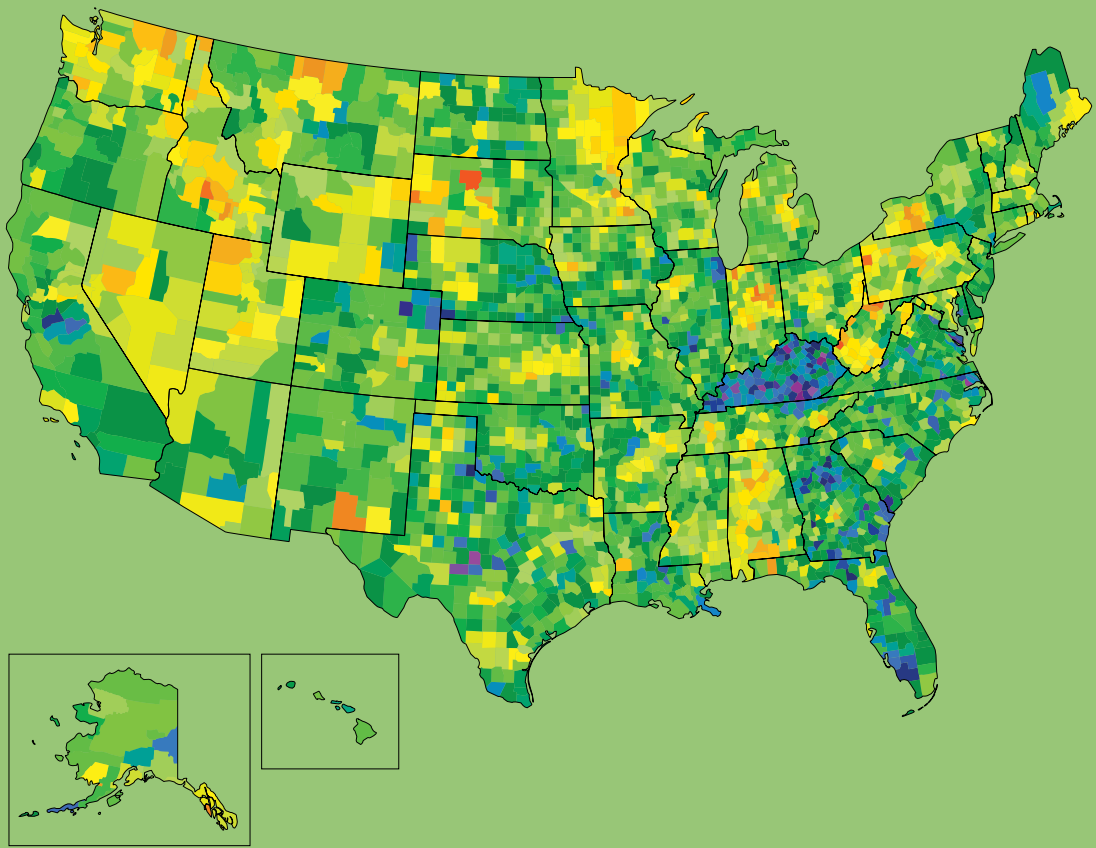
THE STATE OF US HEALTH:

INNOVATIONS, INSIGHTS, AND RECOMMENDATIONS FROM THE GLOBAL BURDEN OF DISEASE STUDY

INSTITUTE FOR HEALTH METRICS AND EVALUATION
UNIVERSITY OF WASHINGTON



THE STATE OF US HEALTH:

INNOVATIONS, INSIGHTS, AND RECOMMENDATIONS FROM THE GLOBAL BURDEN OF DISEASE STUDY

INSTITUTE FOR HEALTH METRICS AND EVALUATION
UNIVERSITY OF WASHINGTON

This report was prepared by the Institute for Health Metrics and Evaluation (IHME) based on seven papers for the Global Burden of Diseases, Injuries, and Risk Factors Study 2010 (GBD 2010) published in *The Lancet* (2012 Dec 13; 380) as well as in the *Journal of the American Medical Association* (2013 July). GBD 2010 had 488 co-authors from 303 institutions in 50 countries. It also draws on US county-level research published in *Population Health Metrics* (2013 July). The work was made possible through core funding from the Bill & Melinda Gates Foundation. The views expressed are those of the authors.

Citation: Institute for Health Metrics and Evaluation. *The State of US Health: Innovations, Insights, and Recommendations from the Global Burden of Disease Study*. Seattle, WA: IHME, 2013.

Institute for Health Metrics and Evaluation
2301 Fifth Ave., Suite 600
Seattle, WA 98121
USA
www.healthmetricsandevaluation.org

Printed in the United States of America

ISBN 978-0-9894752-4-2

THE STATE OF US HEALTH:

INNOVATIONS, INSIGHTS, AND RECOMMENDATIONS FROM THE GLOBAL BURDEN OF DISEASE STUDY

ABOUT IHME

The Institute for Health Metrics and Evaluation (IHME) is an independent global health research center at the University of Washington that provides rigorous and comparable measurement of the world's most important health problems and evaluates the strategies used to address them. IHME makes this information freely available so that policymakers have the evidence they need to make informed decisions about how to allocate resources to best improve population health.

To express interest in collaborating, participating in GBD training workshops, or receiving updates of GBD or copies of this publication, please contact IHME at:

Institute for Health Metrics and Evaluation
2301 Fifth Ave., Suite 600
Seattle, WA 98121
USA

Telephone: +1-206-897-2800
Fax: +1-206-897-2899
E-mail: comms@healthmetricsandevaluation.org

www.healthmetricsandevaluation.org

ACKNOWLEDGMENTS

The Global Burden of Disease Study 2010 (GBD 2010) was implemented as a collaboration involving 488 researchers from 303 institutions in 50 countries. We are grateful to IHME's Board for their continued leadership, particularly Board member Harvey Fineberg, President of the Institute of Medicine. We thank Sam Kass, Executive Director of Let's Move! and Senior White House Policy Advisor on Nutrition, and Julie Moreno, White House Public Health Advisor for Childhood Obesity, for important policy discussions that inspired the county-level analysis in this report. We are grateful to the report's writer and production manager Katherine Leach-Kemon; Christopher Murray, Ali Mokdad, Michael MacIntyre, Rhonda Stewart, and William Heisel at IHME for content guidance; Laura Dwyer-Lindgren, Austin Schumacher, Daniel Dicker, Carly Levitz, Tom Fleming, Emily Carnahan, and Greg Freedman for data analysis; Gillian Hansen for program coordination; Patricia Kiyono for production oversight; Brian Childress for editing; and Ann Kumasaka for design. This report would not have been possible without the ongoing contributions of Global Burden of Disease collaborators around the world as well as Alison Levin-Rector and Sandeep Kulkarni.

Finally, we would like to extend our gratitude to the Bill & Melinda Gates Foundation for generously funding IHME and for its consistent support of the Global Burden of Disease research.

GLOSSARY

Years of life lost (YLLs): Years of life lost due to premature mortality.

Years lived with disability (YLDs): Years of life lived with any short-term or long-term health loss, adjusted for severity. The definition of disability in GBD differs from US legislation such as the Americans with Disabilities Act.

Disability-adjusted life years (DALYs): The sum of years lost due to premature death (YLLs) and years lived with disability (YLDs). DALYs are also defined as years of healthy life lost.

Healthy life expectancy or health-adjusted life expectancy (HALE): The number of years that a person at a given age can expect to live in good health, taking into account mortality and disability.

Sequelae: Consequences of diseases and injuries.

Health states: Groupings of sequelae that reflect key differences in symptoms and functioning.

Disability weights: Number on a scale from 0 to 1 that represents the severity of health loss associated with a health state.

Risk factors: Potentially modifiable causes of disease and injury.

Risk-outcome pairs: Groupings of risk factors and the specific causes of death and disability they affect.

Uncertainty intervals: A range of values that is likely to include the correct estimate of health loss for a given cause. Narrow uncertainty intervals indicate that evidence is strong, while wide uncertainty intervals show that evidence is weaker.

INTRODUCTION

The United States presents an interesting challenge to policymakers and the scientific research community. It is the engine behind clinical innovations that are reducing health loss worldwide. Its academic centers consistently raise the bar, training generation after generation of physicians, nurses, and other health professionals. Despite this, how health is experienced in the US varies greatly by locale. People who live in San Francisco or Fairfax County, Virginia, or Gunnison, Colorado, are enjoying some of the best life expectancies in the world. In some US counties, however, life expectancies are on par with countries in North Africa and Southeast Asia. This is happening despite the fact that the US spends more per capita on health care than most countries.

We know that the situation can be dramatically improved. The US performs better than its economic peers – on average – in premature deaths from stroke and disease burden attributable to high blood pressure. Also, compared to its peers, the US is more effectively addressing multiple causes of disability, although much work remains to be done.

To see where to focus that work, we need to examine the large health disparities across communities. What can be seen through this analysis are success stories, such as the impressive progress being made in physical activity. Over the last decade, some counties substantially increased the number of people getting the recommended levels of exercise. As a contrast, obesity levels continue to rise in many US counties, as do mortality rates in some counties, particularly for females. Life expectancy for females in 42% of US counties saw no significant improvement between 1985 and 2010. If we can find the keys to the successes we are seeing with stroke, high blood pressure, and physical activity, we may be able to apply similar success strategies to tackle these and other growing areas of concern.

The Global Burden of Disease (GBD) approach helps put these challenges in their proper context. The GBD is a systematic, scientific effort to quantify the comparative magnitude of health loss due to diseases, injuries, and risk factors by age, sex, and geography for specific points in time. Box 1 describes the history of GBD. The global and regional results from the most recent iteration of the GBD enterprise, the Global Burden of Diseases, Injuries, and Risk Factors Study 2010 (GBD 2010), were published as a series of papers in *The Lancet* in December 2012. GBD 2010 estimated premature death and disability due to 291 diseases and injuries, 1,160 sequelae (direct consequences of disease and injury), and 67 risk factors for 20 age groups and both sexes in 1990, 2005, and 2010. GBD 2010 produced estimates for 187 countries and 21 regions. In total, the study generated over 1 billion estimates of health outcomes. GBD results for the US were published in July 2013 in the *Journal of the American Medical Association* (JAMA).

GBD 2010 was a collaborative effort among nearly 500 researchers from 50 countries and 303 institutions. The Institute for Health Metrics and Evaluation (IHME) at the University of Washington acted as the coordinating center for the work. Our intention is to enlarge the network in the years to come and routinely update the GBD estimates, ensuring that policymakers have access to high-quality estimates in the timeliest fashion. Through sound measurement, we can provide the foundational evidence that will lead to improved population health.

GBD found evidence of rapid health transitions in most regions of the world with the exception of sub-Saharan Africa. Diseases of poverty, such as communicable, maternal, nutritional, and newborn causes, have decreased nearly universally while non-communicable conditions traditionally associated with wealthier countries have risen. As people live longer and die at lower rates, the number of years spent living with disability from ailments such as low back pain and depression has increased. Although health progress in sub-Saharan Africa lagged behind much of the world, the region made substantial progress in reducing child deaths and fighting diseases such as HIV/AIDS and malaria.

In the US, we found that life expectancy increased, but the number of years Americans spend living with disability also increased. Ischemic heart disease, lung cancer, stroke, chronic obstructive pulmonary disease (COPD), and road injury were responsible for the greatest number of years of life lost in America in 2010. Musculoskeletal, mental, and behavioral disorders, such as low back and neck pain, depression, and anxiety, were the leading causes of years lived with disability. Looking at risk factors for disease and injury, GBD researchers found that dietary risks, such as eating too little fruit, nuts, and seeds and too much salt, were the largest contributors to disease burden, followed by smoking, high body mass index, high blood pressure, high fasting plasma glucose (high blood sugar), insufficient exercise, and alcohol use. In July 2013, county-level findings on life expectancy, obesity, and physical inactivity were published in two articles in *Population Health Metrics*.

Because of how the US is positioned as a health innovation leader and the opportunities presented by the rollout of national health care reform, policymakers can take the findings from this report into account as they assess community health status and look for ways to better allocate resources to improve health policy. Within this diverse, dynamic country, we can see models of incredible health progress and examples of persistent health dilemmas. We see pathways forward, too – as we will discuss later in the report – toward a future with Americans seeing health improvement more consistently across communities.

Related literature

Additional information about the research discussed in this report can be found in the following articles:

US Burden of Disease Collaborators. The state of US health, 1990-2010: burden of diseases, injuries, and risk factors [published online July 10, 2013]. *JAMA*. doi:10.1001/jama.2013.13805.

Box 1: History of the Global Burden of Disease and innovations in GBD 2010

The first GBD study was published as part of the *World Development Report 1993*. Called GBD 1990, it generated estimates for 107 diseases, 483 sequelae (non-fatal health consequences), eight regions, and five age groups. The authors' inspiration for the study came from the realization that policymakers lacked comprehensive and standardized data on diseases, injuries, and potentially preventable risk factors for decision-making. A second source of inspiration was the fact that disease-specific advocates' estimates of the number of deaths caused by their diseases of interest far exceeded the total number of global deaths in any given year. GBD authors chose to pursue a holistic approach to analyzing disease burden to produce scientifically sound estimates that were independent of the influence of advocates.

GBD 1990 had a profound impact on health policy as it exposed the hidden burden of mental illness around the world. It also shed light on neglected health areas such as the premature death and disability caused by road traffic injuries. Work from this study has been cited over 4,000 times since 1993.

The study also sparked substantial controversy. Many disease-specific advocates argued that the original GBD underestimated burden from the causes they cared about most. The use of age weighting and discounting also caused extensive debates. Age weighting assumed that a year of life increased in value until age 22, and then decreased steadily. Discounting counted years of healthy life saved in the present as more valuable than years of life saved in the future. Also controversial was the use of expert judgment to estimate disability weights (estimations of the severity of non-fatal conditions). As a result of this feedback and consultation with a network of philosophers, ethicists, and economists, GBD no longer uses age weighting and discounting. Also, we have updated our methods for determining disability weights and used data gathered from thousands of respondents from different countries around the world.

While the original study had the participation of 100 collaborators worldwide, GBD 2010 had 488 co-authors. Thanks to that network, the study includes vast amounts of data on health outcomes and risk factors. Researchers also made substantial improvements to the GBD methodology, summarized in Box 2 and described in detail in the Annex of this report and in the published studies. Among these improvements, highlights include using data collected via population surveys to estimate disability weights for the first time, greatly expanding the list of causes and risk factors analyzed in the study, detailed analysis of the effect of different components of diet on health outcomes, and reporting of uncertainty intervals for all metrics. GBD 2010 researchers reported uncertainty intervals to provide full transparency about the weaknesses and strengths of the analysis. Narrow uncertainty intervals indicate that evidence is strong, while wide uncertainty intervals show that evidence is weaker.

Wang H, et al. Left behind: widening disparities for males and females in US county life expectancy, 1985-2010. *Population Health Metrics*. 2013; 11:8.

Dwyer-Lindgren L, et al. Prevalence of physical activity and obesity in US counties, 2001-2011: a road map for action. *Population Health Metrics.* 2013; 11:7.

Lozano R, et al. Global and regional mortality from 235 causes of death for 20 age groups in 1990 and 2010: a systematic analysis for the Global Burden of Disease Study 2010. *The Lancet.* 2012 Dec 13; 380: 2095–2128.

Murray CJL, 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. *The Lancet*. 2012 Dec 13; 380: 2197–2223.

Salomon JA, et al. Common values in assessing health outcomes from disease and injury: disability weights measurement study for the Global Burden of Disease Study 2010. *The Lancet.* 2012 Dec 13; 380: 2129–2143.

Salomon JA, et al. Healthy life expectancy for 187 countries, 1990–2010: a systematic analysis for the Global Burden Disease Study 2010. *The Lancet.* 2012 Dec 13; 380: 2144–2162.

Wang H, et al. Age-specific and sex-specific mortality in 187 countries, 1970–2010: a systematic analysis for the Global Burden of Disease Study 2010. *The Lancet*. 2012 Dec 13; 380: 2071–2094.

Vos T, et al. Years lived with disability (YLDs) for 1160 sequelae of 289 diseases and injuries, 1990–2010: a systematic analysis for the Global Burden of Disease Study 2010. *The Lancet*. 2012 Dec 13; 380: 2163–2196.

Lim SS, et al. A comparative risk assessment of burden of disease and injury attributable to 67 risk factors and risk factor clusters in 21 regions, 1990–2010: a systematic analysis for the Global Burden of Disease Study 2010. *The Lancet*. 2012 Dec 13; 380: 2224–2260.

MAIN FINDINGS FOR THE UNITED STATES

GBD results for the United States

- In the US, life expectancy for both sexes combined increased from 75.2 in 1990 to 78.2 in 2010; over the same period, healthy life expectancy (HALE) rose from 65.8 to 68.1. HALE is the number of years that a person at a given age can expect to live in good health, taking into account mortality and disability.
- Life expectancies for both males and females in the US lagged behind the median life expectancies for their counterparts in Organisation for Economic Co-Operation and Development (OECD) countries. The leading causes of premature death in the US were ischemic heart disease, lung cancer, stroke, COPD, and road injury.

- As people in the US live longer, the number of years the average person lives with disability has increased. The major causes of years lived with disability in the US were major depressive disorder, anxiety disorder, low back and neck pain, and other musculoskeletal disorders.
- Potentially avoidable risk factors contributed to rising disease burden in the US. Dietary risks such as diets low in fruits, nuts, and seeds and high in sodium were the most important risk factor for premature death and disability. After dietary risks, tobacco smoking, high body mass index (BMI), high blood pressure, high fasting plasma glucose, physical inactivity, and alcohol use were responsible for the largest numbers of healthy years of life lost in the US.
- Compared to its economic peers, the US performed better than or as well as these countries for different causes of disability. On the other hand, the US ranked poorly compared to peer countries in terms of preventing premature mortality from most leading causes with one key exception: stroke. When evaluating disease burden attributable to different risk factors, the US did a better job than other countries of addressing high blood pressure, but ranked worse for many other risk factors.

Analysis of health in US counties

- In the US, females are making less progress than males when it comes to extending life expectancy. As a result, males are catching up to females. The gap between male life expectancy and female life expectancy shrank from 7.0 years in 1985 to 4.6 years in 2010.
- Drilling down to the county level reveals stark differences in improvement in life expectancy for men and women. Between 1985 and 2010, there were no improvements in female life expectancy in 1,405 counties compared to just 154 counties for males.
- Across US counties, disparities in life expectancy increased for both males and females between 1985 and 2010. In the highest-performing counties, life expectancy rivaled countries with the highest life expectancy in the world, such as Switzerland and Japan. In the lowest-performing counties, life expectancy was lower than the life expectancy of countries receiving foreign aid such as Algeria and Bangladesh. The lowest life expectancies in the US remained around 73 years for females and below 65 for males between 1985 and 2010.
- Levels of sufficient physical activity, defined as 150 minutes of moderate physical activity, 75 minutes of vigorous physical activity, or equivalent combination per week, increased in US counties between 2001 and 2009. The percentage of people getting the recommended amounts of exercise rose by as much as 17% for males and 18% for females in the highest-performing counties. These increases have the potential to reduce death and disability from causes such as ischemic heart disease and stroke.

- Despite progress in sufficient physical activity, obesity rates increased between 2001 and 2009. During this period, only nine US counties experienced a decrease in obesity rates, but none of these reductions were statistically significant.
- Rising levels of sufficient physical activity across US counties appear to have had limited impact on obesity. For every one percentage point increase in sufficient physical activity, obesity prevalence decreased by 0.11 percentage points.

Box 2: Global Burden of Disease methodology

GBD uses thousands of data sources from around the world to estimate disease burden. As a first step, GBD researchers estimate child and adult mortality using data sources such as vital and sample registration systems, censuses, and household surveys. Years lost due to premature death from different causes are calculated using data from vital registration with medical certification of causes of death when available, and sources such as verbal autopsies in countries where medical certification of causes of death is lacking. Years lived with disability are estimated using sources such as cancer registries, data from outpatient and inpatient facilities, and direct measurements of hearing, vision, and lung function testing. Once they have estimated years lost due to premature death and years lived with disability, GBD researchers sum the two estimates to obtain disability-adjusted life years. Finally, researchers quantify the amount of premature death and disability attributable to different risk factors using data on exposure to, and the effects of, the different risk factors. For more information about the GBD methods, see the Annex of this report as well as the published papers.

THE GBD APPROACH TO TRACKING HEALTH PROGRESS AND CHALLENGES

For decision-makers striving to create evidence-based policy, the GBD approach provides numerous advantages over other epidemiological studies. These key features are further explored in this report.

A CRITICAL RESOURCE FOR INFORMED POLICYMAKING

To ensure a health system is adequately aligned to a population's true health challenges, policymakers must be able to compare the effects of different diseases that kill people prematurely and cause ill health. The original GBD study's creators developed a single measurement, disability-adjusted life years (DALYs), to quantify the number of years of life lost as a result of both premature death and disability. One DALY equals one lost year of healthy life. DALYs will be referred to as "years of healthy life lost," and as "years lost due to premature death and disability" throughout this publication. Decision-makers can use DALYs to quickly compare the impact caused by very different conditions, such as cancer and depression, since the conditions are assessed using a single, comparable metric. Considering the number of DALYs instead of causes of death alone provides a more accurate picture of the main drivers of poor health. Information about changing disease patterns is a crucial input for decision-making, effective resource allocation, and policy planning.

The hierarchical GBD cause list (available on IHME's website at http://ihmeuw.org/gbdcauselist) has been designed to include the diseases, injuries, and sequelae that are most relevant for public health policymaking. To create this list, researchers reviewed epidemiological and cause of death data to identify which diseases and injuries resulted in the most ill health. Inpatient and outpatient records were also reviewed to understand the conditions for which patients sought medical care.

GBD was created in part due to researchers' observations that deaths estimated by different disease-specific studies added up to more than 100% of total deaths when summed. The GBD approach ensures that deaths are counted only once. First, GBD counts the total number of deaths in a year. Next, researchers work to assign a single cause to each death using a variety of innovative methods (see Annex). Estimates of cause-specific mortality are then compared to estimates of deaths from all causes to ensure that the cause-specific numbers do not exceed the total number of deaths in a given year. Other components of the GBD estimation process are interconnected with similar built-in safeguards, such as for the estimation of impairments that are caused by more than one disease.

Beyond providing a comparable and comprehensive picture of causes of premature death and disability, GBD also estimates the disease burden attributable to different risk factors. The GBD approach goes beyond risk factor prevalence, such as the number of smokers or heavy drinkers in a population. With comparative risk assessment, GBD incorporates both the prevalence of a given risk factor as well as the relative harm caused by that risk factor. It counts premature death and disability attributable to high blood pressure, tobacco and alcohol use, lack of exercise, air pollution, poor diet, and other risk factors that lead to ill health. Risk-outcome pairs were selected if they passed the test for "convincing or probable evidence" according to World Cancer Research Fund (WCRF) criteria.

The role of social determinants such as income, education, and inequality were not assessed in this study. The lack of inclusion of socioeconomic factors in the analysis does not mean that these factors are unimportant, but rather that the body of evidence about their impacts on health does not meet WCRF criteria of convincing or probable evidence for the effects of a risk factor on a specific cause of death or disability. Given that the impact of social determinants on all-cause mortality are well established in the literature, these factors would have been included in this study if the study's criteria had only required evidence of risk factors' effects on all-cause mortality. Also, studies of socioeconomic factors report varying degrees of impact on health, known as effect sizes, and WCRF criteria require consistency of effect sizes across studies. Nonetheless, experts in the field contend that studies demonstrate that social determinants play a crucial role in determining population health. Future revisions of GBD should consider modifying inclusion criteria for risk factors, and even more rigorous studies on social determinants of health should be carried out. Despite the limitation of not assessing the impact of socioeconomic factors on health, studies have shown that addressing the behavioral, environmental, and metabolic risk factors measured in GBD have substantial benefits across socioeconomic groups.

The flexible design of the GBD machinery allows for regular updates as new data are made available and epidemiological studies are published. Similar to the way in which a policymaker uses gross domestic product data to monitor a country's economic activity, GBD can be used at both the global and national levels to understand health trends over time.

Policymakers in Australia, Brazil, China, Colombia, Indonesia, Mexico, Norway, Saudi Arabia, Turkey, and the United Kingdom are in the process of adopting different aspects of the GBD approach. Box 3 contains decision-makers' and policy influencers' reflections about the value of using GBD tools and results to inform policy discussions.

For the first time in the history of GBD research, IHME has developed many free data visualization tools that allow individuals to explore health trends for different countries and regions. The tools, which can be found on the IHME website, allow users to interact with the results in a manner not seen in past versions of the study.

Box 3: Views on the value of GBD for policymaking

"I want us to be up there with the best in Europe when it comes to tackling the leading causes of early death, starting with the five big killer diseases – cancer, stroke, heart, respiratory, and liver diseases. But the striking picture of our health outcomes across these major causes of early death published in *The Lancet* recently shows that we have a long way to go before we are confident that we can achieve this aspiration."
Jeremy Hunt, *Secretary of State for Health, United Kingdom*

"The launching of these tools is important, because they will allow us to understand who we are in matters of public health and to compare ourselves with ourselves, what is important across time, and also to compare ourselves with what happens in the region and in other regions. It's not a simple new tool; it's a revolution. It's like the first landing on the moon."
Agnes Binagwaho, *Minister of Health of Rwanda*

"We think we know where the burdens are in our society, but I bet you when we have another look at it from this frame we'll find things we didn't know. And then we'll tackle them."
Jane Halton, *Secretary, Australian Department of Health and Ageing*

"The Global Burden of Disease Study 2010 (GBD 2010) in *The Lancet* represents an unprecedented effort to improve global and regional estimates of levels and trends in the burden of disease. Accurate assessment of the global, regional, and country health situations and trends is critical for evidence-based decision-making for public health."
Margaret Chan, *Director-General, World Health Organization*

Users report that the visualization tools provide a unique, hands-on opportunity to learn about the health problems that different countries and regions face, allowing them to explore seemingly endless combinations of data. The following list illustrates the range of estimates that can be explored using the GBD data visualization tools:

- Changes between 1990 and 2010 in leading causes of death, premature death, disability, and DALYs as well as changes in the amount of health loss attributable to different risk factors across age groups, sexes, and locations.
- Rankings for 1990 and 2010 of the leading causes of death, premature death, disability, and DALYs attributable to risk factors across different countries and regions, age groups, and sexes.
- Changes in trends for 21 cause groups in 1990 and 2010 in different regions, sexes, and metrics of health loss.
- The percentage of deaths, premature deaths, disability, or DALYs in a country or region caused by myriad diseases and injuries for particular age groups, sexes, and time periods.
- The percentage of health loss by country or region attributable to specific risk factors by age group, sex, and time period.

The visualization tools allow users to view GBD estimates through hundreds of different dimensions. Only a few examples are explored in the figures throughout this document. We encourage you to use the GBD data visualization tools and share them with others.

In addition to promoting understanding about the major findings of GBD, these visualization tools can help government officials build support for health policy changes, allow researchers to visualize data prior to analysis, and empower teachers to illustrate key lessons of global health in their classrooms.

To use the GBD data visualization tools, visit www.ihmeuw.org/GBDcountryviz.

THE EGALITARIAN VALUES INHERENT IN GBD

When exploring the possibility of incorporating GBD measurement tools into their health information systems, policymakers should consider the egalitarian values on which this approach is founded.

The core principle at the heart of the GBD approach is that everyone should live a long life in full health. As a result, GBD researchers seek to measure the gap between this ideal and reality. Calculation of this gap requires estimation of two different components: years of life lost due to premature death (YLLs) and years lived with disability (YLDs).

To measure years lost to premature death, GBD researchers had to answer the question: "How long is a 'long' life?" For every death, researchers determined that the most egalitarian answer to this question was to use the highest life expectancy observed in the age group of the person who died. The Annex contains more information about the estimation of YLLs.

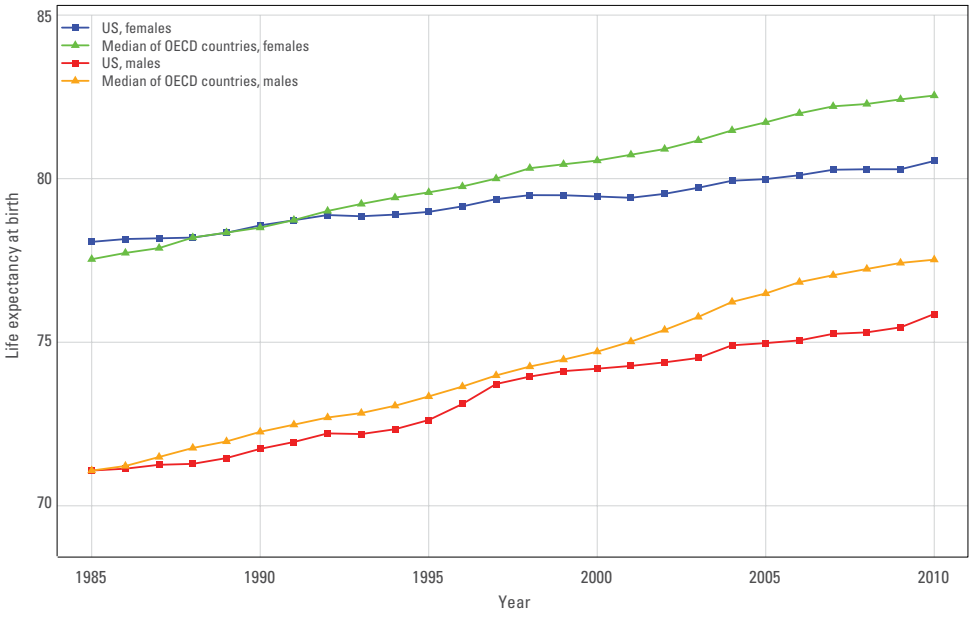
In order to estimate years lived with disability, or YLDs, researchers were confronted with yet another difficult question: "How do you rank the severity of different types of disability?" To determine the answer, researchers created disability weights based on individuals' perceptions of the impact on people's lives from a particular disability, everything from tooth decay to schizophrenia.

GBD RESULTS FOR THE UNITED STATES

One of the simplest measures for understanding overall health outcomes is life expectancy at birth. If a country is generally expanding its longevity, it usually means that people are not dying prematurely at high rates. Worldwide, GBD found that life expectancy is increasing. In 1970, global life expectancy at birth for males was just 56 years, and 61 years for females. By 2010, life expectancy at birth increased to 68 years for males and 73 years for females. In the US, life expectancy at birth grew at a much slower rate, from 67 years for males and 75 years for females in 1970 to 76 and 81 years, respectively, in 2010.

Although Americans are living longer, life expectancy gains in the US have not kept pace with other prosperous countries, as measured by comparisons to other OECD members. Figure 1 compares increases in US life expectancy to the median life expectancy of OECD countries from 1985 to 2010. In the 1980s, US male and female life expectancy nearly matched the OECD median, but in the 1990s, the OECD male and female median life expectancy started to exceed the US male and female life expectancy and has continued to do so every successive year. Since 2000, the gap between US life expectancy and median OECD life expectancy has greatly expanded.

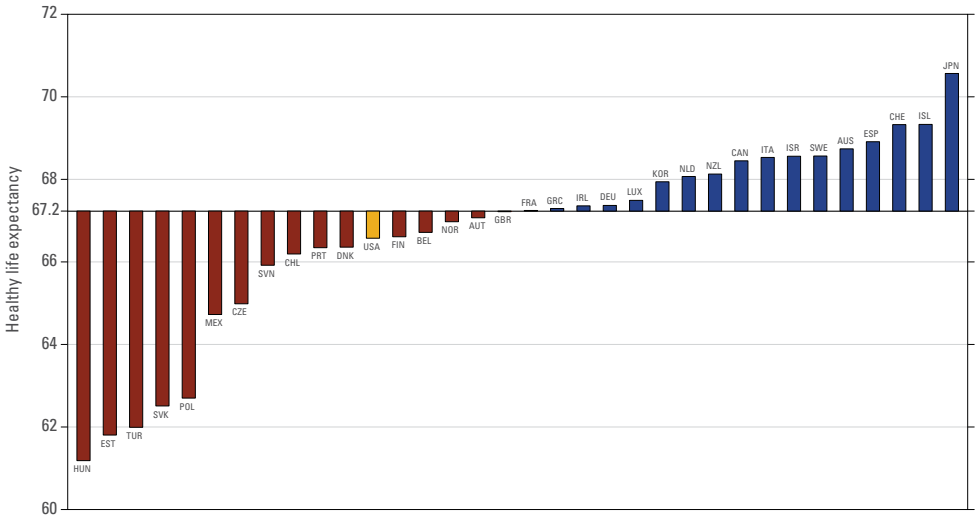
Figure 1: US life expectancy compared to median of OECD countries, males and females, 2010



While life expectancy can be used to measure a country's health, it does not reflect the health loss throughout a person's lifespan. For this reason, GBD calculates healthy life expectancy, or health-adjusted life expectancy (HALE), which reflects the number of years that a person can expect to live in optimal health. The difference between life expectancy and healthy life expectancy is the number of years lived with disability. As people live longer lives, the number of years lived with disability tends to increase. As life expectancy increased in the US, for example, the number of years that the average American male could anticipate living with disability increased from 8.7 in 1990 to 9.6 in 2010, while it increased from 10.4 to 11 years for American females during this time.

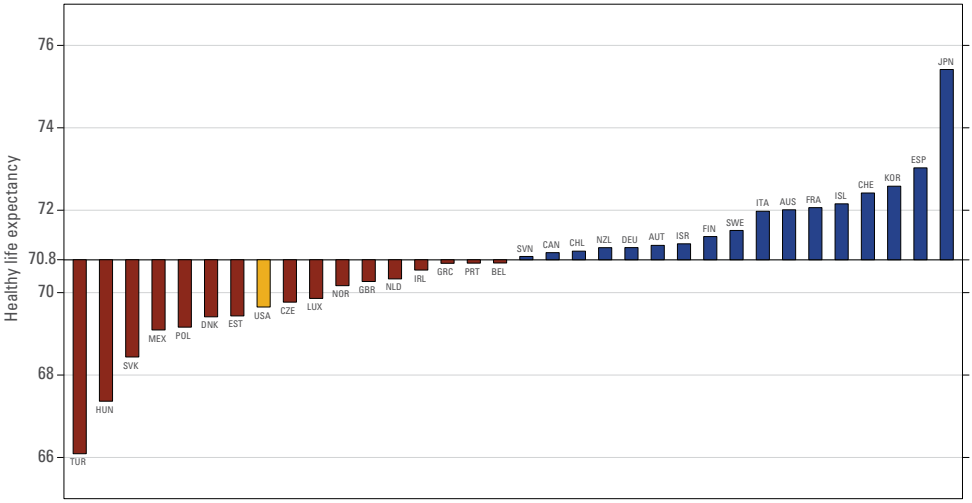
Figures 2a and 2b compare HALE in males and females in OECD countries – including the US – to the median for all OECD countries in 2010. In countries falling below the x-axis, children born in 2010 can expect to live fewer years in full health than the median healthy life expectancy for OECD countries. In countries rising above the x-axis, it is expected that a person born in 2010 will enjoy more years of healthy life than the OECD median. Both American males and females had lower healthy life expectancies than the OECD median, but the healthy life expectancy of American males was closer to the OECD median than American females. Females in countries with much lower income levels, such as Chile, the Czech Republic, and Slovenia, were closer to median OECD healthy life expectancy than females in the US.

Figure 2a: Deviation from median healthy life expectancy in OECD countries, males, 2010



Note: AUS: Australia, AUT: Austria, BEL: Belgium, CAN: Canada, CHE: Switzerland, CHL: Chile, CZE: Czech Republic, DEU: Germany, DNK: Denmark, ESP: Spain, EST: Estonia, FIN: Finland, FRA: France, GBR: United Kingdom, GRC: Greece, HUN: Hungary, IRL: Ireland, ISL: Iceland, ISR: Israel, ITA: Italy, JPN: Japan, KOR: Korea, LUX: Luxembourg, MEX: Mexico, NLD: Netherlands, NOR: Norway, NZL: New Zealand, POL: Poland, SVN: Slovenia, PRT: Portugal, SVK: Slovakia, SWE: Sweden, TUR: Turkey, USA: United States

Figure 2b: Deviation from median healthy life expectancy in OECD countries, females, 2010



Note: AUS: Australia, AUT: Austria, BEL: Belgium, CAN: Canada, CHE: Switzerland, CHL: Chile, CZE: Czech Republic, DEU: Germany, DNK: Denmark, ESP: Spain, EST: Estonia, FIN: Finland, FRA: France, GBR: United Kingdom, GRC: Greece, HUN: Hungary, IRL: Ireland, ISL: Iceland, ISR: Israel, ITA: Italy, JPN: Japan, KOR: Korea, LUX: Luxembourg, MEX: Mexico, NLD: Netherlands, NOR: Norway, NZL: New Zealand, POL: Poland, SVN: Slovenia, PRT: Portugal, SVK: Slovakia, SWE: Sweden, TUR: Turkey, USA: United States

MOST OF THE WORLD'S POPULATION IS LIVING LONGER AND DYING AT LOWER RATES

Around the world, people are living longer on average and populations are growing older. In much of the world, GBD found that the average age of death is increasing; since 1970, it has increased globally by 20 years. In East Asia, which includes China, North Korea, and Taiwan, the average age of death was 36 years in 1970, increasing to 66 years in 2010. The average age of death increased from 31 to 63 in tropical Latin America, which includes Brazil and Paraguay. In the Middle East and North Africa, the average age of death was 30 years higher in 2010 than it was in 1970. Sub-Saharan Africa has not made nearly as much progress as other developing regions, however. In western, southern, and central sub-Saharan Africa, the average age at death rose by less than 10 years, and the average age of death was 12 years higher in 2010 in eastern sub-Saharan Africa than it was in 1970. Over the past decade, though, many countries in sub-Saharan Africa have made substantial progress in improving health outcomes.

Figure 3 shows changes in the average age of death in select high-income countries. In the US, the average age of death increased by nine years between 1970 and 2010, but the increase was even greater in other countries. Of the countries shown in Figure 3, only the Czech Republic, Estonia, Hungary, Poland, and Slovakia had average ages of death that were lower than the US in 2010. The smaller changes in the mean age of death in

the US are likely due to two main factors: the US has higher fertility rates than most countries in the OECD and it also has higher levels of immigration of young people.

Another way to understand changes in demographic trends is to explore reductions in mortality rates by sex and age group. Figure 4 shows how death rates in OECD countries have declined in all age groups between 1970 and 2010, but the decrease in female death rates exceeded male death rates in many age groups, particularly between the ages of 20 and 39, most likely due to the persistence of higher mortality from alcohol and tobacco use among men.

Mortality declined in every sex and age group in the US between 1970 and 2010, as shown in Figure 5. Compared to OECD countries as a whole, US males made similar progress in improving their mortality rates in most age groups. US women, however, made less progress than the OECD average in many age groups from 1970 to 2010. For example, overall, females in the OECD improved their mortality rates by approximately 60% in people aged 20 to 29, but US females only improved their mortality rates by a little more than 40% in these same age groups.

In contrast to OECD trends, US males made more progress in reducing mortality than females in most age groups. Also, while female life expectancy increased at the national level in the US, there were many US counties where female life expectancy did not improve. The lack of progress among females in certain US counties is explored in more detail elsewhere in this report.

Figure 3: Average age of death in select high-income countries, 1970 compared with 2010

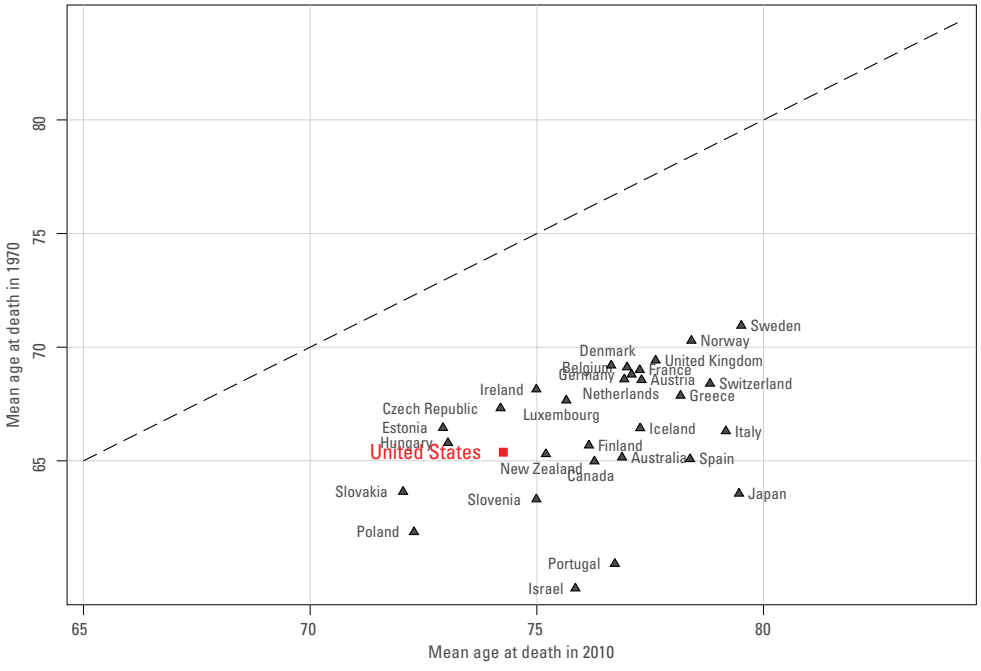


Figure 4: Decline in age-specific mortality rate in OECD countries, 1970-2010

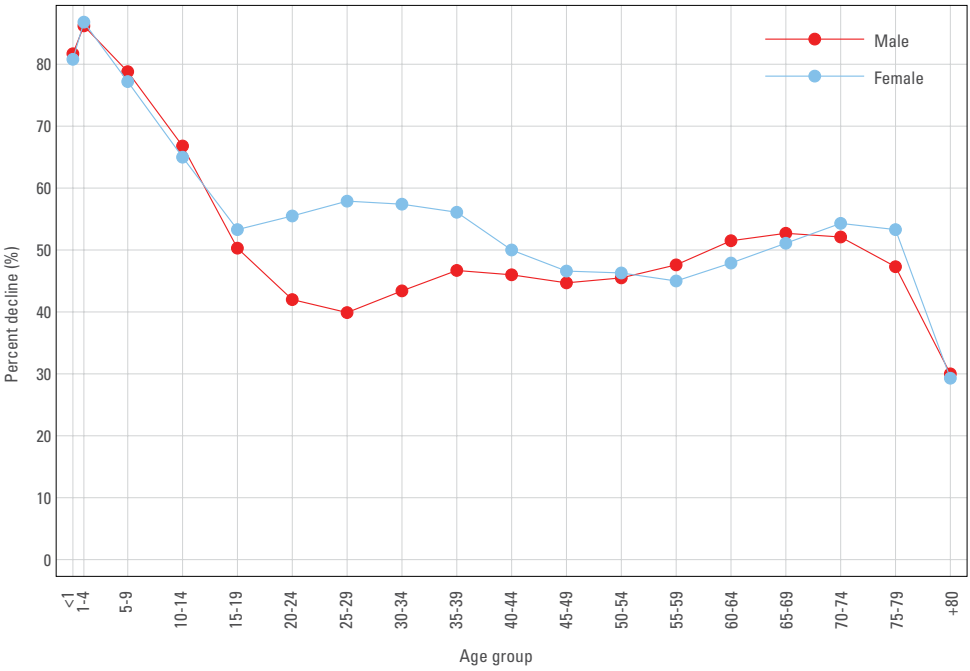
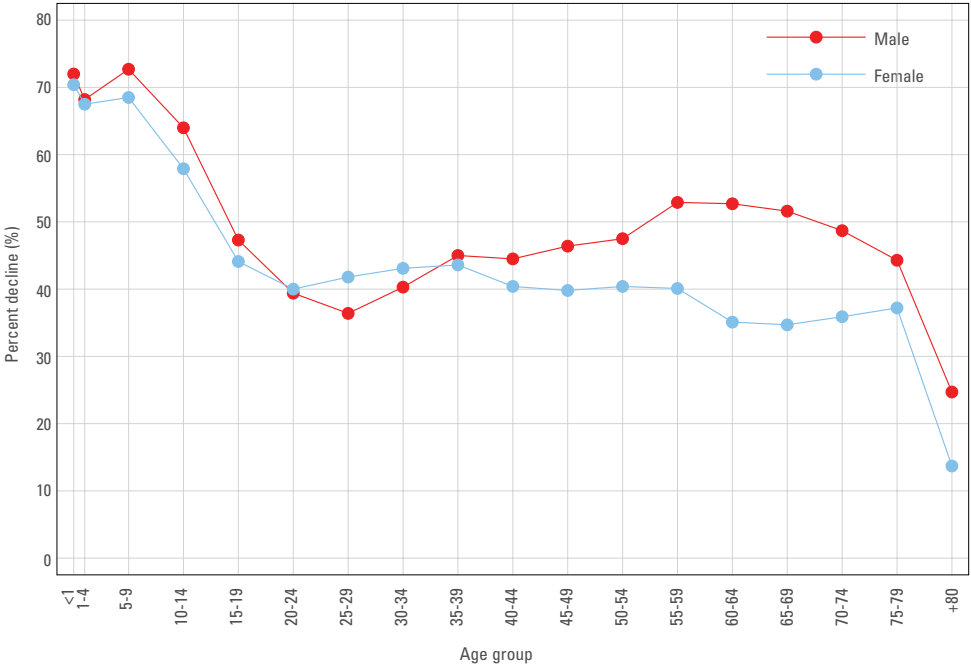


Figure 5: Decline in age-specific mortality rate in the US, 1970-2010

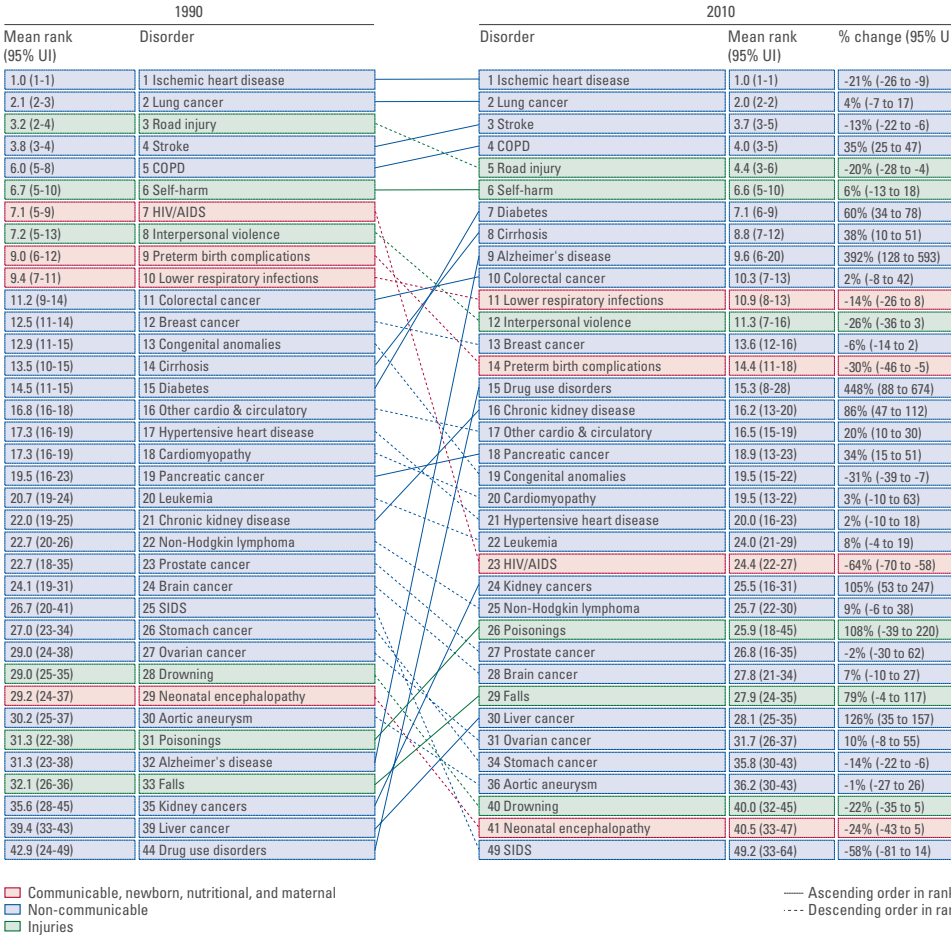


PROGRESS AND CHALLENGES IN CAUSES OF PREMATURE DEATH

In an ideal world, people everywhere would live the maximum life expectancy possible. A fundamental part of the GBD 2010 analysis is tracking deaths that occur before that maximum life expectancy, referred to as years of life lost (YLLs).

Figure 6 shows changes in the leading causes of premature death in the US in both sexes from 1990 to 2010. Communicable, newborn, maternal, and nutritional causes are shown in red, non-communicable diseases in blue, and injuries in green. Dotted

Figure 6: Years of life lost ranks in the US, top 30 causes, and percentage change, 1990-2010



Note: Solid lines indicate a cause that has moved up in rank or stayed the same. Broken lines indicate a cause that has moved down in rank. The causes of YLLs are color coded, with blue for non-communicable diseases, green for injuries, and red for communicable, newborn, nutritional, and maternal causes of YLLs. COPD: Chronic obstructive pulmonary disease. To view an interactive version of this figure, visit IHME's website at http://ihmeuw.org/gbdarrowdiagram. UI: uncertainty interval

lines indicate causes that have fallen in rank during this period, while solid lines signal causes that have risen in rank.

Ischemic heart disease and stroke were the first and third causes of YLLs in the US in 2010, but YLLs from both causes decreased between 1990 and 2010. Two causes linked to smoking, lung cancer and COPD, increased in terms of YLLs primarily due to population growth and aging. Premature death due to road injury and self-harm were the fifth and sixth leading causes in 2010, but both causes ranked much higher in males compared to females (third and fourth for males versus eighth and 16th for women, respectively). Premature death from road injury includes YLLs from bicycle, motorcycle, vehicle, and pedestrian accidents. The next three causes – diabetes, cirrhosis, and Alzheimer's disease – increased substantially as causes of premature death in the US between 1990 and 2010, growing by 60%, 38%, and 392% each. Ranks 10 through 20 featured three types of cancers: colorectal cancer (10th), breast cancer (13th), and pancreatic cancer (18th).

In addition to Alzheimer's disease, the conditions shown in Figure 6 that experienced increases greater than 100% between 1990 and 2010 in the US were drug use disorders, kidney cancers, poisonings, and liver cancer. Another cause that increased by a large amount between 1990 and 2010 was falls, which rose by 79%. Causes such as interpersonal violence, preterm birth complications, congenital anomalies, HIV/AIDS, and sudden infant death syndrome (SIDS) dropped by more than 25% since 1990.

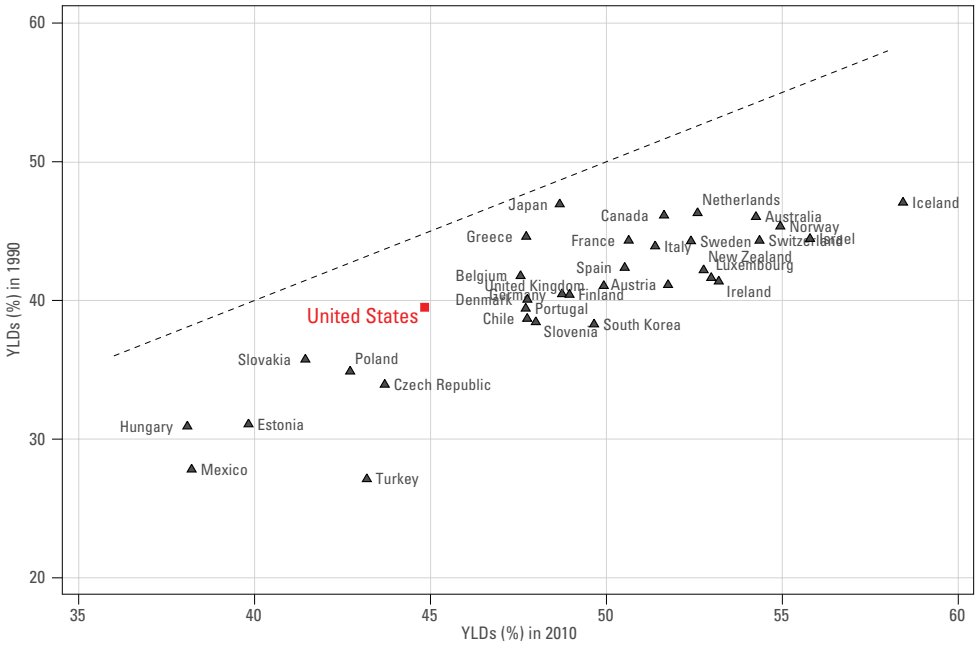
DISABILITY INCREASES AS THE POPULATION GROWS OLDER

Most countries in the world have succeeded in reducing deaths early in life. To a growing extent, longer lives are redefining "old age" in many countries, and people in all age groups are dying at lower rates than in the past. Simply living longer does not mean that people are healthier, though. Little progress has been made in reducing the prevalence of disability, so people are living to an older age but experiencing more ill health. Many people suffer from different forms of disability throughout their lives, such as mental and behavioral health problems starting in their teens, and musculoskeletal disorders beginning in middle age. These findings have far-reaching implications for health systems.

DALYs (healthy years lost) are calculated by adding together YLDs (years lived with disability) and YLLs (years of life lost to premature death). Between 1990 and 2010, YLDs increased as a percentage of total DALYs in most areas of the world. Figure 7 shows YLDs as a percentage of DALYs in 1990 and 2010 in OECD countries. In the US, YLDs increased from 40% of total DALYs in 1990 to 45% in 2010. In 1990, the US ranked 23rd among the 34 OECD countries in terms of YLDs as a percentage of total DALYs. Due to its lagging performance in reducing premature mortality (YLLs), the US dropped to 27th place among OECD countries in 2010 for its percentage of YLDs.

Figure 8 illustrates the different types of disability that affect people of every age group in the US. It is important to keep in mind that these estimates reflect both how many individuals suffer from a particular condition as well as the severity of

Figure 7: YLDs as a percentage of DALYs in OECD countries, 1990 and 2010

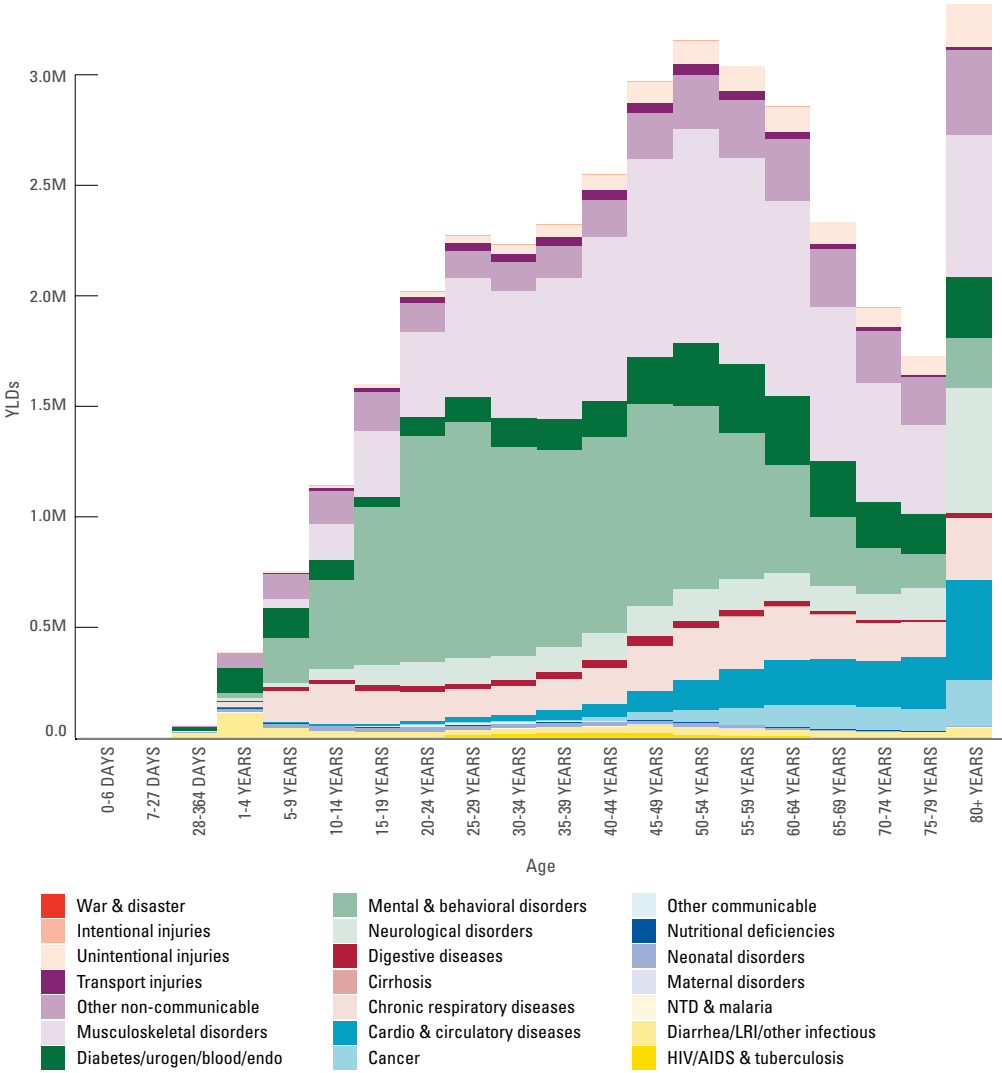


that condition. Similar to the world as a whole, mental and behavioral disorders, such as depression, anxiety, and drug use, led to the loss of many years of healthy life among young people in the US, accounting for as much as 50% of YLDs in 20- to 24-year-olds. As the population of the US has grown, the burden of mental and behavioral disorders has increased. Figure 8 sheds light on other diseases and injuries that cause disability in the US. Starting at age 40 and extending through age 74, musculoskeletal disorders, which include low back pain and neck pain, caused approximately 30% of YLDs. Cardiovascular and circulatory diseases (including ischemic heart disease and stroke) and cancers played a prominent role in causing disability among older people in the US. Other non-communicable diseases caused over 10% of YLDs up to age 20, mainly due the inclusion of skin disorders in this category. It also includes sensory organ diseases such as hearing loss and vision loss, which explains why this category causes roughly 10% of YLDs in people aged 60 and over in the US. Diabetes, urogenital, and other endocrine disorders were also important causes of YLDs in the US.

Population growth and aging are the main reasons that years lived with disability are increasing in the US. When researchers remove the effect of these demographic changes using a metric called age-standardized rates, however, certain patterns emerge. The US has made very little progress in reducing the number of people affected by these different causes of disability, underscoring the need for further

research into the prevention and treatment of conditions that prevent Americans from living lives in full health, such as depression, anxiety, and low back and neck pain. Even more disturbing, after taking population growth and aging into account, GBD 2010 found that YLDs from stroke, drug use disorders, and eating disorders increased by 20% or more from 1990 to 2010 in the US.

Figure 8: Disability patterns by broad cause group and age in the US, 2010

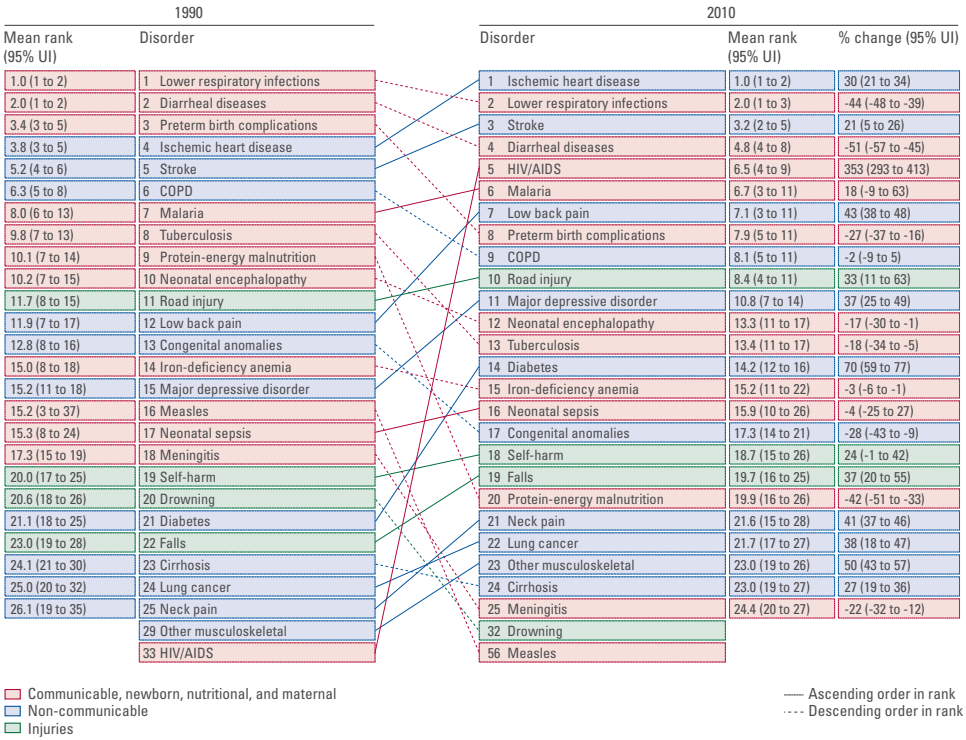


Note: The size of the colored portion in each bar represents the number of YLDs attributable to each cause for a given age group. The height of each bar shows total YLDs for a given age group in 2010. The causes are aggregated. For example, musculoskeletal disorders include low back pain and neck pain. An interactive version of this figure can be found on IHME's website at http://ihmeuw.org/gbdcausepattern.

RANKING CAUSES OF HEALTHY YEARS LOST GLOBALLY AND IN THE US

Adding together years of life lost and years lived with disability produces a metric – the disability-adjusted life year (DALY) – that decision-makers can use to compare health loss from fatal and non-fatal causes, such as breast cancer versus depression. GBD 2010 found that the leading causes of DALYs have evolved dramatically over the past 20 years. Figure 9 shows global changes in the leading causes of DALYs in 1990 and 2010. Causes associated with ill health and death in adults, such as ischemic heart disease, stroke, and low back pain, increased in rank between 1990 and 2010, while causes that primarily affect children, such as lower respiratory infections, diarrhea, preterm birth complications, and protein-energy malnutrition, decreased in rank. Unlike most of the leading communicable causes, HIV/AIDS and malaria increased by 353% and 18%, respectively. Since 2005, however, premature

Figure 9: Global ranks for top 25 causes of DALYs and percentage change, both sexes, all ages, 1990 and 2010

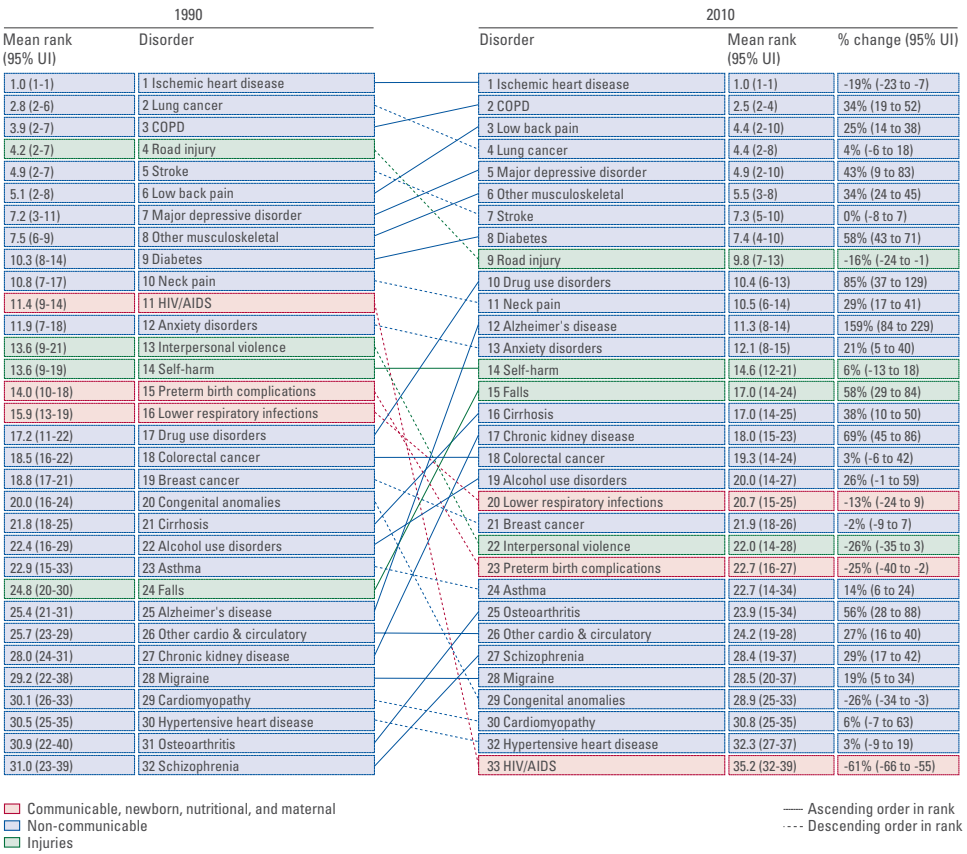


Note: Solid lines indicate a cause that has moved up in rank or stayed the same. Broken lines indicate a cause that has moved down in rank. The causes of DALYs are color coded, with blue for non-communicable diseases, green for injuries, and red for communicable, newborn, nutritional, and maternal causes of DALYs. To view an interactive version of this figure, visit IHME's website at http://ihmeuw.org/gbdarrowdiagram. UI: uncertainty interval

mortality and disability from these two causes have begun to decline. Four main trends have driven changes in the leading causes of DALYs globally: aging populations, increases in non-communicable diseases, shifts toward disabling causes and away from fatal causes, and changes in risk factors.

In the United States, the leading causes of DALYs shed insight into the evolving challenges faced by the US population and its health care system. Cardiovascular diseases, including ischemic heart disease and stroke, continue to rank among the top 10 leading causes of health loss in 2010 as they did in 1990, but ischemic heart disease dropped by 19% during this period. DALYs due to COPD, which includes emphysema, increased by 34% and moved from a ranking of third to second over the two decades. Figure 10 sheds light on the growing importance of musculoskeletal

Figure 10: US ranks for top 30 causes of DALYs and percentage change, both sexes, all ages, 1990 and 2010



Note: Solid lines indicate a cause that has moved up in rank or stayed the same. Broken lines indicate a cause that has moved down in rank. The causes of DALYs are color coded, with blue for non-communicable diseases, green for injuries, and red for communicable, newborn, nutritional, and maternal causes of DALYs. To view an interactive version of this figure, visit IHME's website at http://ihmeuw.org/gbdarrowdiagram. UI: uncertainty interval.

disorders, exemplified by low back pain increasing from the sixth-leading cause of DALYs in 1990 to the third-leading cause in 2010. Burden from mental and behavioral disorders, including depression and drug use disorders, increased by 43% and 85%, respectively, and diabetes rose by 85%. Health loss from injuries such as road injuries and interpersonal violence dropped during the same period (16% and 26%, respectively), but falls increased dramatically (58%) and self-harm rose slightly (6%).

HEALTH LOSS DRIVEN BY POTENTIALLY PREVENTABLE RISK FACTORS

Data on potentially modifiable causes of health loss, or risk factors, can help policymakers and donors prioritize prevention strategies to achieve maximum health gains. GBD tools estimate the number of deaths, premature deaths, years lived with disability, and DALYs attributable to 67 risk factors worldwide. GBD 2010 benefited from the availability of new data, such as epidemiologic evidence about the health impacts of different risk factors; population, nutrition, health, and medical examination surveys; and high-resolution satellite data on air pollution.

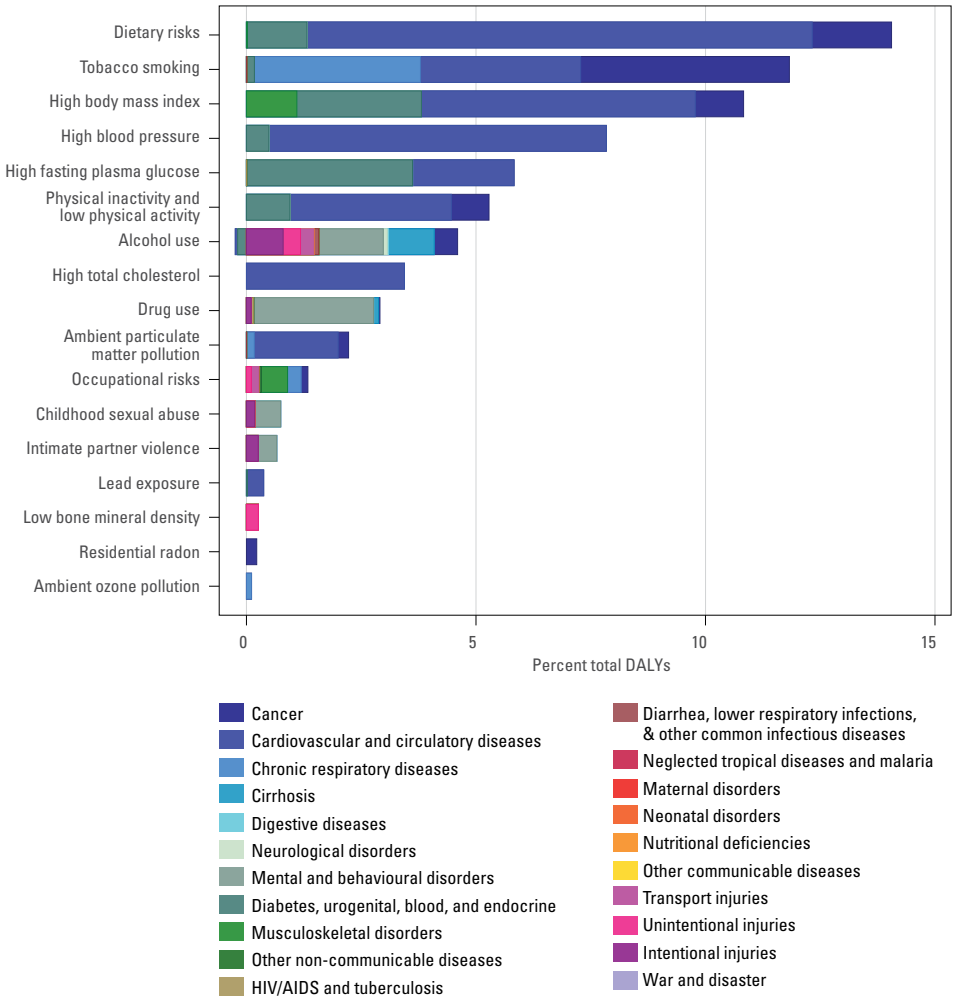
In the US, dietary risks were the leading risk factor in 2010, as shown in Figure 11. Dietary risks include 14 different components ranging from lack of fruit and excessive sodium to high processed meat. Figure 12 provides a detailed breakdown of dietary risks in the US. Diets low in fruits, vegetables, nuts, and seeds and high in sodium, processed meats, and trans fat cause the most health loss in the US. Processed meat includes meat preserved by smoking, curing, salting, or adding chemical preservatives, such as bacon, salami, sausages, or deli or luncheon meats like ham, turkey, and pastrami. Primarily, dietary risks contributed to cardiovascular and circulatory diseases such as ischemic heart disease and stroke. To a lesser extent, dietary risks contributed to cancer, especially diets low in fruits. Two of the top five risk factors, diets high in sodium and diets high in processed meat, also contributed to DALYs from diabetes and urogenital, blood, and endocrine disorders.

Figure 11 shows that, despite the fact that DALYs attributable to smoking decreased by 9% between 1990 and 2010, it still ranked as the second-highest risk factor in the US and caused substantial health loss from cancers including lung cancer, chronic respiratory diseases such as COPD, and cardiovascular and circulatory diseases. Evidence of progress due to increasingly tougher anti-tobacco legislation throughout the country is likely to decrease the ranking of smoking as a risk factor for DALYs as GBD is updated on an annual basis.

High BMI was the third-leading risk factor in the US in 2010. DALYs from this risk factor increased by 45% between 1990 and 2010. In the US, high BMI primarily contributed to DALYs from cardiovascular and circulatory diseases, cancers, and urogenital, blood, and endocrine disorders, a category that includes disorders such as diabetes and chronic kidney disease. High blood pressure, high fasting plasma glucose, and physical inactivity were the next highest ranking risk factors. The US performed better than the OECD average in terms of disease burden attributable to high blood pressure. Alcohol use, which was attributable to DALYs from causes

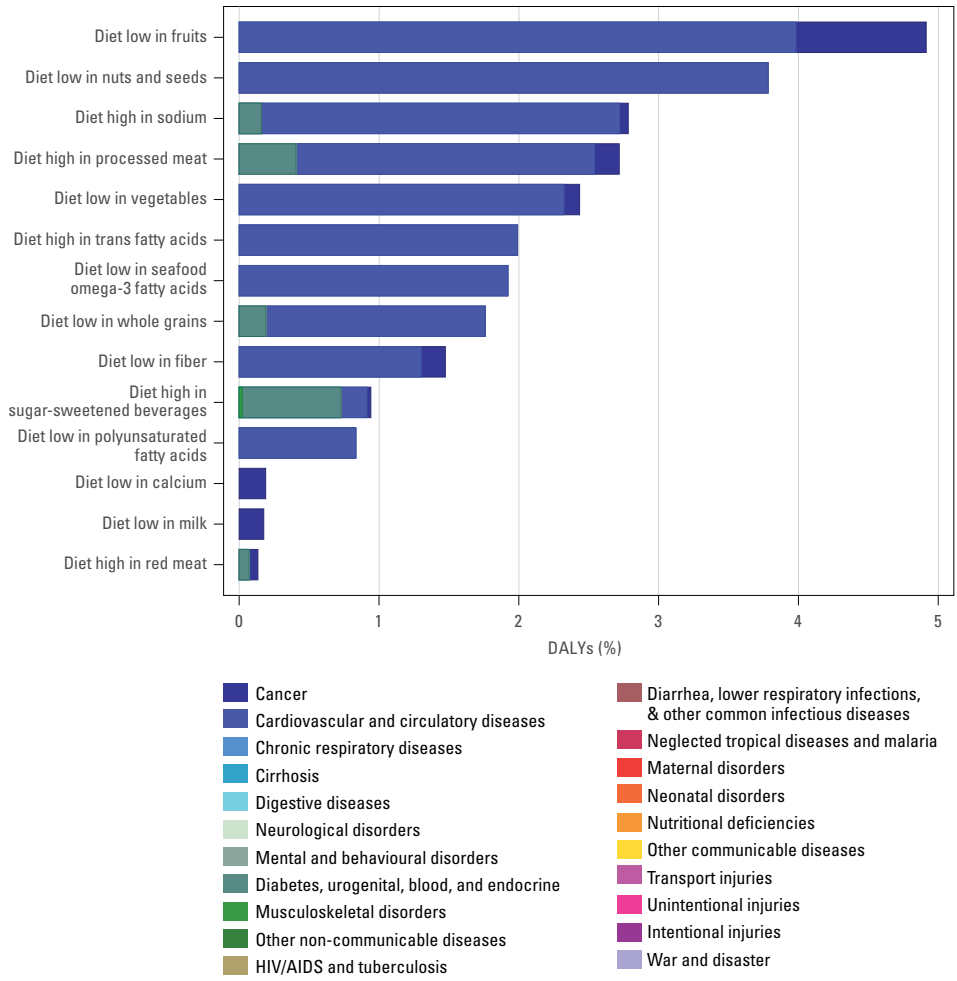
such as mental and behavioral disorders, cirrhosis, self-harm, and interpersonal violence, ranked as the seventh-highest risk factor. While DALYs from high total cholesterol and ambient particulate matter air pollution were among the top 10 risk factors in the US, they declined by 36% and 35%, respectively, between 1990 and 2010 between 1990 and 2010. In contrast, DALYs from drug use, the ninth-leading risk factor for DALYs, rose by 64% during this same period.

Figure 11: Percent of DALYs attributable to the 17 leading risk factors, both sexes, all ages, US, 2010



Note: The size of each colored portion of the bars represents the number of DALYs from a particular cause attributable to a given risk factor. DALYs from each risk factor should not be added together.

Figure 12: Percent of DALYs attributable to the 14 dietary risk factors, both sexes, all ages, US, 2010



Note: The size of each colored portion of the bars represents the number of DALYs from a particular cause attributable to a given risk factor. DALYs from each risk factor should not be added together.

COMPARING US HEALTH PERFORMANCE TO PERFORMANCE OF PEER COUNTRIES

The GBD approach affords countries a unique opportunity to explore their successes in improving health outcomes over time. GBD can also be used to better understand how fast a country's health is improving relative to similar countries. Benchmarking can help countries put their health achievements in context and pinpoint specific diseases, injuries, and risk factors that have the greatest potential for improvement. IHME invites countries interested in collaborating on benchmarking exercises to contact us.

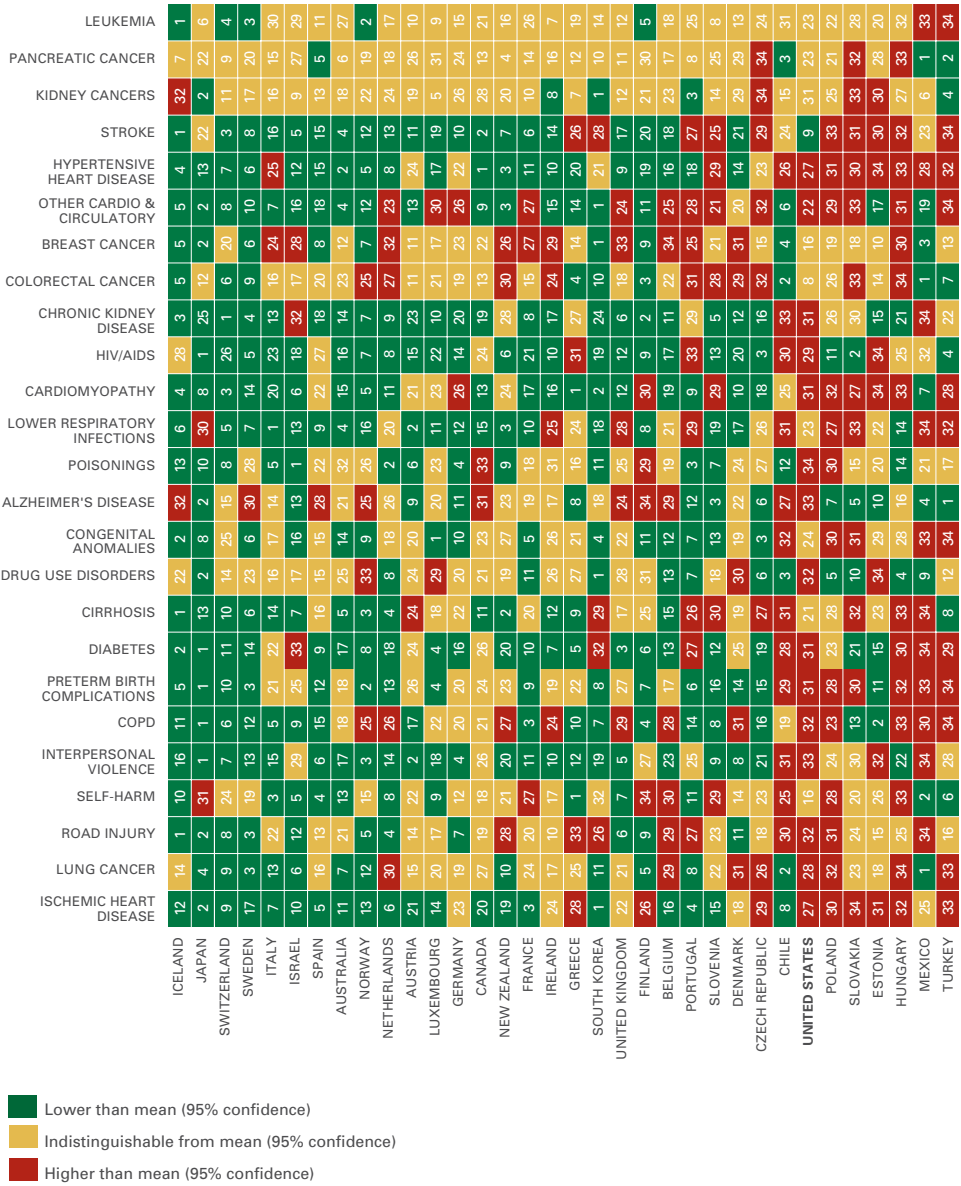
Because differences in population growth and ages across countries can make a country with a younger population appear better in terms of health performance than a country with an older population, researchers remove the impact of population growth and aging to isolate what is important for comparisons of health performance. This metric is known as age-standardized rates. Figure 13 ranks OECD countries by age-standardized rates of premature death, with the top performer – Iceland – at the top.

Figure 13 also shows the 25 leading causes of age-standardized premature death in the US, from ischemic heart disease – the top cause of YLLs in the US – to leukemia, and ranks each OECD country's performance for each cause. The best performers for each cause are in green while the worst performers for each cause appear in red. Yellow shading indicates that the ranking for a particular country does not differ in a statistically significant way from the OECD average.

In terms of age-standardized rates of premature mortality, the US ranks toward the bottom, near countries including Estonia, Hungary, Mexico, Poland, Slovakia, and Turkey. Countries with lower per capita incomes and lower health spending than the US, such as Chile, Portugal, Slovenia, and South Korea, had lower mortality rates than the US.

For 15 causes, the US performed worse than the OECD average as measured by age-standardized YLLs. The US performed significantly better than the OECD average for stroke, however. After removing the effects of demographic changes using age-standardized rates, the three leading causes of premature mortality in the US were ischemic heart disease, lung cancer, and road traffic injuries. Since the US performed significantly worse than the OECD average for these three major causes, the greatest potential reductions in premature mortality could be gained by improving outcomes for these causes. Other leading causes where progress would maximize health gains in the US include interpersonal violence, COPD, preterm birth complications, diabetes, drug use disorders, Alzheimer's disease, and poisonings.

Figure 13: Ranking of leading age-standardized cause rates of years of life lost (YLLs), US relative to OECD countries, both sexes, 2010



Lower than mean (95% confidence)

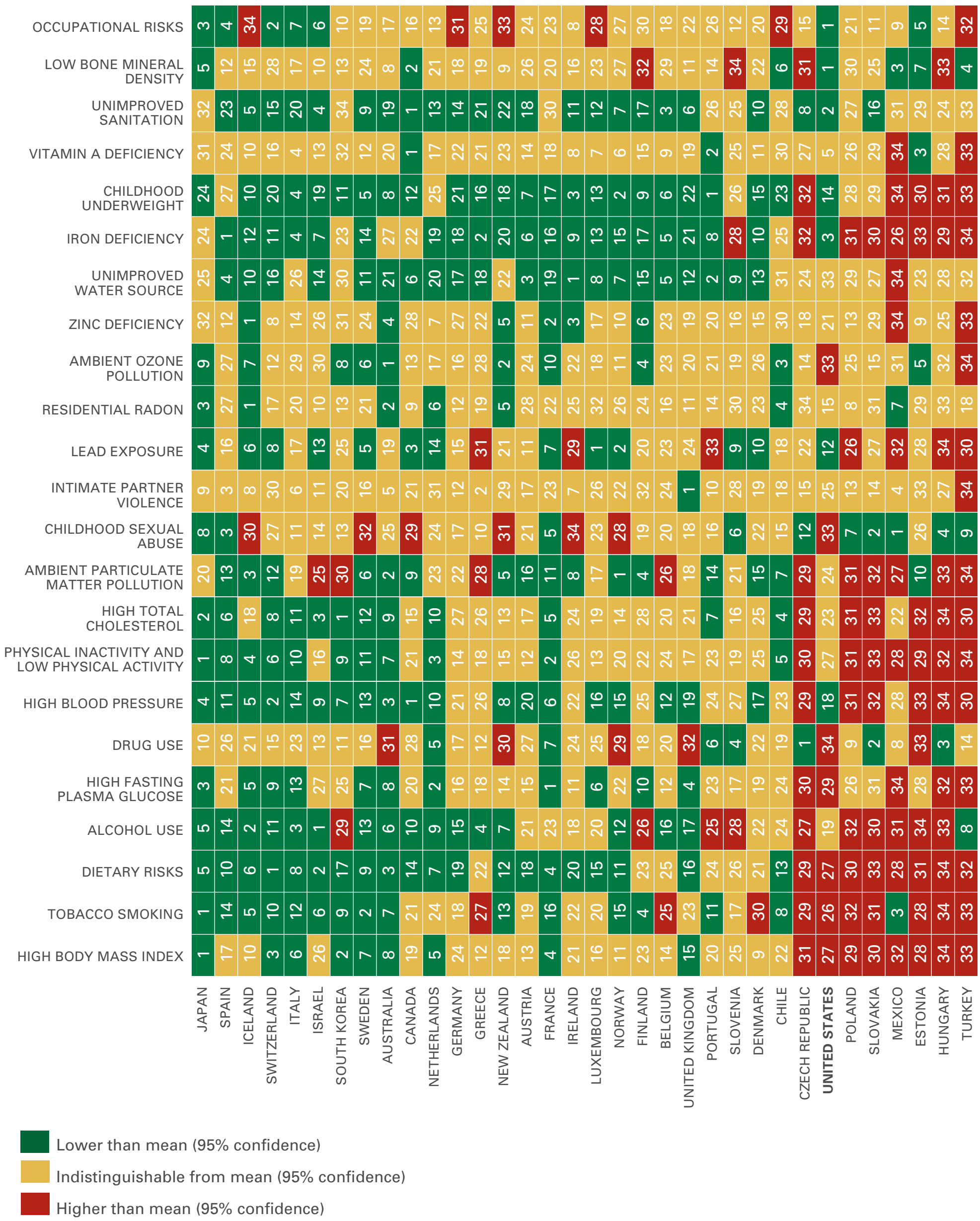
Indistinguishable from mean (95% confidence)

Higher than mean (95% confidence)

Another way to assess US health performance in comparison to OECD countries is to rank its performance in terms of age-standardized YLDs for different causes (figure not shown). Using this metric, the US performs better than the OECD average for three out of 25 causes, including low back pain, falls, and migraine, which may be due to more widespread treatment of these causes of disability in the US compared to other OECD countries. The performance of the US in 17 other causes was not significantly different from the OECD average. Relative to its peers, the US has the greatest potential to reduce years lost due to disability from other musculoskeletal disorders, drug use disorders, COPD, stroke, and sickle cell disease.

Figure 14 shows how the US compares to other OECD countries in terms of age-standardized DALYs attributable to different risk factors. For five of the top six leading risk factors (high BMI, tobacco smoking, dietary risks, high fasting plasma glucose, and drug use) the US performed worse than the OECD average. Thus, prioritizing action to reduce these risk factors could achieve the greatest potential reductions in premature death and disability. As explored elsewhere in this report, these risk factors are major contributors to the leading causes of premature death in the US, such as ischemic heart disease, lung cancer, COPD, and diabetes. Even for high-ranking risk factors where the US performs better or similar to the OECD, such as for alcohol use (fourth-leading risk factor) and high blood pressure (seventh-leading risk factor), reductions in these risk factors could substantially improve health in the US.

Figure 14: Ranking of leading age-standardized risk rates of disability-adjusted life years (DALYs), US relative to OECD countries, both sexes, 2010



HEALTH IN US COUNTIES

The national estimates of US health trends measured by GBD 2010 are useful for informing policymaking and planning at a broad level, but county-level health data are crucial for informing actions across sectors and investments made by states, cities, and counties. As a result, IHME has developed innovative methods to estimate life expectancy and the prevalence of key risk factors in US counties. These results reveal important differences in health outcomes across counties.

MASSIVE DISPARITIES IN LIFE EXPECTANCY ACROSS THE US

In the US, females are making less progress than males when it comes to extending life expectancy. As a result, male life expectancy is starting to catch up to female life expectancy. The gap between male life expectancy and female life expectancy in the US was 7.0 years in 1985, but that gap shrank to just 4.6 years in 2010. Females in the US are also making less progress in extending their life expectancy compared to females in other countries. In 1985, American females ranked 19th among all countries in the world for their life expectancy, but their rank dropped to 39th in 2010. American males' life expectancy ranking also slipped between 1990 and 2010 compared to other countries, but not as dramatically, from 29th to 40th.

Across US counties, disparities in life expectancy are increasing for both males and females. Figures 15a and 15b show the difference between the highest and lowest life expectancies for males and females in US counties (dashed lines) compared to the national average (solid line). In 1985, the county with the longest life expectancy for females was around nine years higher than the county with the shortest life expectancy, while the difference for males was nearly 12 years. By 2010, the difference between the counties with the highest life expectancy and the lowest life expectancy was much greater for both sexes: 12 and 18 years, respectively. These gaps between the life expectancy for the highest-performing and lowest-performing counties have continued to widen over time with the exception of male life expectancy between 1993 and 2002. The disparities between counties with the highest and lowest life expectancies were consistently greater for males compared to women. Figure 15b shows that, among US counties, the lowest life expectancy for females remained around 73 years between 1985 and 2010.

Figure 15a: Maximum and minimum life expectancy across US counties compared to national average, males, 1985-2010

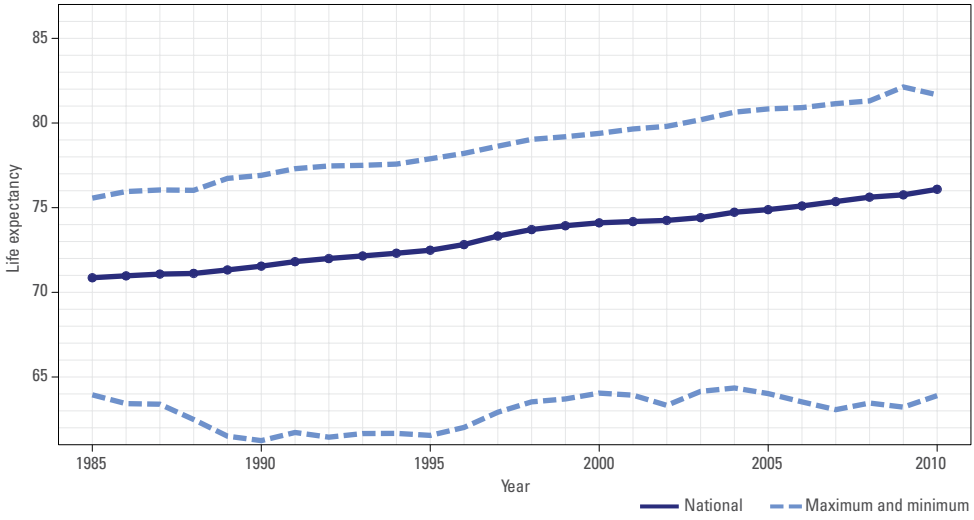
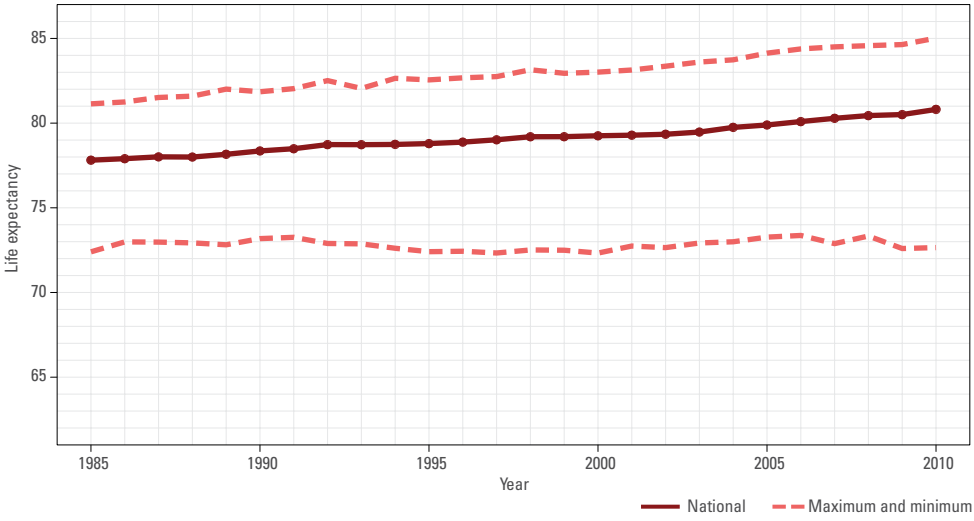


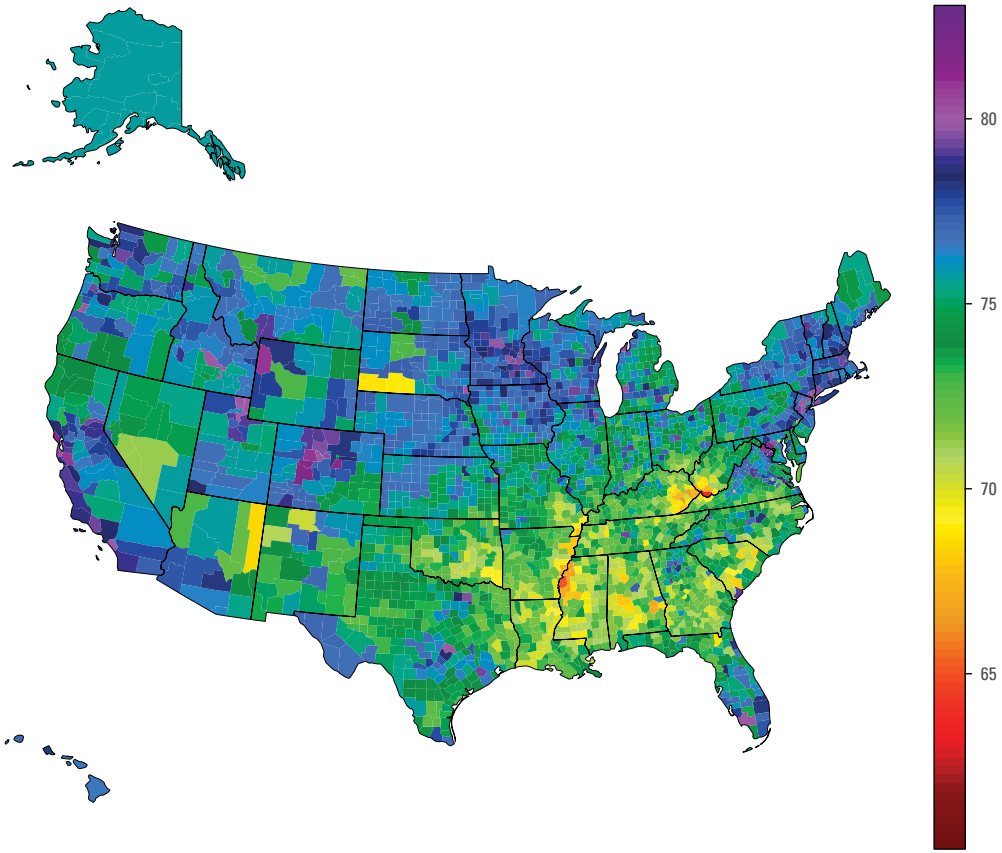
Figure 15b: Maximum and minimum life expectancy across US counties compared to national average, females, 1985-2010



Figures 16 and 17 map disparities in male and female life expectancy in the US in 2010. The regions with the lowest life expectancy in the country were the South, the Mississippi Basin, Kentucky, West Virginia, and counties in the West and Midwest with large numbers of Native Americans living on reservations. In 2010, females with the highest life expectancy (85.0 years) lived in Marin County, California, while females with the lowest life expectancy (72.7 years) lived in Perry County, Kentucky. Males living in Fairfax County, Virginia, had the highest life expectancy (81.7 years) in 2010, but males in nearby McDowell County, West Virginia, had the lowest life expectancy in the country (63.9 years), as shown in Table 1a.

To put these life expectancies in an international context, the top-performing US counties for females (Marin County, California, and Montgomery County, Maryland) have life expectancies that rivaled countries with the highest life expectancies in the

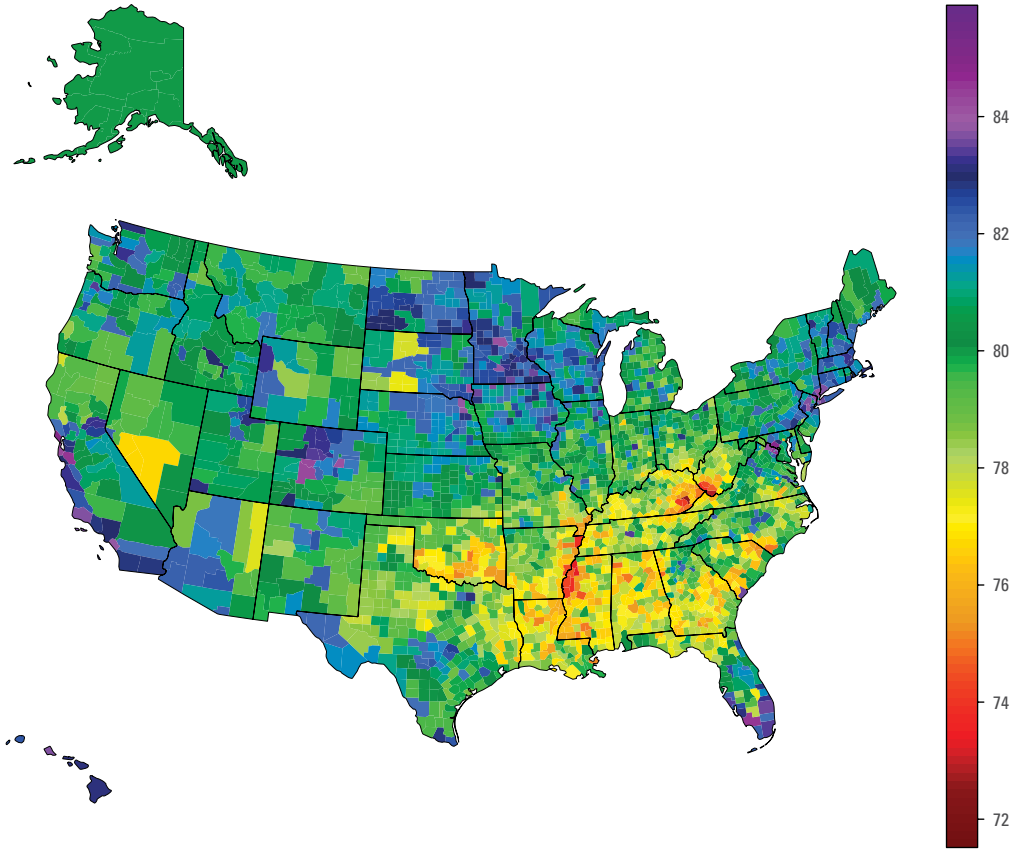
Figure 16: US life expectancy by county, males, 2010



world such as France, Spain, and Switzerland. For US counties where males live the longest (Fairfax County, Virginia, and Gunnison County, Colorado), life expectancy actually surpasses those in countries where males have the highest life expectancies, such as Japan and Switzerland. Some of the lowest-performing counties had life expectancies lower than those seen in countries that receive foreign aid, such as Algeria and Bangladesh.

In addition to the vast differences seen in life expectancy across US counties, improvements in life expectancy over time have been uneven across the country. Between 1985 and 2010, the same parts of the country tended to experience progress in life expectancy, including certain areas of California, Colorado, Iowa, most of Nevada, rural Minnesota, parts of North and South Dakota, some Northeastern states, and parts of Florida. Table 1b lists the 10 highest- and 10 lowest-performing

Figure 17: US life expectancy by county, females, 2010



counties in terms of changes in life expectancy between 1985 and 2010. The largest increases during this period occurred in three New York City counties, in Marin and San Francisco counties in California, and in counties in Colorado, New Jersey, South Carolina, and Virginia. Female life expectancy actually decreased in some counties in Georgia, Kentucky, and Oklahoma, and counties with the smallest gains in male life expectancy were located in Alabama, Kentucky, Mississippi, Oklahoma, Virginia, and West Virginia.

Figure 18 shows how much progress different US counties have made in increasing female and male life expectancy between 1985 and 2010. The red shading indicates the counties where life expectancy declined significantly over this period. In total,

Table 1a: Top 10 and bottom 10 counties in terms of life expectancy by sex, 2010

Top counties					Bottom counties				
Rank (top)	Name	Life expectancy	Lower	Upper	Rank (bottom)	Name	Life expectancy	Lower	Upper
Females									
1	Marin, California	85.02	84.46	85.56	1	Perry, Kentucky	72.65	71.31	73.79
2	Montgomery, Maryland	84.87	84.53	85.19	2	McDowell, West Virginia	72.9	71.37	74.29
3	Collier, Florida	84.62	84.09	85.1	3	Tunica, Mississippi	73.36	71.69	74.63
4	Santa Clara, California	84.54	84.29	84.8	4	Quitman, Mississippi	73.36	71.69	74.63
5	Fairfax County, Virginia	84.52	84.19	84.84	5	Petersburg, Virginia	73.69	72.11	75.19
6	San Francisco, California	84.38	84.02	84.73	6	Sunflower, Mississippi	73.85	72.26	75.16
7	Gunnison, Colorado	84.33	83.04	85.47	7	Mississippi, Arkansas	73.85	72.7	74.95
8	Pitkin, Colorado	84.33	83.04	85.47	8	Mingo, West Virginia	73.92	72.79	74.95
9	San Mateo, California	84.3	83.94	84.7	9	Washington, Mississippi	74.09	72.93	75.19
10	Bergen, New Jersey	84.26	83.95	84.56	10	Leslie, Kentucky	74.12	72.96	75.16
Males									
1	Fairfax County, Virginia	81.67	81.32	82.02	1	McDowell, West Virginia	63.9	62.04	65.61
2	Gunnison, Colorado	81.65	80.39	82.84	2	Bolivar, Mississippi	65.03	63.52	66.46
3	Pitkin, Colorado	81.65	80.39	82.84	3	Perry, Kentucky	66.52	65.15	67.73
4	Montgomery, Maryland	81.57	81.23	81.91	4	Floyd, Kentucky	66.59	65.22	67.86
5	Marin, California	81.44	80.91	82.01	5	Tunica, Mississippi	66.7	65.18	68.04
6	Douglas, Colorado	81.41	80.77	82.01	6	Quitman, Mississippi	66.7	65.18	68.04
7	Eagle, Colorado	81.01	79.83	82.18	7	Sunflower, Mississippi	66.92	65.57	68.33
8	Loudoun, Virginia	81	80.37	81.65	8	Coahoma, Mississippi	66.92	65.32	68.49
9	Santa Clara, California	80.98	80.69	81.25	9	Washington, Mississippi	67.1	65.75	68.5
10	Teton, Wyoming	80.93	79.85	81.84	10	Macon, Alabama	67.19	65.71	68.55

life expectancy declined in just one county for males (Floyd County, Kentucky), but declined in 72 counties for females. Also, stagnation in life expectancy has been much more pronounced for females than males between 1985 and 2010, as shown by the yellow shading in the maps. Overall, life expectancy for males improved in 95% of US counties during this time period, but only improved in 55% of counties for females.

Despite the fact that females in many US counties lagged far behind males in terms of progress in life expectancy, there is evidence that the outlook for women may be brightening, as indicated in Figure 19. Figure 19 shows changes in female and male life expectancy during three periods: 1985 to 1993, 1993 to 2002, and 2002 to 2010.

Table 1b: Top 10 and bottom 10 counties in terms of change in life expectancy by sex, 1985-2010

Top counties					Bottom counties				
Rank (top)	Name	Change in life expectancy	Lower	Upper	Rank (bottom)	Name	Change in life expectancy	Lower	Upper
Females									
1	New York, New York	8.37	7.91	8.79	1	Fayette, Alabama	-3.47	-5.41	-1.71
2	Loudoun, Virginia	7.77	6.59	8.99	2	Harmon, Oklahoma	-3.39	-5.07	-1.6
3	Kings, New York	6.7	6.37	7.03	3	Beckham, Oklahoma	-3.39	-5.07	-1.6
4	Bronx, New York	6.39	5.91	6.85	4	Leslie, Kentucky	-3.17	-4.75	-1.59
5	Gunnison, Colorado	6.28	4.58	7.91	5	Clay, Kentucky	-3.17	-4.75	-1.59
6	Pitkin, Colorado	6.28	4.58	7.91	6	Seminole, Oklahoma	-2.73	-4.35	-1.13
7	Marin, California	6.27	5.47	7.07	7	Haralson, Georgia	-2.58	-4.46	-0.89
8	Prince William, Virginia	6.09	5.02	7.13	8	Murray, Oklahoma	-2.58	-4.06	-1.17
9	San Francisco, California	6.05	5.52	6.61	9	Garvin, Oklahoma	-2.58	-4.06	-1.17
10	Beaufort, South Carolina	6.02	4.78	7.28	10	Perry, Kentucky	-2.57	-4.34	-0.92
Males									
1	New York, New York	12.97	12.55	13.41	1	Floyd, Kentucky	-1.49	-3.23	0.3
2	San Francisco, California	10.6	10.05	11.18	2	Mcdowell, West Virginia	-1.45	-3.62	0.75
3	Kings, New York	9.76	9.39	10.12	3	Bolivar, Mississippi	-0.98	-2.91	1.1
4	Loudoun, Virginia	9.59	8.51	10.75	4	Perry, Alabama	-0.87	-2.76	1.27
5	Bronx, New York	9.57	9.08	10.1	5	Hale, Alabama	-0.87	-2.76	1.27
6	Washington, DC	9.37	8.67	10.09	6	Creek, Oklahoma	-0.69	-2.1	0.74
7	Forsyth, Georgia	9.16	7.71	10.74	7	Wyoming, West Virginia	-0.65	-2.44	1.27
8	Goochland, Virginia	9.15	7.51	10.89	8	Cherokee, Kansas	-0.56	-2.3	1.19
9	Alexandria, Virginia	8.84	7.48	10.13	9	Grundy, Tennessee	-0.55	-2.88	1.5
10	Hudson, New Jersey	8.63	8.06	9.23	10	Danville, Virginia	-0.36	-1.99	1.34

Blue shading indicates counties with no significant decreases in male and female life expectancy, yellow shading indicates counties with significant decreases in male life expectancy but no decreases in female life expectancy, orange represents counties with significant decreases in female life expectancy but not in male life expectancy, and red represents counties with significant decreases in both male and female life expectancy.

Figure 18: Map of significant changes in life expectancy by county, 1985-2010

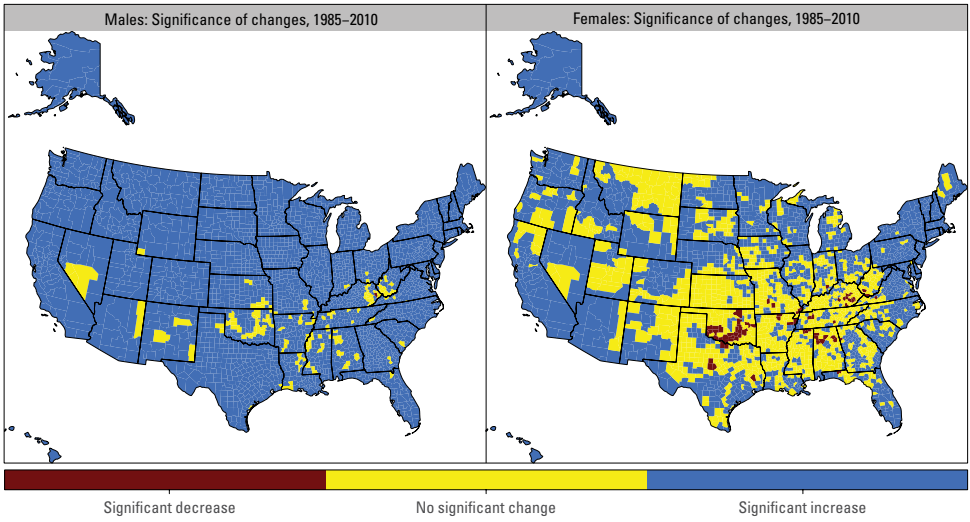
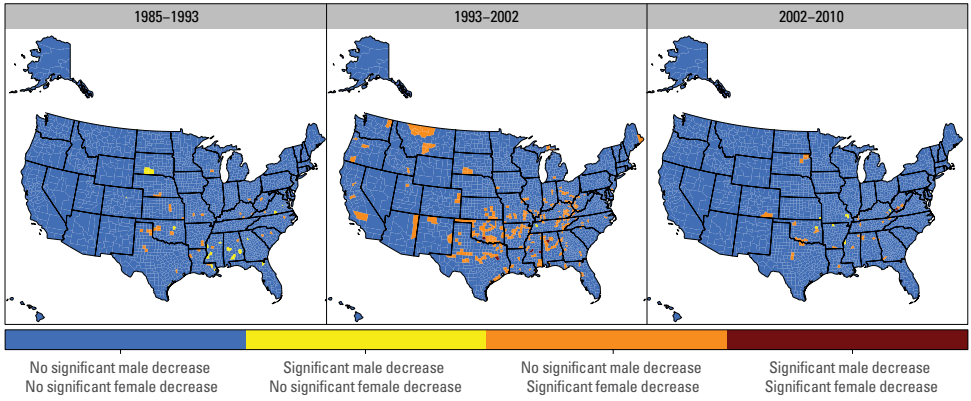


Figure 19: Map of significant decreases in life expectancy, males and females, 1985-1993, 1993-2002, and 2002-2010



The period 1993 to 2002 was plagued by significant decreases in female life expectancy in many counties, but the number of counties with declining female life expectancy were markedly lower in the most recent period (2002 to 2010). Tables 2a, 2b, and 2c show the breakdown of the number of counties experiencing significant increases and decreases in life expectancy over these three periods as well as the number of counties that did not experience significant changes in life expectancy.

Table 2a: Number of counties with significant changes in males versus females, 1985-1993

	Males			
Females	**Significant increase**	**No significant change**	**Significant decrease**	**Total**
Significant increase	632	147	7	786
No significant change	880	1,411	24	2,315
Significant decrease	3	38	1	42
Total	1,515	1,596	32	3,143

Table 2b: Number of counties with significant changes in males versus females, 1993-2002

	Males			
Females	**Significant increase**	**No significant change**	**Significant decrease**	**Total**
Significant increase	573	33	0	606
No significant change	1,612	624	1	2,237
Significant decrease	143	152	5	300
Total	2,328	809	6	3,143

Table 2c: Number of counties with significant changes in males versus females, 2002-2010

	Males			
Females	**Significant increase**	**No significant change**	**Significant decrease**	**Total**
Significant increase	1,095	332	0	1,427
No significant change	788	884	7	1,679
Significant decrease	12	23	2	37
Total	1,895	1,239	9	3,143

The causes driving the disparities in levels of and improvements in life expectancy across the US are not fully understood. The following factors could potentially explain why life expectancy has stagnated or declined in certain counties: 1) migration of healthy individuals away from counties with lower life expectancy into counties with higher life expectancies, 2) socioeconomic factors such as poverty and education, 3) lack of access to health care, 4) poor quality of health care for those with access, and 5) potentially avoidable risk factors. For example, the fact that females started smoking later than males in the US may explain the large number of counties experiencing declines in female life expectancy from 1993 to 2002.

Rising obesity during this period may further explain the declines in female life expectancy, as GBD 2010 quantified the adverse effects of high BMI in terms of premature mortality and disability. Despite the need to identify the causes behind poor and outstanding performance of US counties in terms of life expectancy, county-level data on risk factors for premature mortality, such as dietary risk factors and smoking, are not readily available. Improved data collection and detailed assessment of the impact of different factors on county-level life expectancy are urgently needed to help policymakers improve health.

MORE AMERICANS GET RECOMMENDED LEVELS OF EXERCISE, BUT OBESITY CONTINUES TO RISE

To better understand the factors driving health outcomes such as life expectancy in the US, IHME sought to measure at the county level three important and interrelated risk factors identified in the US burden of disease analysis: dietary risks, high BMI, and physical inactivity and low physical activity. Prevalence of high BMI is particularly important to assess at the county level given GBD 2010's finding that it increased in the US by 45% in terms of DALYs between 1990 and 2010. IHME was unable to measure the primary risk factor for disease burden in the US, dietary risks, due to lack of data on the 14 different components that make up this risk factor.

Although physical inactivity and low physical activity is an important risk factor in the US as a whole, the county-level analysis revealed huge variation in physical activity levels across the country. Table 3 lists the top 10 and bottom 10 counties as measured by rates of physical activity. Douglas County, Colorado, had the highest rate of physical activity in the US (89.9%) for males in 2011, while Marin County, California, had highest rate for females (89.5%). As mentioned elsewhere, Marin County was also the county that ranked the highest in the US for female life expectancy in 2010. The lowest rates of any physical activity were Wolfe County, Kentucky (54.7%), for men, and McDowell County, West Virginia (50.9%), for women. In general, the counties along the Texas and Mexico border, the Mississippi Valley, the South, and West Virginia had the lowest levels of any physical activity for both males and women. Physical activity rates also varied widely within states. For example, for males in Virginia, rates ranged from 85.1% in Arlington County to 57.7% in Dickenson County. While the rates of physical activity in some counties changed between 2001 and 2009, overall, there was no major improvement in the rate of people engaging in physical activity in the country as a whole.

Table 3: Top 10 and bottom 10 counties in terms of physical activity, sufficient physical activity, and obesity, 2011

Top 10, Males		Bottom 10, Males		Top 10, Females		Bottom 10, Females	
Percent reporting any physical activity							
Douglas, CO	89.9 (88.0, 91.7)	Wolfe, KY	54.7 (45.8, 62.9)	Marin, CA	89.5 (87.2, 91.3)	McDowell, WV	50.9 (45.6, 56.5)
Teton, WY	87.9 (84.6, 90.5)	McDowell, WV	54.9 (47.6, 61.8)	San Juan, WA	88.0 (85.8, 89.9)	Issaquena, MS	51.3 (44.0, 58.3)
Los Alamos, NM	87.7 (84.1, 90.6)	Owsley, KY	55.2 (46.1, 63.4)	Pitkin, CO	87.8 (84.9, 90.4)	Dunklin, MO	52.4 (46.0, 58.3)
Routt, CO	87.1 (83.7, 89.7)	Issaquena, MS	57.0 (48.1, 65.1)	Routt, CO	87.5 (84.5, 89.8)	Wolfe, KY	53.8 (46.3, 60.6)
Marin, CA	86.9 (83.7, 89.7)	Clinton, KY	57.6 (48.8, 65.8)	Teton, WY	86.9 (84.4, 89.1)	Owsley, KY	54.0 (46.6, 61.2)
Kauai, HI	86.8 (84.0, 89.1)	Dickenson, VA	57.7 (49.7, 65.6)	Douglas, CO	86.3 (84.5, 88.1)	East Carroll, LA	54.0 (47.2, 61.0)
Summit, UT	86.7 (84.1, 89.0)	Mingo, WV	57.9 (51.7, 64.3)	Santa Cruz, CA	85.7 (82.9, 88.2)	Pemiscot, MO	54.0 (47.7, 60.5)
San Juan, WA	86.6 (83.6, 89.2)	Holmes, OH	58.2 (49.7, 67.0)	Island, WA	85.7 (83.3, 87.7)	Lee, AR	54.1 (47.5, 60.8)
Orange, NC	86.5 (83.7, 88.8)	Leslie, KY	58.6 (49.7, 66.8)	Summit, UT	85.5 (83.1, 87.5)	Mississippi, MO	54.2 (46.8, 61.0)
Island, WA	86.4 (83.7, 89.0)	Starr, TX	58.8 (50.1, 66.6)	Summit, CO	85.5 (81.6, 88.3)	La Salle, TX	54.3 (47.0, 61.1)
Percent reporting sufficient physical activity							
Teton, WY	77.5 (72.0, 82.4)	Owsley, KY	33.1 (24.8, 42.6)	Routt, CO	74.7 (70.2, 78.7)	Issaquena, MS	28.4 (22.5, 35.0)
Summit, UT	73.2 (68.0, 77.3)	Holmes, OH	33.7 (25.4, 42.6)	Marin, CA	74.2 (69.8, 78.3)	Noxubee, MS	29.0 (22.6, 35.9)
Routt, CO	72.9 (66.9, 78.4)	Wolfe, KY	34.2 (25.6, 44.3)	Teton, WY	72.7 (67.9, 76.7)	Quitman, MS	29.1 (22.7, 35.5)
Summit, CO	72.7 (65.2, 79.0)	Issaquena, MS	34.6 (26.1, 44.2)	Pitkin, CO	72.4 (66.8, 77.7)	Tallahatchie, MS	30.7 (24.8, 37.7)
Jefferson, WA	72.2 (66.0, 77.8)	McDowell, WV	34.7 (27.0, 43.2)	San Juan, WA	71.6 (67.5, 75.5)	Haywood, TN	30.7 (24.3, 37.5)
Nevada, CA	71.9 (64.9, 78.0)	Casey, KY	34.8 (27.7, 43.2)	Summit, UT	69.6 (65.6, 73.5)	Tunica, MS	30.7 (24.2, 37.6)
La Plata, CO	71.9 (66.2, 76.9)	Clay, KY	35.8 (27.9, 45.3)	Eagle, CO	69.6 (64.6, 75.0)	McDowell, WV	30.8 (25.4, 37.1)
Wasatch, UT	71.7 (67.0, 76.1)	Mingo, WV	36.0 (29.3, 43.9)	Barnstable, MA	69.2 (65.4, 72.7)	Humphreys, MS	30.9 (24.7, 38.4)
Kauai, HI	71.6 (66.9, 75.8)	Clinton, KY	36.1 (27.2, 45.8)	Benton, OR	69.1 (63.8, 74.3)	East Carroll, LA	31.2 (25.2, 38.7)
Los Alamos, NM	71.4 (64.2, 77.3)	Taliaferro, GA	36.4 (27.7, 46.3)	Rio Blanco, CO	68.8 (61.3, 75.1)	Taliaferro, GA	31.3 (25.0, 38.2)
Percent obese (BMI ≥ 30)							
San Francisco, CA	18.3 (16.4, 22.2)	Owsley, KY	46.9 (41.0, 53.4)	Falls Church City, VA	17.6 (13.8, 21.3)	Issaquena, MS	59.3 (52.5, 64.9)
New York, NY	19.1 (16.8, 22.2)	Issaquena, MS	46.7 (40.4, 53.4)	Pitkin, CO	18.5 (15.1, 21.9)	Humphreys, MS	59.1 (52.7, 64.4)
Falls Church City, VA	19.5 (15.6, 23.7)	East Carroll, LA	46.6 (40.5, 52.8)	Douglas, CO	18.6 (16.5, 20.9)	East Carroll, LA	58.9 (52.1, 64.2)
Santa Fe, NM	21.0 (18.9, 24.1)	Holmes, OH	46.4 (40.2, 52.8)	Routt, CO	19.0 (15.9, 22.0)	Quitman, MS	58.1 (51.8, 63.8)
Pitkin, CO	21.3 (17.9, 26.0)	Starr, TX	46.2 (39.6, 52.5)	Teton, WY	19.6 (16.7, 22.5)	Greene, AL	58.0 (51.0, 63.7)
Teton, WY	21.6 (18.6, 25.1)	Lewis, KY	46.1 (41.7, 51.7)	Summit, UT	20.0 (17.4, 22.7)	Allendale, SC	58.0 (51.6, 63.9)
Eagle, CO	22.0 (18.9, 26.5)	McDowell, WV	46.0 (40.4, 51.5)	San Francisco, CA	20.9 (17.8, 23.7)	Wilcox, AL	57.8 (51.0, 63.5)
Fairfax City, VA	22.0 (17.7, 26.4)	Lincoln, WV	45.9 (40.3, 51.8)	Eagle, CO	20.9 (17.3, 24.0)	Shannon, SD	57.7 (50.2, 64.0)
Washington, DC	22.4 (20.6, 24.8)	Allen, LA	45.6 (39.8, 50.9)	Marin, CA	21.1 (17.5, 23.7)	Jefferson, MS	57.7 (51.0, 63.7)
Summit, UT	22.4 (20.0, 26.5)	Union, FL	45.5 (41.3, 50.3)	Gallatin County and Yellowstone National Park, MT	21.9 (19.5, 24.4)	Holmes, MS	57.6 (52.2, 62.0)

On the other hand, more people reported levels of sufficient physical activity over time across US counties, which is defined as 150 minutes of moderate physical activity, 75 minutes of vigorous physical activity, or equivalent combination per week. While males tended to have higher levels of sufficient physical activity (Figure 20), females had larger increases in sufficient physical activity (Figure 21). Across states, Florida, Georgia, Kentucky, Montana, Nebraska, and parts of California experienced the most dramatic growth in levels of sufficient physical activity in the country, as shown in Figure 21. Specifically, the counties showing the biggest growth were in Concho County, Texas, for men, with an increase from 41.4% in 2001 to 58.2% in 2009, a 16.7 percentage-point increase, and in Morgan County, Kentucky, for women, with an increase from 25.7% in 2001 to 44.0% in 2009, an 18.3 percentage-point increase. The counties with the highest levels of sufficient physical activity were Teton County, Wyoming (77.5%), for males and Routt County, Colorado (74.7%), for women, while the counties with the lowest levels were Owsley County, Kentucky (33.1%), for males, and Issaquena County, Mississippi (28.4%), for females (Table 3).

As sufficient physical activity in the US increased, the percentage of obese people in the country grew during the same period (Figure 22). In fact, obesity prevalence only decreased in nine counties in the country between 2001 and 2009, but none of these reductions were statistically significant. Table 4 shows that the largest increases in obesity occurred in Lewis County, Kentucky, for males, with a change from 28.9% in 2001 to 44.7% in 2009, and in Berkeley County, South Carolina, for females, with a change from 31.6% to 47.9% during the same period. The county with the highest rate of obesity for males was Owsley County, Kentucky (46.9%), and for women, it was Issaquena County, Mississippi (59.3%). San Francisco County, California (18.3%), had the lowest obesity prevalence for males, while Falls Church City, Virginia (17.6%) had the lowest rates for women. Obesity prevalence was generally higher among females (Figure 23).

Rising levels of sufficient physical activity across US counties appear to have done little to mitigate increases in obesity. For every one percentage point increase in sufficient physical activity, obesity prevalence only decreased by 0.11 percentage points.

Figure 20: Percent reporting sufficient physical activity by county, 2011

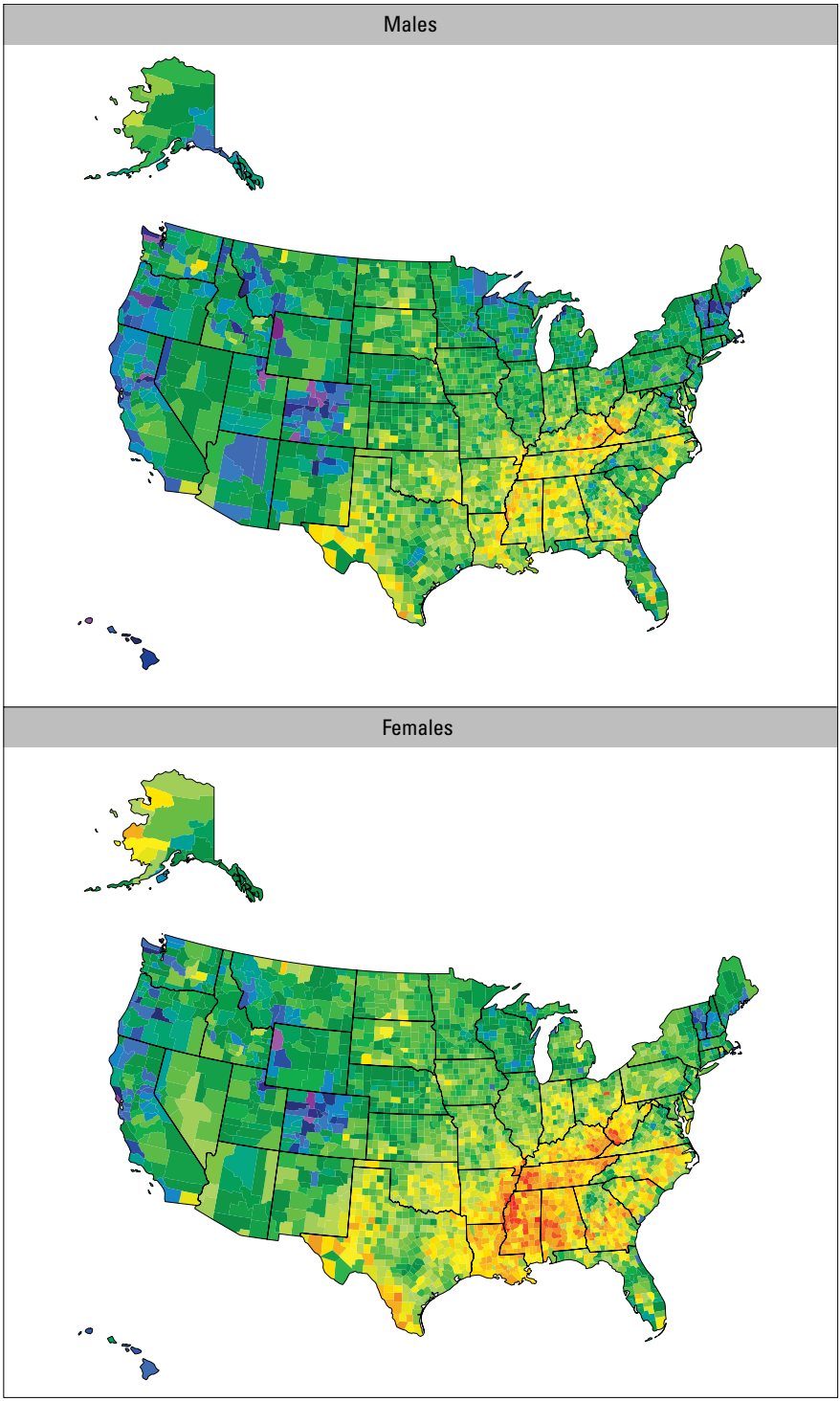


Figure 21: Change in percent reporting sufficient physical activity by county, 2001-2009

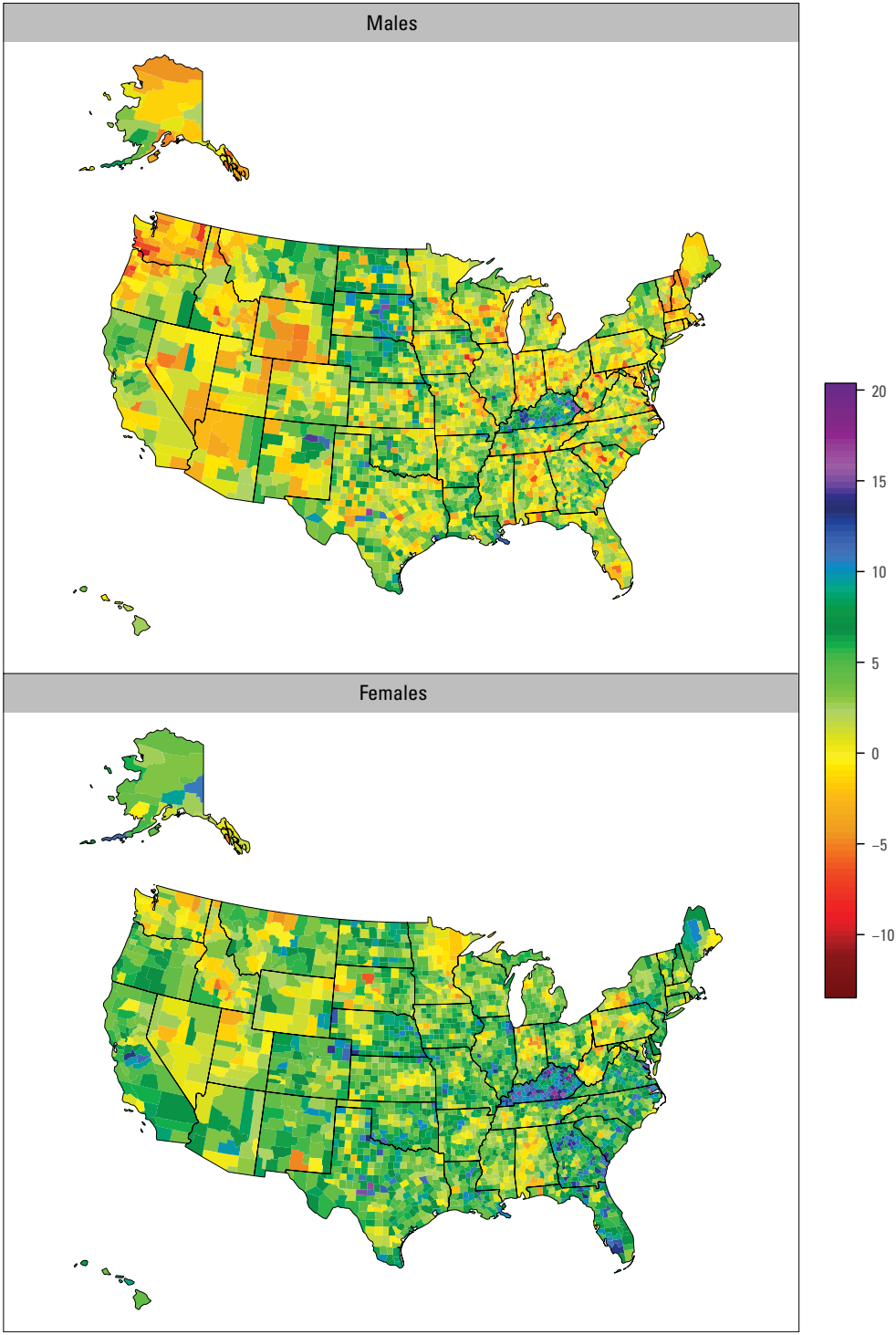


Table 4: Top 10 and bottom 10 counties for change in physical activity, sufficient physical activity, and obesity, 2001-2009

Top 10, Males		Bottom 10, Males		Top 10, Females		Bottom 10, Females	
Change in percent reporting any physical activity							
Concho, TX	16.2 (7.4, 25.1)	Juneau City, AK	-7.5 (-10.3, -4.2)	Concho, TX	13.3 (4.2, 21.9)	Dewey, SD	-9.6 (-18.0, -1.2)
Martin, KY	14.6 (4.9, 24.9)	Fond du Lac, WI	-7.1 (-12.8, -1.5)	Emporia City, VA	12.5 (3.7, 21.2)	Shannon, SD	-7.4 (-16.6, 1.4)
Floyd, KY	12.5 (5.1, 19.4)	Cabell, WV	-7.1 (-12.2, -2.1)	Candler, GA	11.5 (3.3, 19.8)	Cabell, WV	-7.3 (-12.1, -2.6)
Harrisonburg City, VA	11.3 (4.1, 18.8)	Dickenson, VA	-6.9 (-16.3, 2.5)	Banks, GA	11.4 (3.0, 19.9)	Lincoln, WV	-6.7 (-14.1, 1.0)
St. Martin, LA	10.9 (2.8, 18.2)	Carbon, WY	-6.7 (-11.9, -1.3)	Evangeline, LA	11.0 (3.6, 18.5)	Gallia, OH	-6.4 (-14.2, 1.3)
Sheridan, ND	10.7 (1.6, 20.1)	York, NE	-6.7 (-12.0, -1.0)	West Feliciana, LA	10.7 (1.9, 19.6)	Jackson, OH	-6.4 (-14.0, 1.8)
Schleicher, TX	10.6 (2.1, 19.4)	Meade, SD	-6.5 (-11.2, -1.8)	Schleicher, TX	10.7 (2.3, 19.2)	Bristol Bay, AK	-6.2 (-13.2, 0.0)
Candler, GA	10.6 (1.2, 19.3)	Dodge, WI	-6.5 (-12.4, -0.5)	Union, TN	10.6 (1.0, 19.8)	Grant, IN	-6.1 (-12.2, 0.3)
Childress, TX	10.4 (2.8, 17.9)	Lander, NV	-6.4 (-14.9, 1.3)	Hancock, TN	10.3 (0.6, 20.1)	Delaware, IN	-6.0 (-12.0, -0.4)
East Carroll, LA	10.3 (0.1, 19.8)	Chemung, NY	-6.4 (-13.0, -0.2)	Childress, TX	10.1 (1.5, 18.1)	Hill, MT	-5.9 (-9.9, -2.0)
Change in percent reporting sufficient physical activity							
Concho, TX	16.7 (5.7, 27.2)	Virginia Beach City, VA	-11.4 (-19.2, -4.0)	Morgan, KY	18.3 (11.6, 25.3)	Cabell, WV	-6.2 (-12.8, 0.3)
Pike, KY	15.9 (9.0, 22.9)	Cowlitz, WA	-10.0 (-16.9, -2.3)	McCreary, KY	18.2 (10.7, 25.6)	Dewey, SD	-6.0 (-15.5, 3.8)
Elliott, KY	15.9 (5.8, 26.1)	Petersburg City, VA	-9.3 (-20.0, 1.8)	Manassas Park City, VA	18.0 (8.5, 28.1)	Camas, ID	-5.7 (-16.1, 5.0)
Faulk, SD	15.0 (4.2, 26.0)	Marion, WV	-8.5 (-16.4, -0.5)	Owen, KY	17.6 (7.6, 26.4)	Monongalia, WV	-5.6 (-13.2, 1.5)
McCreary, KY	14.9 (5.1, 23.8)	Fairfax City, VA	-8.5 (-16.9, 1.6)	Pulaski, KY	17.2 (10.8, 23.3)	Miami, IN	-5.4 (-14.5, 3.8)
Martin, KY	14.8 (5.5, 23.6)	Johnson, IA	-8.4 (-15.2, -1.1)	Perquimans, NC	16.9 (8.1, 25.6)	Mercer, PA	-5.4 (-13.9, 2.3)
Mora, NM	14.3 (4.1, 25.0)	Richland, SC	-8.0 (-13.8, -2.2)	Edmonson, KY	16.7 (7.6, 25.9)	Lawrence, SD	-5.2 (-11.6, 1.3)
Muhlenberg, KY	13.7 (4.3, 22.3)	Bristol, RI	-7.6 (-14.2, 0.1)	Concho, TX	16.5 (7.0, 26.2)	Harrisonburg City, VA	-5.0 (-15.3, 4.7)
Bond, IL	13.3 (2.9, 24.0)	Norfolk City, VA	-7.6 (-15.5, 0.5)	Elliott, KY	16.1 (7.0, 24.9)	Porter, IN	-4.9 (-12.0, 2.8)
Ohio, KY	12.7 (2.8, 22.4)	Columbia, OR	-7.5 (-15.3, 1.0)	Knox, KY	15.5 (8.3, 22.2)	Otero, NM	-4.8 (-11.4, 1.1)
Change in percent obese (BMI ≥ 30)							
Buffalo, SD	-2.9 (-11.4, 5.3)	Lewis, KY	15.8 (9.5, 22.0)	Keweenaw, MI	-1.4 (-6.8, 7.1)	Berkeley, SC	16.4 (11.8, 20.2)
Ziebach, SD	-2.8 (-10.9, 5.8)	Webb, TX	14.6 (8.5, 20.5)	Rio Blanco, CO	-1.4 (-6.7, 4.7)	Crowley, CO	14.2 (6.6, 22.2)
Roosevelt, MT	-0.9 (-7.3, 6.2)	Allen, LA	14.2 (6.7, 20.0)	Routt, CO	-0.5 (-4.6, 3.9)	Ionia, MI	14.1 (6.9, 19.9)
Corson, SD	-0.6 (-7.7, 7.4)	Allen, OH	14.1 (7.6, 20.3)	Pitkin, CO	-0.2 (-4.6, 4.4)	Barry, MI	13.9 (7.9, 19.9)
Daniels, MT	0.0 (-6.7, 7.1)	Tazewell, VA	14.1 (7.5, 20.6)	Red Lake, MN	0.1 (-6.8, 7.8)	Hancock, WV	13.8 (7.7, 19.6)
Staunton City, VA	0.2 (-5.3, 8.8)	Zapata, TX	14.0 (5.8, 21.7)	Eagle, CO	0.2 (-4.2, 4.5)	Owsley, KY	13.6 (5.6, 22.0)
Menominee, WI	0.2 (-7.8, 8.7)	Salem, NJ	13.8 (8.1, 19.3)	La Plata, CO	0.4 (-3.8, 4.9)	Lee, SC	13.5 (6.8, 19.7)
McCreary, KY	0.3 (-6.4, 7.8)	Ottawa, OH	13.4 (5.5, 19.3)	Archuleta, CO	0.5 (-4.5, 6.2)	Allen, OH	13.3 (7.3, 19.4)
Glacier, MT	0.5 (-6.1, 7.7)	Dallas, IA	13.2 (8.0, 19.3)	Chaffee, CO	0.6 (-4.4, 5.7)	Calhoun, FL	13.1 (7.6, 17.8)
Apache, AZ	0.5 (-5.8, 7.3)	Cambria, PA	13.2 (6.3, 18.8)	Marion, AL	0.7 (-5.3, 7.1)	Crittenden, AR	13.1 (8.4, 19.5)

Figure 22: Change in percent obese (BMI ≥ 30) by county, 2001-2009

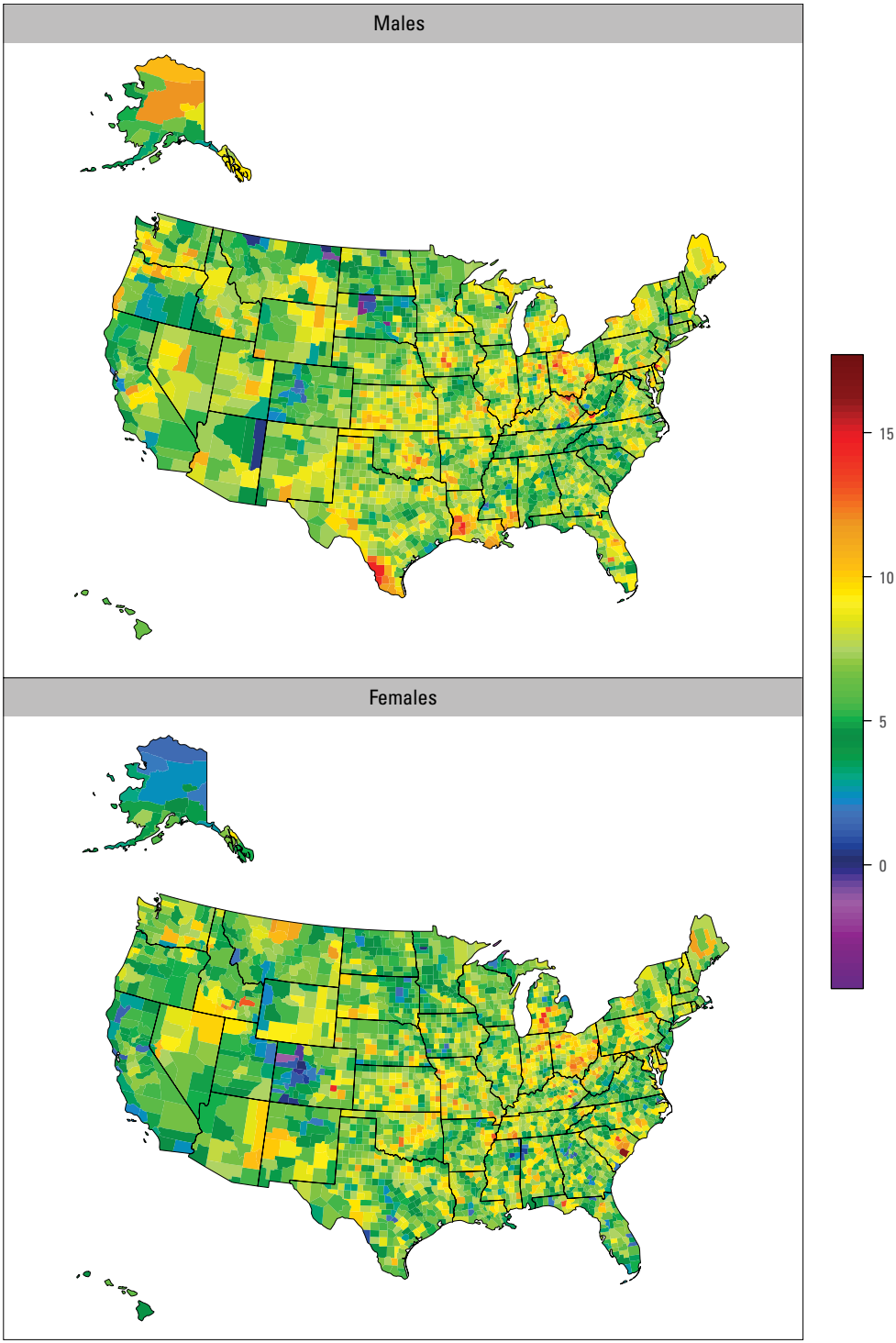
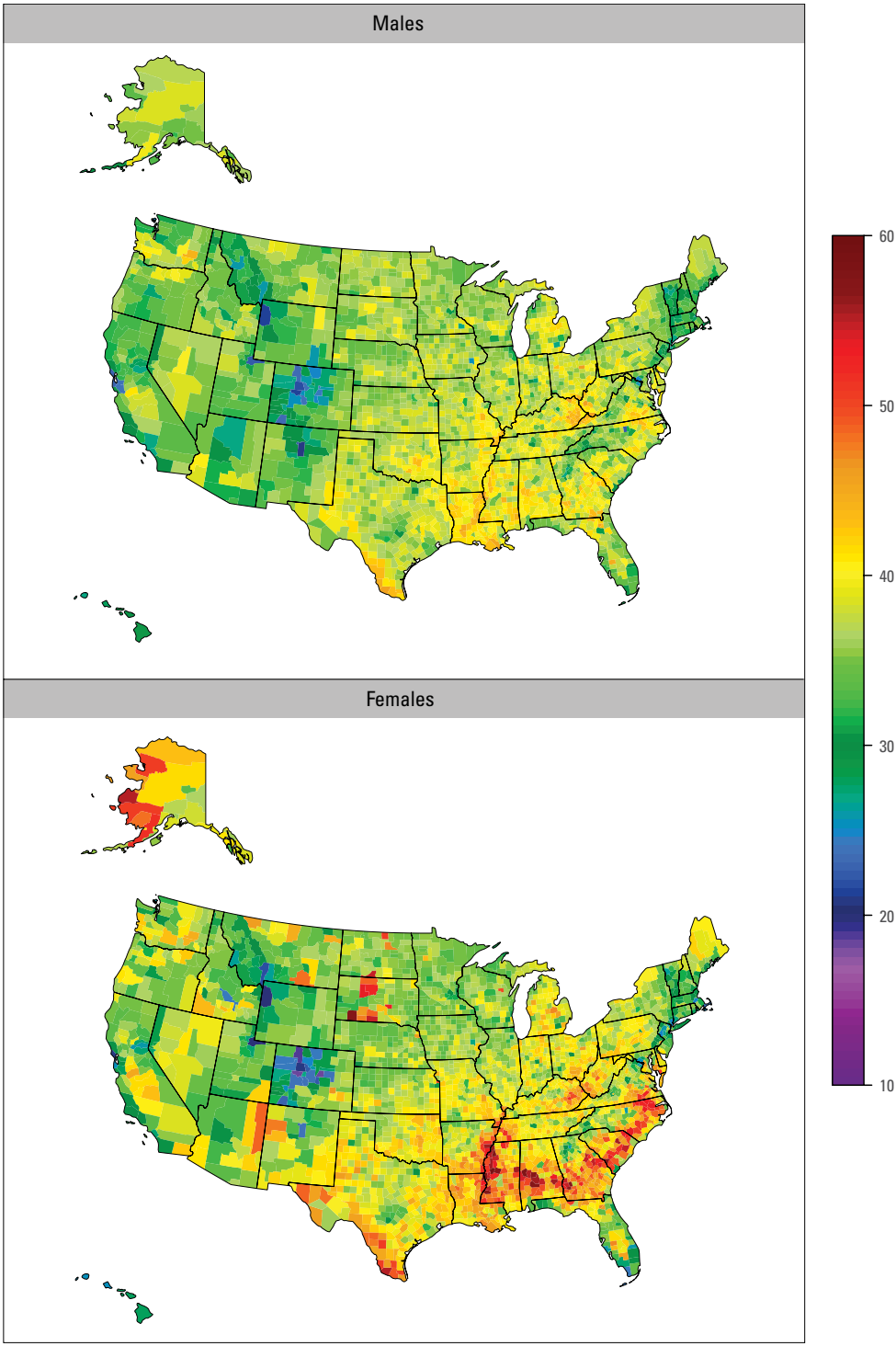


Figure 23: Percent obese (BMI ≥ 30) by county, 2011



POLICY RECOMMENDATIONS

Findings from GBD 2010 and IHME's studies of health outcomes in US counties reveal that the US lags behind many countries with similar levels of wealth and health spending. GBD 2010 found that many Americans' lives are cut short by causes such as ischemic heart disease, lung cancer, stroke, COPD, road injuries, suicide, and diabetes. Many of these premature deaths could be prevented through the reduction of key risk factors, such as healthier diets, less smoking, reduced alcohol and drug use, weight loss, and the prevention and treatment of high blood pressure and high blood sugar. As a result of population growth and aging, the US faces a rising toll of disability, especially from mental, behavioral, and musculoskeletal disorders. Across the US, there is marked variation in life expectancy with some of the worst-off counties showing little improvement in 25 years. Analyses of the nexus of obesity and physical activity at the local level suggest that some communities have made progress in improving physical activity, yet nearly all communities have seen obesity increase in the last decade.

This analysis of health patterns and trends in the US can be seen as the first step toward a blueprint for policy change. It provides clear comparisons between the US and peer countries over time and among counties within the US to highlight important health challenges that deserve further attention. When reviewing this analysis, three overarching policy considerations emerge, each with a variety of pathways that could yield improved health outcomes if matched carefully to a community's particular health profile and effectively implemented. These are changes that could occur at the federal, state, or local levels, and each would need to be considered carefully to find the right scope. We highlight some of the possible policy options below.

Focus public health initiatives and cross-sector collaboration on key modifiable risks, diseases, and injuries

- Incentivize changes in diet to increase beneficial components such as fruit, nuts and seeds, vegetables, seafood omega-3 fatty acids, whole grains, and fiber, and discourage intake of sodium, processed meat, trans fats, and sugar-sweetened beverages. Incentives and disincentives can take many forms including: subsidies, taxes, regulatory restrictions such as for salt in processed foods or bans on trans fats, or rewards for consumer purchasing. The form of incentives and disincentives should be tailored to local community contexts.
- Reinvigorate tobacco monitoring and control efforts, especially in communities that still have high levels of tobacco consumption. Control efforts could include tobacco taxation, labeling, bans on tobacco advertising and sponsorships, and expansion of clean air spaces. They also could include innovations in programs intended to help smokers quit.

- Learn from successful models in the US for promoting physical activity and, in areas that have not been successful, create a physical and social environment that encourages and rewards increases in physical activity. Efforts to promote physical activity should target both children and adults.
- Reduce harmful drinking and alcohol-related road traffic injuries through locally appropriate measures such as drunken driving enforcement, ignition interlocks for persons convicted of driving while intoxicated, alcohol taxation, and restricted sale points.
- Accelerate reductions in road traffic injuries through a range of proven interventions, including enforcement of primary seatbelt laws, traffic calming, and road engineering.
- Focus on long-term research that will address the underlying mental and behavioral disorders that can lead to suicide, while considering shorter-term measures that would restrict access to common methods of suicide, such as firearms or toxic substances like pesticides and other chemicals. Strategies to effectively reduce alcohol and drug dependence and to actively counsel those who have attempted suicide can also be effective approaches to suicide prevention.

Improve the effectiveness of primary health care in managing key causes of disability and modifiable risk factors

- Use proven intervention strategies to maximize the effective management of mental, behavioral, and musculoskeletal disorders in the primary care setting.
- Maximize the opportunity for primary care providers to help patients modify their behavior to reduce the risks associated with alcohol use, physical inactivity, and overweight and obesity, and help patients effectively manage high blood pressure, blood sugar, and cholesterol through multiple mechanisms including pharmacotherapy.
- Facilitate more effective primary care for these diseases and the mitigation of risks through careful monitoring of outcomes and rewarding progress.

Accelerate research and development for key causes of disability and behavioral risk factors

- Invest in research and development to expand the set of effective options to prevent, treat, and manage major causes of chronic disability as even optimal delivery of the available interventions for mental and behavioral disorders, musculoskeletal disorders, and other major causes of disability will leave a large and growing volume of disability in the US.
- Research the drivers of individual behavioral choice and carefully evaluate policy initiatives to modify these behavioral risks given that much of the burden of disease in the US is caused by risk factors related to individual behaviors.

CONCLUSION

The Global Burden of Disease (GBD) provides detailed data on diseases, injuries, and risk factors that are essential inputs for evidence-based policymaking. This collaborative project shows that the world's health is undergoing rapid change: non-communicable diseases and disability caused a greater share of health loss in 2010 compared to 1990 in most regions of the world.

Progress in improving health outcomes in the United States lagged far behind other Organisation for Economic Co-operation and Development (OECD) countries. Most notably, the US fared poorly in measures of life expectancy, healthy life expectancy, causes of premature death such as ischemic heart disease, lung cancer, and road injuries, and risk factors including high body mass index, smoking, dietary risks, high blood sugar, and drug use. Despite the numerous challenges it faces, the US performed well relative to its peer OECD countries in terms of premature death due to stroke, disease burden attributable to high blood pressure, and multiple causes of years lost to disability. The higher performance of other OECD countries relative to the US shows that, for many health indicators, the US has the potential to improve health through aggressive public health action.

Diving deeper into health at the county level, IHME found that the gap between US counties with the highest and lowest life expectancy is widening, and some counties have life expectancies lower than poorer countries such as Algeria and Bangladesh. Also, female life expectancy improved in just 55% of US counties between 1985 and 2010 compared to 95% for males. On a more positive note, life expectancy for females is declining in fewer counties today than in the past, and more Americans are getting the recommended levels of exercise. Rising levels of sufficient physical activity, however, are having little impact on stemming the tide of rising obesity across the country.

While the Global Burden of Diseases, Injuries, and Risk Factors Study 2010 (GBD 2010) provides key information about health trends at the global and regional levels, its tools also allow users to view data specific to 187 countries. Similar to the ways in which governments use financial data to monitor economic trends and make necessary adjustments to ensure continued growth, decision-makers can use GBD data to inform health policy. Continuous updates of GBD will incorporate the most recent data on disease patterns as well as the latest science about the effects of different risk factors on health.

Future updates of GBD will be enriched by widening the network of collaborators and conducting detailed assessments of state- and county-level burden of disease. Expanded collaboration between researchers, staff of government health agencies, and IHME on detailed burden of disease studies will ensure that GBD tools are used to their full potential to understand the different types of diseases, injuries, and

risk factors that are killing people prematurely and disabling them. These in-depth studies can serve as a starting point for state- and county-level action plans to improve health outcomes and mitigate rising health care expenditures.

IHME is seeking partners interested in conducting in-depth studies of the burden of disease in US counties. Through such partnerships, IHME can help mayors, governors, and decision-makers in state and county health departments gain insights into localized health trends to inform planning and policymaking. Detailed assessments of life expectancy, causes of premature death and disability, and risk factors at the county level can help policymakers understand how the health of their county has changed over time and how it compares to other counties. IHME is committed to building capacity for GBD analyses around the country and, to that end, will be conducting a variety of training workshops. Information on these trainings can be found on the IHME website at http://www.healthmetricsandevaluation.org/gbd/training.

ANNEX

Table A1: DALYs and median percent change in the United States by cause for both sexes combined, 1990 and 2010

	All age DALYs (thousands)			Age-standardized DALY rate (per 100,000)		
	1990	2010	Median % change	1990	2010	Median % change
All cause	**71,906.6 (67,197.7 - 77,086.1)**	**81,834.6 (75,868.5 - 88,266.6)**	**13.8**	**25,632.7 (23,873.2 - 27,596.1)**	**21,956.2 (20,236.6 - 23,785.3)**	**-14.4**
Communicable, maternal, neonatal, and nutritional disorders	5,953.1 (5,497.8 - 6,418.7)	4,455.5 (4,069.1 - 4,885.2)	-25.4	2,371.6 (2,179.7 - 2,562.9)	1,454.9 (1,323.8 - 1,603.2)	-38.8
HIV/AIDS and tuberculosis	1,584.2 (1,415.8 - 1,751.4)	626.7 (550.9 - 704.7)	-60.4	597.6 (536.4 - 659.0)	188.8 (165.0 - 213.1)	-68.4
Tuberculosis	75.8 (58.8 - 93.5)	39.2 (30.3 - 51.0)	-49.3	27.4 (21.2 - 34.1)	10.5 (8.0 - 13.8)	-62.5
HIV/AIDS	1,508.4 (1,347.6 - 1,676.9)	587.5 (514.7 - 662.8)	-61	570.2 (512.8 - 631.3)	178.3 (155.1 - 201.4)	-68.7
HIV disease resulting in mycobacterial infection	37.5 (33.7 - 42.1)	9.3 (8.0 - 10.8)	-75.1	14.2 (12.8 - 15.9)	2.8 (2.4 - 3.3)	-80.2
HIV disease resulting in other specified or unspecified diseases	1,470.9 (1,326.8 - 1,628.7)	578.2 (516.9 - 646.7)	-60.8	556.0 (504.0 - 613.3)	175.5 (155.8 - 196.3)	-68.5
Diarrhea, lower respiratory infections, meningitis, and other common infectious diseases	1,959.3 (1,708.8 - 2,265.3)	1,859.1 (1,612.8 - 2,175.0)	-5.7	684.8 (595.2 - 799.2)	491.7 (422.3 - 581.5)	-28.4
Diarrheal diseases	322.9 (224.3 - 447.7)	399.5 (297.8 - 523.5)	24.6	135.4 (93.7 - 187.9)	122.4 (90.0 - 165.4)	-9.1
Other salmonella infections	22.1 (13.7 - 35.0)	39.7 (27.8 - 56.4)	83.2	9.2 (5.7 - 14.7)	12.1 (8.1 - 17.7)	33.4
Shigellosis	21.0 (12.3 - 35.2)	25.4 (17.1 - 36.9)	23.7	8.7 (5.0 - 14.6)	7.7 (4.8 - 11.7)	-10.1
Enteropathogenic E coli infection	34.7 (15.6 - 64.9)	28.5 (14.5 - 50.9)	-17.0	15.6 (6.8 - 29.7)	10.6 (4.9 - 19.8)	-31.9
Enterotoxigenic E coli infection	42.9 (25.7 - 67.8)	58.0 (38.7 - 85.0)	37.1	17.5 (10.2 - 28.1)	17.3 (11.1 - 26.7)	-0.1
Campylobacter enteritis	29.8 (16.2 - 49.2)	37.1 (22.7 - 57.9)	27.3	12.7 (6.8 - 21.6)	11.9 (6.8 - 20.1)	-4.6
Amoebiasis	6.4 (3.4 - 11.0)	12.3 (7.6 - 19.8)	96.1	2.4 (1.3 - 4.2)	3.2 (1.9 - 5.3)	34.5
Cryptosporidiosis	14.6 (6.6 - 27.5)	11.3 (5.8 - 20.2)	-21.0	6.6 (2.9 - 12.6)	4.2 (2.0 - 7.8)	-35.3
Rotaviral enteritis	56.6 (32.5 - 93.1)	61.5 (39.5 - 92.2)	10.0	24.9 (14.1 - 41.3)	20.8 (12.4 - 32.6)	-16.1
Other diarrheal diseases	94.7 (52.2 - 154.8)	125.6 (82.2 - 183.5)	33.9	37.7 (20.4 - 62.2)	34.7 (21.6 - 52.9)	-6.4
Typhoid and paratyphoid fevers	2.8 (0.4 - 5.2)	2.9 (0.3 - 5.4)	3.9	1.2 (0.2 - 2.2)	1.1 (0.1 - 2.1)	-9.6
Lower respiratory infections	1,239.0 (1,045.6 - 1,359.9)	1,093.0 (962.8 - 1,322.7)	-13.0	387.4 (335.3 - 424.1)	247.9 (222.2 - 291.7)	-36.4
Influenza	239.1 (198.8 - 270.2)	214.2 (182.6 - 258.5)	-11.7	75.6 (64.1 - 85.2)	49.4 (42.8 - 58.0)	-35.1
Pneumococcal pneumonia	396.6 (325.5 - 456.1)	355.5 (303.9 - 433.6)	-11.9	119.0 (98.6 - 136.3)	76.7 (66.4 - 90.7)	-36.3
H influenzae type B pneumonia	126.7 (106.7 - 145.9)	104.0 (87.9 - 126.0)	-18.4	44.5 (37.7 - 51.4)	27.4 (23.1 - 32.5)	-38.6
Respiratory syncytial virus pneumonia	35.3 (26.9 - 47.0)	22.4 (17.4 - 28.9)	-36.5	14.6 (10.7 - 20.1)	7.4 (5.5 - 10.1)	-49.1
Other lower respiratory infections	441.2 (366.8 - 502.7)	396.9 (333.4 - 496.8)	-11.6	133.6 (112.0 - 152.1)	87.0 (74.7 - 105.4)	-35.6
Upper respiratory infections	64.6 (35.0 - 110.1)	64.2 (34.4 - 111.2)	-0.5	26.6 (14.3 - 45.5)	22.0 (11.8 - 38.4)	-17.1

(Continued from previous page)	All age DALYs (thousands)			Age-standardized DALY rate (per 100,000)		
	1990	2010	Median % change	1990	2010	Median % change
Otitis media	137.5 (89.4 - 208.9)	141.8 (91.7 - 217.6)	3.7	55.6 (36.3 - 84.5)	48.1 (31.6 - 73.7)	-13.0
Meningitis	125.7 (105.7 - 154.2)	106.8 (88.0 - 130.6)	-15.3	50.4 (42.8 - 61.1)	33.2 (27.8 - 40.1)	-34.2
Pneumococcal meningitis	18.0 (14.3 - 22.9)	13.8 (11.1 - 17.2)	-23.0	7.2 (5.7 - 9.0)	4.4 (3.6 - 5.3)	-38.8
H influenzae type B meningitis	14.5 (11.6 - 18.2)	8.5 (6.5 - 10.9)	-41.7	6.2 (4.9 - 7.8)	3.1 (2.3 - 4.0)	-50.7
Meningococcal infection	20.6 (16.6 - 25.9)	17.0 (13.7 - 21.5)	-16.8	8.3 (6.8 - 10.5)	5.5 (4.4 - 6.8)	-33.8
Other meningitis	72.4 (60.6 - 89.7)	67.3 (55.0 - 84.4)	-7.0	28.5 (24.0 - 34.9)	20.2 (16.6 - 24.7)	-29.3
Encephalitis	16.7 (14.8 - 19.5)	17.0 (14.0 - 20.0)	3.0	6.4 (5.7 - 7.5)	5.1 (4.2 - 5.9)	-20.4
Diphtheria	0.7 (0.0 - 5.7)	0.4 (0.0 - 3.6)	-38.4	0.3 (0.0 - 2.6)	0.2 (0.0 - 1.4)	-47.9
Whooping cough	31.7 (1.7 - 143.4)	14.6 (0.9 - 66.9)	-52.8	14.7 (0.8 - 66.4)	6.0 (0.4 - 27.7)	-57.9
Tetanus	2.1 (0.1 - 8.6)	0.6 (0.0 - 2.5)	-69.9	0.8 (0.0 - 3.3)	0.2 (0.0 - 0.7)	-77.2
Measles	1.1 (0.7 - 2.2)	0.9 (0.5 - 1.8)	-17.8	0.5 (0.3 - 1.0)	0.3 (0.2 - 0.6)	-35.9
Varicella	14.4 (5.4 - 42.1)	17.3 (7.5 - 47.4)	22.4	5.5 (2.0 - 17.1)	5.1 (2.1 - 15.0)	-6.1
Neglected tropical diseases and malaria	6.5 (2.5 - 23.3)	9.3 (3.5 - 18.5)	72.5	2.6 (1.0 - 10.0)	2.9 (1.1 - 6.4)	33.0
Malaria	1.8 (0.0 - 12.7)	0.8 (0.0 - 6.1)	-83.5	0.8 (0.0 - 5.7)	0.3 (0.0 - 2.4)	-85.8
Cysticercosis	0.7 (0.1 - 1.5)	0.6 (0.1 - 1.5)	-13.6	0.2 (0.1 - 0.6)	0.2 (0.0 - 0.5)	-33.0
Echinococcosis	0.5 (0.0 - 1.9)	0.3 (0.0 - 1.0)	-46.6	0.2 (0.0 - 0.7)	0.1 (0.0 - 0.3)	-59.5
Dengue	0.3 (0.2 - 0.7)	0.6 (0.2 - 1.2)	58.8	0.1 (0.1 - 0.3)	0.2 (0.1 - 0.4)	34.6
Rabies	0.3 (0.2 - 0.5)	0.3 (0.1 - 0.6)	-15.3	0.1 (0.1 - 0.2)	0.1 (0.0 - 0.2)	-30.0
Other neglected tropical diseases	2.9 (1.2 - 8.0)	6.8 (2.2 - 11.5)	162.9	1.2 (0.5 - 3.4)	2.0 (0.7 - 3.5)	97.9
Maternal disorders	38.5 (29.8 - 54.1)	64.0 (34.7 - 127.7)	59.2	15.0 (11.6 - 21.1)	22.0 (12.2 - 41.4)	42.9
Maternal hemorrhage	3.9 (3.0 - 5.4)	3.5 (2.3 - 4.7)	-7.6	1.5 (1.2 - 2.1)	1.3 (0.8 - 1.7)	-14.0
Maternal sepsis	1.4 (1.0 - 2.1)	1.5 (0.9 - 2.2)	8.9	0.6 (0.4 - 0.8)	0.6 (0.3 - 0.8)	1.9
Hypertensive disorders of pregnancy	5.4 (4.2 - 7.6)	5.9 (3.5 - 7.9)	18.4	2.1 (1.7 - 3.0)	2.2 (1.3 - 2.9)	10.1
Obstructed labor	2.9 (0.3 - 10.4)	14.6 (1.6 - 59.2)	382.6	1.2 (0.1 - 4.1)	4.4 (0.5 - 17.4)	267.5
Abortion	5.0 (3.8 - 6.8)	5.3 (3.5 - 7.0)	12.0	1.9 (1.5 - 2.6)	2.0 (1.3 - 2.6)	4.9
Other maternal disorders	19.9 (15.8 - 27.9)	33.2 (19.3 - 53.4)	69.8	7.7 (6.2 - 10.8)	11.7 (6.9 - 18.3)	54.6
Neonatal disorders	2,082.3 (1,777.5 - 2,337.3)	1,582.9 (1,369.1 - 1,811.4)	-24.2	969.1 (825.5 - 1,087.6)	660.5 (573.1 - 757.4)	-32.0
Preterm birth complications	1,353.0 (1,100.8 - 1,598.1)	1,025.2 (846.3 - 1,238.2)	-24.7	628.9 (509.6 - 743.2)	426.4 (352.1 - 515.2)	-32.5
Neonatal encephalopathy (birth asphyxia and birth trauma)	350.7 (277.0 - 442.1)	291.5 (226.9 - 370.2)	-17.5	161.3 (126.4 - 204.1)	119.3 (92.1 - 153.6)	-26.7
Sepsis and other infectious disorders of the newborn baby	94.1 (49.6 - 162.8)	84.8 (46.0 - 147.5)	-9.9	44.3 (23.3 - 76.7)	36.5 (19.8 - 63.6)	-17.6
Other neonatal disorders	284.5 (202.0 - 375.7)	181.3 (126.6 - 246.2)	-36.4	134.5 (95.4 - 177.6)	78.3 (54.6 - 106.1)	-41.8
Nutritional deficiencies	97.4 (82.1 - 119.4)	116.7 (85.7 - 142.8)	21.6	31.9 (26.6 - 39.3)	28.9 (21.7 - 35.6)	-8.1
Protein-energy malnutrition	32.3 (26.7 - 40.9)	53.8 (36.8 - 66.2)	69.0	10.2 (8.4 - 12.9)	11.9 (8.4 - 14.2)	18.2

(Continued from previous page)	All age DALYs (thousands)			Age-standardized DALY rate (per 100,000)		
	1990	2010	Median % change	1990	2010	Median % change
Iodine deficiency	28.5 (18.5 - 44.7)	34.4 (21.7 - 54.1)	21.1	11.0 (7.1 - 17.4)	10.9 (6.7 - 17.2)	-1.5
Iron-deficiency anemia	31.3 (26.3 - 40.2)	24.5 (16.5 - 29.8)	-19.7	9.1 (7.8 - 11.8)	5.3 (3.5 - 6.3)	-39.8
Other nutritional deficiencies	5.3 (4.5 - 6.8)	4.0 (2.6 - 4.9)	-24.0	1.5 (1.3 - 1.9)	0.8 (0.5 - 1.0)	-44.5
Other communicable, maternal, neonatal, and nutritional disorders	184.9 (152.0 - 236.3)	196.8 (148.9 - 244.9)	9.6	70.6 (57.7 - 91.0)	60.0 (45.4 - 76.3)	-12.8
Sexually transmitted diseases excluding HIV	55.4 (30.4 - 99.4)	50.2 (28.8 - 90.4)	-8.2	21.7 (11.8 - 39.1)	17.6 (9.8 - 32.6)	-17.7
Syphilis	7.4 (4.0 - 11.7)	7.6 (3.6 - 12.4)	3.1	2.9 (1.6 - 4.6)	2.4 (1.2 - 3.9)	-18.4
Sexually transmitted chlamydial diseases	17.9 (7.8 - 35.1)	17.8 (7.5 - 35.2)	0.5	7.1 (3.1 - 14.1)	6.6 (2.7 - 13.1)	-6.9
Gonococcal infection	10.3 (4.6 - 20.0)	10.2 (4.3 - 20.6)	0.9	4.0 (1.8 - 7.8)	3.7 (1.5 - 7.5)	-6.9
Trichomoniasis	8.7 (0.1 - 27.2)	6.5 (0.0 - 20.6)	-25.6	3.5 (0.0 - 10.8)	2.4 (0.0 - 7.6)	-31.4
Other sexually transmitted diseases	11.1 (5.5 - 23.9)	8.1 (4.5 - 15.4)	-25.1	4.3 (2.1 - 9.2)	2.6 (1.4 - 5.2)	-35.6
Hepatitis	55.2 (49.6 - 61.8)	38.3 (31.8 - 46.2)	-31.1	20.5 (18.3 - 23.2)	10.8 (8.8 - 13.2)	-47.9
Acute hepatitis A	7.4 (4.9 - 10.9)	7.1 (4.3 - 11.0)	-5.1	2.9 (1.9 - 4.3)	2.5 (1.5 - 3.9)	-15.4
Acute hepatitis B	26.9 (21.0 - 34.6)	24.3 (18.8 - 33.0)	-7.6	9.8 (7.6 - 12.7)	6.5 (5.0 - 8.8)	-33.0
Acute hepatitis C	20.9 (7.2 - 36.5)	6.8 (1.5 - 16.1)	-69.5	7.8 (2.7 - 13.6)	1.8 (0.4 - 4.2)	-78.2
Leprosy	<0.05 (0.0 - 0.1)	<0.05 (0.0 - <0.05)	-100.0	<0.05 (0.0 - <0.05)	<0.05 (0.0 - <0.05)	-100.0
Other infectious diseases	74.3 (63.9 - 108.8)	108.4 (64.1 - 133.9)	58.3	28.3 (24.4 - 41.3)	31.6 (18.9 - 39.4)	20.4
Non-communicable diseases	58,022.3 (53,852.6 - 62,753.6)	69,434.1 (63,906.0 - 75,348.7)	19.6	20,133.1 (18,578.9 - 21,900.0)	17,993.0 (16,419.5 - 19,725.2)	-10.7
Neoplasms	10,724.6 (10,085.4 - 11,330.9)	12,363.4 (11,715.1 - 13,270.9)	14.8	3,626.2 (3,401.5 - 3,830.5)	2,916.2 (2,761.4 - 3,129.8)	-19.9
Esophageal cancer	225.9 (182.7 - 297.1)	285.6 (212.8 - 355.5)	28.3	77.9 (62.3 - 101.7)	66.6 (49.7 - 83.4)	-13.3
Stomach cancer	308.1 (238.0 - 413.7)	266.5 (203.1 - 358.6)	-13.3	101.9 (78.3 - 136.8)	62.9 (47.4 - 84.3)	-38.1
Liver cancer	186.2 (169.1 - 236.6)	402.6 (264.3 - 465.5)	125.7	63.2 (57.5 - 81.5)	96.0 (63.1 - 110.9)	58.6
Liver cancer secondary to hepatitis B	28.9 (25.3 - 37.0)	64.0 (39.9 - 76.3)	129.8	9.8 (8.5 - 12.7)	15.1 (9.4 - 17.9)	61.2
Liver cancer secondary to hepatitis C	68.3 (59.5 - 86.6)	146.8 (95.6 - 172.8)	123.2	22.0 (19.3 - 28.2)	33.5 (21.8 - 39.5)	58.2
Liver cancer secondary to alcohol use	54.4 (47.4 - 69.2)	118.6 (76.9 - 140.5)	126.3	18.5 (16.1 - 23.7)	28.2 (18.3 - 33.4)	58.0
Other liver cancer	34.5 (29.9 - 46.3)	73.1 (48.7 - 87.4)	120.9	12.9 (11.2 - 17.7)	19.2 (12.9 - 23.0)	54.4
Larynx cancer	95.4 (57.1 - 157.6)	88.8 (53.2 - 146.3)	-6.8	33.0 (19.5 - 54.7)	20.7 (12.3 - 34.3)	-37.4
Trachea, bronchus, and lung cancers	2,909.7 (2,355.6 - 3,560.1)	3,032.9 (2,468.5 - 3,771.5)	3.9	984.3 (792.6 - 1,197.8)	695.7 (569.7 - 867.8)	-29.9
Breast cancer	1,069.2 (999.6 - 1,154.0)	1,052.9 (949.2 - 1,167.9)	-1.7	376.3 (352.1 - 404.8)	253.4 (228.2 - 279.7)	-32.8
Cervical cancer	156.6 (104.2 - 227.5)	164.1 (108.1 - 249.4)	4.1	57.2 (38.1 - 82.9)	43.6 (28.8 - 66.4)	-24.1
Uterine cancer	93.3 (58.4 - 162.1)	117.8 (63.7 - 176.1)	29.4	29.5 (18.4 - 51.5)	26.9 (14.6 - 40.2)	-6.3
Prostate cancer	478.9 (282.7 - 662.1)	592.4 (387.5 - 947.3)	16.5	135.7 (79.7 - 187.6)	121.5 (78.7 - 192.3)	-15.2
Colon and rectum cancers	1,076.2 (910.7 - 1,184.5)	1,146.8 (1,018.5 - 1,489.7)	2.9	346.7 (294.4 - 383.4)	262.4 (232.8 - 336.1)	-26.6
Mouth cancer	117.9 (100.2 - 129.6)	122.5 (105.3 - 154.7)	1.7	41.4 (35.1 - 45.6)	29.2 (25.0 - 36.9)	-31.1

(Continued from previous page)	All age DALYs (thousands)			Age-standardized DALY rate (per 100,000)		
	1990	2010	Median % change	1990	2010	Median % change
Nasopharynx cancer	30.1 (21.4 - 40.7)	37.2 (26.1 - 52.4)	23.6	11.1 (7.8 - 15.0)	9.6 (6.7 - 13.5)	-13.2
Cancer of other part of pharynx and oropharynx	62.1 (41.6 - 86.2)	79.3 (53.3 - 108.7)	27.5	22.0 (14.6 - 30.8)	18.8 (12.6 - 25.8)	-14.7
Gallbladder and biliary tract cancer	82.7 (57.4 - 120.6)	91.8 (63.9 - 142.4)	10.1	26.5 (18.4 - 38.5)	20.8 (14.5 - 32.3)	-22.2
Pancreatic cancer	512.2 (395.1 - 673.7)	684.8 (504.7 - 914.2)	34.3	167.9 (129.4 - 221.4)	156.6 (115.9 - 208.1)	-6.2
Malignant melanoma of skin	179.0 (117.0 - 274.4)	220.2 (143.5 - 339.1)	22.6	64.7 (41.4 - 98.2)	55.4 (36.8 - 88.5)	-15.4
Non-melanoma skin cancer	112.1 (83.5 - 147.4)	230.9 (175.7 - 293.7)	106.5	34.2 (25.4 - 45.2)	47.9 (36.4 - 61.2)	40.0
Ovarian cancer	285.9 (203.4 - 371.9)	325.4 (249.5 - 455.2)	10.5	98.3 (70.1 - 129.1)	77.4 (59.8 - 108.9)	-23.7
Testicular cancer	23.1 (14.9 - 32.7)	22.2 (15.5 - 33.0)	-5.3	8.9 (5.7 - 12.6)	7.4 (5.1 - 11.3)	-18.2
Kidney and other urinary organ cancers	222.9 (158.2 - 288.0)	494.4 (352.4 - 823.6)	107.0	76.9 (54.5 - 98.9)	118.4 (83.8 - 199.2)	42.9
Bladder cancer	193.3 (164.4 - 241.6)	227.3 (177.0 - 261.9)	19.3	58.9 (50.0 - 74.0)	48.2 (37.4 - 55.8)	-17.1
Brain and nervous system cancers	389.5 (268.6 - 557.1)	419.2 (287.6 - 617.4)	7.4	145.4 (99.4 - 207.1)	114.2 (78.6 - 168.0)	-21.7
Thyroid cancer	25.8 (20.7 - 34.0)	38.8 (27.7 - 49.1)	53.0	8.7 (7.0 - 11.4)	9.4 (6.7 - 11.9)	9.7
Hodgkin's disease	67.5 (42.9 - 96.8)	56.1 (38.9 - 88.9)	-17.4	25.3 (16.2 - 36.3)	17.0 (11.8 - 26.8)	-33.2
Non-Hodgkin lymphoma	419.2 (351.2 - 476.1)	470.4 (392.6 - 561.5)	10.1	143.1 (120.6 - 161.4)	113.8 (96.0 - 136.8)	-22.5
Multiple myeloma	179.7 (124.9 - 256.1)	229.4 (149.0 - 338.8)	28.6	58.1 (40.4 - 82.5)	52.1 (34.3 - 76.6)	-9.5
Leukemia	467.6 (382.3 - 572.2)	506.8 (415.0 - 623.2)	8.3	167.8 (137.1 - 205.1)	134.3 (110.4 - 168.1)	-20.1
Other neoplasms	754.3 (605.9 - 991.7)	956.2 (751.5 - 1,251.4)	25.8	261.4 (209.8 - 342.7)	236.1 (185.6 - 308.0)	-10.1
Cardiovascular and circulatory diseases	14,937.1 (14,140.4 - 15,533.1)	13,748.9 (13,016.7 - 14,688.6)	-8	4,631.8 (4,382.5 - 4,831.9)	2,987.4 (2,819.1 - 3,176.9)	-35.5
Rheumatic heart disease	201.7 (176.9 - 226.2)	126.5 (108.2 - 150.4)	-37.9	67.0 (58.2 - 76.6)	30.8 (25.6 - 38.3)	-54.6
Ischemic heart disease	9,537.4 (8,983.4 - 10,022.6)	7,849.5 (7,305.3 - 8,867.6)	-18.5	2,938.7 (2,770.9 - 3,100.8)	1,679.7 (1,566.7 - 1,891.5)	-43.3
Cerebrovascular disease	2,570.8 (2,411.6 - 2,865.0)	2,574.0 (2,317.3 - 2,793.1)	0.5	770.3 (722.7 - 856.5)	540.4 (483.6 - 581.8)	-29.4
Ischemic stroke	1,525.4 (1,415.4 - 1,680.9)	1,569.7 (1,428.6 - 1,756.1)	2.7	406.6 (378.8 - 446.7)	295.8 (270.9 - 325.6)	-27.4
Hemorrhagic and other non-ischemic stroke	1,045.4 (963.2 - 1,205.6)	1,004.3 (863.5 - 1,105.2)	-4.5	363.7 (333.9 - 418.1)	244.6 (211.7 - 270.2)	-33.2
Hypertensive heart disease	639.0 (535.0 - 779.9)	662.2 (552.0 - 822.9)	3.4	205.4 (173.0 - 249.4)	149.0 (124.0 - 182.0)	-27.5
Cardiomyopathy and myocarditis	649.7 (560.3 - 686.8)	706.0 (617.2 - 955.4)	6.3	226.7 (195.5 - 240.4)	180.7 (157.1 - 243.6)	-22.3
Atrial fibrillation and flutter	196.2 (142.5 - 262.9)	407.8 (298.4 - 536.3)	107.0	56.6 (40.8 - 76.4)	80.5 (58.8 - 105.3)	42.0
Aortic aneurysm	264.7 (203.6 - 328.3)	258.6 (195.4 - 363.7)	-1.3	80.6 (62.3 - 100.3)	57.4 (43.8 - 80.4)	-28.5
Peripheral vascular disease	65.6 (45.0 - 99.6)	122.1 (79.5 - 200.5)	82.5	18.9 (12.9 - 28.8)	23.9 (15.7 - 38.3)	24.9
Endocarditis	44.6 (39.7 - 55.9)	63.4 (46.7 - 75.0)	47.8	15.3 (13.7 - 19.1)	15.6 (11.6 - 18.4)	5.8
Other cardiovascular and circulatory diseases	767.3 (699.8 - 850.3)	978.7 (863.4 - 1,116.3)	27.3	252.2 (228.6 - 281.9)	229.5 (201.8 - 263.7)	-9.2
Chronic respiratory diseases	4,234.5 (3,378.2 - 5,292.0)	5,293.3 (4,254.3 - 6,570.0)	25.1	1,464.1 (1,145.3 - 1,868.9)	1,352.2 (1,057.7 - 1,728.7)	-7.7
Chronic obstructive pulmonary disease	2,720.2 (2,153.6 - 3,435.0)	3,658.5 (2,879.5 - 4,534.1)	34.2	875.6 (678.9 - 1,122.6)	844.9 (646.8 - 1,068.6)	-3.7
Pneumoconiosis	83.2 (61.0 - 112.6)	97.7 (69.5 - 133.1)	17.3	23.9 (17.5 - 32.4)	19.2 (13.6 - 26.1)	-19.9

(Continued from previous page)	All age DALYs (thousands)			Age-standardized DALY rate (per 100,000)		
	1990	2010	Median % change	1990	2010	Median % change
Asthma	901.8 (555.8 - 1,362.1)	1,032.2 (603.9 - 1,563.0)	14.1	375.8 (228.9 - 570.5)	353.2 (204.5 - 540.0)	-6.4
Interstitial lung disease and pulmonary sarcoidosis	148.8 (108.1 - 231.3)	244.2 (146.9 - 321.1)	64.7	48.3 (35.6 - 74.0)	55.1 (33.9 - 72.6)	15.6
Other chronic respiratory diseases	380.5 (286.6 - 504.0)	260.7 (185.5 - 354.4)	-32.1	140.6 (104.9 - 188.3)	79.9 (55.2 - 107.7)	-43.3
Cirrhosis of the liver	930.7 (823.8 - 1,106.8)	1,249.1 (982.1 - 1,378.7)	37.7	341.2 (301.2 - 407.5)	315.6 (250.5 - 348.1)	-5.3
Cirrhosis of the liver secondary to hepatitis B	65.8 (56.0 - 78.4)	91.8 (71.0 - 105.9)	43.6	23.7 (20.1 - 28.5)	22.6 (17.6 - 26.0)	-2.1
Cirrhosis of the liver secondary to hepatitis C	324.5 (282.7 - 390.4)	457.4 (356.6 - 520.0)	44.6	115.8 (101.1 - 140.6)	111.4 (87.4 - 126.8)	-1.3
Cirrhosis of the liver secondary to alcohol use	386.3 (323.2 - 494.6)	509.0 (380.3 - 587.2)	35.5	143.0 (120.0 - 184.0)	129.8 (98.1 - 149.8)	-6.9
Other cirrhosis of the liver	154.2 (127.0 - 183.3)	190.9 (151.9 - 224.1)	24.9	58.7 (48.6 - 70.2)	51.8 (41.7 - 60.9)	-11.3
Digestive diseases (except cirrhosis)	1,091.1 (944.2 - 1,310.1)	1,141.0 (970.5 - 1,403.7)	4.2	374.5 (318.8 - 460.8)	291.2 (242.1 - 371.8)	-22.6
Peptic ulcer disease	137.1 (106.2 - 176.4)	76.4 (62.9 - 102.1)	-44.9	44.0 (34.7 - 57.1)	18.2 (14.8 - 24.2)	-59.1
Gastritis and duodenitis	77.9 (56.4 - 104.5)	52.2 (37.1 - 72.6)	-33.2	29.3 (21.3 - 39.8)	16.6 (11.7 - 23.5)	-43.3
Appendicitis	19.1 (13.3 - 29.3)	19.4 (12.6 - 26.7)	2.4	7.0 (4.9 - 10.7)	5.4 (3.4 - 7.6)	-23.7
Paralytic ileus and intestinal obstruction without hernia	62.7 (46.7 - 84.9)	70.3 (44.4 - 91.6)	14.4	19.0 (14.3 - 26.1)	15.2 (9.5 - 19.5)	-18.2
Inguinal or femoral hernia	20.3 (9.2 - 45.0)	22.2 (9.1 - 53.4)	7.4	7.2 (3.1 - 16.6)	5.9 (2.2 - 14.6)	-19.7
Non-infective inflammatory bowel disease	215.6 (141.7 - 356.3)	209.2 (126.5 - 354.8)	-4.0	84.6 (55.1 - 141.4)	65.0 (38.3 - 112.8)	-24.1
Vascular disorders of intestine	112.3 (64.1 - 216.1)	126.4 (71.9 - 263.9)	9.8	34.0 (19.2 - 65.9)	27.1 (15.3 - 57.4)	-22.3
Gall bladder and bile duct disease	75.6 (64.5 - 90.3)	78.1 (63.7 - 94.5)	3.2	23.8 (20.4 - 28.3)	17.7 (14.7 - 21.4)	-25.3
Pancreatitis	89.7 (69.3 - 125.4)	107.2 (79.9 - 147.3)	18.6	31.9 (24.4 - 44.9)	28.1 (20.9 - 38.7)	-12.6
Other digestive diseases	280.6 (231.6 - 343.2)	379.6 (304.9 - 500.5)	35.0	93.5 (77.7 - 115.8)	92.0 (72.8 - 120.6)	-1.8
Neurological disorders	2,378.9 (2,034.1 - 2,723.1)	4,156.8 (3,452.2 - 4,776.9)	75.8	794.9 (675.5 - 917.0)	953.9 (815.1 - 1,087.7)	20.4
Alzheimer's disease and other dementias	789.6 (615.7 - 994.8)	2,022.3 (1,422.7 - 2,573.2)	159.3	202.9 (159.1 - 254.1)	339.0 (246.9 - 418.2)	69.7
Parkinson's disease	129.8 (104.2 - 179.0)	255.4 (171.0 - 320.7)	103.2	34.4 (27.6 - 47.1)	48.2 (32.8 - 60.2)	43.8
Epilepsy	278.6 (226.0 - 338.2)	338.1 (273.7 - 415.1)	21.4	108.7 (88.0 - 132.3)	108.3 (87.4 - 133.0)	-0.4
Multiple sclerosis	108.0 (89.0 - 133.3)	154.3 (121.7 - 186.5)	42.6	40.8 (33.4 - 50.4)	41.6 (33.3 - 50.4)	1.9
Migraine	676.8 (444.7 - 938.5)	805.0 (525.4 - 1,136.3)	18.9	265.3 (174.2 - 368.2)	258.3 (168.2 - 364.1)	-2.6
Tension-type headache	80.4 (48.5 - 127.7)	98.9 (59.7 - 154.5)	22.9	30.5 (18.5 - 48.6)	30.2 (18.2 - 47.2)	-1.2
Other neurological disorders	315.7 (250.6 - 421.4)	482.7 (369.2 - 648.2)	52.9	112.3 (88.8 - 150.7)	128.3 (97.7 - 176.2)	14.0
Mental and behavioral disorders	8,084.9 (6,617.1 - 9,761.1)	11,139.1 (9,231.3 - 13,274.2)	37.7	3,161.7 (2,578.6 - 3,819.9)	3,575.6 (2,949.7 - 4,285.2)	13.3
Schizophrenia	649.0 (415.0 - 889.5)	835.3 (537.6 - 1,161.0)	28.6	245.6 (156.9 - 336.1)	242.4 (155.9 - 337.8)	-1.4
Alcohol use disorders	908.4 (645.4 - 1,255.2)	1,144.6 (805.8 - 1,589.1)	26.1	357.6 (253.4 - 494.7)	354.2 (246.9 - 491.1)	-0.9
Drug use disorders	1,171.0 (870.6 - 1,568.0)	2,136.1 (1,619.0 - 2,768.4)	85.0	456.2 (338.5 - 609.6)	743.3 (561.3 - 958.5)	64.9
Opioid use disorders	276.4 (190.3 - 378.3)	926.4 (634.1 - 1,227.1)	239.6	105.9 (73.0 - 145.2)	313.2 (218.7 - 414.0)	199.5
Cocaine use disorders	193.5 (110.7 - 334.6)	243.3 (133.7 - 422.1)	24.2	74.9 (42.8 - 129.8)	88.3 (48.4 - 153.2)	16.6

(Continued from previous page)	All age DALYs (thousands)			Age-standardized DALY rate (per 100,000)		
	1990	2010	Median % change	1990	2010	Median % change
Amphetamine use disorders	92.0 (52.0 - 149.9)	102.4 (57.0 - 163.4)	10.3	36.3 (20.4 - 59.3)	36.3 (20.1 - 58.0)	-1.1
Cannabis use disorders	221.5 (143.4 - 322.3)	249.8 (163.9 - 359.3)	12.9	89.7 (58.0 - 130.2)	94.0 (61.6 - 135.3)	5.3
Other drug use disorders	387.7 (264.8 - 569.9)	614.2 (432.4 - 860.7)	63.2	149.5 (101.6 - 220.4)	211.5 (150.4 - 297.5)	44.8
Unipolar depressive disorders	2,578.4 (1,890.9 - 3,358.1)	3,594.4 (2,610.9 - 4,768.2)	39.4	999.5 (731.8 - 1,304.5)	1,110.6 (799.9 - 1,476.3)	11.1
Major depressive disorder	2,142.5 (1,525.2 - 2,843.7)	3,048.9 (2,151.3 - 4,122.3)	42.7	832.4 (593.2 - 1,106.8)	945.4 (668.7 - 1,278.9)	13.4
Dysthymia	435.9 (286.5 - 606.0)	545.5 (355.1 - 765.3)	25.0	167.2 (110.0 - 232.4)	165.3 (107.3 - 232.6)	-1.2
Bipolar affective disorder	481.0 (304.6 - 709.5)	578.0 (358.3 - 854.8)	20.3	183.3 (116.0 - 270.6)	185.7 (115.2 - 276.4)	1.4
Anxiety disorders	1,541.0 (1,078.5 - 2,172.8)	1,866.1 (1,310.2 - 2,569.3)	21.3	603.6 (421.7 - 853.1)	593.7 (416.5 - 819.1)	-1.5
Eating disorders	165.5 (101.2 - 260.3)	264.5 (167.2 - 403.5)	60.9	64.3 (39.2 - 101.4)	92.1 (58.4 - 140.6)	44.1
Pervasive development disorders	304.1 (212.4 - 415.5)	373.4 (258.2 - 518.1)	22.5	124.1 (86.7 - 169.5)	126.0 (86.9 - 174.8)	1.3
Autism	176.1 (118.7 - 248.0)	218.1 (147.7 - 303.0)	23.8	71.8 (48.4 - 101.1)	73.4 (49.6 - 102.4)	2.3
Asperger's syndrome	128.0 (85.3 - 184.1)	155.4 (104.5 - 224.7)	21.5	52.3 (34.8 - 75.4)	52.5 (35.2 - 76.0)	0.2
Childhood behavioral disorders	170.8 (99.1 - 268.3)	203.3 (119.1 - 311.8)	19.0	82.4 (47.9 - 129.7)	85.2 (49.9 - 130.7)	3.3
Attention-deficit hyperactivity disorder	12.7 (7.2 - 20.5)	14.3 (8.1 - 23.3)	12.3	5.8 (3.3 - 9.4)	5.9 (3.3 - 9.5)	0.4
Conduct disorder	158.1 (89.3 - 254.0)	188.9 (106.5 - 294.2)	19.5	76.6 (43.3 - 123.0)	79.4 (44.7 - 123.5)	3.5
Idiopathic intellectual disability	56.9 (32.3 - 91.9)	46.9 (21.1 - 81.1)	-17.0	24.1 (13.7 - 38.9)	17.3 (7.9 - 29.8)	-27.7
Other mental and behavioral disorders	58.8 (35.7 - 93.1)	96.4 (57.1 - 141.7)	70.7	20.9 (12.6 - 32.8)	25.1 (15.0 - 37.7)	25.0
Diabetes, urogenital, blood, and endocrine diseases	4,117.9 (3,548.4 - 4,830.6)	6,529.7 (5,559.5 - 7,929.7)	56.7	1,434.6 (1,217.9 - 1,708.7)	1,669.0 (1,403.2 - 2,056.8)	14.8
Diabetes mellitus	1,622.7 (1,368.9 - 1,953.0)	2,557.2 (2,158.9 - 3,088.5)	57.9	543.9 (456.0 - 657.0)	607.5 (507.1 - 738.5)	12.0
Acute glomerulonephritis	1.5 (0.8 - 2.1)	0.7 (0.4 - 1.4)	-46.6	0.5 (0.3 - 0.7)	0.2 (0.1 - 0.3)	-60.1
Chronic kidney diseases	710.4 (611.9 - 840.5)	1,190.5 (1,015.0 - 1,373.4)	68.5	225.6 (194.1 - 267.2)	269.6 (228.8 - 310.8)	20.5
Chronic kidney disease due to diabetes mellitus	323.2 (268.7 - 393.0)	550.3 (453.5 - 660.7)	71.1	104.7 (87.1 - 127.3)	124.9 (102.4 - 148.7)	20.0
Chronic kidney disease due to hypertension	170.1 (145.4 - 203.5)	286.7 (242.5 - 334.4)	69.3	52.0 (44.4 - 62.2)	62.3 (52.2 - 72.7)	20.5
Chronic kidney disease unspecified	217.0 (177.0 - 262.5)	353.6 (287.6 - 427.8)	62.6	68.8 (55.9 - 83.9)	82.4 (66.4 - 99.8)	19.8
Urinary diseases and male infertility	542.9 (413.6 - 704.5)	849.2 (624.9 - 1,146.7)	54.8	173.2 (131.3 - 226.8)	186.9 (139.3 - 250.1)	6.6
Tubulointerstitial nephritis, pyelonephritis, and urinary tract infections	164.2 (125.2 - 224.6)	269.9 (156.5 - 376.3)	70.4	46.7 (37.1 - 64.1)	54.5 (32.4 - 74.0)	23.4
Urolithiasis	26.8 (18.1 - 39.4)	35.0 (21.9 - 53.1)	29.7	9.3 (6.2 - 13.7)	8.7 (5.4 - 13.3)	-6.7
Benign prostatic hyperplasia	258.4 (167.4 - 389.5)	396.8 (247.6 - 604.7)	54.0	86.2 (55.7 - 130.2)	88.6 (55.2 - 135.1)	3.2
Male infertility	2.7 (1.1 - 6.0)	2.8 (1.1 - 6.3)	1.8	1.0 (0.4 - 2.2)	1.0 (0.4 - 2.2)	-2.2
Other urinary diseases	90.7 (64.3 - 109.6)	144.6 (108.3 - 224.5)	51.1	30.1 (21.7 - 36.6)	34.2 (25.8 - 53.0)	6.6
Gynecological diseases	298.0 (169.8 - 495.1)	339.2 (191.7 - 572.2)	13.8	112.9 (63.9 - 188.8)	111.2 (62.1 - 187.4)	-1.4
Uterine fibroids	51.3 (22.4 - 101.4)	80.9 (34.7 - 161.5)	57.8	20.9 (9.2 - 41.2)	22.2 (9.5 - 44.2)	6.2
Polycystic ovarian syndrome	100.4 (47.7 - 188.7)	97.6 (46.1 - 181.3)	-3.0	37.1 (17.6 - 69.7)	35.5 (16.7 - 65.9)	-4.6

(Continued from previous page)	All age DALYs (thousands)			Age-standardized DALY rate (per 100,000)		
	1990	2010	Median % change	1990	2010	Median % change
Female infertility	2.1 (0.8 - 4.5)	2.0 (0.8 - 4.5)	-2.7	0.8 (0.3 - 1.7)	0.7 (0.3 - 1.6)	-6.5
Endometriosis	22.4 (8.3 - 40.5)	21.8 (8.0 - 39.5)	-2.9	8.1 (3.0 - 14.7)	8.0 (2.9 - 14.6)	-1.5
Genital prolapse	57 (23.5 - 112.0)	67.8 (29.2 - 134.6)	19.1	21.5 (8.9 - 42.4)	19.6 (8.4 - 39.2)	-8.6
Premenstrual syndrome	62.4 (0.0 - 161.0)	62.6 (0.0 - 160.2)	0.7	23.7 (0.0 - 61.3)	23.7 (0.0 - 60.6)	0.1
Other gynecological diseases	2.4 (2.1 - 2.8)	6.5 (5.4 - 8.1)	166.8	0.8 (0.7 - 0.9)	1.5 (1.2 - 2.0)	87.3
Hemoglobinopathies and hemolytic anemias	557.6 (363.2 - 920.3)	669.1 (429.1 - 1,100.9)	20.4	238.9 (151.1 - 411.5)	244.4 (152.4 - 421.9)	2.3
Thalassemias	115.8 (83.7 - 161.9)	133.9 (93.0 - 187.8)	15.4	45.9 (33.3 - 64.1)	43.2 (30.2 - 59.7)	-6.2
Sickle cell disorders	393.5 (224.2 - 752.4)	489.7 (289.5 - 900.5)	25.7	176 (96.8 - 348.2)	188.7 (108.5 - 359.7)	7.6
G6PD deficiency	21.2 (15.7 - 28.6)	19.4 (14.3 - 26.2)	-8.4	9.0 (6.6 - 12.2)	6.9 (5.0 - 9.3)	-23.6
Other hemoglobinopathies and hemolytic anemias	27.0 (18.4 - 37.8)	26.0 (19.8 - 39.6)	-5.8	8.0 (5.3 - 11.6)	5.6 (4.1 - 8.7)	-31.1
Other endocrine, nutritional, blood, and immune disorders	385 (266.3 - 624.5)	923.7 (630.7 - 2,109.4)	97.9	139.7 (95.9 - 226.1)	249.3 (170.9 - 566.0)	47.9
Musculoskeletal disorders	7,316.4 (5,745.7 - 8,972.4)	9,629.6 (7,539.6 - 11,803.1)	31.6	2,664.2 (2,083.2 - 3,275.1)	2,671.4 (2,077.5 - 3,282.1)	0.3
Rheumatoid arthritis	345.2 (253.9 - 439.4)	441.7 (325.1 - 569.3)	27.9	117.0 (85.6 - 149.4)	110.8 (81.5 - 143.2)	-5.4
Osteoarthritis	637.6 (393.1 - 972.0)	994.0 (611.5 - 1,471.0)	56.1	218.8 (134.7 - 335.8)	230.1 (141.3 - 339.6)	5.5
Low back and neck pain	4,190.8 (2,958.6 - 5,703.6)	5,315.0 (3,694.9 - 7,149.1)	26.8	1,565.5 (1,106.1 - 2,137.0)	1,540.7 (1,069.3 - 2,080.1)	-1.5
Low back pain	2,538.0 (1,771.4 - 3,427.2)	3,180.6 (2,179.5 - 4,318.6)	24.9	934.0 (651.0 - 1,263.2)	908.0 (622.6 - 1,239.5)	-3.0
Neck pain	1,652.7 (1,151.0 - 2,296.4)	2,134.4 (1,482.6 - 2,934.4)	29.1	631.5 (440.6 - 881.5)	632.7 (439.0 - 872.0)	0.2
Gout	15.3 (9.8 - 22.6)	21.9 (13.7 - 32.7)	44.1	5.3 (3.4 - 7.8)	5.4 (3.4 - 8.0)	1.8
Other musculoskeletal disorders	2,127.60 (1,758.3 - 2,413.6)	2,857.00 (2,382.4 - 3,253.1)	34.2	757.6 (625.6 - 859.2)	784.4 (655.4 - 892.1)	3.5
Other non-communicable diseases	4,206.1 (3,223.3 - 5,648.5)	4,183.2 (3,066.6 - 5,753.5)	-1.0	1,639.9 (1,278.0 - 2,182.7)	1,260.5 (934.1 - 1,728.8)	-23.6
Congenital anomalies	1,021.2 (845.8 - 1,165.8)	768.4 (678.1 - 955.3)	-26.3	464.9 (382.9 - 531.1)	295.9 (260.7 - 372.5)	-37.8
Neural tube defects	100.8 (69.8 - 127.6)	40.9 (29.7 - 59.4)	-60.4	46.3 (31.7 - 58.9)	16.5 (11.9 - 24.4)	-65.4
Congenital heart anomalies	399 (323.9 - 458.8)	264.1 (213.6 - 338.4)	-34.6	179.5 (143.9 - 206.9)	100.4 (80.0 - 131.1)	-44.7
Cleft lip and cleft palate	4.4 (2.6 - 7.1)	4.4 (2.4 - 7.5)	-1.0	1.8 (1.1 - 2.9)	1.5 (0.8 - 2.5)	-18.9
Down's syndrome	41.9 (32.3 - 56.6)	68.3 (48.4 - 90.6)	63.5	17.5 (13.6 - 23.5)	21.5 (15.7 - 28.4)	22.6
Other chromosomal abnormalities	90.2 (64.1 - 120.5)	91.3 (64.8 - 126.4)	0.7	41.7 (29.4 - 55.7)	37.5 (26.3 - 52.3)	-10.5
Other congenital anomalies	384.9 (250.0 - 535.5)	299.4 (222.9 - 443.0)	-23.9	178 (113.9 - 247.9)	118.5 (86.9 - 183.0)	-35.3
Skin and subcutaneous diseases	1,279.2 (820.9 - 1,945.9)	1,594.9 (1,034.3 - 2,440.7)	24.7	499.7 (318.5 - 760.3)	503.9 (321.7 - 774.5)	0.8
Eczema	303.8 (156.7 - 483.5)	390.2 (202.4 - 619.6)	28.7	124.3 (63.8 - 198.4)	132.9 (68.6 - 211.6)	7.1
Psoriasis	50.2 (24.3 - 80.4)	64.3 (31.7 - 101.9)	27.9	18.7 (9.0 - 29.9)	18.1 (8.9 - 28.7)	-3.2
Cellulitis	43.0 (17.5 - 133.6)	46.8 (19.2 - 142.1)	10.5	15.0 (5.8 - 46.6)	12.9 (4.9 - 41.4)	-14
Abscess, impetigo, and other bacterial skin diseases	39.1 (27.4 - 60.5)	44.6 (29.3 - 71.5)	13.8	14.1 (9.5 - 22.4)	12.6 (8.0 - 21.0)	-10.8
Scabies	20.4 (9.3 - 40.1)	24.1 (11.1 - 46.8)	18.7	8.4 (3.8 - 16.4)	8.2 (3.8 - 16.0)	-1.4

(Continued from previous page)	All age DALYs (thousands)			Age-standardized DALY rate (per 100,000)		
	1990	2010	Median % change	1990	2010	Median % change
Fungal skin diseases	55.8 (17.4 - 130.3)	70.7 (22.1 - 161.7)	26.6	21.7 (6.7 - 50.5)	21.3 (6.7 - 48.5)	-2.0
Viral skin diseases	101.5 (35.9 - 186.3)	119.5 (42.4 - 225.2)	17.0	43.9 (15.7 - 80.7)	43.6 (15.5 - 82.6)	-1.3
Acne vulgaris	177.1 (79.5 - 363.2)	203.4 (90.9 - 410.3)	14.2	78.1 (35.1 - 161.0)	80.2 (36.0 - 162.0)	2.0
Alopecia areata	46.8 (13.9 - 93.2)	58.7 (17.3 - 117.6)	25.1	18.4 (5.4 - 36.7)	18.6 (5.5 - 37.3)	1.3
Pruritus	102.0 (47.4 - 196.6)	134.6 (61.6 - 259.8)	31.7	36.9 (17.1 - 71.3)	36.7 (16.8 - 71.1)	-0.8
Urticaria	91.2 (36.8 - 155.0)	112.7 (45.1 - 191.5)	23.6	36.2 (14.6 - 61.5)	36.2 (14.4 - 62.2)	-0.2
Decubitus ulcer	67.3 (37.6 - 120.2)	84.8 (42.1 - 165.1)	24.7	18.9 (10.6 - 34.6)	17.2 (8.6 - 33.2)	-9.5
Other skin and subcutaneous diseases	181.1 (85.0 - 337.8)	240.6 (114.8 - 446.5)	33.1	65.1 (30.4 - 122.6)	65.3 (30.9 - 121.5)	0.4
Sense organ diseases	1,000.9 (666.1 - 1,477.6)	1,105.2 (742.9 - 1,628.4)	9.5	332.0 (218.3 - 494.1)	258.1 (172.1 - 382.1)	-22.9
Glaucoma	13.9 (9.7 - 18.9)	22.1 (16.2 - 29.2)	59.8	4.1 (2.8 - 5.5)	4.5 (3.3 - 6.0)	12.2
Cataracts	69.0 (51.2 - 91.6)	56.8 (41.2 - 75.6)	-17.7	20.5 (15.2 - 27.2)	11.9 (8.6 - 15.8)	-42.1
Macular degeneration	24.5 (17.6 - 32.7)	42.6 (30.8 - 56.3)	74.1	6.4 (4.6 - 8.5)	7.8 (5.7 - 10.4)	22.2
Refraction and accommodation disorders	32.2 (24.8 - 40.8)	42.7 (32.5 - 54.4)	32.5	9.8 (7.5 - 12.5)	9.4 (7.1 - 11.9)	-4.3
Other hearing loss	585.3 (336.5 - 967.1)	559.2 (322.5 - 916.4)	-4.3	195.7 (111.7 - 326.4)	128.7 (74.0 - 211.7)	-34.1
Other vision loss	270.6 (118.8 - 551.2)	375.0 (162.2 - 762.4)	39.3	93.5 (41.5 - 189.4)	93.8 (41.1 - 189.5)	0.7
Other sense organ diseases	5.4 (1.9 - 12.2)	7.0 (2.4 - 16.3)	29.5	2.0 (0.7 - 4.5)	2.0 (0.7 - 4.6)	-0.3
Oral disorders	572.3 (334.5 - 903.7)	565.3 (324.4 - 923.9)	-1.3	188.4 (111.4 - 299.1)	139.1 (79.1 - 233.4)	-26.3
Dental caries	46.4 (19.3 - 89.0)	56.2 (22.4 - 107.0)	20.7	18.7 (7.8 - 35.8)	18.5 (7.6 - 35.3)	-0.8
Periodontal disease	139.7 (52.5 - 291.8)	194.7 (72.8 - 414.3)	39.1	50.9 (19.1 - 106.3)	51.3 (19.2 - 109.4)	0.7
Edentulism	386.2 (220.2 - 618.2)	314.5 (182.1 - 499.4)	-18.9	118.8 (67.7 - 190.3)	69.2 (40.1 - 109.9)	-41.9
Sudden infant death syndrome	332.5 (181.7 - 487.0)	149.3 (74.5 - 297.4)	-58.3	154.9 (84.7 - 226.8)	63.5 (31.7 - 126.5)	-61.9
Injuries	7,931.2 (7,420.0 - 8,639.9)	7,945.1 (7,107.3 - 8,730.3)	0.7	3,128.0 (2,935.4 - 3,388.5)	2,508.3 (2,264.4 - 2,744.4)	-19.5
Transport injuries	2,816.2 (2,475.0 - 3,295.0)	2,444.0 (2,061.1 - 2,839.4)	-13.1	1,146.5 (1,010.0 - 1,332.4)	823.8 (698.1 - 959.2)	-28.2
Road injury	2,662.4 (2,335.9 - 3,099.1)	2,246.2 (1,918.6 - 2,651.6)	-16	1,085.6 (951.6 - 1,258.5)	759.1 (650.8 - 900.2)	-30.6
Pedestrian injury by road vehicle	401.8 (328.9 - 505.0)	293.0 (229.1 - 358.6)	-27	163.3 (132.5 - 205.3)	95.4 (74.8 - 117.9)	-41.6
Pedal cycle vehicle	64.6 (48.0 - 76.7)	53.6 (43.3 - 65.9)	-17.8	28.4 (20.6 - 33.9)	18.1 (14.9 - 23.3)	-37.1
Motorized vehicle with two wheels	208.5 (178.8 - 265.8)	254.7 (172.7 - 305.1)	25.5	84.5 (72.5 - 105.9)	84.4 (59.6 - 100.5)	1.8
Motorized vehicle with three or more wheels	1,994.6 (1,685.5 - 2,385.7)	1,657.8 (1,412.1 - 2,050.4)	-17.8	812.0 (689.8 - 964.4)	564.6 (482.0 - 699.9)	-31.1
Road injury other	2.3 (1.4 - 4.2)	5.0 (2.4 - 7.8)	125.5	0.9 (0.6 - 1.7)	1.6 (0.7 - 2.5)	75.1
Other transport injury	153.9 (127.9 - 205.1)	197.7 (158.3 - 253.6)	30.3	61.0 (50.7 - 81.3)	64.6 (51.3 - 82.7)	7.6
Unintentional injuries other than transport injuries	2,336.2 (2,036.3 - 2,753.8)	2,980.3 (2,425.1 - 3,575.1)	30.4	877.6 (768.8 - 1,026.7)	833.6 (684.9 - 987.2)	-3.0
Falls	807.3 (619.2 - 1,060.7)	1,264.5 (963.9 - 1,631.6)	58.5	271.5 (207.8 - 358.3)	298.3 (229.6 - 384.8)	10.9

(Continued from previous page)	All age DALYs (thousands)			Age-standardized DALY rate (per 100,000)		
	1990	2010	Median % change	1990	2010	Median % change
Drowning	281.5 (227.6 - 350.6)	223.8 (186.4 - 293.6)	-21.3	120.4 (97.6 - 150.2)	80.8 (66.6 - 107.6)	-33.6
Fire, heat and hot substances	243.4 (197.2 - 289.6)	204.0 (162.9 - 283.2)	-17.6	99.0 (79.2 - 118.0)	64.7 (51.3 - 93.3)	-35.6
Poisonings	267.0 (205.2 - 437.0)	488.5 (176.4 - 695.3)	106.0	102.4 (78.7 - 169.8)	158.7 (58.5 - 226.8)	72.8
Exposure to mechanical forces	237.9 (178.9 - 317.0)	174.5 (138.8 - 268.7)	-29.9	96.7 (72.1 - 128.7)	56.5 (44.2 - 89.0)	-44.9
Mechanical forces (firearm)	101.1 (57.3 - 134.1)	55.7 (39.4 - 109.8)	-49.1	42.9 (23.6 - 56.8)	19.7 (13.6 - 40.2)	-58.0
Mechanical forces (other)	141.3 (109.0 - 204.6)	123.7 (97.1 - 207.9)	-14.7	55.5 (42.4 - 79.4)	38.2 (29.8 - 65.2)	-33.6
Adverse effects of medical treatment	108.5 (88.8 - 137.4)	211.3 (163.6 - 282.6)	94.4	37.9 (31.2 - 47.8)	53.1 (41.4 - 70.3)	39.2
Animal contact	22.3 (16.8 - 29.3)	14.7 (11.3 - 19.2)	-34.2	8.7 (6.5 - 11.4)	4.3 (3.3 - 5.7)	-50.4
Animal contact (venomous)	11.2 (7.6 - 16.4)	7.7 (5.2 - 11.0)	-31.6	4.2 (2.9 - 6.3)	2.1 (1.4 - 3.0)	-51.1
Animal contact (non-venomous)	11.1 (7.7 - 14.1)	7.0 (5.1 - 9.7)	-37.5	4.5 (3.1 - 5.7)	2.3 (1.7 - 3.2)	-50.2
Unintentional injuries not classified elsewhere	368.2 (323.5 - 451.6)	399.0 (330.2 - 464.9)	9.9	141.0 (124.3 - 172.9)	117.2 (97.1 - 136.6)	-16.0
Self-harm and interpersonal violence	2,778.8 (2,309.2 - 3,191.8)	2,520.8 (2,140.6 - 3,034.5)	-10.4	1,103.8 (918.8 - 1,266.2)	851.0 (722.0 - 1,013.6)	-23.9
Self-harm	1,398.5 (1,072.3 - 1,813.4)	1,462.7 (1,070.3 - 1,784.4)	5.7	546.6 (420.2 - 705.5)	470.4 (344.7 - 569.0)	-13.2
Interpersonal violence	1,380.2 (980.9 - 1,702.2)	1,058.2 (835.3 - 1,468.6)	-25.5	557.3 (398.8 - 679.1)	380.5 (297.4 - 522.8)	-33.3
Assault by firearm	940.7 (706.1 - 1,161.4)	757.0 (589.7 - 948.7)	-20.2	379.5 (282.4 - 465.9)	274.2 (213.9 - 340.0)	-28.2
Assault by sharp object	205.9 (119.1 - 274.1)	153.1 (113.7 - 275.6)	-32.9	81.0 (47.3 - 108.1)	52.6 (38.8 - 95.9)	-41.6
Assault by other means	235.6 (183.3 - 273.8)	151.1 (117.5 - 226.4)	-38.5	97.5 (76.1 - 113.5)	54.6 (42.3 - 81.3)	-45.9

Table A2: DALYs and median percent change in the United States by risk for both sexes combined, 1990 and 2010

	All age DALYs (thousands)			Age-standardized DALY rate (per 100,000)		
	1990	2010	Median % change	1990	2010	Median % change
Unimproved water and sanitation	12.1 (0.7 - 27.2)	11.2 (0.7 - 24.3)	-7.4	5.1 (0.3 - 11.4)	3.4 (0.2 - 7.5)	-32.4
Unimproved water source	11.4 (0.7 - 25.7)	10.7 (0.6 - 23.2)	-5.7	4.8 (0.3 - 10.8)	3.3 (0.2 - 7.2)	-31.3
Unimproved sanitation	0.7 (0.0 - 1.8)	0.5 (0.0 - 1.2)	-32.5	0.3 (0.0 - 0.8)	0.1 (0.0 - 0.4)	-50.9
Air pollution	–	–	–	–	–	–
Ambient particulate matter pollution	2,768.9 (2,421.9 - 3,116.8)	1,820.4 (1,552.6 - 2,111.1)	-34.5	909.4 (796.1 - 1,021.0)	417.5 (357.1 - 481.1)	-54.2
Household air pollution from solid fuels	–	–	–	–	–	–
Ambient ozone pollution	118.3 (40.9 - 195.2)	90.2 (30.3 - 161.3)	-24.4	35.1 (12.2 - 58.1)	18.8 (6.3 - 33.6)	-47
Other environmental risks	135.2 (91.2 - 186.3)	489.9 (282.8 - 819.2)	248.2	45.9 (31.3 - 63.1)	111.7 (63.8 - 186.6)	133.3
Residential radon	–	183.2 (18.8 - 514.2)	–	–	42 (4.3 - 117.2)	–
Lead exposure	135.2 (91.2 - 186.3)	306.7 (213.1 - 417.2)	127.6	45.9 (31.3 - 63.1)	69.7 (48.2 - 95.2)	51.3
Child and maternal undernutrition	66.1 (51.1 - 86.9)	46.9 (34.5 - 61.6)	-28.2	25.2 (18.7 - 34.7)	14.7 (10.4 - 20.5)	-41.1
Suboptimal breastfeeding	–	–	–	–	–	–
Non-exclusive breastfeeding	–	–	–	–	–	–
Discontinued breastfeeding	–	–	–	–	–	–
Childhood underweight	7.4 (4.8 - 10.9)	5.8 (3.7 - 8.6)	-22.1	3.4 (2.2 - 5.1)	2.4 (1.5 - 3.6)	-29.1
Iron deficiency	31.3 (26.3 - 40.1)	24.5 (16.3 - 29.7)	-19.7	9.1 (7.8 - 11.8)	5.3 (3.4 - 6.3)	-40.0
Vitamin A deficiency	6.5 (2.3 - 13.8)	2.8 (1.0 - 5.8)	-57.8	3.0 (1.0 - 6.4)	1.2 (0.4 - 2.4)	-61.7
Zinc deficiency	21.9 (10.2 - 41.9)	14.2 (6.5 - 27.3)	-35.1	10.1 (4.7 - 19.4)	6.0 (2.7 - 11.4)	-41.1
Tobacco smoking	10,573.7 (9,611.6 - 11,542.3)	9,679.6 (8,595.0 - 10,988.9)	-8.5	3,532.9 (3,211.5 - 3,851.8)	2,220.0 (1,974.5 - 2,526.1)	-37.3
Tobacco smoking, excluding second-hand smoke	9,945.1 (8,954.3 - 10,973.5)	9,422.1 (8,319.4 - 10,713.6)	-5.4	3,337.1 (2,999.9 - 3,669.7)	2,160.7 (1,914.9 - 2,465.5)	-35.4
Second-hand smoke	628.6 (430.5 - 840.0)	257.5 (120.8 - 456.0)	-60.6	195.9 (135.0 - 261.8)	59.3 (28.3 - 104.5)	-70.9
Alcohol and drug use	4,691.0 (3,783.3 - 5,790.1)	5,855.2 (4,847.4 - 6,934.0)	25.0	1,818.1 (1,466.1 - 2,240.0)	1,869.0 (1,544.6 - 2,226.6)	3.0
Alcohol use	3,310.4 (2,510.1 - 4,254.1)	3,565.3 (2,854.9 - 4,367.5)	8.6	1,281.6 (986.5 - 1,647.1)	1,078.6 (860.4 - 1,311.2)	-15.2
Drug use	1,454.8 (1,105.0 - 1,937.9)	2,380.0 (1,833.5 - 3,067.1)	64.2	565.7 (429.8 - 754.5)	816.2 (626.0 - 1,046.2)	45.0
Physiological risks	–	–	–	–	–	–
High fasting plasma glucose	3,431.9 (2,791.1 - 4,105.9)	4,770.3 (3,953.2 - 5,663.6)	38.7	1,112.4 (903.1 - 1,331.9)	1,088.2 (903.5 - 1,294.2)	-2.5
High total cholesterol	4,408.8 (3,703.4 - 5,122.6)	2,817.3 (2,089.7 - 3,616.8)	-36.2	1,434.5 (1,207.9 - 1,663.7)	642.3 (481.6 - 818.7)	-55.4
High blood pressure	8,130.6 (7,179.7 - 9,129.1)	6,416.2 (5,046.6 - 7,698.3)	-21.1	2,494.5 (2,185.9 - 2,813.2)	1,354.1 (1,039.9 - 1,641.9)	-45.7
High body-mass index	6,117.0 (5,199.3 - 7,051.7)	8,862.5 (7,735.2 - 10,112.0)	44.9	2,065.9 (1,766.2 - 2,374.3)	2,089.7 (1,824.0 - 2,379.7)	1.1
Low bone mineral density	105.6 (65.3 - 147.8)	212.8 (122.4 - 305.5)	105.1	30.5 (19.0 - 42.7)	41.5 (23.8 - 59.6)	39.1

(Continued from previous page)	All age DALYs (thousands)			Age-standardized DALY rate (per 100,000)		
	1990	2010	Median % change	1990	2010	Median % change
Dietary risks	12,292.6 (11,482.2 - 13,040.9)	11,500.7 (10,582.9 - 12,481.3)	-6.9	3,909.0 (3,649.7 - 4,144.3)	2,562.3 (2,369.6 - 2,774.8)	-34.7
Physical inactivity and low physical activity	–	4,323.9 (3,726.1 - 4,988.3)	–	–	982.4 (845.4 - 1,131.5)	–
Occupational risks	1,169.2 (934.9 - 1,453.4)	1,095.0 (821.4 - 1,414.1)	-6.6	448.9 (359.0 - 559.8)	322.3 (244.1 - 412.9)	-28.4
Occupational carcinogens	171.2 (127.6 - 226.9)	120.2 (82.2 - 167.9)	-30.1	59.4 (44.4 - 78.9)	28.5 (19.6 - 39.6)	-52.1
Occupational exposure to asbestos	119.2 (81.0 - 170.6)	78.4 (46.1 - 121.7)	-34.9	40.5 (27.6 - 57.9)	18.4 (10.9 - 28.3)	-54.8
Occupational exposure to arsenic	1.2 (0.5 - 2.2)	0.8 (0.3 - 1.6)	-32.5	0.4 (0.2 - 0.8)	0.2 (0.1 - 0.4)	-56.8
Occupational exposure to benzene	5.1 (1.6 - 9.5)	5.2 (1.7 - 9.7)	2.0	1.8 (0.6 - 3.4)	1.5 (0.5 - 2.8)	-17.1
Occupational exposure to beryllium	0.1 (0.0 - 0.1)	0.1 (0.0 - 0.1)	-34.2	<0.05 (0.0 - 0.1)	<0.05 (0.0 - <0.05)	-57.8
Occupational exposure to cadmium	0.3 (0.1 - 0.5)	0.2 (0.1 - 0.4)	-30.1	0.1 (0.1 - 0.2)	0.1 (0.0 - 0.1)	-55.2
Occupational exposure to chromium	1.1 (0.7 - 1.6)	0.8 (0.5 - 1.1)	-30.8	0.4 (0.2 - 0.6)	0.2 (0.1 - 0.3)	-55.7
Occupational exposure to diesel engine exhaust	12.0 (6.9 - 18.0)	8.7 (5.0 - 13.5)	-28	4.4 (2.5 - 6.5)	2.0 (1.2 - 3.2)	-53.8
Occupational exposure to second-hand smoke	16.1 (11.6 - 21.2)	13.8 (10.1 - 18.6)	-15.4	5.9 (4.2 - 7.7)	3.2 (2.4 - 4.4)	-45.8
Occupational exposure to formaldehyde	0.2 (0.1 - 0.4)	0.2 (0.1 - 0.3)	-9.2	0.1 (0.0 - 0.1)	0.1 (0.0 - 0.1)	-27.0
Occupational exposure to nickel	4.9 (1.3 - 10.0)	3.3 (0.9 - 6.8)	-33.6	1.8 (0.5 - 3.6)	0.8 (0.2 - 1.6)	-57.5
Occupational exposure to polycyclic aromatic hydrocarbons	2.5 (1.2 - 4.0)	1.8 (0.9 - 3.0)	-27.8	0.9 (0.4 - 1.5)	0.4 (0.2 - 0.7)	-53.8
Occupational exposure to silica	7.9 (5.2 - 10.8)	5.9 (4.0 - 8.5)	-26.1	2.9 (1.9 - 3.9)	1.4 (0.9 - 2.0)	-52.7
Occupational exposure to sulfuric acid	2.0 (0.4 - 4.8)	1.6 (0.3 - 4.1)	-19.1	0.7 (0.1 - 1.8)	0.4 (0.1 - 1.0)	-47.1
Occupational asthmagens	65.7 (42.0 - 98.8)	75.2 (47.3 - 116.3)	14.3	26.3 (16.8 - 39.7)	23.9 (14.9 - 37.2)	-9.5
Occupational particulate matter, gases, and fumes	138.1 (52.8 - 248.5)	167 (59.5 - 295.0)	20.5	51.5 (19.6 - 93.0)	43.5 (15.4 - 77.2)	-16.1
Occupational noise	74.3 (42.0 - 125.0)	47.2 (27.5 - 75.9)	-36.5	29.0 (16.3 - 48.7)	13.4 (7.8 - 21.5)	-53.9
Occupational risk factors for injuries	297.4 (239.9 - 366.3)	217.3 (171.2 - 286.5)	-27.7	117.4 (94.6 - 144.4)	72.1 (56.8 - 94.8)	-39.2
Occupational low back pain	422.6 (278.8 - 620.5)	468.2 (300.7 - 685.5)	10.3	165.3 (108.9 - 242.6)	140.8 (90.3 - 206.6)	-15.3
Sexual abuse and violence	–	1,097.3 (842.7 - 1,409.2)	–	–	344.7 (265.9 - 440.9)	–
Childhood sexual abuse	–	608.4 (464.6 - 776.7)	–	–	193.5 (147.8 - 248.8)	–
Intimate partner violence	–	538.3 (355.4 - 780.0)	–	–	166.6 (110.7 - 240.4)	–

Table A3: Life expectancy estimates by US county, males and females, 2010

State	County	Female	Male
Alabama	Autauga	78.78	73.34
	Baldwin	80.29	74.97
	Barbour	77.18	72.17
	Bibb	76.77	71.54
	Blount	78.62	73.14
	Bullock	76.39	67.19
	Butler	78.08	69.38
	Calhoun	75.80	70.80
	Chambers	76.37	70.12
	Cherokee	77.07	72.23
	Chilton	76.94	70.82
	Choctaw	78.60	71.50
	Clarke	77.35	72.29
	Clay	76.60	71.69
	Cleburne	76.60	71.69
	Coffee	78.36	74.05
	Colbert	77.85	70.36
	Conecuh	78.08	69.38
	Coosa	76.94	70.82
	Covington	77.49	72.18
	Crenshaw	76.39	70.17
	Cullman	77.74	72.33
	Dale	77.98	73.45
	Dallas	75.44	68.57
	De Kalb	77.32	72.14
	Elmore	78.40	72.90
	Escambia	77.73	71.05
	Etowah	75.33	70.33
	Fayette	75.82	70.44
	Franklin	74.92	70.69
	Geneva	78.06	72.17
	Greene	77.86	70.02
	Hale	76.80	68.06
	Henry	78.53	71.87
	Houston	79.12	73.29
	Jackson	76.26	70.71
	Jefferson	77.47	72.00
	Lamar	77.22	71.81
	Lauderdale	78.82	72.83
	Lawrence	77.45	70.39
	Lee	78.75	76.34
	Limestone	79.50	74.59
	Lowndes	76.39	70.17
	Macon	76.39	67.19
	Madison	79.51	75.13
	Marengo	77.11	70.07
	Marion	76.41	70.35
	Marshall	76.59	71.50
	Mobile	77.81	71.72
	Monroe	77.72	70.78
	Montgomery	77.98	73.35
	Morgan	77.85	72.89
	Perry	76.80	68.06
	Pickens	76.45	71.58
	Pike	77.32	71.50
	Randolph	77.54	70.73
	Russell	76.10	68.76
	Shelby	80.99	77.25
	St. Clair	78.50	72.34
	Sumter	77.86	70.02
	Talladega	76.14	70.52
	Tallapoosa	78.50	72.56
	Tuscaloosa	77.89	72.36
	Walker	75.05	68.20
	Washington	77.79	71.51
	Wilcox	77.11	70.07
	Winston	76.83	70.19

State	County	Female	Male
Alaska	Anchorage	80.06	75.80
	Bethel	80.06	75.80
	Bristol Bay	80.06	75.80
	Denali	80.06	75.80
	Dillingham	80.06	75.80
	Fairbanks North Star	80.06	75.80
	Haines	80.06	75.80
	Juneau	80.06	75.80
	Kenai Peninsula	80.06	75.80
	Ketchikan Gateway	80.06	75.80
	Kodiak Island	80.06	75.80
	Lake And Peninsula	80.06	75.80
	Matanuska-Susitna	80.06	75.80
	Nome	80.06	75.80
	North Slope	80.06	75.80
	Northwest Arctic	80.06	75.80
	Prince Of Wales-Oute	80.06	75.80
	Sitka	80.06	75.80
	Skagway-Hoonah-Angoon	80.06	75.80
	Southeast Fairbanks	80.06	75.80
	Valdez-Cordova	80.06	75.80
	Wade Hampton	80.06	75.80
	Wrangell-Petersburg	80.06	75.80
	Yakutat	80.06	75.80
	Yukon-Koyukuk	80.06	75.80
Arizona	Apache	77.54	68.50
	Cochise	80.53	75.39
	Coconino	81.81	75.68
	Gila	79.66	72.15
	Graham	79.31	74.19
	Greenlee	79.31	74.19
	La Paz	82.20	77.60
	Maricopa	82.23	77.57
	Mohave	78.71	72.68
	Navajo	78.50	72.05
	Pima	81.26	76.47
	Pinal	82.42	78.10
	Santa Cruz	82.32	76.36
	Yavapai	81.64	75.73
	Yuma	82.20	77.60
Arkansas	Arkansas	77.51	71.90
	Ashley	77.65	72.06
	Baxter	79.73	73.32
	Benton	81.11	76.71
	Boone	79.29	74.25
	Bradley	77.19	72.73
	Calhoun	77.45	71.66
	Carroll	79.72	74.71
	Chicot	76.41	69.79
	Clark	79.05	72.00
	Clay	77.74	72.15
	Cleburne	80.36	74.16
	Cleveland	77.19	72.73
	Columbia	78.56	71.12
	Conway	78.49	72.50
	Craighead	78.61	72.66
	Crawford	78.44	72.10
	Crittenden	75.42	68.09
	Cross	78.23	71.64
	Dallas	77.45	71.66
	Desha	76.41	69.79
	Drew	77.99	72.87
	Faulkner	79.73	74.39
	Franklin	79.09	72.92
	Fulton	78.31	72.70
	Garland	78.46	72.24
	Grant	78.94	73.57
	Greene	77.25	72.62

State	County	Female	Male
(Arkansas, cont'd)	Hempstead	77.69	72.13
	Hot Spring	78.65	71.84
	Howard	76.50	71.37
	Independence	77.98	72.62
	Izard	78.31	72.70
	Jackson	75.66	71.64
	Jefferson	77.10	71.56
	Johnson	77.65	73.32
	Lafayette	76.98	70.31
	Lawrence	77.17	72.03
	Lee	76.45	69.35
	Lincoln	77.99	72.87
	Little River	76.50	71.37
	Logan	77.85	71.25
	Lonoke	78.74	73.14
	Madison	79.13	72.79
	Marion	79.08	73.46
	Miller	77.29	71.94
	Mississippi	73.85	67.98
	Monroe	76.45	69.35
	Montgomery	78.43	72.90
	Nevada	76.98	70.31
	Newton	79.47	74.48
	Ouachita	76.21	70.46
	Perry	78.49	72.50
	Phillips	74.44	67.36
	Pike	78.63	72.70
	Poinsett	74.96	68.26
	Polk	78.63	72.70
	Pope	79.02	74.07
	Prairie	77.63	71.03
	Pulaski	78.72	73.33
	Randolph	78.53	72.85
	Saline	80.36	75.16
	Scott	78.43	72.90
	Searcy	79.47	74.48
	Sebastian	78.78	73.07
	Sevier	77.32	72.12
	Sharp	78.91	73.25
	St. Francis	75.99	70.84
	Stone	79.58	74.10
	Union	76.01	69.84
	Van Buren	79.58	74.10
	Washington	80.32	75.38
	White	78.63	73.43
	Woodruff	77.63	71.03
	Yell	79.00	72.50
California	Alameda	83.10	79.19
	Alpine	81.28	78.10
	Amador	80.03	77.21
	Butte	79.11	75.16
	Calaveras	81.59	77.33
	Colusa	80.31	78.05
	Contra Costa	82.88	78.98
	Del Norte	77.66	74.08
	El Dorado	82.68	78.83
	Fresno	80.87	76.19
	Glenn	79.91	75.10
	Humboldt	79.22	74.52
	Imperial	82.90	77.24
	Inyo	81.24	76.04
	Kern	79.53	75.29
	Kings	79.54	77.59
	Lake	78.00	73.32
	Lassen	78.84	75.32
	Los Angeles	83.04	78.37
	Madera	81.18	76.09
	Marin	85.02	81.44
	Mariposa	80.58	77.38
	Mendocino	79.48	75.43
	Merced	80.41	76.74

State	County	Female	Male
(California, cont'd)	Modoc	78.84	75.32
	Mono	81.28	78.10
	Monterey	83.29	79.17
	Napa	82.52	78.14
	Nevada	83.24	79.33
	Orange	83.82	80.05
	Placer	83.21	78.90
	Plumas	80.01	76.71
	Riverside	82.03	77.75
	Sacramento	81.01	76.66
	San Benito	82.23	78.54
	San Bernardino	80.42	76.10
	San Diego	82.89	78.95
	San Francisco	84.38	78.84
	San Joaquin	80.47	75.76
	San Luis Obispo	82.40	78.86
	San Mateo	84.30	80.34
	Santa Barbara	83.65	78.73
	Santa Clara	84.54	80.98
	Santa Cruz	83.04	78.80
	Shasta	79.03	73.99
	Sierra	80.01	76.71
	Siskiyou	79.23	73.99
	Solano	80.85	77.03
	Sonoma	81.97	78.52
	Stanislaus	80.48	75.95
	Sutter	79.77	76.69
	Tehama	79.48	74.83
	Trinity	79.23	73.99
	Tulare	80.34	75.58
	Tuolumne	81.28	78.10
	Ventura	82.87	79.40
	Yolo	82.06	77.96
	Yuba	78.52	74.16
Colorado	Adams	82.01	78.24
	Alamosa	80.40	74.52
	Arapahoe	82.12	78.43
	Archuleta	81.35	77.02
	Baca	78.99	73.43
	Bent	78.99	73.43
	Boulder	82.01	78.24
	Broomfield	82.01	78.24
	Chaffee	82.15	77.69
	Cheyenne	79.48	74.68
	Clear Creek	83.29	79.60
	Conejos	81.35	77.02
	Costilla	80.40	74.52
	Crowley	79.28	74.54
	Custer	79.87	75.88
	Delta	81.08	75.82
	Denver	80.48	75.12
	Dolores	80.34	76.79
	Douglas	84.17	81.41
	Eagle	83.39	81.01
	El Paso	81.49	77.64
	Elbert	81.85	77.72
	Fremont	79.87	75.88
	Garfield	82.93	77.61
	Gilpin	81.55	76.95
	Grand	83.29	79.60
	Gunnison	84.33	81.65
	Hinsdale	80.41	77.03
	Huerfano	80.40	74.52
	Jackson	83.27	79.15
	Jefferson	82.01	78.24
	Kiowa	79.48	74.68
	Kit Carson	80.82	76.19
	La Plata	83.04	78.96
	Lake	81.73	77.42
	Larimer	82.70	79.35
	Las Animas	78.81	75.54

State	County	Female	Male
(Colorado, cont'd)	Lincoln	79.48	74.68
	Logan	81.20	76.73
	Mesa	81.00	76.09
	Mineral	80.41	77.03
	Moffat	80.57	76.29
	Montezuma	80.34	76.79
	Montrose	80.99	75.99
	Morgan	79.94	76.48
	Otero	79.48	74.68
	Ouray	80.41	77.03
	Park	81.73	77.42
	Phillips	81.20	76.73
	Pitkin	84.33	81.65
	Prowers	78.99	73.43
	Pueblo	79.28	74.54
	Rio Blanco	80.57	76.29
	Rio Grande	80.41	77.03
	Routt	83.27	79.15
	Saguache	79.87	75.88
	San Juan	80.34	76.79
	San Miguel	80.34	76.79
	Sedgwick	81.20	76.73
	Summit	83.43	80.09
	Teller	82.50	77.70
	Washington	79.94	76.48
	Weld	82.01	78.24
	Yuma	80.82	76.19
Connecticut	Fairfield	83.75	79.47
	Hartford	82.32	77.56
	Litchfield	82.38	78.21
	Middlesex	82.66	78.34
	New Haven	81.97	77.43
	New London	81.61	78.13
	Tolland	81.57	79.48
	Windham	80.92	76.58
Delaware	Kent	79.63	73.80
	New Castle	80.47	75.92
	Sussex	80.61	75.68
District Of Columbia	District Of Columbia	79.14	73.68
Florida	Alachua	80.69	75.46
	Baker	77.26	68.80
	Bay	78.75	73.47
	Bradford	76.95	72.69
	Brevard	81.03	75.40
	Broward	81.93	77.05
	Calhoun	77.39	74.23
	Charlotte	82.59	75.91
	Citrus	80.02	72.90
	Clay	80.18	75.28
	Collier	84.62	80.08
	Columbia	77.70	72.56
	Dade	83.45	77.49
	De Soto	79.33	76.82
	Dixie	77.61	73.35
	Duval	78.68	73.79
	Escambia	78.38	73.16
	Flagler	81.35	76.59
	Franklin	77.90	74.27
	Gadsden	77.49	71.48
	Gilchrist	77.61	73.35
	Glades	79.33	76.82
	Gulf	77.39	74.23
	Hamilton	76.78	73.81
	Hardee	78.29	74.97
	Hendry	78.03	73.43
	Hernando	80.03	73.66
	Highlands	80.27	75.46
	Hillsborough	80.51	75.55
	Holmes	76.43	71.05

State	County	Female	Male
(Florida, cont'd)	Indian River	82.83	76.46
	Jackson	77.99	73.63
	Jefferson	77.93	73.67
	Lafayette	78.57	72.74
	Lake	81.34	75.78
	Lee	83.15	77.96
	Leon	80.84	76.58
	Levy	78.19	72.41
	Liberty	77.90	74.27
	Madison	76.78	73.81
	Manatee	82.25	76.68
	Marion	80.29	74.26
	Martin	83.23	78.20
	Miami-Dade	83.45	77.49
	Monroe	82.29	74.69
	Nassau	79.56	75.18
	Okaloosa	80.01	75.32
	Okeechobee	77.30	73.58
	Orange	81.51	76.71
	Osceola	81.39	76.91
	Palm Beach	83.49	78.14
	Pasco	80.26	74.33
	Pinellas	80.54	74.71
	Polk	80.79	75.38
	Putnam	77.82	70.97
	Santa Rosa	80.29	75.17
	Sarasota	83.42	77.49
	Seminole	81.88	77.13
	St. Johns	82.62	78.18
	St. Lucie	81.62	76.43
	Sumter	82.52	78.33
	Suwannee	78.57	72.74
	Taylor	77.93	73.67
	Union	77.26	68.80
	Volusia	80.47	73.72
	Wakulla	78.97	75.02
	Walton	79.46	73.96
	Washington	77.24	71.74
Georgia	Appling	76.07	70.40
	Atkinson	75.62	70.58
	Bacon	77.19	69.83
	Baker	76.30	72.92
	Baldwin	78.76	73.04
	Banks	79.49	73.32
	Barrow	79.10	73.17
	Bartow	78.07	73.01
	Ben Hill	77.10	72.07
	Berrien	76.18	73.06
	Bibb	76.86	69.62
	Bleckley	76.01	71.53
	Brantley	78.43	71.11
	Brooks	78.04	72.94
	Bryan	78.76	72.96
	Bulloch	78.42	73.68
	Burke	77.02	70.62
	Butts	76.01	70.77
	Calhoun	76.92	71.86
	Camden	79.14	75.45
	Candler	76.26	71.32
	Carroll	77.43	73.01
	Catoosa	80.63	74.89
	Charlton	78.43	71.11
	Chatham	79.37	74.10
	Chattahoochee	77.84	72.81
	Chattooga	76.35	70.93
	Cherokee	81.03	77.17
	Clarke	80.49	75.25
	Clay	76.96	69.97
	Clayton	78.23	74.35
	Clinch	77.70	72.12
	Cobb	81.51	77.68

State	County	Female	Male
(Georgia, cont'd)	Coffee	77.56	72.34
	Colquitt	77.90	72.77
	Columbia	80.46	76.37
	Cook	75.31	70.85
	Coweta	80.58	75.75
	Crawford	78.92	72.92
	Crisp	77.48	71.52
	Dade	77.49	72.16
	Dawson	79.70	76.06
	De Kalb	80.94	76.05
	Decatur	76.41	71.00
	Dodge	76.81	71.75
	Dooly	77.53	72.62
	Dougherty	78.51	72.54
	Douglas	78.37	75.00
	Early	76.96	69.97
	Echols	77.70	72.12
	Effingham	78.40	74.66
	Elbert	78.56	73.29
	Emanuel	75.89	70.27
	Evans	76.26	71.32
	Fannin	78.83	75.43
	Fayette	81.58	79.03
	Floyd	76.70	73.42
	Forsyth	82.59	79.16
	Franklin	78.06	71.53
	Fulton	79.59	74.79
	Gilmer	79.89	74.46
	Glascock	76.53	71.60
	Glynn	79.13	72.71
	Gordon	77.37	72.71
	Grady	78.51	73.30
	Greene	79.26	74.80
	Gwinnett	82.11	78.23
	Habersham	80.17	75.33
	Hall	81.06	76.40
	Hancock	76.53	71.60
	Haralson	74.89	70.80
	Harris	80.96	75.21
	Hart	78.75	73.66
	Heard	77.34	72.66
	Henry	79.08	74.88
	Houston	79.62	74.54
	Irwin	78.07	70.83
	Jackson	79.15	73.88
	Jasper	79.52	72.88
	Jeff Davis	77.19	69.83
	Jefferson	75.89	69.68
	Jenkins	76.53	70.62
	Johnson	77.09	72.88
	Jones	79.49	74.74
	Lamar	77.57	72.64
	Lanier	75.62	70.58
	Laurens	76.81	72.26
	Lee	78.40	75.84
	Liberty	78.97	73.79
	Lincoln	77.64	71.17
	Long	79.25	74.11
	Lowndes	77.70	72.12
	Lumpkin	79.24	75.30
	Macon	77.53	72.62
	Madison	78.57	72.36
	Marion	77.84	72.81
	Mcduffie	76.09	70.28
	Mcintosh	79.25	74.11
	Meriwether	78.20	70.00
	Miller	76.30	72.92
	Mitchell	77.07	71.09
	Monroe	78.64	74.03
	Montgomery	78.20	71.59
	Morgan	79.26	74.80
	Murray	77.00	72.24
(Georgia, cont'd)	Muscogee	76.51	71.61
	Newton	78.52	73.68
	Oconee	82.44	77.31
	Oglethorpe	78.56	73.29
	Paulding	80.61	75.26
	Peach	78.16	69.17
	Pickens	78.92	74.94
	Pierce	77.99	70.37
	Pike	77.57	72.64
	Polk	76.44	71.18
	Pulaski	77.47	72.24
	Putnam	79.52	72.88
	Quitman	76.96	69.97
	Rabun	80.18	74.95
	Randolph	76.92	71.86
	Richmond	76.75	70.32
	Rockdale	79.86	75.58
	Schley	77.65	72.46
	Screven	76.53	70.62
	Seminole	76.30	72.92
	Spalding	76.70	71.17
	Stephens	77.73	72.71
	Stewart	76.96	69.97
	Sumter	77.65	72.46
	Talbot	78.20	70.00
	Taliaferro	77.64	71.17
	Tattnall	76.08	71.59
	Taylor	78.92	72.92
	Telfair	77.10	72.07
	Terrell	76.92	71.86
	Thomas	77.93	71.83
	Tift	77.90	72.06
	Toombs	77.37	72.22
	Towns	80.18	74.95
	Treutlen	78.20	71.59
	Troup	77.34	72.66
	Turner	78.07	70.83
	Twiggs	76.01	71.53
	Union	80.52	75.72
	Upson	76.09	71.39
	Walker	77.46	72.06
	Walton	78.58	72.93
	Ware	76.84	71.19
	Warren	76.53	71.60
	Washington	76.65	71.29
	Wayne	77.45	71.90
	Webster	76.96	69.97
	Wheeler	78.20	71.59
	White	80.53	75.00
	Whitfield	79.35	74.06
	Wilcox	77.47	72.24
	Wilkes	77.64	71.17
	Wilkinson	77.09	72.88
	Worth	78.74	72.91
Hawaii	Hawaii	83.09	76.66
	Honolulu	83.71	78.11
	Kalawao	83.09	76.66
	Kauai	82.41	77.04
	Maui	83.62	77.80
Idaho	Ada	82.43	78.87
	Adams	81.16	77.63
	Bannock	79.59	75.64
	Bear Lake	80.91	76.67
	Benewah	78.88	74.76
	Bingham	80.94	75.59
	Blaine	82.98	79.91
	Boise	80.46	76.34
	Bonner	80.74	76.72
	Bonneville	80.70	76.47
	Boundary	80.74	76.72
	Butte	80.54	77.18

State	County	Female	Male
(Idaho, cont'd)	Camas	79.56	75.16
	Canyon	80.64	76.43
	Caribou	80.91	76.67
	Cassia	80.51	75.62
	Clark	80.54	77.18
	Clearwater	80.81	75.97
	Custer	80.46	76.34
	Elmore	80.24	75.87
	Franklin	80.91	76.67
	Fremont	80.54	77.18
	Gem	80.46	76.34
	Gooding	79.56	75.16
	Idaho	80.81	75.97
	Jefferson	81.45	76.54
	Jerome	80.19	74.08
	Kootenai	80.86	77.36
	Latah	81.68	78.99
	Lemhi	80.54	77.18
	Lewis	80.81	75.97
	Lincoln	79.56	75.16
	Madison	81.13	77.90
	Minidoka	79.33	74.99
	Nez Perce	79.88	75.50
	Oneida	80.51	75.62
	Owyhee	80.24	75.87
	Payette	79.87	74.98
	Power	80.51	75.62
	Shoshone	78.88	74.76
	Teton	81.13	77.90
	Twin Falls	79.78	74.96
	Valley	81.16	77.63
	Washington	81.16	77.63
Illinois	Adams	81.30	75.44
	Alexander	77.26	71.35
	Bond	80.13	75.58
	Boone	80.88	77.40
	Brown	79.15	75.66
	Bureau	81.35	76.10
	Calhoun	79.18	74.91
	Carroll	80.67	75.54
	Cass	79.89	75.18
	Champaign	81.84	77.73
	Christian	79.78	75.27
	Clark	78.81	74.69
	Clay	80.12	73.37
	Clinton	82.20	76.43
	Coles	80.08	73.77
	Cook	80.98	75.81
	Crawford	79.47	74.43
	Cumberland	80.76	76.06
	De Kalb	80.73	77.07
	De Witt	79.70	75.14
	Douglas	80.88	75.72
	Du Page	83.36	79.63
	Edgar	79.10	74.54
	Edwards	80.62	74.40
	Effingham	80.85	76.07
	Fayette	80.53	75.53
	Ford	79.18	74.65
	Franklin	78.15	72.15
	Fulton	79.30	75.32
	Gallatin	78.71	72.85
	Greene	79.18	74.91
	Grundy	80.32	75.78
	Hamilton	78.71	72.85
	Hancock	82.18	76.68
	Hardin	78.71	72.85
	Henderson	82.11	76.35
	Henry	81.00	76.01
	Iroquois	79.18	74.65
	Jackson	79.59	75.01

State	County	Female	Male
(Illinois, cont'd)	Jasper	80.76	76.06
	Jefferson	78.88	74.02
	Jersey	80.46	75.96
	Jo Daviess	81.93	78.21
	Johnson	79.25	74.03
	Kane	82.08	78.99
	Kankakee	80.11	74.53
	Kendall	83.06	77.88
	Knox	78.47	74.53
	La Salle	79.47	75.19
	Lake	82.51	78.94
	Lawrence	78.60	73.38
	Lee	79.86	76.63
	Livingston	80.67	75.41
	Logan	80.34	74.73
	Macon	79.56	74.54
	Macoupin	79.67	76.17
	Madison	79.57	74.45
	Marion	78.21	72.44
	Marshall	79.47	75.47
	Mason	79.15	75.66
	Massac	79.25	74.03
	Mcdonough	80.16	76.44
	Mchenry	81.85	77.83
	Mclean	81.35	77.32
	Menard	79.89	75.18
	Mercer	82.11	76.35
	Monroe	82.15	78.00
	Montgomery	79.59	73.90
	Morgan	80.13	75.82
	Moultrie	80.62	76.66
	Ogle	81.56	77.39
	Peoria	79.36	74.86
	Perry	79.82	73.90
	Piatt	80.62	76.66
	Pike	80.42	76.01
	Pope	77.51	72.01
	Pulaski	77.26	71.35
	Putnam	81.35	76.10
	Randolph	80.28	75.19
	Richland	80.12	73.37
	Rock Island	80.35	75.98
	Saline	77.51	72.01
	Sangamon	80.26	74.94
	Schuyler	79.15	75.66
	Scott	80.42	76.01
	Shelby	81.10	76.48
	St. Clair	78.97	74.05
	Stark	79.47	75.47
	Stephenson	80.49	76.34
	Tazewell	80.35	75.88
	Union	79.39	74.99
	Vermilion	78.03	73.05
	Wabash	80.62	74.40
	Warren	81.21	73.91
	Washington	81.36	75.98
	Wayne	80.49	73.81
	White	79.34	73.64
	Whiteside	80.74	75.89
	Will	81.35	77.39
	Williamson	79.02	73.51
	Winnebago	80.24	74.68
	Woodford	81.73	78.04
Indiana	Adams	80.87	75.25
	Allen	80.15	76.10
	Bartholomew	79.23	74.58
	Benton	80.74	74.25
	Blackford	78.94	73.10
	Boone	80.63	77.26
	Brown	80.49	76.65
	Carroll	80.41	75.65

State	County	Female	Male
(Indiana, cont'd)	Cass	79.26	74.09
	Clark	78.48	74.06
	Clay	79.21	74.60
	Clinton	79.60	74.59
	Crawford	79.39	72.77
	Daviess	79.23	73.69
	De Kalb	79.29	74.97
	Dearborn	80.27	76.11
	Decatur	80.04	74.37
	Delaware	79.25	73.70
	Dubois	80.29	76.92
	Elkhart	80.92	76.44
	Fayette	76.80	72.84
	Floyd	78.81	74.38
	Fountain	79.59	73.85
	Franklin	80.36	75.18
	Fulton	78.79	74.21
	Gibson	79.68	75.04
	Grant	78.68	72.31
	Greene	79.02	73.63
	Hamilton	83.21	79.20
	Hancock	79.41	76.22
	Harrison	80.15	74.40
	Hendricks	81.72	77.55
	Henry	78.90	73.44
	Howard	78.72	74.16
	Huntington	80.26	75.09
	Jackson	78.84	73.18
	Jasper	79.57	74.48
	Jay	78.94	73.10
	Jefferson	77.66	73.38
	Jennings	78.12	72.75
	Johnson	80.68	76.12
	Knox	78.55	73.15
	Kosciusko	80.36	75.53
	La Porte	78.89	73.59
	Lagrange	79.84	75.29
	Lake	79.24	73.23
	Lawrence	78.96	72.92
	Madison	78.00	72.96
	Marion	78.51	73.23
	Marshall	80.08	76.19
	Martin	79.23	73.69
	Miami	79.39	75.20
	Monroe	81.55	77.29
	Montgomery	80.01	74.51
	Morgan	79.64	74.19
	Newton	79.10	74.40
	Noble	79.07	74.56
	Ohio	79.12	73.21
	Orange	79.39	72.77
	Owen	78.58	73.30
	Parke	79.90	74.26
	Perry	79.41	75.57
	Pike	79.68	75.04
	Porter	80.04	75.92
	Posey	81.19	75.25
	Pulaski	78.79	74.21
	Putnam	80.10	75.41
	Randolph	79.82	74.97
	Ripley	79.11	75.89
	Rush	79.00	74.52
	Scott	76.53	71.20
	Shelby	79.11	73.94
	Spencer	80.93	75.56
	St. Joseph	79.88	75.19
	Starke	76.50	72.50
	Steuben	81.30	77.09
	Sullivan	78.63	72.62
	Switzerland	79.12	73.21
	Tippecanoe	80.67	76.80
	Tipton	79.21	76.18

State	County	Female	Male
(Indiana, cont'd)	Union	80.36	75.18
	Vanderburgh	78.97	74.57
	Vermillion	77.97	73.58
	Vigo	78.51	73.31
	Wabash	80.21	74.44
	Warren	80.74	74.25
	Warrick	80.42	77.06
	Washington	77.93	72.64
	Wayne	78.54	73.44
	Wells	81.77	76.22
	White	80.11	75.59
	Whitley	80.66	75.97
Iowa	Adair	81.52	76.28
	Adams	80.85	76.29
	Allamakee	81.20	77.19
	Appanoose	80.24	74.96
	Audubon	81.52	76.28
	Benton	81.89	77.56
	Black Hawk	80.72	76.66
	Boone	80.00	75.62
	Bremer	82.95	78.71
	Buchanan	80.78	76.89
	Buena Vista	81.36	76.23
	Butler	82.82	76.94
	Calhoun	81.02	77.33
	Carroll	81.87	76.24
	Cass	81.66	76.90
	Cedar	83.17	77.90
	Cerro Gordo	80.75	76.75
	Cherokee	81.46	76.41
	Chickasaw	82.82	76.94
	Clarke	80.72	75.22
	Clay	81.16	77.30
	Clayton	82.72	76.61
	Clinton	79.72	75.52
	Crawford	80.88	76.07
	Dallas	82.88	79.35
	Davis	80.55	76.26
	Decatur	80.72	75.22
	Delaware	82.43	78.89
	Des Moines	79.86	76.62
	Dickinson	83.70	78.24
	Dubuque	81.36	77.64
	Emmet	81.14	76.37
	Fayette	81.29	76.57
	Floyd	81.27	77.62
	Franklin	81.68	77.07
	Fremont	80.47	75.46
	Greene	81.83	76.65
	Grundy	81.82	77.42
	Guthrie	81.83	76.65
	Hamilton	82.53	76.93
	Hancock	81.68	77.07
	Hardin	81.20	76.17
	Harrison	79.79	74.28
	Henry	81.66	76.72
	Howard	82.43	77.81
	Humboldt	81.96	76.68
	Ida	79.73	75.53
	Iowa	82.34	77.59
	Jackson	81.29	76.11
	Jasper	81.30	75.62
	Jefferson	80.75	76.83
	Johnson	83.46	78.30
	Jones	82.14	77.62
	Keokuk	82.34	77.59
	Kossuth	81.92	78.40
	Lee	79.89	74.61
	Linn	82.09	78.17
	Louisa	81.77	76.67
	Lucas	80.24	74.96
	Lyon	81.45	76.96

State	County	Female	Male
(Iowa, cont'd)	Madison	81.18	75.88
	Mahaska	80.98	76.52
	Marion	81.07	76.75
	Marshall	81.22	73.58
	Mills	80.05	75.15
	Mitchell	82.43	77.81
	Monona	79.73	75.53
	Monroe	80.55	76.26
	Montgomery	80.47	75.46
	Muscatine	80.97	76.51
	O@Brien	81.46	76.41
	Osceola	81.45	76.96
	Page	80.22	75.21
	Palo Alto	81.14	76.37
	Plymouth	82.84	78.15
	Pocahontas	81.96	76.68
	Polk	81.13	76.41
	Pottawattamie	79.88	74.67
	Poweshiek	81.43	77.96
	Ringgold	80.85	76.29
	Sac	81.02	77.33
	Scott	80.78	75.83
	Shelby	81.66	76.90
	Sioux	83.49	77.98
	Story	82.65	79.04
	Tama	81.82	77.42
	Taylor	80.85	76.29
	Union	81.18	75.88
	Van Buren	80.75	76.83
	Wapello	78.98	74.26
	Warren	80.83	76.82
	Washington	81.77	76.67
	Wayne	80.55	76.26
	Webster	78.85	75.38
	Winnebago	82.15	76.71
	Winneshiek	83.67	78.56
	Woodbury	80.06	75.73
	Worth	82.15	76.71
	Wright	81.16	76.72
Kansas	Allen	78.54	74.52
	Anderson	82.13	75.00
	Atchison	79.27	74.95
	Barber	80.55	75.82
	Barton	79.89	74.91
	Bourbon	80.11	73.66
	Brown	81.50	75.66
	Butler	79.68	75.40
	Chase	80.60	75.99
	Chautauqua	78.14	72.43
	Cherokee	77.47	70.95
	Cheyenne	80.87	75.70
	Clark	79.73	75.22
	Clay	80.64	75.33
	Cloud	80.64	75.33
	Coffey	82.13	75.00
	Comanche	79.73	75.22
	Cowley	78.49	73.45
	Crawford	78.61	73.18
	Decatur	80.87	75.70
	Dickinson	80.91	76.89
	Doniphan	79.27	74.95
	Douglas	81.67	77.68
	Edwards	80.62	74.72
	Elk	78.14	72.43
	Ellis	80.77	76.55
	Ellsworth	80.39	74.84
	Finney	80.40	75.82
	Ford	79.73	75.22
	Franklin	79.69	74.28
	Geary	78.65	73.17
	Gove	80.93	76.74
	Graham	80.93	76.74

State	County	Female	Male
(Kansas, cont'd)	Grant	80.32	75.79
	Gray	80.40	75.82
	Greeley	80.22	76.74
	Greenwood	80.60	75.99
	Hamilton	80.22	76.74
	Harper	80.55	75.82
	Harvey	81.32	77.33
	Haskell	80.40	75.82
	Hodgeman	81.65	76.81
	Jackson	80.96	75.52
	Jefferson	80.33	76.13
	Jewell	81.51	76.54
	Johnson	83.04	79.42
	Kearny	80.32	75.79
	Kingman	80.55	75.82
	Kiowa	79.73	75.22
	Labette	79.16	73.64
	Lane	80.22	76.74
	Leavenworth	80.54	75.66
	Lincoln	80.39	74.84
	Linn	78.54	74.52
	Logan	80.93	76.74
	Lyon	80.67	75.77
	Marion	80.91	76.89
	Marshall	81.33	76.65
	Mcpherson	81.00	76.08
	Meade	79.73	75.22
	Miami	80.40	75.76
	Mitchell	80.30	75.42
	Montgomery	78.14	72.43
	Morris	80.60	75.99
	Morton	80.32	75.79
	Nemaha	81.50	75.66
	Neosho	79.42	74.18
	Ness	81.65	76.81
	Norton	80.93	76.74
	Osage	80.69	74.96
	Osborne	81.51	76.54
	Ottawa	80.30	75.42
	Pawnee	81.65	76.81
	Phillips	80.93	76.74
	Pottawatomie	80.96	75.52
	Pratt	80.07	74.80
	Rawlins	80.87	75.70
	Reno	80.07	74.80
	Republic	81.33	76.65
	Rice	80.62	74.72
	Riley	82.27	78.33
	Rooks	81.51	76.54
	Rush	81.65	76.81
	Russell	80.39	74.84
	Saline	80.30	75.42
	Scott	80.22	76.74
	Sedgwick	79.76	75.39
	Seward	79.62	74.02
	Shawnee	80.41	74.73
	Sheridan	80.93	76.74
	Sherman	80.87	75.70
	Smith	81.51	76.54
	Stafford	80.62	74.72
	Stanton	80.22	76.74
	Stevens	80.32	75.79
	Sumner	79.24	73.89
	Thomas	80.87	75.70
	Trego	80.93	76.74
	Wabaunsee	80.69	74.96
	Wallace	80.22	76.74
	Washington	81.33	76.65
	Wichita	80.22	76.74
	Wilson	79.42	74.18
	Woodson	79.42	74.18
	Wyandotte	77.73	71.78

State	County	Female	Male
Kentucky	Adair	78.47	73.56
	Allen	76.73	72.24
	Anderson	78.69	74.88
	Ballard	78.51	72.12
	Barren	79.21	73.19
	Bath	77.65	70.58
	Bell	74.94	68.76
	Boone	80.43	75.51
	Bourbon	79.08	72.40
	Boyd	77.25	72.79
	Boyle	78.70	74.77
	Bracken	76.57	72.04
	Breathitt	75.29	67.50
	Breckinridge	78.63	73.46
	Bullitt	80.16	75.61
	Butler	78.25	73.03
	Caldwell	77.01	73.41
	Calloway	79.64	73.93
	Campbell	78.75	74.70
	Carlisle	78.51	72.12
	Carroll	77.61	73.15
	Carter	77.55	70.93
	Casey	76.49	71.02
	Christian	77.71	72.18
	Clark	77.59	73.41
	Clay	74.12	68.70
	Clinton	77.32	71.22
	Crittenden	78.08	73.59
	Cumberland	77.32	71.22
	Daviess	78.90	74.31
	Edmonson	78.25	73.03
	Elliott	76.97	72.13
	Estill	76.16	69.85
	Fayette	80.04	76.15
	Fleming	77.65	70.58
	Floyd	76.23	66.59
	Franklin	78.62	74.48
	Fulton	77.88	72.41
	Gallatin	77.14	72.70
	Garrard	79.21	73.87
	Grant	77.14	72.70
	Graves	77.88	72.41
	Grayson	77.26	72.01
	Green	78.14	72.60
	Greenup	78.28	72.76
	Hancock	78.63	73.46
	Hardin	78.58	74.04
	Harlan	74.86	68.10
	Harrison	77.43	71.74
	Hart	79.00	72.99
	Henderson	77.31	72.79
	Henry	78.31	72.03
	Hickman	77.88	72.41
	Hopkins	77.18	72.42
	Jackson	76.16	69.85
	Jefferson	79.08	74.17
	Jessamine	79.27	74.59
	Johnson	75.55	69.65
	Kenton	78.55	74.18
	Knott	76.42	70.16
	Knox	76.31	69.64
	Larue	79.00	72.99
	Laurel	77.24	71.48
	Lawrence	76.97	72.13
	Lee	76.72	68.51
	Leslie	74.12	68.70
	Letcher	76.41	68.94
	Lewis	77.38	71.33
	Lincoln	78.14	71.43
	Livingston	77.80	73.12
	Logan	77.21	72.98
	Lyon	78.08	73.59
(Kentucky, cont'd)	Madison	78.34	74.72
	Magoffin	76.03	71.35
	Marion	78.40	73.38
	Marshall	77.80	73.12
	Martin	75.55	69.65
	Mason	77.90	72.87
	Mccracken	78.51	72.12
	Mccreary	75.93	71.87
	Mclean	77.29	71.66
	Meade	79.52	74.44
	Menifee	76.13	69.02
	Mercer	77.83	73.41
	Metcalfe	78.14	72.60
	Monroe	76.73	72.24
	Montgomery	78.70	72.78
	Morgan	76.03	71.35
	Muhlenberg	77.16	71.64
	Nelson	78.89	74.33
	Nicholas	77.43	71.74
	Ohio	78.19	73.84
	Oldham	81.12	76.93
	Owen	77.61	73.15
	Owsley	75.29	67.50
	Pendleton	76.57	72.04
	Perry	72.65	66.52
	Pike	75.03	67.50
	Powell	76.13	69.02
	Pulaski	78.12	72.29
	Robertson	76.57	72.04
	Rockcastle	76.39	71.49
	Rowan	78.20	72.32
	Russell	77.84	72.79
	Scott	78.46	76.23
	Shelby	80.15	75.87
	Simpson	78.47	73.28
	Spencer	78.69	74.88
	Taylor	79.85	72.23
	Todd	77.21	72.98
	Trigg	77.01	73.41
	Trimble	78.31	72.03
	Union	77.61	72.79
	Warren	79.00	75.47
	Washington	78.40	73.38
	Wayne	78.92	74.02
	Webster	77.29	71.66
	Whitley	75.45	70.83
	Wolfe	76.72	68.51
	Woodford	81.03	75.03
Louisiana	Acadia	76.13	70.08
	Allen	79.40	74.79
	Ascension	80.02	74.22
	Assumption	78.62	73.13
	Avoyelles	77.24	70.31
	Beauregard	76.99	72.67
	Bienville	76.07	70.00
	Bossier	79.95	74.37
	Caddo	76.78	71.53
	Calcasieu	77.29	71.63
	Caldwell	76.11	70.30
	Cameron	78.43	70.13
	Catahoula	76.11	70.30
	Claiborne	76.85	72.86
	Concordia	76.72	69.89
	De Soto	77.44	71.02
	East Baton Rouge	78.70	73.33
	East Carroll	75.80	70.44
	East Feliciana	77.52	70.73
	Evangeline	76.51	70.29
	Franklin	76.49	70.64
	Grant	77.38	72.08
	Iberia	76.88	71.88

State	County	Female	Male
(Louisiana, cont'd)	Iberville	78.30	72.83
	Jackson	76.73	71.91
	Jefferson	79.66	73.87
	Jefferson Davis	78.43	70.13
	La Salle	77.65	73.15
	Lafayette	79.34	74.10
	Lafourche	79.73	73.62
	Lincoln	78.52	73.27
	Livingston	78.57	72.43
	Madison	75.85	69.28
	Morehouse	76.12	69.82
	Natchitoches	77.51	72.36
	Orleans	79.17	71.70
	Ouachita	78.08	71.55
	Plaquemines	79.65	73.93
	Pointe Coupee	79.36	73.56
	Rapides	78.14	71.67
	Red River	76.07	70.00
	Richland	75.85	69.28
	Sabine	76.95	73.20
	St. Bernard	75.11	70.49
	St. Charles	78.55	74.58
	St. Helena	77.52	70.73
	St. James	78.79	73.24
	St. John The Baptist	76.62	71.44
	St. Landry	75.57	70.29
	St. Martin	77.92	72.48
	St. Mary	77.89	72.33
	St. Tammany	80.23	75.00
	Tangipahoa	76.82	70.78
	Tensas	76.72	69.89
	Terrebonne	77.09	72.39
	Union	77.13	72.93
	Vermilion	78.66	73.02
	Vernon	78.48	73.56
	Washington	76.24	69.69
	Webster	76.45	70.30
	West Baton Rouge	79.79	73.90
	West Carroll	75.80	70.44
	West Feliciana	79.79	73.90
	Winn	75.20	71.65
Maine	Androscoggin	80.18	75.57
	Aroostook	81.00	75.57
	Cumberland	82.07	77.81
	Franklin	80.05	76.41
	Hancock	81.93	77.03
	Kennebec	79.12	75.87
	Knox	81.72	77.08
	Lincoln	81.66	77.19
	Oxford	80.22	76.00
	Penobscot	80.15	75.54
	Piscataquis	80.10	74.59
	Sagadahoc	81.15	77.69
	Somerset	79.47	74.71
	Waldo	80.43	76.61
	Washington	79.82	73.74
	York	81.87	77.42
Maryland	Allegany	78.77	75.11
	Anne Arundel	81.11	76.78
	Baltimore City	76.03	68.94
	Baltimore County	80.80	75.90
	Calvert	80.95	76.54
	Caroline	78.90	74.31
	Carroll	81.74	76.65
	Cecil	78.74	73.50
	Charles	80.23	75.56
	Dorchester	79.19	74.26
	Frederick	82.20	78.24
	Garrett	80.66	75.43
	Harford	81.29	76.71
	Howard	83.01	80.41

State	County	Female	Male
(Maryland, cont'd)	Kent	81.29	74.67
	Montgomery	84.87	81.57
	Prince George@S	79.78	74.81
	Queen Anne@S	81.68	77.74
	Somerset	78.09	73.98
	St. Mary@S	80.57	76.02
	Talbot	81.73	77.08
	Washington	79.53	75.94
	Wicomico	79.06	73.67
	Worcester	81.40	76.33
Massachusetts	Barnstable	83.06	77.59
	Berkshire	82.18	77.38
	Bristol	81.73	76.22
	Dukes	82.68	79.31
	Essex	82.62	78.21
	Franklin	82.49	77.65
	Hampden	81.04	75.80
	Hampshire	82.41	77.67
	Middlesex	83.21	79.27
	Nantucket	83.06	77.59
	Norfolk	83.16	79.07
	Plymouth	81.38	76.91
	Suffolk	82.12	76.40
	Worcester	81.68	77.42
Michigan	Alcona	79.63	73.78
	Alger	80.87	76.04
	Allegan	80.58	77.08
	Alpena	80.40	75.44
	Antrim	81.81	77.03
	Arenac	78.40	74.15
	Baraga	80.68	75.89
	Barry	80.89	77.55
	Bay	79.97	75.10
	Benzie	81.27	76.53
	Berrien	79.86	75.01
	Branch	79.60	75.03
	Calhoun	78.36	72.99
	Cass	80.44	74.58
	Charlevoix	81.07	76.73
	Cheboygan	80.34	76.43
	Chippewa	80.10	77.37
	Clare	78.76	73.39
	Clinton	82.59	78.49
	Crawford	79.05	75.08
	Delta	81.79	76.49
	Dickinson	81.52	77.14
	Eaton	80.96	77.46
	Emmet	81.04	78.26
	Genesee	78.37	73.25
	Gladwin	79.47	74.29
	Gogebic	79.43	75.17
	Grand Traverse	81.82	77.18
	Gratiot	79.08	75.05
	Hillsdale	80.45	74.74
	Houghton	79.89	75.61
	Huron	80.55	75.10
	Ingham	80.22	76.70
	Ionia	79.28	75.33
	Iosco	79.93	75.13
	Iron	80.68	75.89
	Isabella	80.90	75.80
	Jackson	80.41	75.49
	Kalamazoo	79.86	75.64
	Kalkaska	79.95	75.19
	Kent	81.70	77.54
	Keweenaw	79.89	75.61
	Lake	80.35	75.35
	Lapeer	80.01	75.39
	Leelanau	83.34	80.41
	Lenawee	80.16	76.19
	Livingston	81.65	77.90

State	County	Female	Male
(Michigan, cont'd)	Luce	81.03	75.54
	Mackinac	81.03	75.54
	Macomb	80.65	75.69
	Manistee	80.99	76.72
	Marquette	81.45	76.62
	Mason	80.42	76.19
	Mecosta	81.41	76.43
	Menominee	81.68	77.47
	Midland	82.28	77.55
	Missaukee	79.33	75.89
	Monroe	80.16	75.91
	Montcalm	79.80	75.64
	Montmorency	79.59	74.97
	Muskegon	79.93	74.57
	Newaygo	79.87	75.24
	Oakland	81.39	77.63
	Oceana	80.39	75.46
	Ogemaw	79.60	74.51
	Ontonagon	79.43	75.17
	Osceola	80.35	75.35
	Oscoda	79.63	73.78
	Otsego	81.02	75.53
	Ottawa	82.78	79.80
	Presque Isle	79.59	74.97
	Roscommon	79.88	74.87
	Saginaw	79.68	74.65
	Sanilac	80.26	75.20
	Schoolcraft	80.87	76.04
	Shiawassee	79.45	74.00
	St. Clair	79.17	74.24
	St. Joseph	79.03	74.01
	Tuscola	79.58	74.28
	Van Buren	79.23	73.88
	Washtenaw	81.91	79.04
	Wayne	77.96	72.19
	Wexford	79.18	75.89
Minnesota	Aitkin	82.62	77.59
	Anoka	82.85	78.30
	Becker	80.79	76.47
	Beltrami	81.29	75.78
	Benton	81.99	76.95
	Big Stone	82.27	77.56
	Blue Earth	83.06	78.05
	Brown	83.86	77.64
	Carlton	80.34	76.36
	Carver	83.03	79.72
	Cass	80.86	76.84
	Chippewa	82.34	78.41
	Chisago	81.78	77.80
	Clay	81.70	78.29
	Clearwater	81.36	76.24
	Cook	82.43	77.17
	Cottonwood	82.53	76.53
	Crow Wing	81.87	77.91
	Dakota	83.16	79.46
	Dodge	81.98	77.33
	Douglas	82.29	79.02
	Faribault	83.61	76.77
	Fillmore	82.95	78.04
	Freeborn	81.86	77.72
	Goodhue	81.98	77.67
	Grant	82.86	78.03
	Hennepin	82.58	78.64
	Houston	83.07	78.08
	Hubbard	81.75	77.47
	Isanti	82.69	77.91
	Itasca	82.28	76.68
	Jackson	82.59	78.22
	Kanabec	80.36	76.28
	Kandiyohi	83.16	78.78
	Kittson	83.03	76.92
	Koochiching	81.49	76.37

State	County	Female	Male
(Minnesota, cont'd)	Lac Qui Parle	82.27	77.56
	Lake	82.43	77.17
	Lake Of The Woods	81.49	76.37
	Le Sueur	83.00	78.13
	Lincoln	82.22	77.00
	Lyon	81.56	77.23
	Mahnomen	81.36	76.24
	Marshall	83.03	76.92
	Martin	82.81	77.46
	Mcleod	82.45	77.64
	Meeker	82.18	77.73
	Mille Lacs	79.95	75.48
	Morrison	82.21	77.17
	Mower	82.97	77.27
	Murray	82.49	76.97
	Nicollet	83.25	78.54
	Nobles	82.59	78.22
	Norman	80.79	76.47
	Olmsted	83.60	79.49
	Otter Tail	82.86	78.03
	Pennington	81.36	76.24
	Pine	80.68	76.35
	Pipestone	82.22	77.00
	Polk	81.24	75.93
	Pope	83.04	78.04
	Ramsey	82.19	77.37
	Red Lake	81.24	75.93
	Redwood	82.53	77.21
	Renville	80.94	76.39
	Rice	81.88	79.17
	Rock	82.49	76.97
	Roseau	82.25	77.31
	Scott	83.27	79.49
	Sherburne	81.90	78.77
	Sibley	82.85	77.10
	St. Louis	80.97	76.38
	Stearns	84.13	79.69
	Steele	83.17	78.42
	Stevens	83.04	78.04
	Swift	82.34	78.41
	Todd	82.78	77.80
	Traverse	82.27	77.56
	Wabasha	82.89	78.90
	Wadena	81.75	77.47
	Waseca	82.89	79.40
	Washington	82.92	79.50
	Watonwan	82.53	76.53
	Wilkin	82.86	78.03
	Winona	81.62	77.79
	Wright	81.78	78.64
	Yellow Medicine	82.53	77.21
Mississippi	Adams	76.36	71.11
	Alcorn	77.50	70.74
	Amite	75.73	70.86
	Attala	76.23	69.04
	Benton	76.08	72.43
	Bolivar	74.32	65.03
	Calhoun	77.25	70.16
	Carroll	77.76	71.49
	Chickasaw	78.37	70.56
	Choctaw	76.72	70.27
	Claiborne	76.08	69.50
	Clarke	76.79	71.78
	Clay	77.99	71.53
	Coahoma	74.56	66.92
	Copiah	76.42	70.11
	Covington	77.76	70.72
	De Soto	79.55	74.29
	Forrest	76.78	71.16
	Franklin	76.36	71.11
	George	76.98	70.97
	Greene	76.61	71.17

State	County	Female	Male
(Mississippi, cont'd)	Grenada	77.49	70.50
	Hancock	79.24	73.65
	Harrison	77.89	72.76
	Hinds	78.45	72.12
	Holmes	74.59	67.87
	Humphreys	75.82	67.95
	Issaquena	76.76	72.17
	Itawamba	77.19	71.28
	Jackson	77.29	72.50
	Jasper	77.12	72.41
	Jefferson	76.08	69.50
	Jefferson Davis	74.95	70.67
	Jones	77.55	72.83
	Kemper	76.81	71.27
	Lafayette	79.63	72.88
	Lamar	80.46	74.75
	Lauderdale	77.83	71.89
	Lawrence	74.95	70.67
	Leake	76.35	69.70
	Lee	77.07	71.20
	Leflore	75.17	68.69
	Lincoln	78.04	70.82
	Lowndes	78.74	73.32
	Madison	76.84	72.29
	Marion	75.44	68.93
	Marshall	76.38	70.32
	Monroe	78.90	71.79
	Montgomery	77.76	71.49
	Neshoba	75.75	70.54
	Newton	77.66	70.97
	Noxubee	76.81	71.27
	Oktibbeha	78.95	74.36
	Panola	75.52	69.10
	Pearl River	77.27	71.17
	Perry	76.61	71.17
	Pike	75.01	68.84
	Pontotoc	79.43	73.46
	Prentiss	77.78	71.70
	Quitman	73.36	66.70
	Rankin	79.95	74.61
	Scott	76.69	69.04
	Sharkey	75.82	67.95
	Simpson	77.57	69.94
	Smith	78.45	70.87
	Stone	76.98	70.97
	Sunflower	73.85	66.92
	Tallahatchie	75.55	70.32
	Tate	77.56	71.42
	Tippah	76.08	72.43
	Tishomingo	77.98	70.60
	Tunica	73.36	66.70
	Union	78.43	73.36
	Walthall	76.74	69.72
	Warren	76.68	71.43
	Washington	74.09	67.10
	Wayne	76.98	70.90
	Webster	76.72	70.27
	Wilkinson	75.73	70.86
	Winston	77.67	70.93
	Yalobusha	75.55	70.32
	Yazoo	76.76	72.17
Missouri	Adair	80.52	74.66
	Andrew	80.33	76.47
	Atchison	80.21	76.23
	Audrain	79.22	73.75
	Barry	78.47	73.91
	Barton	79.21	74.50
	Bates	80.26	75.05
	Benton	78.97	73.83
	Bollinger	78.39	70.76
	Boone	81.31	76.85
	Buchanan	78.68	73.67

State	County	Female	Male
(Missouri, cont'd)	Butler	76.02	71.24
	Caldwell	79.59	74.97
	Callaway	79.44	75.04
	Camden	81.11	75.81
	Cape Girardeau	80.12	75.66
	Carroll	79.59	74.97
	Carter	77.86	70.23
	Cass	79.34	75.58
	Cedar	79.21	74.50
	Chariton	80.52	75.48
	Christian	80.79	77.39
	Clark	79.42	74.88
	Clay	80.21	76.70
	Clinton	78.77	75.22
	Cole	80.56	75.76
	Cooper	79.29	74.98
	Crawford	78.37	72.89
	Dade	78.19	73.72
	Dallas	78.34	73.95
	Daviess	79.74	75.64
	De Kalb	80.33	76.47
	Dent	78.76	71.95
	Douglas	79.48	74.20
	Dunklin	75.42	68.99
	Franklin	79.82	73.19
	Gasconade	80.02	73.99
	Gentry	79.74	75.64
	Greene	79.46	74.99
	Grundy	79.66	74.31
	Harrison	79.74	75.64
	Henry	78.80	73.25
	Hickory	80.04	73.38
	Holt	80.21	76.23
	Howard	80.52	75.48
	Howell	77.95	73.50
	Iron	77.86	70.23
	Jackson	78.90	73.91
	Jasper	78.11	74.41
	Jefferson	78.31	73.92
	Johnson	79.91	75.70
	Knox	80.09	74.29
	Laclede	79.00	73.29
	Lafayette	79.11	75.42
	Lawrence	79.62	73.19
	Lewis	79.42	74.88
	Lincoln	78.49	75.03
	Linn	79.36	73.84
	Livingston	79.36	73.84
	Macon	80.09	74.29
	Madison	78.39	70.76
	Maries	80.43	75.66
	Marion	79.33	74.76
	Mcdonald	78.29	71.55
	Mercer	80.52	74.66
	Miller	79.21	73.38
	Mississippi	75.38	69.33
	Moniteau	79.29	74.98
	Monroe	80.92	76.33
	Montgomery	80.02	73.99
	Morgan	78.74	74.01
	New Madrid	75.38	69.33
	Newton	79.41	73.76
	Nodaway	80.21	76.23
	Oregon	79.33	72.78
	Osage	80.43	75.66
	Ozark	79.48	74.20
	Pemiscot	75.80	68.11
	Perry	79.81	74.58
	Pettis	78.97	75.28
	Phelps	79.22	74.19
	Pike	79.53	73.62
	Platte	81.58	77.97

State	County	Female	Male
(Missouri, cont'd)	Polk	78.19	73.72
	Pulaski	78.91	74.37
	Putnam	80.52	74.66
	Ralls	80.92	76.33
	Randolph	78.72	74.07
	Ray	78.25	74.19
	Reynolds	77.86	70.23
	Ripley	76.02	71.24
	Saline	79.37	75.02
	Schuyler	80.52	74.66
	Scotland	79.42	74.88
	Scott	78.27	71.63
	Shannon	79.33	72.78
	Shelby	80.09	74.29
	St. Charles	82.02	77.72
	St. Clair	80.04	73.38
	St. Francois	77.98	72.57
	St. Louis City	76.98	69.69
	St. Louis County	81.05	76.15
	Ste. Genevieve	80.68	75.52
	Stoddard	78.05	72.26
	Stone	81.65	75.93
	Sullivan	79.66	74.31
	Taney	81.37	75.14
	Texas	79.31	73.48
	Vernon	79.17	73.02
	Warren	81.51	74.84
	Washington	76.50	71.30
	Wayne	78.05	72.26
	Webster	78.35	74.96
	Worth	79.74	75.64
	Wright	77.70	73.68
Montana	Beaverhead	79.68	76.38
	Big Horn	79.63	75.07
	Blaine	79.55	72.89
	Broadwater	81.12	76.28
	Carbon	79.63	75.07
	Carter	80.15	75.79
	Cascade	81.10	75.46
	Chouteau	79.55	72.89
	Custer	80.15	75.79
	Daniels	78.86	72.19
	Dawson	80.37	75.82
	Deer Lodge	79.68	76.38
	Fallon	81.02	76.86
	Fergus	80.38	76.14
	Flathead	81.22	76.88
	Gallatin	81.81	79.06
	Garfield	81.02	76.86
	Glacier	79.55	72.89
	Golden Valley	79.82	76.42
	Granite	81.22	76.88
	Hill	80.81	75.75
	Jefferson	81.12	76.28
	Judith Basin	81.10	75.46
	Lake	80.82	74.63
	Lewis And Clark	80.50	76.10
	Liberty	80.81	75.75
	Lincoln	79.60	75.80
	Madison	79.73	73.91
	Mccone	81.02	76.86
	Meagher	81.12	76.28
	Mineral	80.52	77.57
	Missoula	80.52	77.57
	Musselshell	79.82	76.42
	Park	81.81	79.06
	Petroleum	80.00	76.11
	Phillips	80.38	76.14
	Pondera	79.55	72.89
	Powder River	80.15	75.79
	Powell	81.22	76.88
	Prairie	81.02	76.86

State	County	Female	Male
(Montana, cont'd)	Ravalli	81.69	76.93
	Richland	80.37	75.82
	Roosevelt	78.86	72.19
	Rosebud	80.00	76.11
	Sanders	79.60	75.80
	Sheridan	78.86	72.19
	Silver Bow	79.73	73.91
	Stillwater	79.82	76.42
	Sweet Grass	79.82	76.42
	Teton	79.55	72.89
	Toole	80.81	75.75
	Treasure	80.00	76.11
	Valley	81.02	76.86
	Wheatland	79.82	76.42
	Wibaux	81.02	76.86
	Yellowstone	80.00	76.11
	Yellowstone National	81.81	79.06
Nebraska	Adams	81.08	76.97
	Antelope	82.04	77.30
	Arthur	80.88	76.13
	Banner	81.55	75.87
	Blaine	82.09	76.97
	Boone	81.27	76.12
	Box Butte	81.25	77.35
	Boyd	81.79	76.82
	Brown	82.09	76.97
	Buffalo	81.62	76.64
	Burt	79.74	74.42
	Butler	81.96	76.57
	Cass	80.17	75.90
	Cedar	83.81	77.70
	Chase	81.03	77.12
	Cherry	82.09	76.97
	Cheyenne	81.55	75.87
	Clay	81.69	76.62
	Colfax	81.96	76.57
	Cuming	83.08	77.77
	Custer	82.09	76.97
	Dakota	79.92	75.14
	Dawes	81.25	77.35
	Dawson	80.69	76.53
	Deuel	81.03	77.12
	Dixon	79.92	75.14
	Dodge	81.36	75.56
	Douglas	80.96	76.36
	Dundy	81.03	77.12
	Fillmore	81.69	76.62
	Franklin	81.29	77.97
	Frontier	81.17	76.12
	Furnas	81.29	77.97
	Gage	80.74	75.78
	Garden	80.88	76.13
	Garfield	81.62	76.74
	Gosper	80.69	76.53
	Grant	80.88	76.13
	Greeley	81.62	76.74
	Hall	80.95	76.05
	Hamilton	82.52	77.89
	Harlan	81.29	77.97
	Hayes	81.03	77.12
	Hitchcock	81.17	76.12
	Holt	81.79	76.82
	Hooker	80.88	76.13
	Howard	81.62	76.74
	Jefferson	81.69	76.62
	Johnson	80.21	75.81
	Kearney	81.29	77.97
	Keith	80.88	76.13
	Keya Paha	81.79	76.82
	Kimball	81.55	75.87
	Knox	82.04	77.30
	Lancaster	82.50	78.22

State	County	Female	Male
(Nebraska, cont'd)	Lincoln	81.03	77.12
	Logan	80.88	76.13
	Loup	82.09	76.97
	Madison	81.60	75.52
	Mcpherson	80.88	76.13
	Merrick	81.27	76.12
	Morrill	79.77	75.62
	Nance	81.27	76.12
	Nemaha	80.21	75.81
	Nuckolls	81.08	76.97
	Otoe	81.50	75.11
	Pawnee	80.21	75.81
	Perkins	81.03	77.12
	Phelps	80.69	76.53
	Pierce	82.04	77.30
	Platte	82.10	77.74
	Polk	82.52	77.89
	Red Willow	81.17	76.12
	Richardson	80.21	75.81
	Rock	81.79	76.82
	Saline	81.21	76.96
	Sarpy	81.54	78.43
	Saunders	80.71	76.96
	Scotts Bluff	79.77	75.62
	Seward	80.84	76.84
	Sheridan	79.77	75.62
	Sherman	81.62	76.74
	Sioux	81.25	77.35
	Stanton	83.08	77.77
	Thayer	81.69	76.62
	Thomas	82.09	76.97
	Thurston	79.74	74.42
	Valley	81.62	76.74
	Washington	81.54	77.73
	Wayne	83.81	77.70
	Webster	81.08	76.97
	Wheeler	81.62	76.74
	York	81.21	76.96
Nevada	Carson City	78.82	74.14
	Churchill	79.21	74.36
	Clark	80.39	75.74
	Douglas	82.30	77.22
	Elko	80.68	75.44
	Esmeralda	76.71	71.12
	Eureka	79.61	74.76
	Humboldt	79.20	74.86
	Lander	79.61	74.76
	Lincoln	80.39	75.74
	Lyon	79.34	74.70
	Mineral	76.71	71.12
	Nye	76.71	71.12
	Pershing	79.20	74.86
	Storey	79.34	74.70
	Washoe	79.80	75.62
	White Pine	79.61	74.76
New Hampshire	Belknap	80.89	76.48
	Carroll	82.41	77.67
	Cheshire	81.87	77.04
	Coos	79.98	75.51
	Grafton	82.54	78.49
	Hillsborough	82.02	78.37
	Merrimack	82.23	77.80
	Rockingham	82.34	78.55
	Strafford	81.21	76.57
	Sullivan	81.01	76.49
New Jersey	Atlantic	79.30	75.31
	Bergen	84.26	80.53
	Burlington	81.30	77.49
	Camden	79.99	75.33
	Cape May	81.00	74.82
	Cumberland	79.13	74.37

State	County	Female	Male
(New Jersey, cont'd)	Essex	80.50	75.26
	Gloucester	80.55	75.92
	Hudson	82.17	77.16
	Hunterdon	83.29	79.45
	Mercer	81.45	76.89
	Middlesex	82.93	78.48
	Monmouth	82.13	77.62
	Morris	83.65	80.04
	Ocean	81.44	76.53
	Passaic	82.34	77.22
	Salem	79.36	73.44
	Somerset	83.77	80.18
	Sussex	81.23	76.81
	Union	82.39	77.77
	Warren	81.94	77.49
New Mexico	Bernalillo	81.21	75.96
	Catron	80.16	72.94
	Cebola	78.23	74.11
	Chaves	78.88	73.27
	Colfax	80.97	75.93
	Curry	79.42	75.07
	De Baca	79.14	72.77
	Dona Ana	81.49	75.78
	Eddy	79.20	73.27
	Grant	80.62	75.08
	Guadalupe	79.14	72.77
	Harding	80.97	75.93
	Hidalgo	79.65	73.57
	Lea	78.55	72.52
	Lincoln	82.30	77.05
	Los Alamos	83.86	80.82
	Luna	79.65	73.57
	Mckinley	79.03	70.72
	Mora	81.90	76.69
	Otero	80.14	74.99
	Quay	79.14	72.77
	Rio Arriba	79.57	70.31
	Roosevelt	79.35	74.19
	San Juan	79.23	74.35
	San Miguel	79.75	72.85
	Sandoval	81.78	77.04
	Santa Fe	82.44	77.78
	Sierra	80.16	72.94
	Socorro	79.26	73.85
	Taos	81.90	76.69
	Torrance	79.71	74.98
	Union	80.97	75.93
	Valencia	79.67	74.51
New York	Albany	81.49	77.38
	Allegany	80.06	77.35
	Bronx	81.20	74.98
	Broome	80.98	76.15
	Cattaraugus	79.07	74.88
	Cayuga	81.74	77.03
	Chautauqua	80.66	75.46
	Chemung	80.14	75.57
	Chenango	80.04	76.31
	Clinton	81.33	76.50
	Columbia	80.90	76.32
	Cortland	79.71	76.88
	Delaware	80.57	76.38
	Dutchess	81.81	77.91
	Erie	80.31	75.72
	Essex	81.14	77.32
	Franklin	79.77	76.95
	Fulton	80.64	76.15
	Genesee	81.01	75.74
	Greene	80.46	75.16
	Hamilton	81.14	77.32
	Herkimer	81.16	77.20
	Jefferson	80.11	75.49

State	County	Female	Male
(New York, cont'd)	Kings	82.39	77.26
	Lewis	81.75	75.99
	Livingston	81.54	77.57
	Madison	81.25	77.77
	Monroe	81.65	77.65
	Montgomery	79.84	76.13
	Nassau	83.62	79.59
	New York	84.09	79.26
	Niagara	79.64	75.54
	Oneida	80.88	76.05
	Onondaga	81.76	76.92
	Ontario	81.88	76.84
	Orange	81.03	77.63
	Orleans	80.37	76.06
	Oswego	79.99	75.85
	Otsego	81.33	76.79
	Putnam	82.41	78.70
	Queens	83.79	78.98
	Rensselaer	79.93	76.48
	Richmond	81.61	77.25
	Rockland	83.43	79.60
	Saratoga	82.37	78.66
	Schenectady	81.61	76.91
	Schoharie	81.80	77.43
	Schuyler	79.12	76.37
	Seneca	80.68	76.80
	St. Lawrence	79.63	75.52
	Steuben	80.45	75.92
	Suffolk	82.27	78.01
	Sullivan	79.06	74.97
	Tioga	82.22	77.56
	Tompkins	82.17	78.81
	Ulster	81.23	77.13
	Warren	81.98	77.62
	Washington	80.37	77.16
	Wayne	80.58	76.83
	Westchester	84.05	79.83
	Wyoming	80.19	76.76
	Yates	80.45	77.12
North Carolina	Alamance	80.19	74.63
	Alexander	79.33	73.84
	Alleghany	80.48	74.00
	Anson	77.18	71.32
	Ashe	80.48	74.00
	Avery	79.18	74.68
	Beaufort	78.45	73.44
	Bertie	78.26	70.65
	Bladen	76.57	70.87
	Brunswick	80.04	74.96
	Buncombe	80.33	75.90
	Burke	78.22	72.96
	Cabarrus	79.76	75.04
	Caldwell	78.33	72.46
	Camden	78.63	74.25
	Carteret	79.40	74.53
	Caswell	78.65	73.42
	Catawba	78.40	73.48
	Chatham	82.37	77.16
	Cherokee	80.13	74.24
	Chowan	80.28	74.21
	Clay	80.13	74.24
	Cleveland	77.99	71.50
	Columbus	75.06	70.24
	Craven	79.72	75.24
	Cumberland	78.16	73.17
	Currituck	79.43	74.25
	Dare	81.19	76.33
	Davidson	79.33	73.88
	Davie	81.04	75.71
	Duplin	79.29	73.94
	Durham	80.28	75.33
	Edgecombe	77.93	71.04

State	County	Female	Male
(North Carolina) cont'd)	Forsyth	80.38	75.53
	Franklin	79.44	74.29
	Gaston	77.29	72.74
	Gates	78.63	74.25
	Graham	78.08	71.17
	Granville	78.71	74.26
	Greene	77.84	73.73
	Guilford	80.38	76.15
	Halifax	77.49	70.71
	Harnett	79.05	72.94
	Haywood	80.29	75.15
	Henderson	81.37	76.22
	Hertford	77.57	71.85
	Hoke	78.70	74.04
	Hyde	77.77	72.58
	Iredell	79.45	74.71
	Jackson	80.71	74.81
	Johnston	79.88	74.29
	Jones	79.29	73.94
	Lee	79.79	72.58
	Lenoir	77.75	70.95
	Lincoln	78.57	74.62
	Macon	81.18	75.89
	Madison	79.88	74.78
	Martin	77.81	71.29
	Mcdowell	79.49	74.13
	Mecklenburg	81.68	76.72
	Mitchell	78.43	73.62
	Montgomery	79.98	73.93
	Moore	81.85	76.08
	Nash	79.18	72.12
	New Hanover	81.38	76.56
	Northampton	77.80	72.05
	Onslow	79.54	75.38
	Orange	82.04	78.33
	Pamlico	78.45	73.44
	Pasquotank	78.86	73.91
	Pender	79.93	75.15
	Perquimans	80.28	74.21
	Person	77.89	73.17
	Pitt	79.57	74.32
	Polk	80.78	74.93
	Randolph	79.37	73.63
	Richmond	76.18	70.71
	Robeson	76.53	70.58
	Rockingham	78.04	72.68
	Rowan	78.81	73.00
	Rutherford	78.49	72.55
	Sampson	78.20	71.06
	Scotland	77.55	70.70
	Stanly	78.75	73.62
	Stokes	78.30	74.34
	Surry	78.86	72.29
	Swain	78.08	71.17
	Transylvania	82.36	77.29
	Tyrrell	77.77	72.58
	Union	81.07	76.23
	Vance	77.99	70.44
	Wake	82.45	78.72
	Warren	78.52	72.82
	Washington	77.77	72.58
	Watauga	82.34	76.95
	Wayne	77.99	72.66
	Wilkes	78.61	73.43
	Wilson	78.28	72.95
	Yadkin	78.97	74.29
	Yancey	79.49	74.14
North Dakota	Adams	82.95	77.28
	Barnes	81.96	76.63
	Benson	82.13	75.97
	Billings	82.59	76.86
	Bottineau	78.99	74.61

State	County	Female	Male
(North Dakota, cont'd)	Bowman	82.95	77.28
	Burke	81.67	76.24
	Burleigh	82.81	77.92
	Cass	82.50	77.04
	Cavalier	82.02	76.83
	Dickey	82.87	77.16
	Divide	81.67	76.24
	Dunn	82.59	76.86
	Eddy	81.36	76.70
	Emmons	80.91	74.15
	Foster	81.36	76.70
	Golden Valley	82.59	76.86
	Grand Forks	81.89	77.06
	Grant	82.95	77.28
	Griggs	81.36	76.70
	Hettinger	82.95	77.28
	Kidder	81.98	76.70
	La Moure	82.87	77.16
	Logan	81.98	76.70
	Mchenry	78.99	74.61
	Mcintosh	81.98	76.70
	Mckenzie	82.59	76.86
	Mclean	82.74	76.57
	Mercer	82.74	76.57
	Morton	80.91	74.15
	Mountrail	80.77	76.24
	Nelson	81.36	76.70
	Oliver	82.81	77.92
	Pembina	82.08	76.70
	Pierce	82.13	75.97
	Ramsey	82.02	76.83
	Ransom	81.96	76.63
	Renville	78.99	74.61
	Richland	83.24	77.84
	Rolette	78.99	74.61
	Sargent	82.87	77.16
	Sheridan	82.13	75.97
	Sioux	80.91	74.15
	Slope	82.95	77.28
	Stark	82.95	77.28
	Steele	81.36	76.70
	Stutsman	81.98	76.70
	Towner	82.02	76.83
	Traill	81.89	77.06
	Walsh	82.08	76.70
	Ward	80.77	76.24
	Wells	82.13	75.97
	Williams	81.67	76.24
Ohio	Adams	77.84	71.14
	Allen	79.04	75.11
	Ashland	79.73	75.74
	Ashtabula	78.11	73.67
	Athens	79.05	72.73
	Auglaize	80.42	75.51
	Belmont	78.84	74.13
	Brown	78.19	73.11
	Butler	79.33	75.83
	Carroll	79.84	76.15
	Champaign	78.85	74.44
	Clark	77.60	73.22
	Clermont	79.85	75.10
	Clinton	78.22	74.09
	Columbiana	79.49	74.80
	Coshocton	79.27	75.39
	Crawford	80.02	74.11
	Cuyahoga	79.86	74.85
	Darke	80.54	76.35
	Defiance	80.30	75.09
	Delaware	82.79	79.31
	Erie	80.36	74.60
	Fairfield	80.60	76.23
	Fayette	78.53	71.78

State	County	Female	Male
(Ohio, cont'd)	Franklin	79.41	74.55
	Fulton	80.38	76.08
	Gallia	78.94	72.18
	Geauga	82.87	79.22
	Greene	81.07	77.05
	Guernsey	78.47	73.08
	Hamilton	79.01	74.80
	Hancock	80.81	76.66
	Hardin	77.98	73.95
	Harrison	78.47	72.61
	Henry	81.12	76.24
	Highland	78.22	71.70
	Hocking	78.68	74.92
	Holmes	80.01	75.20
	Huron	79.53	75.16
	Jackson	76.76	71.06
	Jefferson	77.84	71.79
	Knox	78.81	75.17
	Lake	80.60	76.43
	Lawrence	77.86	72.55
	Licking	79.96	75.16
	Logan	79.08	74.28
	Lorain	80.44	76.00
	Lucas	79.18	74.32
	Madison	79.60	74.36
	Mahoning	79.08	73.66
	Marion	78.93	74.51
	Medina	81.79	78.41
	Meigs	78.73	72.13
	Mercer	81.58	76.34
	Miami	80.93	75.67
	Monroe	79.87	77.05
	Montgomery	78.76	73.77
	Morgan	79.40	74.38
	Morrow	80.27	73.93
	Muskingum	78.66	73.37
	Noble	79.87	77.05
	Ottawa	81.05	76.62
	Paulding	80.42	74.14
	Perry	79.46	73.39
	Pickaway	78.16	74.41
	Pike	77.52	72.07
	Portage	80.09	76.45
	Preble	80.04	74.40
	Putnam	81.19	77.00
	Richland	79.57	74.69
	Ross	78.19	72.55
	Sandusky	79.38	74.05
	Scioto	76.79	70.59
	Seneca	80.23	75.67
	Shelby	80.13	76.23
	Stark	80.61	75.45
	Summit	80.04	75.23
	Trumbull	79.48	73.95
	Tuscarawas	80.62	75.74
	Union	79.90	76.52
	Van Wert	81.36	75.66
	Vinton	78.73	72.13
	Warren	80.49	77.70
	Washington	79.74	75.18
	Wayne	80.04	76.22
	Williams	80.64	76.18
	Wood	80.83	77.19
	Wyandot	81.16	75.45
Oklahoma	Adair	76.87	72.19
	Alfalfa	79.32	75.72
	Atoka	77.21	72.21
	Beaver	79.48	74.80
	Beckham	75.44	71.61
	Blaine	79.24	74.01
	Bryan	78.23	73.32
	Caddo	76.96	70.77

State	County	Female	Male
(Oklahoma, cont'd)	Canadian	80.10	75.77
	Carter	75.08	70.77
	Cherokee	78.79	72.55
	Choctaw	77.21	72.21
	Cimarron	79.48	74.80
	Cleveland	79.59	76.22
	Coal	75.87	70.39
	Comanche	77.10	73.30
	Cotton	76.46	72.30
	Craig	77.38	72.34
	Creek	76.64	71.23
	Custer	79.09	71.76
	Delaware	79.76	73.72
	Dewey	79.09	71.76
	Ellis	79.48	74.80
	Garfield	77.50	73.09
	Garvin	75.80	70.54
	Grady	78.73	73.64
	Grant	79.40	74.70
	Greer	77.10	71.81
	Harmon	75.44	71.61
	Harper	79.48	74.80
	Haskell	78.42	73.38
	Hughes	76.49	70.83
	Jackson	77.64	73.29
	Jefferson	76.46	72.30
	Johnston	75.87	70.39
	Kay	78.00	72.26
	Kingfisher	79.24	74.01
	Kiowa	77.10	71.81
	Latimer	78.42	73.38
	Le Flore	76.56	70.26
	Lincoln	78.14	73.33
	Logan	79.49	75.43
	Love	77.93	74.19
	Major	79.32	75.72
	Marshall	77.93	74.19
	Mayes	78.62	71.86
	Mcclain	78.54	74.49
	Mccurtain	75.37	69.23
	Mcintosh	76.72	71.94
	Murray	75.80	70.54
	Muskogee	75.58	70.07
	Noble	79.40	74.70
	Nowata	77.38	72.34
	Okfuskee	76.49	70.83
	Oklahoma	78.05	73.28
	Okmulgee	76.62	71.15
	Osage	79.20	73.57
	Ottawa	76.65	70.15
	Pawnee	78.29	71.31
	Payne	79.63	75.09
	Pittsburg	77.25	70.88
	Pontotoc	75.92	70.89
	Pottawatomie	77.25	71.96
	Pushmataha	75.37	69.23
	Roger Mills	79.09	71.76
	Rogers	79.28	75.61
	Seminole	75.05	69.85
	Sequoyah	76.70	70.67
	Stephens	76.87	72.26
	Texas	79.48	74.80
	Tillman	76.46	72.30
	Tulsa	78.89	73.60
	Wagoner	79.33	74.14
	Washington	79.13	75.12
	Washita	76.96	70.77
	Woods	79.32	75.72
	Woodward	77.73	73.49
Oregon	Baker	81.40	75.74
	Benton	82.54	79.93
	Clackamas	81.63	78.45

State	County	Female	Male
(Oregon, cont'd)	Clatsop	80.60	76.03
	Columbia	80.90	75.49
	Coos	78.45	74.35
	Crook	80.40	76.90
	Curry	80.59	74.25
	Deschutes	82.19	78.03
	Douglas	79.61	75.12
	Gilliam	80.58	75.38
	Grant	81.31	76.23
	Harney	81.31	76.23
	Hood River	80.82	77.94
	Jackson	80.74	76.54
	Jefferson	80.20	75.62
	Josephine	80.07	74.53
	Klamath	79.18	73.97
	Lake	79.18	73.97
	Lane	81.20	77.37
	Lincoln	80.02	74.65
	Linn	79.40	76.03
	Malheur	79.28	74.87
	Marion	80.60	76.25
	Morrow	79.60	75.29
	Multnomah	81.30	76.47
	Polk	81.64	77.55
	Sherman	80.58	75.38
	Tillamook	81.12	76.39
	Umatilla	79.60	75.29
	Union	80.55	76.04
	Wallowa	81.40	75.74
	Wasco	80.58	75.38
	Washington	83.42	79.44
	Wheeler	79.60	75.29
	Yamhill	81.51	78.05
Pennsylvania	Adams	80.66	77.18
	Allegheny	80.59	75.30
	Armstrong	79.73	75.76
	Beaver	80.09	75.16
	Bedford	80.38	76.70
	Berks	81.60	76.63
	Blair	79.62	74.77
	Bradford	79.62	75.27
	Bucks	81.93	77.56
	Butler	81.03	77.44
	Cambria	80.15	73.96
	Cameron	80.78	75.62
	Carbon	79.66	74.39
	Centre	82.08	78.75
	Chester	82.79	78.75
	Clarion	80.40	74.94
	Clearfield	79.96	74.94
	Clinton	79.98	75.40
	Columbia	80.62	75.32
	Crawford	79.74	75.00
	Cumberland	82.25	77.77
	Dauphin	80.28	75.30
	Delaware	80.37	75.07
	Elk	81.10	75.57
	Erie	79.99	75.85
	Fayette	78.51	72.18
	Forest	81.10	75.57
	Franklin	81.68	76.24
	Fulton	80.41	74.70
	Greene	78.36	74.21
	Huntingdon	80.87	76.15
	Indiana	80.51	75.81
	Jefferson	79.60	74.16
	Juniata	80.64	75.18
	Lackawanna	79.80	74.70
	Lancaster	82.25	77.67
	Lawrence	80.30	74.52
	Lebanon	81.51	76.63
	Lehigh	81.69	76.93

State	County	Female	Male
(Pennsylvania, cont'd)	Luzerne	79.95	74.28
	Lycoming	80.03	75.76
	Mckean	79.19	75.57
	Mercer	79.83	74.91
	Mifflin	79.69	75.54
	Monroe	81.20	76.16
	Montgomery	82.25	78.23
	Montour	81.38	76.40
	Northampton	81.69	77.43
	Northumberland	80.52	74.91
	Perry	79.86	74.69
	Philadelphia	78.41	71.53
	Pike	82.18	77.79
	Potter	80.78	75.62
	Schuylkill	79.54	74.72
	Snyder	80.76	76.41
	Somerset	81.51	75.31
	Sullivan	79.61	74.02
	Susquehanna	80.93	75.59
	Tioga	80.29	76.08
	Union	81.95	77.79
	Venango	79.56	74.61
	Warren	80.12	75.55
	Washington	79.75	75.34
	Wayne	81.63	75.51
	Westmoreland	80.81	76.37
	Wyoming	79.61	74.02
	York	81.48	76.75
Rhode Island	Bristol	82.60	77.72
	Kent	80.60	76.28
	Newport	82.92	78.12
	Providence	81.16	76.30
	Washington	82.62	77.44
South Carolina	Abbeville	80.18	73.50
	Aiken	79.44	74.98
	Allendale	76.33	69.99
	Anderson	79.09	72.96
	Bamberg	76.33	69.99
	Barnwell	76.60	70.56
	Beaufort	83.50	79.22
	Berkeley	79.72	74.97
	Calhoun	77.77	72.66
	Charleston	80.56	74.68
	Cherokee	77.58	71.57
	Chester	77.74	70.13
	Chesterfield	76.61	70.98
	Clarendon	78.72	70.86
	Colleton	76.50	68.37
	Darlington	76.02	70.06
	Dillon	75.28	70.03
	Dorchester	80.10	75.56
	Edgefield	79.50	74.73
	Fairfield	77.36	70.36
	Florence	77.22	70.47
	Georgetown	78.91	72.90
	Greenville	79.84	75.38
	Greenwood	78.62	73.61
	Hampton	77.16	70.04
	Horry	80.05	73.78
	Jasper	76.38	70.92
	Kershaw	78.65	73.10
	Lancaster	79.37	73.58
	Laurens	77.18	70.68
	Lee	76.93	68.22
	Lexington	79.73	74.82
	Marion	75.50	68.23
	Marlboro	75.76	70.35
	Mccormick	80.18	73.50
	Newberry	78.50	72.25
	Oconee	79.55	73.60
	Orangeburg	75.72	69.25
	Pickens	79.88	73.25

State	County	Female	Male
(South Carolina cont'd)	Richland	79.97	74.70
	Saluda	79.87	74.60
	Spartanburg	78.30	73.04
	Sumter	78.09	72.92
	Union	76.41	70.42
	Williamsburg	76.34	69.92
	York	80.02	75.01
South Dakota	Aurora	82.21	77.41
	Beadle	81.32	75.83
	Bennett	77.43	69.02
	Bon Homme	82.47	76.36
	Brookings	82.50	78.01
	Brown	82.32	76.90
	Brule	81.74	75.80
	Buffalo	81.32	75.83
	Butte	81.04	76.08
	Campbell	82.57	77.19
	Charles Mix	82.47	76.36
	Clark	80.42	75.80
	Clay	82.59	77.42
	Codington	81.84	76.67
	Corson	77.74	72.83
	Custer	78.36	68.78
	Davison	81.01	76.74
	Day	79.78	77.55
	Deuel	81.84	76.67
	Dewey	77.74	72.83
	Douglas	82.21	77.41
	Edmunds	82.57	77.19
	Fall River	78.36	68.78
	Faulk	82.32	76.90
	Grant	81.84	76.67
	Gregory	81.74	75.80
	Haakon	82.08	77.26
	Hamlin	80.42	75.80
	Hand	81.32	75.83
	Hanson	81.01	76.74
	Harding	81.04	76.08
	Hughes	81.48	76.93
	Hutchinson	82.21	77.41
	Hyde	82.32	76.90
	Jackson	77.43	69.02
	Jerauld	81.32	75.83
	Jones	82.08	77.26
	Kingsbury	80.42	75.80
	Lake	82.29	77.28
	Lawrence	81.39	76.61
	Lincoln	84.11	80.04
	Lyman	81.48	76.93
	Marshall	79.78	77.55
	Mccook	81.01	76.74
	Mcpherson	82.57	77.19
	Meade	81.04	76.08
	Mellette	77.43	69.02
	Miner	81.01	76.74
	Minnehaha	81.22	76.28
	Moody	82.29	77.28
	Pennington	82.08	77.26
	Perkins	81.04	76.08
	Potter	77.74	72.83
	Roberts	79.78	77.55
	Sanborn	81.32	75.83
	Shannon	78.36	68.78
	Spink	79.78	77.55
	Stanley	82.08	77.26
	Sully	82.08	77.26
	Todd	77.43	69.02
	Tripp	81.74	75.80
	Turner	82.61	77.59
	Union	82.59	77.42
	Walworth	82.57	77.19
	Yankton	82.61	77.59
	Ziebach	77.74	72.83

State	County	Female	Male
Tennessee	Anderson	77.71	73.80
	Bedford	77.94	73.89
	Benton	76.65	68.70
	Bledsoe	78.12	73.53
	Blount	79.88	74.26
	Bradley	79.20	73.59
	Campbell	76.66	70.57
	Cannon	77.72	71.87
	Carroll	75.84	70.86
	Carter	78.55	72.87
	Cheatham	77.37	72.90
	Chester	79.57	73.48
	Claiborne	77.52	70.26
	Clay	77.61	71.85
	Cocke	77.86	70.67
	Coffee	77.25	72.73
	Crockett	78.04	71.90
	Cumberland	79.82	74.77
	Davidson	79.10	73.65
	De Kalb	77.72	71.87
	Decatur	77.73	72.01
	Dickson	78.22	73.39
	Dyer	77.41	72.81
	Fayette	79.26	74.28
	Fentress	76.68	69.96
	Franklin	79.02	73.76
	Gibson	76.12	70.13
	Giles	78.57	72.39
	Grainger	76.75	71.75
	Greene	77.67	71.88
	Grundy	76.82	68.86
	Hamblen	77.42	72.40
	Hamilton	79.82	74.47
	Hancock	76.75	71.75
	Hardeman	76.11	72.16
	Hardin	77.97	71.66
	Hawkins	77.39	72.37
	Haywood	77.30	70.54
	Henderson	77.37	72.18
	Henry	77.84	70.62
	Hickman	78.82	72.51
	Houston	79.04	71.22
	Humphreys	78.21	73.15
	Jackson	77.15	72.19
	Jefferson	78.09	72.87
	Johnson	77.51	72.71
	Knox	79.59	73.88
	Lake	77.16	71.68
	Lauderdale	76.69	70.72
	Lawrence	77.96	72.99
	Lewis	78.61	72.05
	Lincoln	78.78	73.70
	Loudon	80.03	75.54
	Macon	78.16	69.95
	Madison	79.18	73.77
	Marion	78.20	71.45
	Marshall	77.79	72.47
	Maury	78.06	73.70
	Mcminn	77.78	72.30
	Mcnairy	77.09	70.41
	Meigs	77.31	70.93
	Monroe	78.36	72.02
	Montgomery	77.70	74.01
	Moore	78.78	73.70
	Morgan	77.56	72.52
	Obion	77.16	71.68
	Overton	77.61	71.85
	Perry	77.73	72.01
	Pickett	77.61	71.85
	Polk	77.89	71.68
	Putnam	79.48	73.47
	Rhea	77.31	70.93

State	County	Female	Male
(Tennessee, cont'd)	Roane	78.31	72.37
	Robertson	77.75	73.69
	Rutherford	79.68	75.62
	Scott	76.45	72.07
	Sequatchie	78.12	73.53
	Sevier	79.28	72.56
	Shelby	78.07	72.47
	Smith	77.15	72.19
	Stewart	79.04	71.22
	Sullivan	78.77	73.68
	Sumner	79.92	75.07
	Tipton	76.99	73.46
	Trousdale	78.16	69.95
	Unicoi	78.11	72.89
	Union	78.72	71.95
	Van Buren	78.02	72.38
	Warren	77.53	71.99
	Washington	79.67	74.08
	Wayne	78.61	72.05
	Weakley	79.07	73.27
	White	78.02	72.38
	Williamson	83.40	79.30
	Wilson	80.31	75.15
Texas	Anderson	77.52	71.65
	Andrews	78.36	74.73
	Angelina	77.53	72.58
	Aransas	79.68	72.52
	Archer	80.75	75.57
	Armstrong	80.33	75.25
	Atascosa	80.25	74.45
	Austin	80.64	76.07
	Bailey	78.61	73.68
	Bandera	82.23	77.45
	Bastrop	79.82	75.60
	Baylor	78.21	74.89
	Bee	78.78	73.94
	Bell	80.04	74.85
	Bexar	80.89	75.92
	Blanco	81.53	75.63
	Borden	78.54	72.60
	Bosque	79.61	74.81
	Bowie	78.41	72.40
	Brazoria	80.08	76.52
	Brazos	81.62	77.44
	Brewster	81.54	76.76
	Briscoe	80.33	75.25
	Brooks	79.47	72.44
	Brown	76.98	72.85
	Burleson	80.44	74.31
	Burnet	81.66	76.43
	Caldwell	79.59	75.59
	Calhoun	78.76	74.70
	Callahan	77.56	74.18
	Cameron	82.45	76.86
	Camp	77.99	72.41
	Carson	80.33	75.25
	Cass	77.38	72.24
	Castro	79.56	75.86
	Chambers	80.04	75.48
	Cherokee	78.19	73.54
	Childress	79.66	75.29
	Clay	77.27	73.89
	Cochran	78.61	73.68
	Coke	78.98	73.78
	Coleman	77.56	74.18
	Collin	83.12	79.55
	Collingsworth	78.32	72.30
	Colorado	79.46	75.28
	Comal	81.67	76.97
	Comanche	78.44	73.18
	Concho	79.67	75.07
	Cooke	79.77	74.36

State	County	Female	Male
(Texas, cont'd)	Coryell	79.10	75.04
	Cottle	79.59	73.83
	Crane	78.57	73.04
	Crockett	78.57	73.04
	Crosby	78.57	74.15
	Culberson	82.19	77.15
	Dallam	79.39	75.41
	Dallas	80.17	75.87
	Dawson	78.61	73.68
	De Witt	79.80	73.97
	Deaf Smith	79.16	73.71
	Delta	78.57	74.81
	Denton	81.92	78.42
	Dickens	79.59	73.83
	Dimmit	79.39	74.01
	Donley	80.33	75.25
	Duval	79.47	72.44
	Eastland	78.44	73.18
	Ector	77.88	72.18
	Edwards	80.09	75.48
	El Paso	82.19	77.15
	Ellis	80.37	76.06
	Erath	79.98	76.09
	Falls	78.34	73.47
	Fannin	78.17	73.38
	Fayette	81.04	76.29
	Fisher	77.85	74.54
	Floyd	78.43	74.64
	Foard	79.59	73.83
	Fort Bend	82.35	79.44
	Franklin	78.57	74.81
	Freestone	79.42	74.54
	Frio	80.48	74.16
	Gaines	78.36	74.73
	Galveston	79.75	74.55
	Garza	78.81	74.19
	Gillespie	81.92	76.95
	Glasscock	80.82	74.84
	Goliad	79.83	74.92
	Gonzales	78.80	73.88
	Gray	78.32	72.30
	Grayson	79.09	73.03
	Gregg	77.23	72.64
	Grimes	78.32	73.68
	Guadalupe	81.47	76.50
	Hale	78.43	74.64
	Hall	79.66	75.29
	Hamilton	79.61	74.81
	Hansford	77.91	74.96
	Hardeman	79.66	75.29
	Hardin	78.89	73.71
	Harris	80.70	76.15
	Harrison	79.03	72.43
	Hartley	79.39	75.41
	Haskell	78.21	74.89
	Hays	81.30	77.56
	Hemphill	77.24	73.56
	Henderson	77.80	71.98
	Hidalgo	82.78	77.79
	Hill	78.66	73.87
	Hockley	78.57	74.15
	Hood	80.35	76.87
	Hopkins	79.48	73.90
	Houston	77.82	73.33
	Howard	78.54	72.60
	Hudspeth	82.19	77.15
	Hunt	78.17	72.83
	Hutchinson	77.24	73.56
	Irion	79.09	74.60
	Jack	80.75	75.57
	Jackson	79.79	73.96
	Jasper	78.41	72.35

State	County	Female	Male
(Texas, cont'd)	Jeff Davis	82.19	77.15
	Jefferson	78.70	72.90
	Jim Hogg	79.47	72.44
	Jim Wells	78.95	72.85
	Johnson	79.14	74.02
	Jones	77.85	74.54
	Karnes	78.80	73.88
	Kaufman	78.72	74.07
	Kendall	82.45	77.92
	Kenedy	79.45	74.78
	Kent	77.85	74.54
	Kerr	82.11	75.05
	Kimble	81.15	75.13
	King	79.59	73.83
	Kinney	81.26	75.42
	Kleberg	79.63	73.31
	Knox	78.21	74.89
	La Salle	80.48	74.16
	Lamar	77.41	72.53
	Lamb	78.80	74.01
	Lampasas	79.18	76.01
	Lavaca	81.82	76.33
	Lee	80.90	75.53
	Leon	79.46	73.47
	Liberty	76.65	71.63
	Limestone	77.32	72.40
	Lipscomb	77.24	73.56
	Live Oak	80.25	74.45
	Llano	81.53	75.63
	Loving	77.88	72.18
	Lubbock	78.24	74.19
	Lynn	78.57	74.15
	Madison	78.68	73.21
	Marion	77.38	72.24
	Martin	78.54	72.60
	Mason	81.92	76.95
	Matagorda	79.40	74.23
	Maverick	81.26	75.42
	Mcculloch	79.67	75.07
	Mclennan	79.66	74.61
	Mcmullen	80.48	74.16
	Medina	80.13	76.32
	Menard	81.92	76.95
	Midland	80.82	74.84
	Milam	79.20	74.34
	Mills	79.61	74.81
	Mitchell	78.26	72.83
	Montague	77.27	73.89
	Montgomery	80.90	76.19
	Moore	79.39	75.41
	Morris	77.99	72.41
	Motley	79.59	73.83
	Nacogdoches	77.64	72.59
	Navarro	78.32	73.46
	Newton	76.70	71.77
	Nolan	78.26	72.83
	Nueces	80.50	75.09
	Ochiltree	77.91	74.96
	Oldham	79.16	73.71
	Orange	76.36	71.26
	Palo Pinto	77.52	73.28
	Panola	78.28	73.29
	Parker	78.78	75.72
	Parmer	79.56	75.86
	Pecos	78.37	75.22
	Polk	76.55	70.16
	Potter	76.86	72.43
	Presidio	81.54	76.76
	Rains	79.48	73.90
	Randall	81.11	75.71
	Reagan	80.82	74.84
	Real	80.09	75.48

State	County	Female	Male
(Texas, cont'd)	Red River	78.97	72.13
	Reeves	78.37	75.22
	Refugio	79.83	74.92
	Roberts	77.24	73.56
	Robertson	78.68	73.21
	Rockwall	81.29	78.81
	Runnels	78.98	73.78
	Rusk	77.82	74.09
	Sabine	77.27	71.63
	San Augustine	77.27	71.63
	San Jacinto	77.98	71.90
	San Patricio	79.44	73.69
	San Saba	81.92	76.95
	Schleicher	79.67	75.07
	Scurry	78.81	74.19
	Shackelford	77.52	73.28
	Shelby	77.07	70.26
	Sherman	79.39	75.41
	Smith	79.58	74.81
	Somervell	79.98	76.09
	Starr	79.39	74.35
	Stephens	77.52	73.28
	Sterling	78.98	73.78
	Stonewall	77.85	74.54
	Sutton	81.15	75.13
	Swisher	80.33	75.25
	Tarrant	80.24	76.01
	Taylor	78.36	73.20
	Terrell	81.54	76.76
	Terry	78.61	73.68
	Throckmorton	78.21	74.89
	Titus	78.97	72.13
	Tom Green	79.09	74.60
	Travis	82.38	78.41
	Trinity	77.98	71.90
	Tyler	79.36	73.65
	Upshur	78.60	72.73
	Upton	78.57	73.04
	Uvalde	80.09	75.48
	Val Verde	81.15	75.13
	Van Zandt	77.49	73.03
	Victoria	79.81	74.79
	Walker	79.05	74.80
	Waller	79.72	74.69
	Ward	78.57	73.04
	Washington	80.98	76.41
	Webb	82.04	75.77
	Wharton	80.73	74.30
	Wheeler	78.32	72.30
	Wichita	77.21	72.91
	Wilbarger	79.59	73.83
	Willacy	79.45	74.78
	Williamson	82.67	79.91
	Wilson	81.08	76.20
	Winkler	77.88	72.18
	Wise	79.21	74.67
	Wood	78.76	73.45
	Yoakum	78.36	74.73
	Young	77.83	74.08
	Zapata	79.39	74.35
	Zavala	79.39	74.01
Utah	Beaver	80.83	76.88
	Box Elder	80.97	77.74
	Cache	82.59	79.96
	Carbon	79.33	74.42
	Daggett	80.04	75.42
	Davis	82.35	79.06
	Duchesne	80.04	75.42
	Emery	79.63	75.84
	Garfield	80.83	76.88
	Grand	79.63	75.84
	Iron	79.71	76.70

State	County	Female	Male
(Utah, cont'd)	Juab	80.68	75.81
	Kane	80.65	76.30
	Millard	80.83	76.88
	Morgan	82.59	79.96
	Piute	80.83	76.88
	Rich	82.59	79.96
	Salt Lake	81.38	77.39
	San Juan	80.65	76.30
	Sanpete	80.68	75.81
	Sevier	79.92	75.75
	Summit	83.14	79.19
	Tooele	80.25	75.41
	Uintah	78.75	75.23
	Utah	82.28	79.03
	Wasatch	80.41	77.67
	Washington	83.08	78.55
	Wayne	79.92	75.75
	Weber	80.76	76.33
Vermont	Addison	81.77	78.22
	Bennington	81.08	76.43
	Caledonia	81.45	76.56
	Chittenden	83.08	79.01
	Essex	81.02	75.81
	Franklin	81.06	77.06
	Grand Isle	81.06	77.06
	Lamoille	81.19	77.24
	Orange	82.30	77.23
	Orleans	81.02	75.81
	Rutland	80.43	76.10
	Washington	81.27	77.41
	Windham	81.17	75.92
	Windsor	81.67	77.77
Virginia	Accomack	78.17	71.95
	Albemarle	82.41	79.14
	Alexandria	82.46	78.49
	Alleghany	78.22	73.38
	Amelia	79.73	74.22
	Amherst	79.06	73.38
	Appomattox	79.72	73.88
	Arlington	83.49	80.39
	Augusta	80.71	77.00
	Bath	80.71	77.00
	Bedford City	80.29	75.87
	Bedford County	80.29	75.87
	Bland	79.37	73.25
	Botetourt	80.98	76.58
	Bristol	78.96	73.51
	Brunswick	77.51	70.91
	Buchanan	76.75	69.62
	Buckingham	77.89	74.40
	Buena Vista	80.54	76.30
	Campbell	80.33	75.42
	Caroline	79.52	74.06
	Carroll	79.27	73.76
	Charles City	78.64	72.33
	Charlotte	77.65	72.92
	Charlottesville	79.79	74.34
	Chesapeake	80.29	75.74
	Chesterfield	81.60	77.65
	Clarke	78.72	75.34
	Clifton Forge	78.22	73.38
	Colonial Heights	79.87	75.27
	Covington	78.22	73.38
	Craig	78.22	73.38
	Culpeper	80.58	76.12
	Cumberland	79.73	74.22
	Danville	77.08	69.62
	Dickenson	76.92	70.72
	Dinwiddie	79.14	73.46
	Emporia	76.17	71.64
	Essex	79.73	74.54
	Fairfax City	81.34	76.29

State	County	Female	Male
(Virginia, cont'd)	Fairfax County	84.52	81.67
	Falls Church	83.49	80.39
	Fauquier	80.62	76.53
	Floyd	80.79	75.04
	Fluvanna	81.47	77.01
	Franklin City	79.31	74.68
	Franklin County	80.33	75.56
	Frederick	81.41	77.03
	Fredericksburg	79.20	73.28
	Galax	78.00	73.68
	Giles	79.37	73.25
	Gloucester	79.62	75.37
	Goochland	81.09	77.94
	Grayson	78.00	73.68
	Greene	80.71	76.50
	Greensville	76.17	71.64
	Halifax	78.81	71.63
	Hampton	79.67	73.37
	Hanover	81.53	77.52
	Harrisonburg	80.32	75.81
	Henrico	81.05	76.81
	Henry	77.78	71.40
	Highland	80.71	77.00
	Hopewell	76.62	70.58
	Isle Of Wight	79.31	74.68
	James City	82.77	78.66
	King And Queen	79.27	74.77
	King George	79.71	76.19
	King William	79.27	74.77
	Lancaster	79.08	74.41
	Lee	77.98	71.40
	Lexington	80.54	76.30
	Loudoun	84.16	81.00
	Louisa	80.92	75.67
	Lunenburg	77.65	72.92
	Lynchburg	79.07	74.93
	Madison	80.71	76.50
	Manassas	80.82	76.53
	Manassas Park	80.82	76.53
	Martinsville	77.78	71.40
	Mathews	79.62	75.37
	Mecklenburg	78.21	72.92
	Middlesex	79.73	74.54
	Montgomery	80.68	76.21
	Nelson	79.72	73.88
	New Kent	82.77	78.66
	Newport News	79.34	73.90
	Norfolk	77.38	72.69
	Northampton	78.17	71.95
	Northumberland	79.92	74.62
	Norton	77.42	72.67
	Nottoway	77.56	73.62
	Orange	79.69	76.14
	Page	79.85	73.81
	Patrick	80.79	75.04
	Petersburg	73.69	67.79
	Pittsylvania	80.03	73.34
	Poquoson	82.24	78.85
	Portsmouth	77.03	71.42
	Powhatan	80.90	76.92
	Prince Edward	78.93	73.15
	Prince George	80.04	76.53
	Prince William	82.29	78.67
	Pulaski	78.52	72.56
	Radford	78.92	74.47
	Rappahannock	79.85	73.81
	Richmond City	76.93	71.31
	Richmond County	79.08	74.41
	Roanoke City	77.25	70.75
	Roanoke County	81.07	76.96
	Rockbridge	80.54	76.30
	Rockingham	82.28	76.98
	Russell	77.81	71.28
	Salem	80.10	73.92
	Scott	77.91	72.73
	Shenandoah	80.34	75.98
	Smyth	76.92	72.08
	South Boston	78.81	71.63
	Southampton	78.64	72.33
	Spotsylvania	80.60	76.52
	Stafford	81.19	77.45
	Staunton	79.46	74.01
	Suffolk	78.46	74.49
	Surry	78.64	72.33
	Sussex	76.17	71.64
	Tazewell	76.01	69.19
	Virginia Beach	81.38	77.39
	Warren	78.72	75.34
	Washington	79.52	74.55
	Waynesboro	77.89	73.61
	Westmoreland	79.92	74.62
	Williamsburg	82.77	78.66
	Winchester	78.77	73.93
	Wise	77.42	72.67
	Wythe	78.73	73.35
	York	82.24	78.85
Washington	Adams	79.65	74.78
	Asotin	81.64	76.16
	Benton	81.42	77.45
	Chelan	82.09	78.20
	Clallam	81.37	75.44
	Clark	81.17	77.86
	Columbia	82.20	77.49
	Cowlitz	79.50	74.89
	Douglas	81.13	77.33
	Ferry	80.44	76.56
	Franklin	80.67	77.12
	Garfield	82.20	77.49
	Grant	80.70	75.84
	Grays Harbor	78.90	73.93
	Island	82.93	79.85
	Jefferson	81.93	78.53
	King	83.29	79.32
	Kitsap	80.76	77.30
	Kittitas	81.95	77.58
	Klickitat	82.24	77.68
	Lewis	80.49	75.80
	Lincoln	80.44	76.56
	Mason	80.97	76.52
	Okanogan	80.63	74.53
	Pacific	79.39	75.36
	Pend Oreille	80.25	75.61
	Pierce	80.30	76.20
	San Juan	81.58	77.92
	Skagit	80.69	77.34
	Skamania	82.24	77.68
	Snohomish	81.58	77.92
	Spokane	80.32	76.56
	Stevens	80.25	75.61
	Thurston	81.64	78.13
	Wahkiakum	79.39	75.36
	Walla Walla	80.98	76.76
	Whatcom	83.12	78.55
	Whitman	82.20	77.49
	Yakima	80.19	75.03
West Virginia	Barbour	78.45	73.82
	Berkeley	78.77	74.05
	Boone	75.89	68.83
	Braxton	77.93	73.32
	Brooke	78.61	73.80
	Cabell	78.02	70.96
	Calhoun	78.40	73.67
	Clay	77.93	73.32
	Doddridge	78.02	74.63

State	County	Female	Male
(West Virginia, cont'd)	Fayette	75.79	70.02
	Gilmer	78.40	73.67
	Grant	80.24	74.69
	Greenbrier	77.04	73.83
	Hampshire	79.64	73.68
	Hancock	79.68	74.01
	Hardy	80.24	74.69
	Harrison	78.37	73.09
	Jackson	78.81	73.99
	Jefferson	78.87	74.91
	Kanawha	77.77	71.37
	Lewis	77.27	72.42
	Lincoln	76.11	70.24
	Logan	74.50	68.89
	Marion	78.90	74.51
	Marshall	79.20	74.96
	Mason	77.87	71.49
	Mcdowell	72.90	63.90
	Mercer	76.97	69.39
	Mineral	79.74	73.18
	Mingo	73.92	67.26
	Monongalia	80.99	76.05
	Monroe	79.91	71.16
	Morgan	79.65	74.18
	Nicholas	78.42	71.27
	Ohio	79.74	74.10
	Pendleton	79.63	74.97
	Pleasants	78.00	74.27
	Pocahontas	79.63	74.97
	Preston	79.62	75.48
	Putnam	79.92	75.25
	Raleigh	76.29	71.03
	Randolph	79.12	75.04
	Ritchie	78.00	74.27
	Roane	78.93	72.18
	Summers	79.91	71.16
	Taylor	78.83	73.38
	Tucker	78.45	73.82
	Tyler	78.02	74.63
	Upshur	79.04	74.36
	Wayne	77.60	72.31
	Webster	77.27	72.42
	Wetzel	78.28	73.82
	Wirt	78.93	72.18
	Wood	78.39	73.87
	Wyoming	74.79	67.47
Wisconsin	Adams	81.46	75.26
	Ashland	79.74	75.64
	Barron	81.45	77.43
	Bayfield	80.41	77.16
	Brown	82.79	78.51
	Buffalo	81.28	78.67
	Burnett	81.89	77.40
	Calumet	82.71	78.95
	Chippewa	81.77	77.90
	Clark	81.37	76.50
	Columbia	81.53	77.09
	Crawford	81.02	76.97
	Dane	83.19	79.24
	Dodge	80.89	76.33
	Door	82.78	78.13
	Douglas	80.72	75.88
	Dunn	82.63	77.84
	Eau Claire	82.61	78.29
	Florence	80.37	76.13
	Fond Du Lac	82.12	77.60
	Forest	80.37	76.13
	Grant	80.37	77.30
	Green	81.52	77.17
	Green Lake	81.48	77.08
	Iowa	81.50	77.20
	Iron	81.01	77.16

State	County	Female	Male
(Wisconsin, cont'd)	Jackson	81.85	76.99
	Jefferson	81.64	77.05
	Juneau	79.89	76.45
	Kenosha	80.59	75.54
	Kewaunee	82.26	78.81
	La Crosse	82.21	77.65
	Lafayette	81.31	77.65
	Langlade	81.31	75.02
	Lincoln	81.71	76.44
	Manitowoc	81.72	77.36
	Marathon	82.62	77.43
	Marinette	82.28	76.66
	Marquette	81.04	75.24
	Menominee	81.31	75.02
	Milwaukee	79.64	74.23
	Monroe	81.23	75.48
	Oconto	80.71	77.13
	Oneida	81.22	76.48
	Outagamie	82.60	77.94
	Ozaukee	83.18	79.09
	Pepin	81.28	78.67
	Pierce	83.26	77.86
	Polk	81.44	77.41
	Portage	82.77	78.33
	Price	81.01	77.16
	Racine	80.85	76.54
	Richland	81.64	78.24
	Rock	80.70	76.23
	Rusk	80.75	76.31
	Sauk	81.84	76.73
	Sawyer	80.49	75.70
	Shawano	82.02	76.93
	Sheboygan	82.36	77.47
	St. Croix	82.40	78.27
	Taylor	81.69	76.51
	Trempealeau	81.75	76.60
	Vernon	81.42	76.96
	Vilas	81.79	77.27
	Walworth	81.28	77.78
	Washburn	81.51	75.26
	Washington	82.06	78.89
	Waukesha	82.81	79.02
	Waupaca	80.68	74.42
	Waushara	81.72	76.28
	Winnebago	81.79	76.98
	Wood	82.32	77.32
Wyoming	Albany	81.70	77.70
	Big Horn	79.26	75.91
	Campbell	78.84	74.48
	Carbon	79.77	75.90
	Converse	80.65	77.86
	Crook	78.84	74.48
	Fremont	78.36	72.79
	Goshen	80.70	76.90
	Hot Springs	81.23	78.17
	Johnson	80.70	75.78
	Laramie	80.21	74.97
	Lincoln	82.14	77.91
	Natrona	79.03	74.97
	Niobrara	80.70	76.90
	Park	81.23	78.17
	Platte	80.65	77.86
	Sheridan	80.70	75.78
	Sublette	82.14	77.91
	Sweetwater	81.30	75.51
	Teton	83.29	80.93
	Uinta	79.87	74.83
	Washakie	79.26	75.91
	Weston	78.84	74.48

METHODS

The analytical strategy of GBD

The GBD approach contains 18 distinct components, as outlined in Figure A1. The components of GBD are interconnected. For example, when new data is incorporated into the age-specific mortality rates analysis (component 2), other dependent components must also be updated, such as rescaling deaths for each cause (component 5); healthy life expectancy, or HALE (component 12); YLLs, or years of life lost (component 13); and estimation of YLLs attributable to each risk factor (component 18). The inner workings of key components are briefly described in this publication, and more detailed descriptions of each component are included in the published articles.

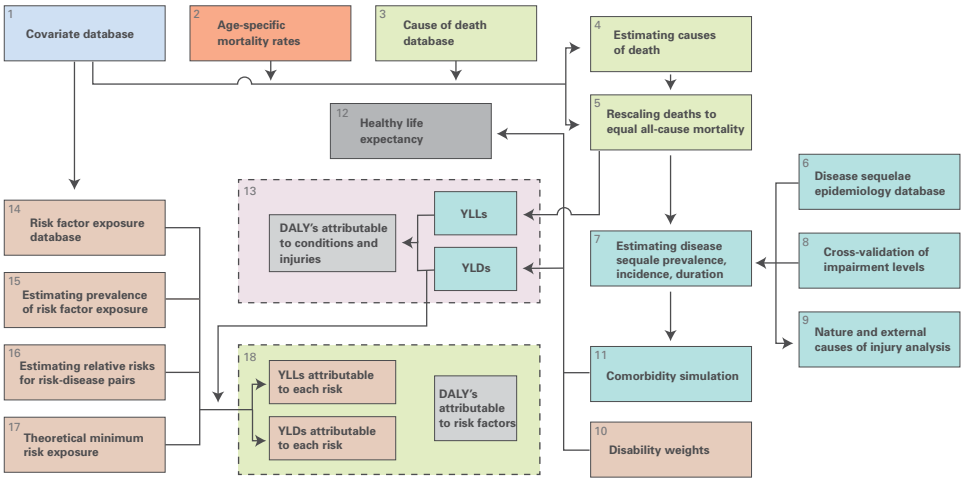
Estimating age- and sex-specific mortality

Researchers identified sources of under-5 and adult mortality data from vital and sample registration systems as well as from surveys that ask mothers about live births and deaths of their children and ask people about siblings and their survival. Researchers processed that data to address biases and estimated the probability of death between ages 0 and 5 and ages 15 and 60 using statistical models. Finally, researchers used these probability estimates as well as a model life table system to estimate age-specific mortality rates by sex between 1970 and 2010.

Estimating years lost due to premature death

Researchers compiled all available data on causes of death from 187 countries. Information about causes of death was derived from vital registration systems, mortality surveillance systems, censuses, surveys, hospital records, police records,

Figure A1: The 18 components of GBD and their interrelations



mortuaries, and verbal autopsies. Verbal autopsies are surveys that collect information from individuals familiar with the deceased about the signs and symptoms the person had prior to death. GBD 2010 researchers closely examined the completeness of the data. For those countries where cause of death data were incomplete, researchers used statistical techniques to compensate for the inherent biases. They also standardized causes of death across different data sources by mapping different versions of the International Classification of Diseases (ICD) coding system to the GBD cause list.

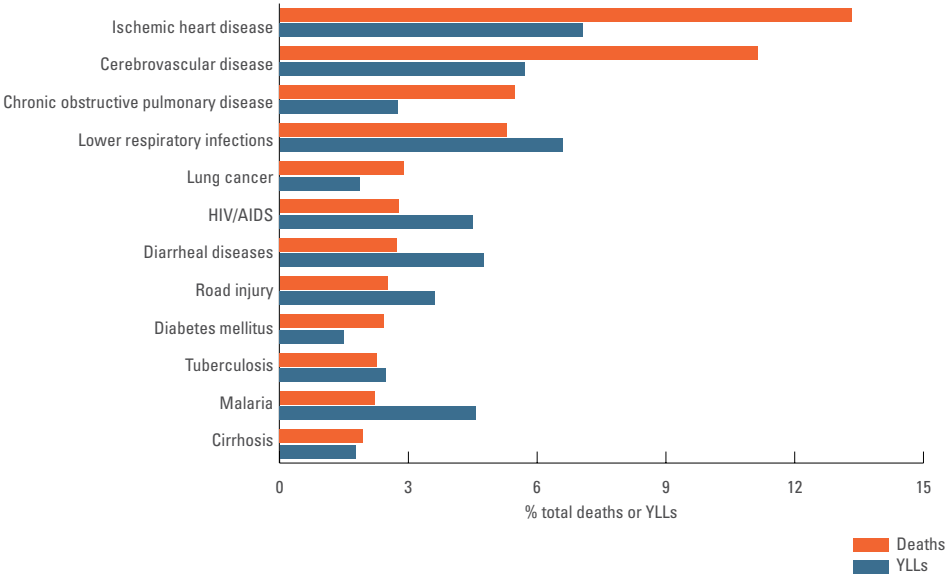
Next, researchers examined the accuracy of the data, scouring rows and rows of data for "garbage codes." Garbage codes are misclassifications of death in the data, and researchers identified thousands of them. Some garbage codes are instances where we know the cause listed cannot possibly lead to death. Examples found in records include "abdominal rigidity," "senility," and "yellow nail syndrome." To correct these, researchers drew on evidence from medical literature, expert judgment, and statistical techniques to reassign each of these to more probable causes of death.

After addressing data-quality issues, researchers used a variety of statistical models to determine the number of deaths from each cause. This approach, named CODEm (for Cause of Death Ensemble modeling), was designed based on statistical techniques called "ensemble modeling." Ensemble modeling was made famous by the recipients of the Netflix Prize in 2009, BellKor's Pragmatic Chaos, who engineered the best algorithm to predict how much a person would like a film, taking into account their movie preferences.

To ensure that the number of deaths from each cause did not exceed the total number of deaths estimated in a separate GBD demographic analysis, researchers applied a correction technique named CoDCorrect. This technique makes certain that estimates of the number of deaths from each cause do not add up to more than 100% of deaths in a given year. After producing estimates of the number of deaths from each of the 235 fatal outcomes included in the GBD cause list, researchers then calculated years of life lost to premature death, or YLLs. For every death from a particular cause, researchers estimated the number of years lost based on the highest life expectancy in the deceased's age group. For example, if a 20-year-old male died in a car accident in South Africa in 2010, he has 66 years of life lost, that is, the highest remaining life expectancy in 20-year-olds, as experienced by 20-year-old females in Japan.

When comparing rankings of the leading causes of death versus YLLs, YLLs place more weight on the causes of death that occur in younger age groups, as shown in Figure A2. For example, malaria represents a greater percentage of total YLLs than total deaths since it is a leading killer of children under age 5. Ischemic heart disease, by contrast, accounts for a smaller percentage of total YLLs than total deaths as it primarily kills older people.

Figure A2: Leading causes of global death and premature death, 2010



Estimating years lived with disability

Researchers estimated the prevalence of each sequelae using different sources of data, including government reports of cases of infectious diseases, data from population-based disease registries for conditions such as cancers and chronic kidney diseases, antenatal clinic data, hospital discharge data, data from outpatient facilities, interview questions, and direct measurements of hearing, vision, and lung function testing from surveys and other sources.

Confronted with the challenge of data gaps in many regions and for numerous types of sequelae, they developed a statistical modeling tool named DisMod-MR (for Disease Modeling – Metaregression) to estimate prevalence using available data on incidence, prevalence, remission, duration, and extra risk of mortality due to the disease.

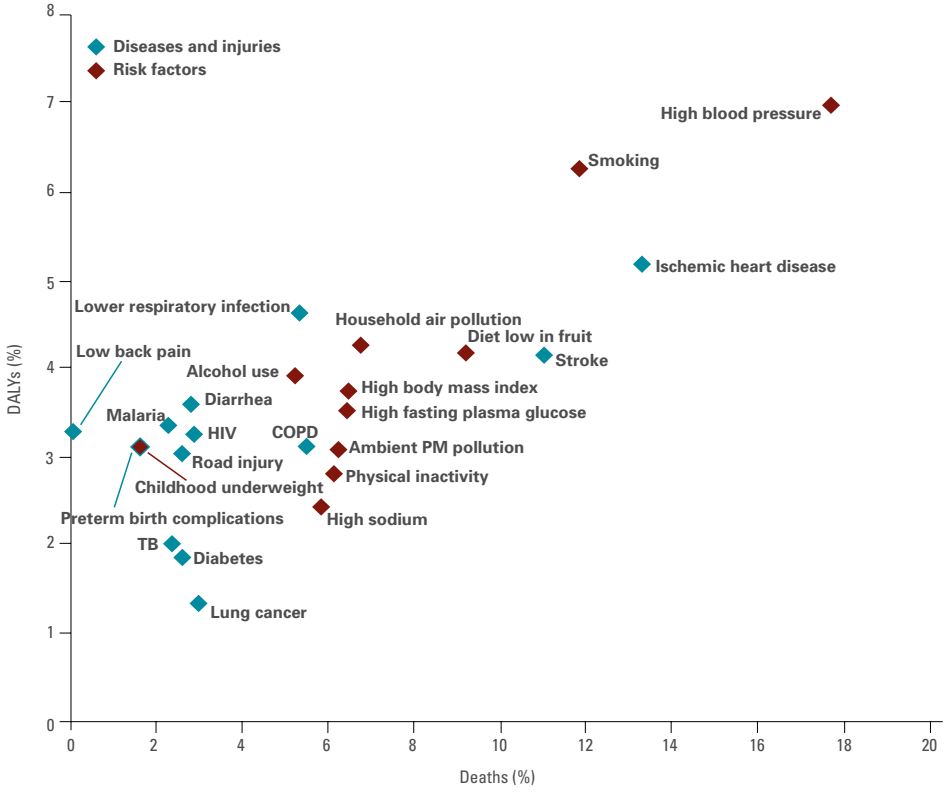
Researchers estimated disability weights using data collected from almost 14,000 respondents via household surveys in Bangladesh, Indonesia, Peru, Tanzania, and the United States. Disability weights measure the severity of different sequelae that result from disease and injury. Data were also used from an Internet survey of more than 16,000 people. GBD researchers presented different lay definitions of sequelae grouped into 220 unique health states to survey respondents, and respondents were then asked to rate the severity of the different health states. The results were similar across all surveys despite cultural and socioeconomic differences. Respondents consistently placed health states such as mild hearing loss and long-term treated fractures at the low end of the severity scale, while they ranked acute schizophrenia and severe multiple sclerosis as very severe.

Finally, years lived with disability, or YLDs, are calculated as prevalence of a sequel multiplied by the disability weight for that sequelae. The number of years lived with disability for a specific disease or injury are calculated as the sum of the YLDs from each sequelae arising from that cause.

Estimating disability-adjusted life years

Disability-adjusted life years (DALYs) were calculated by adding together YLLs and YLDs. Figure A3 compares the 10 leading diseases and injuries calculated as percentages of both global deaths and global DALYs. This figure also shows the top 10 risk factors attributable to deaths and DALYs worldwide. It illustrates how a decision-maker looking only at the top 10 causes of death would fail to see the importance of low back pain, for example, which was a leading cause of DALYs in 2010. DALYs are a powerful tool for priority setting as they measure disease burden from nonfatal, as well as fatal, conditions. Yet another reason why top causes of DALYs differ from leading causes of death is that DALYs give more weight to death in younger ages, as illustrated by the case of neonatal encephalopathy. In contrast, stroke causes a larger percentage of total deaths than DALYs, as it primarily impacts older people.

Figure A3: The 10 leading diseases and injuries and 10 leading risk factors based on percentage of global deaths and DALYs, 2010



Estimating DALYs attributable to risk factors

To estimate the number of healthy years lost, or DALYs, attributable to potentially modifiable risk factors, researchers collected detailed data on exposure to different risk factors. The study used data from sources such as satellite data on air pollution, breastfeeding data from population surveys, and blood and bone lead levels from medical examination surveys and epidemiological surveys. Researchers then collected data on the effects of risk factors on disease outcomes through systematic reviews of epidemiological studies.

All risk factors analyzed met common criteria in four areas:

1. The likely importance of a risk factor for policymaking or disease burden.

2. Availability of sufficient data to estimate exposure to a particular risk factor.

3. Rigorous scientific evidence that specific risk factors cause certain diseases and injuries.

4. Scientific findings about the effects of different risk factors that are relevant for the general population.

To calculate the number of DALYs attributable to different risk factors, researchers compared the disease burden in a group exposed to a risk factor to the disease burden in a group that had zero exposure to that risk factor. When subjects with zero exposure were impossible to find, as in the case of high blood pressure, for example, researchers established a level of minimum exposure that leads to the best health outcomes.

Methods used to estimate life expectancy in US counties

Researchers used mortality data from the National Center of Health Statistics (NCHS). Population data broken down by age, race, sex, and years were derived from the US Census Bureau for years prior to 1990 and from the NCHS for other years. Estimates of income per capita were obtained from the US Bureau of Economic Analysis and converted to real income per capita using gross domestic product (GDP) deflators from the World Bank. Educational attainment data were based on US Census Bureau data from years 1980, 1990, and 2000, and American Community Surveys from 2009 to 2011.

Statistical models developed by Kulkarni et al. were adapted and used to generate estimate age-specific mortality and life expectancy by age for US counties for years 1985 to 2010. These methods are described extensively by Wang et al. in the article "Left behind: widening disparities for males and females in US county life expectancy: 1985-2010," published in *Population Health Metrics* in 2013.

Methods used to estimate physical activity and obesity in US counties

Data from the Behavioral Risk Factor Surveillance System (BRFSS) was used to estimate changes in physical activity and obesity at the county level. Given that the height and weight data collected through the BRFSS is self-reported and prone to bias, measured height and weight data from the National Health and Nutrition Examination Survey (NHANES) was used to correct the bias in the BRFSS data. Researchers used statistical models known as small area estimation techniques, previously described by Srebotnjak et al., to assess the prevalence of obesity, any physical activity, and sufficient physical activity. The methods used to estimate obesity and physical activity are described in further detail in the article by Dwyer-Lindgren et al., "Prevalence of physical activity and obesity in US counties, 2001-2011: a road map for action," published in *Population Health Metrics* in 2013.

GBD

Institute for Health Metrics and Evaluation
2301 Fifth Ave., Suite 600
Seattle, WA 98121
USA

Telephone: +1-206-897-2800
Fax: +1-206-897-2899
E-mail: comms@healthmetricsandevaluation.org

www.healthmetricsandevaluation.org