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By Ellen Nolte and C. Martin McKee

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In Amenable Mortality—Deaths Avoidable Through Health Care—Progress In The US Lags That Of Three European Countries

Ellen Nolte (Ellen_Nolte@rand.org) is director of the Health and Healthcare policy program at RAND Europe, in Cambridge, England.

C. Martin McKee is a professor of European public health at the London School of Hygiene and Tropical Medicine, in England.

ABSTRACT **We examined trends and patterns of amenable mortality—deaths that should not occur in the presence of timely and effective health care—in the United States compared to those in France, Germany, and the United Kingdom between 1999 and 2007. Americans under age sixty-five during this period had elevated rates of amenable mortality compared to their peers in Europe. For Americans over age sixty-five, declines in amenable mortality slowed relative to their peers in Europe. Overall, amenable mortality rates among men from 1999 to 2007 fell by only 18.5 percent in the United States compared to 36.9 percent in the United Kingdom. Among women, the rates fell by 17.5 percent and 31.9 percent, respectively. Although US men and women had the lowest mortality from treatable cancers among the four countries, deaths from circulatory conditions—chiefly cerebrovascular disease and hypertension—were the main reason amenable death rates remained relatively high in the United States. These findings strengthen the case for reforms that will enable all Americans to receive timely and effective health care.**

The United States stands out among other countries for its high expenditure on health care. At $7,960 per capita in 2009, this was roughly double the average in Western European countries.[1] Despite this investment, the United States lags behind on a number of indicators of health system performance.[2–4]

Given the multiple causes of many health outcomes, it remains a challenge to assess the contribution of health care to population health. One approach that has been shown to provide a useful approximation is the concept of amenable mortality.[5] It derives from work undertaken in the 1970s in the United States, which proposed a list of conditions in which death should not occur in the presence of timely and effective health care.[6]

Deaths from such conditions were to be interpreted as "sentinel" health events and to serve as an index of the quality of care.[5] Examples include diabetes, which should be treated by insulin and other medication; appendicitis, treated by surgery; and acute infections, treated by antibiotics.

The key issue is the prevention of death. For example, although the acquisition of tuberculosis is largely driven by socioeconomic conditions, timely treatment is effective in preventing death. So the number of deaths from, for example, diabetes, provides a yardstick of access—or the lack of it—to effective care.

Based on this line of reasoning, the concept of amenable mortality has since been applied widely as a way to assess the quality of care in different health systems across countries and over time.[7–11] Recent work using this concept has demonstrated that the United States is increasingly lagging behind other industrialized nations.[12–14]

This study seeks to better understand some of the reasons behind the comparatively poor per-

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formance of the US health system. We hypothesized that the relative impact of health care in the United States differs by age group as a result of age-dependent variations in access to health care. This difference is in contrast to the situation in most other high-income countries, which provide universal access to health care regardless of age.

Specifically, we hypothesized that much of the lack in progress on the indicator of amenable mortality in the United States is driven by people under age sixty-five. Conversely, for those age sixty-five or older—who are typically, although not always and to varying degrees, covered by Medicare—we would expect patterns that are more comparable to those seen in other high-income countries. We therefore examined amenable mortality in the United States in comparison with that in three other high-income countries to assess whether and how the relative pace of change has differed by age.

Study Data And Methods

DATA Our principal source for mortality and population data was the World Health Organization mortality database,[15] with deaths coded according to the ninth and tenth revisions of the *International Classification of Diseases*, by sex and five-year age bands, for the period 1999–2007 in France and the United Kingdom. Data for Germany were available up to 2006. Data for the United States came from the Centers for Disease Control and Prevention, because at the time of writing, the World Health Organization had published US data only up to 2005.[16]

We chose France, Germany, and the United Kingdom to compare to the United States. The three European countries have a similar commitment to providing universal and equitable access to health care for their populations, but they do so in different ways. France and Germany are primarily funded through statutory health insurance, whereas the United Kingdom's National Health Service is largely tax funded. The countries fall on different places along the spectrum of amenable mortality rates, with France historically at the lower end—that is, France has fewer amenable deaths—and the United Kingdom at the higher end.[12] Furthermore, their population sizes (sixty to eighty million in all three cases) ensure fairly stable comparisons.

Data were checked for consistency through inspection of trends.[17] Data for the United Kingdom for 1999 were corrected for documented coding inconsistencies in counts of deaths coded as pneumonia and cerebrovascular disease.[18,19] UK data were not available for 2000, coinciding with the switch from ninth to the tenth revision of the *International Classification of Diseases*; 2000 rates were therefore imputed as an average of the rates for 1999 and 2001.

SELECTION OF CAUSES OF DEATH The selection of causes of death considered amenable to health care followed the classification used in earlier work (Appendix Exhibit A1).[5,20] In brief, we considered conditions such as selected childhood infections, treatable cancers, diabetes, cerebrovascular disease and hypertension, and complications of common surgical procedures.

We also included ischemic heart disease, hereafter referred to as heart disease. Consistent with earlier work, we considered only 50 percent of heart disease deaths as amenable. This decision was informed by a recent comprehensive review of the evidence that suggests that 40–50 percent of the decline in heart disease mortality in industrialized countries can be attributed to improvements in health care.[21,22] Throughout this article, the term *amenable mortality* thus always includes 50 percent of the deaths from heart disease.

We set an upper age limit for our study population of seventy-five years. This is to reflect uncertainty about the extent to which deaths at older ages can be prevented by health care and about the reliability of death certificates for older people with multiple disease processes.

Younger age limits were applied to selected conditions. These included diabetes mellitus (under age fifty) because the preventability of deaths at older ages from diabetes remains controversial; the childhood conditions of childhood intestinal infectious diseases, whooping cough, measles, and childhood respiratory diseases (under age fifteen); and leukemia (under age forty-five).[23]

ANALYSES We examined levels and trends in amenable mortality by calculating age-standardized mortality rates per 100,000 population for categories of disease, by sex, with direct standardization to the European standard population.[24] Age standardization was used to account for changes in the age structure between populations for the period 1999 to 2007 (or 2006, in the case of Germany).

We further disaggregated death rates by age, examining trends in age-standardized mortality in two age groups: under sixty-five and sixty-five to seventy-four. We computed annual rates by sex, cause and cause group, and country throughout the period under examination.

LIMITATIONS It is important to highlight some of the limitations of the analysis presented here. Challenges related to the concept of amenable mortality have been discussed in detail elsewhere.[12,13,25]

In brief, one of the difficulties is to define the list of conditions to be considered as amenable to

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health care. A death from any cause is typically the final event in a complex chain of processes that include underlying social and economic factors and lifestyles, as well as preventive and curative health care.[5] Thus, in interpreting the findings, a degree of judgment is needed with regard to the attribution of outcomes to activities in the health system.

Furthermore, the concept is limited in that it captures mortality under age seventy-five and so considers only about half of the mortality experience in high-income countries.[12] Although this risks devaluing the role of curative care for people at older ages, extending the concept beyond age seventy-five continues to pose methodological challenges.[12]

Study Results

Amenable mortality is an important contributor to premature mortality in all of the four high-income countries we studied. It accounts for 21 percent of mortality under age seventy-five in men and 30 percent in women (Appendix Exhibit A2).[20]

Between 1999 and 2007, rates of amenable mortality among men fell by 18.5 percent in the United States and 36.9 percent in the United Kingdom (Exhibit 1). For women, the figures were 17.5 percent and 31.9 percent, respectively. This decline was more rapid than that in mortality rates from conditions not considered amenable to health care (other causes in Exhibit 1). This suggests that health care did contribute to improved population health outcomes in all of the countries, although the pace varied.

In 2007 amenable mortality was highest in the United States, with rates almost twice those seen in France (Exhibit 1). Levels of total mortality (all causes in Exhibit 1) also remained higher in the United States than in the other three countries.

Exhibit 2 illustrates trends in mortality from amenable conditions for those under sixty-five. The exhibit demonstrates that the United States not only had the highest rates of amenable mortality in 1999, indicating poor performance, but it also experienced smaller improvements in rates between 1999 and 2007 than the other three countries.

For people over sixty-five, all four countries experienced considerable declines in amenable mortality—that is, their performance improved (Exhibit 3). Again, the rate of improvement was slower in the United States, especially compared to the United Kingdom. As a result, in 2007 the United States had the highest levels of amenable mortality. Similar trends were observed for mortality from heart disease and from causes other than those considered amenable to health care (Appendix Exhibits A3 and A4).[20]

Exhibits 4 and 5 provide information on the scale of change by showing the annual rate of change in mortality rates. The corresponding age-standardized mortality rates are provided in Appendix Exhibits A5 and A6.[20] The annual decline in amenable mortality among men under age sixty-five was lower in the United States than in the other three countries (Exhibit 4). The

EXHIBIT 1

Age-Standardized Mortality Rates From Selected Causes In Four Countries, 1999 And 2006/2007

	Mortality rates per 100,000 people ages 0–74, 2006/2007				Percent change from 1999 to 2006/2007			
Country	Amenable causes	Heart disease (50%)	Other causes	All causes	Amenable causes	Heart disease (50%)	Other causes	All causes
MEN								
France	60.97	13.67	326.96	401.60	27.7	30.7	16.9	19.2
Germany	90.29	30.45	286.32	407.05	24.3	33.2	15.3	19.0
UK	91.27	34.47	253.76	379.51	36.9	41.7	8.4	21.1
US	106.90	37.18	328.20	472.26	18.5	32.6	8.8	13.6
WOMEN								
France	49.39	2.84	126.88	179.10	23.4	37.9	11.2	15.5
Germany	65.87	9.23	133.06	208.15	22.7	37.9	11.3	16.8
UK	74.14	10.82	153.81	238.76	31.9	47.8	6.0	18.6
US	84.50	14.52	191.47	290.49	17.5	35.8	6.1	11.7

SOURCE Authors' calculations based on data from the World Health Organization mortality database (Note 15 in text) and Centers for Disease Control and Prevention vital statistics data (Note 16 in text). **NOTES** Data for Germany for 2007 were not available; we used data for 2006 instead. As explained in the text, we assumed that 50 percent of deaths from heart disease were amenable deaths. Numbers may not sum to the total because of rounding.

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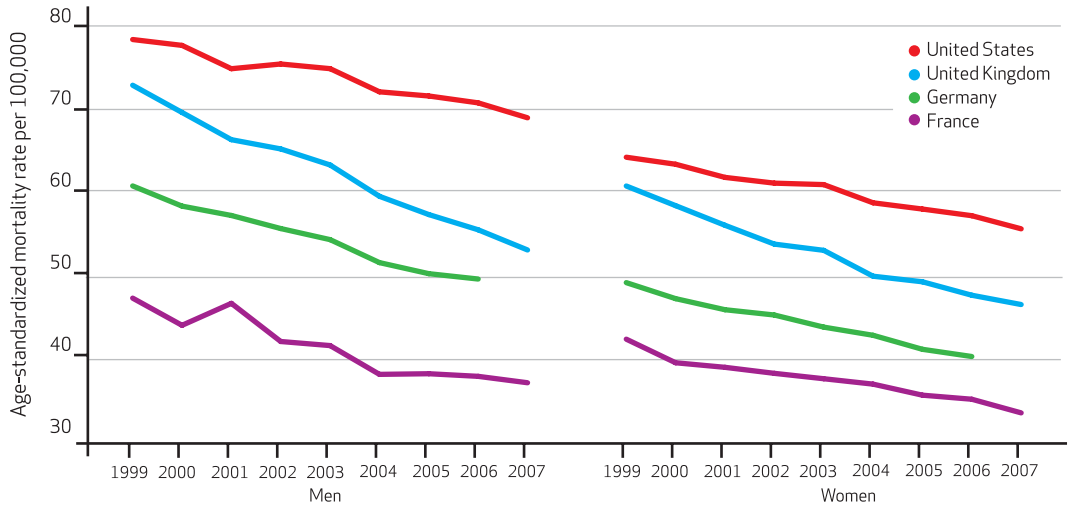
EXHIBIT 2

Trends In Mortality From Amenable Causes In Four Countries For People Under Age Sixty-Five, 1999–2006/2007



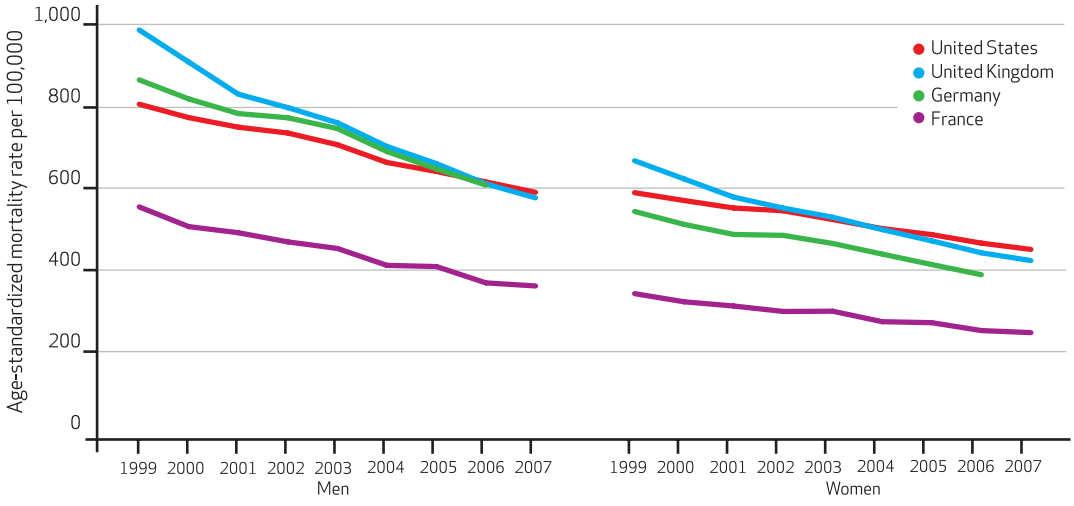
SOURCE Authors' calculations based on data from the World Health Organization mortality database (Note 15 in text) and Centers for Disease Control and Prevention vital statistics data (Note 16 in text). **NOTE** Data for Germany for 2007 were not available.

United Kingdom showed a particularly rapid decline in male amenable mortality, falling at an annual rate of more than twice that in the United States and more rapidly than in France or Germany. For women, these differences were less pronounced, but the United Kingdom again showed the most rapid decline in amenable mortality in those under sixty-five (Exhibit 5).

For men and women ages sixty-five to seventy-four, those in the United Kingdom experienced the largest improvements in amenable mortality. In 1999, UK rates of amenable mortality were 13–20 percentage points higher than those in the United States, but by 2007, the UK rates were 2–5 percentage points lower than US rates (Appendix Exhibits A5 and A6).[20] Rates of decline among the older age group were smallest in France.

EXHIBIT 3

Trends In Mortality From Amenable Causes In Four Countries For People Ages 65–74, 1999–2006/2007



SOURCE Authors' calculations based on data from the World Health Organization mortality database (Note 15 in text) and Centers for Disease Control and Prevention vital statistics data (Note 16 in text). **NOTE** Data for Germany for 2007 were not available.

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EXHIBIT 4

Change From 1999 To 2006/2007 In Age-Standardized Mortality Rates Among Men From Selected Causes In Four Countries

Cause	Change in mortality rate per 100,000 men			
	France	Germany	UK	US
AGES 0–64				
All amenable causes	1.27	1.59	2.46	1.17
Infectious disease	−0.09	0.03	0.01	−0.04
Treatable cancer	0.14	0.25	0.18	0.18
Diabetes[a]	0.00	0.01	0.01	−0.13
Heart disease (50%)[b]	0.33	0.79	1.28	1.02
Other circulatory disease	0.44	0.35	0.66	−0.04
Respiratory disease	0.20	0.03	0.07	0.06
Surgical conditions and medical errors	0.21	0.06	0.08	−0.02
Perinatal, maternal, and congenital conditions	0.07	0.09	0.18	0.13
Other[c]	−0.02	−0.02	0.00	0.00
AGES 65–74				
All amenable causes	23.96	36.47	50.89	26.69
Infectious disease	−0.73	0.16	0.13	−0.17
Treatable cancer	2.64	3.46	2.73	2.69
Heart disease (50%)[b]	6.23	19.53	26.12	17.94
Other circulatory disease	8.70	12.29	15.92	4.64
Respiratory disease	4.02	0.43	3.76	1.50
Surgical conditions and medical errors	3.11	0.46	2.22	0.00
Perinatal, maternal, and congenital conditions	0.02	−0.02	0.05	0.06
Other[c]	−0.03	0.15	−0.03	0.04

SOURCE Authors' calculations based on data from the World Health Organization mortality database (Note 15 in text) and Centers for Disease Control and Prevention vital statistics data (Note 16 in text). **NOTES** Data for Germany for 2007 were not available. Negative changes indicate an increase in mortality. [a]Diabetes deaths are displayed in the category 0–64 only because of the upper age limit of 49 years. [b]As explained in the text, we assumed that 50 percent of deaths from heart disease were amenable deaths. [c]Thyroid disease and epilepsy.

Looking at selected amenable conditions, we found that the relative lack of progress in the United States was largely attributable to circulatory conditions other than heart disease—mainly cerebrovascular disease and hypertension. Thus, among US men under age sixty-five, there was a small increase in mortality rates (Exhibit 4). In contrast, among men in Germany, mortality from circulatory conditions other than heart disease fell 0.35 per 100,000 population annually; in the United Kingdom, they fell 0.66 per 100,000 (Appendix Exhibit A5).[20]

Women experienced a decline in mortality rates from circulatory conditions other than heart disease in all four countries, but again the pace of change was smallest in the United States. Mortality also remained highest there, at 10.24 deaths per 100,000 (Appendix Exhibit A6).[20] Similar trends for circulatory conditions other than heart disease were observed for those ages 65–74, with declines in mortality rates for both sexes smallest in the United States and largest in the United Kingdom. Importantly, in 1999 the United Kingdom (both sexes) and Germany (women) had higher mortality from circulatory conditions other than heart disease, compared to the United States—a pattern that had reversed by 2006 for Germany and 2007 for the United Kingdom.

Lack of progress in the United States relative to other countries was also observed in mortality rates attributed to surgical conditions and medical errors. Among those under age sixty-five, these mortality rates are difficult to interpret because of small numbers. However, among people age sixty-five or older, it is notable not only that the United States had higher age-standardized mortality rates in 1999 (especially among women) but also that these rates remained fairly stable over time. Thus, by 2007 the distance between the United States and the other three countries had increased noticeably.

In contrast, mortality from treatable cancers fell at a fairly similar pace in all four countries. Among men in the younger age group, these mortality rates in 2006 or 2007 were similar across countries. Among men in the older age group, the rates were lowest in the United States, at 81.19 deaths per 100,000 (Appendix Exhibit A5).[20] The only exception was Germany. With higher mortality rates than the other countries in 1999, it saw a more rapid decline in mortality among men in both age groups (Exhibit 4), although it still lagged behind the other countries in 2006.

Among women, mortality rates from treatable cancers fell more rapidly in Germany and the United Kingdom than in France and the United States (Exhibit 5). Thus, by 2006 or 2007, rates had become very similar for women under age sixty-five across all four countries. However, rates among older women in Germany and the United Kingdom remained somewhat elevated. As with men, US women experienced the lowest levels of mortality from treatable cancers, closely followed by French women (Appendix Exhibit A6).[20]

Finally, there was a complex pattern of mortality from respiratory conditions considered amenable to health care, mainly driven by pneumonia. The highest mortality rates were seen in the United Kingdom, among men and women in both age groups, in 1999 and 2007. Rates fell consistently in that country, but they also fell in France, where deaths in the older age group declined by more than half. By 2007 France had the lowest mortality rates from respiratory conditions, although rates in France in 1999 had been higher than in Germany (for both sexes) and the United States (for men). There was also improvement in the United States and, to lesser extent, in Germany. It should be noted that in both of those countries, men had relatively low mortality rates for amenable respiratory condi-

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tions in 1999 (Appendix Exhibit A5).[20]

Discussion

Deaths from causes that are considered amenable to timely and effective health care remain an important contributor to mortality rates for people under age seventy-five in high-income countries. Mortality from these conditions fell consistently in all four countries in this study between 1999 and 2006 or 2007. But as shown previously,[12] the scale and pace of improvement varied.

This study shows that the rate of decline in the United States was slower than that in France or Germany, and especially slow compared to that in the United Kingdom. As a consequence, amenable mortality rates in the United States in 2007 were almost twice as high as those in France, which had the lowest levels of the four countries we studied.

Overall, our findings must be viewed in the context of differences in underlying disease incidence and severity of disease when a patient presents to a health care provider. However, severity is a function of health-seeking behavior and—although partly outside the scope of health services—reflects access to care. It is, therefore, partly amenable to changes in health system design.

CHRONIC CONDITIONS In the early 2000s chronic conditions such as heart disease, stroke, hypertension, diabetes, and cancer were more common among older Americans (those ages fifty to seventy-four) than among Europeans.[26] Those findings were replicated in a representative survey among people age fifteen or older, although prevalences of the conditions in the United States were quite similar to those in Australia and New Zealand.[27] However, a detailed analysis has shown that differences in common risk factors can explain only a small part of the observed differences in the prevalence of chronic diseases between the United States and, for example, England.[28]

More recent work has estimated the incidence of such conditions, finding their rate higher among Americans ages 55–64 than among their English counterparts—and also, to a lesser extent, among those ages 70–80.[29] Relating these findings to prevalence rates, the authors of that study concluded that survival rates for people in the older group with these conditions were higher in the United States than in England, which they attributed to better US medical care.

This conclusion is consistent with our findings, given that we observed lower mortality rates from amenable conditions among those ages 65–74 in the United States than in the United Kingdom in the early 2000s (Exhibit 3). This difference was mainly because mortality rates for cancer and circulatory and respiratory diseases considered amenable to health care were lower in the United States.

However, the difference had reversed itself by the late 2000s, largely because of the more rapid decline in amenable deaths in the United Kingdom than in the United States.

The rapid declines in mortality from treatable cancer in the European countries brought their amenable death rates from cancer considerably closer to the US rate, although the United States retained its advantage. This is consistent with findings that older Americans benefit from intensive screening and treatment provided under Medicare,[30,31] so that cancer survival does not decline markedly with increasing age in the United States, as it does in many European countries.[32]

However, some caution is required. Most comparisons of survival use the Surveillance, Epidemiology, and End Results data, which overestimate US survival rates.[33,34] Furthermore, comparisons of cancer survival are notoriously

EXHIBIT 5

Change From 1999 To 2006/2007 In Age-Standardized Mortality Rates Among Women From Selected Causes In Four Countries

	Change in mortality rate per 100,000 women			
Cause	**France**	**Germany**	**UK**	**US**
AGES 0–64				
All amenable causes	1.10	1.26	1.77	1.07
Infectious disease	−0.06	0.01	−0.01	−0.06
Treatable cancer	0.58	0.74	0.65	0.48
Diabetes[a]	0.00	0.02	−0.02	0.01
Heart disease (50%)[b]	0.05	0.19	0.41	0.39
Other circulatory disease	0.22	0.23	0.54	0.15
Respiratory disease	0.10	0.01	0.06	0.05
Surgical conditions and medical errors	0.09	0.03	0.04	−0.01
Perinatal, maternal, and congenital conditions	0.13	0.04	0.09	0.07
Other[c]	−0.01	−0.01	0.01	0.00
AGES 65–74				
All amenable causes	11.81	21.90	30.25	17.18
Infectious disease	−0.37	−0.11	−0.32	−0.26
Treatable cancer	2.17	3.97	4.05	3.45
Heart disease (50%)[b]	2.32	8.66	11.79	9.01
Other circulatory disease	4.80	8.64	11.56	4.33
Respiratory disease	1.44	0.38	2.39	0.60
Surgical conditions and medical errors	1.23	0.28	0.73	−0.11
Perinatal, maternal, and congenital conditions	0.01	0.01	0.08	0.11
Other[c]	0.10	0.07	−0.03	0.05

SOURCE Authors' calculations based on data from the World Health Organization mortality database (Note 15 in text) and Centers for Disease Control and Prevention vital statistics data (Note 16 in text). **NOTES** Data for Germany for 2007 were not available. Negative changes indicate an increase in mortality. [a]Diabetes deaths are displayed in the category 0–64 only because of the upper age limit of 49 years. [b]As explained in the text, we assumed that 50 percent of deaths from heart disease were amenable deaths. [c]Thyroid disease and epilepsy.

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difficult to interpret, because longer survival may reflect earlier diagnosis, overdiagnosis, or later death.[35,36]

AGE-RELATED DIFFERENCES IN HEALTH Our findings indicate that younger Americans do not appear to benefit from health care to the same extent as do their older compatriots or Europeans. Crucially, levels of amenable mortality among Americans under age sixty-five have fallen increasingly far behind their European counterparts during the past decade. This growing gap was largely caused by a failure to reduce mortality from amenable circulatory diseases and, to lesser extent, treatable cancer (in the case of women only).

The high rates of overweight and obesity in the United States contribute to the burden of disease from diabetes, heart disease, and cancer.[37] But, taking the example of diabetes, we included only deaths under age fifty as amenable to health care. Levels of overweight among the working-age population are fairly similar in the United Kingdom and the United States. In addition, obesity levels are slightly lower in the United Kingdom.[38] However, UK mortality rates from diabetes are only half those in the United States. Conversely, although levels of overweight and obesity have been rising continuously in both countries during the past decade, mortality from heart disease has fallen.

This analysis has not disaggregated mortality by ethnicity or socioeconomic characteristics, which means that our results may conceal potentially large variations within populations.[5] US studies show that deaths from most amenable conditions are consistently higher among African Americans than among whites,[39] although the gap varies greatly by state.[40] Therefore, racial differences cannot be attributed solely to lifestyle or biological factors.[39] That conclusion is further supported by research on diabetes outcomes. This work has demonstrated that although the relative contributions of different factors are still inadequately understood,[41] access to health care can play a substantial part in narrowing the gap due to socioeconomic status[42,43] and ethnicity.[44]

Our analyses confirm our hypothesis that the relative impact of health care in the United States varies by age group as a result of age-dependent differences in access to health care. We show that the lagging progress of the United States compared to other countries, as measured by amenable mortality, is largely driven by elevated amenable mortality among those younger than age sixty-five. However, we also observed a slowing of improvement among older Americans, relative to their peers in the other countries we studied. These changes have taken place at a time when the average US family did not see increases in income, because health care expenditures consumed a greater share of families' resources.[45]

REASONS FOR RECENT TRENDS The space available here does not permit a detailed discussion of the reasons for these recent trends. Improvements in health outcomes represent a combination of diagnostic and therapeutic innovation, where the United States is at the forefront internationally; quality of care, where comparisons across countries are both limited and difficult; and access to care, where the United States differs from European countries with regard to the provision of universal coverage.

A recent comparison of factors underlying differences in mortality rates from the leading amenable causes of death in the United States and the United Kingdom showed that many Americans failed to obtain recommended treatment for common chronic conditions and to secure regular affordable treatment.[32] Those Americans who were treated according to best practices achieved outcomes similar to those of their European counterparts. Factors associated with receiving appropriate care in the United States included being treated within the Department of Veterans Affairs and having adequate insurance.[46]

However, differences in outcomes are not simply attributable to individuals. For example, the population of Minnesota has achieved outcomes that are as good as those in many European countries and a mortality rate from amenable causes that is less than half the rates of Mississippi and the District of Columbia.[47] Factors in these different outcomes included receiving care according to guidelines and being treated adequately by primary care providers to reduce unnecessary hospital admissions.

These observations lead us to the conclusion that there is no reason why all Americans cannot benefit equally from living in a country with the most expensive health care system in the world. ■

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ABOUT THE AUTHORS: ELLEN NOLTE & C. MARTIN MCKEE

Ellen Nolte is director of the Health and Healthcare policy program at RAND Europe.

In this month's *Health Affairs*, Ellen Nolte and Martin McKee report on their examination of amenable mortality—deaths that should not occur in the presence of timely and effective health care—in the United States compared to France, Germany, and the United Kingdom between 1999 and 2007. The authors found that overall, Americans under age sixty-five had elevated rates of amenable mortality compared to their peers in Europe and that for Americans over age sixty-five, declines in amenable mortality slowed relative to their peers in Europe. The authors suggest that these findings strengthen the case for reforms that will enable all Americans to receive timely and effective health care.

Nolte is director of the Health and Healthcare policy program at RAND Europe. Her expertise is in health systems research, international health care comparisons, and performance assessment. She combines this expertise with experience in the systematic analysis of population health indicators across European countries, including the application of demographic and epidemiological approaches to understanding factors contributing to population health outcomes.

Before joining RAND, Nolte held a prestigious Career Scientist Award from the National Institute for Health Research at the London School of Hygiene and Tropical Medicine, where she undertook a five-year study of chronic diseases and care. She currently leads a program on international health care comparisons for the UK Department of Health. She has published widely on health system performance assessment and quality and on amenable mortality. Nolte holds a master's degree in public health from the University of Bielefeld, in Germany, and a doctorate in public health medicine from London University.

C. Martin McKee is a professor at the London School of Hygiene and Tropical Medicine.

McKee is a professor of European public health at the London School of Hygiene and Tropical Medicine. He has written extensively on health and health policy, with a particular focus on countries undergoing political and social transition. At the London School, he is codirector of the European Centre on Health of Societies in Transition, a World Health Organization collaborating center of researchers working on health and health policy in Central and Eastern Europe and the former Soviet Union.

McKee is also research director of the European Observatory on Health Systems and Policies, a unique partnership of universities, national and regional governments, and international agencies that supports and promotes evidence-based health policy making through comprehensive and rigorous analysis of the dynamics of health care systems in Europe. He served as an editor of the *European Journal of Public Health* for fifteen years, including six years as editor-in-chief. McKee earned his master's degree in community medicine from the University of London and his medical degree and doctor of science degree from Queen's University, Belfast.

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Errata

NOLTE ET AL., SEPTEMBER 2012, PP. 2114, 2116, 2118, AND 2119 In Exhibit 1, in the column header "Mortality rates per 1,000 people ages 0–74, 2006/2007," 1,000 should be 100,000. The same change applies in Exhibits 4 and 5, where "1,000" appears in column headers. This error did not affect the study's findings or conclusions. Also, RAND Europe is located in Cambridge, not in London. The text and exhibits have been corrected online.

COUGHLIN ET AL., AUGUST 2012, P. 1694 In the fifth paragraph of the section "Aligning Safety-Net And Academic Missions," the authors offer a clarification. The text originally read as follows: "At Denver Health and Virginia Commonwealth, physicians are directly employed by the hospital rather than the medical school. Because these physicians have no responsibilities to other departments or hospitals, they are more focused on supporting their hospital's mission." The text has been revised as follows: "At Denver Health and Virginia Commonwealth, physicians are employed by the same health care system that owns the hospital, ensuring that they are more focused on supporting their hospital's mission." This change in phrasing does not affect the overall findings of the study. The article has been corrected online.

CUNNINGHAM ET AL., AUGUST 2012, P. 1699 In the third paragraph of the section "Study Data And Methods," the phrase "For each of the twelve communities" has been added to the sentence beginning "Respondents typically included." The omission of this phrase resulted in a potentially misleading description of the study methodology. The article has been corrected online.

DONNELLY, JULY 2012, P. 1395 At the beginning of the sixth paragraph of the section "Deciding To Move Ahead," a date clarification is needed. The text currently states: "As of late January, Bush had made up his mind." The text should read: "Soon after, Bush had made up his mind." The article has been corrected online.

MARTIN ET AL., APRIL 2010 The erratum published in April 2012 was not complete. This erratum notice contains the accurate corrections from the first erratum as well as further changes needed. First, in Exhibit 2, the second row is labeled "ADLs," not "ADLs only" as before. Second, the phrase "up to five" has been removed from the second and third paragraphs below the subheading "Study Data and Methods." Related to this change, the first note in Exhibit 3 has been revised to read as follows: "Each person who reported needing help with activities of daily living (ADLs) or instrumental activities of daily living (IADLs), or having limitations in some other aspect of life (working, walking without equipment, remembering, or activities in general), was asked about causes of his or her condition." Third, in Exhibit 4, correction of a data coding error resulted in small shifts (1–2 per 10,000) in the reports of age at onset of a condition causing need for help from the "age 50+" category to the "missing" category for each condition. The previous erratum stated that these shifts were 100–200 per 10,000. Fourth, the second and third sentences in the last paragraph before the subheading "Discussion" now read as follows: "Notably, for the top-six conditions, the most common age at onset is ages 30–49. For the other four conditions, onset is most common at age 50 and older." These errors do not affect the article's conclusions. The exhibits and text have been corrected online.