Global, regional, and national disability-adjusted life years (DALYs) for 306 diseases and injuries and healthy life expectancy (HALE) for 188 countries, 1990–2013: quantifying the epidemiological transition

*GBD 2013 DALYs and HALE Collaborators**

Summary

Background The Global Burden of Disease Study 2013 (GBD 2013) aims to bring together all available epidemiological data using a coherent measurement framework, standardised estimation methods, and transparent data sources to enable comparisons of health loss over time and across causes, age–sex groups, and countries. The GBD can be used to generate summary measures such as disability-adjusted life-years (DALYs) and healthy life expectancy (HALE) that make possible comparative assessments of broad epidemiological patterns across countries and time. These summary measures can also be used to quantify the component of variation in epidemiology that is related to sociodemographic development.

Methods We used the published GBD 2013 data for age-specific mortality, years of life lost due to premature mortality (YLLs), and years lived with disability (YLDs) to calculate DALYs and HALE for 1990, 1995, 2000, 2005, 2010, and 2013 for 188 countries. We calculated HALE using the Sullivan method; 95% uncertainty intervals (UIs) represent uncertainty in age-specific death rates and YLDs per person for each country, age, sex, and year. We estimated DALYs for 306 causes for each country as the sum of YLLs and YLDs; 95% UIs represent uncertainty in YLL and YLD rates. We quantified patterns of the epidemiological transition with a composite indicator of sociodemographic status, which we constructed from income per person, average years of schooling after age 15 years, and the total fertility rate and mean age of the population. We applied hierarchical regression to DALY rates by cause across countries to decompose variance related to the sociodemographic status variable, country, and time.

Findings Worldwide, from 1990 to 2013, life expectancy at birth rose by 6·2 years (95% UI 5·6–6·6), from 65·3 years (65·0–65·6) in 1990 to 71·5 years (71·0–71·9) in 2013, HALE at birth rose by 5·4 years (4·9–5·8), from 56·9 years (54·5–59·1) to 62·3 years (59·7–64·8), total DALYs fell by 3·6% (0·3–7·4), and age-standardised DALY rates per 100 000 people fell by 26·7% (24·6–29·1). For communicable, maternal, neonatal, and nutritional disorders, global DALY numbers, crude rates, and age-standardised rates have all declined between 1990 and 2013, whereas for non-communicable diseases, global DALYs have been increasing, DALY rates have remained nearly constant, and age-standardised DALY rates declined during the same period. From 2005 to 2013, the number of DALYs increased for most specific non-communicable diseases, including cardiovascular diseases and neoplasms, in addition to dengue, food-borne trematodes, and leishmaniasis; DALYs decreased for nearly all other causes. By 2013, the five leading causes of DALYs were ischaemic heart disease, lower respiratory infections, cerebrovascular disease, low back and neck pain, and road injuries. Sociodemographic status explained more than 50% of the variance between countries and over time for diarrhoea, lower respiratory infections, and other common infectious diseases; maternal disorders; neonatal disorders; nutritional deficiencies; other communicable, maternal, neonatal, and nutritional diseases; musculoskeletal disorders; and other non-communicable diseases. However, sociodemographic status explained less than 10% of the variance in DALY rates for cardiovascular diseases; chronic respiratory diseases; cirrhosis; diabetes, urogenital, blood, and endocrine diseases; unintentional injuries; and self-harm and interpersonal violence. Predictably, increased sociodemographic status was associated with a shift in burden from YLLs to YLDs, driven by declines in YLLs and increases in YLDs from musculoskeletal disorders, neurological disorders, and mental and substance use disorders. In most country-specific estimates, the increase in life expectancy was greater than that in HALE. Leading causes of DALYs are highly variable across countries.

Interpretation Global health is improving. Population growth and ageing have driven up numbers of DALYs, but crude rates have remained relatively constant, showing that progress in health does not mean fewer demands on health systems. The notion of an epidemiological transition—in which increasing sociodemographic status brings structured change in disease burden—is useful, but there is tremendous variation in burden of disease that is not associated with sociodemographic status. This further underscores the need for country-specific assessments of DALYs and HALE to appropriately inform health policy decisions and attendant actions.

Funding Bill & Melinda Gates Foundation.

Lancet 2015; 386: 2145–91

Published Online
August 27, 2015
http://dx.doi.org/10.1016/S0140-6736(15)61340-X

See Editorial page 2118

See Comment page 2121

*Collaborators listed at the end of the Article

Correspondence to:
Prof Christopher J L Murray, Institute for Health Metrics and Evaluation, 2301 5th Avenue, Suite 600, Seattle, WA 98121, USA
cjlm@uw.edu

Research in context

Evidence before this study

In 2012, results from the first complete revision of the Global Burden of Disease (GBD) since the first assessment in 1993 became available. This effort was called the GBD 2010 study and reported on disability-adjusted life-years (DALYs) and health-adjusted life expectancy (HALE) by country for 1990 and 2010 based on analyses of an extensive data collection effort to collate all available information on causes of death and disease occurrence in 187 countries. In response to the need for up-to-date information about the health of populations to inform health policy decision making, a decision was made to produce annual updates. The GBD 2013 is the first of these annual updates. In previous papers on the GBD 2013 study, we have documented the new data and new methods used to assess mortality and morbidity by country and over time.

Added value of this study

Here, we present the results for the aggregation of mortality and morbidity in terms of DALYs and HALE by country and for the time period 1990 to 2013. We examined to what extent the changes in DALYs since 1990 by disease and country can be explained by a composite indicator of sociodemographic status, constructed from income per person, years of schooling after age 15 years, median age of the population and total fertility rate. These GBD 2013 results for the period 1990 to 2013 for DALYs and HALE supersede all previously published GBD findings on DALYs and HALE.

Implications of all the available evidence

Numbers of DALYs and crude and age-standardised DALY rates for communicable diseases, maternal, neonatal, and nutritional disorders have decreased since 1990. For non-communicable diseases, the number of DALYs have increased, crude rates have remained stable, and age-standardised rates have decreased. Global health is improving but population increase and ageing are keeping the crude rates of DALYs constant, showing that progress in health does not mean fewer demands on health systems. The epidemiological transition, as quantified using our sociodemographic status indicator, accounts for much of the variation between countries and over time for most communicable, maternal, and neonatal causes but not for many non-communicable causes such as cardiovascular disease. The large variation in burden that is not associated with sociodemographic status emphasises the need for ongoing detailed assessments of DALYs and HALE at the country level to inform health policies.

Introduction

The Global Burden of Disease study 2013 (GBD 2013) seeks to bring together all available epidemiological data using a coherent measurement framework, standardised estimation methods, and transparent data sources to allow comparisons of health loss to be made over time and across causes, age–sex groups, and geographies. The GBD 2013 data for disease and injury incidence and prevalence, years lived with disability (YLDs), causes of death, and years of life lost because of premature mortality (YLLs) for 188 countries provide an opportunity to assess the effect of recent changes in population health by examining summary measures of health loss attributed to specific causes, expressed in DALYs, and summary measures of average population health, expressed as HALE.[1,2] These measures are crucial to track health progress, strengthen policy decisions, assess programme effects and results, and inform health service and research priorities. Such holistic measures of population health, encompassing both disability and mortality levels and patterns in populations, are also attracting interest as part of the discussion around the Sustainable Development Goals .[3–5]

A hallmark of the GBD approach is an emphasis on making national data easier to compare by taking into account the extensive variation that exists in national medical certification and cause of death coding practices and widely varying case definitions and measurement methods used to track the incidence and prevalence of diseases and injuries.[1,2] The GBD not only provides detailed metrics for specific causes, but also generates summary measures, such as DALYs and HALE, which enable comparative assessments of broad epidemiological patterns across countries and different time periods. HALE is a useful summary of overall health for a country and DALYs allow assessment of both premature mortality and non-fatal outcomes by cause. These broad summary measures allow quantification of general trends, such as the epidemiological transition, while also making clear how countries and regions deviate from general patterns.[6–9] The unfolding of the HIV epidemic and the rise of adult mortality, especially among men in Eastern Europe and Central Asia, have called into question the notion of a universal pattern of epidemiological change that occurs with sociodemographic development.[2,10–13] However, the general notion of a shift from communicable to non-communicable causes of disease burden and injuries remains a powerful framework for global and regional health policy debates.[9,14–18] The GBD provides an opportunity to quantify these patterns and explore the extent to which epidemiological change is driven by sociodemographic change, reduction of health risks, improvement of health management, or other local factors.

GBD 2013 results for deaths, YLLs, incidence, prevalence, and YLDs by cause for 1990 to 2013 for 188 countries have already been published.[1,2] In this study we use these GBD 2013 results to calculate DALYs and HALE. These summary metrics are used to characterise broad patterns of lost healthy life and cross-country

variations within these patterns. The GBD 2013 provides a complete re-analysis of each country's data from 1990 to 2013 and thus supersedes all previously published GBD analyses of DALYs and HALE.

Methods

Study design

GBD 2013 uses a hierarchy of causes that organises 306 diseases and injuries into four levels of classification, the rationale for which has been described previously.[2,19] The first level distinguishes three broad categories: first, communicable, maternal, neonatal, and nutritional disorders; second, non-communicable diseases; and third, injuries. Level 2 has 21 mutually exclusive and collectively exhaustive categories, level 3 has 163 categories, and level 4 has 254 categories. The full cause list, including International Classification of Diseases tenth edition (ICD-10) codes, has been reported previously.[1,2] Mortality rates and causes of death for each country–age–sex–year group have been estimated in accordance with some general principles: identification of all available data sources, evaluation of the quality and correction for known bias in each data source, consistent statistical estimation including uncertainty analysis, and cross-validation analysis to assess model performance. Details of data sources and estimation methods used to deal with missing data and multiple measurements for the same country–age–sex–year group have been described previously.[2] Disease and injury incidence and prevalence and computation of YLDs have been estimated in line with similar principles of identification and assessment of the quality of all available sources for 2337 sequelae of the 301 diseases and injuries.[1] The discrepancy between the 306 diseases and injuries for which DALYs are calculated and the 301 diseases and injuries for which YLDs are calculated is attributable to five diseases that cause death but do not cause disability: sudden infant death syndrome, indirect maternal deaths, late maternal deaths, maternal deaths aggravated by HIV/AIDS, and aortic aneurysm. Various statistical estimation methods were used depending on the details of specific diseases, the most common approach being the application of a Bayesian metaregression model, DisMod-MR 2.0.[20] We used alternative methods when the basic susceptible, with disease, and dead states in DisMod-MR 2.0 were insufficient to capture the natural history of a sequela. We aggregated sequelae prevalence into YLDs first by estimating the distribution of comorbidities through microsimulation, and second by using disability weights derived from population-based surveys of the general public to assign disability weights to each sequela and combination of sequelae—details of both steps have been described previously.[1,21]

We used the GBD 2013 results for YLLs[2] and YLDs[1] to calculate DALYs. To calculate HALE, we used YLDs per

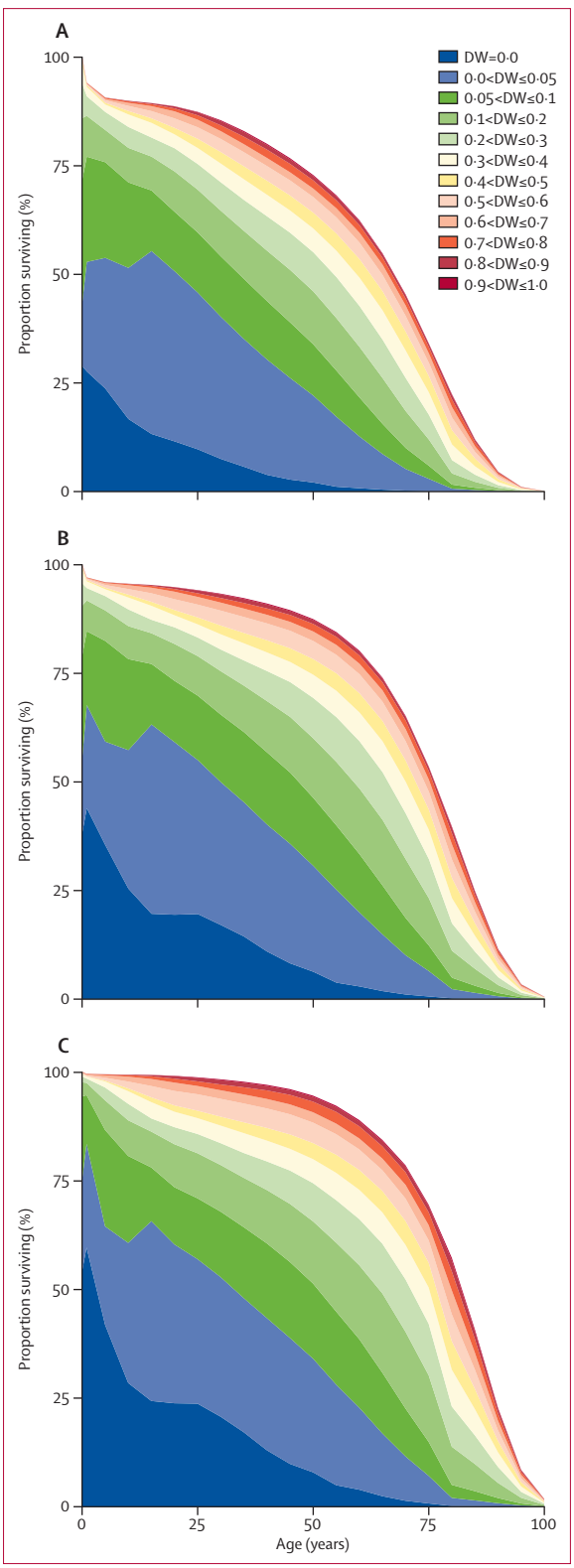


Figure 1: **Survivorship curve stratified by disability weight in 2013**
Health survivorship function showing the fraction of a birth cohort alive at each age exposed to 2013 death rates, with the fraction of time spent at each age by the birth cohort decomposed by level of disability weight. Countries are grouped by socidemographic status into quintiles, including the lowest quintile (A), the three middle quintiles (B), and the highest quintile (C). DW=disability weight.

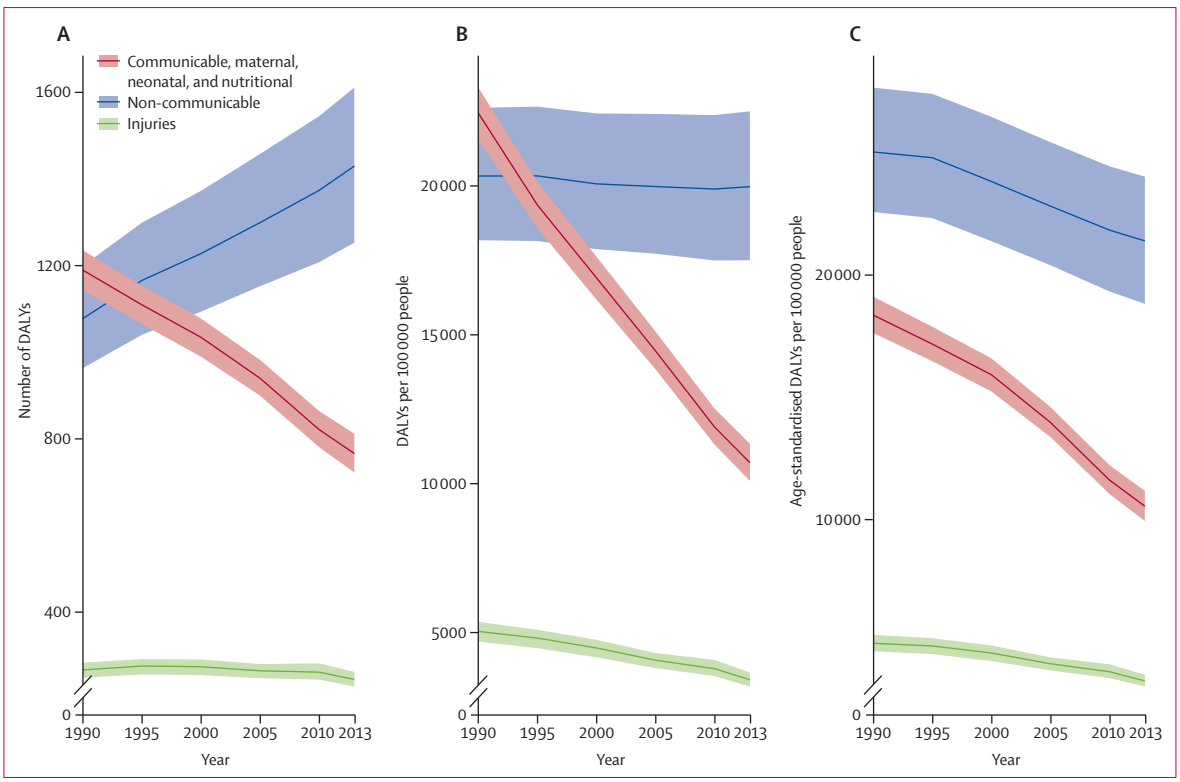


Figure 2: **Total DALYs, crude DALY rates, and age-standardised DALY rates from 1990 to 2013**
Changes in global DALYs caused by communicable, maternal, neonatal, and nutritional disorders, non- communicable diseases, and injuries shown in terms of numbers of DALYs (A), DALY rates per 100 000 people (B), and age-standardised DALY rates per 100 000 people (C). The difference in trends between A and B is caused by population growth and the difference between B and C because of changes in the percentage distribution of the population by age. Shaded areas show 95% uncertainty intervals. DALY=disability-adjusted life-years.

person and life tables.[1,2] We applied decomposition of variance using hierarchical regression to DALY rates by cause.

Years lived with disability

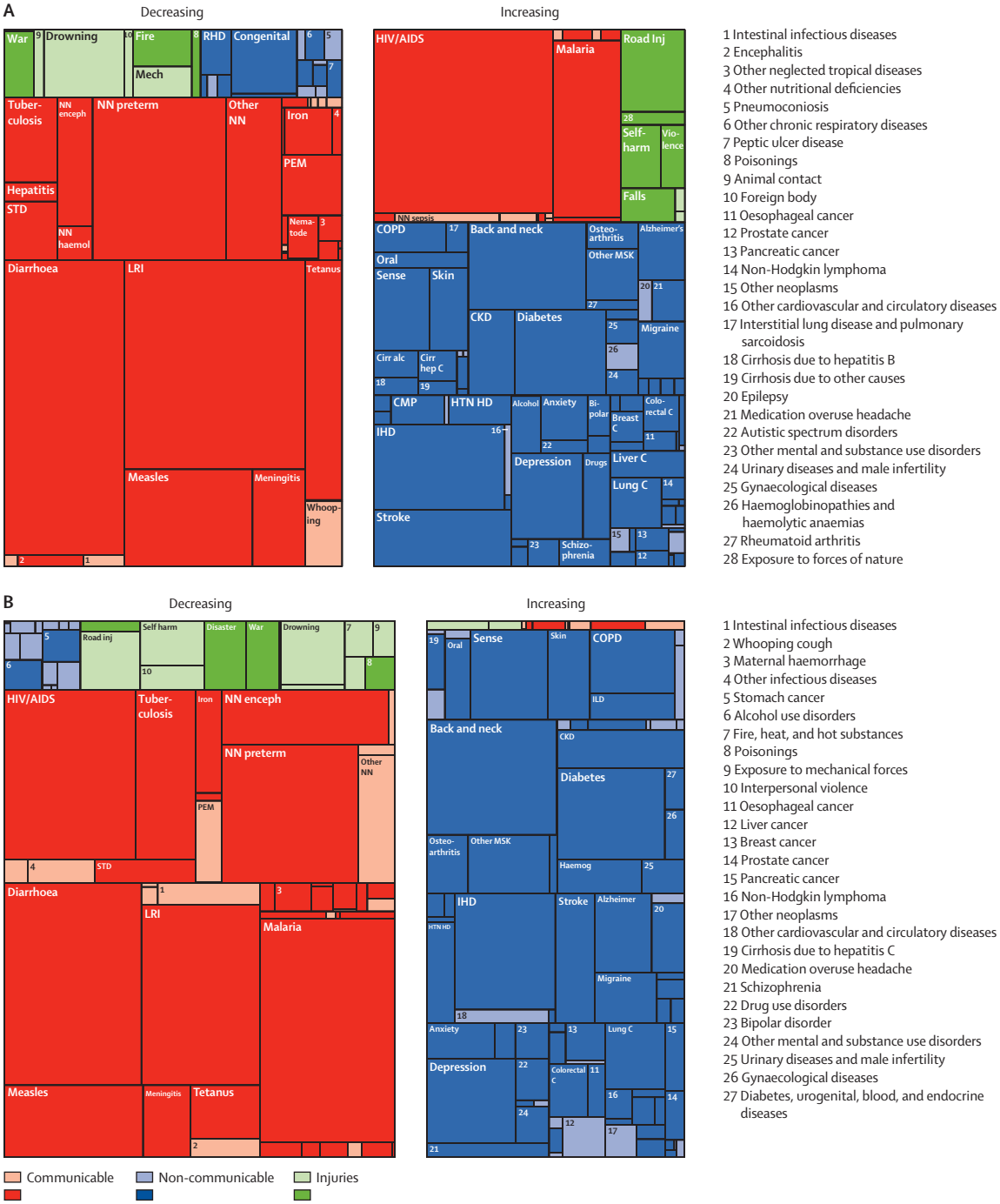
For each year for which YLDs have been estimated (1990, 1995, 2000, 2005, 2010, and 2013), we computed DALYs by adding YLLs and YLDs for each age–sex–country group. We assumed that uncertainty in YLLs is independent of uncertainty in YLDs. We did this by summing the first draw of the 1000 draws for YLLs and YLDs and then repeating for each subsequent draw. We calculated 95% uncertainty intervals (UIs) using the 25th and 975th ordered draw of the DALY uncertainty distribution.

Healthy life expectancy

We calculated HALE in accordance with the methods outlined by Salomon and colleagues.[8] In brief, we used Sullivan's method[22] to incorporate information about average levels of health experienced at different ages into

Figure 3: **Change in DALYs for GBD level 3 causes**
Increasing and decreasing global DALYs for GBD level 3 causes from 1990 to 2005 (A) and 2005 to 2013 (B). Within each tree map, the size of the rectangle for each cause is proportional to the magnitude of the decrease or increase in DALYs for each cause. Dark shading show statistically significant changes and light shading shows changes that are not significant. Unmarked boxes represent causes for which the decrease or increase was less than 1 000 000 DALYs. Table 1 and the appendix (p 4) contains numerical values for each cause. DALY=disability-adjusted life-years. GBD=Global Burden of Disease. Diarrhoea=diarrhoeal diseases. LRI=lower respiratory infections. NN enceph=neonatal encephalopathy due to birth asphyxia and trauma. NN haemol=haemolytic disease and other neonatal jaundice. Other NN=other neonatal disorders. NN preterm=preterm birth complications. Nematode=intestinal nematode infections. Iron=iron-deficiency anaemia. PEM=protein-energy malnutrition. STD=sexually transmitted diseases excluding HIV. TB=tuberculosis. Whooping=whooping cough. NN sepsis=neonatal sepsis and other neonatal infections. Congenital=congenital anomalies. RHD=rheumatic heart disease. Oral=oral disorders. Sense=sense organ diseases. Cirr alc=cirrhosis due to alcohol use. Cirr hep C=cirrhosis due to hepatitis C. CKD=chronic kidney disease. CMP=cardiomyopathy and myocarditis. HTN HD=hypertensive heart disease. IHD=ischaemic heart disease. Stroke=cerebrovascular disease. Diabetes=diabetes mellitus. Alcohol=alcohol use disorders. Anxiety=anxiety disorders. Bipolar=bipolar disorder. Drugs=drug use disorders. Depression=depressive disorders. Other MSK=other musculoskeletal disorders. Back and neck=low back and neck pain. Breast C=breast cancer. Colorectal C=colon and rectum cancer. Liver C=liver cancer. Lung C=tracheal, bronchus, and lung cancer. Alzheimer's=Alzheimer disease and other dementias. COPD=chronic obstructive pulmonary disease. Skin=skin and subcutaneous diseases. Fire=fire, heat, and hot substances. Mech=exposure to mechanical forces. War=collective violence and legal intervention. Violence=interpersonal violence. Road inj=road injuries. Haemog=haemoglobinopathies and haemolytic anaemias. ILD=interstitial lung disease and pulmonary sarcoidosis. Disaster=exposure to forces of nature.

an abridged life table to produce estimates of life expectancy that are adjusted for reductions in functional health status relating to prevalent health conditions. Effectively, the cumulative years lived in an age group in the abridged life table (the life expectancy column) for each country–age–sex group is multiplied by the YLDs per person for that country–age–sex group. Calculation of HALE relies on three inputs from GBD 2013: life tables by sex, country, and year; estimates of the prevalence of 2337 sequelae by age, sex, country and year; and disability weights for 235 unique health states that collectively cover the range of functional health losses and symptoms associated with the 2337 sequelae. Wang and colleagues[2] have described data sources and methods to estimate mortality and life tables, and Vos and colleagues[1] have described these for the measurement of



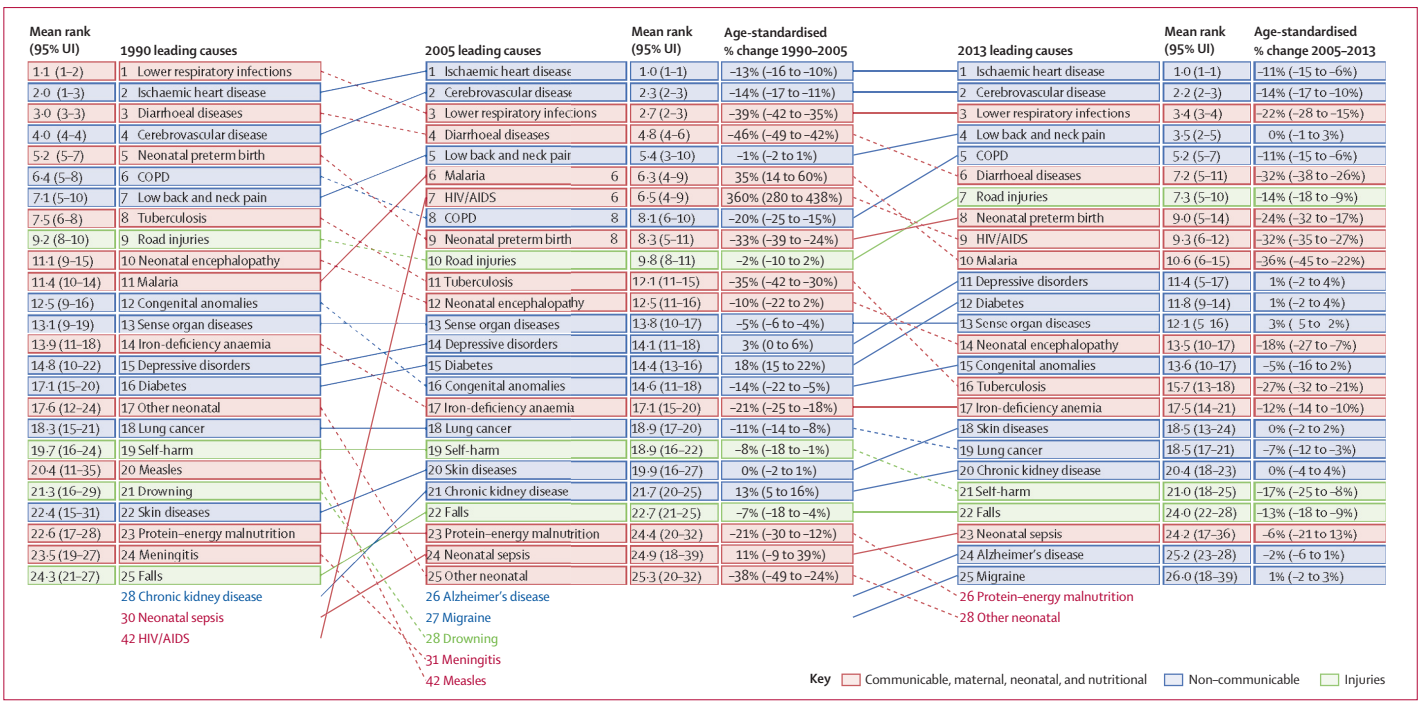


Figure 4: **25 most common GBD level 3 causes of global DALYs for both sexes combined, 1990, 2005, and 2013, with age-standardised median percentage change**
Ranks are based on the number of DALYs. 95% UIs for mean rank are from 1000 draws of DALYs. Communicable, maternal, neonatal, and nutritional disorders causes are shown in red, non-communicable causes in blue, and injuries in green. DALY=disability-adjusted life-years. GBD=Global Burden of Disease. UI=uncertainty interval. COPD=chronic obstructive pulmonary disease.

prevalence of sequelae and disability weights.[1] We combined information about prevalence and disability weights into measures of the overall rate of YLDs per person in each age–sex–country group. We make the strong assumption that uncertainty in YLDs per person is independent of uncertainty in age-specific death rates to calculate uncertainty distributions for HALE.

Decomposition of variance and epidemiological transition

The epidemiological transition is an extension of the notion of the demographic transition. In demographic transition, a characteristic evolution occurs in populations over time towards reduced fertility rates, reduced mortality rates, and an older age distribution of the population. The widely used concept of the epidemiological transition adds the idea that, in addition to these changes, a characteristic change occurs in the contributing causes of death. The epidemiological transition has been broadened to encompass the more general health transition, including both morbidity and mortality. A single variable to characterise countries over time in terms of their demographic and epidemiological status would be crucial to describe the epidemiological transition. Some studies examine associations with income per person, whereas others use variables such as mean age of the population.[23,24] We aimed to construct a single composite variable to represent both demographic status and socioeconomic development to explore the patterns of the epidemiological transition. To construct this sociodemographic status variable, we assessed variables indicative of socioeconomic status and demographic change that were available for all 188 countries from 1990 to 2013. We did not include measures of income inequality, such as the Gini coefficient, because these were not available for all countries for each year. We used principal components analysis (PCA) of the log transformation of income per person (in constant international dollars), average years of schooling of the population after age 15 years, the log of the total fertility rate, and the log of the mean age of the population. The relationship between the PCA variables and DALY rates were highly non-linear, but became linear with respect to the log DALY rates after log transformation of three of the four sociodemographic status component variables. Before using PCA, we normalised each variable to have a mean of zero and a standard deviation of 1·0. Only the first component of the PCA had an eigenvalue greater than 1·0 and the weights were 0·471 for income per person, –0·517 for total fertility rate, 0·495 for education per person, and 0·516 for mean age.[25] As expected, the sign on the total fertility rate was negative, whereas the sign on the other three components was positive. We also tested all possible combinations of the four variables using the same PCA approach to confirm that the principal component of all four was the most predictive of variation in DALY rates by cause. We used the predicted value of the first component for each country–year in the subsequent ANOVA and predictions

	All ages DALYs (thousands)*			Age-standardised DALYs (per 100 000)*		
	2005	2013	Percentage change	2005	2013	Percentage change
All causes	**2 513 239·2 (2 331 974·5 to 2 717 184·5)**	**2 449 810·0 (2 234 094·6 to 2 675 167·6)**	**–2·5 (–4·7 to –0·3)***	**41 072·6 (38 101·1 to 44 409·9)**	**35 523·9 (32 416·1 to 38 774·8)**	**–13·5 (–15·3 to –11·6)***
Communicable, maternal, neonatal, and nutritional diseases	**943 358·6 (903 197·4 to 985 632·0)**	**769 288·8 (725 481·2 to 814 936·0)**	**–18·5 (–21·2 to –15·8)***	**14 031·9 (13 434·2 to 14 662·0)**	**10 606·9 (10 004·2 to 11 234·3)**	**–24·4 (–26·9 to –21·9)***
HIV/AIDS and tuberculosis	**150 304·0 (141 828·2 to 159 539·6)**	**119 179·6 (112 497·7 to 127 584·9)**	**–20·8 (–24·4 to –16·5)***	**2344·3 (2214·0 to 2489·5)**	**1656·0 (1563·5 to 1774·5)**	**–29·5 (–32·6 to –25·6)***
Tuberculosis	59 600·6 (53 405·7 to 64 094·8)	49 816·2 (44 744·3 to 54 313·4)	–16·4 (–22·9 to –9·4)*	964·1 (866·4 to 1035·6)	706·9 (635·9 to 771·7)	–26·7 (–32·3 to –20·5)*
HIV/AIDS	90 703·4 (83 401·7 to 99 132·8)	69 363·4 (64 972·5 to 76 330·2)	–23·9 (–28·1 to –18·5)*	1380·2 (1269·6 to 1507·9)	949·1 (890·0 to 1045·1)	–31·5 (–35·3 to –26·7)*
HIV/AIDS resulting in mycobacterial infection	6573·9 (5371·5 to 8050·8)	4303·1 (3496·7 to 5323·6)	–34·8 (–38·8 to –29·4)*	100·3 (82·0 to 122·8)	58·9 (47·9 to 72·9)	–41·5 (–45·1 to –36·7)*
HIV/AIDS resulting in other diseases	84 129·5 (77 516·6 to 92 482·2)	65 060·3 (60 939·8 to 71 903·6)	–23·0 (–27·3 to –17·6)*	1279·9 (1179·5 to 1404·1)	890·2 (834·3 to 984·9)	–30·7 (–34·6 to –25·9)*
Diarrhoea, lower respiratory, and other common infectious diseases	**316 908·8 (298 964·3 to 335 711·2)**	**249 855·1 (231 222·1 to 269 625·3)**	**–21·1 (–26·0 to –16·4)***	**4762·3 (4499·7 to 5038·0)**	**3488·6 (3231·6 to 3760·2)**	**–26·7 (–31·2 to –22·4)***
Diarrhoeal diseases	99 453·9 (90 724·0 to 108 320·9)	72 796·6 (65 452·9 to 80 756·7)	–26·9 (–33·5 to –19·7)*	1497·5 (1370·2 to 1625·7)	1015·5 (915·5 to 1126·3)	–32·3 (–38·4 to –25·8)*
Intestinal infectious diseases	17 538·4 (9936·1 to 28 497·3)	15 376·5 (8627·8 to 24 958·9)	–12·6 (–22·2 to 1·0)	252·9 (143·5 to 410·7)	210·7 (118·4 to 341·5)	–17·0 (–26·2 to –4·2)*
Typhoid fever	12 863·1 (7058·4 to 21 368·4)	11 127·8 (6013·6 to 18 314·8)	–13·7 (–24·6 to 1·0)	185·4 (101·8 to 307·6)	152·5 (82·6 to 250·5)	–17·9 (–28·3 to –4·0)*
Paratyphoid fever	4150·1 (2271·2 to 6940·7)	3820·5 (2084·1 to 6493·0)	–8·0 (–25·2 to 12·5)	59·8 (32·8 to 100·1)	52·3 (28·6 to 89·0)	–12·5 (–28·8 to 6·7)
Other intestinal infectious diseases	525·2 (460·0 to 598·7)	428·3 (373·2 to 486·9)	–18·4 (–25·3 to –11·4)*	7·7 (6·8 to 8·8)	5·9 (5·1 to 6·7)	–24·2 (–30·6 to –17·7)*
Lower respiratory infections	133 899·9 (124 847·7 to 142 498·1)	113 363·1 (103 083·5 to 122 202·1)	–15·3 (–22·1 to –8·2)*	2043·4 (1912·2 to 2169·8)	1599·1 (1451·9 to 1721·3)	–21·7 (–27·8 to –15·5)*
Upper respiratory infections	2743·4 (1630·3 to 4451·0)	3031·0 (1757·4 to 4934·2)	10·4 (7·3 to 13·4)*	41·3 (24·5 to 66·8)	41·9 (24·3 to 68·2)	1·6 (–1·3 to 4·3)
Otitis media	1751·5 (1102·5 to 2735·2)	1806·5 (1129·8 to 2812·2)	3·1 (0·5 to 5·7)*	26·2 (16·5 to 40·8)	25·0 (15·6 to 38·9)	–4·5 (–7·0 to –2·0)*
Meningitis	24 317·0 (21 010·6 to 27 891·4)	21 014·9 (17 519·8 to 24 328·1)	–13·7 (–20·8 to –5·5)*	358·3 (310·2 to 410·1)	288·2 (240·6 to 333·3)	–19·7 (–26·3 to –12·1)*
Pneumococcal	6343·8 (5493·7 to 7161·7)	5509·2 (4678·8 to 6363·5)	–13·3 (–20·8 to –3·1)*	93·9 (81·5 to 105·7)	75·7 (64·3 to 87·4)	–19·5 (–26·5 to –10·4)*
Haemophilus influenzae type B	6300·1 (5188·0 to 7431·5)	5177·1 (4196·8 to 6211·1)	–17·8 (–27·9 to –7·7)*	91·6 (75·4 to 108·1)	70·7 (57·3 to 84·7)	–22·9 (–32·2 to –13·3)*
Meningococcal	4733·3 (4055·1 to 5610·2)	4314·7 (3583·0 to 5116·6)	–8·5 (–18·7 to 1·3)	69·9 (59·8 to 82·5)	59·2 (49·2 to 70·1)	–15·0 (–24·4 to –5·8)*
Other meningitis	6939·8 (6097·9 to 8066·0)	6014·0 (5084·4 to 6954·2)	–13·2 (–22·2 to –2·9)*	102·9 (90·6 to 119·5)	82·6 (70·0 to 95·4)	–19·7 (–28·0 to –10·2)*
Encephalitis	5087·0 (4236·1 to 6021·8)	4804·2 (4022·4 to 5926·9)	–5·3 (–19·2 to 9·0)	75·4 (62·9 to 89·4)	66·3 (55·6 to 81·9)	–11·9 (–24·6 to 1·3)
Diphtheria	316·5 (153·3 to 671·8)	253·6 (126·5 to 536·1)	–17·8 (–74·5 to 124·7)	4·6 (2·2 to 9·8)	3·5 (1·7 to 7·3)	–22·8 (–75·9 to 111·9)
Whooping cough	6478·7 (2580·1 to 12 839·5)	5250·9 (2029·0 to 11 658·9)	–22·4 (–71·4 to 125·5)	93·9 (37·4 to 186·1)	71·5 (27·6 to 158·8)	–27·0 (–73·1 to 112·1)
Tetanus	7223·6 (4402·4 to 8704·6)	3654·7 (2312·7 to 4911·4)	–49·8 (–58·0 to –36·8)*	105·1 (64·5 to 126·3)	50·2 (32·0 to 67·5)	–52·6 (–60·2 to –40·5)*
Measles	17 635·2 (9981·3 to 28 573·5)	8015·1 (4077·1 to 14 458·0)	–55·9 (–74·0 to –17·9)*	256·3 (145·0 to 414·8)	109·7 (55·8 to 197·8)	–58·5 (–75·5 to –22·7)*
Varicella and herpes zoster	463·7 (371·2 to 580·9)	487·9 (384·7 to 622·7)	5·2 (–12·2 to 26·9)	7·4 (5·9 to 9·2)	7·0 (5·5 to 8·9)	–6·1 (–20·7 to 12·4)

(Table 1 continues on next page)

	All ages DALYs (thousands)*			Age-standardised DALYs (per 100 000)*		
	2005	2013	Percentage change	2005	2013	Percentage change
(Continued from previous page)						
Neglected tropical diseases and malaria	**121 587·6 (108 043·8 to 136 597·5)**	**90 676·8 (75 748·9 to 107 737·6)**	**–25·8 (–34·3 to –14·6)***	**1798·1 (1596·1 to 2023·0)**	**1248·4 (1043·0 to 1483·2)**	**–30·9 (–38·7 to –20·6)***
Malaria	94 497·4 (83 484·0 to 106 879·0)	65 493·1 (53 064·9 to 79 960·7)	–31·3 (–41·6 to –16·9)*	1385·1 (1224·9 to 1565·9)	897·6 (728·1 to 1094·8)	–35·7 (–45·3 to –22·3)*
Chagas disease	326·6 (172·5 to 850·4)	338·5 (183·8 to 846·4)	4·6 (–18·4 to 27·8)	5·9 (3·1 to 15·9)	5·2 (2·8 to 12·8)	–12·3 (–32·6 to 7·4)
Leishmaniasis	3939·2 (3292·5 to 4619·1)	4283·1 (3527·8 to 5090·9)	8·8 (–6·4 to 25·3)	57·3 (47·9 to 67·1)	58·6 (48·2 to 69·7)	2·5 (–11·7 to 18·0)
Visceral	3908·5 (3272·6 to 4591·9)	4241·5 (3488·2 to 5044·7)	8·7 (–6·7 to 25·2)	56·8 (47·5 to 66·7)	58·0 (47·7 to 69·0)	2·4 (–12·0 to 18·0)
Cutaneous and mucocutaneous	30·6 (14·0 to 58·4)	41·7 (19·0 to 80·1)	35·9 (23·7 to 49·0)*	0·5 (0·2 to 0·9)	0·6 (0·3 to 1·1)	23·0 (12·3 to 34·8)*
African trypanosomiasis	854·4 (454·4 to 1366·7)	390·1 (211·4 to 615·3)	–54·3 (–58·7 to –49·1)*	12·6 (6·7 to 20·2)	5·3 (2·9 to 8·3)	–58·2 (–62·2 to –53·5)*
Schistosomiasis	3511·3 (1999·8 to 6207·9)	3062·8 (1690·1 to 5662·0)	–13·9 (–18·5 to –1·4)*	52·3 (29·9 to 92·1)	42·1 (23·3 to 77·8)	–20·5 (–24·7 to –8·8)*
Cysticercosis	409·7 (291·1 to 530·4)	341·2 (244·4 to 442·0)	–16·4 (–31·7 to 1·3)	6·4 (4·6 to 8·3)	4·7 (3·4 to 6·1)	–26·0 (–39·2 to –11·0)*
Cystic echinococcosis	211·5 (185·0 to 243·3)	181·7 (155·7 to 211·7)	–14·1 (–17·3 to –11·1)*	3·3 (2·9 to 3·8)	2·6 (2·2 to 3·0)	–22·3 (–25·0 to –19·7)*
Lymphatic filariasis	2406·4 (1241·2 to 4094·3)	2022·1 (1096·3 to 3294·4)	–14·3 (–31·4 to –5·3)*	39·6 (20·4 to 67·1)	28·9 (15·7 to 47·1)	–25·7 (–40·1 to –18·0)*
Onchocerciasis	1445·3 (792·4 to 2241·9)	1179·8 (556·6 to 1992·7)	–19·4 (–33·0 to –5·0)*	22·6 (12·6 to 34·4)	16·6 (7·9 to 27·6)	–27·5 (–40·0 to –14·4)*
Trachoma	208·9 (141·3 to 286·9)	171·2 (115·3 to 241·7)	–18·1 (–27·5 to –8·4)*	4·2 (2·9 to 5·8)	2·8 (1·9 to 4·0)	–33·4 (–41·0 to –25·6)*
Dengue	957·9 (627·9 to 1395·8)	1142·7 (727·6 to 1978·2)	17·0 (–7·9 to 53·1)	14·1 (9·3 to 20·6)	15·8 (10·1 to 27·4)	9·8 (–13·3 to 43·0)
Yellow fever	30·2 (25·1 to 36·8)	30·7 (25·3 to 37·1)	1·8 (–18·2 to 25·3)	0·4 (0·4 to 0·5)	0·4 (0·3 to 0·5)	–4·2 (–22·9 to 17·5)
Rabies	1449·7 (1124·4 to 1833·1)	1242·9 (914·6 to 1526·7)	–14·6 (–27·6 to 0·9)	21·8 (16·9 to 27·5)	17·3 (12·7 to 21·2)	–20·9 (–32·9 to –6·5)*
Intestinal nematode infections	4641·3 (2899·4 to 7110·5)	4029·4 (2516·8 to 6137·0)	–13·1 (–18·3 to –7·8)*	69·4 (43·3 to 106·4)	55·7 (34·8 to 84·9)	–19·6 (–24·4 to –14·7)*
Ascariasis	1796·2 (1150·3 to 2720·3)	1271·7 (843·1 to 1916·7)	–29·0 (–35·9 to –21·3)*	26·8 (17·2 to 40·7)	17·6 (11·6 to 26·5)	–34·3 (–40·7 to –27·2)*
Trichuriasis	652·0 (357·4 to 1063·6)	576·0 (310·1 to 972·6)	–12·3 (–26·3 to 8·8)	9·8 (5·4 to 16·0)	8·0 (4·3 to 13·5)	–19·1 (–32·1 to 0·4)
Hookworm disease	2193·2 (1335·6 to 3401·2)	2181·7 (1338·6 to 3354·5)	–0·5 (–6·9 to 6·6)	32·8 (20·0 to 50·8)	30·2 (18·5 to 46·4)	–7·8 (–13·9 to –1·3)*
Food-borne trematodiases	3161·5 (1039·8 to 6574·9)	3634·8 (1160·2 to 7692·4)	14·6 (8·6 to 23·2)*	51·3 (16·8 to 106·9)	51·3 (16·3 to 108·6)	–0·3 (–5·4 to 6·5)
Other neglected tropical diseases	3536·4 (2652·7 to 4638·1)	3132·7 (2328·1 to 4208·7)	–11·8 (–18·0 to –3·1)*	51·8 (38·9 to 67·8)	43·5 (32·3 to 58·4)	–16·3 (–22·2 to –8·3)*
Maternal disorders	**21 717·2 (19 935·4 to 23 449·9)**	**18 027·8 (16 051·8 to 19 989·5)**	**–17·0 (–25·6 to –7·9)***	**312·7 (287·2 to 337·5)**	**239·2 (213·3 to 264·9)**	**–23·5 (–31·4 to –15·3)***
Maternal haemorrhage	3551·9 (3154·8 to 3980·3)	2561·7 (2219·9 to 2926·6)	–28·2 (–38·0 to –16·3)*	51·3 (45·6 to 57·5)	34·0 (29·5 to 38·9)	–34·0 (–42·7 to –23·0)*
Maternal sepsis and other maternal infections	1781·7 (1580·7 to 2007·9)	1369·6 (1156·9 to 1624·0)	–23·5 (–36·2 to –7·9)*	25·6 (22·7 to 28·8)	18·2 (15·3 to 21·5)	–29·4 (–41·0 to –15·1)*
Maternal hypertensive disorders	2281·0 (2038·0 to 2547·4)	1753·2 (1523·0 to 1996·7)	–23·4 (–32·7 to –10·8)*	32·6 (29·2 to 36·4)	23·2 (20·2 to 26·4)	–29·1 (–37·5 to –17·3)*
Obstructed labour	2312·0 (1963·9 to 2679·8)	2023·4 (1686·8 to 2414·0)	–12·5 (–20·5 to –3·8)*	33·6 (28·5 to 39·0)	27·1 (22·5 to 32·3)	–19·5 (–26·9 to –11·6)*
Complications of abortion	2886·2 (2603·8 to 3192·2)	2476·5 (2169·9 to 2841·6)	–14·6 (–24·6 to –0·5)*	41·6 (37·6 to 46·0)	32·8 (28·7 to 37·6)	–21·6 (–30·8 to –8·8)*

(Table 1 continues on next page)

	All ages DALYs (thousands)*			Age-standardised DALYs (per 100 000)*		
	2005	2013	Percentage change	2005	2013	Percentage change
(Continued from previous page)						
Indirect maternal deaths	2391·2 (2110·7 to 2718·2)	1790·8 (1534·9 to 2074·7)	−25·3 (−37·7 to −9·9)*	34·3 (30·3 to 38·9)	23·7 (20·3 to 27·4)	−31·1 (−42·4 to −17·2)*
Late maternal deaths	2525·7 (2151·7 to 2947·8)	2481·8 (2030·4 to 2992·2)	−1·3 (−23·0 to 23·2)	36·2 (30·8 to 42·2)	32·9 (27·0 to 39·7)	−8·6 (−28·6 to 13·7)
Maternal deaths aggravated by HIV/AIDS	184·7 (113·8 to 248·6)	117·2 (72·6 to 162·7)	−36·6 (−43·9 to −27·7)*	2·7 (1·7 to 3·6)	1·5 (1·0 to 2·1)	−42·5 (−49·2 to −34·3)*
Other maternal disorders	3761·6 (3379·7 to 4197·0)	3420·6 (2936·5 to 3954·0)	−9·4 (−21·3 to 7·9)	54·2 (48·7 to 60·4)	45·4 (39·0 to 52·4)	−16·6 (−27·5 to −0·5)*
Neonatal disorders	**221 687·5 (213 295·0 to 230 283·3)**	**189 601·0 (179 024·1 to 200 044·0)**	**−14·5 (−18·1 to −10·7)***	**3155·7 (3035·7 to 3278·5)**	**2560·0 (2416·8 to 2700·5)**	**−18·9 (−22·3 to −15·3)***
Preterm birth complications	88 971·6 (75 761·9 to 108 464·4)	70 843·1 (57 523·4 to 85 348·6)	−20·3 (−28·6 to −12·2)*	1267·2 (1079·1 to 1543·9)	957·0 (777·2 to 1152·8)	−24·4 (−32·3 to −16·7)*
Neonatal encephalopathy (birth asphyxia and trauma)	66 760·9 (53 355·4 to 77 432·1)	58 012·7 (46 947·7 to 68 198·2)	−13·2 (−22·7 to −1·8)*	948·9 (758·6 to 1100·2)	782·6 (633·4 to 919·7)	−17·6 (−26·6 to −6·8)*
Sepsis and other neonatal infections	32 000·2 (19 472·8 to 44 418·3)	31 631·8 (20 147·7 to 44 128·5)	−1·0 (−16·8 to 19·3)	455·0 (277·0 to 631·4)	426·7 (271·9 to 595·3)	−6·1 (−21·1 to 13·2)
Haemolytic disease and other neonatal jaundice	3639·6 (2720·1 to 4907·6)	3299·4 (2496·2 to 4382·9)	−9·0 (−29·7 to 14·7)	52·5 (39·3 to 70·7)	44·9 (33·9 to 59·6)	−14·2 (−33·6 to 8·0)
Other neonatal disorders	30 315·2 (24 647·8 to 38 101·8)	25 814·0 (20 483·9 to 32 840·8)	−14·7 (−27·3 to 0·7)	432·1 (351·0 to 542·8)	348·8 (276·7 to 443·7)	−19·1 (−31·1 to −4·6)*
Nutritional deficiencies	**79 695·9 (63 911·4 to 99 518·1)**	**74 834·4 (59 402·0 to 94 084·1)**	**−6·2 (−10·9 to −1·4)***	**1192·4 (958·9 to 1486·1)**	**1040·7 (828·2 to 1306·8)**	**−12·8 (−17·1 to −8·5)***
Protein-energy malnutrition	29 772·1 (23 294·2 to 35 802·7)	27 709·9 (21 411·5 to 33 507·3)	−7·1 (−17·5 to 4·5)	447·4 (348·0 to 536·2)	386·1 (298·4 to 465·7)	−13·7 (−23·1 to −3·6)*
Iodine deficiency	2155·1 (1364·0 to 3259·2)	2189·6 (1406·6 to 3401·4)	1·5 (−5·9 to 9·8)	32·6 (20·7 to 49·4)	30·1 (19·3 to 46·7)	−7·9 (−14·7 to −0·3)*
Vitamin A deficiency	177·2 (113·8 to 261·1)	153·7 (99·0 to 224·9)	−13·2 (−19·5 to −6·8)*	2·6 (1·7 to 3·9)	2·1 (1·4 to 3·1)	−19·1 (−24·8 to −13·2)*
Iron-deficiency anaemia	46 359·5 (33 059·4 to 64 257·3)	43 747·6 (30 848·7 to 61 398·4)	−5·6 (−8·2 to −3·6)*	690·1 (494·3 to 954·8)	607·6 (428·9 to 852·3)	−12·0 (−14·4 to −10·0)*
Other nutritional deficiencies	1232·0 (847·8 to 2025·2)	1033·5 (715·8 to 1747·2)	−16·1 (−29·0 to −2·5)*	19·6 (13·4 to 31·8)	14·8 (10·3 to 25·1)	−24·3 (−35·1 to −12·3)*
Other communicable, maternal, neonatal, and nutritional diseases	**31 457·6 (24 584·5 to 39 680·1)**	**27 114·0 (21 684·1 to 33 977·7)**	**−13·5 (−23·8 to −3·7)***	**466·5 (367·2 to 585·0)**	**373·8 (300·0 to 466·4)**	**−19·7 (−29·1 to −10·7)***
Sexually transmitted diseases excluding HIV	15 145·4 (9593·7 to 22 186·1)	12 857·2 (8079·7 to 19 013·3)	−14·9 (−30·4 to −0·2)*	218·6 (139·2 to 319·6)	174·6 (109·8 to 258·0)	−19·9 (−34·5 to −6·2)*
Syphilis	13 710·1 (8228·6 to 20 649·7)	11 324·5 (6634·9 to 17 484·8)	−17·1 (−33·7 to −1·2)*	197·1 (118·6 to 296·5)	153·8 (90·3 to 237·3)	−21·8 (−37·3 to −6·7)*
Chlamydial infection	645·9 (424·5 to 990·0)	692·4 (454·5 to 1065·5)	7·2 (2·2 to 12·7)*	9·4 (6·2 to 14·4)	9·3 (6·1 to 14·2)	−1·6 (−6·4 to 3·4)
Gonococcal infection	293·9 (219·3 to 401·1)	313·9 (229·4 to 438·1)	6·8 (−3·2 to 16·8)	4·3 (3·3 to 5·8)	4·2 (3·1 to 5·9)	−2·3 (−11·5 to 7·1)
Trichomoniasis	105·1 (41·3 to 221·3)	113·9 (45·1 to 242·9)	8·2 (−1·8 to 20·0)	1·5 (0·6 to 3·2)	1·5 (0·6 to 3·2)	−0·8 (−9·9 to 10·0)
Genital herpes	279·9 (89·6 to 671·1)	311·6 (98·3 to 748·5)	11·2 (8·5 to 13·6)*	4·5 (1·4 to 10·9)	4·4 (1·4 to 10·5)	−3·0 (−4·9 to −1·0)*
Other sexually transmitted diseases	110·5 (93·5 to 133·7)	101·0 (86·1 to 121·0)	−8·8 (−16·9 to 2·4)	1·7 (1·4 to 2·0)	1·4 (1·2 to 1·7)	−17·7 (−25·2 to −7·6)*
Hepatitis	7094·0 (6392·5 to 8180·0)	6556·8 (5774·7 to 8208·0)	−8·2 (−17·4 to 5·3)	108·7 (98·6 to 124·5)	91·2 (80·5 to 113·7)	−16·6 (−24·8 to −4·2)*
Hepatitis A	1456·7 (673·5 to 2476·5)	1214·6 (553·8 to 2108·4)	−17·2 (−34·1 to 6·1)	21·3 (9·8 to 36·1)	16·6 (7·6 to 28·8)	−22·4 (−38·2 to −0·7)*
Hepatitis B	2860·3 (2022·3 to 3868·0)	2587·3 (1839·1 to 3512·8)	−10·1 (−21·5 to 4·9)	46·3 (33·3 to 61·3)	37·1 (26·6 to 49·8)	−20·4 (−30·0 to −8·0)*
Hepatitis C	126·5 (37·9 to 269·5)	138·0 (41·4 to 310·4)	8·1 (−8·7 to 34·5)	2·0 (0·6 to 4·3)	2·0 (0·6 to 4·4)	−5·0 (−19·3 to 17·0)

(Table 1 continues on next page)

	All ages DALYs (thousands)*			Age-standardised DALYs (per 100 000)*		
	2005	2013	Percentage change	2005	2013	Percentage change
(Continued from previous page)						
Hepatitis E	2650·5 (1991·7 to 3421·7)	2616·9 (1962·3 to 3508·9)	–1·8 (–12·8 to 13·4)	39·1 (29·2 to 50·8)	35·6 (26·6 to 47·8)	–9·5 (–19·6 to 4·5)
Leprosy	36·6 (24·2 to 51·9)	39·7 (26·6 to 56·0)	8·6 (2·3 to 15·4)*	0·7 (0·4 to 0·9)	0·6 (0·4 to 0·9)	–8·9 (–13·9 to –3·5)*
Other infectious diseases	9181·6 (5667·4 to 12 740·2)	7660·3 (5301·6 to 10 204·5)	–14·5 (–33·4 to 2·7)	138·6 (87·1 to 190·1)	107·4 (74·9 to 142·3)	–20·9 (–37·7 to –5·1)*
Non-communicable diseases	**1 302 199·4 (1 155 437·8 to 1 460 687·4)**	**1 432 938·8 (1 256 004·9 to 1 614 026·7)**	**10·0 (7·7 to 12·8)***	**22 873·8 (20 458·5 to 25 487·7)**	**21 452·8 (18 880·3 to 24 078·4)**	**–6·3 (–8·3 to –3·8)***
Neoplasms	**180 409·6 (175 482·3 to 185 592·2)**	**197 093·5 (189 237·0 to 206 258·5)**	**9·3 (4·9 to 13·9)***	**3289·8 (3196·1 to 3384·1)**	**3001·7 (2881·6 to 3136·4)**	**–8·7 (–12·3 to –5·0)***
Oesophageal cancer	8905·2 (7787·5 to 10 237·4)	9843·1 (8655·5 to 11 620·1)	10·3 (1·9 to 20·3)*	168·8 (148·2 to 193·7)	152·3 (134·0 to 180·1)	–9·9 (–16·7 to –1·7)*
Stomach cancer	19 059·1 (18 331·4 to 19 926·9)	17 906·5 (16 863·7 to 19 067·8)	–6·0 (–11·5 to –0·6)*	357·4 (343·9 to 373·8)	277·7 (261·5 to 295·9)	–22·2 (–26·8 to –17·9)*
Liver cancer	19 175·3 (18 331·6 to 20 085·5)	20 888·7 (19 321·9 to 22 518·1)	9·2 (–0·2 to 17·7)	344·0 (329·1 to 360·4)	313·0 (289·9 to 336·5)	–8·9 (–16·3 to –1·9)*
Liver cancer due to hepatitis B	8198·9 (7558·5 to 8758·0)	8590·9 (7761·8 to 9462·3)	4·8 (–6·5 to 16·2)	143·6 (132·7 to 153·2)	126·2 (114·1 to 138·7)	–12·1 (–21·3 to –2·7)*
Liver cancer due to hepatitis C	5902·3 (5484·4 to 6445·1)	7967·1 (7271·6 to 8807·4)	35·1 (21·9 to 47·7)*	109·0 (101·5 to 118·8)	121·4 (111·1 to 133·6)	11·5 (0·7 to 21·5)*
Liver cancer due to alcohol use	2450·5 (2239·5 to 2675·5)	1980·4 (1813·1 to 2189·7)	–19·1 (–27·9 to –9·7)*	46·1 (42·2 to 50·2)	30·7 (28·2 to 33·9)	–33·2 (–40·2 to –25·7)*
Liver cancer due to other causes	2623·7 (2366·6 to 2881·3)	2350·2 (2098·1 to 2595·8)	–9·4 (–24·9 to 2·8)	45·3 (40·9 to 49·7)	34·6 (31·0 to 38·3)	–22·8 (–35·9 to –12·4)*
Larynx cancer	2075·5 (1812·6 to 2544·4)	2136·7 (1815·5 to 2620·1)	3·0 (–3·8 to 10·0)	38·6 (33·6 to 47·1)	32·6 (27·8 to 39·9)	–15·5 (–20·9 to –9·9)*
Tracheal, bronchus, and lung cancer	30 791·6 (29 492·6 to 31 587·1)	34 732·9 (33 042·6 to 36 328·1)	12·9 (6·6 to 19·1)*	586·7 (562·2 to 601·6)	542·8 (516·4 to 567·1)	–7·4 (–12·4 to –2·5)*
Breast cancer	11 762·5 (10 713·2 to 13 178·0)	13 258·7 (12 105·4 to 14 558·1)	13·0 (4·5 to 19·8)*	209·8 (190·6 to 234·6)	196·4 (178·1 to 215·5)	–6·1 (–13·0 to –0·7)*
Cervical cancer	6775·6 (5813·9 to 7591·5)	6914·7 (5774·5 to 7589·1)	2·1 (–5·7 to 9·5)	118·0 (101·3 to 131·9)	100·9 (84·4 to 110·5)	–14·4 (–20·7 to –8·2)*
Uterine cancer	1526·9 (1184·9 to 1824·8)	1660·9 (1276·3 to 1961·6)	8·1 (–1·1 to 21·3)	28·5 (22·3 to 34·0)	25·4 (19·6 to 30·0)	–11·3 (–18·6 to –0·7)*
Prostate cancer	3812·1 (3236·1 to 4802·3)	4768·8 (4067·0 to 6034·1)	25·0 (19·3 to 31·6)*	80·2 (68·3 to 100·9)	81·3 (69·2 to 103·0)	1·3 (–3·3 to 6·7)
Colon and rectum cancer	13 747·9 (13 378·9 to 14 138·6)	15 794·1 (15 165·3 to 16 421·4)	14·9 (10·8 to 19·1)*	261·6 (254·4 to 268·9)	246·7 (237·0 to 256·2)	–5·7 (–9·0 to –2·4)*
Lip and oral cavity cancer	2963·9 (2620·9 to 3442·8)	3589·3 (3031·8 to 4109·0)	21·1 (9·8 to 32·1)*	53·8 (47·7 to 62·6)	53·8 (45·5 to 61·7)	0·0 (–9·1 to 8·7)
Nasopharynx cancer	2034·5 (1831·3 to 2318·1)	1933·7 (1723·7 to 2211·8)	–5·0 (–13·1 to 4·1)	34·5 (31·2 to 39·3)	27·9 (24·9 to 31·9)	–19·3 (–26·1 to –11·7)*
Other pharynx cancer	1732·8 (1545·7 to 1880·0)	2137·7 (1832·0 to 2368·2)	23·3 (10·9 to 36·4)*	31·5 (28·2 to 34·2)	31·8 (27·3 to 35·2)	1·2 (–9·1 to 11·9)
Gallbladder and biliary tract cancer	2550·4 (2310·8 to 2841·4)	2701·1 (2338·8 to 2977·8)	6·3 (–2·9 to 14·1)	49·0 (44·4 to 54·8)	42·4 (36·9 to 47·0)	–13·0 (–20·7 to –6·7)*
Pancreatic cancer	5704·7 (5557·7 to 5841·8)	7029·1 (6775·5 to 7276·7)	23·2 (19·2 to 27·5)*	109·5 (106·6 to 112·1)	110·2 (106·3 to 114·1)	0·6 (–2·7 to 4·0)
Malignant skin melanoma	1394·8 (1102·7 to 1877·5)	1555·5 (1227·7 to 2089·3)	12·0 (3·5 to 18·7)*	24·8 (19·3 to 33·5)	23·2 (18·1 to 31·1)	–6·1 (–13·0 to –0·8)*
Non-melanoma skin cancer	724·2 (602·1 to 903·6)	816·5 (682·2 to 1039·9)	12·4 (6·7 to 20·1)*	13·7 (11·4 to 16·9)	12·9 (10·8 to 16·3)	–6·2 (–10·7 to 0·0)
Ovarian cancer	3541·7 (3324·8 to 3725·9)	4056·5 (3794·9 to 4400·2)	14·5 (7·0 to 23·1)*	64·1 (60·2 to 67·3)	60·6 (56·6 to 65·5)	–5·5 (–11·4 to 1·3)

(Table 1 continues on next page)

	All ages DALYs (thousands)*			Age-standardised DALYs (per 100 000)*		
	2005	2013	Percentage change	2005	2013	Percentage change
(Continued from previous page)						
Testicular cancer	354·9 (284·9 to 439·2)	378·7 (284·3 to 470·6)	7·2 (–3·8 to 16·4)	5·5 (4·4 to 6·8)	5·2 (3·9 to 6·5)	–4·4 (–14·2 to 3·6)
Kidney cancer	2810·2 (2675·3 to 2923·1)	3150·3 (2988·6 to 3320·7)	12·2 (5·8 to 18·1)*	51·8 (49·2 to 54·0)	48·3 (45·8 to 50·8)	–6·7 (–12·0 to –2·2)*
Bladder cancer	2987·4 (2743·2 to 3270·2)	3139·9 (2868·8 to 3479·6)	4·9 (0·8 to 10·3)*	59·0 (54·0 to 64·4)	50·6 (46·3 to 56·0)	–14·4 (–17·6 to –10·0)*
Brain and nervous system cancer	6163·4 (5120·0 to 7002·9)	6692·2 (5592·3 to 7765·2)	8·4 (2·3 to 15·4)*	102·6 (85·2 to 115·8)	96·8 (80·9 to 112·1)	–5·7 (–10·8 to 0·4)
Thyroid cancer	764·5 (673·5 to 870·8)	851·9 (739·8 to 983·2)	12·3 (2·4 to 19·2)*	14·0 (12·4 to 16·0)	13·0 (11·3 to 14·9)	–6·7 (–14·4 to –1·1)*
Mesothelioma	504·0 (444·0 to 581·2)	763·5 (686·2 to 864·4)	51·8 (40·0 to 63·4)*	9·5 (8·3 to 11·0)	11·8 (10·5 to 13·4)	24·4 (14·7 to 33·8)*
Hodgkin's lymphoma	1126·5 (1027·5 to 1378·4)	989·6 (867·9 to 1304·0)	–13·5 (–21·9 to 4·2)	17·7 (16·2 to 21·8)	14·0 (12·3 to 18·4)	–22·3 (–29·4 to –7·0)*
Non-Hodgkin lymphoma	5627·7 (4867·0 to 6301·8)	6412·8 (5495·7 to 7202·7)	14·6 (5·7 to 21·1)*	96·9 (83·1 to 107·1)	94·9 (81·2 to 106·2)	–1·4 (–8·9 to 4·0)
Multiple myeloma	1384·2 (1174·0 to 1635·6)	1661·5 (1397·5 to 1964·8)	20·3 (13·4 to 25·0)*	26·6 (22·5 to 31·5)	26·1 (21·8 to 31·0)	–1·7 (–7·3 to 2·2)
Leukaemia	9384·9 (9081·5 to 9744·4)	9301·0 (8869·0 to 9752·8)	–0·7 (–6·0 to 3·6)	150·0 (145·2 to 155·3)	133·7 (127·6 to 140·1)	–10·8 (–15·2 to –7·0)*
Other neoplasms	11 023·4 (10 179·5 to 12 208·5)	12 027·7 (10 693·3 to 13 370·7)	10·3 (–3·1 to 17·1)	182·0 (167·7 to 200·3)	175·3 (156·1 to 194·1)	–2·7 (–13·8 to 2·9)
Cardiovascular diseases	**308 887·0 (294 356·7 to 324 066·8)**	**329 705·6 (311 188·8 to 348 206·2)**	**6·7 (2·6 to 11·7)***	**5907·1 (5641·6 to 6181·0)**	**5206·3 (4924·1 to 5485·9)**	**–11·9 (–15·1 to –8·0)***
Rheumatic heart disease	10 103·6 (8576·3 to 12 982·8)	9517·7 (7867·8 to 11 950·8)	–5·9 (–13·9 to 3·4)	170·0 (144·4 to 219·1)	138·9 (115·1 to 174·2)	–18·4 (–25·5 to –10·3)*
Ischaemic heart disease	138 547·2 (127 675·5 to 149 798·3)	150 238·6 (135 388·5 to 162 458·7)	8·4 (2·9 to 15·0)*	2670·7 (2461·1 to 2880·1)	2375·9 (2142·4 to 2565·1)	–11·1 (–15·2 to –6·0)*
Cerebrovascular disease	107 737·1 (99 331·7 to 116 802·3)	112 878·9 (104 002·3 to 124 567·7)	4·7 (0·2 to 9·6)*	2096·8 (1934·1 to 2266·5)	1806·9 (1667·4 to 1991·7)	–13·9 (–17·5 to –9·9)*
Ischaemic stroke	44 730·9 (38 134·8 to 49 037·1)	47 424·7 (40 537·5 to 52 211·8)	6·0 (0·8 to 11·0)*	920·4 (787·2 to 1007·9)	791·3 (678·0 to 868·8)	–14·0 (–18·2 to –10·0)*
Haemorrhagic stroke	63 006·2 (57 306·5 to 70 880·3)	65 454·2 (59 497·4 to 74 654·7)	3·8 (–1·6 to 10·1)	1176·4 (1068·3 to 1325·3)	1015·6 (923·2 to 1163·2)	–13·8 (–18·2 to –8·5)*
Hypertensive heart disease	16 427·8 (13 746·5 to 19 904·3)	19 248·1 (15 498·3 to 22 588·0)	17·7 (6·2 to 27·9)*	320·7 (269·1 to 388·9)	308·0 (248·4 to 360·3)	–3·6 (–12·9 to 4·7)
Cardiomyopathy and myocarditis	12 876·8 (10 178·6 to 14 361·3)	12 472·7 (10 209·8 to 14 036·3)	–3·5 (–8·0 to 5·8)	220·3 (176·5 to 244·8)	184·3 (151·9 to 207·8)	–16·7 (–20·3 to –9·5)*
Atrial fibrillation and flutter	1477·2 (1238·5 to 1748·3)	1888·7 (1590·0 to 2224·9)	28·1 (20·9 to 34·6)*	32·1 (27·0 to 37·9)	32·6 (27·5 to 38·2)	1·6 (–4·1 to 6·9)
Aortic aneurysm	2404·4 (1973·3 to 2797·7)	2652·7 (2217·4 to 3109·6)	10·2 (5·5 to 16·3)*	46·5 (38·3 to 54·3)	42·2 (35·2 to 49·4)	–9·4 (–13·1 to –4·7)*
Peripheral vascular disease	510·7 (438·1 to 599·2)	596·1 (515·2 to 705·5)	16·8 (10·6 to 23·2)*	11·0 (9·4 to 12·9)	10·2 (8·8 to 12·1)	–7·1 (–12·1 to –2·1)*
Endocarditis	1769·6 (1301·1 to 2161·5)	1913·5 (1420·8 to 2342·1)	7·9 (0·2 to 17·9)*	29·8 (22·1 to 36·3)	28·0 (20·8 to 34·4)	–6·4 (–12·7 to 2·4)
Other cardiovascular and circulatory diseases	17 032·8 (14 236·3 to 21 254·9)	18 298·8 (15 153·9 to 22 824·3)	7·3 (–6·6 to 23·5)	309·3 (259·6 to 383·7)	279·3 (231·5 to 346·9)	–9·7 (–21·1 to 3·6)
Chronic respiratory diseases	**104 250·7 (92 540·7 to 118 201·1)**	**112 710·7 (98 871·9 to 128 147·8)**	**8·1 (2·7 to 13·8)***	**1935·3 (1734·0 to 2180·3)**	**1754·3 (1550·4 to 1981·3)**	**–9·3 (–13·9 to –4·6)***
Chronic obstructive pulmonary disease	66 478·5 (58 577·5 to 75 309·8)	71 900·7 (61 998·5 to 82 621·4)	8·2 (3·0 to 13·6)*	1276·2 (1136·1 to 1435·7)	1137·9 (990·5 to 1299·5)	–10·8 (–15·1 to –6·3)*
Pneumoconiosis	4770·7 (3830·8 to 6066·8)	5468·0 (4285·5 to 6974·4)	14·4 (–1·8 to 33·7)	90·3 (72·5 to 114·6)	85·5 (67·0 to 108·8)	–5·6 (–18·9 to 10·3)
Silicosis	926·8 (635·0 to 1323·0)	983·6 (682·7 to 1386·8)	6·0 (–8·0 to 22·3)	17·5 (12·0 to 24·9)	15·4 (10·8 to 21·5)	–12·2 (–23·6 to 1·2)

(Table 1 continues on next page)

	All ages DALYs (thousands)*			Age-standardised DALYs (per 100 000)*		
	2005	2013	Percentage change	2005	2013	Percentage change
(Continued from previous page)						
Asbestosis	467·4 (340·7 to 629·7)	554·3 (403·8 to 754·9)	18·2 (1·8 to 40·0)*	8·7 (6·3 to 11·7)	8·5 (6·2 to 11·6)	−2·2 (−15·9 to 15·7)
Coal workers' pneumoconiosis	531·1 (393·2 to 749·6)	600·2 (447·6 to 838·6)	13·0 (−2·5 to 31·4)	9·8 (7·3 to 14·0)	9·2 (6·9 to 12·8)	−6·8 (−19·3 to 8·2)
Other pneumoconiosis	2845·4 (2258·8 to 3640·8)	3329·9 (2525·9 to 4296·4)	16·7 (−3·9 to 40·9)	54·3 (43·2 to 69·6)	52·4 (39·8 to 67·9)	−3·7 (−20·4 to 16·5)
Asthma	22 240·4 (17 995·5 to 27 896·9)	22 182·7 (17 852·3 to 28 053·6)	−0·5 (−6·7 to 6·9)	373·1 (304·1 to 471·9)	326·4 (263·3 to 414·3)	−12·7 (−19·0 to −6·1)*
Interstitial lung disease and pulmonary sarcoidosis	5929·3 (4466·5 to 7311·7)	8178·0 (6359·8 to 10 399·7)	38·8 (18·3 to 56·6)*	116·0 (88·1 to 142·5)	131·3 (102·3 to 166·8)	13·8 (−2·7 to 28·6)
Other chronic respiratory diseases	4831·8 (3897·3 to 5955·2)	4981·3 (4025·8 to 6185·0)	2·9 (−5·0 to 11·6)	79·6 (63·8 to 99·0)	73·2 (59·3 to 90·8)	−8·3 (−15·0 to −0·6)*
Cirrhosis	**35 528·4 (34 221·3 to 36 967·4)**	**36 858·1 (35 053·9 to 39 022·5)**	**3·6 (−1·5 to 9·7)**	**606·6 (585·5 to 629·5)**	**535·9 (510·2 to 567·0)**	**−11·8 (−16·1 to −6·8)***
Cirrhosis due to hepatitis B	9321·9 (8709·4 to 9936·2)	9399·4 (8557·4 to 10 303·7)	0·7 (−8·4 to 12·2)	159·9 (149·6 to 170·4)	136·9 (124·9 to 149·7)	−14·5 (−22·0 to −4·7)*
Cirrhosis due to hepatitis C	8937·8 (8404·8 to 9505·2)	9939·9 (9200·4 to 10 788·7)	11·3 (1·7 to 22·5)*	156·3 (147·2 to 165·7)	146·2 (135·9 to 158·6)	−6·5 (−14·2 to 2·6)
Cirrhosis due to alcohol use	11 182·1 (10 401·0 to 11 948·2)	10 886·3 (9929·1 to 11 927·3)	−2·8 (−12·5 to 8·9)	195·0 (181·9 to 207·7)	159·7 (146·2 to 174·5)	−18·3 (−26·0 to −8·6)*
Cirrhosis due to other causes	6086·6 (5445·6 to 6855·8)	6632·4 (5969·0 to 7450·4)	9·0 (−6·4 to 26·6)	95·3 (85·3 to 107·3)	93·1 (83·9 to 104·3)	−2·4 (−16·2 to 13·9)
Digestive diseases	**37 037·5 (33 945·1 to 40 627·4)**	**37 341·2 (33 670·4 to 41 452·4)**	**0·7 (−5·3 to 7·7)**	**643·0 (589·7 to 704·5)**	**557·3 (502·6 to 617·9)**	**−13·5 (−18·2 to −7·7)***
Peptic ulcer disease	9090·0 (7900·7 to 10 341·3)	8457·8 (6967·0 to 9805·3)	−7·2 (−15·3 to 2·8)	163·6 (142·5 to 185·8)	128·5 (106·4 to 148·5)	−21·7 (−27·9 to −13·7)*
Gastritis and duodenitis	3900·1 (2949·8 to 5033·5)	3860·1 (2931·3 to 4985·7)	−1·0 (−6·7 to 4·7)	67·1 (51·1 to 86·6)	58·1 (44·1 to 75·2)	−13·5 (−18·2 to −8·7)*
Appendicitis	3082·0 (2452·4 to 3652·8)	2760·7 (2084·3 to 3383·6)	−10·9 (−23·0 to 4·8)	48·7 (38·6 to 57·5)	39·1 (29·4 to 47·8)	−20·0 (−30·4 to −6·4)*
Paralytic ileus and intestinal obstruction	5468·0 (4182·4 to 7560·0)	6071·7 (4684·6 to 8303·2)	10·9 (1·4 to 22·2)*	93·8 (71·4 to 129·9)	90·0 (69·3 to 123·2)	−4·2 (−12·2 to 5·1)
Inguinal, femoral, and abdominal hernia	982·8 (773·4 to 1426·7)	954·8 (742·2 to 1381·4)	−2·0 (−16·9 to 9·4)	17·8 (14·1 to 25·4)	14·7 (11·5 to 21·2)	−16·5 (−28·2 to −6·2)*
Inflammatory bowel disease	3545·7 (2854·3 to 4368·0)	3729·1 (2964·8 to 4665·3)	5·2 (0·2 to 10·0)*	59·1 (47·4 to 72·8)	54·1 (43·1 to 67·6)	−8·6 (−12·6 to −4·7)*
Vascular intestinal disorders	1158·5 (729·7 to 1739·6)	1241·5 (800·0 to 1839·5)	7·2 (−0·5 to 14·9)	22·6 (14·3 to 33·4)	20·0 (13·0 to 29·4)	−11·6 (−17·8 to −5·5)*
Gallbladder and biliary diseases	2420·2 (2141·2 to 2789·6)	2559·7 (2191·8 to 2924·8)	6·0 (−0·8 to 11·1)	44·6 (39·6 to 51·3)	39·7 (34·0 to 45·5)	−10·8 (−16·5 to −6·8)*
Pancreatitis	3925·9 (2838·2 to 4834·3)	4198·8 (3062·6 to 5140·9)	7·0 (−2·3 to 17·5)	66·0 (47·7 to 81·2)	60·8 (44·4 to 74·4)	−7·8 (−15·5 to 0·9)
Other digestive diseases	3464·3 (2944·0 to 4039·4)	3506·9 (2924·0 to 4110·0)	1·2 (−3·9 to 7·0)	59·8 (51·0 to 69·8)	52·4 (43·8 to 61·3)	−12·5 (−16·6 to −7·7)*
Neurological disorders	**72 438·0 (56 404·6 to 91 027·3)**	**84 048·0 (65 694·2 to 105 692·5)**	**16·1 (13·4 to 18·4)***	**1267·8 (1007·2 to 1568·2)**	**1264·4 (1000·7 to 1571·9)**	**−0·2 (−2·5 to 1·7)**
Alzheimer's disease and other dementias	17 737·9 (16 089·2 to 19 551·9)	22 238·9 (19 993·3 to 24 542·5)	25·3 (21·2 to 29·7)*	404·3 (366·7 to 445·2)	394·6 (354·9 to 435·5)	−2·4 (−5·6 to 1·1)
Parkinson's disease	1489·6 (1240·4 to 1727·5)	1829·0 (1502·7 to 2135·0)	22·9 (18·0 to 26·8)*	31·5 (26·2 to 36·4)	31·2 (25·7 to 36·3)	−0·8 (−4·8 to 2·6)
Epilepsy	13 039·4 (10 714·7 to 15 492·8)	13 372·1 (10 920·9 to 15 979·4)	2·4 (−4·5 to 10·0)	196·8 (161·5 to 233·9)	185·2 (151·2 to 221·3)	−6·0 (−12·3 to 0·9)
Multiple sclerosis	1150·9 (906·8 to 1361·7)	1342·8 (1068·4 to 1625·8)	16·6 (9·3 to 25·1)*	19·3 (15·2 to 22·9)	19·2 (15·3 to 23·1)	−0·8 (−7·2 to 6·4)
Migraine	25 780·9 (15 613·2 to 37 987·5)	28 898·1 (17 585·8 to 42 420·1)	12·1 (8·8 to 15·3)*	395·8 (240·2 to 582·7)	398·4 (242·4 to 584·9)	0·6 (−2·2 to 3·5)

(Table 1 continues on next page)

	All ages DALYs (thousands)*			Age-standardised DALYs (per 100 000)*		
	2005	2013	Percentage change	2005	2013	Percentage change
(Continued from previous page)						
Tension-type headache	2031·8 (985·5 to 3558·8)	2363·2 (1151·9 to 4155·0)	16·3 (13·7 to 19·0)*	31·6 (15·3 to 55·2)	32·9 (16·0 to 57·8)	4·2 (1·9 to 6·6)*
Medication overuse headache	7577·4 (4426·0 to 11589·5)	9845·7 (5777·9 to 15100·3)	30·0 (22·7 to 37·1)*	121·8 (71·3 to 186·3)	138·5 (81·3 to 212·1)	13·7 (7·3 to 19·8)*
Other neurological disorders	3630·1 (3079·2 to 4245·0)	4158·2 (3465·2 to 4719·9)	15·0 (7·2 to 20·4)*	66·7 (56·2 to 78·3)	64·4 (53·8 to 73·5)	–3·0 (–9·2 to 1·5)
Mental and substance use disorders	**157 899·7 (117 039·4 to 202 585·3)**	**173 177·4 (127 426·5 to 221 734·1)**	**9·7 (7·8 to 11·0)***	**2443·3 (1812·5 to 3131·3)**	**2399·8 (1765·2 to 3064·4)**	**–1·8 (–3·4 to –0·7)***
Schizophrenia	13 972·2 (10 445·2 to 16 601·6)	15 687·2 (11 647·4 to 18 704·1)	12·3 (10·8 to 13·6)*	221·6 (165·7 to 263·0)	217·2 (161·4 to 258·7)	–1·9 (–3·2 to –0·8)*
Alcohol use disorders	13 856·3 (10 676·5 to 17 518·8)	12 772·1 (9872·5 to 16 401·5)	–8·0 (–11·5 to –3·5)*	217·5 (168·0 to 274·0)	175·7 (136·1 to 224·8)	–19·3 (–22·7 to –15·0)*
Drug use disorders	16 573·6 (12 990·6 to 20 087·4)	17 953·0 (14 163·9 to 21 969·4)	8·3 (4·5 to 11·8)	247·3 (194·2 to 299·1)	242·2 (191·3 to 296·2)	–2·1 (–5·5 to 1·0)
Opioid use disorders	8577·2 (6762·8 to 10 512·9)	8136·2 (6171·1 to 10 485·5)	–5·4 (–11·2 to 0·9)	130·1 (102·8 to 159·0)	110·3 (83·7 to 142·2)	–15·4 (–20·6 to –9·6)*
Cocaine use disorders	1056·2 (739·6 to 1439·9)	1200·4 (851·2 to 1619·0)	13·8 (9·3 to 18·5)*	15·6 (11·0 to 21·3)	16·1 (11·5 to 21·7)	3·3 (–0·8 to 7·5)
Amphetamine use disorders	1937·0 (1244·8 to 2768·9)	2117·2 (1388·2 to 2987·5)	9·3 (4·9 to 14·3)*	27·9 (18·0 to 39·9)	28·2 (18·5 to 39·8)	1·1 (–2·9 to 5·5)
Cannabis use disorders	383·5 (254·8 to 557·0)	395·6 (261·2 to 576·2)	3·2 (0·1 to 6·4)*	5·5 (3·6 to 7·9)	5·3 (3·5 to 7·7)	–3·0 (–5·8 to –0·1)*
Other drug use disorders	4619·7 (3665·7 to 5670·2)	6103·5 (5006·4 to 7312·4)	32·3 (23·5 to 41·6)*	68·1 (54·2 to 83·3)	82·2 (67·5 to 98·3)	20·8 (12·9 to 29·1)*
Depressive disorders	54 086·1 (36 401·9 to 75 052·8)	61 632·8 (41 353·8 to 85 621·4)	14·0 (10·4 to 17·1)	856·4 (580·2 to 1186·5)	864·4 (580·0 to 1202·1)	1·1 (–2·5 to 3·6)
Major depressive disorder	45 539·4 (29 829·4 to 64 133·2)	51 783·9 (33 888·2 to 73 665·8)	13·8 (9·4 to 17·5)*	717·2 (471·7 to 1011·6)	724·9 (475·7 to 1030·7)	1·3 (–2·8 to 4·4)
Dysthymia	8546·7 (5687·3 to 12 278·3)	9848·9 (6586·6 to 14 166·0)	15·2 (14·0 to 16·3)*	139·3 (93·5 to 200·2)	139·5 (93·7 to 200·9)	0·2 (–0·6 to 0·9)
Bipolar disorder	8715·9 (5487·1 to 13 043·4)	9911·1 (6260·6 to 14 791·0)	13·7 (12·1 to 15·8)*	135·4 (85·0 to 201·5)	136·6 (86·3 to 202·5)	0·8 (–0·4 to 2·5)
Anxiety disorders	21 949·1 (14 287·0 to 31 597·3)	24 355·8 (16 148·6 to 35 139·0)	11·0 (8·5 to 13·6)*	337·7 (221·6 to 481·8)	337·7 (224·4 to 486·3)	0·0 (–2·0 to 1·9)
Eating disorders	1742·9 (1135·8 to 2601·1)	1853·7 (1189·9 to 2753·8)	6·3 (4·2 to 8·5)*	24·6 (16·0 to 36·8)	24·6 (15·9 to 36·6)	0·0 (–2·0 to 1·8)
Anorexia nervosa	448·5 (302·6 to 644·7)	474·0 (318·2 to 682·3)	5·7 (1·9 to 9·4)*	6·3 (4·3 to 9·1)	6·3 (4·3 to 9·1)	–0·2 (–3·8 to 3·2)
Bulimia nervosa	1294·4 (797·2 to 1995·9)	1379·7 (850·7 to 2136·6)	6·5 (4·1 to 9·1)*	18·3 (11·3 to 28·1)	18·3 (11·3 to 28·3)	0·0 (–2·1 to 2·4)
Autistic spectrum disorders	7721·8 (5369·6 to 10 463·8)	8449·0 (5888·1 to 11 458·7)	9·4 (8·6 to 10·3)*	116·6 (81·1 to 158·0)	117·1 (81·6 to 158·7)	0·4 (–0·4 to 1·1)
Autism	4884·2 (3285·3 to 6671·6)	5345·0 (3583·6 to 7309·9)	9·4 (8·3 to 10·6)*	73·8 (49·6 to 100·6)	74·1 (49·7 to 101·3)	0·4 (–0·6 to 1·4)
Asperger's syndrome	2837·6 (1981·9 to 3949·6)	3104·0 (2169·6 to 4325·0)	9·4 (8·5 to 10·3)*	42·9 (30·0 to 59·6)	43·0 (30·1 to 59·9)	0·3 (–0·5 to 1·1)
Attention-deficit hyperactivity disorder	478·9 (287·4 to 740·8)	479·9 (287·4 to 745·8)	0·2 (–1·5 to 1·9)	6·6 (4·0 to 10·2)	6·6 (3·9 to 10·2)	0·0 (–1·7 to 1·7)
Conduct disorder	6192·7 (3889·5 to 8986·2)	6159·0 (3868·2 to 8911·6)	–0·5 (–1·7 to 0·6)	84·0 (52·7 to 122·0)	85·3 (53·6 to 123·4)	1·5 (0·3 to 2·6)*
Idiopathic intellectual disability	4575·2 (3011·1 to 6496·0)	4666·7 (3084·8 to 6640·0)	2·1 (–4·1 to 8·6)	68·0 (44·7 to 96·6)	64·3 (42·5 to 91·5)	–5·3 (–10·9 to 0·7)
Other mental and substance use disorders	8035·0 (5442·0 to 10 785·3)	9257·2 (6277·9 to 12 411·5)	15·2 (14·2 to 16·2)*	127·6 (86·5 to 170·7)	128·1 (86·9 to 171·6)	0·3 (–0·4 to 1·1)

(Table 1 continues on next page)

	All ages DALYs (thousands)*			Age-standardised DALYs (per 100 000)*		
	2005	2013	Percentage change	2005	2013	Percentage change
(Continued from previous page)						
Diabetes, urogenital, blood, and endocrine diseases	**120 976·5 (101 712·4 to 143 463·1)**	**141 620·9 (118 713·4 to 168 158·3)**	**17·0 (13·1 to 21·5)***	**2069·2 (1759·6 to 2429·2)**	**2089·4 (1759·1 to 2468·6)**	**0·8 (–2·1 to 5·2)**
Diabetes mellitus	46 039·4 (38 599·7 to 54 434·2)	55 832·6 (46 374·6 to 66 808·6)	21·2 (17·6 to 25·3)*	837·8 (706·6 to 981·8)	846·2 (704·8 to 1007·4)	0·9 (–2·1 to 4·4)
Acute glomerulonephritis	805·7 (535·0 to 1067·9)	715·4 (519·0 to 923·1)	–11·2 (–22·1 to 4·4)	12·6 (8·5 to 16·6)	10·2 (7·4 to 13·1)	–19·4 (–28·8 to –6·2)*
Chronic kidney disease	28 349·4 (24 290·4 to 31 773·7)	33 187·2 (28 461·0 to 37 316·0)	17·1 (12·5 to 22·0)*	497·7 (425·7 to 555·5)	497·3 (427·5 to 557·2)	–0·1 (–4·0 to 4·1)
Chronic kidney disease due to diabetes mellitus	4493·8 (3673·0 to 5204·8)	5939·3 (5014·8 to 6940·1)	31·8 (25·4 to 43·0)*	82·9 (67·7 to 95·9)	90·9 (77·1 to 105·9)	9·4 (4·4 to 18·6)*
Chronic kidney disease due to hypertension	6482·8 (5143·8 to 7544·1)	7986·4 (6335·9 to 9233·9)	23·1 (17·4 to 29·7)*	116·3 (92·2 to 134·8)	121·1 (95·7 to 139·8)	4·1 (–0·9 to 9·6)
Chronic kidney disease due to glomerulonephritis	6585·6 (5631·4 to 7535·5)	6126·2 (5138·3 to 7170·7)	–7·2 (–12·0 to –1·1)*	108·1 (92·5 to 123·7)	88·2 (74·0 to 103·2)	–18·6 (–22·9 to –13·2)*
Chronic kidney disease due to other causes	10 787·2 (8898·8 to 12 207·3)	13 135·4 (10 821·2 to 14 992·9)	21·7 (14·7 to 28·9)*	190·4 (156·3 to 215·6)	197·2 (162·6 to 225·1)	3·5 (–2·4 to 9·7)
Urinary diseases and male infertility	8848·5 (7381·2 to 10 580·7)	10 292·4 (8404·5 to 12 529·3)	16·1 (12·2 to 21·0)*	163·6 (135·1 to 197·1)	160·4 (130·6 to 196·4)	–2·2 (–5·2 to 1·6)
Interstitial nephritis and urinary tract infections	3481·9 (2922·5 to 3776·0)	3808·0 (3143·5 to 4201·1)	9·0 (3·4 to 16·7)*	61·4 (51·6 to 66·3)	57·6 (47·6 to 63·3)	–6·5 (–11·3 to –0·2)*
Urolithiasis	923·5 (699·2 to 1196·0)	1006·8 (748·8 to 1326·3)	9·0 (2·9 to 14·6)*	16·5 (12·6 to 21·4)	15·2 (11·3 to 20·0)	–7·9 (–12·8 to –3·4)*
Benign prostatic hyperplasia	2759·5 (1817·4 to 3851·3)	3552·9 (2316·5 to 4993·7)	28·7 (25·2 to 32·1)*	56·9 (37·5 to 79·4)	59·1 (38·6 to 83·1)	3·8 (1·0 to 6·6)*
Male infertility due to other causes	221·8 (95·4 to 456·2)	258·6 (111·8 to 531·4)	16·4 (7·7 to 26·6)*	3·2 (1·4 to 6·7)	3·4 (1·5 to 7·1)	5·6 (–2·1 to 14·7)
Other urinary diseases	1461·7 (1070·5 to 1708·8)	1666·0 (1158·6 to 1976·5)	13·9 (5·7 to 23·1)*	25·5 (18·6 to 29·9)	25·0 (17·4 to 29·7)	–2·1 (–8·8 to 5·4)
Gynaecological diseases	8262·5 (5405·8 to 12 229·0)	9237·3 (6081·1 to 13 702·3)	11·7 (8·8 to 15·2)*	124·5 (81·5 to 184·8)	124·5 (81·9 to 184·7)	–0·1 (–2·6 to 3·0)
Uterine fibroids	2012·5 (1178·8 to 3388·1)	2187·3 (1265·4 to 3702·5)	8·4 (5·7 to 13·8)*	31·0 (18·2 to 52·1)	29·6 (17·2 to 50·2)	–4·5 (–6·9 to 0·2)
Polycystic ovarian syndrome	1085·3 (512·3 to 2026·3)	1196·1 (567·0 to 2231·8)	10·2 (6·4 to 14·0)*	16·1 (7·6 to 30·0)	16·0 (7·6 to 29·9)	–0·5 (–3·8 to 2·8)
Female infertility due to other causes	169·4 (68·0 to 357·4)	191·9 (75·2 to 399·1)	13·2 (2·6 to 25·3)*	2·5 (1·0 to 5·2)	2·6 (1·0 to 5·3)	4·0 (–5·6 to 14·9)
Endometriosis	1227·9 (824·6 to 1673·5)	1371·5 (917·7 to 1873·2)	11·8 (7·4 to 16·6)*	18·4 (12·3 to 25·0)	18·4 (12·3 to 25·1)	0·0 (–3·9 to 4·4)
Genital prolapse	960·4 (483·2 to 1792·7)	1111·1 (550·4 to 2058·2)	15·5 (12·4 to 19·2)*	15·5 (7·8 to 28·9)	15·5 (7·7 to 28·7)	–0·6 (–3·2 to 2·5)
Premenstrual syndrome	2136·2 (1333·1 to 3184·3)	2548·6 (1581·3 to 3777·0)	19·0 (9·9 to 30·9)*	31·1 (19·4 to 46·3)	33·9 (21·0 to 50·2)	8·7 (0·4 to 19·6)*
Other gynaecological diseases	670·9 (472·0 to 922·5)	630·8 (443·0 to 873·1)	–5·7 (–13·1 to –0·5)*	9·9 (7·0 to 13·6)	8·5 (6·0 to 11·7)	–14·3 (–21·0 to –9·5)*
Haemoglobinopathies and haemolytic anaemias	20 495·6 (12 009·2 to 32 293·0)	23 368·9 (12 797·5 to 39 245·7)	11·9 (0·7 to 33·0)*	302·4 (178·3 to 473·5)	322·0 (177·3 to 538·3)	4·4 (–5·9 to 24·2)
Thalassaemias	2096·3 (1466·2 to 2677·9)	1814·1 (1257·4 to 2332·0)	–15·4 (–23·1 to 4·8)	30·1 (21·0 to 38·5)	24·7 (17·1 to 31·7)	–19·9 (–27·1 to –0·6)*
Thalassaemia trait	3401·3 (2267·4 to 4899·0)	3769·6 (2508·9 to 5442·2)	10·8 (8·1 to 13·8)*	51·0 (34·1 to 73·6)	52·4 (34·9 to 75·7)	2·7 (0·1 to 5·5)*
Sickle cell disorders	11 142·6 (3743·2 to 22 090·0)	13 650·5 (4382·8 to 29 097·8)	20·8 (0·1 to 52·5)*	161·9 (54·6 to 320·2)	186·5 (59·8 to 397·2)	13·4 (–6·1 to 43·9)
Sickle cell trait	1251·0 (829·2 to 1811·0)	1396·6 (929·4 to 2004·9)	11·5 (6·2 to 19·0)*	18·4 (12·2 to 26·7)	19·3 (12·9 to 27·8)	4·8 (–0·1 to 11·8)
Glucose-6-phosphate dehydrogenase deficiency	265·1 (176·5 to 341·5)	269·1 (174·8 to 371·8)	–0·7 (–11·3 to 22·7)	4·0 (2·6 to 5·1)	3·7 (2·4 to 5·1)	–8·2 (–17·9 to 12·8)

(Table 1 continues on next page)

	All ages DALYs (thousands)*			Age-standardised DALYs (per 100 000)*		
	2005	2013	Percentage change	2005	2013	Percentage change
(Continued from previous page)						
Glucose-6-phosphate dehydrogenase deficiency trait	44·6 (27·7 to 66·0)	48·8 (30·1 to 73·3)	9·2 (–12·1 to 34·0)	0·7 (0·4 to 1·0)	0·7 (0·4 to 1·0)	2·4 (–17·6 to 25·1)
Other haemoglobinopathies and haemolytic anaemias	2294·8 (1707·8 to 2962·2)	2420·1 (1814·8 to 3146·8)	5·1 (–1·0 to 13·6)	36·4 (27·2 to 46·8)	34·7 (26·2 to 45·1)	–4·9 (–10·2 to 2·2)
Endocrine, metabolic, blood, and immune disorders	8175·5 (7030·5 to 9563·7)	8987·0 (7724·2 to 10 348·0)	10·1 (1·9 to 17·8)*	130·6 (111·8 to 152·6)	128·9 (110·9 to 148·3)	–1·1 (–8·2 to 5·4)
Musculoskeletal disorders	**126 874·2 (91 296·7 to 167 000·8)**	**149 435·7 (106 888·5 to 197 565·1)**	**17·7 (16·2 to 19·8)***	**2162·3 (1559·6 to 2834·5)**	**2178·0 (1561·5 to 2875·0)**	**0·6 (–0·5 to 2·4)**
Rheumatoid arthritis	4299·0 (3304·9 to 5461·2)	4741·2 (3597·6 to 5988·1)	10·2 (7·5 to 13·5)*	78·0 (60·2 to 98·8)	72·5 (55·1 to 91·3)	–7·2 (–9·5 to –4·4)*
Osteoarthritis	10 401·5 (7337·3 to 14 133·8)	12 811·1 (9030·0 to 17 281·2)	23·2 (21·6 to 24·7)*	201·3 (142·1 to 272·9)	201·7 (142·3 to 271·8)	0·2 (–1·1 to 1·5)
Low back and neck pain	91 729·2 (64 002·3 to 123 315·7)	106 665·5 (74 116·9 to 142 959·7)	16·2 (14·0 to 19·2)*	1525·7 (1066·3 to 2048·4)	1532·8 (1065·6 to 2052·0)	0·4 (–1·4 to 2·9)
Low back pain	61 611·0 (42 074·7 to 84 850·7)	72 317·6 (49 051·0 to 99 738·5)	17·2 (14·9 to 21·1)*	1032·4 (705·9 to 1418·2)	1045·3 (710·2 to 1440·6)	1·0 (–0·8 to 4·4)
Neck pain	30 118·2 (20 855·1 to 41 090·2)	34 347·9 (23 792·0 to 47 418·5)	14·1 (10·1 to 18·3)*	493·3 (342·4 to 672·2)	487·5 (337·8 to 672·2)	–1·1 (–4·5 to 2·5)
Gout	154·3 (106·8 to 205·2)	185·5 (129·0 to 249·2)	20·1 (16·5 to 24·5)*	2·9 (2·0 to 3·8)	2·8 (2·0 to 3·8)	–0·8 (–3·7 to 2·8)
Other musculoskeletal disorders	20 290·1 (14 431·4 to 27 422·7)	25 032·4 (17 671·6 to 34 085·8)	23·3 (21·2 to 25·5)*	354·4 (251·9 to 481·1)	368·3 (260·1 to 502·1)	3·9 (2·4 to 5·6)*
Other non-communicable diseases	**157 897·8 (120 772·1 to 204 769·6)**	**170 947·9 (130 922·9 to 223 484·3)**	**8·7 (3·1 to 11·6)***	**2549·4 (1934·9 to 3320·6)**	**2465·7 (1884·2 to 3234·3)**	**–3·0 (–7·3 to –0·6)***
Congenital anomalies	56 944·6 (49 141·0 to 69 460·2)	57 173·2 (50 550·4 to 66 265·6)	1·6 (–10·4 to 9·0)	827·1 (714·5 to 1007·5)	779·9 (689·9 to 903·0)	–4·6 (–15·8 to 2·4)
Neural tube defects	7161·8 (4444·2 to 12 759·5)	6236·6 (3854·9 to 10 918·2)	–12·7 (–28·6 to 4·8)	102·6 (63·7 to 183·0)	84·4 (52·2 to 147·9)	–17·4 (–32·5 to –0·9)*
Congenital heart anomalies	26 144·1 (22 321·2 to 32 868·8)	26 219·2 (23 222·4 to 30 340·6)	1·7 (–12·6 to 11·8)	377·4 (322·2 to 473·6)	356·6 (316·0 to 412·7)	–4·1 (–17·6 to 5·4)
Orofacial clefts	416·1 (257·1 to 602·1)	352·3 (229·2 to 515·7)	–15·6 (–31·8 to 8·8)	6·0 (3·7 to 8·6)	4·8 (3·1 to 7·0)	–20·3 (–35·5 to 2·6)
Down's syndrome	3578·6 (2139·0 to 5189·6)	3851·4 (2556·6 to 5223·2)	8·7 (–8·6 to 27·8)	53·5 (32·8 to 76·8)	53·2 (35·5 to 71·8)	0·5 (–14·9 to 17·5)
Turner's syndrome	3·8 (1·9 to 6·1)	4·3 (2·2 to 6·9)	13·3 (5·1 to 23·2)*	0·1 (0·0 to 0·1)	0·1 (0·0 to 0·1)	4·4 (–3·3 to 13·4)
Klinefelter's syndrome	1·2 (0·6 to 2·2)	1·3 (0·6 to 2·4)	13·0 (5·2 to 21·5)*	0·0 (0·0 to 0·0)	0·0 (0·0 to 0·0)	2·1 (–4·9 to 9·6)
Chromosomal unbalanced rearrangements	2629·6 (1930·4 to 3774·0)	2985·4 (2313·0 to 3917·7)	16·2 (–2·6 to 25·0)	40·2 (29·9 to 56·8)	41·7 (32·4 to 54·6)	5·8 (–9·8 to 13·3)
Other congenital anomalies	17 009·4 (13 826·2 to 25 442·3)	17 522·7 (14 425·9 to 24 552·1)	4·1 (–9·1 to 14·4)	247·4 (201·2 to 368·7)	239·1 (196·7 to 334·7)	–2·4 (–14·5 to 7·1)
Skin and subcutaneous diseases	37 827·9 (25 158·8 to 56 628·8)	41 597·6 (27 763·0 to 62 743·1)	10·0 (7·8 to 12·0)*	582·5 (390·2 to 865·7)	582·9 (390·1 to 872·3)	0·1 (–1·8 to 1·8)
Dermatitis	8431·6 (5490·7 to 12 137·7)	9278·4 (6029·0 to 13 326·7)	10·0 (9·2 to 11·0)*	128·6 (83·5 to 184·8)	128·7 (83·6 to 184·9)	0·1 (–0·4 to 0·6)
Psoriasis	4187·6 (2896·0 to 5899·7)	4726·7 (3254·7 to 6621·9)	12·9 (11·4 to 14·4)*	67·2 (46·4 to 94·6)	66·8 (46·0 to 93·6)	–0·5 (–1·6 to 0·6)
Cellulitis	1083·0 (809·2 to 1402·4)	1064·7 (814·0 to 1397·5)	–2·3 (–11·5 to 11·1)	17·7 (13·1 to 23·0)	15·5 (11·8 to 20·2)	–13·2 (–21·1 to –1·7)*
Pyoderma	943·5 (698·5 to 1195·4)	1141·6 (888·5 to 1330·2)	21·4 (4·7 to 39·8)*	15·7 (11·7 to 19·6)	16·6 (13·0 to 19·3)	6·4 (–7·2 to 21·3)
Scabies	1624·7 (927·0 to 2620·2)	1705·4 (967·2 to 2711·6)	4·8 (–3·4 to 15·1)	24·1 (13·8 to 38·9)	23·5 (13·3 to 37·3)	–2·8 (–10·2 to 6·7)
Fungal skin diseases	3447·0 (1403·8 to 7290·4)	3847·2 (1574·5 to 8139·8)	11·6 (10·5 to 12·8)*	53·4 (21·8 to 113·0)	54·0 (22·1 to 114·2)	1·0 (0·5 to 1·4)*

(Table 1 continues on next page)

	All ages DALYs (thousands)*			Age-standardised DALYs (per 100 000)*		
	2005	2013	Percentage change	2005	2013	Percentage change
(Continued from previous page)						
Viral skin diseases	3752·1 (2284·2 to 5820·4)	3955·0 (2398·4 to 6150·9)	5·4 (4·1 to 6·7)*	55·1 (33·4 to 85·5)	54·7 (33·3 to 85·0)	−0·6 (−1·5 to 0·3)
Acne vulgaris	6982·2 (3360·8 to 12 916·9)	7180·8 (3451·6 to 13 214·1)	2·5 (−3·7 to 11·1)	96·9 (46·7 to 179·1)	96·7 (46·4 to 177·8)	−0·5 (−6·5 to 7·7)
Alopecia areata	257·7 (163·9 to 382·5)	292·4 (186·8 to 435·2)	13·5 (10·3 to 16·8)*	4·2 (2·7 to 6·3)	4·2 (2·7 to 6·3)	−0·1 (−2·9 to 2·7)
Pruritus	9·2 (4·4 to 17·1)	10·8 (5·1 to 20·0)	17·4 (9·2 to 25·7)*	0·2 (0·1 to 0·3)	0·2 (0·1 to 0·3)	0·9 (−6·2 to 8·6)
Urticaria	3993·4 (2616·6 to 5702·1)	4720·7 (3036·5 to 6737·2)	19·0 (2·7 to 32·6)*	64·6 (42·5 to 92·2)	67·0 (43·2 to 95·5)	4·3 (−9·4 to 16·1)
Decubitus ulcer	546·8 (454·9 to 647·3)	660·6 (553·9 to 782·1)	20·9 (14·5 to 27·7)*	10·9 (9·1 to 12·8)	10·8 (9·1 to 12·7)	−0·8 (−5·8 to 4·6)
Other skin and subcutaneous diseases	2569·0 (1164·2 to 5187·3)	3013·3 (1374·5 to 6234·7)	17·2 (13·2 to 20·7)*	44·0 (19·4 to 93·1)	44·2 (19·8 to 93·3)	0·4 (−0·7 to 1·6)
Sense organ diseases	47 426·9 (31 917·8 to 66 335·1)	54 428·1 (36 458·4 to 76 075·4)	14·7 (13·2 to 16·2)*	868·4 (588·1 to 1206·6)	839·3 (564·9 to 1165·9)	−3·4 (−4·6 to −2·2)*
Glaucoma	701·8 (496·4 to 963·7)	807·5 (571·6 to 1102·8)	15·0 (10·0 to 20·2)*	13·3 (9·5 to 18·2)	12·7 (9·0 to 17·3)	−5·1 (−9·4 to −1·0)*
Cataract	2592·9 (1853·6 to 3530·8)	2916·7 (2055·1 to 3962·2)	12·5 (8·2 to 16·9)*	54·1 (38·6 to 73·4)	49·0 (34·7 to 66·4)	−9·4 (−12·8 to −5·9)*
Macular degeneration	516·8 (368·3 to 697·4)	725·6 (509·4 to 985·1)	40·4 (33·8 to 47·0)*	10·8 (7·7 to 14·5)	11·9 (8·4 to 16·2)	10·6 (5·1 to 16·0)*
Uncorrected refractive error	10 004·7 (6360·2 to 15 412·8)	11 257·2 (7149·8 to 17 452·3)	12·5 (10·7 to 14·3)*	176·9 (112·7 to 272·8)	169·2 (107·6 to 261·9)	−4·4 (−5·7 to −3·0)*
Age-related and other hearing loss	28 010·5 (18 942·1 to 39 007·8)	32 579·7 (22 083·7 to 45 846·1)	16·3 (13·9 to 18·8)*	521·4 (355·2 to 721·5)	507·3 (346·5 to 710·4)	−2·7 (−4·5 to −0·9)*
Other vision loss	1690·5 (1191·0 to 2309·3)	1793·5 (1260·4 to 2452·0)	6·0 (2·8 to 9·7)*	29·8 (21·1 to 40·7)	27·1 (19·1 to 36·9)	−9·4 (−11·8 to −6·5)*
Other sense organ diseases	3909·6 (2421·5 to 5767·2)	4348·0 (2704·3 to 6435·1)	11·2 (9·5 to 12·9)*	62·1 (38·5 to 91·5)	62·2 (38·7 to 91·9)	0·1 (−1·3 to 1·6)
Oral disorders	14 385·1 (8778·2 to 22 332·8)	16 449·5 (10 022·3 to 25 506·3)	14·3 (13·2 to 15·5)*	252·5 (156·1 to 388·1)	245·9 (151·1 to 378·7)	−2·7 (−3·9 to −1·5)*
Deciduous caries	173·7 (75·1 to 335·6)	181·1 (79·0 to 350·9)	4·2 (2·7 to 5·9)*	2·5 (1·1 to 4·9)	2·5 (1·1 to 4·9)	−0·2 (−1·6 to 1·4)
Permanent caries	2190·3 (1007·6 to 4232·7)	2411·0 (1102·6 to 4664·5)	10·1 (8·6 to 11·5)*	33·2 (15·3 to 64·0)	33·4 (15·3 to 64·5)	0·5 (−0·9 to 1·8)
Periodontal diseases	2748·2 (1103·3 to 5617·2)	3286·0 (1318·3 to 6750·3)	19·6 (17·2 to 22·0)*	47·2 (19·0 to 96·4)	47·7 (19·1 to 97·9)	1·0 (−1·0 to 3·0)
Edentulism and severe tooth loss	5953·6 (4032·0 to 8148·1)	6855·6 (4647·2 to 9420·4)	15·2 (13·1 to 17·2)*	117·6 (79·7 to 160·8)	110·5 (75·0 to 151·7)	−6·1 (−7·6 to −4·5)*
Other oral disorders	3319·4 (2096·9 to 4915·4)	3715·7 (2347·5 to 5558·6)	11·9 (10·2 to 13·8)*	52·0 (32·9 to 77·0)	51·9 (32·8 to 77·6)	−0·2 (−1·7 to 1·4)
Sudden infant death syndrome	1313·3 (860·2 to 2147·1)	1299·5 (828·6 to 1849·5)	0·6 (−27·3 to 25·2)	18·8 (12·3 to 30·8)	17·6 (11·2 to 25·0)	−5·1 (−31·4 to 18·1)
Injuries	**267 681·2 (250 424·7 to 283 221·0)**	**247 582·4 (231 253·2 to 265 122·7)**	**−7·6 (−11·7 to −2·8)***	**4166·9 (3895·0 to 4427·3)**	**3464·2 (3234·7 to 3720·4)**	**−17·0 (−20·6 to −12·3)***
Transport injuries	**82 941·2 (75 570·2 to 87 805·0)**	**78 952·9 (72 122·8 to 85 115·6)**	**−4·9 (−9·8 to 0·7)**	**1270·5 (1154·4 to 1349·4)**	**1092·2 (998·8 to 1177·4)**	**−14·1 (−18·5 to −9·1)***
Road injuries	76 626·7 (70 107·3 to 81 166·5)	73 251·1 (66 857·1 to 78 671·0)	−4·4 (−9·5 to 1·0)	1171·6 (1069·3 to 1242·2)	1012·5 (923·7 to 1087·5)	−13·6 (−18·1 to −8·7)*
Pedestrian road injuries	26 400·1 (22 734·6 to 30 607·2)	25 580·0 (21 221·0 to 29 568·6)	−2·9 (−10·5 to 4·7)	408·7 (352·0 to 471·8)	358·0 (297·3 to 412·8)	−12·2 (−19·0 to −5·5)*
Cyclist road injuries	5010·9 (4305·2 to 5689·1)	4701·5 (4005·2 to 5424·2)	−6·4 (−12·6 to 0·7)	78·5 (67·6 to 88·9)	66·2 (56·5 to 76·3)	−15·9 (−21·4 to −9·4)*
Motorcyclist road injuries	15 234·5 (12 694·2 to 17 550·9)	14 199·2 (11 743·8 to 16 579·2)	−7·0 (−13·6 to 0·7)	227·8 (190·0 to 262·2)	192·8 (159·4 to 225·1)	−15·5 (−21·5 to −8·6)*

(Table 1 continues on next page)

	All ages DALYs (thousands)*			Age-standardised DALYs (per 100 000)*		
	2005	2013	Percentage change	2005	2013	Percentage change
(Continued from previous page)						
Motor vehicle road injuries	28677·5 (25364·5 to 31686·1)	27692·3 (24232·9 to 30737·9)	−3·4 (−8·0 to 1·4)	436·9 (386·5 to 482·5)	380·6 (333·3 to 422·3)	−12·9 (−16·9 to −8·7)*
Other road injuries	1303·7 (971·1 to 1666·4)	1078·1 (779·9 to 1337·0)	−17·6 (−28·2 to −2·3)*	19·7 (14·7 to 25·2)	14·9 (10·8 to 18·5)	−24·5 (−34·3 to −11·3)*
Other transport injuries	6314·5 (5315·6 to 7082·6)	5701·8 (4908·3 to 6443·6)	−10·1 (−15·9 to −0·8)*	98·8 (83·0 to 111·4)	79·7 (68·6 to 90·4)	−19·7 (−24·6 to −11·7)*
Unintentional injuries	**112792·0 (104542·3 to 121686·5)**	**105941·3 (96996·1 to 117265·2)**	**−6·3 (−11·1 to 0·2)**	**1789·1 (1651·5 to 1938·7)**	**1509·4 (1379·5 to 1673·8)**	**−15·8 (−20·0 to −10·1)***
Falls	26950·1 (22901·1 to 31245·3)	27491·4 (23388·5 to 31888·5)	2·1 (−4·0 to 7·6)	480·3 (407·5 to 561·2)	415·4 (352·5 to 483·2)	−13·5 (−18·4 to −9·0)*
Drowning	25529·1 (21942·1 to 29975·8)	21608·0 (18192·8 to 29799·1)	−17·3 (−23·9 to 4·0)	376·2 (323·4 to 441·8)	297·7 (250·8 to 410·4)	−22·6 (−28·7 to −2·8)*
Fire, heat, and hot substances	13280·4 (11575·9 to 15303·6)	12314·8 (10493·2 to 14700·0)	−7·8 (−20·3 to 11·5)	202·5 (176·3 to 232·5)	170·8 (145·7 to 203·9)	−16·2 (−27·1 to 0·7)
Poisonings	5492·5 (4200·6 to 6146·7)	4535·6 (3221·0 to 5172·8)	−17·4 (−25·8 to −9·0)*	83·4 (64·0 to 93·1)	62·7 (44·6 to 71·5)	−24·8 (−32·6 to −17·2)*
Exposure to mechanical forces	14798·4 (13371·9 to 16946·5)	14037·9 (12407·2 to 17176·1)	−6·1 (−11·5 to 6·0)	226·7 (204·2 to 259·5)	194·8 (172·2 to 237·8)	−14·9 (−19·6 to −3·8)*
Unintentional firearm injuries	2843·7 (2559·5 to 3173·4)	2502·6 (2193·8 to 2959·6)	−12·2 (−23·2 to 1·8)	42·5 (38·3 to 47·3)	34·2 (30·0 to 40·2)	−19·8 (−29·5 to −7·2)*
Unintentional suffocation	2365·8 (1972·6 to 3969·2)	2586·9 (1941·6 to 5623·3)	4·2 (−13·5 to 51·0)	34·5 (28·8 to 57·8)	35·4 (26·6 to 76·8)	−2·4 (−18·9 to 41·8)
Other exposure to mechanical forces	9588·9 (8377·2 to 11050·4)	8948·4 (7781·4 to 10308·1)	−6·7 (−12·1 to −1·3)*	149·6 (130·2 to 173·0)	125·3 (108·6 to 144·8)	−16·3 (−20·9 to −11·6)*
Adverse effects of medical treatment	5102·7 (3964·6 to 5855·4)	5392·2 (4125·3 to 6588·9)	5·5 (−7·8 to 22·5)	81·5 (63·3 to 93·0)	76·9 (58·9 to 93·8)	−5·8 (−17·1 to 8·4)
Animal contact	4358·7 (3411·5 to 6835·1)	4281·1 (3418·6 to 6930·8)	−2·7 (−15·2 to 14·8)	66·5 (52·4 to 104·3)	59·7 (47·7 to 96·8)	−11·0 (−22·2 to 5·0)
Venomous	3081·3 (2335·1 to 5172·1)	3002·4 (2356·4 to 5144·3)	−3·4 (−17·3 to 17·0)	46·6 (35·5 to 78·5)	41·7 (32·7 to 71·6)	−11·2 (−23·9 to 7·3)
Non-venomous	1277·4 (965·0 to 1739·0)	1278·7 (1012·2 to 1926·0)	−1·5 (−12·5 to 20·5)	19·9 (15·1 to 27·0)	18·0 (14·3 to 27·1)	−10·7 (−20·4 to 8·6)
Foreign body	7331·3 (5388·3 to 10125·9)	6988·8 (4964·4 to 9369·6)	−4·9 (−16·4 to 8·1)	112·8 (82·5 to 154·6)	98·5 (69·8 to 131·8)	−12·9 (−22·9 to −1·4)*
Pulmonary aspiration and foreign body in airway	6999·5 (5046·8 to 9797·1)	6633·1 (4586·4 to 8996·4)	−5·5 (−17·1 to 8·1)	107·4 (77·4 to 149·2)	93·4 (64·4 to 126·4)	−13·2 (−23·5 to −1·2)*
Foreign body in eyes	56·4 (33·4 to 85·5)	60·3 (35·0 to 91·7)	6·9 (3·8 to 9·6)*	0·9 (0·5 to 1·4)	0·9 (0·5 to 1·3)	−5·5 (−9·0 to −2·8)*
Foreign body in other body part	275·3 (225·5 to 344·5)	295·4 (241·7 to 384·4)	7·5 (−1·7 to 15·7)	4·5 (3·7 to 5·5)	4·2 (3·5 to 5·5)	−5·4 (−13·0 to 2·2)
Other unintentional injuries	9948·8 (9059·1 to 10862·9)	9291·4 (8357·0 to 10332·8)	−6·8 (−12·5 to 0·4)	159·1 (144·0 to 175·0)	132·8 (118·9 to 148·0)	−16·7 (−21·7 to −10·5)*

(Table 1 continues on next page)

of the epidemiological change with sociodemographic status.

We used hierarchical regression to decompose variance in log DALY rates into components related to the sociodemographic status, intercountry variation, year, and fraction explained by the interactions of the other variables. This approach estimates a simple model with uncorrelated random effects for year, country, and sociodemographic status.[26] We divided sociodemographic status into vigintiles (20 equal interval bins) to allow for non-linear correlations between log DALY rates and sociodemographic status for a cause. We did tests with up to 50 bins for the sociodemographic status variable with no change in qualitative results. We divided the variance of each random effect by total variance to decompose variance into different factors. We did this variance decomposition analysis for GBD level 2 and level 3 causes. We use these regressions to predict the pattern of DALYs by cause (and through separate regressions for YLLs and YLDs) purely as a function of sociodemographic status, holding all other random effects (year and country) at zero. Because there could be lagged effects between sociodemographic status and DALY rate, we tested alternative models with

	All ages DALYs (thousands)*			Age-standardised DALYs (per 100 000)*		
	2005	2013	Percentage change	2005	2013	Percentage change
(Continued from previous page)						
Self-harm and interpersonal violence	**60 826·5 (51 784·1 to 65 431·4)**	**56 574·6 (48 677·7 to 63 256·5)**	**–7·1 (–13·5 to 1·2)**	**925·1 (787·0 to 993·3)**	**773·4 (665·2 to 864·1)**	**–16·5 (–22·3 to –9·0)***
Self-harm	37 921·9 (31 030·3 to 40 888·4)	35 170·4 (29 194·0 to 39 484·9)	–7·5 (–15·9 to 3·5)	584·8 (478·8 to 629·8)	484·3 (403·8 to 542·8)	–17·4 (–24·7 to –7·7)*
Interpersonal violence	22 904·6 (17 216·9 to 27 308·2)	21 404·2 (16 041·0 to 25 695·2)	–6·8 (–12·2 to 1·0)	340·3 (255·2 to 405·6)	289·1 (216·7 to 347·3)	–15·3 (–20·2 to –8·2)*
Assault by firearm	9378·3 (6442·6 to 11 785·2)	9601·7 (6465·3 to 12 129·8)	2·0 (–5·5 to 12·4)	137·6 (94·4 to 173·8)	128·9 (86·8 to 163·0)	–6·6 (–13·4 to 2·8)
Assault by sharp object	6242·7 (4123·9 to 8202·9)	5907·0 (4065·6 to 8254·7)	–6·1 (–16·0 to 10·5)	92·9 (61·4 to 121·8)	79·7 (54·9 to 111·1)	–14·8 (–23·8 to 0·2)
Assault by other means	7283·5 (5393·8 to 9079·7)	5895·5 (4268·5 to 7509·6)	–19·7 (–25·6 to –8·9)*	109·9 (81·3 to 136·6)	80·5 (58·3 to 102·3)	–27·3 (–32·6 to –17·7)*
Forces of nature, war, and legal intervention	**11 121·5 (6687·7 to 18 862·5)**	**6113·6 (3504·8 to 11 068·7)**	**–45·0 (–55·3 to –35·0)***	**182·2 (108·3 to 312·3)**	**89·1 (50·7 to 160·0)**	**–51·2 (–59·7 to –42·9)***
Exposure to forces of nature	4123·6 (2740·1 to 7479·8)	1325·5 (818·9 to 2516·9)	–69·6 (–75·1 to –51·1)*	64·3 (42·4 to 116·3)	19·1 (11·8 to 36·1)	–71·9 (–76·9 to –55·7)*
Collective violence and legal intervention	6997·9 (3408·9 to 12 878·9)	4788·1 (2602·8 to 8707·0)	–31·2 (–47·5 to –5·7)*	118·0 (57·1 to 219·7)	70·1 (37·7 to 128·1)	–40·4 (–53·2 to –19·7)*

Data are DALYs (95% UI) or % change (95% UI). UI=uncertainty interval. DALY=disability-adjusted life-years. *Percentage change is statistically significant (p<0·05).

Table 1: **Global all-age DALYs and age-standardised DALYs for 306 causes in 2005 and 2013 with percentage change**

sociodemographic status lagged from 1 to 10 years. Use of sociodemographic status from the same year as the DALY rates explained, on average, the highest proportion of the variance in DALY rates.

Age standardisation

We selected the revised GBD 2013 world population standard for the age standardisation of rates. Details of the age standard, and its development, have been reported previously.[2]

Role of the funding source

The funder of the study had no role in study design, data collection, data analysis, data interpretation, or writing of the report. All authors had access to the data in the study and final responsibility to submit the paper.

Results

Global

Global life expectancy at birth for both sexes combined increased from 65·3 years (95% UI 65·0–65·6) in 1990 to 71·5 years (71·0–71·9) in 2013, whereas during the same interval, HALE at birth for both sexes combined increased from 56·9 years (54·5–59·1) to 62·3 years (59·7–64·8). The survivorship curves shift up and to the right with increasing quintiles of country sociodemographic status (figure 1). In the three groups of countries, defined as the lowest, middle three, and highest quintiles of country sociodemographic status in 2013, individuals are distributed across ranges of disability weights, with the majority of the population in most age groups living in health states with disability weights in the range 0·0–0·1. The fraction of individuals in the life table in full health (ie, living with a disability weight of zero) is 16·3% in the lowest sociodemographic status quintile of countries. Even in the most advantageous sociodemographic quintile of countries, the time lived in full health constitutes only a small fraction (17·5%) of the overall life course. At the other end of the spectrum, the expectation of years lived with disability weights greater than 0·5 is 3·59 years in the lowest quintile and 6·60 years in the highest quintile of countries.

Figure 2 shows the need to understand global epidemiological change in terms of numbers, rates, and age-standardised rates. The number of DALYs caused by communicable, maternal, neonatal, and nutritional disorders has declined steadily from 1·19 billion (95% UI 1·15 billion to 1·24 billion) in 1990 to 769·3 million (725·5 million to 814·9 million) in 2013, whereas DALYs for non-communicable diseases (NCDs) have increased steadily, rising from 1·08 billion (0·97 billion to 1·20 billion) to 1·43 billion (1·26 billion to 1·61 billion) during the same period (figure 2A). The year of crossover, during which global DALYs for NCDs exceeded those for global communicable, maternal, neonatal, and nutritional causes, was 1994. DALYs due to injuries have remained relatively constant, decreasing slightly from 269·6 million (251·6 million to 286·7 million) to 247·6 million (231·3 million to 265·1 million). Figure 2B shows crude DALY rates per 100 000 people for these three broad cause groups, thereby removing the effect of global population growth during the period. The DALY rate for NCDs has remained fairly constant, while substantial declines have occurred in

	Sociodemographic status	Year	Country	Unexplained
A.1. HIV/AIDS and tuberculosis	20·65%	1·13%	73·09%	5·13%
A.2. Diarrhoea, lower respiratory, and other common infectious diseases	79·14%	0·76%	18·19%	1·91%
A.3. Neglected tropical diseases and malaria	14·04%	0·08%	84·98%	0·91%
A.4. Maternal disorders	80·34%	0·17%	17·75%	1·74%
A.5. Neonatal disorders	86·90%	0·25%	11·29%	1·56%
A.6. Nutritional deficiencies	80·48%	0·06%	17·12%	2·33%
A.7. Other communicable, maternal, neonatal, and nutritional diseases	56·61%	0·52%	40·94%	1·94%
B.1. Neoplasms	15·62%	0·28%	80·91%	3·19%
B.2. Cardiovascular diseases	3·01%	1·19%	88·69%	7·11%
B.3. Chronic respiratory diseases	6·41%	3·05%	82·74%	7·80%
B.4. Cirrhosis	1·18%	0·10%	90·78%	7·94%
B.5. Digestive diseases	17·49%	0·96%	76·95%	4·60%
B.6. Neurological disorders	45·38%	0·01%	53·01%	1·61%
B.7. Mental and substance use disorders	28·62%	0·37%	68·41%	2·60%
B.8. Diabetes, urogenital, blood, and endocrine diseases	8·77%	1·85%	83·05%	6·33%
B.9. Musculoskeletal disorders	65·71%	0·02%	33·30%	0·96%
B.10. Other non-communicable diseases	57·14%	1·05%	33·72%	8·08%
C.1. Transport injuries	21·39%	1·76%	63·26%	13·58%
C.2. Unintentional injuries	4·58%	6·27%	80·81%	8·33%
C.3. Self-harm and interpersonal violence	2·61%	0·36%	91·23%	5·80%
C.4. Forces of nature, war, and legal intervention	24·54%	1·18%	55·63%	18·65%

DALY=disability-adjusted life-years. GBD=Global Burden of Disease.

***Table* 2: Decomposition of variance in 2013 global DALY rates per 100 000 people for GBD level 2 causes using hierarchical regression**

DALY rates for communicable, maternal, neonatal, and nutritional disorders (52·2%, 50·1–54·4) and injuries (32·0%, 27·0–35·9). The analysis of age-standardised DALY rates, shows that, after controlling for changes in population size and composition, NCD disease burden worldwide, has continued to decline, falling by 14·5% (11·6–17·3) between 1990 and 2013 (figure 3C). During the same period, worldwide age-standardised DALY rates fell by 42·4% (40·0–45·0) for communicable, maternal, neonatal, and nutritional disorders and 30·9% (26·1–34·7) for injuries.

We decomposed the changes in the number of DALYs into trends for two periods: 1990–2005 and 2005–2013 (figure 3).[10] Between 1990 and 2005, the number of global DALYs changed only slightly, from 2·54 billion (95% UI 2·40 billion to 2·70 billion) to 2·51 billion (2·33 billion to 2·72 billion). Looking at disease-level details within this relative stagnation reveals important trends for specific diseases (figure 3A); the earlier period was characterised by decreases in the number of DALYs from diarrhoea, lower respiratory infections, measles, neonatal causes, tuberculosis, and tetanus, with smaller contributions from declines in congenital causes and some injuries. Conversely, large increases in disease burden were recorded for HIV/AIDS and malaria, with smaller increases for road injuries and a diverse range of NCDs, including ischaemic heart disease, diabetes, low back and neck pain, stroke, and depression, in addition to several types of cancer. From 2005 to 2013, total DALYs worldwide decreased from 2·51 billion (2·33 billion to 2·72 billion) to 2·45 billion (2·23 billion to 2·68 billion; figure 3B). Decreases were recorded for diarrhoea, malaria, HIV/AIDS, lower respiratory infections, measles, tuberculosis, and neonatal causes, and nearly all injuries. Increases were noted for a wide range of NCDs, especially low back and neck pain, ischaemic heart disease, diabetes, chronic obstructive pulmonary disease (COPD), depression, stroke, and sense organ disorders. Although they were not large contributors to the number of DALYs, notable increases were seen for dengue, food-borne trematodes, and leishmaniasis. Separate analyses of changes in age-standardised DALY rates for the period 2005–13 (data not shown) suggest that most of the increases shown in figure 3 are caused by ageing of the population and population growth.

We assessed changes in the age-standardised DALY rates of the leading GBD level 3 causes for 1990–2005 and 2005–2013 (figure 4; level 4 of the GBD cause hierarchy is reported in the appendix p 2). Between 1990 and 2005 huge reductions occurred in measles, meningitis, iron-deficiency anaemia, congenital anomalies, tuberculosis, drowning, protein-energy malnutrition, and some neonatal disorders, whereas disease burden from HIV/AIDS and malaria substantially increased (figure 4). From 2005 to 2013, age-standardised DALY rates for ischaemic heart disease, lower respiratory infections, and

See Online for appendix

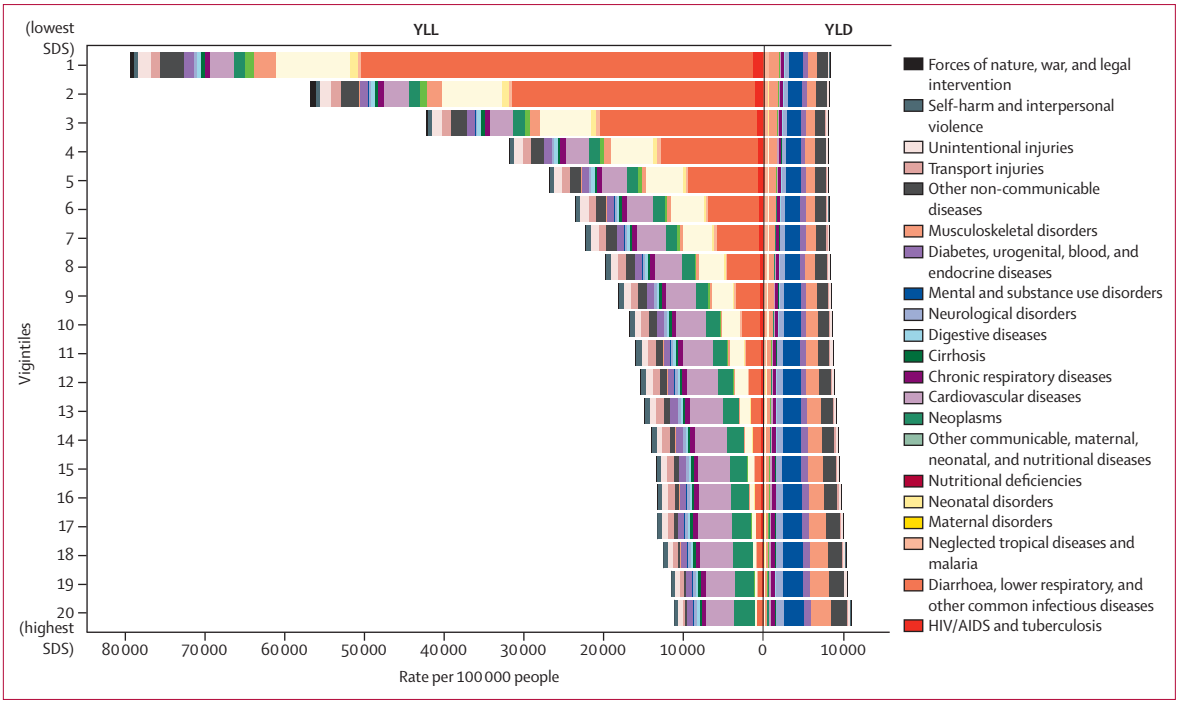


Figure 5: **YLL and YLD cause composition of DALY rates by sociodemographic status vigintile**
The epidemiological transition based on predicted YLL and YLD rates per 100 000 people as a function of the level of sociodemographic status by vigintile and broken down into GBD level 2 causes. These predicted levels control for variation explained by year and country. YLL= years of life lost. YLD=years lived with disability. GBD=Global Burden of Disease.

cerebrovascular disease have declined, although not sufficiently for these conditions to be replaced as the leading causes of disease burden worldwide. The ranks of low back and neck pain, road injuries and COPD have all increased since 2005. Age-standardised rates decreased significantly for 16 of the 25 leading causes of DALYs in 2013; for the remaining nine causes (Alzheimer's disease, chronic kidney disease, congenital anomalies, depressive disorders, diabetes, low back and neck pain, migraine, neonatal sepsis, and skin diseases), age-standardised rates did not significantly change.

Table 1 shows DALYs for each cause in 2005 and 2013 and changes in numbers and age-standardised rates of the DALYs (for the same information for 1990 to 2013 see appendix p 4).

Decomposition of epidemiological patterns

We decomposed the variance of DALY rates for GBD level 2 causes into contributions from sociodemographic status, year, country, and unexplained sources (residual; table 2). Sociodemographic status explained more than 50% of the variance for diarrhoea, lower respiratory infections and other common infectious diseases; maternal disorders; neonatal disorders; nutritional deficiencies; other communicable diseases; musculoskeletal disorders; and other NCDs. Furthermore, sociodemographic status explains between a fifth and a half of the variance for HIV/AIDS and tuberculosis; neurological disorders; mental and substance use disorders; transport injuries; and forces of nature, war, and legal intervention. Sociodemographic status explained little of the variance in the DALY rates for neglected tropical diseases and malaria, for which time-invariant country differences account for 84·98% of the variance. Notably, less than 10% of the variance in the burden of several level 2 causes could be related to sociodemographic status, including cardiovascular diseases; chronic respiratory diseases; cirrhosis; diabetes, urogenital, blood, and endocrine diseases; unintentional injuries; and self-harm and interpersonal violence. Year explained less than 7% of variance for all causes. By contrast, time invariant intercountry variation was an important component of the variance in DALY rates for all causes, ranging from a low of 11·29% for neonatal disorders to 91·23% for self-harm and interpersonal violence. Intercountry variation explains more than two-thirds of the total variance in DALY rates for HIV/AIDS and tuberculosis; neglected tropical diseases and malaria; neoplasms; cardiovascular diseases; chronic respiratory diseases; cirrhosis; digestive diseases; mental and substance use disorders; diabetes, urogenital, blood, and endocrine disorders; unintentional injuries; and self-harm and interpersonal violence. Notably, together, sociodemographic status and country account for more than 90% of the variance for 17 of 21 GBD level 2 causes; indeed, the lowest fraction of variance accounted for by these three factors is 80·2% for forces of nature, war, and legal intervention.

	1990				2005				2013			
	Male population		Female population		Male population		Female population		Male population		Female population	
	Life expectancy (years)	HALE (years)	Life expectancy (years)	HALE (years)	Life expectancy (years)	HALE (years)	Life expectancy (years)	HALE (years)	Life expectancy (years)	HALE (years)	Life expectancy (years)	HALE (years)
Global	63·01 (62·59–63·46)	55·40 (53·10–57·42)	67·68 (67·20–68·10)	58·51 (55·90–60·87)	66·23 (65·90–66·57)	58·27 (55·96–60·39)	71·31 (70·95–71·64)	61·54 (58·67–64·08)	68·80 (68·16–69·41)	60·59 (58·15–62·89)	74·29 (73·79–74·79)	64·13 (61·25–66·84)
Developed	70·64 (70·56–70·71)	62·12 (59·70–64·26)	77·97 (77·90–78·04)	67·18 (64·15–69·86)	72·55 (72·51–72·59)	63·56 (61·04–65·82)	79·85 (79·82–79·89)	68·48 (65·28–71·34)	75·50 (75·27–75·76)	66·00 (63·26–68·39)	81·82 (81·62–82·02)	70·03 (66·71–73·04)
Developing	61·40 (60·86–61·99)	54·04 (51·75–56·06)	64·89 (64·25–65·43)	56·26 (53·79–58·54)	64·96 (64·54–65·41)	57·30 (55·07–59·35)	69·14 (68·67–69·57)	59·88 (57·14–62·28)	67·30 (66·50–68·09)	59·47 (57·11–61·77)	72·28 (71·67–72·92)	62·65 (59·89–65·27)
High income	72·63 (72·60–72·67)	63·70 (61·19–65·94)	79·35 (79·31–79·39)	68·06 (64·92–70·91)	76·40 (76·37–76·44)	66·56 (63·82–69·04)	82·15 (82·11–82·18)	70·06 (66·73–73·10)	77·83 (77·51–78·15)	67·72 (64·81–70·25)	83·22 (82·97–83·49)	70·92 (67·54–74·08)
Australasia	73·68 (73·57–73·78)	64·00 (61·31–66·46)	79·82 (79·70–79·94)	67·80 (64·40–70·85)	78·60 (78·48–78·70)	67·68 (64·65–70·43)	83·32 (83·23–83·43)	70·30 (66·64–73·65)	79·53 (79·02–80·03)	68·39 (65·28–71·11)	83·77 (83·32–84·22)	70·60 (66·94–73·89)
Australia	73·93 (73·80–74·05)	64·14 (61·40–66·61)	80·15 (80·01–80·28)	67·93 (64·47–71·03)	78·80 (78·67–78·93)	67·79 (64·76–70·55)	83·62 (83·52–83·74)	70·35 (66·60–73·75)	79·71 (79·13–80·30)	68·43 (65·30–71·22)	83·99 (83·48–84·52)	70·63 (66·92–73·92)
New Zealand	72·49 (72·26–72·69)	63·27 (60·70–65·60)	78·21 (77·98–78·43)	67·18 (64·06–69·92)	77·56 (77·36–77·76)	67·12 (64·14–69·78)	81·86 (81·66–82·06)	70·02 (66·72–73·04)	78·61 (77·82–79·36)	68·19 (65·19–70·88)	82·66 (82·02–83·32)	70·48 (66·98–73·58)
High-income Asia Pacific	74·20 (74·09–74·30)	66·37 (64·12–68·35)	80·79 (80·68–80·90)	71·03 (68·18–73·55)	77·97 (77·92–78·02)	69·16 (66·57–71·42)	84·87 (84·81–84·93)	73·98 (70·83–76·75)	79·43 (78·82–80·08)	70·45 (67·82–72·84)	85·91 (85·37–86·50)	74·82 (71·64–77·76)
Brunei	72·41 (71·88–72·90)	65·11 (62·90–67·06)	75·67 (75·09–76·25)	67·12 (64·58–69·36)	75·75 (74·97–76·65)	67·79 (65·37–69·99)	78·90 (78·23–79·69)	69·67 (66·94–72·16)	76·88 (74·71–78·99)	68·80 (66·05–71·51)	80·65 (78·76–82·42)	70·97 (67·86–73·94)
Japan	76·04 (75·98–76·10)	68·09 (65·83–70·11)	81·96 (81·86–82·05)	72·24 (69·38–74·77)	78·66 (78·60–78·71)	69·89 (67·31–72·12)	85·48 (85·41–85·54)	74·77 (71·66–77·46)	80·05 (79·26–80·84)	71·11 (68·50–73·57)	86·39 (85·74–87·12)	75·56 (72·46–78·42)
Singapore	72·60 (72·39–72·79)	65·26 (63·12–67·16)	77·61 (77·39–77·83)	68·49 (65·76–70·90)	77·99 (77·79–78·20)	69·25 (66·67–71·56)	82·28 (82·05–82·51)	72·00 (69·01–74·73)	79·71 (79·01–80·39)	70·75 (68·01–73·17)	84·03 (83·33–84·76)	73·35 (70·28–76·30)
South Korea	67·74 (67·42–68·02)	60·48 (58·30–62·38)	76·26 (76·00–76·49)	66·48 (63·66–69·02)	75·32 (75·19–75·45)	66·59 (64·02–68·81)	81·95 (81·80–82·11)	70·79 (67·58–73·68)	77·20 (76·37–78·07)	68·26 (65·57–70·64)	83·66 (82·95–84·33)	72·05 (68·74–75·07)
High-income North America	72·10 (72·02–72·18)	62·91 (60·36–65·24)	79·00 (78·94–79·06)	67·13 (63·94–70·09)	75·32 (75·23–75·41)	65·08 (62·23–67·67)	80·48 (80·39–80·56)	67·94 (64·49–71·10)	76·64 (75·90–77·42)	66·17 (63·13–68·98)	81·62 (80·89–82·28)	68·85 (65·36–72·17)
Canada	74·20 (74·10–74·31)	65·13 (62·54–67·48)	80·59 (80·48–80·69)	68·74 (65·50–71·70)	77·87 (77·74–77·99)	67·84 (64·98–70·45)	82·64 (82·53–82·75)	70·31 (66·84–73·46)	79·44 (78·85–80·01)	69·11 (66·08–71·82)	83·43 (82·85–83·95)	71·04 (67·54–74·25)
USA	71·87 (71·79–71·96)	62·66 (60·13–64·98)	78·84 (78·77–78·90)	66·96 (63·75–69·92)	75·04 (74·94–75·14)	64·78 (61·92–67·37)	80·25 (80·16–80·34)	67·68 (64·23–70·85)	76·33 (75·50–77·18)	65·84 (62·83–68·74)	81·42 (80·58–82·16)	68·61 (65·10–71·93)
Southern Latin America	69·14 (69·02–69·26)	61·39 (59·16–63·30)	76·39 (76·26–76·51)	66·72 (64·02–69·17)	72·67 (72·59–72·76)	64·31 (61·92–66·41)	79·54 (79·45–79·62)	69·08 (66·14–71·66)	73·38 (72·73–73·99)	65·03 (62·64–67·23)	80·20 (79·73–80·71)	69·81 (66·80–72·49)
Argentina	69·00 (68·84–69·16)	61·27 (58·99–63·19)	76·21 (76·02–76·39)	66·60 (63·88–69·09)	71·79 (71·68–71·90)	63·59 (61·22–65·66)	79·00 (78·88–79·12)	68·72 (65·82–71·31)	72·29 (71·60–72·96)	64·17 (61·75–66·39)	79·58 (79·03–80·21)	69·44 (66·52–72·10)
Chile	69·51 (69·36–69·67)	61·72 (59·50–63·68)	76·54 (76·39–76·69)	66·79 (63·99–69·32)	75·51 (75·38–75·63)	66·51 (63·90–68·78)	81·12 (80·98–81·26)	70·19 (67·05–72·90)	76·31 (75·33–77·32)	67·32 (64·75–69·69)	81·72 (80·79–82·63)	70·77 (67·66–73·58)
Uruguay	69·20 (68·98–69·43)	61·49 (59·32–63·40)	76·68 (76·40–76·94)	67·00 (64·18–69·48)	71·69 (71·33–72·03)	63·79 (61·52–65·79)	79·01 (78·66–79·32)	68·69 (65·72–71·30)	73·03 (71·67–74·49)	64·78 (62·07–67·23)	80·62 (79·28–81·86)	70·03 (66·78–72·90)

(Table 3 continues on next page)

	1990				2005				2013			
	Male population		Female population		Male population		Female population		Male population		Female population	
	Life expectancy (years)	HALE (years)	Life expectancy (years)	HALE (years)	Life expectancy (years)	HALE (years)	Life expectancy (years)	HALE (years)	Life expectancy (years)	HALE (years)	Life expectancy (years)	HALE (years)
(Continued from previous page)												
Western Europe	72·89 (72·86–72·92)	63·57 (60·94–65·90)	79·48 (79·44–79·52)	67·84 (64·61–70·79)	77·01 (76·98–77·05)	66·88 (64·04–69·39)	82·60 (82·56–82·63)	70·20 (66·77–73·31)	78·64 (78·43–78·84)	68·17 (65·17–70·76)	83·68 (83·50–83·87)	71·07 (67·59–74·21)
Andorra	77·26 (74·31–79·57)	66·90 (63·21–70·19)	83·69 (81·63–85·87)	71·01 (67·26–74·61)	79·61 (78·44–80·81)	68·73 (65·72–71·63)	86·39 (85·04–87·63)	73·05 (69·23–76·57)	80·88 (78·82–83·59)	69·92 (66·35–73·17)	86·62 (84·68–88·75)	73·39 (69·46–77·29)
Austria	72·18 (72·05–72·31)	63·40 (60·77–65·66)	78·81 (78·65–78·99)	68·01 (64·96–70·61)	76·69 (76·56–76·82)	66·97 (64·22–69·33)	82·35 (82·21–82·52)	70·71 (67·31–73·55)	78·30 (77·65–78·98)	68·47 (65·67–71·07)	83·10 (82·49–83·72)	71·21 (67·86–74·27)
Belgium	72·68 (72·54–72·81)	63·02 (60·31–65·48)	79·22 (79·06–79·38)	67·60 (64·25–70·55)	76·26 (76·13–76·37)	65·74 (62·81–68·36)	81·98 (81·84–82·12)	69·51 (65·98–72·67)	77·62 (76·62–78·57)	67·05 (64·00–69·94)	82·66 (81·75–83·53)	70·29 (66·89–73·64)
Cyprus	75·59 (75·07–76·05)	65·10 (61·90–67·84)	81·06 (80·65–81·43)	69·34 (66·03–72·36)	77·50 (77·11–77·91)	67·34 (64·45–69·97)	83·44 (83·14–83·74)	71·11 (67·61–74·16)	79·59 (78·51–80·61)	69·16 (66·02–71·97)	84·73 (83·83–85·56)	72·22 (68·71–75·60)
Denmark	72·31 (72·15–72·47)	63·20 (60·51–65·44)	77·81 (77·62–78·02)	66·85 (63·78–69·53)	75·85 (75·66–76·02)	66·07 (63·26–68·48)	80·39 (80·22–80·56)	68·69 (65·44–71·58)	77·82 (77·05–78·54)	67·79 (64·88–70·32)	82·02 (81·29–82·77)	70·14 (66·78–73·26)
Finland	70·94 (70·78–71·10)	61·40 (58·70–63·74)	79·00 (78·79–79·18)	67·29 (63·96–70·27)	75·30 (75·12–75·47)	64·68 (61·60–67·26)	82·11 (81·92–82·31)	69·09 (65·56–72·28)	77·37 (76·69–78·13)	66·45 (63·30–69·33)	83·79 (83·11–84·47)	70·68 (66·93–73·93)
France	73·04 (72·96–73·13)	64·00 (61·40–66·24)	81·21 (81·09–81·32)	69·54 (66·36–72·47)	76·84 (76·74–76·94)	67·10 (64·29–69·51)	83·88 (83·78–83·97)	71·37 (67·86–74·44)	78·38 (77·81–78·98)	68·43 (65·51–71·11)	84·91 (84·43–85·40)	72·32 (68·87–75·53)
Germany	71·96 (71·88–72·04)	62·32 (59·63–64·74)	78·52 (78·42–78·60)	66·70 (63·42–69·72)	76·59 (76·51–76·67)	66·11 (63·13–68·71)	82·07 (82·00–82·13)	69·35 (65·83–72·52)	78·18 (77·94–78·42)	67·27 (64·18–70·02)	83·14 (82·91–83·37)	70·31 (66·67–73·60)
Greece	74·53 (74·38–74·68)	65·34 (62·70–67·63)	79·44 (79·29–79·59)	68·42 (65·15–71·20)	76·40 (76·26–76·55)	66·82 (64·07–69·25)	81·47 (81·28–81·68)	70·22 (66·93–73·03)	77·41 (76·77–78·07)	67·90 (65·13–70·44)	82·24 (81·67–82·75)	70·75 (67·46–73·67)
Iceland	75·98 (75·51–76·51)	65·94 (63·07–68·59)	80·23 (79·63–80·81)	68·47 (65·11–71·38)	79·54 (79·01–80·13)	68·66 (65·52–71·55)	83·07 (82·52–83·65)	70·50 (66·98–73·68)	80·81 (79·45–82·21)	69·72 (66·51–72·60)	84·82 (83·61–86·05)	72·00 (68·40–75·30)
Ireland	72·13 (71·94–72·33)	63·31 (60·81–65·50)	77·64 (77·39–77·89)	66·86 (63·75–69·59)	76·58 (76·36–76·79)	66·74 (63·94–69·22)	81·26 (81·01–81·50)	69·49 (66·14–72·38)	78·20 (76·70–79·55)	68·20 (65·13–71·01)	82·67 (81·36–83·81)	70·73 (67·38–73·99)
Israel	74·72 (74·50–74·93)	65·22 (62·56–67·62)	78·08 (77·89–78·28)	67·51 (64·53–70·18)	77·86 (77·69–78·02)	67·62 (64·73–70·17)	82·03 (81·85–82·21)	70·20 (66·83–73·12)	80·25 (79·82–80·68)	69·46 (66·46–72·26)	84·02 (83·59–84·42)	71·70 (68·22–74·95)
Italy	73·60 (73·53–73·67)	64·47 (61·92–66·74)	80·23 (80·11–80·35)	68·12 (64·71–71·15)	78·32 (78·24–78·38)	68·32 (65·48–70·83)	83·76 (83·68–83·84)	70·95 (67·41–74·16)	79·45 (78·63–80·20)	69·11 (66·24–71·89)	84·60 (83·80–85·28)	71·36 (67·70–74·92)
Luxembourg	71·64 (71·19–72·08)	62·52 (59·85–64·89)	78·43 (77·94–78·93)	67·06 (63·74–70·02)	76·90 (76·53–77·29)	66·59 (63·67–69·23)	82·47 (82·03–82·88)	69·81 (66·27–73·04)	79·05 (78·15–80·13)	68·14 (65·04–71·19)	83·10 (81·79–84·36)	70·48 (66·79–73·79)
Malta	74·99 (74·46–75·60)	65·03 (62·33–67·50)	80·04 (79·54–80·55)	67·90 (64·41–70·91)	78·82 (78·35–79·27)	67·88 (64·82–70·72)	82·77 (82·30–83·19)	69·93 (66·32–73·25)	79·81 (78·49–81·02)	68·77 (65·75–71·73)	84·35 (83·19–85·46)	71·16 (67·36–74·72)
Netherlands	73·85 (73·74–73·96)	64·56 (61·93–66·91)	80·09 (79·97–80·22)	68·33 (65·06–71·32)	77·28 (77·15–77·41)	67·24 (64·43–69·80)	81·60 (81·46–81·72)	69·55 (66·19–72·56)	78·69 (78·07–79·30)	68·35 (65·30–71·00)	82·42 (81·79–83·02)	70·17 (66·64–73·28)
Norway	73·62 (73·43–73·80)	64·23 (61·62–66·54)	80·04 (79·83–80·25)	68·57 (65·38–71·53)	77·72 (77·55–77·88)	67·43 (64·54–70·01)	82·30 (82·09–82·50)	70·38 (67·03–73·42)	79·09 (78·66–79·48)	68·56 (65·57–71·25)	83·71 (83·32–84·16)	71·66 (68·36–74·79)
Portugal	70·65 (70·52–70·80)	61·78 (59·26–64·05)	77·84 (77·67–77·98)	66·87 (63·72–69·66)	75·03 (74·90–75·15)	65·53 (62·79–67·95)	81·71 (81·56–81·85)	69·72 (66·30–72·67)	76·65 (76·00–77·31)	66·74 (63·86–69·29)	82·95 (82·36–83·62)	70·75 (67·29–74·09)

(Table 3 continues on next page)

	1990				2005				2013			
	Male population		Female population		Male population		Female population		Male population		Female population	
	Life expectancy (years)	HALE (years)	Life expectancy (years)	HALE (years)	Life expectancy (years)	HALE (years)	Life expectancy (years)	HALE (years)	Life expectancy (years)	HALE (years)	Life expectancy (years)	HALE (years)
(Continued from previous page)												
Spain	73·33 (73·22–73·45)	63·89 (61·15–66·19)	80·57 (80·44–80·70)	68·88 (65·50–71·82)	77·05 (76·97–77·12)	66·90 (64·07–69·48)	83·74 (83·63–83·86)	71·49 (68·08–74·58)	78·97 (78·41–79·57)	68·40 (65·34–71·23)	84·43 (83·98–84·90)	71·83 (68·22–75·18)
Sweden	74·78 (74·63–74·91)	64·73 (61·96–67·24)	80·39 (80·21–80·55)	68·22 (64·89–71·29)	78·35 (78·22–78·49)	67·51 (64·50–70·19)	82·54 (82·37–82·70)	69·96 (66·57–73·13)	79·64 (79·01–80·28)	68·53 (65·53–71·37)	83·87 (83·26–84·54)	70·95 (67·58–74·27)
Switzerland	74·07 (73·91–74·22)	63·59 (60·69–66·15)	80·94 (80·76–81·12)	67·93 (64·53–71·15)	78·63 (78·48–78·78)	66·97 (63·79–69·86)	83·64 (83·48–83·81)	69·88 (66·12–73·31)	80·46 (79·81–81·09)	68·63 (65·34–71·51)	84·77 (84·17–85·35)	71·16 (67·44–74·56)
UK	72·87 (72·79–72·95)	63·76 (61·12–66·08)	78·44 (78·35–78·52)	67·26 (64·17–70·08)	76·83 (76·71–76·95)	66·73 (63·94–69·28)	81·21 (81·11–81·31)	69·26 (65·88–72·21)	79·09 (78·57–79·67)	68·48 (65·50–71·16)	82·84 (82·25–83·35)	70·56 (67·16–73·66)
Central Europe, Eastern Europe, and central Asia	64·77 (64·58–64·95)	57·48 (55·33–59·31)	73·62 (73·44–73·77)	64·25 (61·49–66·62)	62·77 (62·65–62·88)	55·90 (53·86–57·62)	73·51 (73·41–73·60)	64·05 (61·28–66·45)	67·73 (67·47–67·96)	60·24 (58·08–62·23)	76·92 (76·69–77·15)	66·89 (63·97–69·48)
Central Asia	62·82 (62·48–63·18)	56·08 (54·11–57·81)	70·31 (69·93–70·66)	61·67 (59·05–63·90)	63·38 (62·85–63·84)	56·64 (54·66–58·45)	71·32 (70·88–71·74)	62·56 (59·99–64·86)	65·59 (64·52–66·56)	58·68 (56·55–60·70)	73·64 (72·74–74·62)	64·59 (61·99–67·18)
Armenia	66·32 (65·52–66·98)	59·11 (56·97–61·10)	73·60 (72·91–74·40)	64·46 (61·72–66·84)	68·28 (67·56–69·09)	60·93 (58·76–62·90)	76·06 (75·25–76·66)	66·40 (63·52–68·93)	70·22 (68·97–71·45)	62·73 (60·21–64·87)	77·55 (76·24–78·50)	67·76 (64·80–70·53)
Azerbaijan	62·31 (61·45–63·17)	55·71 (53·62–57·71)	70·03 (69·25–70·76)	61·14 (58·56–63·59)	66·22 (65·36–67·15)	59·00 (56·67–61·06)	72·87 (71·98–73·73)	63·31 (60·52–65·93)	68·75 (66·87–71·05)	61·21 (58·58–63·85)	75·82 (74·11–77·11)	65·75 (62·73–68·70)
Georgia	65·82 (64·82–66·57)	58·78 (56·67–60·77)	74·23 (73·45–75·01)	65·22 (62·54–67·64)	67·70 (66·85–68·43)	60·36 (58·07–62·34)	76·98 (76·19–77·54)	67·23 (64·38–69·77)	67·69 (66·45–69·02)	60·52 (58·20–62·73)	78·16 (76·86–79·18)	68·28 (65·34–71·05)
Kazakhstan	61·99 (61·16–62·82)	55·43 (53·47–57·27)	71·29 (70·56–72·00)	62·53 (59·97–64·93)	59·28 (58·44–60·17)	53·37 (51·48–55·11)	70·47 (69·77–71·19)	62·03 (59·53–64·34)	62·60 (60·59–64·29)	56·29 (53·79–58·55)	73·07 (71·44–74·50)	64·24 (61·46–66·82)
Kyrgyzstan	61·42 (60·60–62·29)	54·90 (52·81–56·80)	69·11 (68·30–69·89)	60·73 (58·14–63·05)	62·52 (61·66–63·36)	56·01 (53·90–57·86)	70·60 (69·98–71·34)	62·17 (59·57–64·44)	64·48 (62·94–66·14)	57·92 (55·68–60·12)	72·87 (71·45–74·28)	64·10 (61·30–66·70)
Mongolia	59·39 (58·19–60·67)	53·08 (50·91–55·02)	64·37 (63·27–65·64)	57·01 (54·66–59·31)	58·36 (57·25–59·47)	52·57 (50·64–54·27)	66·62 (65·71–67·49)	59·24 (56·96–61·31)	60·54 (58·40–62·54)	54·58 (52·13–56·86)	69·38 (67·53–71·26)	61·61 (59·06–64·22)
Tajikistan	62·39 (61·39–63·34)	55·52 (53·35–57·54)	67·50 (66·57–68·38)	59·37 (56·85–61·69)	66·40 (65·49–67·51)	58·50 (55·99–60·91)	71·32 (70·22–72·22)	62·40 (59·58–64·85)	68·09 (66·48–70·16)	60·24 (57·54–62·96)	73·19 (71·34–74·70)	64·08 (61·21–66·81)
Turkmenistan	59·89 (58·84–60·89)	53·57 (51·46–55·53)	66·63 (65·60–67·59)	58·69 (56·17–61·00)	60·89 (57·91–63·95)	54·75 (51·92–57·51)	68·84 (65·92–71·36)	60·71 (57·48–63·67)	63·47 (60·49–66·53)	57·11 (54·02–60·18)	71·73 (68·65–73·93)	63·19 (59·90–66·28)
Uzbekistan	64·58 (63·81–65·34)	57·60 (55·50–59·50)	70·64 (69·96–71·43)	61·90 (59·14–64·24)	65·38 (64·24–66·43)	58·25 (56·04–60·37)	70·95 (69·86–72·09)	62·35 (59·76–64·81)	66·64 (63·73–69·56)	59·60 (56·48–62·60)	72·95 (70·38–75·91)	64·25 (61·01–67·69)
Central Europe	67·25 (67·09–67·41)	59·27 (56·95–61·29)	74·90 (74·74–75·04)	65·29 (62·56–67·72)	70·64 (70·59–70·69)	62·07 (59·52–64·25)	78·10 (78·05–78·16)	67·63 (64·59–70·24)	73·14 (72·84–73·45)	64·30 (61·76–66·57)	80·09 (79·83–80·31)	69·39 (66·32–72·11)
Albania	71·02 (70·35–71·64)	61·83 (59·17–64·26)	76·24 (75·66–76·77)	65·74 (62·76–68·51)	71·53 (70·46–72·58)	62·64 (59·98–65·15)	77·62 (76·54–78·60)	67·00 (63·88–69·82)	72·68 (69·64–75·97)	63·85 (60·53–67·08)	79·32 (76·65–81·80)	68·64 (64·96–71·89)
Bosnia and Herzegovina	69·36 (69·14–69·56)	61·24 (58·87–63·32)	76·71 (76·39–77·06)	66·88 (63·95–69·43)	72·55 (72·33–72·78)	63·09 (60·24–65·71)	78·74 (78·51–79·01)	68·01 (64·91–70·72)	74·36 (73·42–75·24)	65·23 (62·44–67·69)	80·63 (79·73–81·58)	70·05 (67·03–72·93)
Bulgaria	68·31 (68·13–68·49)	60·02 (57·61–62·15)	74·78 (74·60–74·96)	65·13 (62·34–67·56)	69·06 (68·91–69·21)	60·83 (58·37–62·96)	76·20 (76·01–76·37)	66·24 (63·32–68·84)	71·23 (70·72–71·70)	62·75 (60·29–64·94)	77·81 (77·39–78·25)	67·64 (64·72–70·37)

(Table 3 continues on next page)

	1990				2005				2013			
	Male population		Female population		Male population		Female population		Male population		Female population	
	Life expectancy (years)	HALE (years)	Life expectancy (years)	HALE (years)	Life expectancy (years)	HALE (years)	Life expectancy (years)	HALE (years)	Life expectancy (years)	HALE (years)	Life expectancy (years)	HALE (years)
(Continued from previous page)												
Croatia	68·71 (68·52–68·90)	60·96 (58·66–62·97)	76·69 (76·44–76·96)	67·03 (64·21–69·46)	72·43 (72·24–72·61)	63·91 (61·43–66·08)	79·99 (79·70–80·29)	69·49 (66·43–72·13)	74·18 (73·61–74·67)	65·52 (62·97–67·85)	81·29 (80·71–81·86)	70·62 (67·48–73·43)
Czech Republic	67·82 (67·69–67·94)	59·61 (57·25–61·68)	75·45 (75·29–75·61)	65·50 (62·63–68·02)	73·01 (72·89–73·13)	63·57 (60·79–65·96)	79·44 (79·29–79·57)	68·35 (65·21–71·15)	75·33 (74·98–75·71)	65·62 (62·75–68·06)	80·93 (80·56–81·30)	69·79 (66·58–72·65)
Hungary	65·27 (65·13–65·42)	57·76 (55·64–59·68)	73·90 (73·73–74·06)	64·27 (61·50–66·69)	68·76 (68·66–68·88)	60·69 (58·36–62·74)	77·26 (77·12–77·40)	66·88 (63·87–69·48)	72·18 (71·77–72·58)	63·60 (61·08–65·84)	79·26 (78·89–79·62)	68·68 (65·67–71·37)
Macedonia	70·40 (69·91–70·79)	61·66 (59·04–63·95)	75·46 (75·06–75·90)	65·51 (62·57–67·99)	72·34 (72·20–72·49)	63·59 (61·01–65·82)	77·95 (77·73–78·19)	67·62 (64·62–70·21)	73·91 (73·00–74·90)	65·13 (62·37–67·69)	79·42 (78·42–80·38)	69·00 (65·93–71·88)
Montenegro	70·21 (67·86–72·65)	61·68 (58·69–64·59)	77·34 (75·08–79·25)	66·87 (63·62–69·97)	71·08 (70·58–71·55)	62·64 (60·24–64·78)	76·75 (76·29–77·25)	66·89 (64·01–69·50)	72·59 (71·17–74·26)	64·11 (61·38–66·63)	78·61 (77·19–80·17)	68·44 (65·45–71·35)
Poland	66·43 (66·32–66·54)	58·66 (56·34–60·62)	75·40 (75·28–75·51)	65·64 (62·78–68·14)	70·69 (70·61–70·77)	62·05 (59·48–64·30)	79·29 (79·19–79·39)	68·46 (65·30–71·15)	72·64 (71·98–73·25)	63·86 (61·35–66·20)	81·02 (80·50–81·58)	70·03 (66·77–72·88)
Romania	66·64 (66·44–66·85)	58·68 (56·32–60·71)	73·11 (72·89–73·32)	64·15 (61·55–66·45)	69·09 (68·96–69·21)	60·85 (58·43–62·91)	76·16 (76·01–76·29)	66·29 (63·39–68·74)	72·77 (71·99–73·46)	64·02 (61·45–66·36)	79·17 (78·50–79·82)	68·77 (65·76–71·48)
Serbia	70·58 (68·51–72·80)	61·93 (58·81–64·79)	76·73 (74·70–78·70)	66·93 (63·72–69·80)	72·99 (72·85–73·12)	64·43 (61·89–66·61)	78·58 (78·42–78·75)	68·07 (65·09–70·70)	75·02 (74·44–75·54)	66·24 (63·74–68·54)	80·18 (79·68–80·73)	69·73 (66·76–72·56)
Slovakia	66·63 (66·46–66·79)	58·83 (56·55–60·78)	75·38 (75·21–75·57)	65·80 (63·00–68·23)	70·36 (70·20–70·51)	61·88 (59·37–64·05)	78·16 (77·98–78·33)	67·92 (64·97–70·45)	72·61 (71·77–73·36)	63·87 (61·32–66·26)	79·70 (79·00–80·39)	69·25 (66·22–72·06)
Slovenia	69·62 (69·39–69·85)	60·87 (58·38–63·06)	77·39 (77·10–77·67)	66·96 (63·96–69·60)	73·52 (73·29–73·75)	63·98 (61·29–66·35)	80·73 (80·38–81·08)	69·37 (66·15–72·17)	76·86 (75·83–77·82)	66·87 (63·87–69·51)	82·95 (82·02–83·74)	71·35 (68·04–74·39)
Eastern Europe	64·62 (64·25–64·93)	57·52 (55·41–59·37)	74·44 (74·15–74·70)	64·94 (62·12–67·36)	59·58 (59·47–59·68)	53·36 (51·52–54·97)	72·52 (72·42–72·61)	63·25 (60·46–65·61)	66·00 (65·69–66·33)	59·04 (56·97–60·93)	76·70 (76·42–76·93)	66·66 (63·69–69·20)
Belarus	65·77 (65·19–66·30)	58·73 (56·65–60·72)	75·48 (74·99–75·87)	65·94 (63·06–68·57)	62·93 (62·52–63·31)	56·49 (54·53–58·22)	74·89 (74·59–75·19)	65·41 (62·65–67·90)	64·32 (63·22–65·64)	57·93 (55·72–59·87)	76·18 (75·26–77·16)	66·62 (63·60–69·31)
Estonia	65·23 (65·01–65·47)	58·18 (56·13–59·98)	75·36 (75·06–75·61)	65·53 (62·63–68·09)	66·86 (66·62–67·10)	59·62 (57·49–61·50)	77·67 (77·44–77·91)	67·34 (64·28–69·99)	71·54 (70·98–72·14)	63·63 (61·34–65·78)	81·10 (80·56–81·89)	69·94 (66·67–72·87)
Latvia	64·79 (64·55–65·02)	57·86 (55·87–59·65)	75·03 (74·76–75·30)	65·88 (63·26–68·26)	65·42 (65·20–65·63)	58·45 (56·39–60·26)	76·21 (75·99–76·44)	66·73 (63·95–69·10)	70·17 (69·64–70·64)	62·63 (60·44–64·64)	79·83 (79·35–80·36)	69·68 (66·60–72·35)
Lithuania	66·46 (66·25–66·66)	59·14 (56·96–60·99)	76·35 (76·10–76·57)	66·59 (63·63–69·12)	65·56 (65·39–65·74)	58·41 (56·28–60·28)	77·47 (77·28–77·69)	67·21 (64·18–69·90)	69·67 (69·15–70·23)	62·08 (59·81–64·17)	80·01 (79·54–80·50)	69·35 (66·13–72·10)
Moldova	64·45 (64·01–64·92)	57·65 (55·66–59·58)	71·41 (70·90–71·85)	62·59 (59·98–64·98)	65·50 (65·01–65·95)	58·62 (56·54–60·49)	73·85 (73·45–74·18)	64·34 (61·54–66·82)	67·37 (66·79–67·99)	60·40 (58·33–62·29)	76·32 (75·70–76·95)	66·44 (63·62–69·07)
Russia	64·34 (63·80–64·80)	57·27 (55·14–59·17)	74·42 (73·96–74·78)	64·85 (62·06–67·32)	58·40 (58·32–58·48)	52·34 (50·54–53·90)	71·90 (71·81–71·99)	62·67 (59·86–65·03)	65·74 (65·40–66·06)	58·86 (56·79–60·72)	76·65 (76·35–76·92)	66·56 (63·60–69·17)
Ukraine	65·09 (64·60–65·51)	57·88 (55·72–59·76)	74·39 (74·05–74·73)	65·05 (62·30–67·52)	61·52 (61·12–61·88)	54·97 (53·01–56·76)	73·21 (72·91–73·50)	63·98 (61·28–66·38)	66·55 (65·81–67·26)	59·31 (57·15–61·36)	76·52 (75·98–77·07)	66·64 (63·73–69·31)
Latin America and Caribbean	66·80 (66·63–66·99)	58·24 (55·84–60·44)	73·11 (72·88–73·23)	62·76 (59·85–65·38)	70·69 (70·52–70·83)	61·88 (59·32–64·14)	76·85 (76·65–76·93)	65·89 (62·77–68·62)	71·85 (71·35–72·32)	63·03 (60·41–65·36)	78·02 (77·58–78·37)	66·91 (63·70–69·77)

(Table 3 continues on next page)

	1990				2005				2013			
	Male population		Female population		Male population		Female population		Male population		Female population	
	Life expectancy (years)	HALE (years)	Life expectancy (years)	HALE (years)	Life expectancy (years)	HALE (years)	Life expectancy (years)	HALE (years)	Life expectancy (years)	HALE (years)	Life expectancy (years)	HALE (years)
(Continued from previous page)												
Andean Latin America	66·73 (66·20–67·24)	54·62 (49·76–58·16)	70·54 (69·95–71·11)	58·94 (54·95–62·30)	72·47 (71·90–73·10)	62·32 (59·21–65·07)	76·28 (75·73–76·83)	65·06 (61·79–68·02)	73·49 (72·06–74·94)	64·04 (61·05–66·76)	77·49 (76·02–78·80)	66·51 (63·21–69·68)
Bolivia	61·31 (60·09–62·70)	54·36 (52·12–56·53)	63·80 (62·05–65·35)	55·54 (52·86–58·13)	68·76 (67·20–70·26)	60·77 (58·02–63·32)	71·24 (69·73–72·84)	61·68 (58·74–64·44)	70·53 (67·12–73·50)	62·39 (58·87–65·86)	73·19 (70·12–76·11)	63·46 (59·80–67·19)
Ecuador	68·77 (68·10–69·41)	60·68 (58·37–62·82)	74·09 (73·48–74·68)	63·91 (61·04–66·59)	70·95 (69·90–71·99)	62·62 (59·98–65·05)	76·74 (75·82–77·69)	66·21 (63·10–69·16)	71·75 (69·49–74·26)	63·45 (60·47–66·36)	78·09 (75·58–80·35)	67·38 (63·87–70·76)
Peru	67·63 (66·77–68·44)	51·82 (43·77–57·25)	71·27 (70·49–72·04)	57·85 (51·98–62·28)	74·59 (73·75–75·56)	62·69 (58·53–66·09)	77·86 (77·20–78·40)	65·71 (61·97–69·09)	75·47 (73·45–77·69)	64·95 (61·34–68·17)	78·71 (76·69–80·31)	67·21 (63·69–70·50)
Caribbean	65·94 (65·48–66·40)	58·29 (56·06–60·37)	69·11 (68·61–69·58)	60·11 (57·39–62·48)	68·44 (67·99–68·87)	60·49 (58·13–62·61)	71·85 (71·33–72·37)	62·19 (59·39–64·66)	70·12 (69·06–71·09)	61·93 (59·32–64·28)	74·25 (73·15–75·18)	64·12 (61·21–66·80)
Antigua and Barbuda	69·48 (68·01–70·85)	61·88 (59·39–64·31)	75·16 (73·78–76·47)	65·48 (62·64–68·31)	72·07 (70·80–73·08)	63·90 (61·33–66·24)	76·45 (75·18–77·86)	66·22 (63·11–69·20)	72·45 (69·25–75·27)	64·41 (61·01–67·49)	77·84 (74·41–80·89)	67·38 (63·64–71·33)
Barbados	70·52 (69·05–71·52)	62·40 (59·79–64·73)	75·45 (74·63–76·33)	65·55 (62·77–68·30)	73·47 (72·37–74·10)	64·72 (62·07–67·06)	76·53 (75·62–77·45)	66·13 (63·15–68·83)	73·78 (71·67–76·13)	65·20 (62·27–68·17)	77·34 (74·82–79·82)	66·83 (63·17–70·59)
Belize	69·85 (68·59–71·05)	61·70 (59·12–64·27)	74·42 (73·27–75·58)	64·42 (61·42–67·34)	67·86 (67·20–68·59)	60·34 (58·06–62·47)	73·64 (73·00–74·35)	63·80 (60·85–66·43)	67·48 (64·62–70·39)	60·28 (57·29–63·24)	72·66 (69·93–75·24)	63·18 (59·80–66·44)
Cuba	72·80 (72·66–72·95)	64·41 (61·88–66·60)	76·62 (76·46–76·78)	66·40 (63·37–69·02)	75·33 (75·20–75·46)	66·41 (63·75–68·75)	78·85 (78·73–78·98)	67·87 (64·64–70·66)	76·29 (75·31–77·19)	67·31 (64·61–69·79)	80·43 (79·55–81·35)	69·06 (65·61–72·13)
Dominica	69·67 (67·59–71·42)	61·12 (58·05–64·06)	72·82 (71·22–74·39)	63·38 (60·21–66·37)	71·26 (69·90–72·53)	62·90 (60·34–65·46)	77·01 (75·42–78·30)	66·38 (63·10–69·42)	70·71 (67·52–73·84)	62·83 (59·09–66·27)	78·45 (75·51–81·11)	67·51 (63·68–71·15)
Dominican Republic	69·34 (68·52–70·17)	61·25 (58·82–63·41)	73·56 (72·77–74·28)	63·91 (61·13–66·47)	69·47 (68·34–70·74)	61·63 (59·28–63·87)	75·03 (73·96–76·07)	65·11 (62·17–67·78)	70·99 (67·80–73·66)	63·05 (59·61–66·12)	76·53 (73·66–78·84)	66·44 (63·09–69·78)
Grenada	67·94 (66·69–69·15)	60·15 (57·44–62·50)	72·25 (70·67–73·61)	62·78 (59·67–65·61)	67·27 (66·09–68·24)	59·94 (57·73–62·21)	73·06 (71·98–74·00)	63·54 (60·66–66·18)	69·00 (66·95–71·22)	61·40 (58·74–64·16)	73·96 (72·07–75·68)	64·32 (61·26–66·99)
Guyana	61·93 (60·90–63·03)	55·17 (52·96–57·32)	68·21 (67·31–69·14)	59·38 (56·76–61·77)	59·57 (58·42–60·67)	53·39 (51·38–55·36)	65·87 (64·73–66·99)	57·60 (55·13–59·90)	61·03 (57·29–64·50)	54·77 (51·53–58·14)	67·15 (63·61–71·21)	58·74 (55·03–62·34)
Haiti	54·00 (52·74–55·32)	47·59 (45·49–49·63)	55·42 (54·15–56·73)	48·54 (46·32–50·74)	59·86 (58·77–61·06)	52·83 (50·44–54·91)	60·76 (59·35–62·21)	52·98 (50·38–55·22)	63·35 (61·51–65·34)	55·60 (52·53–58·21)	65·31 (63·15–67·52)	56·71 (53·79–59·35)
Jamaica	73·68 (72·72–74·67)	65·10 (62·38–67·60)	75·08 (74·16–76·03)	65·29 (62·28–68·01)	73·98 (72·85–75·01)	65·32 (62·80–67·75)	75·43 (74·33–76·45)	65·30 (62·37–68·03)	74·29 (71·66–77·14)	65·66 (62·62–69·03)	76·72 (74·10–79·62)	66·30 (62·58–70·05)
Saint Lucia	68·20 (66·59–69·36)	60·22 (57·37–62·62)	72·27 (70·97–73·50)	62·63 (59·42–65·56)	70·43 (69·07–71·42)	62·46 (59·97–64·84)	76·20 (75·14–77·26)	65·92 (62·80–68·66)	72·11 (69·47–74·71)	63·94 (60·67–67·08)	76·89 (74·31–79·65)	66·62 (63·14–70·16)
Saint Vincent and the Grenadines	67·79 (65·18–69·50)	60·24 (57·13–62·74)	71·63 (69·57–73·42)	62·51 (59·31–65·33)	68·25 (67·15–69·44)	60·69 (58·28–63·06)	73·36 (72·37–74·33)	63·68 (60·80–66·27)	70·53 (67·79–72·68)	62·63 (59·64–65·50)	74·99 (72·73–77·70)	64·98 (61·51–68·17)
Suriname	66·27 (65·15–67·16)	57·89 (54·59–60·45)	71·32 (70·30–72·27)	61·21 (58·07–64·07)	65·62 (64·65–66·46)	58·15 (55·67–60·42)	71·56 (70·57–72·48)	61·85 (58·98–64·56)	66·99 (63·70–70·28)	59·70 (56·42–63·15)	73·33 (70·35–76·36)	63·53 (60·05–67·29)
The Bahamas	65·29 (63·90–66·81)	58·25 (55·83–60·45)	71·86 (70·42–73·21)	62·64 (59·68–65·42)	69·47 (68·27–70·60)	61·58 (59·12–63·88)	74·57 (73·76–75·48)	64·55 (61·46–67·26)	69·54 (66·41–72·85)	61·82 (58·34–65·51)	75·47 (72·78–78·90)	65·27 (61·59–69·26)

(Table 3 continues on next page)

	1990				2005				2013			
	Male population		Female population		Male population		Female population		Male population		Female population	
	Life expectancy (years)	HALE (years)	Life expectancy (years)	HALE (years)	Life expectancy (years)	HALE (years)	Life expectancy (years)	HALE (years)	Life expectancy (years)	HALE (years)	Life expectancy (years)	HALE (years)
(Continued from previous page)												
Trinidad and Tobago	66·98 (66·19–67·62)	59·86 (57·65–61·95)	72·47 (71·67–73·04)	63·45 (60·64–65·84)	67·42 (66·79–68·06)	60·18 (58·04–62·22)	74·54 (73·88–75·18)	64·73 (61·81–67·36)	67·39 (65·08–69·56)	60·29 (57·41–62·96)	75·47 (73·48–77·28)	65·45 (62·18–68·64)
Central Latin America	68·19 (67·94–68·43)	59·32 (56·86–61·62)	74·69 (74·46–74·90)	64·28 (61·23–66·91)	71·58 (71·33–71·80)	62·60 (60·02–64·87)	77·81 (77·60–78·03)	66·74 (63·50–69·49)	72·07 (71·47–72·57)	63·30 (60·82–65·61)	78·58 (78·08–79·01)	67·52 (64·36–70·39)
Colombia	66·96 (66·36–67·62)	58·42 (56·00–60·68)	75·01 (74·50–75·54)	64·38 (61·34–67·27)	70·74 (69·99–71·43)	61·98 (59·42–64·30)	77·49 (76·94–78·09)	66·31 (63·14–69·24)	72·28 (69·99–74·50)	63·24 (60·21–66·28)	78·94 (77·10–80·67)	67·56 (64·17–70·99)
Costa Rica	74·59 (74·26–74·86)	65·40 (62·71–67·75)	78·72 (78·44–79·01)	67·90 (64·73–70·66)	76·61 (76·40–76·82)	67·20 (64·50–69·60)	81·16 (80·94–81·39)	69·29 (65·86–72·25)	77·58 (76·86–78·34)	68·01 (65·07–70·58)	82·11 (81·47–82·84)	70·14 (66·72–73·30)
El Salvador	65·26 (64·81–65·68)	57·29 (54·96–59·43)	74·35 (73·86–74·77)	63·01 (59·45–66·05)	68·68 (68·46–68·93)	58·11 (54·46–61·04)	77·85 (77·61–78·10)	66·17 (62·76–69·13)	69·29 (66·60–71·68)	60·38 (57·02–63·61)	78·10 (75·93–80·12)	66·84 (63·32–70·22)
Guatemala	62·56 (62·09–63·14)	50·27 (44·91–54·23)	67·16 (66·50–67·70)	56·64 (52·73–59·76)	65·85 (65·49–66·22)	55·49 (52·06–58·41)	73·06 (72·67–73·38)	62·22 (58·97–65·21)	69·34 (68·20–70·46)	59·51 (56·56–62·31)	75·21 (74·20–76·29)	64·53 (61·42–67·43)
Honduras	66·49 (65·24–67·77)	57·85 (54·79–60·34)	70·15 (68·65–71·45)	60·52 (57·48–63·32)	68·40 (65·16–72·20)	59·98 (56·15–63·88)	71·83 (68·06–76·28)	61·86 (57·69–66·16)	70·11 (66·66–73·88)	61·70 (57·79–65·17)	74·00 (70·36–78·37)	63·93 (60·02–68·15)
Mexico	68·88 (68·54–69·23)	60·78 (58·34–62·95)	75·34 (74·95–75·66)	65·17 (62·17–67·85)	72·57 (72·35–72·77)	64·01 (61·52–66·28)	78·48 (78·26–78·70)	67·47 (64·24–70·22)	72·21 (71·91–72·53)	63·80 (61·31–65·99)	78·72 (78·41–78·99)	67·79 (64·64–70·58)
Nicaragua	68·63 (67·90–69·41)	41·79 (31·29–50·92)	73·23 (72·50–73·94)	56·90 (49·16–63·35)	71·89 (71·30–72·44)	54·16 (47·43–59·86)	77·33 (76·85–77·86)	64·33 (59·85–68·32)	73·74 (72·53–74·82)	60·76 (55·84–64·58)	79·07 (78·00–80·06)	67·36 (63·99–70·50)
Panama	72·78 (72·14–73·47)	63·84 (61·09–66·22)	77·80 (77·19–78·41)	67·06 (63·78–69·90)	74·78 (74·21–75·33)	65·50 (62·80–68·04)	79·86 (79·31–80·42)	68·43 (65·07–71·44)	74·99 (73·10–76·78)	65·80 (62·79–68·78)	80·89 (79·43–82·18)	69·38 (65·87–72·44)
Venezuela	69·93 (69·76–70·12)	61·55 (59·10–63·76)	75·52 (75·33–75·71)	65·64 (62·79–68·19)	71·55 (71·42–71·67)	63·02 (60·55–65·19)	78·63 (78·49–78·76)	67·69 (64·47–70·53)	71·84 (70·56–73·29)	63·31 (60·73–65·93)	79·32 (78·08–80·48)	68·21 (64·97–71·11)
Tropical Latin America	65·64 (65·31–65·99)	57·90 (55·61–59·88)	73·04 (72·69–73·40)	62·80 (59·90–65·44)	69·89 (69·68–70·09)	61·34 (58·84–63·54)	77·10 (76·89–77·28)	66·11 (62·98–68·94)	71·62 (70·65–72·62)	62·75 (59·96–65·32)	78·37 (77·61–79·20)	67·02 (63·70–70·07)
Brazil	65·47 (65·13–65·83)	57·76 (55·47–59·74)	72·97 (72·60–73·32)	62·73 (59·82–65·38)	69·84 (69·62–70·05)	61·29 (58·78–63·49)	77·14 (76·92–77·34)	66·13 (62·99–68·97)	71·63 (70·63–72·65)	62·75 (59·94–65·33)	78·43 (77·64–79·28)	67·06 (63·72–70·13)
Paraguay	72·58 (72·00–73·18)	63·75 (61·10–66·06)	75·78 (75·16–76·45)	65·37 (62·37–68·12)	71·70 (71·14–72·24)	63·12 (60·63–65·33)	75·42 (74·54–76·42)	65·35 (62·30–68·14)	71·42 (69·03–73·49)	63·07 (60·11–65·98)	76·21 (74·30–78·87)	66·02 (62·77–69·52)
Southeast Asia, east Asia, and Oceania	65·45 (64·63–66·51)	58·32 (56·00–60·42)	69·81 (68·68–70·74)	61·24 (58·71–63·66)	70·01 (69·48–70·59)	62·65 (60·44–64·58)	75·50 (74·97–75·98)	66·30 (63·57–68·74)	72·04 (71·13–73·29)	64·44 (62·14–66·78)	78·26 (77·45–79·15)	68·76 (65·95–71·43)
East Asia	66·08 (65·05–67·45)	59·22 (56·89–61·40)	70·28 (68·77–71·46)	61·94 (59·36–64·44)	71·26 (70·70–71·96)	64·00 (61·70–65·99)	76·84 (76·27–77·47)	67·56 (64·84–70·09)	73·50 (72·43–75·23)	65·85 (63·48–68·42)	79·90 (78·87–81·02)	70·19 (67·34–73·00)
China	66·01 (64·94–67·45)	59·16 (56·83–61·37)	70·21 (68·67–71·46)	61·88 (59·29–64·40)	71·27 (70·68–72·01)	64·01 (61·72–66·00)	76·88 (76·29–77·54)	67·59 (64·86–70·10)	73·53 (72·44–75·35)	65·89 (63·53–68·46)	79·99 (78·92–81·17)	70·28 (67·41–73·11)
North Korea	66·04 (62·08–70·34)	59·34 (55·65–63·20)	69·39 (65·43–73·16)	61·34 (57·45–65·26)	67·48 (65·52–69·52)	60·81 (58·22–63·41)	72·30 (70·71–73·80)	64·02 (61·32–66·58)	68·30 (66·07–71·15)	61·56 (59·00–64·52)	73·83 (72·00–76·53)	65·46 (62·51–68·39)

(Table 3 continues on next page)

	1990				2005				2013			
	Male population		Female population		Male population		Female population		Male population		Female population	
	Life expectancy (years)	HALE (years)	Life expectancy (years)	HALE (years)	Life expectancy (years)	HALE (years)	Life expectancy (years)	HALE (years)	Life expectancy (years)	HALE (years)	Life expectancy (years)	HALE (years)
(Continued from previous page)												
Taiwan (province of China)	71·31 (71·18–71·45)	63·71 (61·38–65·62)	76·74 (76·61–76·87)	67·27 (64·42–69·83)	74·50 (74·39–74·63)	66·68 (64·37–68·71)	80·72 (80·61–80·85)	70·41 (67·46–73·07)	76·42 (76·10–76·75)	68·11 (65·59–70·23)	82·36 (82·05–82·66)	71·66 (68·51–74·46)
Oceania	56·67 (52·29–60·98)	51·09 (47·14–54·96)	59·22 (54·36–63·81)	52·77 (48·43–56·95)	57·93 (53·18–62·40)	52·32 (47·99–56·32)	60·36 (55·18–64·99)	53·93 (49·17–58·17)	59·83 (54·91–64·24)	54·09 (49·75–58·22)	62·70 (57·29–67·32)	55·93 (51·14–60·21)
Federated States of Micronesia	59·95 (54·43–65·55)	54·47 (49·56–59·37)	64·81 (59·21–70·08)	57·91 (52·81–62·55)	63·33 (57·55–68·41)	57·51 (52·28–62·09)	68·05 (62·19–73·11)	60·73 (55·53–65·48)	64·41 (58·75–69·51)	58·47 (53·21–62·96)	69·49 (63·79–74·55)	61·93 (56·72–66·52)
Fiji	61·58 (58·49–65·13)	55·47 (52·25–58·70)	67·05 (64·20–70·16)	59·54 (56·25–62·68)	63·38 (61·16–65·72)	57·09 (54·51–59·57)	67·36 (65·40–69·61)	59·76 (57·11–62·53)	64·02 (60·96–67·18)	57·84 (54·54–60·92)	68·28 (64·85–71·18)	60·63 (57·11–63·76)
Kiribati	55·06 (52·12–58·25)	49·46 (46·51–52·44)	60·17 (57·20–63·33)	53·28 (50·08–56·34)	56·82 (52·98–60·99)	51·08 (47·57–54·96)	64·64 (60·50–68·87)	57·10 (53·32–60·83)	58·08 (53·42–63·29)	52·31 (48·37–56·65)	66·48 (62·29–71·41)	58·63 (54·41–62·91)
Marshall Islands	61·52 (59·56–63·93)	55·56 (53·08–58·04)	67·57 (65·38–69·58)	59·82 (56·90–62·49)	61·59 (58·45–64·88)	55·78 (52·50–59·14)	65·52 (62·43–68·60)	58·32 (55·01–61·61)	62·24 (57·49–67·14)	56·44 (51·92–60·58)	67·35 (63·30–71·76)	59·91 (55·99–64·10)
Papua New Guinea	54·87 (49·90–60·47)	49·46 (45·01–54·18)	56·69 (51·38–62·11)	50·56 (45·86–55·17)	56·33 (51·09–61·64)	50·89 (46·02–55·52)	58·32 (52·63–63·67)	52·20 (46·96–56·84)	58·59 (53·01–63·81)	52·99 (48·13–57·64)	61·08 (55·08–66·49)	54·58 (49·39–59·25)
Samoa	65·49 (61·83–69·06)	59·20 (55·75–62·75)	71·68 (68·46–74·72)	63·83 (60·19–67·33)	68·91 (66·70–71·20)	62·13 (59·61–64·74)	72·89 (70·54–75·05)	64·82 (62·06–67·67)	70·77 (68·26–73·15)	63·67 (60·70–66·62)	72·82 (70·20–75·13)	64·75 (61·61–67·68)
Solomon Islands	59·08 (53·34–64·73)	53·79 (48·57–58·71)	61·79 (55·62–67·96)	55·47 (49·95–60·64)	60·71 (54·84–66·02)	55·33 (50·15–60·01)	63·35 (57·36–68·88)	56·84 (51·39–61·58)	62·19 (56·61–67·44)	56·65 (51·37–61·22)	65·35 (59·63–70·85)	58·46 (53·13–63·23)
Tonga	67·00 (63·85–70·56)	60·25 (57·05–63·56)	70·38 (67·05–73·09)	62·51 (59·13–65·83)	66·70 (65·07–68·22)	60·27 (57·92–62·51)	72·40 (70·69–74·04)	64·04 (61·06–66·75)	67·37 (63·82–71·10)	60·89 (57·41–64·39)	73·23 (69·93–76·78)	64·83 (61·30–68·18)
Vanuatu	60·79 (55·27–66·22)	55·08 (50·25–59·88)	64·71 (58·84–70·27)	58·05 (52·85–62·88)	61·26 (55·67–66·89)	55·80 (50·65–60·38)	65·22 (59·24–70·43)	58·55 (53·26–63·25)	62·49 (57·16–67·84)	56·76 (51·62–61·35)	66·91 (61·17–72·08)	59·85 (54·66–64·43)
Southeast Asia	63·89 (63·01–64·63)	55·91 (53·30–58·25)	68·78 (67·77–69·63)	59·53 (56·71–62·20)	67·26 (66·37–68·06)	59·62 (57·30–61·77)	72·77 (71·89–73·61)	63·80 (61·05–66·32)	68·83 (67·78–69·85)	61·37 (59·18–63·53)	74·80 (73·70–75·71)	65·84 (63·19–68·32)
Cambodia	56·87 (55·77–57·92)	39·74 (30·29–46·94)	61·16 (59·88–62·44)	47·15 (37·92–52·90)	61·80 (60·74–62·90)	48·76 (41·38–53·92)	67·05 (66·05–68·22)	55·17 (48·33–59·46)	64·82 (62·86–66·47)	54·62 (49·86–58·25)	70·56 (68·95–72·26)	60·23 (55·85–64·00)
Indonesia	63·18 (62·52–63·85)	56·20 (54·04–58·16)	66·84 (66·03–67·60)	59·01 (56·76–61·25)	67·24 (66·63–67·91)	60·17 (58·05–62·15)	70·76 (69·90–71·78)	62·79 (60·33–65·03)	68·34 (67·17–69·90)	61·33 (59·04–63·65)	72·66 (71·50–74·11)	64·51 (62·03–67·01)
Laos	54·51 (49·52–59·71)	47·82 (43·37–52·22)	57·15 (52·12–62·32)	50·26 (45·56–54·90)	60·38 (54·85–65·34)	53·28 (48·40–57·79)	63·80 (57·96–68·83)	56·17 (51·14–60·87)	63·82 (58·29–68·96)	56·48 (51·52–60·92)	67·81 (62·47–72·87)	59·74 (54·79–64·40)
Malaysia	69·88 (69·76–70·00)	62·40 (60·17–64·35)	74·53 (74·35–74·72)	65·99 (63·45–68·23)	71·90 (71·81–72·00)	63·96 (61·69–66·01)	77·15 (77·02–77·26)	68·10 (65·42–70·38)	71·75 (70·67–72·89)	64·09 (61·69–66·23)	78·04 (77·19–79·19)	68·89 (66·22–71·62)
Maldives	66·02 (65·16–66·81)	58·22 (55·73–60·37)	65·42 (64·62–66·13)	57·78 (55·33–59·94)	75·44 (74·81–75·96)	66·56 (63·80–68·95)	78·11 (77·65–78·53)	68·22 (65·18–70·79)	77·62 (76·30–78·84)	68·55 (65·54–71·22)	81·21 (79·85–82·41)	70·98 (67·96–73·86)
Myanmar	56·43 (51·30–61·44)	49·78 (45·00–54·12)	59·74 (54·61–65·47)	52·71 (48·14–57·22)	60·82 (55·41–65·96)	54·23 (49·31–58·69)	66·18 (60·60–71·60)	58·52 (53·89–63·17)	64·21 (58·79–69·78)	57·55 (52·69–62·28)	69·98 (64·65–75·33)	61·97 (57·05–66·57)
Philippines	64·70 (64·00–65·35)	54·96 (50·53–57·93)	72·20 (71·57–72·78)	62·28 (59·07–65·06)	65·39 (64·65–66·11)	57·25 (54·68–59·54)	72·87 (72·28–73·44)	63·40 (60·49–65·96)	66·41 (63·92–68·85)	58·76 (55·97–61·56)	73·75 (71·51–75·85)	64·59 (61·51–67·55)

(Table 3 continues on next page)

	1990				2005				2013			
	Male population		Female population		Male population		Female population		Male population		Female population	
	Life expectancy (years)	HALE (years)	Life expectancy (years)	HALE (years)	Life expectancy (years)	HALE (years)	Life expectancy (years)	HALE (years)	Life expectancy (years)	HALE (years)	Life expectancy (years)	HALE (years)
(Continued from previous page)												
Sri Lanka	67·35 (66·72–67·76)	59·69 (57·48–61·79)	75·39 (74·83–75·75)	66·08 (63·27–68·58)	70·53 (70·30–70·75)	62·64 (60·29–64·67)	78·13 (77·92–78·35)	68·66 (65·78–71·15)	72·09 (70·17–73·90)	64·14 (61·39–67·00)	80·23 (78·57–81·72)	70·62 (67·56–73·53)
Thailand	68·44 (67·58–69·32)	61·38 (59·18–63·43)	75·10 (74·38–75·84)	66·07 (63·42–68·44)	69·36 (68·44–70·28)	62·39 (60·24–64·41)	76·36 (75·73–77·01)	67·50 (64·87–69·89)	71·51 (68·75–74·21)	64·30 (61·20–67·29)	78·49 (76·79–80·37)	69·20 (66·23–72·12)
Timor-Leste	58·98 (57·32–60·86)	51·40 (48·76–53·96)	58·98 (57·01–60·83)	52·45 (49·75–54·87)	65·99 (64·83–67·11)	57·95 (55·28–60·19)	68·09 (66·71–69·39)	60·50 (58·07–62·71)	70·20 (68·10–71·96)	61·65 (58·86–64·34)	72·70 (70·86–74·59)	64·57 (61·85–67·33)
Vietnam	65·94 (64·06–67·54)	55·60 (50·67–59·15)	72·14 (70·50–73·79)	58·75 (52·49–63·47)	70·58 (68·15–73·19)	61·37 (57·74–64·78)	78·45 (76·84–79·81)	66·82 (62·56–70·54)	72·26 (69·13–75·51)	63·77 (60·17–67·14)	80·07 (77·85–82·37)	69·33 (65·80–72·92)
South Asia	57·60 (56·39–58·88)	50·21 (47·81–52·48)	58·53 (57·29–59·84)	50·29 (47·74–52·62)	62·00 (60·85–63·16)	54·13 (51·67–56·55)	64·81 (63·52–65·96)	55·58 (52·65–58·30)	64·36 (62·46–66·29)	56·50 (53·78–59·17)	68·34 (66·82–70·02)	58·78 (55·72–61·80)
Afghanistan	50·71 (46·90–54·80)	42·96 (38·35–46·87)	49·98 (46·73–53·18)	43·16 (39·99–46·36)	53·29 (49·17–57·71)	45·91 (41·47–50·15)	52·48 (48·79–56·28)	45·71 (42·20–49·29)	56·45 (52·17–61·38)	49·07 (44·73–53·64)	55·99 (52·21–60·36)	48·78 (45·04–52·69)
Bangladesh	58·12 (56·13–60·26)	49·99 (47·10–52·67)	58·98 (56·73–61·32)	50·06 (47·02–53·22)	66·57 (65·28–67·87)	57·55 (54·82–60·18)	69·39 (68·05–70·55)	58·68 (55·47–61·71)	68·29 (66·02–71·23)	59·49 (56·29–62·89)	70·92 (68·78–73·75)	60·40 (56·86–63·90)
Bhutan	59·02 (53·93–64·25)	52·07 (47·45–56·47)	59·72 (54·45–64·96)	51·80 (47·15–56·58)	65·50 (59·49–71·17)	57·77 (52·76–62·45)	68·10 (62·54–73·04)	58·90 (54·01–63·48)	68·03 (61·82–73·67)	60·12 (54·88–64·93)	71·36 (65·49–76·31)	61·76 (56·54–66·54)
India	57·25 (55·79–58·77)	50·07 (47·64–52·43)	58·19 (56·64–59·77)	50·15 (47·48–52·63)	61·76 (60·41–63·16)	54·11 (51·57–56·51)	64·74 (63·11–66·12)	55·71 (52·80–58·54)	64·16 (61·97–66·70)	56·52 (53·59–59·25)	68·48 (66·60–70·62)	59·11 (56·08–62·28)
Nepal	58·00 (56·21–59·84)	50·49 (47·98–52·99)	58·93 (56·88–61·21)	51·15 (48·30–53·99)	66·05 (64·66–67·70)	57·38 (54·63–60·07)	68·62 (66·70–70·38)	59·38 (56·51–62·28)	69·10 (66·94–71·40)	60·36 (57·35–63·44)	72·14 (69·93–74·68)	62·53 (59·44–65·69)
Pakistan	62·20 (60·46–64·05)	54·08 (51·45–56·53)	62·54 (60·56–64·43)	53·60 (50·74–56·42)	61·69 (59·82–63·99)	53·96 (51·34–56·60)	63·58 (61·63–65·80)	54·61 (51·72–57·57)	64·33 (61·38–67·72)	56·46 (53·08–59·58)	67·20 (63·95–70·05)	57·89 (54·30–61·48)
North Africa and Middle East	64·83 (64·16–65·43)	56·86 (54·60–59·03)	69·12 (68·60–69·61)	59·39 (56·62–62·00)	69·92 (69·25–70·67)	61·45 (58·92–63·71)	74·18 (73·61–74·71)	63·62 (60·55–66·47)	71·96 (71·14–72·70)	63·28 (60·79–65·75)	76·33 (75·62–77·04)	65·44 (62·35–68·45)
Algeria	69·03 (67·05–71·17)	60·45 (57·54–63·14)	71·94 (70·28–73·44)	61·85 (58·46–64·72)	73·13 (71·20–75·37)	63·97 (60·92–66·98)	75·83 (73·43–77·50)	65·07 (61·62–68·18)	75·13 (73·63–76·83)	65·60 (62·53–68·31)	77·42 (75·34–78·51)	66·34 (63·08–69·49)
Bahrain	70·70 (69·03–72·34)	61·72 (58·98–64·41)	72·41 (71·18–73·62)	61·72 (58·45–64·58)	73·92 (72·99–75·49)	63·97 (61·01–66·61)	76·88 (76·09–77·92)	64·88 (61·46–68·17)	78·26 (75·71–80·67)	67·22 (63·53–70·72)	79·87 (77·82–82·01)	66·89 (62·95–70·80)
Egypt	62·42 (61·41–63·48)	55·08 (52·89–57·21)	66·69 (65·52–67·69)	57·19 (54·21–59·88)	67·42 (66·60–68·19)	59·39 (56·92–61·59)	72·24 (71·58–72·92)	61·68 (58·47–64·53)	68·31 (66·78–69·83)	60·37 (57·90–62·73)	73·62 (72·17–75·05)	62·93 (59·87–65·93)
Iran	63·48 (60·90–65·50)	55·60 (52·69–58·44)	69·46 (67·74–70·95)	59·14 (56·08–62·29)	72·24 (71·15–73·16)	63·38 (60·61–65·80)	77·28 (76·49–78·02)	65·40 (62·01–68·62)	76·12 (73·81–78·08)	66·75 (63·65–69·75)	80·58 (79·10–82·21)	68·23 (64·62–71·75)
Iraq	68·59 (65·82–71·61)	59·17 (55·47–62·60)	69·86 (66·82–72·60)	59·84 (56·29–63·25)	64·79 (61·12–69·62)	56·55 (52·09–61·60)	68·52 (66·48–71·65)	59·06 (55·74–62·81)	70·57 (66·63–74·38)	61·04 (57·09–65·07)	72·02 (69·01–75·48)	61·95 (58·58–65·64)
Jordan	70·83 (67·92–73·19)	61·50 (58·17–64·63)	73·20 (71·64–75·02)	62·35 (58·94–65·48)	74·64 (73·33–75·94)	64·13 (60·90–67·00)	73·90 (72·84–75·70)	62·77 (59·44–65·98)	76·77 (74·45–78·97)	66·07 (62·76–69·47)	79·56 (78·23–81·39)	66·89 (63·14–70·49)
Kuwait	76·74 (76·32–77·11)	65·32 (61·95–68·16)	79·09 (78·78–79·35)	67·07 (63·55–70·18)	76·96 (76·69–77·19)	66·42 (63·31–69·08)	80·38 (80·16–80·63)	68·41 (64·86–71·47)	79·39 (78·72–80·09)	68·54 (65·42–71·51)	81·69 (81·10–82·28)	69·58 (66·08–72·68)

(Table 3 continues on next page)

	1990				2005				2013			
	Male population		Female population		Male population		Female population		Male population		Female population	
	Life expectancy (years)	HALE (years)	Life expectancy (years)	HALE (years)	Life expectancy (years)	HALE (years)	Life expectancy (years)	HALE (years)	Life expectancy (years)	HALE (years)	Life expectancy (years)	HALE (years)
(Continued from previous page)												
Lebanon	65·28 (58·68–69·57)	52·87 (45·32–58·65)	70·63 (66·68–73·72)	57·89 (51·52–62·99)	76·11 (73·88–78·14)	64·20 (59·27–68·10)	78·53 (77·05–79·64)	66·15 (62·04–69·80)	76·83 (73·57–79·42)	66·64 (62·85–70·09)	80·01 (78·36–81·87)	68·54 (65·00–71·93)
Libya	71·75 (68·94–74·40)	62·27 (58·81–65·44)	74·36 (71·94–76·30)	63·54 (59·86–67·04)	73·83 (72·31–75·15)	64·09 (60·89–66·91)	76·41 (74·64–78·01)	65·10 (61·55–68·27)	73·82 (71·42–76·63)	64·42 (61·35–67·89)	77·34 (75·17–79·61)	65·79 (61·94–69·46)
Morocco	66·56 (65·04–67·91)	57·92 (55·10–60·38)	69·97 (69·10–70·87)	60·45 (57·66–63·24)	70·81 (68·44–72·77)	61·61 (58·42–64·49)	74·05 (71·96–75·73)	63·82 (60·57–67·10)	72·60 (69·68–75·11)	63·19 (59·67–66·21)	75·95 (73·34–78·10)	65·42 (61·76–69·03)
Oman	69·98 (66·53–73·97)	60·40 (56·62–64·63)	71·59 (68·04–75·01)	60·81 (56·87–64·93)	73·04 (71·08–75·15)	63·05 (59·86–66·00)	76·10 (74·72–78·09)	64·46 (60·96–67·82)	73·83 (71·48–77·29)	64·04 (60·78–67·53)	78·13 (75·96–81·26)	66·03 (62·16–70·05)
Palestine	68·56 (65·44–72·23)	59·57 (55·84–63·22)	72·08 (68·47–74·99)	61·63 (57·62–65·27)	70·92 (68·99–72·73)	61·40 (58·47–64·34)	76·78 (75·27–77·84)	64·87 (61·36–68·10)	71·57 (68·06–75·19)	62·36 (58·53–66·07)	77·95 (74·69–80·32)	65·97 (61·93–69·68)
Qatar	76·75 (75·83–77·79)	65·74 (62·55–68·69)	77·41 (76·04–78·53)	65·41 (61·97–68·76)	78·14 (77·25–78·95)	66·87 (63·50–69·83)	80·22 (79·52–80·87)	67·41 (63·63–70·81)	81·20 (79·81–82·60)	69·23 (65·65–72·47)	83·08 (81·39–84·87)	69·47 (65·55–73·31)
Saudi Arabia	71·66 (67·89–75·35)	61·87 (58·11–65·55)	74·66 (72·03–77·44)	63·45 (59·79–67·15)	75·76 (74·51–76·87)	65·07 (61·96–68·01)	79·18 (78·46–79·80)	66·66 (62·89–69·97)	75·79 (73·26–78·16)	65·24 (61·78–68·48)	80·76 (79·40–82·14)	67·29 (63·37–71·01)
Sudan	60·25 (58·23–62·34)	52·18 (49·46–55·05)	62·30 (60·40–64·27)	52·90 (49·67–55·90)	64·68 (62·54–67·14)	56·08 (53·21–59·18)	68·03 (65·29–70·68)	57·61 (53·81–60·99)	67·01 (64·35–69·73)	58·24 (55·07–61·56)	70·81 (67·86–73·77)	60·06 (56·27–63·47)
Syria	67·88 (65·36–70·59)	55·64 (49·16–60·53)	71·73 (69·38–74·44)	59·84 (54·99–64·27)	73·92 (73·03–74·90)	63·24 (59·80–66·34)	77·94 (76·81–78·64)	65·71 (61·93–68·95)	69·42 (64·52–72·67)	59·96 (55·72–63·67)	75·90 (72·16–78·35)	63·73 (59·66–67·54)
Tunisia	69·86 (68·63–71·18)	61·50 (58·86–64·14)	74·12 (73·18–75·11)	64·57 (61·65–67·27)	73·73 (70·79–76·71)	64·86 (61·41–68·13)	78·42 (76·01–80·38)	67·96 (64·53–71·09)	74·53 (71·84–77·89)	65·74 (62·32–69·51)	79·78 (77·76–81·94)	69·10 (65·50–72·49)
Turkey	64·01 (62·86–65·07)	56·73 (54·52–58·98)	70·73 (69·79–71·63)	60·59 (57·76–63·30)	70·35 (68·57–71·73)	62·11 (59·47–64·62)	77·35 (76·64–78·08)	65·71 (62·36–68·91)	72·92 (70·79–74·93)	64·26 (61·39–67·25)	79·65 (78·46–81·04)	67·63 (64·07–70·84)
United Arab Emirates	71·67 (67·95–75·06)	62·61 (59·10–66·20)	73·52 (71·15–76·82)	63·49 (59·84–66·78)	74·12 (72·88–76·48)	64·64 (61·73–67·70)	77·46 (76·37–78·93)	66·37 (63·17–69·61)	75·14 (72·46–78·80)	65·44 (62·19–69·07)	79·25 (76·61–82·18)	67·59 (63·88–71·45)
Yemen	59·70 (54·52–64·20)	52·33 (47·98–56·38)	60·46 (55·14–65·43)	52·46 (48·01–56·87)	65·00 (59·21–70·20)	56·96 (52·07–61·77)	65·11 (59·17–70·61)	56·38 (51·29–61·49)	66·95 (61·03–72·36)	58·79 (53·68–63·45)	67·08 (60·97–72·69)	58·13 (52·83–63·18)
Sub-Saharan Africa	53·02 (52·49–53·50)	45·62 (43·40–47·56)	56·05 (55·59–56·51)	47·82 (45·43–50·04)	54·51 (54·06–54·92)	47·02 (44·83–48·99)	56·56 (56·08–57·00)	48·30 (45·87–50·47)	58·79 (58·07–59·45)	51·02 (48·68–53·12)	61·64 (60·92–62·29)	52·83 (50·29–55·17)
Central sub-Saharan Africa	50·72 (49·25–52·29)	43·35 (40·79–45·65)	54·04 (52·59–55·61)	45·82 (43·12–48·35)	52·77 (51·53–54·04)	45·24 (42·84–47·53)	55·98 (54·66–57·17)	47·52 (44·77–49·96)	56·24 (54·17–58·30)	48·67 (45·89–51·50)	59·92 (57·88–61·93)	51·15 (48·09–54·07)
Angola	48·22 (44·51–52·35)	41·69 (37·99–45·59)	52·50 (48·30–57·48)	44·73 (40·64–49·18)	54·56 (50·54–57·60)	47·47 (43·45–50·68)	57·50 (53·26–61·04)	49·32 (45·14–52·95)	58·79 (54·20–62·20)	51·36 (47·22–54·83)	62·05 (57·55–65·92)	53·33 (49·10–57·32)
Central African Republic	43·68 (41·23–45·59)	37·90 (35·34–40·21)	50·67 (49·11–52·30)	43·35 (40·92–45·75)	47·29 (45·41–49·46)	41·16 (38·86–43·51)	49·55 (47·40–51·64)	42·60 (39·82–45·34)	51·79 (48·56–55·27)	45·29 (41·99–48·51)	53·81 (50·46–56·82)	46·46 (42·88–49·78)
Congo	53·14 (51·55–54·73)	46·73 (44·30–48·87)	58·30 (56·91–59·57)	50·23 (47·51–52·82)	54·46 (52·98–56·03)	47·80 (45·67–49·91)	57·88 (56·30–59·42)	49·77 (47·14–52·27)	59·12 (57·13–61·41)	52·11 (49·48–54·85)	64·05 (62·27–65·89)	55·03 (52·17–57·77)
Democratic Republic of the Congo	52·29 (50·55–54·30)	44·28 (41·47–47·00)	54·37 (52·53–56·23)	45·94 (43·15–48·61)	52·66 (51·19–54·22)	44·78 (42·27–47·41)	55·82 (54·29–57·32)	47·14 (44·35–49·78)	55·70 (52·82–58·53)	47·94 (44·71–51·20)	59·35 (56·70–62·08)	50·51 (47·18–53·77)

(Table 3 continues on next page)

	1990				2005				2013			
	Male population		Female population		Male population		Female population		Male population		Female population	
	Life expectancy (years)	HALE (years)	Life expectancy (years)	HALE (years)	Life expectancy (years)	HALE (years)	Life expectancy (years)	HALE (years)	Life expectancy (years)	HALE (years)	Life expectancy (years)	HALE (years)
(Continued from previous page)												
Equatorial Guinea	49·16 (45·45–53·24)	43·25 (39·74–47·01)	53·88 (49·46–58·56)	46·60 (42·56–50·82)	54·04 (49·26–58·32)	47·33 (43·07–51·26)	57·24 (52·24–61·53)	49·33 (44·79–53·52)	57·29 (52·57–61·02)	50·34 (46·18–53·91)	60·54 (55·38–64·60)	52·29 (47·83–56·34)
Gabon	57·20 (55·86–58·70)	50·21 (47·81–52·59)	63·85 (62·74–65·04)	54·64 (51·72–57·22)	52·59 (50·88–54·27)	46·08 (43·76–48·31)	62·31 (60·46–64·13)	53·35 (50·25–56·21)	54·37 (52·36–56·50)	47·77 (45·22–50·24)	65·18 (62·74–68·05)	55·76 (52·25–59·06)
Eastern sub-Saharan Africa	50·85 (50·12–51·50)	43·83 (41·77–45·82)	53·84 (53·25–54·38)	46·17 (43·93–48·15)	55·11 (54·61–55·63)	47·54 (45·35–49·51)	57·08 (56·53–57·58)	48·92 (46·64–50·99)	59·97 (59·23–60·72)	52·05 (49·71–54·19)	62·73 (61·97–63·46)	53·91 (51·38–56·22)
Burundi	48·67 (46·78–50·53)	42·96 (40·59–45·31)	49·38 (47·59–51·19)	43·57 (41·42–45·76)	53·06 (51·69–54·47)	45·59 (42·57–48·06)	54·57 (53·39–55·82)	47·28 (44·80–49·61)	58·51 (56·36–60·40)	51·00 (48·05–53·64)	61·08 (59·31–63·03)	53·30 (50·48–56·00)
Comoros	55·93 (51·67–60·09)	48·81 (44·91–52·52)	57·87 (54·17–62·12)	50·59 (46·65–54·25)	60·35 (56·07–64·69)	52·96 (49·20–57·09)	63·48 (59·71–67·66)	55·33 (51·56–59·01)	61·90 (57·89–66·15)	54·50 (50·64–58·69)	65·53 (61·76–70·22)	57·17 (53·20–61·34)
Djibouti	60·48 (55·96–64·54)	52·86 (48·85–56·87)	60·63 (56·40–65·12)	52·76 (48·69–57·09)	59·53 (55·00–62·97)	52·26 (48·24–55·57)	60·30 (55·89–63·91)	52·37 (48·32–56·00)	62·69 (57·82–66·02)	55·04 (50·76–58·46)	64·07 (59·41–67·56)	55·71 (51·54–59·23)
Eritrea	50·96 (49·45–52·44)	44·33 (42·02–46·45)	54·01 (52·63–55·51)	46·80 (44·45–49·20)	57·83 (55·68–60·18)	49·42 (46·33–52·65)	60·22 (58·19–62·29)	51·60 (48·67–54·58)	60·50 (57·99–63·41)	52·08 (48·74–55·45)	63·59 (61·16–65·96)	54·72 (51·48–57·93)
Ethiopia	45·51 (43·86–47·20)	39·36 (37·14–41·63)	48·89 (47·31–50·34)	42·42 (40·13–44·49)	55·98 (54·81–57·13)	48·45 (46·08–50·75)	57·68 (56·44–58·83)	50·04 (47·63–52·14)	61·43 (59·61–63·21)	53·37 (50·60–56·00)	63·70 (62·06–65·43)	55·27 (52·46–57·95)
Kenya	61·77 (60·74–62·73)	53·77 (51·30–56·02)	64·17 (63·21–65·25)	55·60 (52·98–58·04)	57·37 (56·19–58·60)	49·92 (47·72–51·97)	60·25 (58·75–61·60)	51·93 (49·49–54·35)	62·98 (61·28–64·80)	55·01 (52·30–57·76)	67·52 (65·36–69·25)	58·21 (55·18–61·16)
Madagascar	55·11 (53·62–56·74)	47·25 (44·52–49·79)	57·84 (56·29–59·21)	49·50 (46·84–51·97)	61·10 (59·00–62·82)	52·48 (49·26–55·26)	63·56 (61·91–65·09)	54·47 (51·47–57·10)	62·73 (59·02–65·92)	54·29 (50·72–57·42)	65·82 (62·70–69·32)	56·60 (52·82–60·46)
Malawi	48·69 (47·28–50·16)	41·17 (38·70–43·56)	50·36 (48·77–51·84)	43·05 (40·72–45·31)	48·13 (46·79–49·85)	41·30 (38·99–43·57)	48·64 (47·14–50·42)	41·67 (39·35–43·78)	55·66 (53·94–57·46)	48·56 (46·18–51·03)	58·88 (57·20–60·76)	50·69 (48·03–53·29)
Mauritius	65·57 (65·33–65·81)	59·07 (57·14–60·78)	73·70 (73·39–74·04)	65·38 (62·77–67·61)	68·71 (68·46–68·94)	61·62 (59·51–63·44)	75·40 (75·11–75·68)	66·82 (64·24–69·06)	69·64 (68·72–70·58)	62·51 (60·45–64·67)	77·19 (76·19–78·25)	68·33 (65·38–71·01)
Mozambique	49·53 (48·08–51·00)	42·31 (39·68–44·64)	53·77 (51·95–55·29)	45·35 (42·42–47·90)	51·58 (50·28–52·85)	44·42 (42·14–46·50)	56·25 (55·10–57·58)	47·48 (44·72–50·03)	53·98 (52·24–55·69)	46·68 (44·28–48·99)	58·43 (56·76–60·25)	49·48 (46·45–52·09)
Rwanda	47·90 (46·41–49·60)	42·21 (40·07–44·32)	51·03 (49·73–52·31)	44·83 (42·85–46·78)	55·38 (54·22–56·60)	45·60 (41·35–48·76)	59·21 (58·03–60·28)	49·61 (45·97–52·47)	62·94 (61·07–64·62)	53·24 (49·70–56·56)	67·53 (65·86–69·30)	57·45 (53·88–60·48)
Seychelles	65·06 (64·31–65·80)	58·71 (56·87–60·55)	74·24 (73·45–75·12)	65·74 (63·20–68·09)	68·24 (67·56–68·93)	61·06 (58·86–63·04)	75·65 (74·95–76·27)	66·79 (64·20–69·24)	69·92 (68·61–71·00)	62·46 (59·99–64·65)	76·89 (75·90–78·69)	67·81 (64·80–70·70)
Somalia	52·17 (47·32–57·01)	45·01 (40·78–49·18)	52·77 (47·96–58·01)	45·85 (41·56–49·99)	55·70 (50·46–60·91)	48·65 (44·13–53·14)	56·66 (51·45–62·24)	49·26 (44·79–53·93)	57·15 (51·39–62·48)	49·94 (45·07–54·75)	58·37 (53·02–64·50)	50·78 (45·92–55·71)
South Sudan	49·50 (45·59–53·83)	42·20 (38·37–46·03)	55·39 (51·53–58·75)	46·30 (42·34–50·07)	52·45 (50·05–54·72)	45·05 (41·95–47·85)	58·30 (56·13–60·37)	49·16 (45·98–52·06)	54·57 (51·92–57·63)	47·29 (44·34–50·40)	60·17 (57·64–62·84)	51·17 (47·86–54·44)
Tanzania	56·43 (55·13–57·77)	48·75 (46·26–51·02)	58·08 (56·71–59·36)	49·86 (47·44–52·30)	57·20 (56·00–58·58)	49·70 (47·29–51·90)	57·23 (55·88–58·87)	49·25 (46·85–51·70)	61·52 (59·93–63·45)	53·73 (50·86–56·36)	62·89 (60·88–64·84)	54·20 (51·36–57·02)

(Table 3 continues on next page)

	1990				2005				2013			
	Male population		Female population		Male population		Female population		Male population		Female population	
	Life expectancy (years)	HALE (years)	Life expectancy (years)	HALE (years)	Life expectancy (years)	HALE (years)	Life expectancy (years)	HALE (years)	Life expectancy (years)	HALE (years)	Life expectancy (years)	HALE (years)
(Continued from previous page)												
Uganda	49·86 (48·59–51·23)	42·64 (40·27–44·93)	53·55 (52·35–54·69)	43·93 (38·85–47·24)	52·74 (51·57–53·97)	45·66 (43·38–47·92)	56·43 (55·23–57·81)	47·11 (43·13–50·29)	58·17 (56·12–59·85)	50·74 (48·10–53·27)	61·62 (59·96–63·12)	52·10 (48·37–55·08)
Zambia	50·92 (48·50–52·81)	42·92 (40·14–45·67)	51·83 (50·43–53·08)	44·70 (42·26–46·93)	49·04 (47·57–50·48)	42·27 (39·97–44·40)	47·01 (45·50–48·46)	40·71 (38·67–42·70)	58·02 (56·15–59·97)	50·26 (47·39–53·01)	55·61 (53·39–57·63)	48·14 (45·52–50·70)
Southern sub-Saharan Africa	60·57 (59·22–61·81)	52·69 (50·25–54·95)	68·04 (66·88–69·03)	58·28 (55·36–60·90)	50·23 (48·81–51·55)	43·58 (41·41–45·70)	53·38 (51·84–54·69)	45·63 (43·29–47·85)	56·46 (55·27–57·83)	49·03 (46·80–51·21)	61·66 (60·26–63·17)	52·69 (49·87–55·18)
Botswana	64·14 (60·49–67·24)	55·81 (52·09–59·23)	71·43 (68·02–74·56)	60·76 (56·91–64·42)	51·45 (49·04–54·01)	45·04 (42·36–47·69)	57·73 (52·98–62·43)	49·10 (44·97–53·31)	61·60 (58·41–65·00)	53·56 (49·98–57·02)	70·61 (63·80–75·86)	59·67 (54·23–64·64)
Lesotho	56·73 (55·23–58·27)	50·18 (47·93–52·40)	65·84 (64·33–67·15)	56·55 (53·72–59·21)	42·25 (40·93–43·75)	37·14 (35·48–39·00)	45·77 (43·83–48·10)	39·43 (37·16–42·00)	45·55 (43·86–47·30)	40·06 (38·12–42·15)	51·16 (48·33–53·87)	44·02 (41·03–47·13)
Namibia	59·02 (58·10–60·05)	52·22 (50·08–54·19)	65·68 (64·92–66·52)	56·84 (54·12–59·21)	50·04 (48·69–51·49)	44·28 (42·38–46·25)	53·80 (52·19–55·49)	46·67 (44·44–49·10)	56·22 (54·31–58·13)	49·73 (47·32–52·19)	65·35 (63·13–67·14)	56·40 (53·40–59·28)
South Africa	60·46 (58·65–62·17)	52·97 (50·51–55·42)	68·87 (67·31–70·28)	59·19 (56·19–61·89)	51·14 (49·06–53·01)	44·51 (42·01–46·82)	55·05 (53·08–56·85)	47·18 (44·58–49·65)	57·67 (55·98–59·45)	50·09 (47·72–52·58)	63·01 (61·30–64·91)	53·85 (50·87–56·75)
Swaziland	59·13 (57·42–60·99)	51·78 (49·29–54·18)	65·18 (63·83–66·69)	55·95 (53·00–58·62)	42·40 (40·74–43·86)	36·93 (34·95–38·75)	44·66 (42·70–46·93)	38·26 (36·02–40·73)	47·69 (46·06–49·41)	41·66 (39·41–43·77)	54·14 (51·86–56·53)	46·36 (43·52–49·25)
Zimbabwe	61·70 (60·68–62·77)	51·60 (47·94–54·54)	65·00 (63·81–66·06)	54·77 (51·25–57·64)	47·33 (45·57–48·94)	40·24 (38·06–42·48)	47·91 (45·72–50·45)	40·34 (37·79–42·95)	54·09 (52·15–56·34)	46·64 (43·95–49·25)	57·87 (55·11–60·92)	49·33 (46·17–52·56)
Western sub-Saharan Africa	54·24 (53·25–55·08)	46·51 (44·11–48·61)	56·07 (55·13–56·96)	47·60 (45·04–50·03)	56·27 (55·46–57·04)	48·51 (46·20–50·64)	57·65 (56·87–58·39)	49·10 (46·50–51·43)	59·58 (58·47–60·69)	51·72 (49·34–54·01)	61·44 (60·23–62·40)	52·63 (49·89–55·09)
Benin	54·91 (53·42–56·36)	47·50 (45·03–49·83)	59·15 (57·75–60·48)	49·96 (47·05–52·81)	58·96 (57·46–60·34)	51·87 (49·45–54·10)	63·84 (62·21–65·33)	54·58 (51·56–57·54)	62·39 (59·93–64·60)	55·18 (52·41–57·88)	67·44 (65·29–69·58)	57·92 (54·66–61·11)
Burkina Faso	51·16 (49·57–52·72)	43·93 (41·41–46·30)	54·11 (52·54–55·56)	45·92 (43·19–48·41)	55·76 (54·50–56·95)	48·50 (45·89–50·76)	57·62 (56·32–58·93)	49·35 (46·73–51·88)	60·81 (58·98–62·51)	53·51 (50·86–55·94)	63·08 (61·26–65·00)	54·54 (51·69–57·34)
Cameroon	57·43 (56·28–58·49)	49·59 (47·09–52·01)	60·01 (58·83–61·15)	51·18 (48·49–53·76)	53·87 (52·42–55·31)	46·80 (44·32–49·11)	56·49 (55·36–57·82)	48·32 (45·71–50·62)	56·99 (54·99–58·81)	49·92 (47·19–52·49)	60·53 (58·57–62·40)	52·13 (49·32–54·83)
Cape Verde	64·99 (64·35–65·68)	57·50 (55·26–59·61)	72·38 (71·69–73·13)	62·17 (59·07–64·91)	67·30 (63·49–71·13)	59·51 (55·92–63·14)	76·07 (72·62–78·83)	65·27 (61·35–68·81)	69·83 (66·03–74·09)	61·86 (57·86–65·61)	78·50 (74·70–81·11)	67·43 (63·69–70·93)
Chad	52·00 (50·38–53·80)	43·88 (41·10–46·60)	55·22 (53·64–56·81)	46·55 (43·58–49·27)	52·24 (50·13–54·55)	44·70 (41·97–47·22)	54·92 (53·09–56·99)	46·78 (43·95–49·65)	55·74 (53·11–58·51)	48·11 (45·13–50·99)	58·49 (55·53–61·10)	50·08 (46·80–53·22)
Côte d'Ivoire	53·95 (52·66–55·22)	46·71 (44·41–48·96)	58·88 (57·65–60·21)	49·89 (47·04–52·61)	52·11 (50·78–53·57)	45·62 (43·51–47·66)	55·65 (54·40–57·09)	47·84 (45·46–50·27)	57·07 (54·84–58·89)	50·07 (47·52–52·39)	61·03 (59·51–62·65)	52·65 (49·90–55·35)
Ghana	59·34 (57·79–61·12)	51·91 (49·22–54·27)	61·23 (59·50–63·06)	52·54 (49·68–55·26)	60·29 (59·09–61·54)	53·29 (50·81–55·57)	62·63 (61·03–64·27)	54·06 (51·35–56·71)	62·99 (61·10–64·91)	56·00 (53·45–58·53)	66·85 (64·77–68·97)	57·90 (54·93–61·00)
Guinea	52·52 (50·79–54·41)	45·36 (42·82–47·77)	52·22 (50·46–53·86)	44·72 (41·94–47·16)	56·94 (55·35–58·85)	49·76 (47·27–52·07)	57·71 (56·19–59·25)	49·56 (46·83–52·20)	59·66 (57·53–61·86)	52·44 (49·66–55·06)	60·67 (58·43–63·06)	52·46 (49·24–55·33)
Guinea-Bissau	50·25 (45·91–54·83)	43·34 (39·05–47·37)	52·34 (47·31–57·34)	44·96 (40·35–49·16)	50·23 (45·79–54·07)	43·87 (39·99–47·50)	51·52 (47·20–55·68)	44·64 (40·94–48·33)	52·21 (48·32–55·56)	45·85 (42·12–49·23)	53·48 (49·56–57·13)	46·59 (42·91–50·15)

(Table 3 continues on next page)

	1990				2005				2013			
	Male population		Female population		Male population		Female population		Male population		Female population	
	Life expectancy (years)	HALE (years)	Life expectancy (years)	HALE (years)	Life expectancy (years)	HALE (years)	Life expectancy (years)	HALE (years)	Life expectancy (years)	HALE (years)	Life expectancy (years)	HALE (years)
(Continued from previous page)												
Liberia	50·23 (46·87–52·55)	42·04 (38·82–45·14)	52·56 (50·04–54·61)	43·82 (40·63–46·72)	59·29 (57·88–60·77)	49·72 (46·47–52·50)	59·28 (57·90–60·67)	49·60 (46·57–52·56)	62·71 (60·71–64·91)	53·42 (50·19–56·34)	63·57 (61·45–65·72)	53·78 (50·53–56·94)
Mali	48·75 (46·91–50·59)	42·37 (39·87–44·84)	48·86 (47·15–50·61)	41·79 (39·31–44·07)	54·90 (53·11–56·63)	47·83 (45·29–50·22)	53·72 (52·16–55·42)	46·15 (43·54–48·44)	57·58 (54·82–60·19)	50·73 (47·71–53·72)	56·97 (54·33–59·91)	49·35 (46·16–52·40)
Mauritania	59·87 (58·47–61·30)	51·72 (49·04–54·10)	60·89 (59·66–62·12)	51·98 (49·19–54·60)	61·87 (59·79–63·98)	53·96 (51·12–56·68)	63·45 (61·36–65·84)	54·42 (51·17–57·53)	64·02 (61·54–66·77)	56·03 (52·87–59·09)	66·13 (63·43–68·94)	56·97 (53·47–60·32)
Niger	45·96 (44·12–47·99)	40·12 (37·69–42·61)	48·03 (45·94–49·79)	41·47 (38·75–44·02)	56·46 (55·08–57·80)	49·23 (46·79–51·51)	58·23 (56·93–59·59)	50·17 (47·60–52·68)	60·45 (58·80–62·23)	53·26 (50·77–55·66)	62·89 (61·17–64·61)	54·46 (51·72–57·06)
Nigeria	54·94 (52·82–56·68)	46·54 (43·60–49·12)	55·84 (53·79–57·57)	47·13 (44·22–49·86)	56·79 (55·14–58·34)	48·24 (45·62–50·69)	56·97 (55·33–58·37)	48·11 (45·29–50·77)	59·78 (57·48–62·01)	51·15 (48·34–54·01)	60·42 (58·01–62·31)	51·34 (48·27–54·24)
São Tomé and Príncipe	63·38 (61·38–65·51)	55·42 (52·46–58·43)	65·31 (63·04–67·11)	56·22 (53·15–59·20)	64·99 (62·96–67·19)	56·99 (53·86–60·02)	67·42 (65·57–69·34)	58·15 (55·01–61·02)	66·88 (62·57–70·65)	58·74 (53·87–62·93)	69·95 (66·64–73·27)	60·40 (56·40–64·01)
Senegal	56·50 (55·16–57·85)	49·73 (47·31–51·86)	59·63 (58·22–60·92)	51·28 (48·62–53·67)	61·39 (59·91–62·84)	53·94 (51·39–56·25)	64·19 (62·65–65·81)	55·16 (52·32–58·06)	64·25 (62·09–66·24)	56·59 (53·78–59·29)	66·99 (64·90–69·18)	57·71 (54·49–60·73)
Sierra Leone	48·80 (46·71–50·95)	42·31 (39·72–44·98)	53·68 (51·90–55·58)	45·82 (42·99–48·50)	52·59 (50·86–54·25)	45·43 (42·97–47·84)	56·25 (54·78–57·79)	48·03 (45·38–50·59)	55·83 (53·47–57·85)	49·02 (46·32–51·50)	59·73 (57·45–61·87)	51·66 (48·70–54·56)
The Gambia	56·39 (51·14–61·18)	49·29 (44·63–53·70)	58·71 (53·52–63·42)	50·61 (45·86–55·02)	60·02 (54·45–65·44)	52·82 (48·04–57·42)	62·66 (56·88–67·74)	54·09 (49·12–58·83)	62·69 (56·39–68·33)	55·34 (49·81–60·37)	66·03 (59·56–71·65)	57·17 (51·65–62·47)
Togo	57·42 (55·98–58·93)	50·07 (47·49–52·52)	59·72 (58·22–61·25)	51·29 (48·63–53·88)	57·66 (55·78–59·39)	50·34 (47·67–52·89)	60·25 (58·57–62·04)	51·52 (48·71–54·35)	61·12 (58·52–63·71)	53·81 (50·88–56·67)	64·76 (62·61–66·67)	55·64 (52·45–58·65)

Data are years (95% uncertainty interval). HALE=healthy life expectancy.

Table 3: **Life expectancy at birth and HALE at birth for 1990, 2005, and 2013 for both sexes and 188 countries**

Figure 5 shows the predicted global composition of YLLs and YLDs for level 2 causes at different levels of sociodemographic status, controlling for year and country. YLLs from diarrhoea, lower respiratory infections, and other common infections, and neonatal disorders fall substantially as sociodemographic status increases. Other YLLs that fall noticeably with rising sociodemographic status include YLLs from maternal causes, nutritional deficiencies, other non-communicable causes (including congenital causes), and unintentional injuries. YLLs from cardiovascular diseases at first increase slightly with increasing sociodemographic status, but then decrease at the highest levels of country sociodemographic status. Some important causes of global YLLs are not strongly related to sociodemographic status because they are largely country-specific, such as neglected tropical diseases and malaria, neoplasms, and intentional injuries. By contrast, overall YLDs decline slightly at first, but then increase substantially, showing the opposite trend to YLLs. The large increases in YLDs are related to musculoskeletal disorders; mental and substance use disorders; diabetes, urogenital, blood, and endocrine diseases; and neurological disorders. As sociodemographic status rises, the steady decreases in YLLs and increases in YLDs cause the proportion of total DALYs attributable to YLDs to steadily rise from 9·9% at the lowest level of sociodemographic status to 49·1% in the highest vigintile. Above the tenth vigintile of sociodemographic status, the rise in YLDs and fall in YLLs nearly compensate for each other so that DALY rates have remained largely constant.

Country-specific results

In 1990, life expectancy ranged from 46·9 years (95% UI 45·1–48·2) in the Central African Republic to 80·7 years (78·7–82·5) in Andorra, while HALE ranged from 40·4 years (38·2–42·5) in the Central African Republic to 70·2 years (67·7–72·5) in Japan. By 2013, life expectancy ranged from 48·3 years (46·5–50·1) in Lesotho to 83·9 years (82·3–85·5) in Andorra, and HALE

	1	2	3	4	5	6	7	8	9	10
Global	IHD	LRI	Stroke	Back & neck	Road inj	Diarrhoea	COPD	NN preterm	HIV/AIDS	Malaria
Developed	IHD	Back & neck	Stroke	Lung C	Depression	COPD	Sense	Diabetes	Alzheimer's	Falls
Developing	IHD	LRI	Stroke	Back & neck	Diarrhoea	NN preterm	HIV/AIDS	Road inj	Malaria	COPD
High-income	Back & neck	IHD	Stroke	Lung C	COPD	Depression	Diabetes	Alzheimer's	Sense	Other MSK
Australasia	Back & neck	IHD	Depression	Other MSK	COPD	Alzheimer's	Lung C	Stroke	Diabetes	Sense
Australia	Back & neck	IHD	Depression	Other MSK	COPD	Alzheimer's	Lung C	Stroke	Diabetes	Sense
New Zealand	Back & neck	IHD	COPD	Depression	Alzheimer's	Lung C	Stroke	Diabetes	Sense	Other MSK
High-income Asia Pacific	Back & neck	Stroke	IHD	Diabetes	Lung C	Self-harm	Other MSK	LRI	Sense	Depression
Brunei	Back & neck	IHD	Diabetes	Stroke	Depression	Road inj	Congenital	Skin	Iron	Other MSK
Japan	Back & neck	Stroke	IHD	LRI	Lung C	Other MSK	Diabetes	Sense	Self-harm	Depression
Singapore	IHD	Depression	Diabetes	Back & neck	LRI	Stroke	Sense	Other MSK	Lung C	Skin
South Korea	Back & neck	Stroke	Diabetes	Self-harm	IHD	Liver C	Lung C	Other MSK	Stomach C	Migraine
High-income North America	IHD	Back & neck	COPD	Lung C	Depression	Diabetes	Alzheimer's	Other MSK	Stroke	Sense
Canada	Back & neck	IHD	Lung C	Other MSK	Alzheimer's	Diabetes	Sense	Depression	COPD	Stroke
USA	IHD	Back & neck	COPD	Lung C	Depression	Diabetes	Alzheimer's	Other MSK	Stroke	Sense
Southern Latin America	IHD	Back & neck	COPD	Stroke	Depression	LRI	Road inj	Congenital	Diabetes	Skin
Argentina	IHD	COPD	Back & neck	Stroke	LRI	Depression	Road inj	Congenital	Diabetes	Skin
Chile	Back & neck	IHD	Stroke	Depression	COPD	Road inj	Skin	Congenital	Anxiety	CKD
Uruguay	IHD	Stroke	Back & neck	COPD	Alzheimer's	Lung C	Depression	Road inj	Sense	LRI
Western Europe	Back & neck	IHD	Stroke	Lung C	Alzheimer's	Sense	Falls	Depression	COPD	Diabetes
Andorra	Back & neck	IHD	Stroke	Sense	Lung C	Depression	Alzheimer's	Falls	COPD	Skin
Austria	IHD	Back & neck	Stroke	Alzheimer's	Lung C	Sense	Falls	Depression	Diabetes	COPD
Belgium	Back & neck	IHD	Lung C	COPD	Alzheimer's	Stroke	Falls	Road inj	Sense	Self-harm
Cyprus	Back & neck	IHD	Diabetes	Depression	Stroke	Sense	Alzheimer's	Skin	Lung C	CKD
Denmark	Back & neck	IHD	COPD	Stroke	Lung C	Alzheimer's	Falls	Depression	Skin	Colorect C
Finland	IHD	Back & neck	Falls	Alzheimer's	Stroke	Depression	Diabetes	Sense	Lung C	Self-harm
France	Back & neck	IHD	Lung C	Falls	Depression	Sense	Stroke	Skin	Alzheimer's	Self-harm
Germany	Back & neck	IHD	Stroke	Sense	Alzheimer's	Lung C	Diabetes	COPD	Falls	CKD
Greece	IHD	Back & neck	Stroke	Lung C	COPD	Alzheimer's	Sense	Depression	CKD	Falls
Iceland	Back & neck	IHD	Skin	COPD	Sense	Alzheimer's	Lung C	Depression	Diabetes	Stroke
Ireland	IHD	Back & neck	Depression	COPD	Lung C	Stroke	Skin	Sense	Falls	Diabetes
Israel	Back & neck	IHD	Depression	Diabetes	Alzheimer's	CKD	Skin	Sense	COPD	Lung C
Italy	Back & neck	IHD	Alzheimer's	Sense	Stroke	Lung C	Falls	Depression	Migraine	COPD
Luxembourg	Back & neck	IHD	Stroke	Lung C	COPD	Depression	Migraine	Sense	Falls	Diabetes
Malta	Back & neck	IHD	Diabetes	Stroke	Depression	Sense	Lung C	Falls	CKD	COPD
Netherlands	Back & neck	IHD	Lung C	COPD	Skin	Stroke	Diabetes	Sense	Depression	Alzheimer's
Norway	Back & neck	IHD	Alzheimer's	Stroke	Lung C	Falls	COPD	Anxiety	Depression	Skin
Portugal	Back & neck	Stroke	IHD	Diabetes	Depression	Alzheimer's	Sense	Lung C	CKD	COPD
Spain	Back & neck	IHD	Diabetes	Stroke	COPD	Alzheimer's	Depression	Lung C	Sense	Falls
Sweden	Back & neck	IHD	Stroke	Falls	COPD	Depression	Sense	Alzheimer's	Lung C	Skin
Switzerland	Back & neck	IHD	Falls	COPD	Alzheimer's	Stroke	Sense	Lung C	Depression	Skin
UK	Back & neck	IHD	Stroke	COPD	Lung C	Alzheimer's	Sense	Depression	Falls	Skin
England	Back & neck	IHD	Stroke	COPD	Lung C	Alzheimer's	Sense	Depression	Falls	Skin
Northern Ireland	IHD	Back & neck	Depression	Lung C	Stroke	COPD	Alzheimer's	Falls	Skin	Sense
Scotland	Back & neck	IHD	Lung C	Stroke	COPD	Alzheimer's	Sense	Diabetes	Falls	Skin
Wales	Back & neck	IHD	Stroke	COPD	Lung C	Alzheimer's	Depression	Sense	Falls	Diabetes
Central Europe, eastern Europe, and central Asia	IHD	Stroke	Back & neck	LRI	Self-harm	Depression	Sense	Lung C	Road inj	COPD
Central Asia	IHD	LRI	Stroke	NN enceph	Back & neck	Congenital	Road inj	Depression	Diabetes	NN preterm
Armenia	IHD	Stroke	Diabetes	Back & neck	Lung C	Depression	Sense	Road inj	Congenital	COPD
Azerbaijan	IHD	LRI	Stroke	Back & neck	Diabetes	NN enceph	Depression	Congenital	Road inj	Sense
Georgia	IHD	Stroke	COPD	Diabetes	Back & neck	Sense	Depression	Falls	Alzheimer's	Road inj
Kazakhstan	IHD	Stroke	Self-harm	Back & neck	Road inj	Congenital	LRI	COPD	NN enceph	Depression
Kyrgyzstan	IHD	Stroke	LRI	NN enceph	NN preterm	Congenital	Back & neck	Road inj	COPD	Depression
Mongolia	IHD	Stroke	LRI	Liver C	NN enceph	Congenital	Self-harm	Road inj	NN preterm	Back & neck
Tajikistan	LRI	IHD	NN preterm	Diarrhoea	NN enceph	Congenital	Stroke	Back & neck	Depression	Drown
Turkmenistan	IHD	LRI	Stroke	NN enceph	Diarrhoea	Back & neck	Congenital	NN preterm	Depression	Diabetes
Uzbekistan	IHD	LRI	Stroke	NN enceph	Back & neck	Road inj	Depression	Diabetes	Congenital	HTN HD
Central Europe	IHD	Stroke	Back & neck	Lung C	Falls	COPD	Sense	Diabetes	Depression	Alzheimer's
Albania	IHD	Stroke	Back & neck	Depression	LRI	Falls	Lung C	Sense	COPD	Diabetes
Bosnia and Herzegovina	IHD	Stroke	Back & neck	Diabetes	Lung C	CMP	COPD	Sense	Depression	Falls
Bulgaria	IHD	Stroke	Back & neck	COPD	Diabetes	HTN HD	Falls	Lung C	Sense	Alzheimer's
Croatia	IHD	Stroke	Back & neck	Lung C	Sense	COPD	Diabetes	Alzheimer's	Depression	Falls
Czech Republic	IHD	Back & neck	Stroke	Falls	Lung C	Sense	Diabetes	COPD	Depression	Alzheimer's
Hungary	IHD	Stroke	Back & neck	Lung C	Falls	COPD	Sense	Diabetes	Colorect C	Depression
Macedonia	Stroke	IHD	Back & neck	Diabetes	Lung C	Depression	Sense	Falls	COPD	CKD
Montenegro	IHD	Stroke	Back & neck	Lung C	Diabetes	Sense	Falls	Depression	Self-harm	CKD
Poland	IHD	Stroke	Back & neck	Lung C	Falls	COPD	Sense	Depression	Diabetes	Self-harm
Romania	IHD	Stroke	Back & neck	Falls	Lung C	Sense	Depression	COPD	Diabetes	Alzheimer's
Serbia	IHD	Stroke	Back & neck	CMP	Lung C	Diabetes	Sense	COPD	Depression	Alzheimer's
Slovakia	IHD	Back & neck	Stroke	Falls	Lung C	Sense	Depression	Diabetes	Colorect C	COPD
Slovenia	Back & neck	IHD	Falls	Stroke	Lung C	Sense	Depression	COPD	Alzheimer's	Diabetes
Eastern Europe	IHD	Stroke	Back & neck	Self-harm	CMP	Depression	Sense	Alcohol	Lung C	Road inj

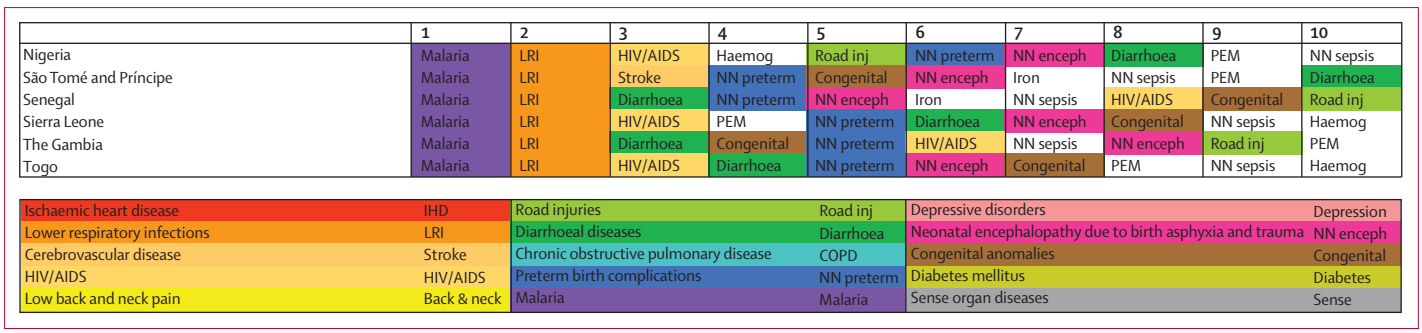
(Figure 6 continues on next page)

	1	2	3	4	5	6	7	8	9	10
Belarus	IHD	Stroke	Back & neck	Self-harm	Road inj	Lung C	Depression	Sense	COPD	Alcohol
Estonia	IHD	Stroke	Back & neck	Depression	Lung C	Sense	Alzheimer's	Alcohol	Diabetes	HTN HD
Latvia	IHD	Stroke	Back & neck	Sense	CMP	Lung C	Alzheimer's	Self-harm	Depression	Diabetes
Lithuania	IHD	Stroke	Back & neck	Self-harm	Sense	Depression	Lung C	Alzheimer's	COPD	Road inj
Moldova	IHD	Stroke	Back & neck	Depression	Cirr HepC	Sense	LRI	COPD	Self-harm	Lung C
Russia	IHD	Stroke	Back & neck	CMP	Self-harm	Depression	Alcohol	Sense	Road inj	Lung C
Ukraine	IHD	Stroke	Back & neck	Depression	Self-harm	Sense	HIV/AIDS	Lung C	Road inj	COPD
Latin America and Caribbean	IHD	Violence	Back & neck	Road inj	Diabetes	Depression	Stroke	LRI	Congenital	Sense
Andean Latin America	LRI	Road inj	IHD	Back & neck	Congenital	Depression	NN preterm	Sense	Stroke	F Body
Bolivia	LRI	F Body	Road inj	NN preterm	IHD	Congenital	NN enceph	Back & neck	Depression	Diarrhoea
Ecuador	LRI	Road inj	IHD	Congenital	Violence	Back & neck	Depression	CKD	Stroke	Sense
Peru	LRI	Back & neck	IHD	Depression	Road inj	Sense	Congenital	COPD	NN preterm	Stroke
Caribbean	IHD	Stroke	Diabetes	LRI	HIV/AIDS	Road inj	Depression	Diarrhoea	Back & neck	Congenital
Antigua and Barbuda	Diabetes	IHD	Stroke	Depression	Back & neck	Sense	Road inj	Iron	CKD	LRI
Barbados	Diabetes	IHD	Stroke	Back & neck	Depression	Sense	CKD	LRI	COPD	Skin
Belize	Diabetes	IHD	Stroke	Violence	Road inj	NN preterm	Depression	Congenital	Iron	HIV/AIDS
Cuba	IHD	Stroke	Diabetes	Sense	Depression	Lung C	Back & neck	COPD	LRI	Road inj
Dominica	Diabetes	IHD	Stroke	Depression	Back & neck	Road inj	Sense	LRI	CKD	NN preterm
Dominican Republic	IHD	Road inj	Stroke	NN preterm	Congenital	Diabetes	Depression	Back & neck	LRI	Violence
Grenada	IHD	Diabetes	Stroke	Road inj	Depression	Back & neck	LRI	Sense	HIV/AIDS	Violence
Guyana	IHD	HIV/AIDS	Stroke	Diabetes	Road inj	Congenital	LRI	Self-harm	Violence	NN preterm
Haiti	HIV/AIDS	LRI	Diarrhoea	Stroke	PEM	NN sepsis	Iron	IHD	NN preterm	Congenital
Jamaica	Diabetes	Stroke	IHD	Violence	Depression	Back & neck	NN preterm	Sense	CKD	Congenital
Saint Lucia	Diabetes	IHD	Stroke	Depression	Back & neck	Sense	Violence	Road inj	LRI	COPD
Saint Vincent and the Grenadines	IHD	Diabetes	Stroke	Depression	Back & neck	NN preterm	Road inj	HIV/AIDS	Violence	Sense
Suriname	IHD	Stroke	Diabetes	NN preterm	Congenital	Road inj	LRI	Depression	HIV/AIDS	Back & neck
The Bahamas	IHD	Diabetes	Stroke	HIV/AIDS	Depression	Back & neck	Violence	Road inj	CKD	Sense
Trinidad and Tobago	Diabetes	IHD	Stroke	Road inj	Violence	Depression	Back & neck	CKD	Sense	HIV/AIDS
Central Latin America	Violence	IHD	Diabetes	Back & neck	Road inj	Depression	CKD	Congenital	LRI	Sense
Colombia	Violence	IHD	Depression	Back & neck	Road inj	Congenital	COPD	Stroke	Diabetes	Sense
Costa Rica	Back & neck	IHD	Depression	Road inj	Sense	Congenital	CKD	COPD	Asthma	Diabetes
El Salvador	Violence	IHD	Road inj	Back & neck	CKD	Congenital	Diabetes	LRI	Depression	Iron
Guatemala	LRI	Violence	Diarrhoea	NN preterm	Back & neck	IHD	Iron	Congenital	Diabetes	PEM
Honduras	IHD	Congenital	Violence	Depression	NN preterm	COPD	Back & neck	Stroke	Diarrhoea	LRI
Mexico	Diabetes	IHD	CKD	Back & neck	Depression	Road inj	Congenital	Violence	Sense	COPD
Nicaragua	Congenital	CKD	Back & neck	War	Depression	LRI	IHD	NN preterm	Diabetes	Road inj
Panama	Back & neck	IHD	Congenital	Depression	Violence	Road inj	Diabetes	Stroke	Sense	CKD
Venezuela	Violence	IHD	Road inj	Back & neck	Diabetes	Depression	Stroke	Congenital	Sense	CKD
Tropical Latin America	IHD	Back & neck	Violence	Stroke	Road inj	Diabetes	Depression	Anxiety	COPD	Sense
Brazil	IHD	Back & neck	Violence	Stroke	Road inj	Diabetes	Depression	Anxiety	COPD	Sense
Paraguay	IHD	Road inj	Back & neck	Stroke	Congenital	Diabetes	NN preterm	Depression	LRI	Violence
Southeast Asia, east Asia, and Oceania	Stroke	IHD	Back & neck	Road inj	COPD	Diabetes	Sense	Lung C	Depression	LRI
East Asia	Stroke	Back & neck	IHD	COPD	Road inj	Lung C	Sense	Depression	Diabetes	Liver C
China	Stroke	Back & neck	IHD	COPD	Road inj	Lung C	Depression	Sense	Diabetes	Liver C
North Korea	Stroke	IHD	Back & neck	COPD	Lung C	Road inj	Liver C	Stomach C	Sense	Congenital
Taiwan (province of China)	Back & neck	Diabetes	IHD	Stroke	Liver C	Sense	Road Inj	Lung C	Skin	Self-harm
Oceania	LRI	IHD	Diabetes	Diarrhoea	Malaria	Congenital	NN preterm	Stroke	Road inj	Other NN
Federated States of Micronesia	IHD	Diabetes	Stroke	LRI	Congenital	Road inj	Back & neck	Skin	COPD	Asthma
Fiji	IHD	Diabetes	Stroke	LRI	Congenital	NN preterm	Back & neck	CKD	COPD	Sense
Kiribati	Diabetes	Stroke	IHD	LRI	Other NN	Congenital	Road inj	Diarrhoea	Asthma	Back & neck
Marshall Islands	IHD	Diabetes	LRI	Stroke	Congenital	NN preterm	Road inj	Other NN	Back & neck	CKD
Papua New Guinea	LRI	IHD	Diarrhoea	Diabetes	Malaria	NN preterm	Congenital	Other NN	Road inj	HIV/AIDS
Samoa	Diabetes	IHD	Stroke	Back & neck	LRI	Congenital	Skin	Sense	CKD	Road inj
Solomon Islands	IHD	Diabetes	Stroke	LRI	Diarrhoea	Congenital	NN preterm	Back & neck	Asthma	TB
Tonga	IHD	Diabetes	LRI	Stroke	NN preterm	Back & neck	Congenital	Road inj	Skin	Other NN
Vanuatu	IHD	Diabetes	LRI	Stroke	NN preterm	Congenital	Other NN	Road inj	Diarrhoea	Back & neck
Southeast Asia	Stroke	IHD	LR	Road inj	TB	Diabetes	Back & neck	NN preterm	Sense	COPD
Cambodia	IHD	LRI	NN preterm	War	Stroke	Congenital	Road inj	Iron	TB	COPD
Indonesia	Stroke	IHD	TB	LRI	Diabetes	Road inj	NN enceph	Back & neck	Diarrhoea	NN preterm
Laos	LRI	NN preterm	IHD	Stroke	Diarrhoea	Road inj	Congenital	NN enceph	Iron	TB
Malaysia	IHD	Road inj	Stroke	LRI	Diabetes	Back & neck	COPD	Skin	Depression	Nematode
Maldives	IHD	Back & neck	Congenital	Stroke	COPD	Sense	NN enceph	Diabetes	Skin	NN preterm
Myanmar	Stroke	LRI	TB	IHD	Sense	Malaria	COPD	NN preterm	Diabetes	Road inj
Philippines	IHD	LRI	Stroke	Back & neck	TB	NN preterm	Congenital	Diabetes	COPD	Iron
Sri Lanka	IHD	Self-harm	Diabetes	COPD	Back & neck	Stroke	Sense	Road inj	Asthma	Depression
Thailand	IHD	Road inj	Stroke	Diabetes	LRI	Sense	COPD	CKD	Liver C	HIV/AIDS
Timor-Leste	LRI	NN preterm	Diarrhoea	Congenital	IHD	Iron	Stroke	Other NN	NN enceph	Road inj
Vietnam	Stroke	Road inj	Back & neck	Sense	LRI	NN preterm	Liver C	Depression	War	COPD
South Asia	IHD	LRI	NN enceph	NN preterm	Diarrhoea	COPD	TB	Stroke	Back & neck	Road inj
Afghanistan	LRI	Diarrhoea	NN preterm	IHD	Congenital	Road inj	Stroke	Iron	Meningitis	Other NN
Bangladesh	Stroke	Back & neck	NN enceph	IHD	NN preterm	LRI	COPD	Drown	Iron	Depression
Bhutan	IHD	LRI	NN enceph	Stroke	Back & neck	NN preterm	COPD	Road inj	Depression	Diabetes

(Figure 6 continues on next page)

	1	2	3	4	5	6	7	8	9	10
India	IHD	COPD	TB	LRI	NN preterm	NN enceph	Diarrhoea	Stroke	Road inj	Back & neck
Nepal	LRI	IHD	Back & neck	NN enceph	Diarrhoea	Stroke	COPD	TB	Self-harm	NN preterm
Pakistan	LRI	NN enceph	Diarrhoea	IHD	NN preterm	NN sepsis	Stroke	Meningitis	Road inj	Congenital
North Africa and Middle East	IHD	Back & neck	Congenital	NN preterm	Stroke	Diabetes	Road inj	Depression	LRI	COPD
Algeria	NN preterm	IHD	Back & neck	Congenital	Road inj	Stroke	Diabetes	Depression	Sense	Iron
Bahrain	Diabetes	Back & neck	Drugs	Depression	IHD	Road inj	Skin	Sense	Iron	Congenital
Egypt	IHD	Stroke	Back & neck	Congenital	COPD	LRI	Diabetes	Cirr hep C	Sense	Other cardio
Iran	IHD	Back & neck	Congenital	NN preterm	Depression	Road inj	Diabetes	Sense	Stroke	Drugs
Iraq	NN preterm	IHD	Congenital	Stroke	Diabetes	Back & neck	LRI	Iron	CKD	Road inj
Jordan	Congenital	Back & neck	NN preterm	Diabetes	IHD	Depression	Drugs	Iron	Skin	LRI
Kuwait	IHD	Diabetes	Depression	Drugs	Congenital	Road inj	Back & neck	Skin	Sense	NN preterm
Lebanon	IHD	Diabetes	Depression	Back & neck	Congenital	Skin	War	COPD	Stroke	Drugs
Libya	IHD	Back & neck	Diabetes	Congenital	Stroke	Depression	Road inj	NN preterm	COPD	Iron
Morocco	Back & neck	NN preterm	IHD	Diabetes	Drugs	Depression	Stroke	Road inj	Congenital	NN enceph
Oman	Road inj	Back & neck	IHD	Diabetes	Depression	Sense	Congenital	Drugs	Skin	Stroke
Palestine	Congenital	IHD	Depression	Back & neck	Diabetes	Stroke	NN preterm	LRI	Iron	Road inj
Qatar	Drugs	Back & neck	Road inj	Depression	Diabetes	Skin	Congenital	IHD	NN preterm	Sense
Saudi Arabia	Road inj	Diabetes	Back & neck	IHD	Depression	Congenital	Drugs	NN preterm	Skin	Stroke
Sudan	NN preterm	IHD	Congenital	Diarrhoea	LRI	Stroke	Back & neck	Road inj	Iron	Malaria
Syria	War	IHD	Stroke	Back & neck	Depression	Congenital	Diabetes	Iron	Migraine	COPD
Tunisia	IHD	Back & neck	Road inj	Stroke	Depression	Congenital	Diabetes	COPD	Sense	NN preterm
Turkey	IHD	Back & neck	COPD	Diabetes	Congenital	Stroke	Lung C	Depression	Road inj	NN preterm
United Arab Emirates	Road inj	Back & neck	Drugs	Depression	IHD	Diabetes	Skin	Congenital	Sense	COPD
Yemen	NN preterm	IHD	Diarrhoea	Congenital	LRI	Stroke	Iron	Malaria	Road inj	Back & neck
Sub-Saharan Africa	HIV/AIDS	Malaria	LRI	Diarrhoea	NN preterm	PEM	NN enceph	Congenital	TB	Road inj
Central sub-Saharan Africa	LRI	Diarrhoea	Malaria	PEM	HIV/AIDS	NN preterm	Congenital	TB	NN enceph	Meningitis
Angola	LRI	Diarrhoea	HIV/AIDS	Malaria	Congenital	PEM	NN preterm	TB	NN enceph	Road inj
Central African Republic	HIV/AIDS	LRI	Diarrhoea	Malaria	TB	NN preterm	PEM	STD	Meningitis	NN enceph
Congo	HIV/AIDS	LRI	Malaria	Congenital	Stroke	Diarrhoea	NN preterm	NN enceph	Measles	TB
Democratic Republic of the Congo	Diarrhoea	LRI	Malaria	PEM	NN preterm	HIV/AIDS	Congenital	TB	NN enceph	Iron
Equatorial Guinea	HIV/AIDS	LRI	Malaria	Congenital	Road inj	Diarrhoea	Stroke	NN preterm	PEM	NN enceph
Gabon	HIV/AIDS	LRI	Malaria	Stroke	Road inj	Congenital	TB	Diarrhoea	IHD	NN enceph
Eastern sub-Saharan Africa	HIV/AIDS	LRI	Malaria	Diarrhoea	TB	NN preterm	NN enceph	PEM	NN sepsis	Congenital
Burundi	Malaria	LRI	Diarrhoea	TB	HIV/AIDS	NN preterm	PEM	NN enceph	NN sepsis	Congenital
Comoros	LRI	Diarrhoea	TB	NN preterm	Malaria	NN enceph	Stroke	NN sepsis	Road inj	Congenital
Djibouti	HIV/AIDS	LRI	Malaria	Diarrhoea	TB	Stroke	NN enceph	Depression	PEM	Congenital
Eritrea	Diarrhoea	LRI	TB	HIV/AIDS	Malaria	Iron	NN preterm	PEM	Depression	Meningitis
Ethiopia	LRI	Diarrhoea	HIV/AIDS	TB	NN preterm	NN enceph	Malaria	NN sepsis	Congenital	Meningitis
Kenya	HIV/AIDS	LRI	Diarrhoea	TB	NN preterm	Malaria	NN enceph	Congenital	PEM	NN sepsis
Madagascar	LRI	Diarrhoea	Stroke	NN preterm	PEM	Malaria	STD	Iron	Depression	Congenital
Malawi	HIV/AIDS	LRI	Diarrhoea	PEM	Malaria	TB	NN preterm	Congenital	NN enceph	Meningitis
Mauritius	Diabetes	IHD	Stroke	CKD	Back & neck	Sense	COPD	Road inj	Depression	LRI
Mozambique	HIV/AIDS	Malaria	LRI	Diarrhoea	TB	NN sepsis	NN enceph	NN preterm	STD	Road inj
Rwanda	HIV/AIDS	LRI	Malaria	Diarrhoea	NN preterm	War	NN enceph	Road inj	TB	NN sepsis
Seychelles	IHD	Stroke	LRI	Diabetes	Back & neck	HTN HD	Sense	COPD	Road inj	Depression
Somalia	Diarrhoea	LRI	Malaria	TB	PEM	Meningitis	NN preterm	NN enceph	Tetanus	Other NN
South Sudan	LRI	Diarrhoea	HIV/AIDS	TB	PEM	Meningitis	Malaria	STD	NN preterm	NN enceph
Tanzania	HIV/AIDS	LRI	Malaria	Diarrhoea	TB	Congenital	PEM	NN enceph	STD	NN preterm
Uganda	HIV/AIDS	Malaria	LRI	Diarrhoea	NN preterm	NN enceph	TB	NN sepsis	PEM	Road inj
Zambia	HIV/AIDS	Malaria	LRI	Diarrhoea	PEM	TB	NN enceph	Congenital	NN sepsis	Meningitis
Southern sub-Saharan Africa	HIV/AIDS	LRI	Diarrhoea	TB	Back & neck	Violence	NN preterm	Stroke	Diabetes	Road inj
Botswana	HIV/AIDS	TB	LRI	Diarrhoea	Back & neck	NN preterm	Road inj	Depression	Other NN	Self-harm
Lesotho	HIV/AIDS	TB	Diarrhoea	LRI	NN preterm	Violence	Other NN	NN enceph	Road inj	Self-harm
Namibia	HIV/AIDS	TB	LRI	Diarrhoea	Stroke	Self-harm	Road inj	NN preterm	Other NN	Back & neck
South Africa	HIV/AIDS	LRI	TB	Diarrhoea	Back & neck	Diabetes	Violence	Stroke	COPD	Road inj
Swaziland	HIV/AIDS	LRI	TB	Diarrhoea	Road inj	NN preterm	Other NN	Violence	Self-harm	Stroke
Zimbabwe	HIV/AIDS	LRI	Diarrhoea	TB	NN preterm	NN enceph	Stroke	PEM	Malaria	Road inj
Western sub-Saharan Africa	Malaria	LRI	HIV/AIDS	Diarrhoea	NN preterm	NN enceph	Haemog	Road inj	PEM	NN sepsis
Benin	Malaria	LRI	HIV/AIDS	Diarrhoea	NN preterm	NN enceph	Congenital	Iron	Road inj	NN sepsis
Burkina Faso	Malaria	LRI	Diarrhoea	NN preterm	Congenital	Meningitis	NN enceph	Road inj	HIV/AIDS	NN sepsis
Cameroon	HIV/AIDS	Malaria	LRI	Diarrhoea	Road inj	NN preterm	NN enceph	Congenital	PEM	NN sepsis
Cape Verde	Stroke	Back & neck	Depression	Congenital	IHD	LRI	Iron	COPD	Sense	Skin
Chad	Diarrhoea	LRI	Malaria	HIV/AIDS	PEM	NN preterm	Meningitis	NN enceph	Iron	Congenital
Côte d'Ivoire	LRI	HIV/AIDS	Malaria	Diarrhoea	NN preterm	NN enceph	Road inj	NN sepsis	Congenital	PEM
Ghana	Malaria	LRI	HIV/AIDS	NN sepsis	NN preterm	PEM	NN enceph	Stroke	Road inj	Iron
Guinea	Malaria	LRI	Diarrhoea	HIV/AIDS	NN preterm	NN enceph	PEM	NN sepsis	Meningitis	Road inj
Guinea-Bissau	Malaria	HIV/AIDS	LRI	Diarrhoea	NN preterm	PEM	NN enceph	Meningitis	Road inj	Congenital
Liberia	Malaria	LRI	Diarrhoea	HIV/AIDS	NN preterm	NN enceph	PEM	TB	NN sepsis	Congenital
Mali	Malaria	Diarrhoea	LRI	PEM	NN preterm	NN enceph	Iron	Meningitis	NN sepsis	Congenital
Mauritania	LRI	Malaria	Diarrhoea	NN enceph	NN preterm	Road inj	Congenital	Iron	NN sepsis	Stroke
Niger	Malaria	Diarrhoea	LRI	PEM	NN preterm	Meningitis	Iron	Congenital	NN enceph	NN sepsis

(Figure 6 continues on next page)



	1	2	3	4	5	6	7	8	9	10
Nigeria	Malaria	LRI	HIV/AIDS	Haemog	Road inj	NN preterm	NN enceph	Diarrhoea	PEM	NN sepsis
São Tomé and Príncipe	Malaria	LRI	Stroke	NN preterm	Congenital	NN enceph	Iron	NN sepsis	PEM	Diarrhoea
Senegal	Malaria	LRI	Diarrhoea	NN preterm	NN enceph	Iron	NN sepsis	HIV/AIDS	Congenital	Road inj
Sierra Leone	Malaria	LRI	HIV/AIDS	PEM	NN preterm	Diarrhoea	NN enceph	Congenital	NN sepsis	Haemog
The Gambia	Malaria	LRI	Diarrhoea	Congenital	NN preterm	HIV/AIDS	NN sepsis	NN enceph	Road inj	PEM
Togo	Malaria	LRI	HIV/AIDS	Diarrhoea	NN preterm	NN enceph	Congenital	PEM	NN sepsis	Haemog

Ischaemic heart disease	IHD	Road injuries	Road inj	Depressive disorders	Depression
Lower respiratory infections	LRI	Diarrhoeal diseases	Diarrhoea	Neonatal encephalopathy due to birth asphyxia and trauma	NN enceph
Cerebrovascular disease	Stroke	Chronic obstructive pulmonary disease	COPD	Congenital anomalies	Congenital
HIV/AIDS	HIV/AIDS	Preterm birth complications	NN preterm	Diabetes mellitus	Diabetes
Low back and neck pain	Back & neck	Malaria	Malaria	Sense organ diseases	Sense

Figure 6: **Ten most common GBD level 3 causes of DALYs for 188 countries in 2013**
The 15 most common global causes of DALYs are coloured. Alcohol=alcohol use disorders. Alzheimer=Alzheimer's disease and other dementias. Anxiety=anxiety disorders. Back and neck=low back and neck pain. Cirr Hep C=cirrhosis due to hepatitis C. CKD=chronic kidney disease. CMP=cardiomyopathy and myocarditis. Colorect C=colon and rectum cancer. Congenital=congenital disorders. COPD=chronic obstructive pulmonary disease. Depression=depressive disorders. Diabetes=diabetes mellitus. Diarrhoea=diarrhoeal diseases. Drown=drowning. Drugs=drug use disorders. F Body=foreign body. Haemog=haemoglobinopathies and haemolytic anaemias. HTN HD=hypertensive heart disease. IHD=ischaemic heart disease. Iron=iron-deficiency anaemia. Liver C=liver cancer. LRI=lower respiratory infections. Lung C=tracheal, bronchus, and lung cancer. Nematode=intestinal nematode infections. NN enceph=neonatal encephalopathy due to birth asphyxia and trauma. NN preterm=preterm birth complications. NN sepsis=neonatal sepsis and other neonatal infections. Other cardio=other cardiovascular and circulatory diseases. Other MSK=other musculoskeletal disorders. Other NN=other neonatal disorders. PEM=protein-energy malnutrition. Road inj=road injuries. Sense=sense organ diseases. Skin=skin and subcutaneous diseases. STD=sexually transmitted diseases excluding HIV. Stomach C=stomach cancer. Stroke=cerebrovascular disease. TB=tuberculosis. Violence=interpersonal violence. War=collective violence and legal intervention. DALY=disability-adjusted life-years. GBD=Global Burden of Disease.

ranged from 42·0 years (39·8–44·2) in Lesotho to 73·4 years (70·5–76·0) in Japan. Disaggregating by sex, in 1990, there were no countries in which men had attained a HALE of 70 years or more, and only in Japan and Andorra did women attain this. By 2013, HALE for men exceeded 70 years in only two countries (Japan and Singapore), whereas HALE for women exceeded 70 years in 40 countries (table 3). Of the 21 GBD regions, nine contained at least one country in which female HALE was at least 70 years in 2013. For most countries, changes in HALE were positive for both men and women between 1990 and 2013, and the differences were significant. However, HALE in 2013 was not significantly higher than it was in 1990 in 43 countries for men and in 32 countries for women. As life expectancy increases, the gap between life expectancy and HALE widens, increasing to more than 10 years at a life expectancy of 77 years for women and 78 years for men. The life expectancy minus HALE divided by life expectancy (the percentage of life expectancy lost because of poor health) ranged between 11·5% and 15·0%.

Figure 6 shows the ten most common causes of DALYs for each country in 2013. The leading causes of DALYs vary substantially across regions, representing both different levels of sociodemographic status and distinct regional patterns. In high-income regions, low back and neck pain, ischaemic heart disease, cerebrovascular disease, and tracheal, bronchus, and lung cancer are often among the four most common causes, although major depression, COPD, and diabetes come into the top four slots in some countries. In central and eastern Europe, cardiovascular diseases rank consistently in the most common causes of DALYs. Self-harm and depression frequently rank higher in eastern Europe than in central Europe or elsewhere. In central Asia, representative of the mixed levels of sociodemographic status present in the region, leading causes include neonatal encephalopathy and congenital causes. In central Latin America, violence, ischaemic heart disease, diabetes, low back and neck pain, and road injuries comprise the top five causes. Other examples of distinct regional patterns include the high ranking of COPD in east Asia, the dominance of malaria in west Africa, and the dominance of HIV/AIDS in eastern and southern sub-Saharan Africa. Within some regions, such as north Africa and the Middle East, the leading causes varied substantially.

Discussion

Global health is improving: life expectancy at birth rose by 6·2 years between 1990 and 2013, while HALE at birth increased by 5·4 years during the same interval; worldwide, age-standardised DALY rates fell by 27%. Global progress has accelerated since 2005 because of major reductions in HIV/AIDS and malaria, in addition to continued progress against other major communicable, maternal, neonatal, and nutritional disorders. Although the total volume of DALYs is down by only 3·6% over the 23 year period, this is largely explained by population growth and ageing driving up numbers of DALYs. Declines in age-standardised DALY rates are counterbalanced by population growth and ageing, so that, despite improvements in age–sex-specific health status, demands on health systems remain high. An example of these demands is the fact that the number of individuals in the world living in states of health characterised by a disability weight greater than 0·1 has increased by 43% from 1990 to 2013.

In 1971, Omran[27] outlined the concept of the epidemiological transition to describe the changing pattern of causes of death that results from sociodemographic development. The notion of the epidemiological transition has been expanded to recognise the phase in transition that leads to double burden of disease[9,28,29] and the countertransitions of the HIV/AIDS epidemic and the rise

of mortality in the former Soviet Union.[2,10,11,13,30–32] Many studies have recognised regional and national variation in the epidemiological transition.[9,14,33–35] Taking advantage of the database of the GBD 2013 country-level results from 1990 to 2013, we have quantified the extent to which sociodemographic status accounts for changes in epidemiological patterns, as opposed to other factors changing over time or static variation between countries. Isolation of this component of the variation of DALY rates allows examination of the shifts in disease and injury patterns that would be expected purely as a function of changing sociodemographic status. As sociodemographic status rises, YLLs from diarrhoea, lower respiratory infections, neonatal causes, maternal mortality, and other infectious causes decline substantially, while at the same time, there has been a slower rise in YLDs from musculoskeletal disorders, mental and substance use disorders, neurological disorders, and diabetes, urogenital, blood, and endocrine diseases. DALY rates for neoplasms and cardiovascular disease are minimally related to sociodemographic status; instead local factors have a profound effect. However, with rising sociodemographic status, the proportion of DALYs due to these causes increases because of decreases in other causes of YLLs. Although, DALY rates for cardiovascular disease seem not to be related to sociodemographic status, large declines have been recorded for these causes in high-income countries in age-standardised rates over the past decades. The wide variation between some high sociodemographic status countries, such as Japan and Finland, shows how other factors, such as diet, physical activity, and other risks, vary substantially within the same level of sociodemographic status and also affect cardiovascular disease outcomes. Furthermore, our analysis of the epidemiological transition is based on crude population rates, so reductions in age-specific cardiovascular rates associated with rising sociodemographic status are countered by shifts towards an older population. Our analysis of the epidemiological transition shows decreases in DALY rates for cardiovascular disease at the very highest levels of sociodemographic status. Notably, the predictable rise in YLD rates for some causes (such as musculoskeletal disorders, diabetes mellitus, and mental and substance use disorders) driven by population ageing is not well recognised in the literature about the epidemiological transition.

Our decomposition of variance analysis shows that, for many NCDs, the main determinants of variation in DALY rates are country-specific effects, not the epidemiological transition. Global health can be understood in terms of a general theme in which change in epidemiological patterns is related to sociodemographic status, upon which country-specific patterns are overlaid. Little of the variation in DALY rates was attributable to the year, which contrasted with previous findings showing that the association between life expectancy and income and education has shifted over time.[24,36–38] Our analysis only covers a 23 year period, which might be too short to fully capture the effects of changing sociodemographic status. Some of the country effects, such as those noted for neglected tropical diseases and malaria, might have been related to sociodemographic status in a longer run analysis. The substantial effect of country variation on the epidemiological transition pattern reinforces the importance of estimating the burden of disease for each country individually. The GBD results can be used productively in the future to characterise the deviation of individual countries from the general epidemiological transition. Our analysis of the association between crude DALY rates and country sociodemographic status does not provide insights into within-country disease associations across individual levels of socioeconomic status. For example, findings from multiple studies have shown that individuals of lower socioeconomic status have increased rates of cardiovascular and circulatory diseases.[39–47]

HALE varies widely between countries and over time. As a single summary measure of population health, HALE is fairly simple to explain and provides an indicator that is affected by any changes in mortality rates or prevalence of disease or injury. HALE has been proposed as an indicator for the Sustainable Development Goals. As calculated through the GBD, HALE is an attractive measure that is sensitive to intervention and comparable over time and between populations. Although HALE needs input about the prevalence of multiple sequelae, the annual revisions of the GBD provide a widely available source for regular updates. By contrast, some other variants of health expectancies might be less appropriate for intertemporal or cross-country comparison. With measures that define disability according to arbitrary thresholds of disability weight, such as disability-free life expectancy (DFLE),[48] even slight changes in the disability weight threshold will profoundly affect conclusions about levels and changes in healthy life expectancy, as can be seen in figure 1. Moreover, these measures are non-standardised and hence not comparable: in some implementations of DFLE, the choice of the severity threshold to define disability is left to individual respondents in the surveys. For example, the European Union[49] has adopted a measure of healthy life expectancy based on survey responses to a single item on activity limitations. Such a measure is susceptible to variation in the meaning attached to categorical descriptions of limitation levels, both between individuals and over time, as seen in related survey items on health status.[50–52] An example of the sensitivity of DFLE measured in Europe is the reported decline in DFLE in Italy after 2004, which was caused by a change in question phrasing; we noted an increase in HALE for Italy in this study.[53] Although HALE and DFLE both use disability weights, the continuous scale of disability weights used in HALE makes it less sensitive to measurement error than are the dichotomous (zero or one) weights used in DFLE.

Our findings support those of Salomon and colleagues,[8] which showed that HALE is increasing more slowly than life expectancy: ie, as life expectancy increases, the expectation of years lived with multiple sequelae increases as well. The difference between life expectancy and HALE has increased, whereas the ratio of this difference to life expectancy has remained fairly constant. Whether or not this change should be termed an expansion of morbidity is not the issue. Rather, we saw that while health loss because of YLDs from cardiovascular and circulatory diseases and neoplasms might be decreasing, the real drivers of the difference between HALE and life expectancy are musculoskeletal disorders, mental and substance use disorders, neurological disorders, and diabetes, along with vision loss and hearing loss. Prevalence for all of these conditions is strongly age-related, and age-standardised rates for them are not declining. Even though the age of onset for mental health and substance use disorders is not strongly age-related, the prevalence of these conditions tends to rise with age. Prevalence of musculoskeletal disorders, neurological disorders, diabetes, and hearing and vision loss rise even more profoundly with age. As individuals increasingly survive to 80 years and older, the amount of time spent with a combination of these disorders increases, even though age-standardised rates have not increased over time. According to our analysis, the available therapies have not led to significant declines in age-standardised YLD rates. Very few, if any, of these disorders receive the attention they deserve in public policy discourse about health and health research priorities.

Global health progress has been driven by impressive progress in reducing age-standardised rates for a wide range of causes of death. Age-standardised YLD rates, however, are not declining. Many potential reasons exist to explain the general success for mortality and absence of success for disease prevalence. Research and development investments by funders such as the US National Institutes of Health (NIH) and the pharmaceutical industry have focused on cardiovascular diseases, neoplasms, and endocrine disorders.[54–59] As we report, in the early phases of the epidemiological transition, the major driver of change in disease and injury patterns is progress in the reduction of YLLs. We believe that the historical focus of health research funding on causes of YLLs was probably appropriate. However, health progress now means that more research investment is needed for the disorders that debilitate, rather than kill. With each passing year, the shift towards YLDs as the leading causes of disease burden will be more evident. Action is needed now to develop preventive, curative, and ameliorative strategies for these conditions rather than waiting until this shift is even more obvious.

Controlling for sociodemographic status, substantial variation exists for DALY rates between countries. In our decomposition of variance, the importance of intercountry variation fluctuated by cause; for example, country level variation explains little variation for neonatal causes, but most variation for self-harm and interpersonal violence. These findings raise the question of whether the division of countries into 21 regions in GBD based on geographic contiguity and the levels and patterns of adult and child mortality rates is the best way to explain the variance in DALY rates. With country-specific results now available, more sophisticated clustering methods could be used, with various constraints, to propose a more empirically calculated set of regions. Regions have two dimensions: analytical and presentational. The presentational dimension is easily addressed because results for any set of countries can easily be generated from the country-specific results. In fact, the GBD Compare data visualisation tool provides several alternative presentational groupings, such as WHO political regions or World Bank regions. However, regions have an analytical effect on the results if the super-region and region hierarchy have been used in the Bayesian modelling. In the GBD cause of death analysis, spatiotemporal Gaussian process regression models use the GBD hierarchy to borrow strength. In DisMod-MR 2.0, the regional hierarchy also affects estimation of the prior for each country analysis. More simply, where data are sparse or not available, the GBD regional groupings can have an important analytical effect. More research is needed on two fronts. First, to explore the extent to which alternative regional groupings would explain more of the variance in the DALY results (or any other GBD indicator). Second, whether analytical tools, such as cause of death ensemble modelling (CODEm)[60] or DisMod-MR 2.0,[1] could be modified to easily allow for different regional hierarchies for different causes.

This study has all the limitations previously reported for the GBD 2013 analysis of YLLs and YLDs.[1,2] Additionally, a key limitation is the assumption that uncertainty is independent for YLLs and YLDs. In fact, for diseases modelled with DisMod-MR 2.0, we estimated a correlation between the uncertainty in condition-specific mortality and the uncertainty in prevalence. However, DisMod-MR 2.0 estimates excess mortality related to a cause, not the mortality that would be assigned to a cause according to the ICD principles of underlying cause. In future iterations of the GBD, it might be useful to attempt to use the correlation structure produced from DisMod-MR 2.0 as a proxy for the correlation between the underlying cause and prevalence. By assuming independence, we might be underestimating overall uncertainty in DALYs. However, more careful examination of the uncertainty in YLDs reveals that most uncertainty stems from uncertainty in disability weights and not from uncertainty in prevalence. We have no reason to assume that the uncertainty associated with valuations of health states in population surveys would be correlated with either

disease or death outcomes. Inclusion of the smaller component of the correlation of prevalence with mortality in the estimation of DALY uncertainty would probably not substantially alter the large uncertainty already recorded for DALYs. Another key limitation, is that our assessment of the burden of disease related to sociodemographic status was affected by the choice of variables that we have included in our sociodemographic status indicator (income per person, average years of schooling after age 15 years, total fertility rate, and mean age of the population). Alternative measures of sociodemographic status could be developed that might explain more of the variance seen for some GBD level 2 causes of DALYs. However, we experimented with alternative formulations, including the addition of urbanisation and all combinations of the four variables in our index, and established that the approach we used had the most explanatory power. Other variables that would be interesting to include in a composite country-level sociodemographic status measure, such as the Gini coefficient, were not available for all countries in all years. Notably, where both measures are available, the correlation between the sociodemographic status indicator and the UN Human Development Index during the 23 year time period was 0·95.

In the post-Millennium Development Goal (MDG) era, there is much interest in identification of appropriate goals for population health and how these goals should be monitored.[4] Increasingly, measurement frameworks to assess levels of health in populations have moved away from measures of survival to encompass more holistic measures of disability as well as mortality. Our findings suggest that this broader focus is probably going to be increasingly relevant to guide countries' public policy interventions. Large, impressive, and sustained gains are being made against the majority of leading causes of death in most countries, but as our findings show, these gains are not being accompanied by commensurate declines in age-standardised rates of disability, especially from major musculoskeletal disorders, mental and substance use disorders, neurological disorders, and diabetes. Moreover, the failure of health information systems to reliably describe trends in these disorders not only severely hampers policy responses, but contributes greatly to their further neglect and insufficient awareness of the significant part they now play in overall population health. Despite the important country variation in measures of population, now is the time for the global health community, donors and countries alike, to maximise the opportunities for health that have resulted from the data revolution, and ensure that priority is given to the development of scientifically valid, feasible, and informative data systems to measure progress in reducing disability. Improved data and monitoring can help decision makers to reduce DALYs from a wide range of causes by pursuing the most important opportunities for prevention, treatment, and rehabilitation.

GBD 2013 DALYs and HALE Collaborators
Christopher J L Murray, Ryan M Barber, Kyle J Foreman, Ayse Abbasoglu Ozgoren*, Foad Abd-Allah*, Semaw F Abera*, Victor Aboyans*, Jerry P Abraham*, Ibrahim Abubakar*, Laith J Abu-Raddad*, Niveen M Abu-Rmeileh*, Tom Achoki*, Ilana N Ackerman*, Zanfina Ademi*, Arsène K Adou*, José C Adsuar*, Ashkan Afshin*, Emilie E Agardh*, Sayed Saidul Alam*, Deena Alasfoor*, Mohammed I Albittar*, Miguel A Alegretti*, Zewdie A Alemu*, Rafael Alfonso-Cristancho*, Samia Alhabib*, Raghib Ali*, François Alla*, Peter Allebeck*, Mohammad A Almazroa*, Ubai Alsharif*, Elena Alvarez*, Nelson Alvis-Guzman*, Azmeraw T Amare*, Emmanuel A Ameh*, Heresh Amini*, Walid Ammar*, H Ross Anderson*, Benjamin O Anderson*, Carl Abelardo T Antonio*, Palwasha Anwari*, Johan Arnlöv*, Valentina S Arsic Arsenijevic*, Al Artaman*, Rana J Asghar*, Reza Assadi*, Lydia S Atkins*, Marco A Avila*, Baffour Awuah*, Victoria F Bachman*, Alaa Badawi*, Maria C Bahit*, Kalpana Balakrishnan*, Amitava Banerjee*, Suzanne L Barker-Collo*, Simon Barquera*, Lars Barregard*, Lope H Barrero*, Arindam Basu*, Sanjay Basu*, Mohammed O Basulaiman*, Justin Beardsley*, Neeraj Bedi*, Ettore Beghi*, Tolesa Bekele*, Michelle L Bell*, Corina Benjet*, Derrick A Bennett*, Isabela M Bensenor*, Habib Benzian*, Eduardo Bernabé*, Amelia Bertozzi-Villa*, Tariku J Beyene*, Neeraj Bhala*, Ashish Bhalla*, Zulfiqar A Bhutta*, Kelly Bienhoff*, Boris Bikbov*, Stan Biryukov*, Jed D Blore*, Christopher D Blosser*, Fiona M Blyth*, Megan A Bohensky*, Ian W Bolliger*, Berrak Bora Başara*, Natan M Bornstein*, Dipan Bose*, Soufiane Boufous*, Rupert R A Bourne*, Lindsay N Boyers*, Michael Brainin*, Carol E Brayne*, Alexandra Brazinova*, Nicholas J K Breitborde*, Hermann Brenner*, Adam D Briggs*, Peter M Brooks*, Jonathan C Brown*, Traolach S Brugha*, Rachelle Buchbinder*, Geoffrey C Buckle*, Christine M Budke*, Anne Bulchis*, Andrew G Bulloch*, Ismael R Campos-Nonato*, Hélène Carabin*, Jonathan R Carapetis*, Rosario Cárdenas*, David O Carpenter*, Valeria Caso*, Carlos A Castañeda-Orjuela*, Ruben E Castro*, Ferrán Catalá-López*, Fiorella Cavalleri*, Alanur Çavlin*, Vineet K Chadha*, Jung-Chen Chang*, Fiona J Charlson*, Honglei Chen*, Wanqing Chen*, Peggy P Chiang*, Odgerel Chimed-Ochir*, Rajiv Chowdhury*, Hanne Christensen*, Costas A Christophi*, Massimo Cirillo*, Matthew M Coates*, Luc E Coffeng*, Megan S Coggeshall*, Valentina Colistro*, Samantha M Colquhoun*, Graham S Cooke*, Cyrus Cooper*, Leslie T Cooper*, Luis M Coppola*, Monica Cortinovis*, Michael H Criqui*, John A Crump*, Lucia Cuevas-Nasu*, Hadi Danawi*, Lalit Dandona*, Rakhi Dandona*, Emily Dansereau*, Paul I Dargan*, Gail Davey*, Adrian Davis*, Dragos V Davitoiu*, Anand Dayama*, Diego De Leo*, Louisa Degenhardt*, Borja Del Pozo-Cruz*, Robert P Dellavalle*, Kebede Deribe*, Sarah Derrett*, Don C Des Jarlais*, Muluken Dessalegn*, Samath D Dharmaratne*, Mukesh K Dherani*, Cesar Diaz-Torné*, Daniel Dicker*, Eric L Ding*, Klara Dokova*, E Ray Dorsey*, Tim R Driscoll*, Leilei Duan,* Herbert C Duber*, Beth E Ebel*, Karen M Edmond*, Yousef M Elshrek*, Matthias Endres*, Sergey P Ermakov*, Holly E Erskine*, Babak Eshrati*, Alireza Esteghamati*, Kara Estep*, Emerito Jose A Faraon*, Farshad Farzadfar*, Derek F Fay*, Valery L Feigin*, David T Felson*, Seyed-Mohammad Fereshtehnejad*, Jefferson G Fernandes*, Alize J Ferrari*, Christina Fitzmaurice*, Abraham D Flaxman*, Thomas D Fleming*, Nataliya Foigt*, Mohammad H Forouzanfar*, F Gerry R Fowkes*, Urbano Fra.Paleo*, Richard C Franklin*, Thomas Fürst*, Belinda Gabbe*, Lynne Gaffikin*, Fortuné G Gankpé*, Johanna M Geleijnse*, Bradford D Gessner*, Peter Gething*, Katherine B Gibney*, Maurice Giroud*, Giorgia Giussani*, Hector Gomez Dantes*, Philimon Gona*, Diego González-Medina*, Richard A Gosselin*, Carolyn C Gotay*, Atsushi Goto*, Hebe N Gouda*, Nicholas Graetz*, Harish C Gugnani*, Rahul Gupta*, Rajeev Gupta*, Reyna A Gutiérrez*, Juanita Haagsma*, Nima Hafezi-Nejad*, Holly Hagan*, Yara A Halasa*, Randah R Hamadeh*, Hannah Hamavid*, Mouhanad Hammami*, Jamie Hancock*, Graeme J Hankey*, Gillian M Hansen*, Yuantao Hao*, Hilda L Harb*,

For the **United Nations Development Programme Human Development Index** see http://hdr.undp.org/en/content/human-development-index-hdi

Josep Maria Haro*, Rasmus Havmoeller*, Simon I Hay*, Roderick J Hay*, Ileana B Heredia-Pi*, Kyle R Heuton*, Pouria Heydarpour*, Hideki Higashi*, Martha Hijar*, Hans W Hoek*, Howard J Hoffman*, H Dean Hosgood*, Mazeda Hossain*, Peter J Hotez*, Damian G Hoy*, Mohamed Hsairi*, Guoqing Hu*, Cheng Huang*, John J Huang*, Abdullatif Husseini*, Chantal Huynh*, Marissa L Iannarone*, Kim M Iburg*, Kaire Innos*, Manami Inoue*, Farhad Islami*, Kathryn H Jacobsen*, Deborah L Jarvis*, Simerjot K Jassal*, Sun Ha Jee*, Panniyammakal Jeemon*, Paul N Jensen*, Vivekanand Jha*, Guohong Jiang*, Ying Jiang*, Jost B Jonas*, Knud Juel*, Haidong Kan*, André Karch*, Corine K Karema*, Chante Karimkhani*, Ganesan Karthikeyan*, Nicholas J Kassebaum*, Anil Kaul*, Norito Kawakami*, Konstantin Kazanjan*, Andrew H Kemp*, Andre P Kengne*, Andre Keren*, Yousef S Khader*, Shams Eldin A Khalifa*, Ejaz A Khan*, Gulfaraz Khan*, Young-Ho Khang*, Christian Kieling*, Daniel Kim*, Sungroul Kim*, Yunjin Kim*, Yohannes Kinfu*, Jonas M Kinge*, Miia Kivipelto*, Luke D Knibbs*, Ann Kristin Knudsen*, Yoshihiro Kokubo*, Soewarta Kosen*, Sanjay Krishnaswami*, Barthelemy Kuate Defo*, Burcu Kucuk Bicer*, Ernst J Kuipers*, Chanda Kulkarni*, Veena S Kulkarni*, G Anil Kumar*, Hmwe H Kyu*, Taavi Lai*, Ratilal Lalloo*, Tea Lallukka*, Hilton Lam*, Qing Lan*, Van C Lansingh*, Anders Larsson*, Alicia E B Lawrynowicz*, Janet L Leasher*, James Leigh*, Ricky Leung*, Carly E Levitz*, Bin Li*, Yichong Li*, Yongmei Li*, Stephen S Lim*, Maggie Lind*, Steven E Lipshultz*, Shiwei Liu*, Yang Liu*, Belinda K Lloyd*, Katherine T Lofgren*, Giancarlo Logroscino*, Katharine J Looker*, Joannie Lortet-Tieulent*, Paulo A Lotufo*, Rafael Lozano*, Robyn M Lucas*, Raimundas Lunevicius*, Ronan A Lyons*, Stefan Ma*, Michael F Macintyre*, Mark T Mackay*, Marek Majdan*, Reza Malekzadeh*, Wagner Marcenes*, David J Margolis*, Christopher Margono*, Melvin B Marzan*, Joseph R Masci*, Mohammad T Mashal*, Richard Matzopoulos*, Bongani M Mayosi*, Tasara T Mazorodze*, Neil W Mcgill*, John J Mcgrath*, Martin Mckee*, Abigail Mclain*, Peter A Meaney*, Catalina Medina*, Man Mohan Mehndiratta*, Wubegzier Mekonnen*, Yohannes A Melaku*, Michele Meltzer*, Ziad A Memish*, George A Mensah*, Atte Meretoja*, Francis A Mhimbira*, Renata Micha*, Ted R Miller*, Edward J Mills*, Philip B Mitchell*, Charles N Mock*, Norlinah Mohamed Ibrahim*, Karzan A Mohammad*, Ali H Mokdad*, Glen L D Mola*, Lorenzo Monasta*, Julio C Montañez Hernandez*, Marcella Montico*, Thomas J Montine*, Meghan D Mooney*, Ami R Moore*, Maziar Moradi-Lakeh*, Andrew E Moran*, Rintaro Mori*, Joanna Moschandreas*, Wilkister N Moturi*, Madeline L Moyer*, Dariush Mozaffarian*, William T Msemburi*, Ulrich O Mueller*, Mitsuru Mukaigawara*, Erin C Mullany*, Michele E Murdoch*, Joseph Murray*, Kinnari S Murthy*, Mohsen Naghavi*, Aliya Naheed*, Kovin S Naidoo*, Luigi Naldi*, Devina Nand*, Vinay Nangia*, K M Venkat Narayan*, Chakib Nejjari*, Sudan P Neupane*, Charles R Newton*, Marie Ng*, Frida N Ngalesoni*, Grant Nguyen*, Muhammad I Nisar*, Sandra Nolte*, Ole F Norheim*, Rosana E Norman*, Bo Norrving*, Luke Nyakarahuka*, In-Hwan Oh*, Takayoshi Ohkubo*, Summer L Ohno*, Bolajoko O Olusanya*, John Nelson Opio*, Katrina Ortblad*, Alberto Ortiz*, Amanda W Pain*, Jeyaraj D Pandian*, Carlo Irwin A Panelo*, Christina Papachristou*, Eun-Kee Park*, Jae-Hyun Park*, Scott B Patten*, George C Patton*, Vinod K Paul*, Boris I Pavlin*, Neil Pearce*, David M Pereira*, Rogelio Perez-Padilla*, Fernando Perez-Ruiz*, Norberto Perico*, Aslam Pervaiz*, Konrad Pesudovs*, Carrie B Peterson*, Max Petzold*, Michael R Phillips*, Bryan K Phillips*, David E Phillips*, Frédéric B Piel*, Dietrich Plass*, Dan Poenaru*, Suzanne Polinder*, Daniel Pope*, Svetlana Popova*, Richie G Poulton*, Farshad Pourmalek*, Dorairaj Prabhakaran*, Noela M Prasad*, Rachel L Pullan*, Dima M Qato*, D Alex Quistberg*, Anwar Rafay*, Kazem Rahimi*, Sajjad U Rahman*, Murugesan Raju*, Saleem M Rana*, Homie Razavi*, K Srinath Reddy*, Amany Refaat*, Giuseppe Remuzzi*, Serge Resnikoff*, Antonio L Ribeiro*, Lee Richardson*, Jan Hendrik Richardus*, D Allen Roberts*, David Rojas-Rueda*, Luca Ronfani*, Gregory A Roth*, Dietrich Rothenbacher*, David H Rothstein*, Jane T Rowley*, Nobhojit Roy*, George M Ruhago*, Mohammad Y Saeedi*, Sukanta Saha*, Mohammad Ali Sahraian*, Uchechukwu K A Sampson*, Juan R Sanabria*, Logan Sandar*, Itamar S Santos*, Maheswar Satpathy*, Monika Sawhney*, Peter Scarborough*, Ione J Schneider*, Ben Schöttker*, Austin E Schumacher*, David C Schwebel*, James G Scott*, Soraya Seedat*, Sadaf G Sepanlou*, Peter T Serina*, Edson E Servan-Mori*, Katya A Shackelford*, Amira Shaheen*, Saeid Shahraz*, Teresa Shamah Levy*, Siyi Shangguan*, Jun She*, Sara Sheikhbahaei*, Peilin Shi*, Kenji Shibuya*, Yukito Shinohara*, Rahman Shiri*, Kawkab Shishani*, Ivy Shiue*, Mark G Shrime*, Inga D Sigfusdottir*, Donald H Silberberg*, Edgar P Simard*, Shireen Sindi*, Abhishek Singh*, Jasvinder A Singh*, Lavanya Singh*, Vegard Skirbekk*, Erica Leigh Slepak*, Karen Sliwa*, Samir Soneji*, Kjetil Søreide*, Sergey Soshnikov*, Luciano A Sposato*, Chandrashekhar T Sreeramareddy*, Jeffrey D Stanaway*, Vasiliki Stathopoulou*, Dan J Stein*, Murray B Stein*, Caitlyn Steiner*, Timothy J Steiner*, Antony Stevens*, Andrea Stewart*, Lars J Stovner*, Konstantinos Stroumpoulis*, Bruno F Sunguya*, Soumya Swaminathan*, Mamta Swaroop*, Bryan L Sykes*, Karen M Tabb*, Ken Takahashi*, Nikhil Tandon*, David Tanne*, Marcel Tanner*, Mohammad Tavakkoli*, Hugh R Taylor*, Braden J Te Ao*, Fabrizio Tediosi*, Awoke M Temesgen*, Tara Templin*, Margreet Ten Have*, Eric Y Tenkorang*, Abdullah S Terkawi*, Blake Thomson*, Andrew L Thorne-Lyman*, Amanda G Thrift*, George D Thurston*, Taavi Tillmann*, Marcello Tonelli*, Fotis Topouzis*, Hideaki Toyoshima*, Jefferson Traebert*, Bach X Tran*, Matias Trillini*, Thomas Truelsen*, Miltiadis Tsilimbaris*, Emin M Tuzcu*, Uche S Uchendu*, Kingsley N Ukwaja*, Eduardo A Undurraga*, Selen B Uzun*, Wim H Van Brakel*, Steven Van De Vijver*, Coen H van Gool*, Jim Van Os*, Tommi J Vasankari*, N Venketasubramanian*, Francesco S Violante*, Vasiliy V Vlassov*, Stein Emil Vollset*, Gregory R Wagner*, Joseph Wagner*, Stephen G Waller*, Xia Wan*, Haidong Wang*, Jianli Wang*, Linhong Wang*, Tati S Warouw*, Scott Weichenthal*, Elisabete Weiderpass*, Robert G Weintraub*, Wang Wenzhi*, Andrea Werdecker*, Ronny Westerman*, Harvey A Whiteford*, James D Wilkinson*, Thomas N Williams*, Charles D Wolfe*, Timothy M Wolock*, Anthony D Woolf*, Sarah Wulf*, Brittany Wurtz*, Gelin Xu*, Lijing L Yan*, Yuichiro Yano*, Pengpeng Ye*, Gökalp K Yentür*, Paul Yip*, Naohiro Yonemoto*, Seok-Jun Yoon*, Mustafa Z Younis*, Chuanhua Yu*, Maysaa E Zaki*, Yong Zhao*, Yingfeng Zheng*, David Zonies*, Xiaonong Zou*, Joshua A Salomon†, Alan D Lopez†, Theo Vos†. *Authors listed alphabetically. †Joint senior authors.

Affiliations

Institute for Health Metrics and Evaluation (Prof C J L Murray D Phil, R M Barber BS, K J Foreman MPH, T Achoki MD, A Afshin MD, V F Bachman BA, A Bertozzi-Villa BA, K Bienhoff MA, S Biryukov BS, J D Blore PhD, I W Bolliger BA, J C Brown MAIS, A Bulchis MPH, M M Coates BS, L E Coffeng PhD, M S Coggeshall BA, Prof L Dandona PhD, E Dansereau BA, D Dicker BS, H C Duber MD, K Estep MPA, C Fitzmaurice MD, A D Flaxman PhD, T D Fleming BS, Prof M H Forouzanfar PhD, D González-Medina BA, N Graetz BS, J Haagsma PhD, H Hamavid BA, J Hancock MLS, G M Hansen MSW, Prof S I Hay DSc, K R Heuton BChe, H Higashi PhD, C Huynh BA, M L Iannarone MSc, N J Kassebaum MD, H H Kyu PhD, C E Levitz MPH, S S Lim PhD, M Lind BS, K T Lofgren MPH, R Lozano PhD, M F MacIntyre MEd, C Margono BS, A McLain MA, A H Mokdad PhD, M D Mooney BS, M Moradi-Lakeh PhD, M L Moyer BS, W T Msemburi MPhil, E C Mullany BA, Prof M Naghavi PhD, M Ng PhD, G Nguyen BA, S L Ohno BA, K Ortblad MPH, A W Pain MPH, B K Phillips BA, D E Phillips BS, L Richardson BS, D A Roberts BS, G A Roth MD, L Sandar BS, A E Schumacher BS, P T Serina MPH, K A Shackelford BA, L Singh BS, E Slepak MLIS, J D Stanaway PhD, C Steiner MPH, A Stevens PhD, A Stewart MPH, A M Temesgen PhD, T Templin BA, B Thomson BA, T Vos PhD, J Wagner BS, X Wan PhD, H Wang PhD, T M Wolock BA, S Wulf MPH, B Wurtz MPH), Harborview Injury Prevention and Research Center (B E Ebel MD), Seattle Children's Hospital

(N J Kassebaum MD) University of Washington, Seattle, WA, USA (R Alfonso-Cristancho PhD, Prof B O Anderson MD, C D Blosser MD, P N Jensen PhD, C N Mock PhD, T J Montine PhD, D Quistberg PhD); Department of Infectious Disease Epidemiology (T Fürst PhD), Imperial College London, London, UK (G S Cooke DPhil, K J Foreman MPH, Prof D L Jarvis MD, Prof T N Williams MD); Institute of Population Studies (A Abbasoglu Ozgoren MSc, A Çavlin PhD), Institute of Public Health (B Kucuk Bicer PhD), Hacettepe University, Ankara, Turkey; Faculty of Medicine, Cairo-University, Cairo, Egypt (Prof F Abd-Allah MD); School of Public Health, College of Health Sciences, Mekelle University, Mekelle, Ethiopia (S F Abera MSc); Kilte Awlaelo-Health and Demographic Surveillance Site, Mekelle, Ethiopia (S F Abera MSc); Dupuytren University Hospital, Limoges, France (Prof V Aboyans PhD); Family Medicine Residency Program at California Hospital, University of Southern California, Los Angeles, CA, USA (J P Abraham MD); Institute for Global Health (J P Abraham MD), Department of Nutrition (A L Thorne-Lyman ScD), School of Public Health (J P Abraham MD, E L Ding ScD, G R Wagner MD), Harvard University, Boston, MA, USA (I R Campos-Nonato PhD, J A Salomon PhD, M G Shrime MD); Department of Epidemiology and Public Health (H Benzian PhD), University College London, London, UK (Prof I Abubakar PhD); Weill Cornell Medical College Ar-Rayyan Qatar, Doha, Qatar (L J Abu-Raddad PhD); Institute of Community and Public Health, Birzeit University, Ramallah, Palestine (N M Abu-Rmeileh PhD); General Practice and Primary Health Care Academic Centre (P P Chiang PhD), Departments of Medicine and the Florey (A Meretoja PhD), University of Melbourne, Melbourne, VIC, Australia (I N Ackerman PhD, Z Ademi PhD, J D Blore PhD, M A Bohensky PhD, Prof P M Brooks MD, S M Colquhoun PhD, Prof A D Lopez PhD, Prof G C Patton MD, Prof H R Taylor AC, R G Weintraub MBBS); University of Basel, Basel, Switzerland (Z Ademi PhD, H Amini MSPH), Swiss Tropical and Public Health Institute (Prof M Tanner PhD, F Tediosi PhD), Basel University, Basel, Switzerland (Z Ademi PhD); Association Ivoirienne pour le Bien-Être Familial, Abidjan, Côte d'Ivoire (A K Adou MD); University of Extremadura, Cáceres, Spain (Prof J C Adsuar PhD, U-F Paleo PhD); Friedman School of Nutrition Science and Policy (A Afshin MD, R Micha PhD, D Mozaffarian MD), Tufts University, Boston, MA, USA (S Shangguan MD, P Shi PhD); Institution of Public Health Sciences, Stockholm, Sweden (E E Agardh PhD); International Centre for Diarrhoeal Disease Research (ICDDR), Bangladesh, Dhaka, Bangladesh (S Alam MSc, A Naheed PhD); Ministry of Health, Al Khuwair, Oman (D Alasfoor MSc); Independent, Damascus, Syria (M I Albittar BS); Departamento de Medicina Preventiva y Social (M A Alegretti MD), Universidad de la República—Facultad de Medicina, Montevideo, Uruguay (F Cavalleri BS); Debre Markos University, Addis Ababa, Ethiopia (Z A Alemu MPH); King Abdullah Bin Abdulaziz University Hospital, Riyadh, Saudi Arabia (S Alhabib PhD); Department of Zoology (P Gething PhD), University of Oxford, Oxford, UK (R Ali MSc, D A Bennett PhD, A D Briggs MSc, Prof S I Hay DSc, F B Piel PhD, K Rahimi DM, P Scarborough DPhil); Melbourne Health, Parkville, VIC, Australia (K B Gibney FRACP); School of Public Health, University of Lorraine, Nancy, France (Prof F Alla PhD); Department of Public Health Sciences (P Allebeck PhD, N Roy MD), Department of Neurobiology, Care Sciences and Society (NVS) (S Fereshtehnejad MD), Department of Medical Epidemiology and Biostatistics (E Weiderpass PhD), Aging Research Center (Prof M Kivipelto PhD), Karolinska Institute, Stockholm, Sweden (R Havmoeller PhD, S Sindi PhD); Ministry of Health, Riyadh, Saudi Arabia (M A AlMazroa MD, M O Basulaiman PhD, M Y Saeedi PhD); Charité University Medicine Berlin, Berlin, Germany (U Alsharif MPH, Prof M Endres MD); Government, Madrid, Spain (E Alvarez PhD); Universidad de Cartagena, Cartagena de Indias, Colombia (Prof N Alvis-Guzman PhD); Department of Epidemiology (A T Amare MPH), Department of Psychiatry (Prof H W Hoek MD), University Medical Center Groningen, University of Groningen, Groningen, Netherlands; College of Medicine and Health Sciences, Bahir Dar University, Bahir Dar, Ethiopia (A T Amare); Ahmadu Bello University, Zaria, Nigeria (Prof E A Ameh MBBS); Kurdistan Environmental Health Research Center, Kurdistan University of Medical Sciences, Sanandaj, Iran (H Amini MSPH); Ministry of Public Health, Beirut, Lebanon (W Ammar PhD, H L Harb MPH); St George's, University of London, London, UK (Prof H R Anderson MD); Department of Health Policy and Administration, College of Public Health (C T Antonio MD), University of the Philippines Manila, Manila, Philippines (C I A Panelo MD); Self employee, Kabul, Afghanistan (P Anwari MS); Department of Medical Sciences, Uppsala University, Uppsala, Sweden (Prof J Arnlöv PhD); Dalarna University, Falun, Sweden (Prof J Arnlöv PhD); School of Medicine, Institute of Microbiology and Immunology, University of Belgrade, Belgrade, Serbia (Prof V S Arsic Arsenijevic PhD); University Children's Hospital Belgrade, Belgrade, Serbia (Prof V S Arsic Arsenijevic PhD); Consultant, Windsor, ON, Canada (A Artaman PhD); South Asian Public Health Forum, Islamabad, Pakistan (R J Asghar MD); Mashhad University of Medical Sciences, Mashhad, Iran (R Assadi PhD); Wellness, Human Services and Gender Relations, Ministry Of Health, Castries, Saint Lucia (L S Atkins MPH); National Institute of Public Health, Cuernavaca, Mexico (M A Avila BS, S Barquera PhD, I R Campos-Nonato PhD, L Cuevas-Nasu MsC, H Gomez Dantes MC, I Heredia-Pi PhD, R Lozano PhD, C Medina MS, J C Montañez Hernandez MSc, Prof E E Servan-Mori MSc, T Shamah Levy PhD); Komfo Anokye Teaching Hospital, Kumasi, Ghana (B Awuah MD); Public Health Agency of Canada, Toronto, ON, Canada (A Badawi PhD); INECO Neurociencias, Rosario, Argentina (M C Bahit MD); Sri Ramachandra University, Chennai, India (K Balakrishnan PhD); University of Birmingham, Birmingham, UK (A Banerjee DPhil); School of Psychology (S L Barker-Collo PhD), University of Auckland, Auckland, New Zealand (B del Pozo-Cruz PhD); Department of Occupational and Environmental Health, University of Gothenburg, Gothenburg, Sweden (Prof L Barregard MD); Department of Industrial Engineering, Pontificia Universidad Javeriana, Bogota, Colombia (L H Barrero ScD); School of Health Sciences, University of Canterbury, Christchurch, New Zealand (A Basu PhD); School of Medicine (L Gaffikin DrPH), Stanford University, Stanford, CA, USA (S Basu PhD); Oxford University, Ho Chi Minh City, Vietnam (J Beardsley MBChB); College of Public Health and Tropical Medicine, Jazan, Saudi Arabia (N Bedi MD); IRCCS Istituto di Ricerche Farmacologiche Mario Negri, Milano, Italy (E Beghi MD, M Cortinovis Biotech D, G Giussani Biol D); Madawalabu University, Bale Goba, Ethiopia (T Bekele MPH); Yale University, New Haven, CT, USA (Prof M L Bell PhD, J J Huang MD); National Institute of Psychiatry Ramon de la Fuente Muñiz, Mexico City, Mexico (C Benjet PhD, R A Gutiérrez PhD); University of Sao Paulo, Sao Paulo, Brazil (I M Bensenor PhD, Prof P A Lotufo DrPH, Prof I S Santos PhD, Prof A H Kemp PhD); Department of Epidemiology and Health Promotion, College of Dentistry (H Benzian PhD), Nelson Institute of Environmental Medicine, School of Medicine (Prof G D Thurston ScD), New York University, New York, NY, USA (Prof H Hagan PhD); King's College London, London, UK (E Bernabé PhD, Prof R J Hay MD, Prof C D Wolfe MD); School of Public Health (K Deribe MPH), Addis Ababa University, Addis Ababa, Ethiopia (T J Beyene DVM, W Mekonnen PhD); Queen Elizabeth Hospital Birmingham, Birmingham, UK (N Bhala DPhil); University of Otago Medical School, New Zealand (N Bhala DPhil); Postgraduate Institute of Medical Education and Research, Chandigarh, India (A Bhalla MD, Prof V Jha DM); Medical Center (Z A Bhutta PhD), Aga Khan University, Karachi, Pakistan (M I Nisar MSc); A.I.Evdokimov Moscow State University of Medicine and Dentistry, Moscow, Russia (B Bikbov MD); Academician V.I.Shumakov Federal Research Center of Transplantology and Artificial Organs, Moscow, Russia (B Bikbov MD); Sydney School of Public Health (T R Driscoll PhD), University of Sydney, Sydney, NSW, Australia (F M Blyth PhD, Prof A H Kemp PhD, J Leigh PhD); General Directorate of Health Research (B Bora Başara PhD, G K Yentür PhD), Ministry of Health, Ankara, Turkey (S B Uzun MD); Tel Aviv Saurasky Medical Center, Tel Aviv, Israel (Prof N M Bornstein MD); World Bank, Washington, DC, USA (D Bose PhD); Transport and Road Safety (TARS) Research (S Boufous PhD), BHVI (Prof S Resnikoff MD), University of New South Wales, Kensington, NSW, Australia (Prof L Degenhardt PhD, Prof P B Mitchell MD); Anglia Ruskin University, Cambridge, UK (Prof R R A Bourne FRCOphth); Georgetown University, Washington, DC, USA (L N Boyers BA); Danube-University Krems, Krems, Austria (Prof M Brainin PhD); Cambridge Institute of Public Health, Cambridge, UK (Prof C E Brayne MD); Faculty of Health Sciences and

Social Work (A Brazinova PhD), Department of Public Health (M Majdan PhD), Trnava University, Trnava, Slovakia; The Ohio State University, Columbus, OH, USA (Prof N J K Breitborde PhD); University of Arizona, Tucson, AZ, USA (Prof N J K Breitborde PhD); Division of Clinical Epidemiology and Aging Research (B Schöttker MPH), German Cancer Research Center, Heidelberg, Germany (Prof H Brenner MD); University of Leicester, Leicester, UK (Prof T S Brugha MD); Monash Department of Clinical Epidemiology, Cabrini Institute, Melbourne, VIC, Australia (Prof R Buchbinder PhD); Department of Epidemiology and Preventive Medicine, School of Public Health and Preventive Medicine (Prof R Buchbinder PhD), Eastern Health Clinical School (B K Lloyd PhD), Monash University, Melbourne, VIC, Australia (Prof B Gabbe PhD, K B Gibney FRACP, Prof A G Thrift PhD); University of California San Francisco, San Francisco, CA, USA (G C Buckle MD, R A Gosselin MD); Texas A&M University, College Station, TX, USA (C M Budke PhD); University of Calgary, Calgary, AB, Canada (A G Bulloch PhD, Prof S B Patten PhD, Prof M Tonelli MD, J Wang PhD); University of Oklahoma Health Sciences Center, Oklahoma City, OK, USA (H Carabin PhD); Telethon Institute for Child Health Research, Subiaco, WA, Australia (Prof J R Carapetis PhD); Universidad Autonoma Metropolitana, Mexico City, Mexico (R Cárdenas ScD); University at Albany, Rensselaer, NY, USA (Prof D O Carpenter MD); University of Perugia, Perugia, Italy (V Caso MD); Colombian National Health Observatory, Bogota, Colombia (C A Castañeda-Orjuela MS); Epidemiology and Public Health Evaluation Group, Public Health Department, Universidades Nacional de Colombia, Bogota, Colombia (C A Castañeda-Orjuela MS); Universidad Diego Portales, Santiago, Chile (R E Castro PhD); Division of Pharmacoepidemiology and Pharmacovigilance, Spanish Medicines and Healthcare Products Agency (AEMPS), Ministry of Health, Madrid, Spain (F Catalá-López PhD); Department of Medicine, University of Valencia/CIBERSAM, Valencia, Spain (F Catalá-López PhD); National Tuberculosis Institute, Bengaluru, India (V K Chadha MD); College of Medicine, National Taiwan University, Taipei, Taiwan (Prof J Chang PhD); School of Population Health (D G Hoy PhD), School of Public Health (L D Knibbs PhD), Centre for Clinical Research (J G Scott PhD), University of Queensland, Brisbane, QLD, Australia (F J Charlson MIPH, H E Erskine B PsySc, A J Ferrari B PsySc, H N Gouda PhD, Prof J J McGrath MD, Prof H A Whiteford MD); Division of Intramural Research, National Institute of Environmental Health Sciences, National Institutes of Health, Department of Health and Human Services, Research Triangle Park, NC, USA (H Chen PhD); Department of Health Development (Y Jiang PhD), Institute of Industrial Ecological Sciences (Y Jiang PhD, Prof K Takahashi MD), Department of Environmental Epidemiology (Y Jiang PhD, O Chimed-Ochir MPH, Prof K Takahashi MD) University of Occupational and Environmental Health, Kitakyushu, Japan; University of Cambridge, Cambridge, UK (R Chowdhury PhD, J Murray PhD); Bispebjerg University Hospital, Copenhagen, Denmark (Prof H Christensen DMSCi); Cyprus University of Technology, Limassol, Cyprus (C A Christophi PhD); University of Salerno, Baronissi, Italy (Prof M Cirillo MD); Universidad de la República, Montevideo, Uruguay (V Colistro MSc); Ministerio de Salud Pública, Montevideo, Uruguay (V Colistro); Murdoch Childrens Research Institute, Melbourne, VIC, Australia (S M Colquhoun PhD); MRC Lifecourse Epidemiology Unit, University of Southampton, Southampton, UK (Prof C Cooper FMedSci); University of California, San Diego, La Jolla, CA, USA (M H Criqui MD, S K Jassal MD, M B Stein MD); Mayo Clinic, Rochester, MN, USA (L T Cooper MD); Hospital Municipal Ramon Santamarina, Tandil, Argentina (L M Coppola MD); Centre for International Health, Dunedin School of Medicine (Prof J A Crump MD), Department of Preventive and Social Medicine, Dunedin School of Medicine (S Derrett PhD), University of Otago, Dunedin, New Zealand (Prof R G Poulton PhD); School of Public Health, College of Health, Massey University, Palmerston North, New Zealand (S Derrett PhD); Walden University, Minneapolis, MN, USA (H Danawi PhD); Public Health Foundation of India, New Delhi, India (Prof L Dandona PhD, R Dandona PhD, G Kumar PhD, K S Murthy MPH, K Reddy DM [Card]); Guy's and St. Thomas' NHS Foundation Trust, London, UK (P I Dargan FRCP); Wellcome Trust Brighton & Sussex Centre for Global Health Research, Brighton, UK (Prof G Davey MD); Public Health England, London, UK (A Davis PhD, D F Fay MSc); University of Medicine and Pharmacy Bucharest, Bucharest, Romania (D V Davitoiu PhD); Department of Surgery, Jacobi Medical Center, Atlanta, GA, USA (A Dayama MD); School of Dentistry and Oral Health (Prof R Lalloo PhD), Griffith University, Brisbane, QLD, Australia (Prof D De Leo DSc); US Department of Veterans Affairs, Eastern Colorado Healthcare System, Denver, CO, USA (R P Dellavalle MD); Brighton and Sussex Medical School, Brighton, UK (K Deribe MPH); Mount Sinai Beth Israel, New York, NY, USA (Prof D C Des Jarlais PhD); Icahn School of Medicine at Mount Sinai New York City, NY, USA (Prof D C Des Jarlais PhD); Africa Medical and Research Foundation in Ethiopia, Addis Ababa, Ethiopia (M Dessalegn MPH); University of Peradeniya, Peradeniya, Sri Lanka (S D Dharmaratne MD); School of Medicine (Prof R Lunevicius PhD), The University of Liverpool, Liverpool, UK (M K Dherani PhD, D Pope PhD); Hospital de la Santa Creu i Sant Pau, Barcelona, Spain (C Diaz-Torné MD); Department of Social Medicine, Faculty of Public Health, Medical University—Varna, Varna, Bulgaria (K Dokova PhD); University of Rochester Medical Center, Rochester, NY, USA (Prof E R Dorsey MD); University of Western Australia, Perth, WA, Australia (Prof K M Edmond PHD, Prof G J Hankey MD); Food Science Department, Faculty of Agriculture, University of Tripoli, Tripoli, Libya (Prof Y M Elshrek PhD); The Institute of Social and Economic Studies of Population, Russian Academy of Sciences, Moscow, Russia (Prof S P Ermakov DSc); Federal Research Institute for Health Organization and Informatics, Ministry of Health of Russian Federation, Moscow, Russia (Prof S P Ermakov DSc); Arak University of Medical Sciences and Health Affairs, Arak, Iran (B Eshrati PhD); Non-Communicable Diseases Research Center, Endocrinology and Metabolic Research Institute (Prof A Esteghamati MD, F Farzadfar MD, N Hafezi-Nejad MD, S Sheikhbahaei MD), Multiple Sclerosis Research Center, Neuroscience Institute (P Heydarpour MD, M Sahraian MD), Digestive Diseases Research Institute (S G Sepanlou MD), Tehran University of Medical Sciences, Tehran, Iran; DHPA, UP College of Public Health, Manila, Philippines (E A Faraon MD); National Institute for Stroke and Applied Neurosciences (V L Feigin PhD), Auckland University of Technology, Auckland, New Zealand (B J Te Ao MPH); Boston University, Boston, MA, USA (Prof D T Felson MD); Institute of Education and Sciences, German Hospital Oswaldo Cruz, São Paulo, Brazil (Prof J G Fernandes PhD); Institute of Gerontology, Academy of Medical Science, Kiev, Ukraine (N Foigt PhD); University of Edinburgh, Edinburgh, UK (Prof F R Fowkes PhD); James Cook University, Townsville, QLD, Australia (R C Franklin PhD); Leras Afrique, Cotonou, Benin (F G Gankpé MD); CHU Hassan II, Fez, Morocco (F G Gankpé MD); Division of Human Nutrition, Wageningen University, Wageningen, Netherlands (J M Geleijnse PhD); Agence de Medecine Preventive, Paris, France (B D Gessner MD); University Hospital of Dijon, Dijon, France (Prof M Giroud MD); University of Massachusetts Boston, Boston, MA, USA (Prof P Gona PhD); School of Population and Public Health (F Pourmalek PhD), University of British Columbia, Vancouver, BC, Canada (C C Gotay PhD); Department of Public Health, Tokyo Women's Medical University, Tokyo, Japan (A Goto MD); Saint James School of Medicine, Kralendijk, Netherlands Antilles (Prof H C Gugnani PhD); West Virginia Bureau for Public Health, Charleston, WV, USA (R Gupta MD); Fortis Escorts Hospital, Jaipur, India (R Gupta PhD); Brandeis University, Waltham, MA, USA (Y A Halasa MS MA, E A Undurraga PhD); Arabian Gulf University, Manama, Bahrain (Prof R R Hamadeh DPhil); Wayne County Department of Health and Human Services, Detroit, MI, USA (M Hammami MD); School of Public Health (Prof Y Hao PhD), Zhongshan Ophthalmic Center (Y Zheng MD), Sun Yae-Sen University, Guangzhou, China; Parc Sanitari Sant Joan de Déu—CIBERSAM, Sant Boi de Llobregat, Barcelona, Spain (J Haro MD); Universitat de Barcelona, Barcelona, Spain (J Haro MD); International Foundation for Dermatology, London, UK (Prof R J Hay MD); Fundacion Entornos AC, Cuernavaca, Mexico (M Hijar PhD); Department of Epidemiology (Prof H W Hoek MD), Columbia University, New York, NY, USA (A E Moran MD); Epidemiology and Statistics Program, National Institute on Deafness and Other Communication Disorders (H J Hoffman MA), Center for Translation Research and Implementation Science, National Heart, Lung, and Blood Institute

(G A Mensah MD), National Heart Lung and Blood Institute (U K A Sampson MD), National Institutes of Health, Bethesda, MD, USA; Albert Einstein College of Medicine, Bronx, NY, USA (Prof H Hosgood PhD); London School of Hygiene & Tropical Medicine, London, UK (M Hossain MSc, Prof M McKee DSc, Prof N Pearce PhD, R L Pullan PhD, T Tillmann MBChB); Baylor College of Medicine, Houston, TX, USA (P J Hotez PhD); Public Health Division, Secretariat of the Pacific Community, Noumea, New Caledonia (D G Hoy PhD); National Institute of Public Health, Tunis, Tunisia (Prof M Hsairi MD); School of Public Health, Central South University, Changsha, China (G Hu PhD); George Washington University, Washington, DC, USA (Prof C Huang PhD); Qatar University, Doha, Qatar (A Husseini PhD); Aarhus University, Aarhus, Denmark (K M Iburg PhD); National Institute for Health Development, Tallinn, Estonia (K Innos PhD); Graduate School of Medicine (M Inoue PhD), School of Public Health (Prof N Kawakami MD), The University of Tokyo, Tokyo, Japan (K Shibuya MD); American Cancer Society, New York, NY, USA (F Islami PhD); George Mason University, Fairfax, VA, USA (K H Jacobsen PhD); Graduate School of Public Health, Yonsei University, Seoul, South Korea (Prof S Jee PhD); Centre for Chronic Disease Control, New Delhi, India (P Jeemon PhD, D Prabhakaran DM); Tianjin Centers for Disease Control and Prevention, Tianjin, China (G Jiang MD); Department of Ophthalmology, Medical Faculty Mannheim, Ruprecht-Karls-University Heidelberg, Mannheim, Indonesia (Prof J B Jonas MD); The National Institute of Public Health, Copenhagen, Denmark (Prof K Juel PhD); Zhongshan Hospital (J She MD), Fudan University, Shanghai, China (H Kan MD); Department of Epidemiology, Helmholtz Centre for Infection Research, Braunschweig, Germany (A Karch MD); Hannover-Braunschweig Site, German Center for Infection Research (DZIF), Braunschweig, Germany (A Karch MD); Malaria and Other Parasitic Diseases Division, Ministry of Health, Kigali City, Rwanda (C K Karema MSc); Case Western University Hospitals, Cleveland, OH, USA (C Karimkhani MD); All India Institute of Medical Sciences, New Delhi, India (Prof G Karthikeyan DM, V K Paul MD, Prof N Tandon PhD, M Satpathy PhD); Oklahoma State University, Tulsa, OK, USA (A Kaul MD); National Center for Disease Control and Public Health, Tbilisi, Georgia (K Kazanjan MS); South African Medical Research Council, Cape Town, South Africa (A P Kengne PhD, R Matzopoulos PhD, W T Msemburi MPhil, Prof D J Stein MD); Faculty of Health Sciences, Hatter Institute for Cardiovascular Research in Africa (Prof K Sliwa PhD), School of Public Health and Family Medicine (R Matzopoulos PhD), University of Cape Town, Cape Town, South Africa (A P Kengne PhD, Prof B M Mayosi DPhil, Prof D J Stein MD); Cardiology, Hadassah Ein Kerem University Hospital, Jerusalem, Israel (Prof A Keren MD); Jordan University of Science and Technology, Irbid, Jordan (Prof Y S Khader ScD); Supreme Council of Health, Doha, Qatar (S A Khalifa MSc); Health Services Academy, Islamabad, Pakistan (E A Khan MPH); Expanded Programme on Immunization, Islamabad, Pakistan (E A Khan MPH); UAE University, Al Ain, United Arab Emirates (G Khan PhD); Seoul National University College of Medicine, Seoul, South Korea (Prof Y Khang MD); Federal University of Rio Grande do Sul, Porto Alegre, Brazil (C Kieling PhD); Northeastern University, Boston, MA, USA (Prof D Kim DrPH); Soonchunhyang University, Seoul, South Korea (S Kim PhD); Southern University College, Johor, Malaysia (Y Kim PhD); University of Canberra, Canberra, ACT, Australia (Y Kinfu PhD); Department of Health Registries (A Knudsen PhD), Norwegian Institute of Public Health, Oslo, Norway (J M Kinge PhD, Prof V Skirbekk MD, Prof S Vollset MD); National Cerebral and Cardiovascular Center, Suita, Japan (Y Kokubo PhD); Center for Community Empowerment, Health Policy and Humanities, NIHRD, Jakarta, Indonesia (S Kosen MD); Oregon Health and Science University, Portland, OR, USA (S Krishnaswami MD, D Zonies MD); University of Montreal, Montreal, QC, Canada (Prof B Kuate Defo PhD); Erasmus MC, University Medical Center Rotterdam, Rotterdam, Netherlands (Prof E J Kuipers PhD, S Polinder MS, Prof J Richardus PhD); Rajrajeswari Medical College & Hospital, Bangalore, India (Prof C Kulkarni MD); Arkansas State University, Jonesboro, AR, USA (V S Kulkarni PhD); Fourth View Consulting, Tallinn, Estonia (T Lai PhD); Australian Research Centre for Population Oral Health, School of Dentistry, The University of Adelaide, Adelaide, SA, Australia (Prof R Lalloo PhD); Disability Prevention Research Centre (T Lallukka PhD), Finnish Institute of Occupational Health, Helsinki, Finland (R Shiri PhD); Faculty of Medicine, University of Helsinki, Helsinki, Finland (T Lallukka PhD); Institute of Health Policy and Development Studies, National Institutes of Health, Manila, Philippines (Prof H Lam PhD); National Cancer Institute, Rockville, MD, USA (Q Lan PhD); Help Me See, Inc, New York, NY, USA (V C Lansingh PhD); Instituto Mexicano de Oftalmologia, Queretaro, Mexico (V C Lansingh PhD); Uppsala University, Uppsala, Sweden (Prof A Larsson PhD); Instituto Nacional de Epidemiología "Dr. Juan H. Jara", Mar del Plata, Argentina (A E B Lawrynowicz MPH); Nova Southeastern University College of Optometry, Fort Lauderdale, FL, USA (J L Leasher OD); SUNY-Albany, Rensselaer, NY, USA (R Leung PhD); Jinan Central Hospital, Jinan, China (B Li PhD); National Center for Chronic and Noncommunible Disease Control and Prevention, China CDC, Beijing, China (Y Li MPH, S Liu PhD, L Duan MS, Prof L Wang MD, P Ye MPH); Anolinx, LLC, Salt Lake City, UT, USA (Y Li PhD); Wayne State University, Miami, FL, USA (Prof S E Lipshultz MD); Rollins School of Public Health (E P Simard PhD), Emory University, Atlanta, GA, USA (Prof Y Liu PhD, Prof K Narayan MD); Turning Point, Eastern Health, Melbourne, VIC, Australia (B K Lloyd PhD); University of Bari, Bari, Italy (Prof G Logroscino PhD); University of Bristol, Bristol, UK (K J Looker PhD); American Cancer Society, Atlanta, GA, USA (J Lortet-Tieulent MSc); The Australian National University, Canberra, ACT, Australia (Prof R M Lucas PhD); Aintree University Hospitals NHS Foundation Trust, Liverpool, UK (Prof R Lunevicius PhD); Swansea University, Swansea, UK (Prof R A Lyons MD); Ministry of Health Singapore, Singapore, Singapore (S Ma PhD); Saw Swee Hock School of Public Health, National University of Singapore, Singapore, Singapore (S Ma PhD); Murdoch Children's Research Institute (R G Weintraub MBBS), Royal Children's Hospital, Melbourne, VIC, Australia (M T Mackay MBBS); Digestive Disease Reseach Institute, Shariati Hospital, Tehran, Iran (Prof R Malekzadeh MD); Shiraz University of Medical Scinces, Shiraz, Iran (Prof R Malekzadeh MD); Queen Mary University of London, London, UK (Prof W Marcenes PhD); Pereleman School of Medicine (P A Meaney MD), University of Pennsylvania, Philadelphia, PA, USA (D J Margolis PhD, D H Silberberg MD); University of the East Ramon Magsaysay Memorial Medical Center, Quezon City, Philippines (M B Marzan MSc); Elmhurst Hospital Center, Mount Sinai Services, Elmhurst, NY, USA (J R Masci MD); Ministry of Public Health, Kabul, Afghanistan (M T Mashal PhD); AIDC EC, Port Elizabeth, South Africa (T T Mazorodze MA); Royal Prince Alfred Hospital, Camperdown, NSW, Australia (N W McGill MB BS); Children's Hospital of Philadelphia, Philadelphia, PA, USA (P A Meaney MD); Janakpuri Superspecialty Hospital, New Delhi, India (Prof M Mehndiratta DM); Mekelle University, Mekelle, Ethiopia (Y A Melaku MPH); Thomas Jefferson University, Philadelphia, PA, USA (M Meltzer MD); Saudi Ministry of Health, Riyadh, Saudi Arabia (Prof Z A Memish MD); Department of Neurology, Helsinki University Central Hospital, Helsinki, Finland (A Meretoja PhD); Ifakara Health Institute, Bagamoyo, Tanzania (F A Mhimbira MS); Pacific Institute for Research & Evaluation, Calverton, MD, USA (T R Miller PhD); Curtin University Centre for Population Health, Perth, WA, Australia (T R Miller PhD); University of Ottawa, Ottawa, ON, Canada (E J Mills PhD); Department of Medicine, Universiti Kebangsaan Malaysia Medical Center, Bandar Tun Razak, Malaysia (Prof N Mohamed Ibrahim MRCP); University of Salahaddin, Erbil, Iraq (K A Mohammad PhD); University of Papua New Guinea, Boroko, Papua New Guinea (Prof G L D Mola MD); Institute for Maternal and Child Health, IRCCS "Burlo Garofolo", Trieste, Italy (L Monasta DSc, L Ronfani PhD, M Montico Msc); University of North Texas, Denton, TX, USA (Prof A R Moore PhD); Department of Community Medicine, Iran University of Medical Sciences, Tehran, Iran (M Moradi-Lakeh PhD); National Center for Child Health and Development, Setagaya, Japan (R Mori PhD); Department of Medicine (Prof M Tsilimbaris PhD), University of Crete, Crete, Greece (J Moschandreas PhD); Egerton University, Egerton, Kenya (W N Moturi PhD); Philipps-University Marburg, Marburg, Germany (Prof U O Mueller PhD); Okinawa Chubu Hospital, Okinawa, Japan (M Mukaigawara MD); West Herts Hospitals NHS Trust, Watford, UK

(M E Murdoch FRCP); University of KwaZulu-Natal, Durban, South Africa (Prof K S Naidoo PhD); Azienda Ospedaliera papa Giovanni XXIII, Bergamo, Italy (Prof L Naldi MD); Ministry of Health, Suva, Fiji (D Nand MPH [Hons]); Suraj Eye Institute, Nagpur, India (Prof V Nangia MD); Faculty of Medicine, Fez, Morocco (Prof C Nejjari PhD); University of Oslo, Oslo, Norway (S P Neupane PhD); Kilifi, Kenya (Prof C R Newton MD); Ministry of Health and Social Welfare, Dar es Salaam, Tanzania (F N Ngalesoni MSc); Charité University Medicine Berlin, Berlin, Germany (S Nolte PhD, C Papachristou PhD); Deakin University, Melbourne, VIC, Australia (S Nolte PhD); Department of Global Public Health and Primary Care (Prof S Vollset MD), University of Bergen, Bergen, Norway (Prof O F Norheim PhD); Institute of Health and Biomedical Innovation, Queensland University of Technology, Brisbane, QLD, Australia (R E Norman PhD); Department of Clinical Sciences, Lund University, Lund, Sweden (Prof B Norrving PhD); Makerere University, Kampala, Uganda (L Nyakarahuka MPH); Kyung Hee University, Seoul, South Korea (Prof I Oh PhD); Teikyo University School of Medicine, Tokyo, Japan (Prof T Ohkubo MD); Center for Healthy Start Initiative, Ikoyi, Nigeria (B O Olusanya PhD); Lira District Local Government, Lira Municipal Council, Uganda (J N Opio MPH); IIS-Fundacion Jimenez Diaz, Madrid, Spain (Prof A Ortiz PhD); Christian Medical College Ludhiana, Ludhiana, India (J D Pandian DM); Kosin University College of Medicine, Busan, South Korea (E Park PhD); School of Medicine, Sungkyunkwan University, Suwon, South Korea (Prof J Park MPH); Independent Researcher, Boroko, Papua New Guinea (B I Pavlin MD); REQUIMTE/LAQV, Laboratório de Farmacognosia, Departamento de Química, Faculdade de Farmácia, Universidade do Porto, Porto, Portugal (Prof D M Pereira PhD); National Institute of Respiratory Diseases, Mexico City, Mexico (Prof R Perez-Padilla MD); Hopsital Universitario Cruces, OSI EE-Cruces, Barakaldo, Spain (F Perez-Ruiz PhD); Biocruces Health Research Institute, Baracaldo, Spain (F Perez-Ruiz PhD); Mario Negri Institute for Pharmacological Research, Ranica, Italy (N Perico MD, M Trillini MD); Postgraduate Medical Institute, Lahore, Pakistan (A Pervaiz MHA); Flinders University, Adelaide, SA, Australia (Prof K Pesudovs PhD); Aalborg University, Aalborg Esst, Denmark (C B Peterson PhD); Health Metrics Unit, Gothenburg, Sweden (Prof M Petzold PhD); The University of the Witwatersrand, Johannesburg, South Africa (Prof M Petzold PhD); Shanghai Jiao Tong University School of Medicine, Shanghai, China (Prof M R Phillips MD); Emory University, Atlanta, GA, USA (Prof M R Phillips MD); Section Exposure Assessment and Environmental Health Indicators, Federal Environment Agency, Berlin, Germany (D Plass Dr. PH); Montreal Children's Hospital, McGill University, Montreal, QC, Canada (Prof D Poenaru MD); MyungSung Medical College, Addis Ababa, Ethiopia (Prof D Poenaru MD); Centre for Addiction and Mental Health (CAMH), Toronto, ON, Canada (S Popova PhD); The Fred Hollows Foundation, Sydney, NSW, Australia (N M Prasad DO); University of Illinois, Chicago, IL, USA (D M Qato PhD); Contech International Health Consultants, Lahore, Pakistan (A Rafay MS); Hamad Medical Corporation, Doha, Qatar (S U Rahman FCPS); University of Missouri, Columbia, MO, USA (M Raju PhD); Contech School of Public Health, Lahore, Pakistan (A Rafay MS, Prof S M Rana PhD); Contech Internal Health Consultants, Lahore, Pakistan (Prof S M Rana PhD); Center for Disease Analysis, Louisville, CO, USA (H Razavi PhD); Suez Canal University, Ismailia, Egypt (Prof A Refaat PhD); Centro Anna Maria Astori, IRCCS Mario Negri Institute for Pharmacological Research, Bergamo, Italy (Prof G Remuzzi MD); International Health and Development, Geneva, Switzerland (Prof S Resnikoff MD); Hospital das Clinica da Universidade Federal de Minas Gerais, Belo Horizonte, Brazil (Prof A L Ribeiro PhD); Centre for Research in Environmental Epidemiology (CREAL), Barcelona, Spain (D Rojas-Rueda PhD); Institute of Epidemiology and Medical Biometry, Ulm University, Ulm, Germany (Prof D Rothenbacher MD); Ann and Robert H Lurie Children's Hospital of Chicago, Chicago, IL, USA (D H Rothstein MD); Independent researcher, London, UK (J T Rowley PhD); BARC Hospital, HBNI University, Mumbai, India (N Roy MD); Muhimbili University of Health and Allied Sciences, Dar es Salaam, Tanzania (G M Ruhago MA, B F Sunguya MSc); Queensland Centre for Mental Health Research, The Park Centre for Mental Health, Brisbane, QLD, Australia (S Saha PhD); Case Western Reserve University, Cleveland, OH, USA (J R Sanabria MD); Cancer Treatment Centers of America—RFU Chicago Medical School, North Chicago, IL, USA (J R Sanabria MD); Marshall University, Huntington, WV, USA (M Sawhney PhD); Federal University of Santa Catarina, Florianópolis, Brazil (I J Schneider PhD); University of Alabama at Birmingham, Birmingham, AL, USA (D C Schwebel PhD, J A Singh MD); Stellenbosch University, Cape Town, South Africa (Prof S Seedat PhD); An-Najah University, Nablus, Palestine (A Shaheen PhD); Tufts Medical Center, Boston, MA, USA (Prof S Shahraz PhD); University of Pittsburgh Medical Center, Pittsburgh, PA, USA (S Shangguan); Tachikawa Hospital, Tokyo, Japan (Y Shinohara PhD); Finnish Institute of Occupational Health, Helsinki, Finland (R Shiri PhD); Washington State University, Spokane, WA, USA (K Shishani PhD); Northumbria University, Newcastle upon Tyne, UK (I Shiue PhD); Alzheimer's Scotland Dementia Research Centre, University of Edinburgh, Edinburgh, UK (I Shiue PhD); Reykjavik University, Reykjavik, Iceland (I D Sigfusdottir PhD); International Institute for Population Sciences, Mumbai, India (A Singh PhD); Dartmouth College, Lebanon, NH, USA (S Soneji PhD); Stavanger University Hospital, Stavanger, Norway (K Søreide PhD); Federal Research Institute for Health Organization and Informatics, Ministry of Health of the Russian Federation, Moscow, Russia (S Soshnikov PhD); Department of Clinical Neurological Sciences, Western University, London, ON, Canada (L A Sposato MD); Faculty of Medicine and Health Sciences, Universiti Tunku Abdul Rahman, Kajang, Cheras, Malaysia (C T Sreeramareddy MPH); "Attikon" University Hospital, Athens, Greece (V Stathopoulou PhD); Department of Neuroscience (Prof L J Stovner PhD), Norwegian University of Science and Technology, Trondheim, Norway (Prof T J Steiner PhD); Norwegian Advisory Unit on Headache, St Olavs Hospital, Trondheim, Norway (Prof L J Stovner PhD); "Alexandra" General Hospital of Athens, Athens, Greece (K Stroumpoulis PhD); Centre Hospitalier Public du Cotentin, Cherbourg, France (K Stroumpoulis); National Institute for Research in Tuberculosis, Chennai, India (S Swaminathan MD); Northwestern University, Chicago, IL, USA (M Swaroop MD, Y Yano MD); University of California Irvine, Irvine, CA, USA (Prof B L Sykes PhD); University of Illinois at Urbana-Champaign, Champaign, IL, USA (K M Tabb PhD); Chaim Sheba Medical Center, Tel Hashomer, Israel (Prof D Tanne MD); Tel Aviv University, Tel Aviv, Israel (Prof D Tanne MD); Westchester Medical Center, Valhalla, NY, USA (M Tavakkoli MD); Netherlands Institute of Mental Health and Addiction, Utrecht, Netherlands (M Ten Have PhD); Memorial University, St John's, NL, Canada (E Y Tenkorang PhD); Department of Anesthesiology, University of Virginia, Charlottesville, VA, USA (A S Terkawi MD); Outcomes Research Consortium, Cleveland, OH, USA (A S Terkawi); Department of Anesthesiology, King Fahad Medical City, Riyadh, Saudi Arabia (A S Terkawi); WorldFish, Penang, Malaysia (A L Thorne-Lyman ScD); Aristotle University of Thessaloniki, Thessaloniki, Greece (Prof F Topouzis PhD); Health Care Center of Anjo Kosei Hospital, Anjo City, Japan (H Toyoshima MD); University of Southern Santa Catarina, Palhoça, Brazil (Prof J Traebert PhD); Johns Hopkins University, Baltimore, MD, USA (B X Tran PhD); Hanoi Medical University, Hanoi, Vietnam (B X Tran PhD); Department of Neurology, Rigshospitalet, University of Copenhagen, Copenhagen, Denmark (T Truelsen DSc); Cleveland Clinic, Cleveland, OH, USA (Prof E M Tuzcu MD); Department of Veterans Affairs, Washington, DC, USA (U S Uchendu MD); Department of Internal Medicine Federal Teaching Hospital, Abakaliki, Nigeria (K N Ukwaja MD); Netherlands Leprosy Relief, Amsterdam, Netherlands (W H van Brakel PhD); African Population and Health Research Center, Nariobi, Kenya (S van de Vijver MD); National Institute for Public Health and the Environment, Bilthoven, Netherlands (C H van Gool PhD); Maastricht University Medical Centre, Maastricht, Netherlands (Prof J van Os PhD); UKK Institute for Health Promotion Research, Tampere, Finland (Prof T J Vasankari PhD); Neuroscience Centre, Raffles Hospital, Singapore, Singapore (N Venketasubramanian MD); University of Bologna, Bologna, Italy (Prof F S Violante MD); Higher School of Economics, Moscow, Russia (Prof V V Vlassov MD); National Institute for Occupational Safety and Health, Washington, DC, USA (G R Wagner MD); Uniformed Services University of Health Sciences, Bethesda, MD, USA (Prof S G Waller MD); Institute of Basic Medical

Sciences (X Wan PhD), and Cancer Institute (W Chen PhD, Prof X Zou MD), Chinese Academy of Medical Sciences, Beijing, China; NIHRD, Ministry of Health Indonesia, Jakarta, Indonesia (T S Warouw PhD); Health Canada, Ottawa, ON Canada (S Weichenthal PhD); Beijing Neurosurgical Institute, Beijing, China (Prof W Wenzhi MD); Institute of Medical Sociology and Social Medicine, Marburg, Germany (A Werdecker DiplOecTroph.); Federal Institute for Population Research, Wiesbaden, Germany (R Westerman PhD); German National Cohort Consortium, Heidelberg, Germany (R Westerman PhD); Wayne State University, Detroit, MI, USA (Prof J D Wilkinson MD); Royal Cornwall Hospital, Truro, UK (Prof A D Woolf FRCP); Nanjing University School of Medicine, Nanjing, China (Prof G Xu PhD); Duke Kunshan University, Kunshan, China (Prof L L Yan PhD); Jichi Medical School, Tochigi, Japan (Y Yano MD); The University of Hong Kong, Hong Kong Special Administrative Region, China (Prof P Yip PhD); National Center of Neurology and Psychiatry, Kodaira, Japan (N Yonemoto MPH); Korea University, Seoul, South Korea (S Yoon PhD); Jackson State University, Jackson, MS, USA (Prof M Z Younis PhD); School of Public Health, Wuhan, China (Prof C Yu PhD); Global Health Institute, Wuhan University, Wuhan, China (Prof C Yu PhD); Mansoura Faculty of Medicine, Mansoura, Egypt (Prof M E Zaki MD); and Chongqing Medical University, Chongqing, China (Prof Y Zhao MSc)

Contributors

TV, ADL, JAS, and CJLM prepared the first draft. CJLM and TV finalised the draft based on comments from other authors and reviewer feedback. TV, ADL, JAS, and CJLM conceived of the study and provided overall guidance. RB and KF performed final statistical analyses. All other authors provided data, developed models, reviewed results, provided guidance on methodology, and reviewed the manuscript.

Declaration of interests

BDG works for AMP, which receives grant-specific support from Crucell, GlaxoSmithKline, Merck, Novartis, Pfizer, and Sanofi Pasteur; however, none of this support is for work related to the present report. MGS received a speaking honorarium from Ethicon for work unrelated to this manuscript. MBS is a paid consultant to Janssen, Pfizer, and Tonix Pharmaceuticals and is also paid for his editorial work on *Up-to-Date* and on the journal *Biological Psychiatry*. PJ is supported by a career development fellowship from the Wellcome Trust, Public Health Foundation of India and a Consortium of UK Universities. SIH is funded by a Wellcome Trust Grant. JAS has received grant support from Takeda and Savient Pharmaceuticals and consultant fees from Takeda, Regeneron, Allergan, and Savient. JAS is an executive member of OMERACT, an organisation that received arms-length funding from 36 pharmaceutical companies. KJL was funded by WHO to conduct the review of HSV-2 seroprevalence which informs this study. During the study, KJL received funding from Health Protection Scotland, the National Institute for Health Research (NIHR) Health Protection Research Unit (HPRU) in Evaluation of Interventions, and Sexual Health 24: the funding sources had no role in the writing of the manuscript or the decision to submit it for publication. FP-R is a consultant for AstraZeneca, Cimabay, Menarini, and Pfizer, and has received investigation grants from the Spanish Health Ministry, Spanish Foundation for Rheumatology, and Cruces Hospital Rheumatology Association. PJH is principal investigator on vaccines in clinical trials against hookworm and schistosomiasis as well as several other neglected tropical disease vaccines in development. CKi receives research grants from Brazilian public funding agencies Conselho Nacional de Desenvolvimento Científico e Tecnológico (CNPq), Coordenação de Aperfeiçoamento de Pessoal de Nível Superior (CAPES), and Fundação de Amparo à Pesquisa do Estado do Rio Grande do Sul (FAPERGS). CKi has also received authorship royalties from publishers Artmed and Manole. KBG received the NHMRC-Gustav Nossal scholarship sponsored by CSL in 2012. This award is peer-reviewed through the standard NHMRC peer-review process; CSL played no part in selection of the awardee. HAW, AJF, FJC, and HEE are all affiliated with the Queensland Centre for Mental Health Research, which receives funding from the Queensland Department of Health. DJS has received research grants and consultancy honoraria in the past three years from AMBRF, Biocodex, Cipla, Lundbeck, National Responsible Gambling Foundation, Novartis, Servier, and Sun. DJS is also supported by the Medical Research Council of South Africa. DM reports being on the scientific advisory board of Unilever North America and ad hoc honoraria or consulting from Bunge, Nutrition Impact, Amarin, AstraZeneca, and Life Sciences Research Organization. DAQ was supported by The Eunice Kennedy Shriver National Institute of Child Health and Human Development of the National Institutes of Health under award number 5T32HD057822. RAL receives funding through the Farr Institute of Health Informatics Research. The Farr Institute is supported by a consortium of ten UK research organisations: Arthritis Research UK, the British Heart Foundation, Cancer Research UK, the Economic and Social Research Council, the Engineering and Physical Sciences Research Council, the Medical Research Council, the National Institute of Health Research, the National Institute for Social Care and Health Research (Welsh Government), and the Chief Scientist Office (Scottish Government Health Directorates). KeS is affiliated with Grant in Aid for Scientific Research from the Ministry of Education, Culture, Sports and Technology in Japan. JM received a fellowship from the Wellcome Trust. AKau acknowledges that she receives funding from Oklahoma Center for the Advancement of Science and Technology (OCAST) as co-principal investigator. HoC acknowledges that the study was in part supported by the intramural research program of the NIH, the National Institute of Environmental Health Sciences. SS received research support and funding from the NIH and NRF and an honorarium from Pharmaceutical companies and is an employee at the NRF. VC acknowledges the following conflicts of interest: Speaker Bureau Boehringer Ingelheim, BMS Pfizer Advisory board: Boehringer Ingelheim Mindmaze. All other authors declare no competing interests.

Acknowledgments

On behalf of the GBD 2010 Genitourinary Diseases Expert Group, GR, NoP, and BB would like to acknowledge that their activities within the GBD 2013 have been made on the behalf of the International Society of Nephrology (ISN). ATA received institutional support and grants from the Graduate School of Medical Sciences, University Medical Center Groningen (UMCG). JM has received support from the National Health and Medical Research Council. LLY is also supported by the National Natural Sciences Foundation of China. UOM would like to acknowledge his funding by the German National Cohort Consortium. RB was provided funding support by the Brien Holden Vision Institute. INA would like to acknowledge her funding support from the National Health and Medical Research Council Public Health (Australian) Early Career Fellowship. KD is supported by a Wellcome Trust Fellowship in Public Health and Tropical Medicine (grant number 099876). The funding sources had no role in the writing of the manuscript or the decision to submit it for publication. JS was supported by the National Natural Science Foundation for Young Scholars of China, (number 81200051); Research Fund for the Doctoral Program of Higher Education of China (number 20110071120060); Science Foundation for Young Scholars in Zhongshan Hospital (number 2012ZSQN04); and the Scientific Project for Fudan University (number 20520133474). RB is funded by an Australian National Health and Medical Research Council Senior Principal Research Fellow. TF is grateful to the Swiss National Science Foundation for an Early and an Advanced Postdoc Mobility fellowship (project numbers PBBSP3-146869 and P300P3-154634). SJY and IHO received funding for their work in a grant from the Korean Health Technology R&D Project (Ministry of Health & Welfare, Republic of Korea; grant number HI13C0729). ALT-L was supported by the CGIAR Research Program on Aquatic Agricultural Systems.

References

1 Global Burden of Disease Study 2013 Collaborators. Global, regional, and national incidence, prevalence, and years lived with disability for 301 acute and chronic diseases and injuries in 188 countries, 1990–2013: a systematic analysis for the Global Burden of Disease Study 2013. *Lancet* 2015; **386:** 743–800.

2 GBD 2013 Mortality and Causes of Death Collaborators. Global, regional, and national age–sex specific all-cause and cause-specific mortality for 240 causes of death, 1990–2013: a systematic analysis for the Global Burden of Disease Study 2013. *Lancet* 2014; **385:** 117–71.

3 Alliance NCD. Healthy planet, healthy people: The NCD alliance vision for health in the post-2015 development agenda. Geneva: NCD Alliance, 2013.

4 Open working group proposal for Sustainable development goals. 2014. https://sustainabledevelopment.un.org/index.php?page=view&type=400&nr=1579&menu=1300 (accessed Feb 9, 2015).
5 Pintér L, Almássy D, Hatakeyama S. Sustainable Development Goals and indicators for a small planet—Part II: Measuring sustainability. Singapore: Asia-Europe Foundation, 2014.
6 Murray CJ, Salomon JA, Mathers C. A critical examination of summary measures of population health. *Bull World Health Organ* 2000; **78:** 981–94.
7 Murray CJL, Vos T, Lozano R, et al. Disability-adjusted life years (DALYs) for 291 diseases and injuries in 21 regions, 1990–2010: a systematic analysis for the Global Burden of Disease Study 2010. *Lancet* 2012; **380:** 2197–223.
8 Salomon JA, Wang H, Freeman MK, et al. Healthy life expectancy for 187 countries, 1990–2010: a systematic analysis for the Global Burden Disease Study 2010. *Lancet* 2012; **380:** 2144–62.
9 Santosa A, Wall S, Fottrell E, Högberg U, Byass P. The development and experience of epidemiological transition theory over four decades: a systematic review. *Glob Health Action* 2014; **7:** 23574.
10 Murray CJL, Ortblad KF, Guinovart C, et al. Global, regional, and national incidence and mortality for HIV, tuberculosis, and malaria during 1990–2013: a systematic analysis for the Global Burden of Disease Study 2013. *Lancet* 2014; **384:** 1005–70.
11 Hill K, Vapattanawong P, Prasartkul P, Porapakkham Y, Lim SS, Lopez AD. Epidemiologic transition interrupted: a reassessment of mortality trends in Thailand, 1980–2000. *Int J Epidemiol* 2007; **36:** 374–84.
12 Hofmarcher MM. Is public health between East and West? Analysis of wealth, health and mortality in Austria, Central and Eastern European Countries and Croatia relative to the European Union. *Croat Med J* 1998; **39:** 241–48.
13 Kahn K, Garenne ML, Collinson MA, Tollman SM. Mortality trends in a new South Africa: hard to make a fresh start. *Scand J Public Health Suppl* 2007; **69:** 26–34.
14 Rivera JA, Barquera S, Campirano F, Campos I, Safdie M, Tovar V. Epidemiological and nutritional transition in Mexico: rapid increase of non-communicable chronic diseases and obesity. *Public Health Nutr* 2002; **5:** 113–22.
15 United Nations General Assembly. Prevention and control of non-communicable diseases: Report of the Secretary General. New York, NY: United Nations, 2011.
16 World Health Organization (WHO). 2008–2013 Action Plan for the Global Strategy for the Prevention and Control of Noncommunicable Diseases : Prevent and control cardiovascular diseases, cancers, chronic respiratory diseases and diabetes. Geneva, Switzerland: World Health Organization, 2009.
17 Yang G, Kong L, Zhao W, et al. Emergence of chronic non-communicable diseases in China. *Lancet* 2008; **372:** 1697–705.
18 Yang G, Wang Y, Zeng Y, et al. Rapid health transition in China, 1990–2010: findings from the Global Burden of Disease Study 2010. *Lancet* 2013; **381:** 1987–2015.
19 Murray CJL, Ezzati M, Flaxman AD, et al. GBD 2010: design, definitions, and metrics. *Lancet* 2012; **380:** 2063–66.
20 Flaxman A. Integrated Metaregression Framework for Descriptive Epidemiology. Seattle, WA: University of Washington Press, 2014.
21 Salomon JA, Vos T, Hogan DR, et al. Common values in assessing health outcomes from disease and injury: disability weights measurement study for the Global Burden of Disease Study 2010. *Lancet* 2012; **380:** 2129–43.
22 Sullivan DF. A single index of mortality and morbidity. *HSMHA Health Rep* 1971; **86:** 347–54.
23 Bloom DE, Canning D. Policy forum: public health. The health and wealth of nations. *Science* 2000; **287:** 1207–09, 1209.
24 Preston SH. The changing relation between mortality and level of economic development. *Popul Stud (Camb)* 1975; **29:** 231–48.
25 Jolliffe I. Principal component analysis. In: Encyclopedia of Statistics in Behavioral Science. West Sussex: John Wiley & Sons, 2005.
26 Gelman A. Analysis of variance—why it is more important than ever. *Ann Stat* 2005; **33:** 1–53.
27 Omran AR. The epidemiologic transition. A theory of the epidemiology of population change. *Milbank Mem Fund Q* 1971; **49:** 509–38.
28 Agyei-Mensah S, de-Graft Aikins A. Epidemiological transition and the double burden of disease in Accra, Ghana. *J Urban Health* 2010; **87:** 879–97.
29 Frenk J, Bobadilla JL, Stern C, Frejka T, Lozano R. Elements for a theory of the health transition. *Health Transit Rev* 1991; **1:** 21–38.
30 Andreev EM, Nolte E, Shkolnikov VM, Varavikova E, McKee M. The evolving pattern of avoidable mortality in Russia. *Int J Epidemiol* 2003; **32:** 437–46.
31 McMichael AJ, McKee M, Shkolnikov V, Valkonen T. Mortality trends and setbacks: global convergence or divergence? *Lancet* 2004; **363:** 1155–59.
32 Smallman-Raynor M, Phillips D. Late stages of epidemiological transition: health status in the developed world. *Health Place* 1999; **5:** 209–22.
33 Carolina Martínez S, Gustavo Leal F. Epidemiological transition: model or illusion? A look at the problem of health in Mexico. *Soc Sci Med* 2003; **57:** 539–50.
34 Caselli G, Meslé F, Vallin J. Epidemiologic transition theory exceptions. *Genus* 2002; **58:** 9–51.
35 Rivera-Andrade A, Luna MA. Trends and heterogeneity of cardiovascular disease and risk factors across Latin American and Caribbean countries. *Prog Cardiovasc Dis* 2014; **57:** 276–85.
36 Bloom DE, Canning D. Commentary: The Preston Curve 30 years on: still sparking fires. *Int J Epidemiol* 2007; **36:** 498–99, discussion 502–03.
37 Mackenbach JP, Looman CW. Life expectancy and national income in Europe, 1900–2008: an update of Preston's analysis. *Int J Epidemiol* 2013; **42:** 1100–10.
38 Preston SH. The changing relation between mortality and level of economic development. Population Studies, Vol. 29, No. 2, July 1975. *Int J Epidemiol* 2007; **36:** 484–90.
39 Bergström G, Redfors B, Angerås O, et al. Low socioeconomic status of a patient's residential area is associated with worse prognosis after acute myocardial infarction in Sweden. *Int J Cardiol* 2015; **182:** 141–47.
40 Capingana DP, Magalhães P, Silva ABT, et al. Prevalence of cardiovascular risk factors and socioeconomic level among public-sector workers in Angola. *BMC Public Health* 2013; **13:** 732.
41 Chang P, Nead KT, Olin JW, Cooke JP, Leeper NJ. Clinical and socioeconomic factors associated with unrecognized peripheral artery disease. *Vasc Med* 2014; **19:** 289–96.
42 Di Cesare M, Khang Y-H, Asaria P, et al, and the *Lancet* NCD Action Group. Inequalities in non-communicable diseases and effective responses. *Lancet* 2013; **381:** 585–97.
43 Marmot MG, Kogevinas M, Elston MA. Social/economic status and disease. *Annu Rev Public Health* 1987; **8:** 111–35.
44 Marmot MG, Shipley MJ, Rose G. Inequalities in death—specific explanations of a general pattern? *Lancet* 1984; **1:** 1003–06.
45 Marmot MG, Smith GD, Stansfeld S, et al. Health inequalities among British civil servants: the Whitehall II study. *Lancet* 1991; **337:** 1387–93.
46 Wang J-Y, Wang C-Y, Juang S-Y, et al. Low socioeconomic status increases short-term mortality of acute myocardial infarction despite universal health coverage. *Int J Cardiol* 2014; **172:** 82–87.
47 Wu W-H, Yang L, Peng F-H, et al. Lower socioeconomic status is associated with worse outcomes in pulmonary arterial hypertension. *Am J Respir Crit Care Med* 2013; **187:** 303–10.
48 Robine J-M, Mathers CD, Bone MR, Romieu I. Calculation of Health Expectancies: Harmonization, Consensus Achieved and Future Perspectives. Paris: John Libbey Eurotext, 1993.
49 Jagger C, Gillies C, Moscone F, et al, and the EHLEIS team. Inequalities in healthy life years in the 25 countries of the European Union in 2005: a cross-national meta-regression analysis. *Lancet* 2008; **372:** 2124–31.
50 King G, Murray CJL, Salomon JA, Tandon A. Enhancing the validity and cross-cultural comparability of measurement in survey research. *Am Polit Sci Rev* 2004; **98:** 191–207.
51 Salomon JA, Nordhagen S, Oza S, Murray CJL. Are Americans feeling less healthy? The puzzle of trends in self-rated health. *Am J Epidemiol* 2009; **170:** 343–51.
52 Salomon JA, Tandon A, Murray CJL. Comparability of self rated health: cross sectional multi-country survey using anchoring vignettes. *BMJ* 2004; **328:** 258.

53 Gennaro V, Ghirga G, Corradi L. In Italy, healthy life expectancy drop dramatically: from 2004 to 2008 there was a 10 years drop among newborn girls. *Ital J Pediatr* 2012; **38:** 19.

54 Catalá-López F, García-Altés A, Alvarez-Martín E, Gènova-Maleras R, Morant-Ginestar C. Does the development of new medicinal products in the European Union address global and regional health concerns? *Popul Health Metr* 2010; **8:** 34.

55 Dorsey ER, Thompson JP, Carrasco M, et al. Financing of U.S. biomedical research and new drug approvals across therapeutic areas. *PLoS One* 2009; **4:** e7015.

56 Gross CP, Anderson GF, Powe NR. The relation between funding by the National Institutes of Health and the burden of disease. *N Engl J Med* 1999; **340:** 1881–87.

57 Keyhani S, Wang S, Hebert P, Carpenter D, Anderson G. US pharmaceutical innovation in an international context. *Am J Public Health* 2010; **100:** 1075–80.

58 Luengo-Fernandez R, Leal J, Gray AM. UK research expenditure on dementia, heart disease, stroke and cancer: are levels of spending related to disease burden? *Eur J Neurol* 2012; **19:** 149–54.

59 Moses H 3rd, Matheson DHM, Cairns-Smith S, George BP, Palisch C, Dorsey ER. The anatomy of medical research: US and international comparisons. *JAMA* 2015; **313:** 174–89.

60 Foreman KJ, Lozano R, Lopez AD, Murray CJ. Modeling causes of death: an integrated approach using CODEm. *Popul Health Metr* 2012; **10:** 1.