BRIEFLY NOTED

What Should We Fear Most and What Should We Do About It?

BY DAVID R. HENDERSON AND CHARLES L. HOOPER

Some acquaintances recently paddled surfboards and kayaks into the Pacific to disperse a relative's ashes where he loved to surf. During the memorial service, one brother of the deceased expressed concern about the risk from sharks.

The image of an aggressive shark in the deep ocean is graphic and terrifying, but the risk of mundane threats far outweighs the risk from shark attack. The dead man's brother should worry much more about heart disease, which felled his brother, and devote his attention to lowering that and similar risks. There is only so much time and energy; each unit of energy spent on lowering the risk from sharks is one less unit that can be spent on hearts.

What should we fear? What threats are most likely to kill us? Setting aside cataclysmic events such as nuclear wars and planet-altering meteorites, there are some risks that generate a lot of fear but few deaths, such as shark attacks, terrorism, and killings by police. On the other end of the spectrum are everyday risks that kill a large number, such as heart disease and cancer. In between are risks from motor vehicle collisions and the seasonal flu. And this year there is a new risk: COVID-19.

Putting small risks in perspective / Let's start with the risk from our introduction. In 2019, there were two deaths from unprovoked shark attacks in the whole world, though the longer-term average is about four per year. Based on the latter number, the risk to the average person of dying from a shark attack works out to 1 in 2 billion per year. For someone who is in the ocean

frequently, that risk is higher. For someone who eschews open waters, the risk is lower.

To put that risk in perspective, there were just over 40,000 motor vehicle deaths in the United States in 2017, a typical year. That works out to 1 death in 8,078 people, or one death per every 80 million miles traveled. So, the annual risk of dying from an unprovoked shark attack equals the risk of driving 0.04 miles—or 217 feet.

What about the risk of terrorism, which has received a lot of attention (and government spending) over the last two decades? During the 22-year period from 1995 to 2016, which includes the 9/11 attacks in 2001, there were a total of 3,277 fatalities from terrorism in the United States, according to data from the University of Maryland's National Consortium for the Study of Terrorism and Response to Terrorism. Using those numbers, the risk of death from terrorism for the average American is about 1 in 2.2 million per year. That equals the risk of driving 37 miles. Put another way, in a given year we should be as fearful of driving 37 miles as we are of dying from a terrorist attack.

The troubling deaths of George Floyd and some other African Americans at the hands of police officers in recent years have raised questions about the risk posed by police, especially to African-Americans. According to a database assembled by the *Washington Post*, an average of 62 unarmed people die each year at the hands of the police. That is about the same number of deaths caused by "contact with hot tap water" and "contact with hornets, wasps

and bees," according to data from the National Safety Council. That works out to a risk of 1 in 5.2 million. For males, the risk increases to 1 in 2.8 million per year (57 out of 159 million men) and 1 in 1 million for black men (21 out of 21 million black men). That is roughly the same risk as death from "exposure to excessive natural heat" or from drowning in a bathtub, according to the National Safety Council. Compared to the risk from motor vehicles, the chance of death for the average unarmed American is about the same as the chance of death from traveling 15 miles by car; for an unarmed male it is about the same as the risk of traveling 29 miles, and for an unarmed African-American male it is about the same as the risk from traveling 80 miles. While worrisome as a justice issue, those deaths of black men are not much of a risk concern.

Larger risks / The typical American faces much greater risk of death from comparatively mundane causes. Heart disease kills about 1 in 502 Americans each year, while cancer kills 1 in 542.

The number of deaths from seasonal flu varies significantly from year to year, but it has averaged about 40,000 in the United States in recent years, which works out to 1 death in 8,125 Americans. The good news is that rate has fallen significantly over the decades; if the death rate from flu in the 1950s and 1960s were applied to today's population, we would see over 160,000 deaths per year.

If the death rates from these diseases seem high, it is because they are. Heart disease alone kills as many Americans each year as the combined U.S. combat casualties from all American wars.

Where does COVID-19 fit? As this was written in mid-October, COVID-19 had killed more than 220,000 Americans. How many Americans will it kill in 2020? No one knows, but a reasonable guess is around 300,000, which would be about 11% of total U.S. deaths in 2017. That would mean that 1 in every 1,100 Americans will have died from COVID-19 in 2020. That would be higher than the death rate from

DAVID R. HENDERSON is a research fellow with the Hoover Institution at Stanford University and the editor of *The Concise Encyclopedia of Economics* **(Liberty Fund, 2008). CHARLES L. HOOPER is president of Objective Insights, a firm that consults with pharmaceutical clients. They co-authored** *Making Great Decisions in Business and Life* **(Chicago Park Press, 2005).**

the flu in the 1950s and 1960s, but it would be substantially below the tolls for both heart disease and cancer. Put another way, COVID-19 subjects us to a risk equivalent to that of driving about 73,000 miles. Table 1 presents statistics on various risks.

Putting all these numbers in perspective, the average American is 4 million times more likely to die from heart disease or cancer than from a shark attack and 20,000 times more likely to die from heart disease or cancer than from the police (assuming the person is unarmed). The average American is 4.2 times as likely to die from heart disease or cancer as from COVID-19 and 9.4 times as likely to die from anything other than COVID-19 as from COVID-19.

FDA reform / What policy responses could lower Americans' risk of dying from the medical conditions discussed above? We have one recommendation: reform the U.S. Food and Drug Administration.

In 1962, Congress passed the Kefauver–Harris Amendments, which substantially increased the threshold for FDA approval of new drugs by requiring drug companies to prove efficacy in addition to safety. This may seem like a good idea, but it significantly slowed the approval of new medicines and reduced the number of new drug launches, while apparently not improving the efficacy of those medicines.

In 1973, economist Sam Peltzman analyzed the effects of Kefauver–Harris by comparing the number of new chemical entities (not just reformulations) approved by the FDA before the law changed with the number approved in the decade after the change, as well as econometrically estimating values for that same period if there had been no policy change. He found that the number

of new drugs approved dropped by 60%, a number that should disturb Americans. According to his model, there should have been about 40 new approvals each year after the new law, but instead there were just 16.

Subsequent studies have concluded that this change in the law did not result in weeding out inferior drugs. According to Henry Grabowski and John Vernon, "In sum, the hypothesis that the observed decline in new product introductions has largely been concentrated in marginal or ineffective drugs is not generally supported by empirical analyses." Peltzman himself came to this same conclusion, seeing the culling "as … if an arbitrary marketing quota … had been placed on new drugs after 1962."

How could the FDA's new rules *not* have affected the ratio of good to bad drugs? Peltzman surmised, "The penalties imposed by the marketplace on sellers of ineffective drugs before 1962 seem to have been sufficient to have left little room for improvement by a regulatory agency." In other words, the market did as good a job of weeding out ineffective drugs before 1962 as Kefauver–Harris did afterward, without the harmful side effect of dramatically lowering the release of new drugs.

Why should we care that there have been fewer new drug approvals? Columbia University's Frank Lichtenberg studied the effects of pharmaceutical innovation by comparing the vintage (the launch year) of drugs used in a country with the increase in national life expectancy at birth. This research was motivated, interestingly enough, by research that showed a positive correlation with higher productivity in

TABLE 1

U.S. Statistics for Various Causes of Death, 2017

Cause of Death	Deaths per Year	1 Death in *N* persons per Year	Equal to the Risk of Driving *M* Miles
Heart disease	647,457	502	159,000
Cancer	599,108	542	147,000
Accidental deaths	169,936	1,912	41,800
Chronic lower respiratory disease	160,201	2,029	39,400
Influenza and pneumonia	55,672	5,838	13,700
Suicide	47,173	6,890	11,600
Motor vehicles	40,231	8,078	13,500
Homicide	19,454	16,706	4,800
Terrorism	149	2.2 million	37
Police (all Americans)	62	5.2 million	15
Police (all men)	57	2.8 million	29
Police (black men)	21	1 million	80
Sharks (worldwide)	4	1.95 billion	0.04
ALL CAUSES	2,813,502	116	692,000

manufacturing firms that used more modern, or later-vintage, equipment. Could a similar pattern be seen with drug usage?

Here is what he found:

> For the 30 countries in our sample, between 2000 and 2009 population-weighted mean life expectancy at birth increased by 1.74 years. The estimates indicate that the increase in life expectancy at birth due to the increase in the fraction of drugs consumed that were launched after 1990 was 1.27 years—73% of the actual increase in life expectancy at birth.

As with all retrospective studies, Lichtenberg's work shows only correlations and cannot prove cause-and-effect. Yet if this relationship is causal, three-quarters of the increase in life expectancy we have enjoyed in recent times is due solely to our adoption of newer drugs.

New pharmaceuticals are friends, not foes. Yet, the FDA treats all new drugs as guilty until proven innocent. The Kefauver–Harris Amendments have augmented that attitude. That attitude should be reversed.

If we want to lower our risk from COVID-19, one of the most fruitful approaches would be to speed up research and approvals for drugs that could treat the disease. An easy way to do that during the coronavirus pandemic would be to roll back the FDA's efficacy requirement for COVID-related drugs. The same goes for cancer and heart disease drugs. If drug companies can demonstrate safety, let the drug makers market or otherwise distribute their new medicines and allow researchers, doctors, patients, and hospitals to evaluate efficacy. This approach has the potential to save lives today.   **R**

READINGS

- ■ "Pharmaceutical Innovation and Longevity Growth in 30 Developing and High-Income Countries, 2000–2009," by Frank R. Lichtenberg. *Health Policy and Technology* 3(1): 36–58 (2014).

- ■ *Regulation of Pharmaceutical Innovation*, by Sam Peltzman. University of Chicago Press, 1974.

- ■ *The Regulation of Pharmaceuticals: Balancing the Benefits and Risks*, by Henry G. Grabowski and John M. Vernon. American Enterprise Institute Press, 1983.

COVID-19 and Opioid Addiction Treatment

◆○ BY FELER BOSE

The COVID-19 pandemic has changed the treatment of addictive disorders. Until this year, most patients using methadone to treat opioid addiction were required to visit a clinic daily to receive the medication, although tightly controlled take-home doses were allowed for a small number of patients. That highly regulated and rigid treatment model was inconvenient for most patients but lucrative for the clinics.

Today, a majority of the methadone clinics are operated by for-profit corporations and comprise one of the most lucrative businesses in the field of drug treatment. Any attempt to change this model has been opposed by the clinics. As a result, the treatment of opioid addiction remains firmly separate from "normal" medical practice, which generally pursues more convenient options for patients, like being seen in a medical office.

COVID-19 and the requirement for social distancing prompted the federal Substance Abuse and Mental Health Services Administration (SAMHSA) to temporarily relax the rigid requirements of patients standing in line outside methadone clinics for their daily dose. SAMHSA has allowed methadone clinics to give patients 15–30 days of methadone to take at home. These relaxed rules should continue after the pandemic ends. The treatment of opioid addiction should be reintegrated into mainstream medical practice.

History / Methadone was originally developed in Germany during World War II as a synthetic opioid to alleviate an acute shortage of morphine. Methadone is relatively long-acting, with an effective half-life of 24 hours compared to about four hours for the opioid heroin. Methadone thus can be used to treat addiction to other opioids by helping addicts to detoxify or at least transition away from more dangerous drugs. Under a 1974 presidential order, methadone came into use as a treatment for patients addicted to heroin, including soldiers who became addicted to heroin while fighting the Vietnam War. The methadone clinic model was also codified in 1974 with the passage of the Narcotic Addict Treatment

Opioid addiction treatment remains firmly separate from "normal" medical practice, which generally pursues convenient options for patients.

Act, which requires patients to receive methadone on a daily basis in a strictly regulated setting.

An alternative / Many opioids—including methadone—cause dose-related respiratory depression that can result in death at high doses. Buprenorphine, an opioid developed in the 1970s as a potent analgesic for post-operative pain, is characterized by a "ceiling" effect on respiratory depression: as the dose increases, respiratory depression plateaus. Buprenorphine users thus are unlikely to die of respiratory arrest or cessation. Yet, like methadone, buprenorphine can alleviate craving for more dangerous opioids. The safety of buprenorphine is conducive to using the medication in normal medical practices.

FELER BOSE is associate professor of economics and finance at Indiana University East in Richmond, IN.

If buprenorphine can be prescribed by a physician in an office-based setting without restrictions, why do methadone clinics continue to dominate the field of opioid treatment? The answer is that regulatory barriers have been erected to protect the lucrative methadone clinic model.

To maintain the viability of methadone clinics while introducing a new office-based treatment modality using buprenorphine, policymakers reached a compromise whereby physicians have to take an eight-hour course on buprenorphine and then apply for Drug Enforcement Administration permission to prescribe the drug. Further, physicians are only permitted to have 30 patients in treatment in their first year of prescribing the drug, and then 275 (recently raised from 100) in subsequent years. In 2018, the Substance Use Disorder Prevention that Promotes Opioid Recovery and Treatment for Patients and Communities Act did expand the prescribing authority for buprenorphine to physician assistants and nurse practitioners. Nonetheless, the tight restrictions on buprenorphine have had their intended effect of protecting the methadone clinics. As a result, less than 4% of physicians have obtained the DEA waiver and even fewer prescribe buprenorphine on a regular basis.

The pandemic / The national opioid emergency in 2017–2018 did not dramatically change the methadone-clinic-dominated status quo. But the current pandemic has. SAMHSA permits patients to take home a two- to four-week supply of methadone doses and facilitates the utilization of buprenorphine by suspending the requirement that the physician see the patient face-to-face before prescribing the drug for the first time.

Policymakers, treatment providers, patient advocates, patients, and—most critically—methadone clinics are closely watching this unprecedented relaxation of the rigid policies. What will patients do with the take-home doses? Will there be more overdose deaths, children accidently ingesting the drug, and diversion of the drug to others? If problems arise,

the methadone clinics will lobby for reinstating the daily-clinic-visit model. On the other hand, if the experiment is reasonably successful, the clinic model that has been in place for over 50 years may not return.

Conclusion / The coronavirus pandemic has reduced the separation between the treatment of opioid addiction and normal medical practice. The temporary measures

allowed by SAMSHA should be made permanent. This would require the repeal of the Ryan Haight Act requiring initial in-person doctor consultation before the prescribing of buprenorphine. In addition, methadone clinics, which by law can only provide that type of addiction service, should be allowed to operate like urgent care facilities and offer patients a range of services for all addictive disorders rather than just dispense methadone. **R**

Adapt or Suffer: Demographic Change and Consequences for the United States

✎ **BY THOMAS GRENNES**

Major demographic changes are occurring throughout the developed world. Although world population has doubled in the last 50 years and grown almost continuously since at least 10,000 B.C.E., prominent demographers are now projecting a forthcoming peak in world population and a subsequent decline. The United

Nations estimates the peak will come around 2100 while a group at the University of Washington says it will happen around 2060. Though skepticism is appropriate for projections about the distant future, these estimates incorporate large reductions in total fertility rates (TFRs) that have been occurring for years in nearly all the high-income countries in the world, including the United States.

Declining fertility / TFR measures the number of children born to an average woman over her lifetime. A TFR of roughly 2 is necessary for a country to maintain a stable population (in the absence of immigration), with the offspring replacing their mother and father.

The TFR for the United States was 1.7 in 2019, the lowest in U.S. history. This is not a blip; the U.S. TFR has been declining continuously from a peak of 3.7 in 1960,

THOMAS GRENNES is professor of economics emeritus at North Carolina State University.

and it has been below 2.0 since 2010. If it continues at this rate or below, the U.S. population will decline unless there is off-setting immigration. This same trend is occurring in other high-income countries around the world.

Slow or declining population growth is new to the United States and to the world. Negative consequences from this demographic shift have already occurred, and the problems will get worse unless there are major reforms in economic policy. The rate of economic growth has already declined in the United States from its earlier 3% to 2%, and the latest Congressional Budget Office (CBO) projection is for 1.6% annual growth over the next 30 years. A total fertility rate below the replacement rate contributes to aging of the population, and a smaller and older population reduces the rate of economic growth. Countries like Japan, Italy, and Russia, which are experiencing decreasing population, have had very little economic growth as a result.

Declining standard of living / A country's gross domestic product can be expressed as the size of its labor force multiplied by its average productivity of labor. A lower fertility rate lowers the population, which in turn reduces the labor force about 20 years later. A smaller population reduces GDP directly, and aging further reduces GDP by shrinking the size of the labor force. The U.S. labor force participation rate has already decreased from 67% to 63% since 1968.

Aging also reduces labor productivity through various channels. Average health and ability to perform certain tasks decline with age. Labor productivity also declines as economic changes make some previously acquired skills obsolete. All these factors contribute to the CBO's projection of slower productivity growth in the future.

Aging can reduce the productivity of workers, but it can also reduce the productivity of business firms. A set of relatively inefficient Japanese firms, called "zombies," contributed to a decade of slow growth in Japan in the 1990s. They were unable to earn enough revenue to service their debts, and they were kept alive by various subsidies from the Japanese government. Similar firms have been identified in the United States, and as the share of zombie firms has increased relative to start-ups, productivity growth has declined. The American zombies have been protected by the government in various ways, including loan guarantees, low interest rates, and Federal Reserve purchases of private assets.

Social Security / Slower population growth reduces economic growth and the standard of living. It also reduces the sustainability of Social Security and other pension plans. Social Security is a pay-as-you-go system in which benefits delivered to retirees in a given year are limited to what the program receives from payroll taxes on current workers in the same year, plus any drawdown in the Social Security Trust Fund. Thus, anything that reduces the future labor force reduces the ability to pay future retiree benefits. Increased longevity of retirees also contributes to the solvency problem of Social Security by increasing total benefits to be paid out.

The 2020 Trustees Report, which came out before the COVID-19 pandemic, projected that the trust fund would be exhausted by 2035. This means projected payroll tax revenue would not be enough to pay the promised benefits to the expected number of retirees in that year. The short-fall would be $6,600 per person, which is about 24% of normal benefits. Anything that would lower revenue or increase promised benefits would cause the fund to be exhausted earlier. Accordingly, in the wake of COVID, the CBO now projects the fund will become insolvent in 2031.

Recent proposals to increase the program's benefits or reduce its taxes would exacerbate the insolvency problem. A proposal to raise the cap on income subject to the tax would reduce the severity of the insolvency problem.

Social Security's insolvency problem is well known, but Congress stubbornly refuses to make reforms that would increase its revenues relative to its benefits. Reform faces strong opposition, but Congress did implement reforms in the past, when the program faced the same problem of benefits exceeding payroll tax revenue. In 1983, Congress raised payroll taxes and reduced benefits by raising the age at which people qualify for full benefits. The higher ages for eligibility were phased in gradually, so that no one faced a large immediate shock, and subsequent complaints were mild. As a result of those changes, the program began accruing cash surpluses that expanded its trust fund—until recently.

Public pension reform has been difficult to achieve in other countries, but it has happened. Sweden recently implemented a major reform, transforming its system from a defined benefits plan like Social Security to a defined contribution plan in which money is paid into a worker's retirement account while he is working.

Immigration / For any single country, population growth is affected by immigration as well as the difference between births and deaths in the national population. Thus, immigration policy can offset problems

from a low fertility rate. In recent years, immigration has contributed about half of the growth in the U.S. population. The United States is a nation of immigrants, and newcomers have made major contributions to national prosperity. Among recent successful business start-ups are many that were founded or co-founded by immigrants or their children, including Zoom, Amazon, Apple, Google, YouTube, and Tesla. America is fortunate that it attracts many immigrants with varying skills, ranging from people with advanced degrees to people with no more than an elementary education.

Reform of immigration policy is a possible solution to both the problems of slower economic growth and Social Security insolvency. Historically, the United States has received more immigrants than any other country. However, major surges in immigration at different times in U.S. history have brought strong backlashes against accepting additional foreigners. The first surge occurred just before World War I, when the foreign-born share of the U.S. population reached 15%, the highest level in its history. The current backlash against immigration comes as the foreign-born share of the population has risen to nearly 14%. Opposition to immigration contributed to the 2016 electoral success of Donald Trump, the United Kingdom's "Brexit" from the European Union, and the popularity of other nationalist/populist governments in Europe. Based on recent restrictions on immigration implemented by the Trump administration, the CBO assumes there will be 2.5 million fewer immigrants in the next decade than it projected a year ago.

Increasing immigration to the United States could offset the negative effects of a low TFR on both the rate of economic growth and the sustainability of Social Security. But opposition to a more liberal immigration policy is strong in the United States and other high-income countries. If U.S. officials follow the backlash against immigrants and impose additional restrictions, that would magnify the negative effects of low fertility. However, obstacles to

reform are not insurmountable, as demonstrated by major immigration liberalization in Australia. Australians transformed their immigration policy from one of the most restrictive in the world (the "White Australia" policy) to one that has resulted in one of the highest shares of immigrants of any country in the world.

Conclusion / The significant decline in the U.S. fertility rate has been persistent, and it shows no signs of reversing. The same

declines are happening in all the high-income countries of the world. The low fertility rate has negative consequences for the average standard of living in the United States and for the sustainability of Social Security.

If America fails to adapt to the new demographic reality, it will suffer economic losses. However, adverse effects can be avoided if Social Security and immigration policies are reformed to take account of the new and lower fertility rates. **R**

Bad Energy Legislation in New Mexico

✸ BY KENNETH W. COSTELLO

Traditionally, the primary goal of electric utility regulation has been to control the pricing behavior of monopoly providers in order to achieve reliable electric supply at a low cost to consumers. Now, electric regulators are frequently tasked with other objectives, particularly environmental. (See "Rent-Seekers Infiltrate Public

Utility Regulation," Summer 2018.) A recent example is the New Mexico Energy Transition Act (ETA), which became law in March 2019. It promises to clean the air of local pollutants, mitigate climate change, create new jobs, motivate firms to move to New Mexico, lower electricity rates, make New Mexico a leader in clean energy, and redress almost any other imaginable ill that afflicts the state.

The ETA achieves these miracles by committing New Mexico to stringent renewable-energy and clean-energy standards pushed aggressively by special interests. Such objectives are far beyond the traditional expertise of public utility regulation.

Deep decarbonization to achieve the temperature-change limits (holding warming to 1.5° C above pre-industrial limits) advocated by climate activists requires collective action among the industrialized

KENNETH W. COSTELLO is a regulatory economist and independent consultant. He previously worked for the National Regulatory Research Institute, the Illinois Commerce Commission, the Argonne National Laboratory, and Commonwealth Edison.

countries of the world. One country, even as large as the United States, let alone a single state like New Mexico, cannot achieve that goal by itself. Thus, the ETA won't have any detectable effect on climate change. It forces New Mexicans to spend their money on electricity generation projects whose climate change benefits are *next to zero*. The ETA is not a serious policy to reduce global temperature. Instead, it furthers the symbolic goals of environmentalists and sends the bill to electricity consumers, probably with regressive results.

Subsidies / A particularly troubling aspect of the ETA is its subsidies for renewable energy. The ETA, for example, requires generation technologies to be 50% renewable by 2030, 80% by 2040, and 100% carbon-free by midcentury. To achieve the last goal may require the use of expensive technologies like carbon capture and advanced nuclear power plants that would likely require subsidies to shelter consumers from their actual costs.

The ETA also downplays the potential of natural gas, which is a reliable, affordable, and abundant energy source that produces lower carbon emissions per unit of output than traditional generator fuels. There is an abundance of domestic natural gas at affordable prices. Why should we wean ourselves, over the next two decades, from this energy source that has produced tremendous benefits to individuals and businesses in New Mexico and elsewhere?

Bootleggers and Baptists / It is understandable why environmentalists support the ETA, but so does New Mexico's largest electric utility. The law guarantees that utilities recover their costs if they comply with the act while environmentalists achieve a transition away from fossil fuels to wind and solar.

The losers from this bootleggers-and-Baptists coalition are consumers. The ETA erodes the traditional authority of the state utility commission to disallow utilities from passing through excessive (i.e., imprudent) costs to their customers. This shift toward cost-plus regulation diminishes a utility's incentive to minimize its operating and capital costs. The ETA has in effect created a "moral hazard" situation: a utility has no financial risk for complying with costs imposed by the ETA.
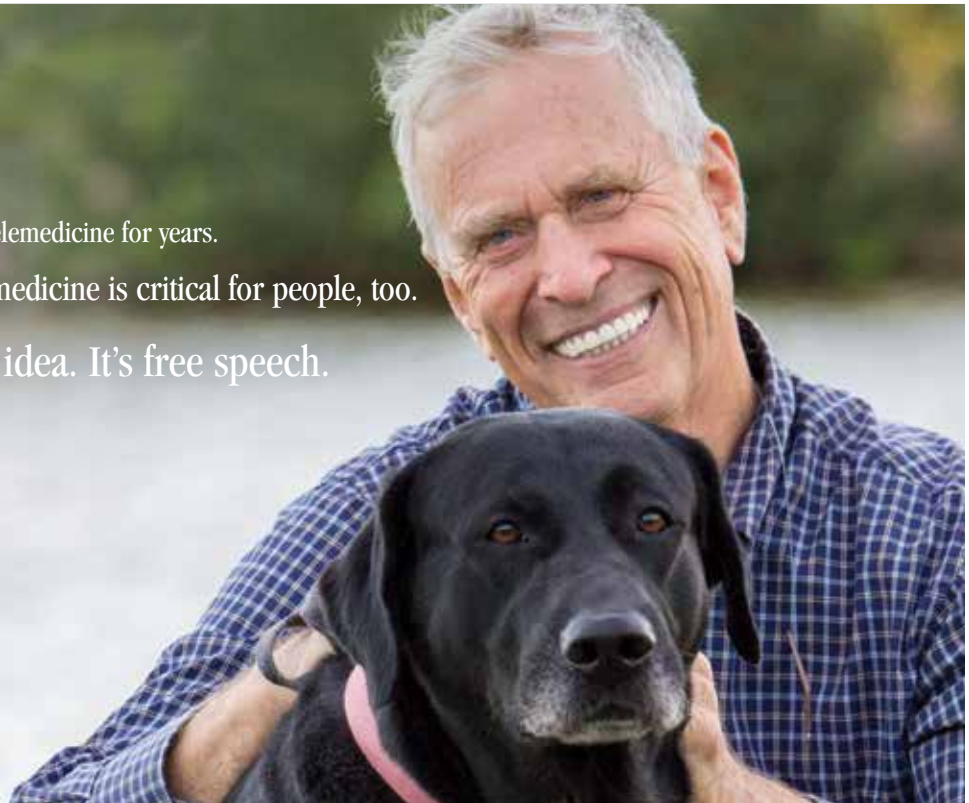
In many states, the core objective of electric utility regulation—to protect consumers from the monopoly power of utilities—has been compromised because of legislation like the ETA. These issues, if anything, should be left to other governmental entities and market forces to address. (See "Public Utilities as Social Agencies," Spring 2020.)

Utility regulation should return to its original concern of incentivizing utilities to serve consumers at least cost. Climate change policy should be left to national and international policymakers. The ETA asks utility customers to pay for the agenda of special interests without receiving any benefits. This is government at its worst: the politically connected exploit the general public. ⬛R