We can say with confidence that American health and life expectancy are likely to improve somewhat over the coming decades; but we can also be confident that there will be no tremendous breakthroughs leading to dramatically extended lives during this period or in the number of years people will live in good health. We can also safely predict that the United States is unlikely to regain the relative prominence it held at the middle of the twentieth century among the world leaders in life expectancy and other health indicators.

The twenty-five years between 2015 and 2040 are a period where we should focus on increasing the length of our healthy life; however, there are a number of disquieting trends in the United States that indicate accomplishing such a goal will require concerted effort. In fact, current trends suggest that changes in individual behavior and social policy will be needed to address the American “health problem.” Otherwise, we are likely to have a difficult time maintaining even the current length of healthy life, as we continue to fall behind our peer nations in both life expectancy and health.
Life Expectancy Increase in Recent Decades

The increase in human life expectancy was probably the greatest accomplishment of the twentieth century—almost doubling in the United States, from around forty to seventy-eight years. This increase was accomplished by initially increasing the likelihood that children born would survive to old age and, only more recently, that people who survive to old age will survive to very old age.

Demographers routinely project life expectancy and disability seventy years ahead, so the twenty-five-year focus of this book is a relatively short demographic projection about which one can be relatively confident. We do not expect the coming decades to be like the mid-twentieth-century period when the earlier version of this book was written—a time of impressive increases in longevity and health. Instead, we can expect to add only a couple of additional years of life expectancy in the next few decades, but not more than that. While there are researchers who believe that life expectancy for those born now can reach one hundred (see Christensen et al., for example),¹ my view is that this is highly unlikely to occur even a century into the future. The only way this extreme life expectancy can be achieved is by almost entirely eliminating any deaths before age one hundred, which is unlikely for a number of reasons: at present only a small percentage of people live to become centenarians; the speed of decline in mortality that would be required to produce such increases in life expectancy at older ages has never been experienced; the trends in recent decades do not indicate that such a decline in mortality is currently happening; and there is no scientific advance on the immediate horizon that could result in such dramatic change in the next few decades. Therefore, I expect any increase in life expectancy to be modest in the years leading up to 2040.

U.S. Life Expectancy Trends in International Perspective

Trends over thirty years in life expectancy at birth—from 1980 to 2010—in the United States are shown in figure 2.1 for males and figure 2.2 for females. There have been relatively modest but continuous increases for men, but only very slow increases for women, including years of stagnation within this period. The relatively poor improvement for
Figure 2.1. Life expectancy at birth, trends for U.S. males relative to 21 other OECD countries

Figure 2.2. Life expectancy at birth, trends for U.S. females relative to 21 other OECD countries

Each dot represents life expectancy in one country among those in the Organization for Economic Cooperation and Development (OECD). The large circles represent the United States. The rest represent Australia, Austria, Belgium, Canada, Denmark, Finland, France, Iceland, Italy, Japan, Luxembourg, the Netherlands, New Zealand, Norway, Portugal, Spain, Sweden, Switzerland, the United Kingdom, and West Germany.

women relative to men is reason for some concern, but it is the trends in the United States relative to other countries that raise the most serious issues among Americans about both our current health situation and the outlook for the future. As indicated in the two figures, the relative rank of U.S. life expectancy has dropped markedly. The United States has fallen well behind leaders such as Japan, Australia, France, and Italy, and today the United States has levels of life expectancy similar to the eastern European countries. These differences between the United States and other countries were first clarified in a National Research Council report that focused on the population age fifty years old and older. Additional work focusing on the relative health of those younger than age fifty found that the United States fared even more poorly at younger ages. In a comparison of the ranking of mortality at each age among seventeen peer countries, the United States ranks worst or second to worst at every age up to seventy-five. As indicated in figure 2.3, only at the oldest ages do Americans compare relatively well.

This poor performance in life expectancy for the United States is due to a set of wide-ranging causes. Some of these causes are clearly rooted in social or political values. For example, it is not surprising that violent deaths—particularly those involving firearms—are a significant cause of international differences at younger ages. But deaths from transportation accidents are also an important cause of international differences. The reasons behind high levels of transportation-related mortality are not immediately obvious. More miles are driven in the United States than in most peer countries, particularly by teenagers; affluence may be the reason teenagers drive more, but the relative lack of availability of public transportation may also be a factor. In turn, the availability of public transportation may be linked to the particular geography of the country. Deaths from automobile accidents may also be related to the level of drinking alcoholic beverages, particularly among the young, and the level of enforcement of laws against drinking and driving. Then there are additional deaths from drug usage, infant mortality, and maternal mortality. All of these factors differ across countries. In sum, the causes of lower life expectancy and higher mortality in the United States before old age are wide ranging.

Higher levels of chronic disease, particularly heart disease and diabe-
tes, account for most of the difference in life expectancy beyond middle age between Americans and people in other countries. Americans have smoked more in the past on average than people in other countries; they are more likely to be obese than people in most countries; and they may be more likely to be sedentary than people in other countries. Americans reach old age with more risk factors for cardiovascular disease than people in Europe and elsewhere, and they have higher mortality.

The United States is the only one of the peer countries examined in these studies without universal health insurance, so Americans, particularly those younger than age sixty-five, are more likely to be without a regular source of health care than people in other countries. Recent
changes in the availability of health insurance may reduce the role of this factor in causing differences between the United States and other countries, but the reasons underlying these health differences are only partly related to differences in health care.

**Differentials within the United States**

It is useful to consider differences within the United States as well as differences between the United States and other countries. The United States has long had differentials by socioeconomic status in average length of life and in most health indicators. People who are wealthier or who have more education live longer on average, and that difference has been growing over time as increases in life expectancy are increasingly concentrated among those with the highest education. Between 1990 and 2008 life expectancy among women with less than a high school education actually declined by about five years.\(^4\) It is also true that a large number of U.S. counties, primarily in the South, experienced declining life expectancy among women over the twenty-five-year period from 1985 to 2010.\(^5\)

Declines in life expectancy are certainly not something that we ever expected to observe. So while our overall progress has been modest, our disparities have been growing. Relative to Europe, socioeconomic differences in health appear to be wider in the United States. However, it is important to note that these differences are not the reason Americans are less healthy than Europeans: even nonminority Americans with relatively high education do poorly relative to their European counterparts.\(^6\)

**Diseases and Conditions Causing Health Problems**

One of the reasons that we can be fairly confident about only modest life extension in the relative short term is that the United States and other high-income countries are now places where people die of chronic diseases, the course of which are many decades long. Many of these diseases have their roots in earlier life circumstances and lifestyles. In the 1955 edition of *The Fabulous Future*, likely cures for polio and tuberculosis were predicted. The source of these optimistic projections was the science underlying cures or prevention and virtual elimination of deaths from
infectious diseases that took place after World War II. These successes gave us great confidence that we could do the same for other diseases and conditions. After we developed the antibiotics to virtually eliminate deaths from infection, deaths became most likely the result of heart disease or cancer. Assuming our ability to cure diseases would continue, we began “wars” on heart disease and cancer in the 1960s. As with other wars undertaken during this time period, these have neither been won nor totally lost. They have been long, drawn-out campaigns with some successes obtained at great cost.

Reducing mortality from heart disease has been our greatest success story of the last half of the twentieth century. Heart disease death rates have tumbled; they are now only about 50 percent of what they were in 1950. We did not accomplish this reduction in mortality the way we expected, by understanding the causes of heart disease and eliminating it from our population, as we had with most infectious diseases. Rather, our success has been due to some combination of improved behaviors, such as a reduction in smoking and fat consumption, and better medical and pharmaceutical interventions. We have also probably received a largely unrecognized benefit from the long-term development of healthier and stronger bodies, reflecting the long-term decline in infectious illnesses and better nutrition over the human life cycle. These two factors have resulted in people reaching older age with less organ damage.

We have been successful in preventing the progression of heart disease to disability and death among people who have it, but we have done little to prevent the onset of heart disease. In fact, the number of people with heart disease has been increasing over time. If we look at the numbers of people with risk factors for heart disease—diagnosed hypertension, high cholesterol, overweight—we also see increases in recent decades. However, we have had some successes, particularly after people have been diagnosed with hypertension and cholesterol risks, as they have experienced impressive increases over time in treatment and control. The use of prescription drugs has markedly reduced the number of people who have uncontrolled hypertension and high cholesterol. It is likely that the use of these drugs has also resulted in a reduction in the mortality risks associated with obesity.

While we began a war on cancer at the same time we began our attempt to put a man on the moon, it was more than twenty years after
men walked on the moon in 1969 that we began to see some decline in overall cancer death rates. However, we had some interim successes, particularly in childhood cancers. In the twenty-first century we have seen some reduction in cancer death rates, which has resulted from the earlier diagnosis occurring with increased screening and the development of multiple new approaches to treatment. Such success is based on scientific foundations that are likely to continue and be the source of some improvement in life expectancy. Changes in behavior can also lead to reductions in cancer onset. Lung cancer rates are closely related to smoking behavior, and they have declined with decreases in smoking. Reductions in the use of hormone replacement therapy have also resulted in some decrease in breast cancer incidence. It is hard to predict changes in cancer onset due to other environmental exposure, since causation is still not well understood.

Type II diabetes is a disease with worrisome trends; rates have been increasing for decades along with the increase in obesity. While survival rates for those with diabetes have risen, the increase in onset, especially at younger ages, has resulted from increases in obesity among young people. Obesity trends appear to have leveled off in the last few years, but we have never before had generations of people living with obesity for so many years before reaching the older ages. Mitigating this effect will be one of our major health challenges going forward.

**What Do We Predict from the Joint Trends in Life Expectancy and Health?**

In recent decades the concept of healthy life expectancy (expected years in good health) has joined that of life expectancy (total expected length of life) in evaluating health changes and policy. It is the combination of rates of onset and recovery from disease and disability, along with mortality among the sick and disabled and those free of such conditions, that determines the average length of healthy life. Empirical evidence indicates that since 1980 we have managed to increase the length of life without severe disability enough that it has exceeded the increase in overall life expectancy. That is extremely good news. However, the bad news is that the length of life with disease has also increased, so that a greater proportion of life is now spent grappling with major chronic diseases.
Conclusion

The outlook presented here is unfortunately rather negative. But given the current situation and recent trends, it seems realistic. We will be fortunate to continue to add even modestly to our current levels of life expectancy. It is a lot harder to increase life expectancy when, as is currently the case in the United States (and in many other developed countries), most people die in their eighties. Life expectancy was more easily increased in the twentieth century, when death rates for babies and children could be reduced.

It will be difficult to increase the relative length of healthy life expectancy without some major changes in the incidence of chronic health problems. While survival among those with health problems is likely to improve somewhat as we learn to treat our current conditions better, the relatively poor status of younger persons makes it hard to project great improvements in health. The key toward increasing the length of healthy life is to improve health by delaying to older ages the onset of health problems, and this will require major behavioral changes as well as scientific advances.

Improving health and life expectancy does not rest simply on increasing expenditures. If it did, there would be a plausible solution to increasing years of healthy living. Presently, Americans spend about twice as much on health care as do people in peer countries that rank above the United States in life expectancy. It would be possible, perhaps, to improve health through a redistribution of some of this spending. Funds could improve health more if reallocated toward preventative care, mental health, and greater access to care for those who do not have it. While the United States ranks first among nations in expenditures on health care, rankings on social service expenditures lag far behind. Some reallocation of funds from health care to social services might improve U.S. health by improving people’s well-being and levels of stress. Behavioral changes are also required for Americans to see improved health. Individuals choose to eat more than they should, be less physically active, drink alcohol and then drive, possess firearms, and use illicit drugs and misuse prescription drugs. While people certainly have the right to do some of these things, there are social costs to having these rights. Understanding how to incentivize behavior to improve health may prove to be an even
more important source of progress over the next twenty-five years than either scientific discoveries or improving access to health care.

Notes


