	-4.4%	-3.3%	-7.8%
Europe, Western	0.158	0.158	0.154	0.153	**0.0%**	-2.3%	-1.1%	-3.4%
Australasia	0.193	0.193	0.188	0.187	**0.0%**	-3.1%	-0.5%	-3.6%
North America, High Income	0.153	0.153	0.148	0.147	**0.0%**	-3.2%	-0.6%	-3.9%
Europe, Central	0.223	0.223	0.208	0.202	**0.0%**	-6.7%	-2.8%	-9.5%
Latin America, Southern	0.232	0.232	0.215	0.207	**0.0%**	-7.4%	-3.2%	-10.6%
Europe, Eastern	0.293	0.293	0.280	0.277	**0.0%**	-4.4%	-1.3%	-5.7%
Asia, East	0.320	0.320	0.290	0.223	**0.0%**	-9.3%	-21.0%	-30.4%
Latin America, Tropical	0.327	0.327	0.302	0.279	**0.0%**	-7.7%	-6.9%	-14.6%
Latin America, Central	0.341	0.341	0.321	0.294	**0.0%**	-6.1%	-7.9%	-14.0%
Asia, Southeast	0.486	0.486	0.466	0.362	**0.0%**	-4.1%	-21.4%	-25.5%
Asia, Central	0.461	0.461	0.442	0.432	**0.0%**	-4.1%	-2.2%	-6.3%
Latin America, Andean	0.444	0.444	0.423	0.389	**0.0%**	-4.7%	-7.6%	-12.3%
North Africa / Middle East	0.470	0.470	0.444	0.407	**0.0%**	-5.6%	-7.8%	-13.4%
Caribbean	0.537	0.537	0.523	0.498	**0.0%**	-2.5%	-4.7%	-7.2%
Asia, South	0.687	0.687	0.674	0.556	**0.0%**	-1.9%	-17.1%	-19.0%
Oceania	0.502	0.502	0.493	0.440	**0.0%**	-1.8%	-10.5%	-12.2%
Sub-Saharan Africa, Southern	0.462	0.462	0.438	0.403	**0.0%**	-5.2%	-7.5%	-12.7%
Sub-Saharan Africa, East	0.544	0.544	0.535	0.483	**0.0%**	-1.6%	-9.6%	-11.2%
Sub-Saharan Africa, Central	0.618	0.618	0.613	0.592	**0.0%**	-0.7%	-3.4%	-4.1%
Sub-Saharan Africa, West	0.665	0.665	0.661	0.624	**0.0%**	-0.7%	-5.5%	-6.2%

(b) Decomposition of changes in total anemia cases (in millions) by region and sex

Region	Males							
	1990 Actual	Isolated Pop Growth	Isolated Pop Aging	2010 Actual	% Δ Due to Pop Growth	% Δ Due to Aging	% Δ Due to Δ Rates	% Δ Actual
Global	1,021.31	1,328.88	1,227.89	1,015.46	30.1%	-9.9%	-20.8%	-0.6%
Asia Pacific, High Income	9.84	10.31	9.01	8.77	4.7%	-13.1%	-2.5%	-10.9%
Europe, Western	21.90	24.09	23.28	22.73	10.0%	-3.7%	-2.5%	3.8%
Australasia	1.33	1.69	1.62	1.60	26.6%	-5.4%	-1.2%	20.0%
North America, High Income	16.89	20.92	19.95	19.79	23.9%	-5.8%	-0.9%	17.2%
Europe, Central	11.69	11.27	9.51	9.17	-3.5%	-15.1%	-3.0%	-21.6%
Latin America, Southern	4.59	5.63	4.78	4.64	22.7%	-18.6%	-2.9%	1.2%
Europe, Eastern	19.70	18.22	15.18	14.88	-7.5%	-15.4%	-1.5%	-24.4%
Asia, East	195.65	231.15	202.79	155.40	18.1%	-14.5%	-24.2%	-20.6%
Latin America, Tropical	26.03	33.80	29.55	26.38	29.8%	-16.3%	-12.2%	1.3%
Latin America, Central	31.77	43.80	39.44	35.10	37.9%	-13.7%	-13.7%	10.5%
Asia, Southeast	119.12	157.52	146.39	99.89	32.2%	-9.3%	-39.0%	-16.1%
Asia, Central	9.83	11.49	9.74	8.94	16.8%	-17.8%	-8.1%	-9.1%
Latin America, Andean	7.81	10.80	9.79	8.52	38.2%	-12.9%	-16.2%	9.1%
North Africa / Middle East	62.05	92.25	77.72	67.09	48.7%	-23.4%	-17.1%	8.1%
Caribbean	6.80	8.27	7.67	6.92	21.6%	-8.8%	-11.0%	1.8%
Asia, South	329.58	468.51	444.47	307.83	42.2%	-7.3%	-41.5%	-6.6%
Oceania	1.53	2.34	2.24	1.82	53.0%	-6.6%	-27.7%	18.7%
Sub-Saharan Africa, Southern	11.29	15.16	13.57	12.01	34.2%	-14.1%	-13.8%	6.3%
Sub-Saharan Africa, East	60.58	103.87	101.55	91.06	71.5%	-3.8%	-17.3%	50.3%
Sub-Saharan Africa, Central	15.61	28.28	27.93	26.79	81.2%	-2.2%	-7.3%	71.6%
Sub-Saharan Africa, West	57.72	96.93	94.82	86.14	67.9%	-3.6%	-15.0%	49.2%
Region	Females							
	1990 Actual	Isolated Pop Growth	Isolated Pop Aging	2010 Actual	% Δ Due to Pop Growth	% Δ Due to Aging	% Δ Due to Δ Rates	% Δ Actual
Global	1,107.96	1,438.19	1,371.58	1,250.19	29.8%	-6.0%	-11.0%	12.8%
Asia Pacific, High Income	17.97	19.08	18.23	17.59	6.1%	-4.7%	-3.5%	-2.1%
Europe, Western	30.95	33.53	32.75	32.40	8.3%	-2.5%	-1.1%	4.7%
Australasia	1.99	2.53	2.45	2.43	27.2%	-3.9%	-0.7%	22.6%
North America, High Income	21.79	26.39	25.54	25.37	21.1%	-3.9%	-0.8%	16.4%
Europe, Central	13.90	13.67	12.75	12.37	-1.7%	-6.6%	-2.7%	-11.0%
Latin America, Southern	5.77	7.12	6.59	6.36	23.3%	-9.1%	-4.0%	10.2%
Europe, Eastern	34.63	32.68	31.24	30.82	-5.6%	-4.2%	-1.2%	-11.0%
Asia, East	184.32	215.59	195.49	150.15	17.0%	-10.9%	-24.6%	-18.5%
Latin America, Tropical	25.31	33.44	30.88	28.55	32.1%	-10.1%	-9.2%	12.8%
Latin America, Central	28.49	39.91	37.47	34.33	40.1%	-8.6%	-11.0%	20.5%
Asia, Southeast	112.28	149.07	143.02	111.05	32.8%	-5.4%	-28.5%	-1.1%
Asia, Central	16.15	18.84	18.07	17.66	16.6%	-4.7%	-2.6%	9.3%
Latin America, Andean	8.56	11.86	11.30	10.40	38.5%	-6.5%	-10.6%	21.4%
North Africa / Middle East	70.01	102.56	96.81	88.83	46.5%	-8.2%	-11.4%	26.9%
Caribbean	9.62	11.76	11.46	10.91	22.2%	-3.1%	-5.7%	13.4%
Asia, South	371.70	537.71	527.59	435.43	44.7%	-2.7%	-24.8%	17.1%
Oceania	1.58	2.44	2.40	2.14	54.6%	-2.7%	-16.2%	35.7%
Sub-Saharan Africa, Southern	12.28	16.43	15.58	14.35	33.8%	-6.9%	-10.1%	16.8%
Sub-Saharan Africa, East	57.15	97.00	95.47	86.17	69.7%	-2.7%	-16.3%	50.8%
Sub-Saharan Africa, Central	16.76	29.95	29.74	28.71	78.7%	-1.3%	-6.1%	71.3%
Sub-Saharan Africa, West	66.73	111.02	110.29	104.18	66.4%	-1.1%	-9.2%	56.1%

(c) Decomposition of changes in total anemia YLDs (in millions) by region and sex

Region	Males							
	1990 Actual	Isolated Pop Growth	Isolated Pop Aging	2010 Actual	% Δ Due to Pop Growth	% Δ Due to Aging	% Δ Due to Δ Rates	% Δ Actual
Global	30.045	39.093	35.101	30.324	30.1%	-13.3%	-15.9%	0.9%
Asia Pacific, High Income	0.194	0.203	0.178	0.173	4.7%	-13.3%	-2.2%	-10.7%
Europe, Western	0.428	0.471	0.455	0.442	10.0%	-3.6%	-3.0%	3.4%
Australasia	0.030	0.038	0.036	0.036	26.6%	-6.3%	-1.0%	19.3%
North America, High Income	0.315	0.390	0.379	0.386	23.9%	-3.4%	2.2%	22.6%
Europe, Central	0.290	0.279	0.229	0.223	-3.5%	-17.3%	-2.4%	-23.1%
Latin America, Southern	0.116	0.142	0.120	0.117	22.7%	-19.6%	-1.9%	1.1%
Europe, Eastern	0.506	0.469	0.384	0.378	-7.5%	-16.8%	-1.2%	-25.4%
Asia, East	3.527	4.167	3.281	2.641	18.1%	-25.1%	-18.1%	-25.1%
Latin America, Tropical	0.774	1.005	0.856	0.775	29.8%	-19.2%	-10.4%	0.2%
Latin America, Central	0.892	1.230	1.083	0.900	37.9%	-16.5%	-20.5%	0.9%
Asia, Southeast	3.503	4.632	4.157	2.934	32.2%	-13.6%	-34.9%	-16.2%
Asia, Central	0.269	0.314	0.258	0.241	16.8%	-20.8%	-6.3%	-10.3%
Latin America, Andean	0.245	0.339	0.299	0.266	38.2%	-16.4%	-13.6%	8.3%
North Africa / Middle East	1.782	2.649	2.143	1.897	48.7%	-28.4%	-13.8%	6.5%
Caribbean	0.223	0.271	0.245	0.223	21.6%	-11.8%	-9.7%	0.1%
Asia, South	11.430	16.248	14.865	10.475	42.2%	-12.1%	-38.4%	-8.4%
Oceania	0.042	0.065	0.061	0.052	53.0%	-8.4%	-22.2%	22.4%
Sub-Saharan Africa, Southern	0.376	0.504	0.436	0.391	34.2%	-18.1%	-12.0%	4.1%
Sub-Saharan Africa, East	2.214	3.797	3.656	3.304	71.5%	-6.4%	-15.9%	49.2%
Sub-Saharan Africa, Central	0.643	1.164	1.139	1.105	81.2%	-3.9%	-5.3%	71.9%
Sub-Saharan Africa, West	2.245	3.770	3.642	3.364	67.9%	-5.7%	-12.3%	49.9%
Region	**Females**							
	1990 Actual	Isolated Pop Growth	Isolated Pop Aging	2010 Actual	% Δ Due to Pop Growth	% Δ Due to Aging	% Δ Due to Δ Rates	% Δ Actual
Global	35.427	45.985	42.857	38.013	29.8%	-8.8%	-13.7%	7.3%
Asia Pacific, High Income	0.332	0.353	0.335	0.320	6.1%	-5.4%	-4.4%	-3.6%
Europe, Western	0.528	0.572	0.556	0.545	8.3%	-3.1%	-1.9%	3.3%
Australasia	0.036	0.046	0.044	0.044	27.2%	-5.1%	-0.5%	21.6%
North America, High Income	0.391	0.473	0.457	0.457	21.1%	-4.0%	-0.1%	17.0%
Europe, Central	0.323	0.317	0.287	0.278	-1.7%	-9.2%	-3.0%	-13.9%
Latin America, Southern	0.119	0.147	0.134	0.128	23.3%	-11.3%	-4.4%	7.6%
Europe, Eastern	0.863	0.814	0.761	0.747	-5.6%	-6.2%	-1.6%	-13.4%
Asia, East	4.211	4.926	4.114	3.052	17.0%	-19.3%	-25.2%	-27.5%
Latin America, Tropical	0.641	0.847	0.753	0.692	32.1%	-14.6%	-9.6%	7.9%
Latin America, Central	0.739	1.035	0.949	0.872	40.1%	-11.6%	-10.5%	17.9%
Asia, Southeast	3.377	4.483	4.198	3.001	32.8%	-8.4%	-35.4%	-11.1%
Asia, Central	0.481	0.56	0.528	0.502	16.6%	-6.7%	-5.4%	4.6%
Latin America, Andean	0.238	0.33	0.304	0.274	38.5%	-11.0%	-12.4%	15.1%
North Africa / Middle East	2.092	3.065	2.811	2.525	46.5%	-12.1%	-13.6%	20.7%
Caribbean	0.315	0.385	0.368	0.343	22.2%	-5.3%	-8.2%	8.7%
Asia, South	14.614	21.141	20.324	15.139	44.7%	-5.6%	-35.5%	3.6%
Oceania	0.048	0.074	0.072	0.062	54.6%	-4.4%	-21.1%	29.1%
Sub-Saharan Africa, Southern	0.418	0.559	0.516	0.465	33.8%	-10.3%	-12.3%	11.2%
Sub-Saharan Africa, East	2.227	3.779	3.68	3.243	69.7%	-4.5%	-19.6%	45.6%
Sub-Saharan Africa, Central	0.645	1.153	1.136	1.091	78.7%	-2.6%	-7.0%	69.1%
Sub-Saharan Africa, West	2.789	4.639	4.574	4.233	66.4%	-2.3%	-12.2%	51.8%

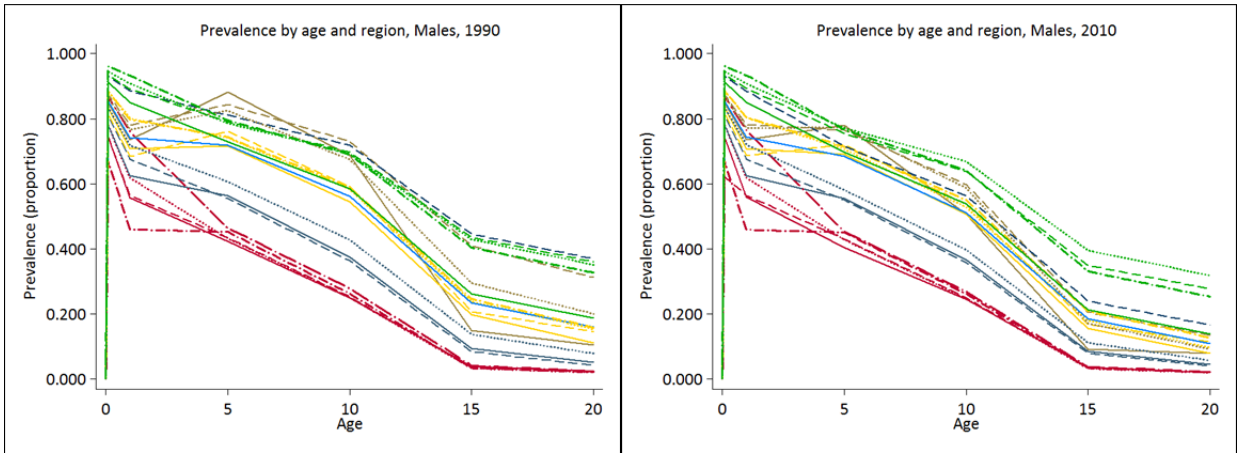
(d) Decomposition of changes in mean disability weight of anemia cases by region and sex

Region	Males							
	1990 Actual	Isolated Pop Growth	Isolated Pop Aging	2010 Actual	% Δ Due to Pop Growth	% Δ Due to Aging	% Δ Due to Δ Rates	% Δ Actual
Global	0.0294	0.0294	0.0286	0.0299	**0.0%**	-2.8%	4.3%	1.5%
Asia Pacific, High Income	0.0197	0.0197	0.0197	0.0198	**0.0%**	-0.2%	0.4%	0.2%
Europe, Western	0.0195	0.0195	0.0195	0.0195	**0.0%**	0.1%	-0.5%	-0.4%
Australasia	0.0224	0.0224	0.0223	0.0223	**0.0%**	-0.7%	0.2%	-0.5%
North America, High Income	0.0186	0.0186	0.0190	0.0195	**0.0%**	2.0%	2.7%	4.7%
Europe, Central	0.0248	0.0248	0.0241	0.0243	**0.0%**	-2.7%	0.7%	-2.0%
Latin America, Southern	0.0253	0.0253	0.0250	0.0253	**0.0%**	-1.0%	1.0%	0.0%
Europe, Eastern	0.0257	0.0257	0.0253	0.0254	**0.0%**	-1.8%	0.5%	-1.3%
Asia, East	0.0180	0.0180	0.0162	0.0170	**0.0%**	-10.3%	4.5%	-5.7%
Latin America, Tropical	0.0297	0.0297	0.0290	0.0294	**0.0%**	-2.5%	1.4%	-1.2%
Latin America, Central	0.0281	0.0281	0.0275	0.0257	**0.0%**	-2.2%	-6.4%	-8.7%
Asia, Southeast	0.0294	0.0294	0.0284	0.0294	**0.0%**	-3.4%	3.3%	-0.1%
Asia, Central	0.0274	0.0274	0.0265	0.0270	**0.0%**	-3.0%	1.8%	-1.3%
Latin America, Andean	0.0314	0.0314	0.0305	0.0312	**0.0%**	-2.8%	2.0%	-0.8%
North Africa / Middle East	0.0287	0.0287	0.0276	0.0283	**0.0%**	-4.0%	2.5%	-1.5%
Caribbean	0.0328	0.0328	0.0319	0.0322	**0.0%**	-2.6%	1.0%	-1.6%
Asia, South	0.0347	0.0347	0.0334	0.0340	**0.0%**	-3.6%	1.7%	-1.9%
Oceania	0.0277	0.0277	0.0274	0.0286	**0.0%**	-1.2%	4.4%	3.1%
Sub-Saharan Africa, Southern	0.0333	0.0333	0.0321	0.0326	**0.0%**	-3.4%	1.3%	-2.1%
Sub-Saharan Africa, East	0.0366	0.0366	0.0360	0.0363	**0.0%**	-1.5%	0.8%	-0.7%
Sub-Saharan Africa, Central	0.0412	0.0412	0.0408	0.0412	**0.0%**	-0.9%	1.1%	0.2%
Sub-Saharan Africa, West	0.0389	0.0389	0.0384	0.0391	**0.0%**	-1.3%	1.7%	0.4%
Region	**Females**							
	1990 Actual	Isolated Pop Growth	Isolated Pop Aging	2010 Actual	% Δ Due to Pop Growth	% Δ Due to Aging	% Δ Due to Δ Rates	% Δ Actual
Global	0.0320	0.0320	0.0312	0.0304	**0.0%**	-2.3%	-2.6%	-4.9%
Asia Pacific, High Income	0.0185	0.0185	0.0184	0.0182	**0.0%**	-0.6%	-0.9%	-1.5%
Europe, Western	0.0171	0.0171	0.0170	0.0168	**0.0%**	-0.6%	-0.8%	-1.3%
Australasia	0.0184	0.0184	0.0182	0.0182	**0.0%**	-1.0%	0.1%	-0.9%
North America, High Income	0.0179	0.0179	0.0179	0.0180	**0.0%**	-0.1%	0.6%	0.5%
Europe, Central	0.0232	0.0232	0.0226	0.0224	**0.0%**	-2.8%	-0.4%	-3.3%
Latin America, Southern	0.0207	0.0207	0.0203	0.0202	**0.0%**	-1.9%	-0.5%	-2.4%
Europe, Eastern	0.0249	0.0249	0.0244	0.0242	**0.0%**	-2.2%	-0.5%	-2.7%
Asia, East	0.0228	0.0228	0.0210	0.0203	**0.0%**	-7.9%	-3.2%	-11.0%
Latin America, Tropical	0.0253	0.0253	0.0244	0.0242	**0.0%**	-3.7%	-0.7%	-4.4%
Latin America, Central	0.0259	0.0259	0.0253	0.0254	**0.0%**	-2.3%	0.2%	-2.1%
Asia, Southeast	0.0301	0.0301	0.0294	0.0270	**0.0%**	-2.4%	-7.7%	-10.1%
Asia, Central	0.0297	0.0297	0.0292	0.0285	**0.0%**	-1.8%	-2.6%	-4.3%
Latin America, Andean	0.0278	0.0278	0.0269	0.0264	**0.0%**	-3.4%	-1.8%	-5.3%
North Africa / Middle East	0.0299	0.0299	0.0290	0.0284	**0.0%**	-2.8%	-2.0%	-4.9%
Caribbean	0.0328	0.0328	0.0322	0.0314	**0.0%**	-1.9%	-2.3%	-4.2%
Asia, South	0.0393	0.0393	0.0385	0.0348	**0.0%**	-2.0%	-9.6%	-11.6%
Oceania	0.0304	0.0304	0.0301	0.0290	**0.0%**	-1.1%	-3.7%	-4.8%
Sub-Saharan Africa, Southern	0.0340	0.0340	0.0331	0.0324	**0.0%**	-2.7%	-2.1%	-4.8%
Sub-Saharan Africa, East	0.0390	0.0390	0.0385	0.0376	**0.0%**	-1.1%	-2.3%	-3.4%
Sub-Saharan Africa, Central	0.0385	0.0385	0.0382	0.0380	**0.0%**	-0.8%	-0.6%	-1.3%
Sub-Saharan Africa, West	0.0418	0.0418	0.0415	0.0406	**0.0%**	-0.8%	-2.0%	-2.8%

Figure S8: Regional anemia prevalence and total YLDs by age in 1990 and 2010 until age 20

Prevalence of anemia by age varied widely between GBD regions. All regions had similar age patterns and the ordering did not change appreciably after age 20. The differences between regions were less pronounced in (a) males than (b) females. 1990 results are in the left column and 2010 in the right column. Differences between high and low burden regions narrowed between 1990 and 2010, especially for females.

(a) Male anemia prevalence from all causes and severities in 1990 (left) and 2010 (right)



(a) Female anemia prevalence from all causes and severities in 1990 (left) and 2010 (right)

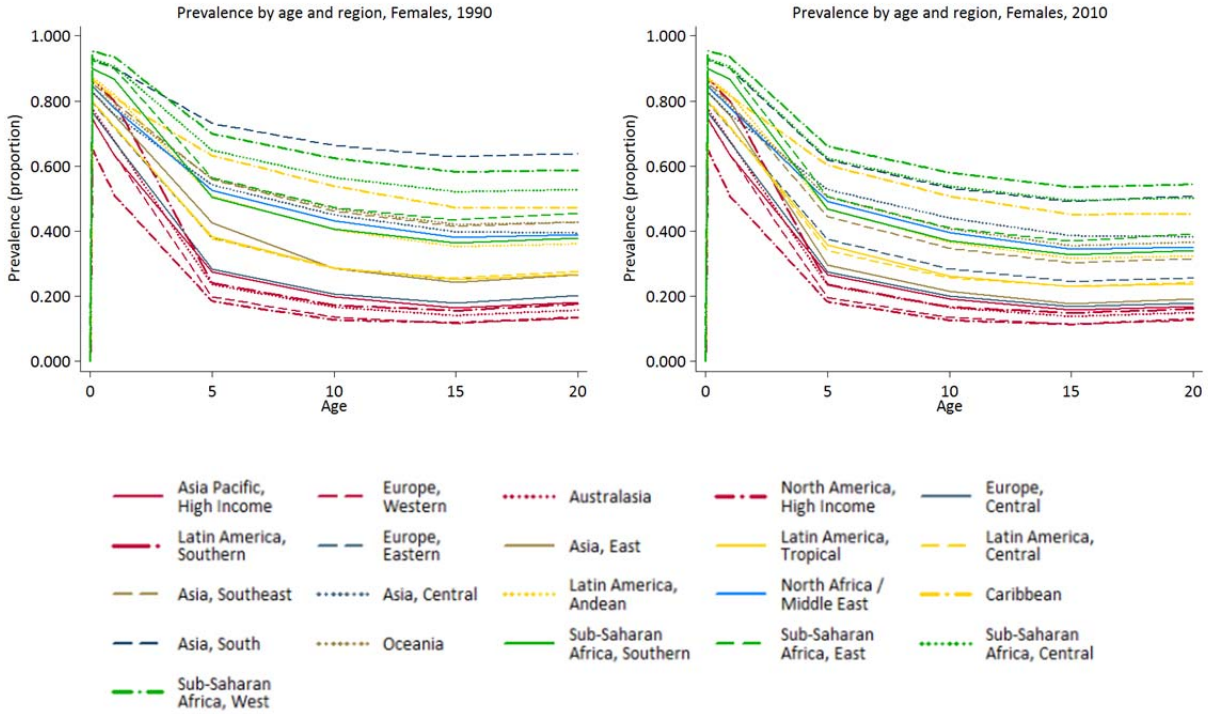
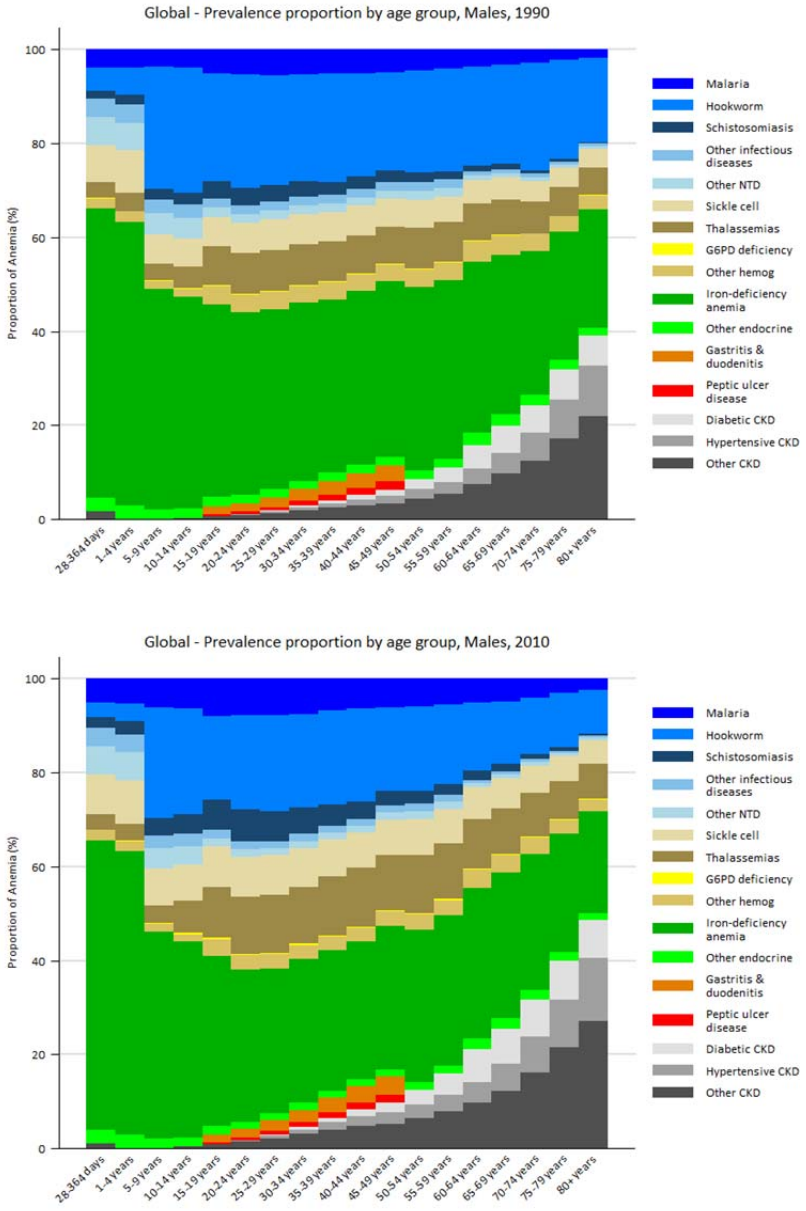


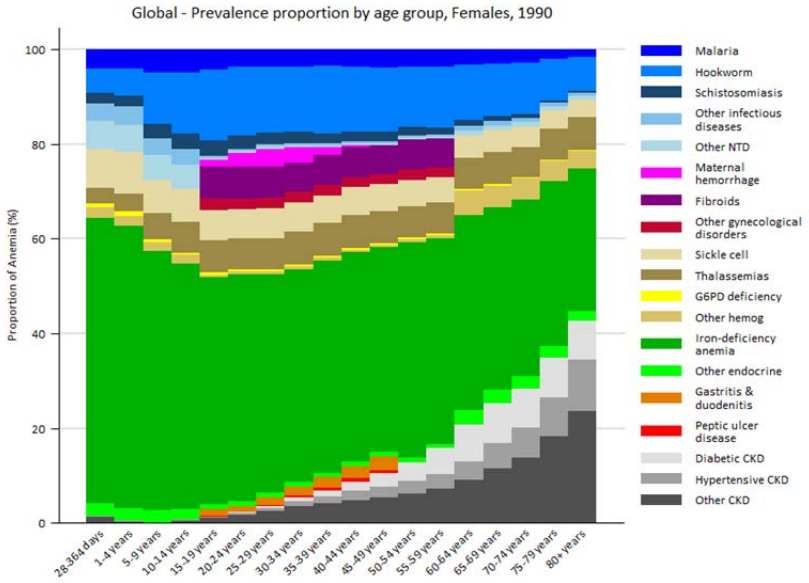
Figure S9: Proportion of total anemia due to each underlying etiology by age, sex, and year.

Trends in age patterns of anemia by cause showed some important differences between 1990 and 2010. Infectious etiologies of anemia as a whole decreased as a proportion of total anemia more with age in 2010 than 1990. Hemoglobinopathies and hemolytic anemias comprised a larger proportion of the total anemia envelope in most age groups in 2010 than 1990, a change that was more pronounced in males. At most ages, iron deficiency was the biggest contributor to anemia. Gynecologically-rleated conditions were an important cause in adult females. Chronic kidney diseases increased with increasing age and comprised a larger proportion of the anemia envelope in 2010 than 1990. Two items are notable in the youngest age groups (0-6 days and 7-27 days) and these results have been omitted as a result. First, the total estimated anemia prevalence and burden at these ages is very low. Second, our causal attribution algorithm did not vary with age, even though neonates are known not to produce beta-globin genes until nearly 6 months of age. Abbreviations: NTD = neglected tropical diseases, CKD = chronic kidney disease

(a) Males: Proportion of total anemia prevalence by cause and age in 1990 (top) and 2010 (bottom)



(b) Females: Proportion of total anemia prevalence by cause and age in 1990 (top) and 2010 (bottom)



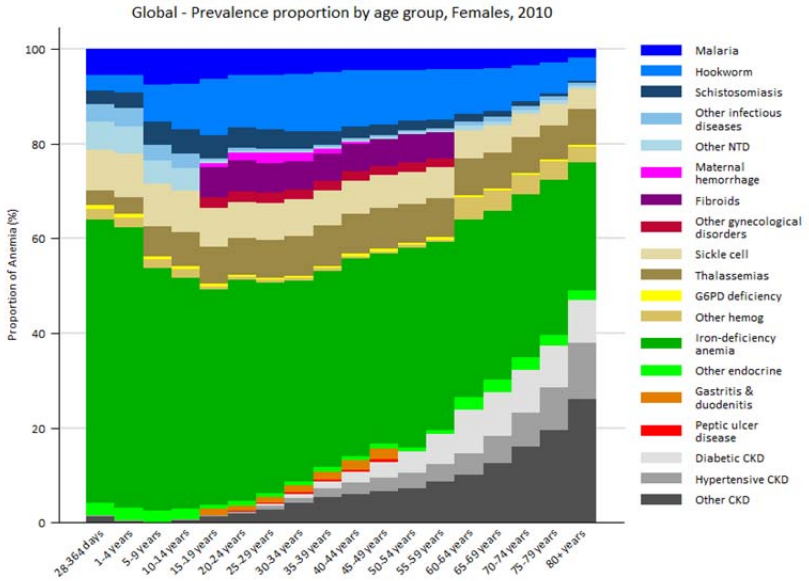


Table S7: Country-level results of anemia age-adjusted prevalence in 1990 and 2010 and prevalence by age range and sex in 2010

Age-standardized prevalence for 1990 and 2010 is presented for each country, along with overall prevalence results for five aggregated age groups in 2010. All results are presented with 95% confidence intervals in the table following the references.

Table S7: Country-level results of anemia age-adjusted prevalence in 1990 and 2010 and prevalence (per 100,000 population) by age range and sex in 2010

Region	MALES								FEMALES							
	Age-Adjusted Prevalence		Prevalence by age range (per 100,000 population)						Age-Adjusted Prevalence		Prevalence by age range (per 100,000 population)					
Country	1990	2010	Neonatal	Post-neonatal	1-4 years	5-14 years	15-59 years	60+ years	1990	2010	Neonatal	Post-neonatal	1-4 years	5-14 years	15-59 years	60+ years
Asia Pacific, High Income	13,904 (8,563-26,752)	13,557 (8,157-25,342)	44 (38-52)	74,025 (1,287-392,545)	55,938 (1,035-176,636)	31,925 (29,994-33,681)	2,703 (2,486-2,944)	9,777 (8,165-11,508)	22,745 (16,785-35,066)	22,020 (15,862-34,357)	1 (1-1)	74,295 (1,363-409,964)	63,538 (1,492-159,846)	22,693 (20,624-24,603)	16,685 (15,340-18,510)	17,049 (14,701-19,990)
Brunei	17,004 (11,930-29,303)	16,890 (11,752-30,260)	47 (40-56)	74,739 (1,213-659,186)	56,847 (612-109,610)	41,417 (39,965-42,674)	4,190 (3,821-4,646)	15,136 (12,850-18,361)	21,476 (16,630-27,397)	20,865 (15,663-26,443)	1 (1-1)	74,920 (1,229-188,833)	64,297 (13,481-111,375)	21,548 (20,588-22,415)	15,873 (14,476-17,428)	14,128 (11,338-18,496)
Japan	12,163 (6,588-23,363)	11,969 (6,405-22,005)	49 (41-59)	74,899 (1,239-1,775)	57,226 (500-216,628)	25,970 (24,402-27,261)	1,967 (1,757-2,214)	8,626 (6,936-10,429)	23,470 (17,221-39,233)	23,077 (16,793-38,417)	1 (1-1)	75,024 (1,180-512,200)	64,626 (577-177,979)	24,109 (23,800-24,456)	17,742 (16,655-18,967)	17,776 (15,183-20,834)
Singapore	14,659 (6,310-27,539)	13,722 (5,682-25,579)	54 (45-66)	75,838 (1,284-327,183)	58,460 (13,325-102,316)	33,560 (13,826-62,874)	2,385 (2,059-2,737)	8,020 (6,234-10,446)	23,501 (19,035-31,227)	22,035 (17,491-27,406)	26 (1-1)	76,062 (1,555-142,045)	65,872 (25,116-123,642)	22,800 (22,022-23,536)	16,615 (15,527-17,926)	15,420 (13,035-18,811)
South Korea	18,607 (13,493-36,422)	17,313 (12,225-38,261)	33 (25-45)	71,945 (1,057-1,099,171)	52,796 (668-125,487)	43,735 (39,536-46,857)	4,285 (3,896-4,830)	15,945 (13,908-18,207)	20,692 (14,101-29,423)	19,560 (12,872-28,446)	0 (0-1)	72,475 (1,170-281,483)	60,758 (668-127,502)	19,727 (13,348-25,351)	14,422 (11,623-18,836)	13,484 (10,594-17,336)
Asia, Central	24,368 (23,577-25,268)	22,282 (21,476-23,142)	280 (241-320)	83,583 (78,241-91,427)	71,969 (67,883-77,789)	48,828 (47,661-49,942)	7,588 (7,234-8,006)	21,867 (20,350-23,772)	43,989 (42,924-45,197)	42,946 (41,891-44,162)	170 (165-175)	82,772 (77,026-101,506)	75,906 (71,314-82,294)	48,382 (47,866-48,994)	38,047 (37,232-39,013)	36,474 (34,277-39,318)
Armenia	20,351 (19,303-21,476)	19,819 (18,653-21,015)	111 (81-147)	77,790 (67,974-85,314)	63,022 (55,235-69,031)	46,551 (44,608-48,007)	6,157 (5,580-6,899)	21,131 (18,562-25,083)	31,552 (29,981-33,440)	30,894 (29,264-32,581)	65 (56-70)	77,599 (66,718-84,994)	69,525 (59,999-76,115)	33,922 (33,254-34,582)	25,572 (24,205-27,330)	25,584 (21,841-30,842)
Azerbaijan	25,161 (24,180-26,238)	22,611 (21,728-23,714)	304 (244-370)	84,763 (79,543-88,863)	73,719 (69,724-76,990)	49,123 (47,254-50,747)	7,795 (7,178-8,608)	23,293 (20,660-27,209)	43,632 (42,108-45,475)	41,250 (39,877-43,039)	129 (117-137)	82,005 (74,199-87,920)	74,954 (68,114-79,917)	45,690 (44,954-46,536)	36,217 (34,996-37,791)	36,407 (32,603-42,059)
Georgia	20,382 (19,606-21,129)	19,996 (19,254-20,735)	156 (126-193)	81,193 (75,693-85,621)	67,819 (63,342-71,337)	45,735 (44,127-47,083)	5,988 (5,562-6,556)	20,117 (18,747-21,788)	39,167 (38,245-40,053)	38,734 (37,900-39,631)	75 (68-80)	79,261 (71,805-84,964)	71,419 (64,594-76,507)	43,116 (42,638-43,695)	33,716 (33,018-34,576)	34,016 (32,282-36,385)
Kazakhstan	22,598 (21,656-23,892)	21,273 (20,388-22,231)	279 (200-394)	83,729 (78,332-87,332)	72,255 (68,086-75,050)	47,614 (45,450-49,169)	6,550 (5,870-7,490)	20,007 (17,540-23,438)	38,480 (37,210-40,125)	37,163 (35,831-38,806)	163 (153-170)	82,398 (76,089-86,508)	75,490 (70,108-79,036)	41,130 (40,526-41,950)	31,742 (30,467-33,431)	31,253 (27,493-36,861)
Kyrgyzstan	24,587 (23,682-25,772)	22,067 (21,130-23,058)	258 (181-361)	83,481 (77,996-87,627)	71,758 (67,492-74,959)	48,166 (46,256-49,520)	7,256 (6,532-8,199)	22,331 (19,681-26,122)	42,127 (40,786-44,038)	39,718 (38,347-41,386)	142 (132-149)	82,450 (75,802-87,221)	75,532 (69,679-79,652)	43,871 (43,271-44,664)	34,536 (33,285-36,101)	34,342 (30,314-40,391)
Mongolia	16,397 (10,734-27,619)	14,362 (8,406-26,902)	61 (48-82)	74,798 (1,218-249,279)	58,006 (994-189,832)	33,349 (29,753-35,756)	2,743 (2,352-3,572)	11,416 (9,567-13,681)	27,196 (20,830-45,990)	24,454 (18,122-44,135)	0 (0-0)	72,025 (825-553,652)	61,942 (483-224,499)	25,524 (24,986-26,187)	19,976 (19,054-21,237)	18,384 (15,935-21,685)
Tajikistan	28,640 (27,585-30,014)	28,337 (27,298-29,582)	287 (226-361)	84,575 (77,604-90,197)	73,352 (67,978-77,783)	56,029 (54,785-57,206)	13,622 (12,725-14,926)	29,799 (26,947-34,326)	41,415 (39,894-43,326)	41,006 (39,501-42,979)	167 (153-178)	83,363 (74,679-89,584)	76,625 (69,389-82,008)	45,183 (44,400-46,106)	35,941 (34,695-37,580)	35,568 (31,562-41,904)
Turkmenistan	25,084 (24,216-26,202)	22,986 (22,171-23,991)	196 (143-267)	82,557 (76,454-86,871)	69,965 (65,161-73,297)	50,251 (48,988-51,212)	8,231 (7,528-9,262)	23,086 (20,580-26,942)	39,495 (38,176-41,433)	37,515 (36,239-39,230)	97 (89-102)	80,640 (73,108-85,854)	73,130 (66,672-77,629)	41,660 (41,136-42,321)	32,428 (31,268-33,929)	31,965 (28,119-37,816)
Uzbekistan	27,237 (26,405-28,418)	22,639 (21,902-23,631)	340 (273-419)	84,678 (81,970-86,781)	73,869 (71,693-75,568)	48,687 (47,529-49,657)	7,629 (7,074-8,339)	22,662 (20,236-26,673)	56,879 (55,433-58,960)	53,344 (51,846-55,483)	243 (237-247)	85,382 (82,473-87,671)	79,156 (76,591-81,186)	58,573 (58,081-59,187)	48,879 (47,605-50,631)	49,760 (44,590-57,465)
Asia, East	31,908 (26,081-39,874)	25,103 (20,278-30,417)	289 (264-318)	84,630 (82,163-86,988)	73,475 (71,400-75,525)	63,473 (38,563-92,261)	8,494 (7,726-9,663)	17,228 (14,957-20,092)	31,156 (29,329-33,056)	24,451 (22,618-26,144)	149 (146-152)	82,549 (79,623-85,487)	75,677 (72,998-78,099)	25,274 (23,635-26,960)	18,177 (16,143-19,971)	17,362 (15,266-19,675)

China	32,071 (26,022-40,264)	25,094 (20,114-30,557)	287 (262-316)	84,619 (82,152-86,965)	73,459 (71,397-75,504)	63,571 (37,897-93,217)	8,500 (7,711-9,708)	16,971 (14,626-19,912)	31,092 (29,216-33,024)	24,201 (22,329-25,914)	148 (145-151)	82,531 (79,662-85,461)	75,660 (73,020-78,076)	24,932 (23,269-26,618)	17,938 (15,840-19,735)	17,037 (14,927-19,379)
Region	Age-Adjusted Prevalence		Prevalence by age range (per 100,000 population)						Age-Adjusted Prevalence		Prevalence by age range (per 100,000 population)					
Country	1990	2010	Neonatal	Post-neonatal	1-4 years	5-14 years	15-59 years	60+ years	1990	2010	Neonatal	Post-neonatal	1-4 years	5-14 years	15-59 years	60+ years
North Korea	34,454 (33,369-35,879)	30,413 (28,895-31,814)	422 (315-576)	86,407 (83,582-88,255)	76,530 (74,224-78,020)	67,782 (63,387-70,847)	11,909 (11,187-12,927)	33,669 (29,780-38,972)	38,119 (36,742-40,037)	35,607 (34,278-37,379)	234 (227-238)	84,746 (80,881-87,015)	78,391 (74,986-80,388)	38,516 (37,952-39,188)	30,017 (28,750-31,888)	28,637 (24,745-34,304)
Taiwan	20,944 (16,868-26,779)	20,086 (16,419-24,606)	195 (134-277)	82,431 (75,782-88,809)	69,804 (64,134-75,424)	50,687 (32,358-73,784)	4,821 (4,176-5,532)	16,753 (14,628-19,270)	27,283 (24,930-29,801)	26,104 (23,665-28,690)	89 (81-95)	79,976 (71,072-88,864)	72,316 (64,448-79,457)	27,528 (24,548-30,913)	20,145 (17,914-22,487)	19,791 (17,388-22,711)
Asia, South	52,355 (51,289-53,474)	35,193 (34,323-36,217)	3,049 (2,818-3,311)	92,999 (91,484-94,664)	88,432 (86,848-90,178)	63,962 (62,197-65,928)	18,951 (18,281-19,749)	36,618 (35,062-38,293)	66,631 (65,267-68,026)	54,560 (53,236-55,932)	3,308 (3,198-3,434)	92,485 (90,903-94,168)	90,059 (88,435-91,797)	57,635 (56,287-59,152)	49,890 (48,531-51,286)	48,481 (46,447-50,719)
Afghanistan	35,168 (34,100-36,622)	28,558 (27,575-29,697)	1,278 (1,099-1,485)	90,862 (89,060-92,522)	84,354 (82,747-85,844)	59,034 (57,048-60,804)	11,629 (10,997-12,343)	28,257 (25,528-32,205)	45,674 (44,207-47,416)	40,548 (39,126-42,609)	1,109 (1,079-1,146)	90,066 (87,966-91,902)	86,727 (84,835-88,497)	41,793 (40,877-42,888)	36,140 (34,729-38,048)	30,446 (26,736-36,551)
Bangladesh	61,309 (59,470-63,128)	41,023 (39,450-42,714)	2,095 (1,923-2,291)	92,286 (88,459-97,512)	87,099 (83,066-92,716)	68,606 (64,463-73,966)	25,669 (24,131-27,371)	44,409 (41,509-47,736)	60,257 (58,121-62,568)	44,199 (42,235-46,385)	2,254 (2,189-2,320)	91,740 (88,099-96,501)	89,293 (85,227-94,973)	47,516 (43,764-51,995)	38,571 (36,378-41,108)	36,397 (33,491-39,805)
Bhutan	45,906 (44,650-47,576)	32,446 (31,355-33,743)	875 (751-1,025)	89,592 (87,819-91,262)	81,981 (80,381-83,781)	61,962 (60,657-63,317)	15,949 (15,134-16,936)	34,180 (30,961-39,044)	43,336 (41,646-45,532)	32,941 (31,499-34,809)	735 (718-755)	88,994 (87,223-90,811)	84,799 (82,977-86,598)	34,646 (33,436-35,932)	26,816 (25,504-28,398)	24,929 (21,120-30,183)
India	52,302 (51,150-53,539)	34,691 (33,757-35,819)	3,576 (3,271-3,933)	93,721 (92,148-95,564)	89,623 (87,835-91,514)	63,559 (61,622-65,696)	18,270 (17,538-19,149)	35,810 (34,176-37,703)	69,543 (68,118-71,061)	57,979 (56,537-59,437)	3,953 (3,805-4,121)	93,277 (91,678-95,043)	91,025 (89,312-92,862)	61,742 (60,174-63,328)	53,546 (52,114-55,061)	51,694 (49,619-54,166)
Nepal	53,969 (51,776-56,349)	42,421 (40,495-44,648)	700 (621-792)	88,926 (84,429-96,170)	80,704 (75,459-88,293)	70,779 (66,158-76,220)	27,792 (25,964-29,834)	45,904 (41,801-50,640)	59,334 (56,263-62,686)	50,013 (47,125-52,958)	555 (548-565)	88,158 (83,185-95,622)	83,365 (78,172-90,433)	55,109 (50,484-60,679)	45,151 (42,018-48,395)	43,339 (38,366-48,880)
Pakistan	46,642 (45,447-48,050)	34,250 (33,209-35,481)	1,508 (1,349-1,679)	91,388 (89,654-92,964)	85,415 (83,828-86,850)	63,344 (61,961-64,640)	18,012 (17,244-18,848)	36,188 (32,967-40,613)	52,656 (50,869-54,754)	42,641 (41,042-44,535)	1,436 (1,402-1,473)	90,645 (88,853-92,191)	87,755 (85,952-89,364)	45,547 (44,662-46,424)	37,082 (35,690-38,807)	34,587 (30,321-39,801)
Asia, Southeast	48,522 (46,766-50,453)	32,894 (30,813-35,185)	581 (548-616)	87,336 (83,390-91,235)	78,058 (74,844-81,647)	68,243 (60,930-75,911)	15,767 (14,962-16,616)	35,205 (32,867-38,212)	46,481 (44,745-48,452)	36,039 (34,550-37,747)	331 (318-343)	85,530 (80,878-90,207)	79,520 (75,407-83,809)	39,702 (38,302-41,168)	30,392 (29,109-31,860)	28,206 (25,849-31,218)
Cambodia	69,779 (67,208-72,641)	46,545 (44,807-48,355)	3,378 (3,108-3,664)	93,865 (91,774-96,044)	89,798 (87,590-92,012)	79,057 (75,759-82,270)	29,745 (28,666-30,938)	51,113 (47,470-56,495)	69,518 (67,128-72,219)	55,923 (54,248-58,076)	2,269 (2,197-2,345)	91,848 (89,174-94,582)	89,427 (86,942-92,061)	59,934 (58,455-61,395)	51,267 (49,768-53,106)	49,384 (45,057-55,670)
Indonesia	50,115 (48,812-51,657)	35,652 (34,684-36,854)	639 (587-697)	88,661 (85,604-91,614)	80,210 (77,611-82,833)	65,096 (63,411-66,936)	20,156 (19,456-20,970)	37,964 (35,293-41,895)	49,780 (47,958-52,048)	38,384 (36,922-40,286)	331 (321-342)	86,550 (83,057-90,198)	80,804 (77,668-84,086)	42,072 (40,724-43,606)	32,769 (31,466-34,374)	31,180 (27,496-36,702)
Laos	63,165 (60,827-65,793)	46,664 (44,463-48,805)	857 (773-940)	89,482 (84,426-94,988)	81,804 (77,227-87,260)	79,540 (74,896-84,220)	30,627 (29,002-32,465)	53,259 (49,427-57,660)	50,689 (48,672-52,898)	39,782 (37,965-41,641)	554 (519-586)	88,101 (82,253-94,655)	83,293 (77,671-89,857)	42,606 (40,615-44,871)	34,331 (32,563-36,239)	32,125 (29,271-35,991)
Malaysia	39,227 (37,139-41,500)	24,346 (21,307-27,873)	333 (306-365)	85,277 (80,034-91,512)	74,556 (69,905-80,347)	60,778 (44,770-79,926)	6,846 (5,737-7,932)	22,621 (19,760-26,451)	38,809 (36,860-41,120)	29,048 (26,820-31,476)	170 (161-177)	83,213 (77,183-90,505)	76,469 (70,858-82,753)	30,897 (28,113-34,446)	23,237 (21,262-25,371)	21,035 (18,128-25,000)
Maldives	60,972 (59,072-63,309)	37,298 (34,540-40,178)	1,552 (1,351-1,773)	91,363 (86,335-95,636)	85,420 (80,812-89,557)	73,173 (63,178-81,600)	18,386 (17,317-19,575)	44,828 (39,453-51,822)	61,227 (59,191-63,689)	47,000 (44,962-49,342)	1,061 (1,008-1,110)	89,936 (84,107-95,200)	86,479 (81,216-91,283)	50,605 (48,972-52,383)	41,842 (40,233-43,651)	39,730 (35,369-46,790)
Myanmar	54,283 (51,580-56,903)	34,219 (30,557-37,713)	600 (539-670)	87,999 (80,198-96,143)	79,262 (71,998-86,591)	71,366 (59,080-83,362)	15,655 (14,296-16,944)	39,946 (35,540-44,582)	55,064 (52,515-57,787)	42,778 (40,111-45,476)	353 (302-403)	86,529 (76,821-96,206)	80,850 (71,655-90,058)	47,143 (44,360-49,937)	37,376 (35,295-39,643)	36,096 (32,403-40,875)

Philippines	46,904 (43,381-50,794)	35,016 (29,740-40,932)	407 (373-444)	86,358 (81,553-93,262)	76,442 (71,866-83,260)	79,299 (59,373-98,578)	14,631 (12,918-16,591)	42,207 (34,414-53,282)	43,677 (41,406-46,300)	37,234 (35,172-39,561)	248 (241-254)	85,030 (79,798-91,977)	78,785 (74,175-86,101)	40,528 (37,118-44,703)	31,937 (29,866-34,254)	29,528 (26,104-34,145)
Sri Lanka	56,555 (54,057-59,176)	41,778 (40,256-43,423)	412 (369-460)	86,286 (82,918-89,706)	76,314 (73,206-79,433)	77,522 (74,906-80,315)	25,290 (24,273-26,426)	49,103 (45,160-54,597)	45,368 (43,101-48,004)	36,653 (35,077-38,678)	232 (225-239)	84,719 (80,864-88,788)	78,349 (75,635-81,659)	40,509 (38,896-42,391)	30,977 (29,486-32,905)	29,768 (26,024-35,850)
Region	Age-Adjusted Prevalence		Prevalence by age range (per 100,000 population)						Age-Adjusted Prevalence		Prevalence by age range (per 100,000 population)					
Country	1990	2010	Neonatal	Post-neonatal	1-4 years	5-14 years	15-59 years	60+ years	1990	2010	Neonatal	Post-neonatal	1-4 years	5-14 years	15-59 years	60+ years
Thailand	33,139 (31,203-35,125)	23,387 (21,643-25,165)	294 (261-330)	84,621 (76,237-93,049)	73,462 (66,801-80,325)	51,684 (47,064-57,111)	8,073 (7,425-8,804)	23,870 (21,792-26,335)	32,245 (30,077-34,511)	25,950 (24,132-27,864)	145 (128-158)	82,420 (71,368-93,178)	75,523 (66,205-84,275)	26,930 (24,726-29,694)	19,873 (18,448-21,298)	18,975 (17,082-21,177)
Timor-Leste	72,245 (69,852-74,876)	62,034 (59,447-64,473)	433 (366-506)	86,500 (79,526-94,478)	76,701 (69,931-83,204)	87,628 (84,501-91,204)	51,118 (48,997-53,357)	68,986 (64,924-74,089)	42,780 (40,736-45,179)	35,518 (33,459-37,680)	260 (227-289)	84,907 (76,553-92,958)	78,685 (71,133-86,516)	37,598 (34,878-40,675)	30,366 (28,664-32,369)	26,622 (23,630-30,956)
Vietnam	52,969 (50,067-56,257)	27,312 (21,963-34,614)	364 (324-410)	85,706 (78,878-94,130)	75,288 (69,357-83,675)	67,466 (41,765-104,535)	8,578 (7,341-9,893)	30,260 (26,272-34,860)	46,577 (44,135-49,251)	31,640 (29,003-34,553)	201 (189-212)	84,058 (76,205-93,895)	77,480 (69,824-86,609)	34,085 (32,678-35,653)	25,818 (23,454-28,499)	24,923 (20,634-29,924)
Australasia	14,468 (12,325-16,742)	14,344 (12,707-15,988)	76 (68-85)	78,053 (69,348-86,058)	61,822 (54,662-68,408)	33,671 (28,191-38,837)	2,607 (2,303-2,945)	10,935 (8,909-13,268)	20,407 (18,399-22,601)	20,288 (18,409-22,151)	32 (27-37)	77,448 (64,278-89,801)	67,730 (56,168-79,038)	19,928 (18,524-21,171)	14,642 (13,392-15,997)	13,984 (11,359-17,079)
Australia	14,795 (12,421-17,218)	14,683 (12,866-16,401)	76 (68-85)	78,046 (69,387-86,155)	61,811 (54,771-68,387)	34,842 (28,666-40,560)	2,734 (2,427-3,106)	11,454 (9,149-14,194)	20,799 (18,686-22,974)	20,691 (18,804-22,604)	32 (27-37)	77,440 (64,203-89,720)	67,720 (56,172-78,972)	20,591 (19,842-21,376)	15,037 (13,781-16,411)	14,417 (11,549-17,810)
New Zealand	12,831 (10,052-15,453)	12,710 (9,713-15,391)	76 (69-85)	78,087 (67,692-87,458)	61,873 (53,466-69,597)	28,272 (12,300-42,497)	1,967 (1,653-2,327)	8,180 (6,186-11,276)	18,454 (15,534-21,834)	18,348 (15,385-21,748)	33 (26-38)	77,485 (61,878-91,971)	67,780 (53,866-80,268)	16,876 (10,248-22,692)	12,729 (9,924-16,642)	11,712 (8,354-16,885)
Caribbean	34,757 (33,851-35,799)	31,258 (30,335-32,241)	1,130 (1,024-1,254)	88,615 (86,596-90,672)	80,379 (78,662-82,211)	63,243 (61,590-64,965)	14,907 (14,381-15,464)	33,344 (31,220-35,770)	52,142 (50,835-53,669)	49,627 (48,345-51,005)	783 (760-809)	86,803 (84,374-89,338)	81,570 (79,401-83,879)	55,515 (54,554-56,608)	44,726 (43,507-45,964)	43,540 (40,687-46,929)
Antigua and Barbuda	28,890 (26,094-33,528)	27,545 (24,845-31,592)	366 (113-1,000)	85,801 (69,672-90,157)	75,451 (67,477-79,399)	59,869 (55,459-64,140)	10,904 (8,367-16,556)	30,802 (26,234-38,969)	47,422 (42,613-55,708)	46,389 (41,489-54,367)	176 (51-207)	83,537 (56,258-89,729)	76,836 (56,024-81,902)	52,073 (46,603-61,295)	41,480 (35,975-52,834)	41,409 (35,068-50,978)
Barbados	28,951 (27,668-30,443)	27,451 (26,192-28,955)	365 (276-477)	85,740 (83,068-88,062)	75,344 (73,244-77,364)	58,556 (56,645-60,479)	11,183 (10,216-12,362)	30,774 (27,710-34,869)	47,623 (45,542-50,169)	46,387 (44,277-48,985)	172 (164-179)	83,457 (80,220-86,119)	76,741 (74,032-79,059)	51,517 (49,846-53,574)	41,450 (39,205-44,214)	42,184 (37,174-49,264)
Belize	31,963 (30,580-33,477)	29,475 (28,272-30,809)	411 (319-523)	86,291 (83,439-89,774)	76,317 (73,634-79,457)	61,998 (60,204-63,693)	12,531 (11,657-13,462)	33,392 (30,418-37,413)	49,602 (47,636-51,985)	47,909 (46,123-50,202)	200 (193-205)	84,179 (80,795-87,835)	77,608 (74,357-81,050)	53,630 (52,242-55,416)	43,006 (41,132-45,287)	43,315 (38,906-49,734)
Cuba	29,706 (28,527-31,091)	27,493 (26,242-28,846)	378 (328-433)	85,893 (82,996-89,034)	75,612 (73,074-78,478)	59,597 (56,674-62,770)	11,148 (10,508-11,838)	31,141 (28,527-34,594)	48,163 (46,279-50,327)	46,388 (44,519-48,641)	180 (174-184)	83,657 (79,803-87,603)	76,977 (73,461-80,593)	51,899 (50,036-53,958)	41,599 (39,723-43,650)	41,607 (37,643-47,446)
Dominica	26,389 (24,153-29,142)	25,774 (23,499-28,953)	290 (91-755)	84,611 (67,104-89,293)	73,441 (64,333-77,297)	57,960 (52,291-61,921)	9,255 (7,143-13,686)	28,636 (24,158-36,337)	45,481 (41,910-50,643)	44,963 (40,343-53,504)	138 (36-162)	82,380 (57,212-88,658)	75,448 (56,335-80,325)	50,518 (45,526-60,067)	40,089 (34,770-52,045)	39,901 (33,832-49,730)
Dominican Republic	32,831 (31,726-34,171)	28,320 (27,241-29,541)	355 (299-416)	86,297 (83,825-88,731)	76,329 (74,264-78,459)	60,932 (59,043-62,923)	11,557 (10,910-12,326)	32,252 (29,384-36,172)	50,348 (48,578-52,690)	47,018 (45,352-48,956)	198 (187-207)	84,187 (80,931-87,380)	77,618 (74,893-80,353)	52,870 (51,589-54,370)	42,042 (40,535-43,817)	42,208 (38,069-48,605)
Grenada	31,706 (30,226-33,312)	28,444 (26,900-30,148)	408 (310-532)	86,264 (81,790-92,325)	76,270 (72,261-82,311)	60,402 (56,069-65,771)	11,471 (10,547-12,500)	32,593 (29,541-36,317)	49,477 (47,376-51,974)	47,139 (44,827-49,821)	199 (190-206)	84,144 (78,910-90,818)	77,565 (73,039-84,657)	52,600 (49,052-57,105)	42,121 (39,676-44,960)	42,874 (38,522-49,189)
Guyana	50,443 (48,868-52,343)	43,099 (41,651-44,869)	341 (269-431)	85,405 (82,635-87,889)	74,772 (72,504-77,202)	71,291 (69,386-73,386)	29,526 (28,154-31,089)	47,397 (44,058-52,137)	55,192 (53,209-57,524)	49,715 (47,915-52,011)	208 (202-213)	84,545 (81,610-87,391)	78,043 (75,381-81,024)	54,921 (53,263-57,070)	45,126 (43,493-47,157)	44,723 (40,245-50,874)

Haiti	47,437 (46,126-48,866)	40,004 (38,830-41,320)	2,410 (2,132-2,736)	92,783 (91,350-94,265)	87,959 (86,450-89,437)	68,105 (66,595-69,772)	24,422 (23,358-25,575)	42,327 (39,580-46,053)	62,467 (60,797-64,512)	57,438 (55,813-59,411)	1,787 (1,730-1,854)	91,623 (90,093-93,303)	89,038 (87,538-90,843)	61,296 (59,920-62,836)	52,991 (51,509-54,736)	51,708 (47,798-57,167)
Jamaica	30,785 (29,694-32,010)	28,293 (27,112-29,579)	488 (438-544)	87,063 (84,229-89,890)	77,695 (75,332-80,304)	59,757 (57,239-62,455)	11,702 (11,139-12,375)	32,057 (29,430-35,452)	49,154 (47,365-51,293)	47,201 (45,324-49,427)	199 (191-207)	84,165 (80,388-88,000)	77,590 (74,387-81,100)	52,205 (50,680-53,936)	42,451 (40,836-44,493)	42,769 (38,728-49,526)
Saint Lucia	31,567 (30,225-33,175)	28,706 (27,099-30,379)	402 (303-520)	86,206 (82,130-91,538)	76,167 (72,399-80,915)	60,760 (57,170-65,561)	11,849 (10,960-12,874)	32,848 (29,733-36,494)	49,413 (47,243-52,218)	47,358 (45,106-49,889)	195 (185-203)	84,068 (79,142-89,671)	77,472 (73,211-82,761)	52,879 (49,651-56,622)	42,495 (40,178-44,959)	42,716 (38,566-48,879)
Region	Age-Adjusted Prevalence		Prevalence by age range (per 100,000 population)						Age-Adjusted Prevalence		Prevalence by age range (per 100,000 population)					
Country	1990	2010	Neonatal	Post-neonatal	1-4 years	5-14 years	15-59 years	60+ years	1990	2010	Neonatal	Post-neonatal	1-4 years	5-14 years	15-59 years	60+ years
Saint Vincent and the Grenadines	33,005 (31,509-34,699)	28,413 (26,837-30,249)	421 (321-548)	86,393 (82,384-92,005)	76,501 (72,435-82,114)	60,367 (56,395-65,628)	11,711 (10,755-12,784)	31,721 (28,608-35,353)	50,545 (48,381-53,261)	47,128 (44,851-49,833)	204 (195-210)	84,314 (79,487-90,349)	77,774 (73,452-83,683)	52,598 (49,086-57,121)	42,177 (39,777-44,874)	42,352 (37,923-47,901)
Suriname	37,252 (35,846-38,750)	32,386 (31,171-33,792)	468 (372-589)	87,161 (84,594-89,842)	77,869 (75,613-80,320)	64,597 (62,503-66,914)	15,879 (15,022-16,886)	35,802 (32,884-39,488)	53,641 (51,693-55,893)	50,160 (48,289-52,545)	253 (244-259)	85,285 (82,157-88,217)	79,100 (76,129-81,873)	56,074 (54,245-58,221)	45,407 (43,656-47,665)	45,270 (41,061-51,487)
The Bahamas	27,559 (26,435-28,804)	26,827 (25,739-27,989)	345 (289-411)	85,461 (82,327-88,426)	74,857 (72,526-77,061)	58,309 (56,133-60,405)	10,227 (9,529-10,981)	28,711 (25,988-32,490)	46,435 (44,541-48,801)	45,853 (43,897-48,487)	160 (149-171)	83,093 (78,746-87,026)	76,312 (72,993-79,661)	50,957 (49,452-52,726)	40,911 (38,965-43,407)	40,858 (36,276-48,034)
Trinidad and Tobago	29,827 (28,665-31,119)	27,428 (26,277-28,708)	376 (299-475)	85,883 (83,528-88,131)	75,594 (73,563-77,535)	59,699 (57,821-61,527)	10,486 (9,731-11,385)	29,288 (26,483-33,311)	48,259 (46,257-50,689)	46,373 (44,455-48,790)	179 (169-186)	83,643 (79,910-86,425)	76,962 (73,737-79,464)	51,938 (50,461-53,852)	41,392 (39,541-43,804)	41,331 (36,756-48,116)
Europe, Central	20,259 (19,352-21,112)	19,670 (18,834-20,443)	94 (82-108)	77,867 (69,939-84,567)	62,589 (56,629-67,664)	45,701 (44,560-46,782)	6,039 (5,727-6,377)	19,687 (18,136-21,486)	23,491 (21,883-25,040)	22,828 (21,260-24,393)	42 (37-46)	76,305 (67,270-83,934)	67,530 (59,356-74,197)	23,682 (22,065-26,308)	17,185 (16,076-18,414)	16,902 (15,032-19,208)
Albania	35,903 (32,154-40,088)	32,114 (28,387-36,363)	51 (42-60)	73,553 (1,175-177,824)	56,245 (29,320-84,409)	60,523 (59,281-61,770)	19,656 (18,643-20,845)	35,803 (32,832-40,318)	28,996 (25,090-32,739)	26,230 (22,670-29,756)	0 (0-0)	71,843 (9,127-124,260)	61,367 (31,753-91,012)	28,777 (27,800-29,894)	21,373 (20,119-22,885)	20,661 (17,501-25,208)
Bosnia and Herzegovina	23,134 (22,165-24,338)	19,548 (18,452-20,572)	113 (85-149)	79,173 (69,429-86,173)	64,604 (56,891-70,269)	44,591 (42,961-45,857)	5,829 (5,245-6,618)	19,589 (16,909-23,460)	26,142 (24,235-28,012)	23,206 (20,811-25,455)	54 (46-59)	77,648 (66,459-85,349)	69,388 (59,387-76,385)	23,942 (22,513-25,028)	17,380 (14,999-19,695)	17,019 (13,918-21,738)
Bulgaria	19,337 (18,040-20,612)	19,138 (17,865-20,368)	94 (76-118)	77,903 (66,270-86,895)	62,638 (53,266-70,120)	45,377 (43,731-46,763)	5,555 (5,010-6,288)	19,335 (16,506-23,092)	23,217 (20,637-25,684)	22,980 (20,202-25,492)	42 (35-49)	76,370 (62,699-87,857)	67,626 (55,480-77,732)	24,173 (22,673-25,383)	17,285 (14,576-19,752)	16,965 (13,838-21,573)
Croatia	18,613 (17,062-19,944)	18,456 (16,955-19,824)	88 (66-116)	77,467 (62,641-88,901)	61,982 (50,381-71,130)	43,269 (41,250-44,900)	5,150 (4,632-5,823)	18,181 (15,463-22,311)	23,932 (22,024-25,826)	23,715 (21,689-25,495)	39 (29-47)	75,940 (55,515-90,290)	67,022 (48,909-79,779)	24,633 (24,137-25,239)	18,163 (16,913-19,833)	17,948 (14,810-22,612)
Czech Republic	18,926 (17,271-20,263)	19,146 (17,816-20,367)	92 (67-124)	77,777 (62,976-88,870)	62,448 (50,866-71,250)	45,337 (43,398-46,843)	5,559 (4,993-6,330)	18,742 (16,057-22,925)	22,904 (19,677-25,615)	22,953 (20,232-25,529)	41 (30-49)	76,246 (54,478-90,769)	67,452 (48,117-80,301)	24,165 (22,376-25,418)	17,320 (15,788-19,368)	16,943 (13,741-22,076)
Hungary	19,511 (18,007-20,862)	19,209 (17,721-20,432)	95 (69-128)	77,975 (62,709-88,545)	62,746 (50,825-71,313)	45,022 (42,802-46,493)	5,622 (5,035-6,427)	19,252 (16,514-23,306)	23,364 (20,350-26,091)	22,995 (20,324-25,372)	43 (32-50)	76,441 (56,953-89,724)	67,725 (50,465-79,449)	24,048 (22,281-25,243)	17,295 (15,497-19,208)	17,148 (13,835-22,049)
Macedonia	20,396 (18,889-21,758)	19,828 (18,327-21,117)	88 (66-117)	77,489 (62,139-89,086)	62,016 (49,707-71,206)	46,283 (44,389-47,702)	6,014 (5,409-6,847)	19,905 (17,242-23,976)	21,403 (17,681-27,322)	20,820 (16,287-27,561)	39 (27-47)	75,943 (52,946-90,366)	67,028 (46,625-79,843)	20,704 (9,757-45,018)	15,255 (10,162-22,026)	14,471 (10,180-20,742)
Montenegro	19,346 (17,841-20,951)	19,375 (17,869-20,863)	95 (58-183)	77,968 (59,890-89,100)	62,735 (48,654-71,331)	45,351 (43,072-47,637)	5,805 (5,003-7,280)	19,482 (16,535-23,409)	23,250 (20,394-26,129)	23,193 (20,540-25,799)	43 (32-51)	76,434 (57,763-90,531)	67,715 (50,922-80,077)	24,236 (22,418-26,547)	17,585 (15,743-20,145)	16,871 (13,660-21,701)
Poland	19,384 (17,959-20,623)	19,093 (17,653-20,278)	93 (67-126)	77,876 (62,903-88,665)	62,597 (50,510-71,127)	44,449 (42,417-45,884)	5,541 (4,987-6,232)	19,012 (16,665-21,976)	23,321 (20,556-25,689)	22,895 (20,113-25,174)	42 (31-49)	76,343 (56,940-89,857)	67,588 (50,346-79,555)	23,789 (22,033-25,036)	17,187 (15,513-19,061)	17,115 (14,168-21,516)

Romania	21,265 (20,496-22,307)	19,998 (19,279-20,920)	105 (87-127)	78,717 (74,696-81,810)	63,878 (60,511-66,448)	46,064 (45,295-46,681)	6,086 (5,531-6,915)	20,499 (17,773-24,719)	24,793 (23,370-26,472)	23,620 (22,198-25,361)	49 (46-51)	77,175 (72,819-80,732)	68,747 (64,833-71,963)	24,678 (24,081-25,220)	17,940 (16,422-19,952)	17,598 (14,183-22,675)
Serbia	19,144 (17,354-20,530)	19,148 (17,321-20,512)	88 (64-120)	77,472 (58,500-90,571)	61,990 (46,502-72,526)	45,288 (43,050-46,826)	5,661 (5,091-6,454)	19,728 (16,987-23,992)	19,296 (15,209-24,990)	19,111 (15,073-25,259)	37 (24-47)	75,683 (47,771-95,222)	66,663 (42,045-83,962)	18,221 (6,858-42,932)	13,585 (9,257-19,568)	12,977 (9,470-18,159)
Slovakia	19,551 (18,013-20,783)	19,180 (17,662-20,380)	95 (69-133)	78,005 (61,009-88,696)	62,792 (49,386-71,422)	44,678 (42,447-46,089)	5,545 (4,984-6,307)	18,689 (16,219-22,589)	23,458 (20,448-26,006)	22,938 (20,188-25,382)	43 (32-50)	76,471 (57,011-89,528)	67,766 (50,458-79,481)	23,906 (22,211-25,107)	17,247 (15,567-19,314)	16,869 (13,763-21,485)
Slovenia	19,531 (18,096-20,798)	19,027 (17,517-20,208)	94 (69-130)	77,940 (60,979-88,316)	62,693 (49,202-71,129)	44,760 (42,407-46,317)	5,530 (4,965-6,322)	18,858 (16,234-22,629)	23,260 (20,435-25,916)	22,829 (20,088-25,256)	43 (32-50)	76,406 (57,339-90,235)	67,676 (50,722-79,911)	23,912 (22,036-25,334)	17,141 (15,513-19,062)	17,040 (13,728-21,582)

Region	Age-Adjusted Prevalence		Prevalence by age range (per 100,000 population)						Age-Adjusted Prevalence		Prevalence by age range (per 100,000 population)					
Country	1990	2010	Neonatal	Post-neonatal	1-4 years	5-14 years	15-59 years	60+ years	1990	2010	Neonatal	Post-neonatal	1-4 years	5-14 years	15-59 years	60+ years
Europe, Eastern	20,011 (19,114-20,894)	19,687 (18,790-20,537)	152 (115-199)	81,002 (74,579-85,773)	67,522 (62,341-71,225)	45,518 (43,749-46,947)	5,617 (5,104-6,243)	19,039 (17,054-21,892)	30,681 (29,386-32,138)	30,287 (29,042-31,772)	76 (69-81)	79,541 (71,996-85,022)	71,720 (64,833-76,560)	33,055 (32,494-33,753)	24,648 (23,529-26,184)	24,355 (21,568-28,280)
Belarus	19,857 (18,711-21,044)	19,509 (18,333-20,669)	145 (102-203)	80,714 (70,653-87,382)	67,074 (59,218-72,317)	44,871 (42,264-46,671)	5,494 (4,869-6,401)	19,211 (16,582-23,443)	30,493 (28,734-32,583)	30,072 (28,498-32,009)	70 (60-76)	79,044 (67,644-86,811)	71,134 (61,036-77,991)	32,554 (31,929-33,203)	24,502 (23,093-26,482)	24,741 (20,976-30,601)
Estonia	20,308 (19,306-21,333)	19,636 (18,608-20,641)	148 (106-210)	80,851 (71,284-86,778)	67,286 (59,677-71,892)	45,533 (43,155-47,209)	5,579 (4,994-6,370)	19,569 (16,840-23,362)	30,924 (29,351-33,012)	30,234 (28,666-32,028)	72 (62-78)	79,200 (67,975-86,603)	71,316 (61,449-77,803)	32,923 (32,302-33,671)	24,665 (23,250-26,531)	24,917 (20,981-30,902)
Latvia	19,793 (18,610-20,958)	19,623 (18,539-20,800)	145 (102-207)	80,729 (71,016-87,026)	67,097 (59,494-71,944)	45,518 (43,057-47,210)	5,575 (4,944-6,415)	19,472 (16,749-23,541)	30,439 (28,822-32,281)	30,175 (28,588-31,952)	70 (59-77)	79,061 (66,588-87,036)	71,153 (59,962-78,075)	32,915 (32,270-33,618)	24,621 (23,158-26,452)	24,809 (20,987-30,104)
Lithuania	19,789 (18,652-20,941)	19,470 (18,309-20,475)	144 (102-202)	80,678 (71,762-87,050)	67,018 (59,694-72,008)	44,116 (41,663-45,763)	5,490 (4,920-6,224)	19,516 (16,819-23,339)	30,439 (28,861-32,272)	30,026 (28,546-31,764)	69 (60-76)	79,003 (67,091-86,723)	71,085 (60,602-77,849)	32,194 (31,577-32,862)	24,487 (23,003-26,262)	24,682 (20,634-30,474)
Moldova	20,030 (19,016-20,856)	20,529 (19,626-21,375)	168 (120-231)	81,811 (73,895-87,170)	68,722 (62,651-72,863)	45,826 (43,722-47,244)	6,420 (5,833-7,130)	19,936 (17,970-22,393)	35,998 (34,825-37,227)	36,404 (35,283-37,593)	107 (96-113)	82,614 (73,327-88,191)	75,396 (67,297-80,257)	39,860 (39,292-40,555)	30,755 (29,697-31,974)	30,781 (27,958-34,419)
Russia	20,125 (19,055-21,200)	19,730 (18,682-20,755)	154 (106-215)	81,102 (72,872-86,851)	67,677 (61,454-72,088)	45,816 (43,596-47,413)	5,643 (4,993-6,453)	18,887 (16,536-22,722)	30,650 (29,111-32,524)	30,209 (28,767-32,112)	78 (69-84)	79,666 (69,898-86,204)	71,861 (63,293-77,535)	33,088 (32,528-33,783)	24,554 (23,172-26,581)	24,110 (20,551-29,696)
Ukraine	19,719 (18,730-21,102)	19,531 (18,609-20,826)	144 (111-221)	80,690 (76,232-84,421)	67,036 (63,354-70,161)	44,770 (43,374-46,599)	5,509 (4,905-6,548)	19,263 (16,472-23,731)	30,352 (28,743-32,481)	30,088 (28,505-32,100)	69 (65-73)	79,016 (73,796-83,484)	71,101 (66,377-75,144)	32,496 (31,592-34,361)	24,497 (22,924-26,695)	24,523 (20,602-30,298)
Europe, Western	14,206 (8,628-31,749)	13,865 (8,722-38,620)	46 (43-49)	62,144 (5,078-158,824)	56,424 (12,809-335,629)	34,016 (28,038-59,520)	2,729 (2,519-2,925)	11,662 (10,513-12,834)	17,786 (12,143-33,558)	17,621 (11,966-35,172)	3 (1-1)	74,301 (9,969-406,656)	63,468 (10,414-237,548)	16,556 (13,625-20,491)	12,286 (11,326-13,300)	11,866 (10,404-13,476)
Andorra	14,317 (7,598-43,528)	14,243 (8,024-44,380)	48 (20-123)	74,803 (637-825,042)	56,939 (315-339,253)	34,802 (18,284-45,475)	2,713 (2,100-4,308)	11,731 (8,365-17,509)	18,083 (6,374-63,230)	18,005 (6,491-63,813)	1 (0-2)	74,697 (662-606,904)	63,970 (368-354,705)	17,034 (2,914-63,879)	12,635 (7,553-24,206)	12,232 (8,832-17,765)
Austria	14,435 (8,263-25,586)	14,402 (8,324-34,374)	48 (39-60)	79,016 (1,185-1,803)	57,086 (484-365,843)	34,634 (29,593-38,911)	2,756 (2,454-3,141)	11,751 (8,919-16,246)	18,074 (8,883-40,797)	17,961 (9,451-46,796)	1 (1-1)	74,880 (1,085-843,524)	64,119 (533-259,054)	16,995 (10,382-35,707)	12,515 (9,700-16,203)	12,291 (8,841-17,453)
Belgium	14,376 (8,382-19,119)	14,291 (8,504-19,936)	48 (42-55)	74,981 (1,256-1,708)	57,023 (592-152,641)	34,849 (28,199-40,466)	2,757 (2,482-3,074)	11,904 (9,406-15,260)	18,063 (10,779-27,574)	18,057 (10,663-30,502)	1 (1-1)	74,747 (1,210-428,353)	64,051 (743-131,456)	17,058 (11,056-23,880)	12,650 (11,031-14,641)	12,271 (9,609-15,883)
Cyprus	14,472 (10,730-19,025)	14,318 (10,167-19,248)	49 (42-56)	74,960 (39,742-155,299)	57,165 (32,394-79,085)	34,087 (25,599-43,856)	2,693 (1,978-3,402)	11,391 (9,305-14,365)	18,444 (15,268-21,500)	17,939 (14,517-21,603)	1 (1-1)	74,852 (37,132-117,954)	64,192 (37,036-85,445)	16,826 (14,520-19,615)	12,577 (11,115-14,372)	11,848 (9,356-15,396)

Region	Age-Adjusted Prevalence		Prevalence by age range (per 100,000 population)						Age-Adjusted Prevalence		Prevalence by age range (per 100,000 population)					
Country	1990	2010	Neonatal	Post-neonatal	1-4 years	5-14 years	15-59 years	60+ years	1990	2010	Neonatal	Post-neonatal	1-4 years	5-14 years	15-59 years	60+ years
Denmark	14,371 (8,095-25,729)	13,090 (8,302-38,596)	48 (39-59)	1,451 (1,175-1,773)	57,019 (480-415,609)	34,764 (30,104-38,611)	2,785 (2,459-3,176)	11,277 (8,326-15,203)	15,408 (7,371-37,020)	15,470 (7,395-42,491)	1 (1-1)	74,795 (1,088-937,492)	64,049 (536-253,418)	12,759 (7,725-19,781)	10,149 (7,746-13,464)	9,268 (6,837-13,299)
Finland	14,470 (8,366-28,816)	14,377 (8,381-40,002)	48 (38-62)	76,100 (1,146-1,863)	57,143 (463-440,255)	34,875 (29,110-38,810)	2,815 (2,512-3,197)	11,342 (9,011-14,642)	18,204 (9,866-40,907)	18,169 (9,728-48,274)	1 (1-1)	74,767 (1,058-980,836)	64,160 (509-295,241)	17,085 (8,268-41,609)	12,736 (10,403-15,604)	12,240 (9,486-16,084)
France	14,447 (8,471-26,009)	14,366 (8,349-32,427)	49 (43-55)	79,009 (1,281-1,651)	57,179 (531-326,934)	35,238 (31,713-38,621)	2,745 (2,482-3,059)	11,611 (9,253-14,665)	18,089 (10,636-36,704)	18,012 (10,505-41,945)	1 (1-1)	74,842 (1,193-851,590)	64,207 (604-215,534)	17,229 (12,593-27,193)	12,593 (10,798-14,765)	11,837 (9,306-15,003)
Germany	14,810 (8,821-50,939)	13,377 (8,712-71,158)	50 (43-57)	1,475 (1,279-1,685)	57,432 (509-882,507)	34,875 (32,547-36,982)	2,923 (2,613-3,302)	12,847 (10,170-16,340)	18,597 (10,016-44,859)	18,413 (10,703-55,250)	1 (1-1)	74,848 (1,182-726,784)	64,414 (552-503,398)	17,144 (10,529-23,119)	13,026 (10,453-16,329)	13,167 (10,134-17,008)
Greece	14,909 (10,243-20,348)	14,539 (9,874-20,963)	51 (44-58)	75,285 (43,942-104,840)	57,642 (27,904-108,947)	35,453 (23,594-59,219)	2,781 (2,279-3,240)	12,656 (10,125-16,600)	18,467 (14,487-23,485)	18,143 (14,303-22,638)	1 (1-1)	75,183 (54,455-102,943)	64,663 (33,451-107,618)	17,350 (14,706-20,026)	12,720 (10,983-14,857)	12,326 (9,368-16,413)
Iceland	14,427 (8,758-37,580)	14,315 (8,462-26,445)	48 (35-67)	74,948 (1,070-241,585)	57,079 (475-204,928)	34,881 (25,267-41,898)	2,720 (2,412-3,064)	11,710 (9,882-13,813)	18,312 (10,208-31,904)	18,207 (10,240-35,651)	1 (1-1)	74,792 (1,019-475,930)	64,107 (556-172,989)	17,072 (7,130-33,395)	12,937 (11,156-14,983)	12,165 (10,145-14,645)
Ireland	14,432 (8,775-37,825)	14,287 (8,286-22,943)	48 (37-62)	74,973 (1,116-1,976)	57,064 (486-195,515)	35,164 (26,451-42,431)	2,651 (2,354-3,021)	11,217 (8,837-14,504)	18,284 (9,949-31,966)	18,183 (9,564-37,920)	1 (1-1)	74,789 (1,052-565,088)	64,095 (558-172,467)	17,162 (7,209-33,056)	13,065 (10,970-15,650)	12,084 (9,218-15,982)
Israel	14,406 (8,972-20,837)	14,305 (9,585-20,674)	48 (42-54)	74,886 (1,375-337,242)	57,058 (22,250-82,183)	35,386 (21,580-47,689)	2,672 (2,313-3,122)	11,614 (9,342-14,968)	18,633 (14,651-22,323)	18,482 (14,317-22,300)	1 (1-1)	74,778 (2,838-133,852)	64,087 (31,575-88,770)	17,254 (14,584-20,081)	13,483 (12,200-15,079)	12,043 (9,214-16,077)
Italy	14,250 (8,238-26,206)	14,175 (9,323-24,892)	48 (42-54)	74,789 (17,084-120,087)	56,919 (40,687-87,429)	34,824 (18,521-92,807)	2,683 (2,343-2,972)	11,572 (9,994-13,475)	17,757 (13,759-24,259)	17,712 (12,426-26,938)	1 (1-1)	74,677 (43,504-97,617)	63,943 (16,243-175,293)	17,036 (13,021-20,690)	12,298 (10,925-13,769)	11,797 (10,171-13,695)
Luxembourg	14,388 (8,078-40,673)	14,321 (8,195-53,732)	48 (36-65)	78,158 (1,081-1,963)	57,025 (434-638,680)	34,704 (29,989-38,250)	2,716 (2,386-3,121)	11,535 (8,628-15,911)	18,072 (8,571-48,870)	17,999 (9,119-49,526)	1 (1-1)	74,814 (981-845,717)	64,055 (469-411,406)	16,972 (8,726-32,638)	12,660 (9,586-16,634)	12,221 (8,819-17,015)
Malta	14,544 (9,191-34,085)	14,356 (8,683-36,567)	49 (36-64)	75,006 (1,097-1,044,489)	57,198 (498-169,784)	34,082 (24,164-41,115)	2,773 (2,419-3,237)	10,957 (8,179-14,780)	18,401 (10,034-30,919)	17,946 (8,814-33,412)	1 (1-1)	74,872 (1,067-394,233)	64,225 (632-159,078)	16,816 (8,168-30,849)	12,457 (9,200-16,653)	11,972 (8,640-17,060)
Netherlands	14,575 (8,537-32,931)	14,439 (8,501-42,716)	49 (42-56)	77,279 (1,267-1,692)	57,251 (513-481,234)	35,174 (32,142-38,077)	2,822 (2,580-3,122)	11,387 (9,139-14,566)	18,239 (10,403-45,871)	18,149 (9,904-39,779)	1 (1-1)	74,749 (1,153-613,080)	64,273 (567-311,258)	17,216 (9,014-31,556)	12,720 (10,643-15,252)	12,204 (9,123-16,607)
Norway	14,311 (7,997-24,301)	12,992 (8,160-32,183)	48 (39-58)	1,446 (1,181-1,770)	56,931 (486-333,651)	34,483 (28,123-39,337)	2,713 (2,497-2,959)	11,333 (9,401-14,109)	18,097 (9,616-40,076)	18,066 (10,081-48,461)	1 (1-1)	74,695 (1,079-1,072,840)	63,960 (540-242,559)	16,933 (10,748-25,482)	12,727 (10,967-14,752)	12,183 (10,298-14,308)
Portugal	14,249 (7,918-30,862)	14,194 (8,108-32,727)	47 (40-56)	76,221 (1,224-1,719)	56,853 (506-328,006)	34,759 (30,257-39,221)	2,649 (2,349-3,003)	11,731 (8,795-16,144)	17,971 (9,658-45,135)	17,796 (9,458-44,004)	1 (1-1)	74,585 (1,113-920,763)	63,883 (564-239,258)	16,955 (11,691-22,550)	12,407 (9,594-16,272)	12,112 (8,988-16,907)
Spain	13,264 (2,831-49,275)	13,093 (2,835-60,632)	52 (44-61)	75,294 (1,279-1,828)	57,659 (508-96,384)	31,878 (3,260-264,085)	2,143 (1,881-2,396)	9,388 (7,800-10,944)	16,411 (8,834-67,734)	16,303 (8,719-51,024)	23 (1-1)	75,187 (1,171-197,021)	64,695 (539-514,153)	14,732 (9,038-20,539)	10,939 (9,488-12,535)	10,300 (8,397-12,912)
Sweden	14,386 (8,244-24,635)	14,400 (8,283-30,413)	48 (40-57)	79,690 (1,213-1,732)	57,040 (501-299,934)	35,129 (29,623-39,443)	2,768 (2,474-3,159)	11,725 (8,826-16,637)	18,217 (9,927-35,916)	18,141 (10,213-40,236)	1 (1-1)	74,732 (1,106-779,271)	64,067 (555-206,209)	17,170 (11,301-26,908)	12,775 (10,550-15,877)	12,236 (9,085-17,168)
Switzerland	14,347 (8,072-23,139)	14,330 (8,361-27,264)	48 (39-57)	74,827 (1,195-1,725)	56,999 (501-255,653)	34,601 (29,175-38,710)	2,783 (2,493-3,092)	11,790 (9,689-14,252)	18,033 (9,521-35,703)	17,995 (10,084-40,899)	1 (1-1)	74,801 (1,105-785,810)	64,036 (569-196,874)	16,989 (11,537-24,764)	12,585 (10,509-14,845)	12,277 (9,749-15,369)

United Kingdom	13,471 (10,457-17,469)	13,300 (10,348-17,698)	32 (28-35)	71,594 (1,175-251,575)	52,293 (27,667-70,887)	30,760 (29,868-31,767)	2,899 (2,742-3,075)	11,556 (10,517-12,795)	16,991 (13,642-19,868)	16,481 (13,030-19,302)	0 (0-0)	71,571 (2,368-119,745)	59,488 (31,583-80,719)	15,360 (13,144-17,421)	11,458 (10,270-12,772)	10,794 (9,196-12,872)
Latin America, Andean	34,505 (33,704-35,481)	29,612 (28,891-30,525)	767 (708-838)	88,573 (87,513-89,977)	80,298 (79,221-81,612)	61,840 (60,672-63,292)	12,531 (12,026-13,092)	32,228 (29,997-35,268)	41,219 (39,525-43,033)	37,774 (36,062-39,343)	483 (475-492)	87,325 (86,062-88,733)	82,091 (80,873-83,478)	41,800 (40,858-42,900)	31,832 (29,554-33,492)	30,539 (27,327-34,549)
Bolivia	36,322 (35,108-37,758)	30,532 (29,246-32,056)	1,420 (1,271-1,598)	90,657 (87,893-94,880)	84,338 (81,552-88,719)	62,679 (59,248-67,396)	13,212 (12,236-14,383)	32,315 (29,598-35,869)	46,547 (44,593-48,664)	42,479 (40,530-44,627)	969 (942-1,002)	88,765 (85,854-92,973)	85,058 (82,083-89,587)	46,772 (43,775-50,513)	36,711 (34,472-38,992)	35,281 (31,548-40,902)
Ecuador	38,359 (37,231-39,793)	31,690 (30,772-32,843)	571 (500-648)	87,778 (86,423-89,536)	78,901 (77,597-80,523)	63,952 (62,872-65,256)	14,935 (14,212-15,803)	35,199 (32,205-39,597)	44,922 (42,926-47,049)	40,304 (38,595-42,234)	323 (319-327)	86,259 (84,795-87,986)	80,473 (79,047-82,138)	44,585 (43,646-45,719)	34,771 (32,722-36,773)	33,640 (29,503-39,978)
Peru	32,143 (31,256-33,313)	28,253 (27,465-29,348)	580 (503-672)	88,071 (87,326-88,958)	79,293 (78,557-80,208)	60,438 (59,683-61,221)	11,133 (10,539-11,910)	30,694 (27,839-35,131)	37,857 (35,335-40,279)	34,948 (32,380-37,069)	349 (344-355)	87,237 (86,376-88,240)	81,645 (80,827-82,621)	38,394 (37,718-39,110)	28,817 (24,978-31,037)	27,658 (23,511-33,927)
Latin America, Central	32,856 (31,782-34,023)	28,841 (22,927-52,944)	176 (161-193)	81,698 (79,365-84,278)	68,603 (66,626-70,660)	63,110 (34,863-199,380)	12,994 (12,098-14,611)	30,406 (24,579-39,580)	31,284 (26,776-37,553)	28,605 (24,268-39,984)	87 (86-88)	80,066 (77,324-82,986)	72,419 (69,995-75,043)	29,935 (18,216-88,545)	23,277 (19,710-28,157)	22,082 (18,592-27,228)
Region	Age-Adjusted Prevalence		Prevalence by age range (per 100,000 population)						Age-Adjusted Prevalence		Prevalence by age range (per 100,000 population)					
Country	1990	2010	Neonatal	Post-neonatal	1-4 years	5-14 years	15-59 years	60+ years	1990	2010	Neonatal	Post-neonatal	1-4 years	5-14 years	15-59 years	60+ years
Colombia	45,826 (44,253-47,613)	41,809 (40,298-43,401)	190 (163-220)	82,629 (78,267-87,686)	69,973 (66,388-74,336)	74,425 (71,916-77,557)	27,069 (25,839-28,349)	47,816 (44,696-51,705)	43,478 (41,472-45,635)	40,765 (38,906-42,878)	98 (95-101)	81,383 (76,456-86,627)	73,964 (69,597-78,837)	45,821 (43,780-48,361)	35,745 (33,969-37,743)	34,838 (31,146-40,055)
Costa Rica	26,384 (25,119-27,909)	25,631 (24,352-27,042)	132 (105-166)	80,083 (75,130-85,330)	66,101 (61,818-70,963)	58,396 (55,420-62,773)	9,650 (8,917-10,513)	29,048 (26,108-33,068)	25,235 (22,185-29,240)	24,453 (21,558-27,941)	60 (57-63)	78,011 (72,057-84,172)	69,948 (64,754-75,940)	24,918 (15,904-37,396)	19,052 (15,888-22,943)	17,969 (13,999-23,328)
El Salvador	45,307 (43,303-47,565)	40,144 (38,415-42,173)	134 (108-163)	80,319 (73,861-88,867)	66,395 (60,847-74,267)	72,039 (71,149-73,113)	25,855 (23,780-28,202)	46,987 (42,711-52,314)	30,413 (27,037-34,584)	27,078 (24,200-31,105)	57 (55-58)	76,763 (69,305-84,962)	68,478 (61,716-76,918)	28,821 (24,106-32,914)	21,939 (18,569-25,982)	20,638 (16,712-26,090)
Guatemala	46,745 (44,448-49,216)	39,466 (37,464-41,703)	287 (234-351)	84,617 (78,527-94,414)	73,408 (66,855-82,820)	70,286 (65,970-76,232)	24,775 (22,897-26,829)	44,253 (40,784-48,164)	35,758 (31,543-42,372)	30,794 (27,207-35,014)	158 (156-160)	83,326 (76,789-93,388)	76,598 (69,724-86,615)	32,275 (20,630-49,935)	25,782 (21,877-30,232)	22,918 (18,633-28,123)
Honduras	33,679 (32,502-35,062)	25,672 (24,650-26,817)	309 (250-384)	84,808 (82,758-87,289)	73,807 (71,995-76,291)	58,517 (56,500-60,716)	8,836 (8,193-9,636)	28,105 (25,151-32,294)	31,332 (28,951-33,560)	26,256 (22,636-31,172)	144 (142-146)	82,403 (80,010-84,865)	75,474 (73,256-78,036)	27,315 (17,552-35,301)	20,564 (16,700-26,118)	18,966 (14,333-26,479)
Mexico	26,530 (25,462-27,710)	22,438 (10,809-71,696)	145 (123-170)	80,737 (79,636-81,670)	67,121 (66,251-67,859)	57,908 (186-344,210)	6,079 (4,632-9,180)	21,708 (11,263-38,746)	27,072 (19,690-37,839)	24,274 (16,512-47,453)	69 (68-70)	79,173 (77,853-80,296)	71,346 (70,173-72,342)	24,156 (2,406-147,302)	18,855 (12,430-28,512)	17,949 (12,205-26,514)
Nicaragua	34,866 (33,922-36,208)	30,455 (29,574-31,685)	202 (163-248)	82,657 (80,553-84,392)	70,163 (68,545-71,586)	63,315 (62,600-64,052)	14,296 (13,638-15,231)	34,831 (31,613-39,651)	29,918 (24,877-35,710)	27,079 (21,384-33,871)	101 (98-103)	80,878 (78,372-82,823)	73,449 (71,241-75,144)	28,113 (8,227-54,304)	21,746 (17,637-26,641)	20,011 (13,376-29,458)
Panama	30,297 (28,840-31,987)	28,631 (27,740-29,903)	152 (125-186)	80,973 (77,999-83,362)	67,505 (65,118-69,415)	62,002 (61,070-62,887)	12,630 (11,910-13,642)	32,377 (29,327-37,186)	33,090 (28,902-38,002)	31,919 (26,486-36,608)	72 (69-74)	79,032 (75,555-81,739)	71,150 (68,070-73,570)	35,547 (31,953-38,309)	26,614 (18,809-32,347)	25,316 (19,706-33,340)
Venezuela	29,636 (28,569-30,886)	27,566 (26,495-28,763)	149 (127-174)	80,909 (77,492-84,543)	67,406 (64,623-70,618)	60,864 (59,152-62,918)	11,487 (10,805-12,288)	30,575 (28,011-34,323)	27,619 (23,945-33,511)	26,221 (23,457-29,523)	71 (68-73)	78,966 (74,926-83,137)	71,073 (67,436-74,901)	27,632 (19,230-38,055)	20,817 (18,277-23,789)	19,086 (14,763-25,229)
Latin America, Southern	16,763 (15,942-17,599)	16,312 (15,470-17,246)	364 (319-422)	86,815 (85,570-88,074)	76,335 (75,261-77,427)	35,939 (32,726-38,878)	2,888 (2,662-3,178)	12,207 (10,239-14,682)	22,284 (20,932-23,775)	21,541 (20,245-22,884)	214 (206-223)	86,892 (85,489-88,295)	80,223 (78,934-81,542)	20,087 (17,891-22,882)	14,976 (13,706-16,468)	14,271 (11,850-17,441)
Argentina	17,144 (16,272-18,042)	16,610 (15,720-17,646)	439 (378-516)	88,052 (86,831-89,373)	78,541 (77,407-79,692)	36,285 (33,253-39,440)	2,941 (2,694-3,264)	12,440 (10,310-15,485)	23,428 (22,175-24,831)	22,573 (21,389-24,038)	268 (257-280)	88,493 (87,104-89,873)	82,373 (81,088-83,703)	21,231 (20,348-22,213)	15,913 (14,708-17,315)	15,083 (12,136-19,186)

Chile	15,731 (14,629-17,032)	15,442 (14,376-16,533)	186 (157-221)	83,798 (82,112-85,136)	71,025 (69,705-72,114)	34,599 (30,040-38,162)	2,690 (2,374-3,237)	11,272 (8,670-14,900)	19,287 (16,411-22,838)	18,736 (15,856-22,045)	85 (84-87)	82,993 (80,926-84,666)	75,038 (73,181-76,506)	16,417 (8,170-27,722)	12,573 (9,963-16,009)	11,721 (8,536-16,438)
Uruguay	16,944 (16,080-17,816)	16,607 (15,793-17,390)	214 (169-263)	84,566 (82,070-86,404)	72,312 (70,342-73,770)	37,579 (35,140-39,392)	3,288 (2,972-3,748)	13,639 (11,431-16,806)	22,995 (21,554-24,698)	22,466 (21,207-23,908)	102 (99-104)	83,922 (80,735-86,185)	76,274 (73,545-78,256)	21,965 (21,293-22,557)	16,248 (14,902-17,789)	15,329 (12,466-19,492)
Latin America, Tropical	30,214 (29,103-31,343)	27,004 (25,971-28,124)	201 (172-232)	83,090 (80,276-86,153)	70,870 (68,406-73,908)	59,816 (57,624-62,356)	10,588 (10,024-11,222)	29,928 (27,192-33,430)	30,649 (28,061-33,418)	28,420 (25,251-32,559)	83 (79-86)	79,786 (75,136-84,328)	72,048 (68,169-75,983)	31,004 (26,455-35,780)	22,782 (19,222-27,128)	21,499 (17,605-26,950)
Brazil	30,271 (29,151-31,415)	26,990 (25,941-28,126)	200 (170-232)	83,075 (80,240-86,261)	70,847 (68,358-73,978)	59,793 (57,561-62,408)	10,575 (10,004-11,228)	29,926 (27,126-33,504)	30,589 (27,968-33,392)	28,303 (25,060-32,487)	82 (78-85)	79,735 (74,963-84,440)	71,985 (67,990-75,985)	30,820 (26,155-35,720)	22,664 (19,023-27,123)	21,420 (17,473-26,934)
Paraguay	28,088 (27,108-29,187)	27,405 (26,386-28,542)	231 (198-267)	83,375 (81,082-85,938)	71,347 (69,437-73,868)	60,383 (58,412-62,899)	10,996 (10,379-11,722)	30,008 (27,382-33,674)	32,902 (31,172-34,893)	32,123 (30,251-34,259)	101 (99-102)	80,799 (78,029-83,987)	73,361 (70,924-76,151)	35,445 (33,609-37,759)	26,759 (24,663-28,662)	24,953 (21,230-30,454)
North Africa / Middle East	33,579 (32,602-34,610)	28,691 (27,704-29,721)	294 (278-310)	85,267 (81,136-89,407)	74,454 (71,061-77,794)	59,925 (58,147-61,791)	12,588 (12,245-12,968)	30,177 (28,590-31,992)	43,485 (42,367-44,642)	39,715 (38,599-40,834)	231 (219-242)	84,447 (79,858-88,742)	78,021 (73,819-81,919)	44,502 (43,708-45,358)	34,276 (33,471-35,096)	33,072 (31,316-35,119)
Algeria	29,628 (28,414-30,811)	25,384 (24,226-26,631)	176 (150-205)	84,699 (79,488-89,080)	73,583 (69,534-77,122)	55,654 (53,211-57,885)	9,200 (8,746-9,700)	26,633 (24,150-30,221)	40,236 (38,692-42,061)	36,820 (35,452-38,669)	165 (152-177)	83,375 (77,406-88,759)	76,648 (71,461-81,440)	40,578 (39,689-41,555)	31,421 (30,393-32,786)	30,335 (27,051-35,769)

Region	Age-Adjusted Prevalence		Prevalence by age range (per 100,000 population)						Age-Adjusted Prevalence		Prevalence by age range (per 100,000 population)					
Country	1990	2010	Neonatal	Post-neonatal	1-4 years	5-14 years	15-59 years	60+ years	1990	2010	Neonatal	Post-neonatal	1-4 years	5-14 years	15-59 years	60+ years
Bahrain	27,637 (25,961-29,462)	24,848 (23,176-26,579)	276 (241-314)	84,323 (74,299-93,061)	72,946 (65,698-79,572)	54,601 (50,531-58,440)	7,928 (7,358-8,553)	24,897 (22,583-28,342)	38,686 (36,623-40,757)	36,413 (34,533-38,507)	156 (128-182)	82,931 (71,696-93,280)	76,123 (66,575-84,523)	40,023 (38,582-41,742)	31,153 (29,664-32,839)	29,620 (26,476-34,056)
Egypt	38,620 (37,339-40,026)	33,987 (32,792-35,305)	143 (125-165)	84,586 (78,509-90,188)	73,089 (68,228-77,789)	65,334 (63,611-67,168)	18,526 (17,866-19,278)	36,622 (34,413-39,495)	48,775 (47,268-50,527)	45,137 (43,514-46,788)	218 (202-232)	85,781 (80,562-90,289)	79,545 (74,918-83,882)	49,835 (48,691-51,095)	40,163 (38,843-41,564)	38,587 (35,500-42,835)
Iran	34,883 (33,742-36,247)	25,819 (24,716-26,932)	341 (287-401)	85,425 (80,123-89,994)	74,792 (70,552-78,547)	55,678 (53,083-58,063)	9,362 (8,807-10,106)	28,455 (26,276-31,293)	44,158 (42,813-45,606)	37,159 (35,916-38,511)	203 (190-214)	84,228 (78,358-89,060)	77,673 (72,501-81,905)	40,694 (39,842-41,693)	31,616 (30,574-32,774)	30,986 (28,394-34,475)
Iraq	32,387 (31,276-33,701)	30,355 (29,244-31,625)	354 (309-405)	85,640 (80,947-89,415)	75,163 (71,357-78,251)	61,305 (59,459-63,020)	14,333 (13,626-15,120)	31,824 (29,094-36,153)	42,329 (40,805-44,283)	40,806 (39,349-42,537)	214 (202-225)	84,486 (79,755-88,811)	77,997 (73,912-81,833)	45,031 (44,020-46,118)	35,747 (34,586-37,199)	34,354 (30,614-40,058)
Jordan	26,495 (25,199-27,899)	24,078 (22,772-25,395)	193 (158-230)	82,417 (74,165-89,343)	69,752 (63,151-75,047)	54,305 (51,239-56,993)	8,117 (7,622-8,639)	25,341 (22,468-29,286)	39,637 (37,903-41,574)	37,657 (35,997-39,582)	87 (75-95)	79,247 (68,502-88,093)	71,468 (61,832-78,909)	42,416 (41,418-43,470)	32,480 (31,323-33,856)	31,929 (27,965-37,759)
Kuwait	25,799 (24,787-26,916)	23,006 (22,060-24,106)	239 (208-279)	83,574 (80,176-86,414)	71,677 (68,950-74,000)	53,531 (51,580-55,308)	6,526 (6,096-7,047)	24,205 (21,434-28,212)	34,014 (32,677-35,730)	31,778 (30,544-33,352)	131 (125-136)	82,055 (78,419-85,469)	75,048 (71,888-78,045)	34,632 (33,823-35,561)	26,524 (25,455-27,869)	24,678 (21,478-29,955)
Lebanon	23,818 (22,606-25,092)	23,602 (22,526-24,877)	220 (189-258)	83,120 (77,957-87,628)	70,914 (66,806-74,481)	52,584 (50,317-54,767)	7,934 (7,426-8,595)	25,089 (22,320-29,268)	35,635 (34,062-37,412)	35,295 (33,783-36,989)	121 (112-128)	81,650 (75,889-86,727)	74,531 (69,527-78,951)	38,508 (37,658-39,452)	29,875 (28,582-31,340)	29,024 (25,161-34,202)
Libya	25,986 (22,823-28,695)	25,348 (22,266-27,981)	217 (178-263)	84,021 (60,095-103,077)	72,431 (55,579-86,070)	56,216 (48,570-62,473)	9,078 (8,350-9,889)	26,215 (23,511-29,889)	37,539 (34,401-40,343)	36,799 (34,164-39,502)	144 (72-196)	82,576 (54,261-104,269)	75,694 (52,399-93,463)	40,882 (39,211-42,598)	31,570 (30,047-33,245)	30,120 (26,642-34,831)
Morocco	33,359 (31,981-34,880)	29,013 (27,738-30,359)	285 (243-331)	84,492 (78,026-89,898)	73,234 (68,004-77,472)	60,581 (58,366-62,761)	13,031 (12,263-13,874)	31,254 (28,293-35,217)	42,501 (40,948-44,364)	39,630 (38,151-41,519)	150 (135-162)	82,726 (74,784-89,567)	75,876 (68,850-81,713)	43,759 (42,826-44,784)	34,434 (33,257-36,042)	33,433 (29,870-39,088)
Oman	36,002 (34,861-37,386)	27,450 (26,432-28,574)	485 (426-548)	87,048 (83,854-90,039)	77,662 (74,959-80,160)	55,583 (54,027-57,139)	10,916 (10,294-11,605)	27,655 (25,326-31,058)	59,259 (57,590-61,333)	53,415 (51,709-55,402)	312 (298-324)	86,115 (82,675-89,422)	80,282 (77,233-83,176)	59,158 (58,034-60,468)	48,876 (47,454-50,413)	48,811 (44,523-55,691)

Palestine	26,811 (25,276-28,300)	24,716 (23,260-26,074)	147 (111-192)	80,753 (66,733-90,974)	67,157 (56,359-75,043)	55,481 (52,557-57,748)	9,259 (8,555-10,073)	25,317 (22,540-29,194)	38,269 (36,367-40,382)	36,478 (34,733-38,319)	71 (55-83)	78,872 (62,210-91,027)	70,980 (56,200-81,805)	40,442 (39,545-41,541)	31,742 (30,453-33,302)	29,775 (25,887-35,498)
Qatar	24,887 (23,674-26,167)	23,312 (22,108-24,592)	240 (202-286)	83,580 (77,659-88,341)	71,686 (67,127-75,390)	53,605 (50,530-56,176)	6,457 (5,953-7,052)	22,266 (19,770-26,049)	36,652 (35,065-38,646)	35,100 (33,527-36,986)	131 (121-140)	82,061 (75,585-87,409)	75,056 (69,390-79,699)	38,934 (37,890-40,126)	29,865 (28,550-31,478)	28,112 (24,428-33,384)
Saudi Arabia	33,320 (31,838-34,774)	26,039 (24,733-27,437)	326 (285-367)	85,203 (78,889-90,988)	74,424 (69,694-78,841)	56,691 (53,838-59,607)	9,621 (9,056-10,240)	27,289 (24,967-30,305)	42,987 (41,259-44,855)	37,411 (35,744-39,333)	193 (170-211)	83,968 (76,188-90,464)	77,354 (70,692-82,917)	41,316 (40,032-42,711)	32,064 (30,807-33,561)	30,980 (27,824-35,513)
Syria	32,836 (31,623-34,201)	27,472 (26,270-28,832)	332 (281-386)	85,280 (79,416-90,151)	74,551 (69,904-78,429)	58,038 (55,618-60,266)	11,634 (10,982-12,390)	28,993 (26,184-33,342)	42,616 (41,056-44,643)	38,507 (37,039-40,217)	196 (181-208)	84,058 (77,466-89,750)	77,464 (71,763-82,499)	42,367 (41,343-43,539)	33,159 (31,956-34,622)	32,062 (28,430-37,168)
Tunisia	26,507 (25,187-27,908)	23,099 (21,667-24,443)	270 (232-312)	84,218 (76,632-90,106)	72,766 (66,731-77,438)	51,985 (47,940-55,122)	7,403 (6,916-7,958)	24,098 (21,438-27,880)	34,366 (32,758-36,072)	31,487 (30,095-33,038)	152 (136-164)	82,808 (74,153-89,609)	75,975 (68,373-81,757)	33,799 (32,864-34,883)	25,798 (24,618-27,252)	24,832 (21,640-29,157)
Turkey	29,933 (29,076-30,858)	24,271 (23,436-25,203)	293 (256-333)	84,634 (81,428-87,195)	73,473 (70,951-75,599)	53,777 (52,057-55,329)	8,361 (7,913-8,957)	24,998 (22,883-27,418)	40,364 (39,339-41,547)	35,888 (34,885-36,994)	168 (162-173)	83,298 (79,926-86,252)	76,557 (73,597-79,167)	39,257 (38,590-40,051)	30,367 (29,522-31,358)	29,345 (26,776-32,489)
United Arab Emirates	31,718 (30,375-33,171)	27,059 (25,703-28,433)	322 (278-375)	85,118 (77,386-91,731)	74,283 (68,268-79,392)	56,878 (54,099-59,584)	9,542 (8,981-10,276)	25,958 (23,563-29,678)	35,179 (33,544-36,864)	31,670 (30,197-33,454)	189 (169-205)	83,869 (75,167-90,928)	77,235 (69,802-83,431)	33,770 (32,769-34,916)	26,159 (25,083-27,502)	24,539 (21,582-29,020)
Yemen	51,819 (50,507-53,312)	52,764 (51,432-54,275)	576 (514-647)	89,798 (86,051-93,272)	82,360 (79,055-85,502)	77,715 (76,287-79,304)	40,050 (39,064-41,124)	57,535 (54,651-61,330)	56,456 (54,903-58,199)	57,095 (55,621-58,777)	646 (600-686)	88,918 (84,981-92,491)	84,661 (80,777-88,152)	61,550 (60,375-62,845)	52,985 (51,740-54,403)	51,621 (48,235-56,543)
Region	Age-Adjusted Prevalence		Prevalence by age range (per 100,000 population)						Age-Adjusted Prevalence		Prevalence by age range (per 100,000 population)					
Country	1990	2010	Neonatal	Post-neonatal	1-4 years	5-14 years	15-59 years	60+ years	1990	2010	Neonatal	Post-neonatal	1-4 years	5-14 years	15-59 years	60+ years
North America, High Income	13,521 (4,446-37,125)	13,439 (4,473-34,424)	20 (18-22)	66,666 (867-120,869)	45,900 (610-82,062)	35,790 (9,245-137,920)	2,728 (2,470-2,990)	11,046 (9,350-13,021)	16,149 (10,846-22,065)	16,063 (10,351-22,290)	0 (0-0)	64,890 (697-197,688)	50,912 (3,331-83,574)	15,551 (8,977-21,962)	11,806 (10,573-13,199)	10,899 (9,213-12,925)
Canada	13,967 (8,893-31,219)	13,817 (8,826-32,553)	37 (33-41)	72,817 (1,142-1,006,732)	54,052 (649-95,924)	34,526 (26,822-41,573)	2,640 (2,350-2,956)	10,139 (8,146-12,356)	19,087 (14,313-23,635)	18,929 (14,277-23,140)	0 (0-0)	72,182 (1,130-172,982)	60,296 (12,906-91,765)	19,524 (18,354-20,583)	13,698 (11,761-15,367)	12,347 (9,824-15,233)
United States	13,478 (3,951-38,554)	13,412 (4,045-35,125)	18 (16-21)	66,118 (829-19,106)	45,195 (485-81,367)	35,905 (6,945-147,354)	2,738 (2,462-3,017)	11,157 (9,265-13,250)	15,833 (10,359-21,992)	15,779 (9,866-22,219)	0 (0-0)	64,244 (631-199,867)	50,104 (1,534-83,621)	15,193 (8,029-22,219)	11,595 (10,299-13,127)	10,731 (8,914-12,930)
Oceania	39,406 (36,251-43,204)	30,127 (26,645-34,668)	468 (422-521)	86,736 (80,061-94,916)	77,093 (70,648-85,213)	68,448 (58,942-81,149)	11,789 (9,842-14,034)	31,170 (27,405-35,976)	46,802 (44,041-49,879)	41,191 (38,167-44,483)	257 (232-282)	84,882 (77,009-94,542)	78,655 (71,180-88,007)	45,853 (42,336-50,474)	36,017 (33,170-38,781)	33,726 (30,442-37,342)
Federated States of Micronesia	28,959 (26,756-31,332)	24,615 (18,892-31,022)	181 (138-236)	81,984 (76,016-88,357)	69,092 (64,058-74,371)	61,578 (30,170-89,218)	7,304 (6,356-8,458)	25,418 (20,024-32,940)	40,432 (38,330-42,653)	36,671 (34,741-38,938)	76 (69-81)	79,010 (69,949-86,893)	71,168 (62,814-78,576)	40,683 (38,274-43,733)	31,645 (29,899-33,766)	30,661 (26,760-36,014)
Fiji	25,481 (21,806-29,846)	23,454 (19,287-28,550)	289 (223-364)	84,556 (78,338-92,825)	73,352 (67,498-81,409)	60,856 (38,185-88,956)	6,519 (5,501-7,778)	16,639 (14,122-19,421)	36,371 (33,545-39,418)	33,988 (31,467-36,898)	118 (113-122)	81,347 (73,623-90,851)	74,180 (67,081-84,274)	37,377 (33,439-42,268)	28,565 (26,051-31,379)	26,686 (23,274-31,176)
Kiribati	27,001 (23,353-30,663)	23,704 (17,909-33,980)	279 (189-419)	84,345 (79,108-89,023)	72,995 (68,607-77,369)	59,859 (28,544-117,398)	6,414 (5,555-7,545)	21,069 (16,285-27,556)	38,960 (37,021-41,310)	35,844 (33,946-38,006)	133 (124-139)	81,984 (75,549-87,812)	74,995 (69,134-79,949)	39,470 (37,214-42,929)	30,591 (28,687-32,779)	28,698 (25,040-33,954)
Marshall Islands	23,937 (19,392-30,187)	23,221 (18,798-29,306)	249 (169-374)	83,764 (75,800-93,427)	72,009 (65,039-80,152)	59,147 (36,033-92,068)	6,184 (5,231-7,327)	19,983 (16,888-23,974)	36,209 (33,617-38,788)	35,359 (32,891-38,063)	117 (108-122)	81,296 (72,178-91,815)	74,110 (66,461-84,431)	38,998 (34,939-44,673)	30,167 (27,850-32,881)	28,174 (24,488-32,449)
Papua New Guinea	44,745 (41,175-48,810)	32,294 (28,346-37,135)	514 (456-584)	87,304 (79,791-96,614)	78,116 (70,727-87,846)	70,470 (59,989-82,954)	13,405 (11,086-16,061)	36,180 (31,133-42,652)	50,241 (47,109-53,688)	42,888 (39,406-46,627)	289 (260-318)	85,630 (76,810-96,447)	79,658 (71,074-90,218)	47,447 (43,326-52,771)	37,729 (34,407-41,012)	35,862 (31,982-40,181)

Samoa	22,240 (16,345-29,590)	21,562 (15,624-29,154)	241 (181-323)	83,598 (79,822-86,634)	71,728 (68,670-74,142)	55,086 (23,126-95,659)	5,388 (4,551-6,686)	18,548 (13,041-26,918)	29,388 (27,597-31,616)	28,520 (26,800-30,328)	123 (116-127)	81,556 (76,427-85,453)	74,454 (69,836-77,745)	30,234 (28,802-31,620)	22,859 (20,998-24,638)	21,550 (17,775-27,220)
Solomon Islands	32,466 (28,575-36,792)	26,781 (23,305-31,863)	349 (307-395)	85,512 (76,567-96,303)	74,949 (65,973-84,955)	64,895 (47,915-86,928)	8,334 (6,443-10,277)	28,417 (25,072-32,311)	43,051 (40,254-46,201)	38,718 (35,808-41,664)	178 (143-211)	83,400 (72,563-96,471)	76,694 (66,237-88,761)	42,963 (38,958-47,778)	33,542 (31,051-36,318)	31,580 (28,190-35,713)
Tonga	23,113 (17,046-36,128)	21,918 (16,439-32,860)	232 (175-308)	83,402 (78,429-88,039)	71,397 (67,540-74,935)	56,526 (26,653-120,790)	5,526 (4,818-6,393)	19,985 (15,028-27,059)	41,952 (40,187-44,316)	40,546 (38,856-42,708)	107 (102-112)	80,866 (75,168-85,936)	73,527 (68,356-78,264)	45,649 (43,816-47,992)	35,527 (33,807-37,620)	35,734 (31,022-42,540)
Vanuatu	29,085 (26,183-32,009)	25,880 (22,064-31,702)	347 (295-407)	85,729 (77,626-97,082)	75,211 (68,138-85,221)	63,380 (44,374-88,787)	7,743 (6,564-9,142)	26,661 (23,039-30,530)	45,894 (44,013-47,990)	43,037 (40,197-46,362)	191 (176-204)	84,178 (75,033-96,437)	77,638 (69,315-88,423)	48,266 (43,580-54,220)	37,865 (35,259-40,970)	36,497 (32,577-41,158)
Sub-Saharan Africa, Central	50,693 (46,998-54,062)	47,827 (44,148-51,281)	4,300 (3,960-4,620)	94,562 (90,266-97,924)	90,749 (86,286-94,721)	72,422 (67,337-76,432)	34,075 (30,901-37,380)	50,412 (45,631-54,426)	56,812 (51,919-60,832)	54,466 (49,457-58,519)	4,181 (3,692-4,647)	92,978 (88,288-96,845)	90,614 (85,693-94,650)	58,464 (53,191-62,675)	49,670 (44,514-53,862)	48,053 (43,141-52,210)
Angola	56,259 (52,882-59,462)	39,428 (35,904-42,860)	1,385 (1,249-1,530)	92,174 (87,471-96,427)	86,915 (81,940-91,453)	68,349 (63,023-73,140)	23,864 (20,894-26,916)	41,138 (36,567-45,467)	55,569 (50,573-59,799)	42,394 (36,752-47,173)	1,312 (977-1,602)	90,295 (85,077-95,203)	87,327 (82,005-92,462)	45,188 (39,097-50,028)	37,469 (31,789-42,389)	33,491 (28,088-38,861)
Central African Republic	45,711 (42,256-48,810)	46,664 (43,338-49,769)	8,867 (8,028-9,620)	96,146 (92,369-98,974)	93,320 (89,134-96,940)	73,021 (68,116-77,709)	31,590 (28,611-34,285)	49,766 (45,389-53,948)	54,036 (49,362-57,792)	54,613 (50,007-58,275)	10,929 (9,998-11,854)	95,587 (91,540-98,768)	93,897 (89,788-97,443)	58,128 (53,712-61,985)	49,569 (44,851-53,281)	47,534 (42,601-51,935)
Congo	35,012 (29,843-40,227)	32,265 (27,118-38,104)	2,563 (2,320-2,827)	93,543 (88,430-97,593)	89,335 (83,968-94,572)	61,642 (55,845-67,717)	15,356 (10,477-21,925)	33,034 (25,880-39,355)	64,463 (58,978-69,100)	62,697 (57,154-67,262)	2,625 (1,997-3,198)	92,589 (87,321-97,391)	90,298 (84,667-95,791)	67,200 (61,548-71,713)	58,604 (52,897-63,237)	57,686 (52,278-62,995)
Democratic Republic of the Congo	51,298 (47,640-54,590)	52,154 (48,514-55,437)	5,007 (4,533-5,437)	95,245 (90,962-98,529)	91,875 (87,377-95,853)	74,543 (69,587-78,526)	39,258 (36,024-42,433)	55,418 (50,855-59,215)	57,248 (52,428-61,221)	57,896 (53,076-61,796)	4,742 (4,224-5,241)	93,642 (89,024-97,355)	91,446 (86,534-95,474)	62,299 (57,136-66,588)	53,172 (48,243-57,231)	51,770 (46,966-55,966)

Region	Age-Adjusted Prevalence		Prevalence by age range (per 100,000 population)						Age-Adjusted Prevalence		Prevalence by age range (per 100,000 population)					
Country	1990	2010	Neonatal	Post-neonatal	1-4 years	5-14 years	15-59 years	60+ years	1990	2010	Neonatal	Post-neonatal	1-4 years	5-14 years	15-59 years	60+ years
Equatorial Guinea	44,687 (40,592-48,586)	29,063 (24,647-35,230)	3,114 (2,780-3,429)	93,419 (88,832-98,095)	89,125 (83,968-94,349)	58,436 (53,697-64,893)	12,472 (8,141-19,991)	29,110 (21,323-35,367)	53,391 (48,318-57,650)	41,430 (35,948-45,918)	2,836 (2,228-3,391)	92,374 (87,103-97,825)	90,031 (84,072-95,879)	44,308 (38,913-48,762)	35,558 (30,026-39,910)	33,477 (26,783-39,082)
Gabon	33,824 (29,260-38,292)	30,513 (25,881-35,887)	1,671 (1,506-1,841)	92,698 (87,555-96,987)	87,871 (82,575-92,637)	59,582 (53,817-65,275)	13,797 (9,494-19,634)	31,368 (24,863-36,989)	44,943 (38,902-49,873)	42,210 (35,814-47,438)	1,831 (1,401-2,225)	91,624 (86,279-96,075)	89,120 (83,589-94,304)	45,410 (38,822-50,588)	36,310 (29,790-41,837)	34,859 (28,744-40,133)
Sub-Saharan Africa, East	51,383 (49,509-53,161)	44,440 (42,646-46,171)	2,614 (2,515-2,714)	93,626 (90,601-96,021)	89,249 (86,117-92,033)	70,065 (67,132-72,772)	30,000 (28,676-31,359)	46,861 (44,619-49,183)	49,114 (46,131-51,775)	43,359 (40,445-45,987)	3,397 (3,194-3,598)	92,575 (89,308-95,365)	90,062 (86,673-92,939)	46,161 (42,800-48,994)	37,918 (35,063-40,584)	34,793 (31,892-37,591)
Burundi	41,245 (38,067-44,322)	44,831 (42,341-47,321)	1,938 (1,773-2,116)	93,485 (89,561-96,633)	89,234 (85,277-92,780)	72,227 (68,052-76,029)	29,644 (27,682-31,724)	47,629 (44,330-50,780)	38,342 (33,591-42,903)	39,789 (36,268-43,188)	2,431 (2,228-2,623)	92,518 (88,308-95,930)	90,189 (85,971-94,091)	40,721 (36,685-44,385)	34,552 (31,005-37,966)	30,005 (26,558-33,664)
Comoros	43,231 (41,381-45,241)	42,328 (40,648-44,103)	3,584 (3,291-3,967)	93,754 (90,335-98,658)	89,672 (85,664-95,181)	70,476 (66,385-76,123)	26,716 (25,221-28,443)	44,589 (41,179-48,361)	43,746 (41,758-45,858)	42,858 (40,805-45,219)	3,402 (3,237-3,588)	92,809 (89,138-97,838)	90,491 (86,261-95,765)	45,498 (42,043-50,128)	37,564 (35,360-40,129)	33,978 (30,637-38,356)
Djibouti	43,132 (41,962-44,345)	46,753 (45,609-48,116)	1,286 (1,168-1,438)	93,863 (92,387-95,412)	89,851 (88,288-91,505)	73,105 (71,576-74,907)	32,104 (31,282-33,109)	49,406 (46,827-52,911)	43,759 (42,253-45,367)	45,899 (44,339-47,587)	2,393 (2,320-2,469)	92,923 (91,311-94,513)	90,616 (88,889-92,294)	48,924 (47,442-50,536)	40,426 (39,021-41,937)	37,384 (34,306-41,743)
Eritrea	63,102 (61,834-64,520)	54,596 (53,342-55,955)	2,570 (2,416-2,747)	95,146 (93,159-96,691)	91,717 (89,705-93,427)	78,132 (76,442-79,925)	40,970 (40,011-42,082)	58,137 (55,576-61,423)	59,065 (57,248-60,927)	52,268 (50,467-54,210)	4,168 (4,016-4,323)	94,300 (92,042-96,072)	92,284 (90,075-94,186)	55,663 (53,753-57,544)	47,527 (45,811-49,271)	44,291 (41,431-48,509)
Ethiopia	49,116 (47,966-50,410)	39,459 (38,280-40,696)	614 (567-663)	91,035 (88,688-93,674)	85,217 (82,806-87,975)	65,020 (62,807-67,485)	25,130 (24,267-26,064)	40,963 (38,715-43,963)	42,273 (40,185-44,414)	34,224 (31,952-36,394)	1,140 (1,091-1,187)	89,879 (87,312-92,511)	86,893 (84,243-89,780)	35,732 (33,272-38,203)	28,199 (25,985-30,346)	25,377 (22,553-29,054)

Kenya	44,912 (43,397-46,463)	37,776 (36,272-39,209)	2,363 (2,190-2,551)	94,495 (92,045-96,494)	90,788 (88,264-92,913)	66,639 (63,944-69,256)	21,295 (20,319-22,242)	39,565 (37,207-42,428)	47,199 (44,923-49,345)	41,477 (39,110-43,747)	3,606 (3,460-3,756)	93,724 (90,914-95,855)	91,563 (88,709-93,867)	43,735 (41,062-46,201)	35,999 (33,749-38,140)	32,580 (29,668-36,136)
Madagascar	48,499 (45,690-51,367)	48,330 (45,718-50,817)	690 (622-764)	91,331 (86,856-95,619)	84,983 (80,299-89,533)	73,492 (69,389-77,039)	35,027 (32,984-37,059)	52,741 (49,482-56,016)	48,851 (44,763-52,781)	48,534 (44,851-51,921)	839 (638-1,020)	90,644 (85,605-95,776)	87,021 (81,960-92,183)	52,325 (48,153-56,258)	43,623 (40,057-47,019)	41,317 (37,598-45,091)
Malawi	54,811 (52,011-57,523)	45,770 (43,031-48,410)	4,357 (3,925-4,816)	95,406 (91,205-98,275)	92,121 (87,896-95,772)	72,603 (68,610-76,693)	30,689 (28,408-32,789)	48,474 (45,064-52,023)	53,486 (49,407-57,069)	46,268 (42,253-49,800)	5,185 (4,686-5,667)	94,305 (89,912-97,696)	92,297 (87,868-95,966)	49,230 (44,790-53,015)	40,981 (37,005-44,354)	37,422 (33,306-41,510)
Mauritius	23,308 (16,615-44,424)	18,465 (13,165-32,651)	347 (235-494)	85,885 (80,483-89,682)	75,603 (71,728-78,780)	45,441 (17,539-124,261)	4,037 (3,339-4,920)	10,023 (7,774-13,309)	25,659 (21,649-30,615)	21,237 (17,519-26,617)	212 (193-225)	84,341 (77,463-88,851)	77,834 (72,166-81,614)	19,809 (10,970-32,365)	14,892 (11,209-19,959)	13,688 (10,457-18,533)
Mozambique	51,852 (49,054-54,504)	42,171 (39,406-44,806)	2,702 (2,444-2,963)	94,488 (89,803-97,801)	90,779 (86,019-94,777)	68,485 (64,171-72,358)	27,213 (25,012-29,349)	44,044 (40,677-47,415)	58,451 (54,311-62,071)	51,119 (47,148-54,807)	3,745 (3,324-4,149)	93,677 (88,574-97,266)	91,506 (86,433-95,456)	54,755 (50,386-58,719)	46,003 (41,882-49,751)	43,920 (40,204-47,692)
Rwanda	46,703 (44,554-48,863)	39,440 (37,335-41,701)	387 (347-431)	88,979 (84,894-93,536)	81,062 (76,616-86,289)	68,609 (64,745-73,020)	24,101 (22,608-25,760)	41,809 (38,946-45,436)	37,683 (34,280-40,880)	32,559 (28,699-36,082)	549 (484-606)	87,568 (83,157-92,743)	82,932 (78,339-88,365)	34,469 (30,262-38,179)	26,698 (22,887-30,166)	24,260 (20,147-28,512)
Seychelles	22,013 (17,829-28,193)	20,603 (16,741-25,825)	177 (119-250)	81,864 (67,247-95,801)	68,903 (58,246-78,951)	54,340 (31,892-84,349)	4,950 (4,053-5,850)	15,170 (12,599-18,368)	27,206 (24,120-30,588)	25,428 (22,002-29,401)	77 (59-90)	79,146 (58,913-96,181)	71,318 (54,553-85,705)	27,090 (22,221-33,928)	19,925 (17,441-22,944)	17,990 (14,873-22,682)
Somalia	44,555 (42,742-46,460)	49,970 (48,190-51,878)	1,486 (1,357-1,613)	93,723 (90,601-96,414)	89,621 (86,559-92,540)	75,566 (72,525-78,736)	36,127 (34,637-37,694)	53,568 (50,980-56,678)	44,925 (42,278-47,577)	48,989 (46,212-51,615)	2,420 (2,292-2,553)	92,786 (89,459-95,619)	90,465 (87,100-93,755)	51,983 (48,991-55,047)	44,247 (41,614-46,857)	40,238 (36,998-43,927)
Sudan	55,584 (53,952-57,237)	47,205 (45,618-48,787)	4,990 (4,716-5,293)	95,999 (93,437-97,994)	93,077 (90,655-95,280)	73,441 (70,815-76,180)	32,368 (31,148-33,711)	50,111 (47,563-53,321)	53,346 (51,104-55,603)	46,486 (44,253-48,660)	7,325 (7,048-7,610)	95,409 (92,478-97,600)	93,680 (90,968-96,003)	49,270 (46,717-51,799)	40,963 (38,753-43,113)	37,669 (34,630-41,536)
Tanzania	70,235 (67,493-72,929)	62,503 (59,763-65,232)	2,695 (2,457-2,947)	94,287 (90,187-97,743)	90,504 (86,346-94,344)	82,767 (78,982-86,656)	51,479 (49,167-53,923)	67,271 (63,685-71,235)	57,752 (53,907-61,112)	51,037 (47,065-54,465)	2,779 (2,521-3,043)	92,783 (88,579-96,443)	90,454 (86,016-94,416)	54,366 (50,022-58,104)	46,469 (42,523-49,951)	42,989 (38,999-46,997)
Region	Age-Adjusted Prevalence		Prevalence by age range (per 100,000 population)						Age-Adjusted Prevalence		Prevalence by age range (per 100,000 population)					
Country	1990	2010	Neonatal	Post-neonatal	1-4 years	5-14 years	15-59 years	60+ years	1990	2010	Neonatal	Post-neonatal	1-4 years	5-14 years	15-59 years	60+ years
Uganda	43,463 (41,002-45,732)	37,275 (35,040-39,351)	5,282 (4,803-5,780)	95,200 (91,984-97,882)	91,785 (88,258-95,060)	63,219 (59,438-66,935)	21,855 (20,113-23,527)	37,815 (34,778-40,741)	54,154 (50,329-57,540)	48,653 (45,156-51,773)	5,873 (5,421-6,341)	93,926 (90,346-96,879)	91,775 (87,988-94,983)	52,592 (48,733-56,417)	43,322 (39,832-46,455)	40,715 (36,883-45,064)
Zambia	43,192 (40,820-45,444)	39,315 (37,042-41,629)	2,274 (2,072-2,497)	93,659 (89,714-97,326)	89,518 (85,551-93,846)	65,952 (61,833-70,412)	23,945 (22,210-25,817)	40,621 (37,349-43,637)	43,090 (39,277-46,495)	40,007 (36,189-43,549)	2,844 (2,618-3,064)	92,832 (88,820-96,608)	90,516 (86,132-94,769)	41,453 (36,818-45,414)	34,975 (31,245-38,509)	30,296 (26,109-34,636)
Sub-Saharan Africa, Southern	36,887 (35,471-38,418)	32,156 (30,801-33,695)	638 (578-714)	91,118 (88,253-94,715)	84,924 (82,002-88,523)	61,835 (58,798-65,531)	15,577 (14,726-16,506)	32,663 (30,385-35,473)	42,344 (40,398-44,404)	38,755 (36,744-41,024)	945 (922-968)	89,992 (86,911-93,639)	86,645 (83,631-90,648)	41,946 (39,589-44,703)	32,763 (30,820-34,886)	30,689 (27,871-34,193)
Botswana	39,627 (38,229-41,055)	30,961 (29,725-32,425)	834 (761-917)	91,317 (88,562-94,884)	85,341 (82,334-89,279)	60,082 (56,839-64,186)	14,119 (13,323-14,950)	31,185 (28,776-34,037)	44,030 (42,280-46,021)	37,289 (35,503-39,253)	1,072 (1,047-1,096)	90,443 (87,607-94,007)	87,388 (84,238-91,306)	39,485 (37,231-42,198)	31,188 (29,476-33,034)	29,124 (26,147-33,110)
Lesotho	36,420 (34,662-38,567)	30,807 (28,974-32,842)	643 (525-787)	88,228 (84,409-93,540)	79,666 (75,567-86,123)	66,621 (61,596-73,306)	12,005 (10,883-13,255)	35,708 (31,909-39,903)	40,433 (38,520-42,606)	36,960 (34,962-39,107)	479 (467-494)	87,652 (83,749-93,818)	82,531 (78,504-88,173)	39,923 (36,665-44,418)	31,069 (28,964-33,409)	29,701 (26,529-33,631)
Namibia	44,662 (43,104-46,423)	37,456 (36,011-39,046)	1,934 (1,730-2,141)	92,083 (88,626-96,964)	86,757 (83,047-92,077)	66,151 (62,332-70,601)	21,491 (20,150-22,942)	39,286 (36,545-43,087)	48,487 (46,579-50,630)	42,518 (40,825-44,509)	1,686 (1,622-1,757)	91,151 (87,619-95,629)	88,448 (84,694-93,515)	45,597 (42,576-49,386)	36,827 (34,936-39,008)	34,536 (31,195-39,034)
South Africa	36,270 (34,732-37,893)	30,484 (29,127-32,155)	618 (531-731)	91,079 (87,772-95,648)	84,853 (81,372-89,409)	59,830 (56,383-64,375)	13,789 (12,903-14,759)	30,319 (27,846-33,595)	41,699 (39,739-43,853)	37,329 (35,281-39,718)	933 (916-951)	90,191 (86,596-94,755)	86,897 (83,209-92,148)	39,829 (37,198-43,180)	31,207 (29,182-33,571)	29,244 (26,122-33,525)

Swaziland	32,133 (29,457-35,116)	28,819 (25,946-31,980)	103 (90-118)	85,644 (80,156-92,633)	75,369 (70,242-81,596)	63,602 (57,131-71,091)	11,223 (9,549-13,019)	31,483 (27,221-36,317)	39,644 (36,383-43,137)	37,255 (33,870-40,915)	181 (168-195)	83,855 (77,417-92,272)	77,222 (71,144-85,451)	40,827 (36,991-45,039)	31,930 (28,777-35,321)	30,099 (26,577-34,355)
Zimbabwe	38,186 (36,703-39,863)	39,403 (37,879-41,039)	507 (466-555)	92,021 (88,961-95,433)	86,503 (83,187-90,213)	66,684 (63,736-69,632)	23,972 (22,881-25,131)	42,170 (39,654-45,121)	44,347 (42,046-46,620)	45,117 (42,822-47,455)	987 (940-1,035)	90,116 (86,780-93,792)	87,014 (83,500-91,058)	48,755 (46,168-51,345)	39,553 (37,269-41,840)	37,983 (35,141-41,677)
Sub-Saharan Africa, West	49,300 (45,402-53,028)	43,224 (39,208-47,014)	8,769 (8,333-9,169)	96,159 (91,491-99,225)	93,336 (88,508-96,793)	70,826 (65,722-75,405)	27,652 (24,138-31,256)	44,894 (39,215-49,885)	62,656 (57,382-66,847)	58,523 (53,332-62,597)	9,975 (9,192-10,800)	95,351 (90,383-98,691)	93,611 (88,577-97,326)	62,388 (57,228-66,428)	53,901 (48,666-58,069)	51,876 (46,380-56,711)
Benin	50,093 (46,270-53,563)	42,697 (38,698-46,514)	12,520 (11,460-13,559)	97,211 (92,122-100,217)	95,101 (89,960-98,583)	70,240 (64,708-75,078)	26,839 (23,108-30,518)	44,379 (39,537-48,980)	71,657 (66,398-75,736)	67,533 (62,360-71,596)	14,123 (12,890-15,357)	96,510 (90,823-100,080)	95,063 (89,456-98,878)	71,002 (65,759-75,085)	63,762 (58,545-67,896)	62,503 (57,078-67,090)
Burkina Faso	55,623 (51,929-58,971)	51,861 (48,144-55,200)	34,752 (32,272-37,370)	98,713 (94,729-100,748)	97,541 (93,415-100,031)	76,187 (71,203-81,071)	37,377 (33,802-40,639)	54,422 (49,673-59,061)	63,040 (58,628-66,880)	60,367 (55,900-64,212)	40,170 (37,038-43,265)	98,619 (93,920-101,222)	97,855 (93,576-100,561)	64,048 (59,276-68,319)	55,420 (51,153-59,339)	53,330 (47,914-58,541)
Cameroon	36,542 (32,474-40,464)	33,356 (29,702-37,171)	4,707 (4,246-5,161)	94,925 (90,756-98,153)	91,381 (87,132-95,136)	62,608 (57,336-68,250)	16,406 (13,049-19,853)	33,879 (28,321-38,664)	53,006 (47,991-57,146)	50,564 (46,079-54,299)	3,906 (3,444-4,391)	93,434 (89,158-97,378)	91,237 (86,597-95,460)	54,273 (49,614-58,183)	45,374 (40,762-49,123)	43,260 (38,406-47,831)
Cape Verde	36,585 (35,270-38,097)	30,126 (29,016-31,515)	5,236 (4,602-6,050)	94,734 (93,547-96,189)	91,117 (89,817-92,715)	58,527 (57,092-60,198)	12,867 (11,982-13,911)	33,469 (30,037-38,266)	51,629 (49,891-53,937)	46,478 (44,570-48,718)	4,850 (4,471-5,251)	93,717 (92,541-95,075)	91,580 (90,319-92,986)	49,994 (48,692-51,460)	40,505 (38,746-42,552)	40,641 (35,599-48,236)
Chad	58,163 (56,078-60,393)	50,405 (48,310-52,576)	7,836 (7,271-8,423)	96,288 (93,554-98,688)	93,557 (90,520-96,499)	75,582 (72,321-79,400)	36,223 (34,374-38,187)	53,623 (50,576-57,301)	54,750 (51,899-57,467)	48,571 (45,767-51,276)	8,761 (8,282-9,239)	95,489 (92,379-98,116)	93,802 (90,676-96,770)	51,174 (48,081-54,493)	43,678 (40,844-46,443)	39,360 (35,918-43,204)
Côte d'Ivoire	38,770 (33,194-44,099)	39,100 (33,683-44,181)	4,571 (4,043-5,040)	95,072 (89,343-99,144)	91,606 (85,752-96,222)	67,504 (61,278-73,382)	23,132 (17,769-28,449)	40,499 (33,607-46,217)	53,288 (46,966-58,544)	53,481 (47,074-58,571)	4,825 (3,939-5,670)	94,088 (87,982-98,838)	92,040 (86,187-97,295)	57,493 (51,126-62,838)	48,273 (41,766-53,674)	46,626 (40,053-52,155)
Ghana	46,813 (42,926-50,593)	37,361 (32,877-41,708)	9,516 (8,684-10,308)	96,888 (91,560-100,089)	94,574 (89,214-98,202)	65,826 (59,913-71,084)	20,693 (16,578-24,956)	38,374 (32,693-43,284)	64,576 (59,314-68,833)	58,124 (52,917-62,437)	10,269 (9,248-11,247)	95,641 (89,760-99,248)	93,952 (88,003-97,884)	61,649 (56,020-66,089)	53,542 (48,195-57,961)	51,477 (46,432-56,240)
Guinea	48,806 (44,805-52,698)	45,506 (41,335-49,707)	6,458 (5,926-7,035)	95,992 (90,806-99,439)	93,060 (87,652-97,169)	73,643 (67,478-79,254)	29,994 (26,180-33,909)	48,458 (42,930-53,663)	60,657 (55,175-65,178)	58,257 (52,579-62,975)	8,235 (7,446-9,027)	95,512 (89,764-99,526)	93,841 (88,028-98,305)	61,607 (55,710-66,648)	53,919 (48,223-58,651)	51,209 (45,786-56,367)

Region	Age-Adjusted Prevalence		Prevalence by age range (per 100,000 population)						Age-Adjusted Prevalence		Prevalence by age range (per 100,000 population)					
Country	1990	2010	Neonatal	Post-neonatal	1-4 years	5-14 years	15-59 years	60+ years	1990	2010	Neonatal	Post-neonatal	1-4 years	5-14 years	15-59 years	60+ years
Guinea-Bissau	47,035 (44,672-49,326)	42,599 (40,687-44,544)	5,375 (4,943-5,818)	95,593 (92,876-97,917)	92,415 (89,526-95,055)	70,254 (67,019-73,656)	27,077 (25,542-28,550)	44,421 (41,521-47,524)	59,205 (56,148-62,129)	56,061 (53,349-58,636)	5,951 (5,582-6,310)	94,675 (91,555-97,131)	92,779 (89,923-95,624)	60,101 (57,110-62,813)	51,016 (48,299-53,532)	49,481 (45,981-53,681)
Liberia	41,370 (35,927-46,463)	43,983 (38,985-48,702)	4,346 (3,907-4,811)	95,278 (88,841-99,709)	91,929 (85,726-96,991)	71,496 (64,894-77,297)	28,516 (23,923-33,043)	46,029 (39,970-51,492)	56,296 (49,411-61,870)	58,008 (51,199-63,443)	4,675 (3,799-5,516)	94,316 (87,373-99,516)	92,310 (85,663-97,534)	61,845 (54,790-67,527)	53,589 (46,687-59,178)	51,192 (44,491-57,078)
Mali	53,402 (49,914-56,750)	47,872 (44,426-51,095)	13,368 (12,240-14,435)	97,004 (92,647-99,603)	94,722 (90,376-98,090)	73,971 (69,379-78,471)	32,792 (29,741-35,718)	50,309 (45,818-54,721)	73,317 (68,771-76,945)	70,308 (65,966-73,880)	15,559 (14,328-16,763)	96,247 (91,547-99,183)	94,648 (90,096-98,104)	74,184 (69,777-77,926)	66,701 (62,411-70,373)	65,544 (60,958-70,348)
Mauritania	57,447 (55,986-59,021)	42,710 (41,394-44,077)	5,428 (5,096-5,807)	95,994 (93,806-97,588)	93,068 (90,991-94,910)	70,248 (68,077-72,480)	26,954 (26,020-27,919)	44,018 (41,701-47,090)	66,142 (64,184-68,250)	56,143 (54,170-58,236)	6,513 (6,245-6,782)	95,140 (92,695-96,967)	93,365 (90,995-95,288)	60,112 (58,121-62,021)	51,126 (49,319-53,127)	49,229 (46,200-53,678)
Niger	43,700 (40,873-46,319)	41,999 (39,308-44,564)	12,318 (11,455-13,174)	96,874 (94,009-98,960)	94,534 (91,457-97,046)	71,379 (67,337-75,518)	25,997 (23,706-28,312)	43,097 (39,348-46,609)	56,280 (52,958-59,260)	55,020 (51,709-57,823)	16,648 (15,587-17,761)	96,715 (93,581-99,002)	95,344 (92,314-97,871)	57,909 (54,728-61,016)	50,439 (47,170-53,332)	46,423 (42,600-50,470)
Nigeria	52,186 (48,147-56,122)	44,333 (40,089-48,577)	6,255 (5,748-6,784)	95,853 (90,666-99,333)	92,836 (87,381-96,922)	71,617 (65,906-76,460)	28,892 (25,145-32,821)	46,697 (40,325-52,605)	64,655 (58,750-69,333)	59,336 (53,344-63,993)	6,943 (6,116-7,768)	94,975 (89,465-98,756)	93,157 (87,648-97,469)	63,369 (57,553-68,071)	54,748 (48,758-59,479)	53,075 (46,321-59,144)

Senegal	41,905 (40,181-43,749)	38,393 (36,792-40,056)	7,320 (6,770-7,857)	96,255 (93,875-98,016)	93,480 (91,153-95,741)	66,861 (64,134-69,719)	21,872 (20,696-23,106)	38,823 (36,247-41,736)	67,098 (64,680-69,413)	65,049 (62,734-67,232)	8,412 (8,002-8,821)	96,062 (93,519-98,175)	94,558 (92,035-96,900)	68,812 (66,569-70,967)	60,898 (58,727-62,949)	59,432 (55,751-63,851)
Sierra Leone	55,609 (50,210-60,484)	53,157 (48,262-57,560)	6,214 (5,676-6,790)	96,101 (90,011-99,918)	93,240 (87,046-97,809)	75,792 (69,092-80,975)	40,021 (35,652-44,227)	55,594 (49,933-60,333)	55,614 (47,825-61,992)	53,708 (46,783-59,315)	6,826 (5,924-7,755)	95,258 (88,700-99,632)	93,534 (86,800-98,177)	57,674 (50,444-63,224)	48,394 (41,145-54,368)	45,807 (39,523-51,545)
São Tomé and Príncipe	41,955 (39,408-44,553)	39,493 (37,147-42,115)	2,065 (1,861-2,281)	93,018 (88,403-98,063)	88,129 (83,253-93,515)	67,997 (63,597-72,521)	23,485 (21,599-25,439)	43,308 (39,307-47,613)	50,093 (47,158-52,975)	47,972 (44,827-51,038)	1,596 (1,401-1,780)	92,081 (86,379-97,897)	89,544 (83,659-96,330)	51,910 (48,361-55,919)	42,523 (39,347-45,483)	41,216 (37,190-45,798)
The Gambia	45,070 (43,351-46,737)	38,317 (36,688-40,067)	5,509 (5,108-5,990)	95,438 (93,257-97,365)	92,169 (89,762-94,590)	66,896 (63,829-69,899)	21,958 (20,823-23,168)	38,960 (36,084-42,271)	62,351 (60,036-64,579)	57,760 (55,543-60,030)	5,846 (5,569-6,164)	94,499 (92,113-96,662)	92,557 (90,036-95,075)	62,278 (59,935-64,518)	52,722 (50,646-54,834)	51,438 (47,946-56,088)
Togo	46,048 (41,834-50,233)	44,890 (40,578-48,996)	5,814 (5,234-6,352)	95,605 (90,478-98,969)	92,433 (87,029-96,594)	71,814 (66,212-77,118)	29,575 (25,602-33,512)	47,535 (41,931-52,213)	58,519 (52,899-63,064)	57,693 (51,984-62,293)	6,291 (5,421-7,155)	94,688 (89,396-98,536)	92,796 (87,427-97,145)	61,695 (56,005-66,362)	52,876 (47,089-57,628)	51,537 (45,584-56,958)

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