Lessons from Success Stories in Health

Americans know, all too well, what is wrong with health care. Ask the single mother who waits half a day in a crowded clinic for a five-minute visit with a harried physician, or the unemployed worker who has been downsized out of his job and his health insurance. Their experience tells a devastating tale about our system's shortcomings.

But there is another, equally important story that concerns the problems we don't see anymore--at least not in the numbers of the past young victims of polio, mumps, and measles; preschoolers with neurological problems caused by lead poisoning; people in the prime of life dying prematurely from tuberculosis and influenza; hordes of patients with rotting teeth. While we need to address persistent inequities, we also need to understand the basis of victories in public health--not just to keep up our hopes, but to learn how research, advocacy, public discussion, and policy fit together in successful campaigns for change.

GETTING THE LEAD OUT

Children in America today carry far less lead in their blood than they did just 20 years ago. The origins of that change go back nearly a century to 1904, when Australian pediatrician J. Lockhart Gibson found that lead paint caused lead poisoning of children in Queensland. A decade later, reports linking neurological damage in American children to lead began to appear. Mounting evidence of the metal's harmful effects led to sporadic local efforts to prevent poisoning caused by lead paint.

The single greatest source of lead, however, came from automobile engines. Leaded gasoline was introduced in the American market in 1923, less than a year after Thomas Midgely and his co-workers at the General Motors Research Corporation in Dayton, Ohio, discovered that adding tetraethyl lead to gasoline as an antiknock agent gave cars more zip and allowed them to go farther on a tank of gas. The potential health effects of tetraethyl lead became known shortly after its discovery. In 1924 a fire in Standard Oil's lead processing plant in Bayway, New Jersey, led to five deaths and caused severe tremors, psychosis, hallucinations, and other symptoms of serious lead poisoning in 35 injured workers.

The next year, the U.S. surgeon general convened a conference on the safety of lead in gasoline. Although public-health advocates testified in opposition to the release of a poison--lead--into the air, the lead, automotive, and chemical industries dominated the conference. Representing Standard Oil of New Jersey, Frank Howard said, "We have an apparent gift of God--tetraethyl lead" and accused opponents of standing in the way of progress. The surgeon general concluded that there were no good grounds for prohibiting the use of leaded gasoline as a motor fuel.

[Graphic omitted]So matters stood until the 1960s, when a new generation of scientists began challenging the assertion that lead was
harmless. Dr. Herbert Needleman, who became an advocate for efforts to lower lead levels, revealed that extremely low amounts could damage a child's nervous system. At hearings on air pollution chaired by Senator Edmund Muskie in 1966, Clair Patterson, a highly respected California Institute of Technology geochemist, testified that the amount of lead in the air was 100 times what it had been in the 1930s. The Muskie hearings led, ultimately, to passage of the Clean Air Act of 1970, which required automakers to reduce hazardous emissions drastically.

In fulfilling the mandate of the Clean Air Act, the newly formed Environmental Protection Agency began issuing standards for the maximum level of lead in gasoline. These regulations were consistently challenged by the lead and petroleum-refining industries. For example, in 1973 the EPA issued its initial lead standard--one that was to be phased in over five years beginning in 1975. The Ethyl Corporation promptly went to court. The lawsuit, ultimately resolved in the EPA's favor by the U.S. Court of Appeals, delayed implementation of the standard for two years.

Next came a challenge from another direction. In the anti-regulation climate of the 1980s, Vice President George Bush's Task Force on Regulatory Relief pressured the EPA to roll back its lead standard. Activists from the Natural Resources Defense Council, the Environmental Defense Fund, Consumers Union, and other organizations fought back, and the press jumped on the story. "Incredibly, the Reagan administration appears willing to risk the health of hundreds of thousands of anonymous preschoolers, just so the oil companies can make a few bucks" wrote influential columnist Jack Anderson. At congressional hearings, witnesses presented new evidence demonstrating the effects of even very low levels of lead on the nervous systems of children.

At about this time, the U.S. Centers for Disease Control analyzed the results of the second National Health and Nutrition Examination Survey (NHANES). The survey showed that levels of lead in Americans' blood had dropped 37 percent between 1976 and 1980, largely because of reduced lead in gasoline. In the face of these data, plus all the negative publicity it was receiving, the EPA backed down. Instead of weakening the lead standard, it toughened it.

By the early 1990s, Congress was again involved. The 1990 amendments to the Clean Air Act banned the manufacture, sale, or introduction after 1992 of any engine requiring leaded gasoline. Congress also prohibited the use of all leaded gasoline for highway use after 1995. Since 1996, an outright ban on leaded gasoline has been in effect. These actions complemented laws that ban lead in paint, food containers, and solder joints. While lead-based paint continues to be a serious health hazard in inner-city buildings, legal restrictions have eliminated most new sources of lead poisoning. The results have been impressive. The third NHANES found that the average blood lead level in the United States had dropped by 78 percent between 1976 and 1994, largely because lead had virtually disappeared from gasoline--and because researchers and policy makers had overcome entrenched industry opposition in order to improve the public's health.

GETTING THE FLUORIDE IN
Sometimes the obstacle to better health isn't an economic interest but public hysteria. Fluoridation has proved to be one of the cheapest, most effective public-health measures of the past century. Yet during the Red Scare of the 1950s, it faced strenuous opposition from groups who feared that it was part of a communist plot to poison Americans.

The origins of fluoridation also go back a century, to 1901, when Frederick McKay opened a dental practice in Colorado Springs, Colorado, and noticed that many of his patients had chocolate-like stains on their teeth. Even stranger, few of these patients had cavities. Dr. McKay spent the next 40 years investigating why some people developed what came to be known as Colorado Brown Stain. By 1931 scientists had established a link between fluorine and mottled teeth, and attention turned to whether fluorine protected against tooth decay.

[Graphic omitted]Enter the U.S. government. H. Trendley Dean, director of dental research at the National Institutes of Health, collected water samples and examined children's teeth throughout the country; and in 1943, he concluded that children exposed to minuscule amounts of fluorine in water developed few or no cavities and avoided brown teeth. The next step for the Public Health Service was to test this conclusion. In January 1945, Grand Rapids, Michigan, became the first community to add fluoride, a compound of the element fluorine, to its drinking water, while residents of neighboring Muskegon, who continued to drink unfluoridated water, served as the comparison group. Three other communities began testing fluoride in the water shortly thereafter. The results were dramatic. In the four demonstration communities, cavities fell by 40 percent to 60 percent. Even as results were coming in, activists were campaigning to have fluoride added to the water supply. Wisconsin was the hotbed of dental activism; 50 communities in the state fluoridated their water by 1950. That year, under intense pressure from pro-fluoridation advocates, the Public Health Service and the American Dental Association endorsed fluoridation.

Then came Joe McCarthy and the backlash. In 1949, Stevens Point, Wisconsin, became the first community to reject fluoridation of the community's water supply. Opposition in other communities followed. At the height of the Cold War, opponents linked fluoridation to a perceived communist threat and spread tales of dead fish washing up on the shores of fluoridated reservoirs.

Those in favor of fluoridation struck back. The endorsements of major dental and medical organizations, supported by ongoing research, provided persuasive support for the safety of water fluoridation. When opponents went to court, they invariably lost as judges upheld local decisions to fluoridate water as a legitimate exercise of governmental authority. Of the 50 largest cities in the United States, 43 presently have fluoridated water systems. Some 62 percent of Americans live in communities with fluoridated water supplies. Cavities in children have dropped significantly (although the oral health of poor children is worse than that of well-to-do children). In the years 1971-1974, 74 percent of children six to 17 years old had one or more cavities in their permanent teeth. By the period 1988-1994, the percentage had dropped to 46 percent.
Public-health progress has often had to overcome the belief that nothing can be done about a problem until individuals improve their behavior. From the time of the nation's first automobile fatality, conventional wisdom had it that traffic accidents were the fault of bad drivers, not of the automobile itself. This viewpoint was articulated pithily by Harry Barr, Chevrolet's chief engineer: "We feel our cars are quite safe and reliable.... If drivers did everything they should, there wouldn't be any accidents."

By the 1950s, however, a respectable body of thought began to challenge the conventional wisdom. The medical profession--most particularly physicians who treated crash victims--weighed in early. By the mid-1950s, both the American Medical Association and the American College of Surgeons were recommending that automobile manufacturers design their cars for better passenger safety and equip them with safety belts. Triggered by concerns about the mounting toll of highway deaths, Senator Abraham Ribicoff of New York convened hearings that began in 1965 and continued into 1966. A 32-year-old lawyer named Ralph Nader was the star witness. Nader's book Unsafe at Any Speed, published in 1965, lambasted the automobile industry for its lack of concern about safety, singling out General Motors for selling the Chevrolet Corvair, an automobile produced with a defective and dangerous gas tank. The rest is the stuff of legend: GM hired private detectives to tail Nader and come up with dirt about his personal life, which they failed to do. When the attempted smear campaign came to light in March 1966, Nader became an instant national hero and used his new celebrity as a platform to promote auto safety.

The publicity galvanized public opinion and provided the impetus for Congress to pass the National Traffic and Motor Vehicle Safety Act and the Highway Safety Act in 1966. These laws established the National Highway Safety Bureau, the precursor of today's National Highway Traffic Safety Administration, and gave it the authority to set automobile safety standards.

As in the case of lead, new legislation precipitated legal and regulatory battles about how the law should be interpreted and carried out. Proposed federal regulations required that cars come equipped with padded instrument panels and seat belts, among other safety features. These rules were challenged by automobile manufacturers as unrealistic and by consumer safety advocates as weak and ineffectual. The battle over seat belts and, later, air bags lasted nearly a decade. Now, of course, they are both standard equipment.

During the late 1970s and early 1980s, an extraordinary grass-roots movement took shape across the nation. Doris Aiken founded Remove Intoxicated Drivers (RID) in 1978 after a drunk driver ran over and killed a teenager in her hometown of Schenectady, New York. Candy Lightner organized Mothers Against Drunk Driving (MADD) in 1980 after her daughter was run over and killed by a man who had been drinking. Aiken and Lightner cultivated the media, who responded by regularly featuring the speeches and activities of the anti-drunk-driving activists, particularly those of the charismatic Lightner.
Hundreds of newspapers and magazine articles reported on the victims of drunk driving and their families. Drunk driving was the subject of television specials and dramatizations. Activists formed chapters of RID, MADD, and SADD (Students Against Driving Drunk) in communities around the country and began telling their stories through the media, providing victims' services, lobbying government officials, and monitoring the courts.

Graphic omitted

The effect of this grass-roots movement on public policy was stunning. Between 1981 and 1985 alone, state legislatures passed 478 laws to deter drunk driving. In 1982 Congress passed the Alcohol Traffic Safety Act, which provided extra funds to states that enacted stricter drunk-driving laws. To be eligible, a state had to require that a blood alcohol level of 10 percent was conclusive evidence of drunkenness. (The permissible alcohol level was lowered to .08 in 2000.) Two years later, in 1984, Congress stepped in again and passed a law requiring states to enact a minimum drinking age of 21 or lose some of their federal highway funds. All states eventually complied.

Since the 1970s, public attitudes have changed remarkably. Drunk driving is no longer tolerated in a way it once was; even the liquor and beer industry recommends that drinkers give their car keys to a "designated driver" (a term that would not too. Between 1982 and 1999, deaths from alcohol-related crashes dropped by 37 percent. Safer cars, improved highways, better emergency medical services, and a decline in drunk driving have sent the nation's traffic fatality rate tumbling. On average in 1950, 7.6 individuals were killed for every 100 million vehicle miles traveled. By 1999 that statistic had plummeted to 1.6 persons— a decrease of more than 75 percent.

AN UNFINISHED CRUSADE

Not very long ago, a movie star drawing slowly on a cigarette was considered the height of sophistication; medical-society meetings took place in rooms clouded with tobacco smoke; R.J. Reynolds and Philip Morris were considered so powerful that few dared to challenge them.

How things have changed! Planes are now smoke-free, as are many restaurants and offices; Joe Camel has been put out to pasture; and the $246-billion settlement between the tobacco companies and the states made front-page headlines. Americans have given up smoking in record numbers, and many of those who continue are trying to kick the habit. The percentage of adult male smokers in the United States dropped from a high of more than 50 percent in 1965 to about 26 percent in 1998. The percentage of adult female smokers fell from its high of 34 percent in 1965 to 22 percent in 1998. Teenagers present more of a mixed picture. Although the percentage of American high school seniors who smoke daily decreased from a high of 29 percent in 1976 to a low of 17 percent in 1990, it then rose to 22 percent in 1998, before dropping slightly, to 21 percent, in 2000. Research, advocacy, media coverage, public education, politics, and government contributed to this unexpected transformation.

While the dangers of tobacco have long been recognized (in 1604 King James I branded the tobacco habit as "a loathsome custom to the Eye, Harmfull to the Braine, and dangerous to the lungs"), the scientific
community ignored smoking until the last half of the twentieth century. As late as 1948, the Journal of the American Medical Association (JAMA) wrote, "More can be said on behalf of smoking as a form of escape from tension than against it."

Only two years later, in May 1950, JAMA published two articles linking smoking and lung cancer. In one of them, Ernst Wynder (who remained an anti-tobacco activist until his death in 1999) and Evarts Graham reported that of the more than 600 lung cancer patients they interviewed, 97 percent were moderately heavy to very heavy smokers. From there, the evidence mushroomed. By the late 1980s, some 60,000 studies had made it abundantly clear that tobacco causes cancers, stroke, and heart disease.

From published research to public awareness, however, there is often a long journey. In the case of smoking, the federal government played a critical role in narrowing the distance. In 1964 Surgeon General Luther Terry’s widely publicized report woke up the nation to the dangers of tobacco. And in 1986, C. Everett Koop, surgeon general during the Reagan administration, reported that secondhand smoke caused cancers and other life-threatening illnesses—a finding that legitimized local, state, and federal efforts to limit smoking in public places.

Public-health advocates challenged the tobacco industry and kept the issues alive. Among the leaders were John Banzhaf, a Georgetown University law professor, whose organization ASH (Action on Smoking and Health) brought lawsuits and petitioned regulatory agencies, and Stanton Glantz, a University of California professor, whose advocacy groups Californians for Nonsmokers’ Rights and, later, Americans for Nonsmokers’ Rights, fought for the enactment of local and state anti-tobacco measures. Long-established organizations also joined the fray. The American Cancer Society, the American Lung Association, and the American Heart Association were relatively early participants. In 1982 these three organizations formed the Coalition on Smoking and Health, directed by Matt Myers, another longtime antismoking activist. The American Medical Association was the last to come to the table. Long ambivalent about smoking, the AMA ultimately proved to be an influential ally through its Journal articles and its work to organize antismoking coalitions.

[Graphic omitted]Although some media organizations were slow to publicize the dangers of smoking (tobacco ads are a significant source of advertising revenues), others played an important early role. In December of 1952, Reader's Digest ran an article entitled "Cancer by the Carton." In it the most widely read magazine of its day reported, in plain English, the link between smoking and lung cancer and accused the tobacco industry of a cover-up. From then on, despite the best efforts of the tobacco industry, the danger of tobacco has become increasingly well known.

Laws and regulations have long been the backbone of antismoking efforts. A week after the release of the surgeon general’s report in 1964, the Federal Trade Commission proposed that cigarette packages and advertising carry a strong warning label. In response the tobacco industry cried foul and tried to sabotage the legislation, a scenario that was to be replayed many times in the succeeding years. Ultimately, in 1965, over the fierce opposition of the tobacco industry, Congress
passed a law requiring that cigarette packs and ads carry a watered-down warning. This was the first of many federal laws and regulations aimed at reducing smoking.

Equally if not more important were local ordinances and state laws banning smoking in public places and making the sale of cigarettes to minors illegal.

As Victor Crawford, a former Tobacco Institute lobbyist who became an anti-tobacco advocate after developing lung cancer, recalled, "We [the tobacco lobby] could never win at the local level. The reason is that all the health advocates are local activists who run the little political organizations. On the local level, I couldn't compete with them."

While Americans' attitudes toward smoking have changed, the tobacco industry remains a formidable force. Cigarettes and spit tobacco are still attractive to young people, and the commitment of the Bush administration to tobacco-control measures is, at best, uncertain. While the victories won so far in the national effort against tobacco are a cause for cheering, it is too early to celebrate them as permanent.

INGREDIENTS OF SUCCESS

Cavities, lead poisoning, traffic fatalities, smoking--although serious health concerns remain, each of these examples involves a success story. These experiences are not triumphs of medical technology; rather--and this may explain why they are unappreciated--they are the result of social and behavioral change. Four elements shared by these quiet victories offer lessons for shaping public policy.

1. Highly credible scientific evidence can persuade policy makers and withstand attack from those whose interests are threatened. Tobacco is the clearest example. The evidence linking smoking with cancer and other deadly illnesses was so strong and so consistent that--over the legal and scientific objections of the tobacco companies--it provided a scientific basis for legislation, regulations, and judicial decisions; ultimately, it was persuasive enough to move public opinion. Similarly, well-structured comparative trials provided convincing evidence that moderate amounts of fluoride added to the water supply reduced tooth decay. The federal government's National Health and Nutrition Examination Surveys gave the EPA the foundation on which to base regulations--strongly challenged by the gasoline and lead lobbies--that eventually eliminated lead from the nation's gasoline supply.

2. Public-health campaigns need advocates who are passionately committed to their cause, who have the inner resources to withstand the tremendous pressure applied by the industries whose practices they are criticizing, and who continue to fight even at the risk of their professional reputations. Ralph Nader, Candy Lightner, Herbert Needleman, and other crusaders have had a tremendous effect on social policy. But advocacy from outside the system is rarely enough. When government agencies and their leaders speak out, new ideas about public health become more acceptable to the mainstream media and the populace. Similarly, campaigns for change gain legitimacy from the backing of authoritative groups outside government, notably professional societies--such as the American Medical Association on seat belts, the
American Dental Association on fluoridated water, and the American Cancer Society on tobacco.

3. Public awareness and discussion depend on a partnership with the media. Advocates need the media to reach the public, and the media, looking for good stories, also need the advocates. "Behind virtually every public-health-and-safety measure enacted in this half-century has been a media advocacy campaign to dramatize both the risks and the public-policy solution" says the Advocacy Institute's Michael Pertschuk. As a result of the media, few now doubt that smoking is bad for health, that drinking and driving is a lethal combination, that seat belts save lives, and that fluoridated water prevents cavities.

4. Law and regulation, often at the federal level, have been critical elements in focusing Americans' attention on health concerns, providing policy direction, and setting standards that have led to improvement in the public's health. Despite all the criticism they have received, federal laws and regulations have vastly improved people's health. They have been--and continue to be--the underpinning that protects the health of the American public.

Because of the Clean Air Act, the Lead-Based Paint Act, and federal regulations that reduced or eliminated other sources of lead contamination, lead poisoning has been significantly reduced as a health concern. Because of highway safety laws and federal regulations mandating the use of seat belts and other safety features, drivers and their passengers are now much safer.

As impressive as these victories appear, the United States still has a long way to go even to catch up with the rest of the developed world. For all our achievements, we still rank 24th in measures of national health, according to the World Health Organization. Imagine what we could do if we had social movements against homicide, HIV infection, unhealthy foods, and physical inactivity that could match what public-health initiatives have achieved in such areas as lead and tobacco. Without the energy of such social movements, the United States will be doomed to suffer from inferior health, no matter how much we invest in basic biomedical research or cutting-edge medical technologies. Yet if we put that research to positive use in the public arena, combine it with committed advocacy, and follow up with intelligent policy-making, we can do much to improve America's health--not with miracles but with just hard work.

For more on success stories in public health, see the links to this article at [www.prospect.org](http://www.prospect.org).

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