

Vulnerability of Health to Market Forces

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Objectives: This article reviews adverse influences of for-profit enterprises on health care and public health, and examines significance for public policy.

Research Design: Narrative review.

Results: For-profit health-care industries may increase costs and reduce quality, leading to market failure and contributing to the USA's unflattering position in international comparisons of health-care efficiency. Drug and device corporations use strategies such as making biased inferences, influencing scientists and physicians, marketing rather than informing the public, and lobbying to control their own industry regulations to create market advantage. Successful marketing leads to the increased use of costly profit-making drugs and procedures over cheaper, nonpatented therapies. Because resources are limited, the overuse of costly modalities contributes to expensive health care, which presents a challenge to universal coverage. The free market also fosters the proliferation of industries, such as tobacco, food, and chemicals, which externalize costs to maximize profits, seek to unduly influence research by paying experts and universities, and attempt to control the media and regulatory agencies. Most vulnerable to the cumulative harm of these tactics are children, the poor, the sick, and the least educated.

Conclusions: The free market can harm health and health care. The corporate obligation to increase profits and ensure a return to shareholders affects public health. Such excesses of capitalism pose formidable challenges to social justice and public health. The recognition of the health risks entailed by corporation-controlled markets has important implications for public policy. Reforms are required to limit the power of corporations.

Key Words: health care industry, free market, public health, pharmaceutical industry, corporations

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The free market is generally credited with remarkable technological innovations in modern global society. Industries have fostered infrastructures for improved sanitation, transportation, and communication, as well as medical inventions, with great benefits to public health. Less well known,

but increasingly studied in recent years, is the damage to health which is attributable to free market characteristics such as excessive corporate power that poses threats to democratic processes, a problem described as “supercapitalism.”¹ Consequences to public health occur at multiple and often inter-related levels, including inefficient health care, the marketing of unhealthy products, environmental pollution, and deepening socioeconomic inequities.

HEALTH CARE AS A BUSINESS

International surveys suggest that the United States of America (USA) spends more for health care but has lower quality of care compared with other countries.² Within the USA, higher spending has also been associated with lower quality of care.³ Therefore, contrary to expectation, greater investments in health care do not necessarily improve its quality. In fact, analyses such as those displayed in Figure 1 raise the possibility that higher expenditures, perhaps driven by higher profits for health-care industries, may actually translate into worse care.³

Studies focusing on for-profit versus not-for-profit health-care providers have also revealed associations between higher costs and worse outcomes.^{4–6} These include higher mortality in for-profit hospitals,⁷ less referral to kidney transplantation, and the overuse of expensive medications such as erythropoietin in private dialysis centers,^{8,9} as well as higher rates of deficiencies in the quality and staffing of for-profit nursing homes.¹⁰ These differences exist even though competition increasingly blurs this distinction in that not-for-profit institutions imitate for-profit industrial practices. By design, investor-owned health plans favor profits over “medical losses.”¹¹ Overall, and contrary to some economic theories, the free market in health care may increase choice but not efficiency,¹² as we discuss below.

Market failure in health care was predicted more than 40 years ago by Kenneth Arrow, a Nobel laureate in economics.¹³ The information gap between providers and customers, and the emotions, uncertainties, and complexities inherent to health care promote supply-induced demand, subsidized by insurance coverage (moral hazard). These attributes facilitate profit-driven health care over value-driven health care.^{3,14,15} Primary care, associated with better quality, lower costs, and greater equity,¹⁶ is in crisis in the USA, in part because family physicians earn less than medical specialists.¹⁷ About 30% of the increased health-care costs in the USA have been attributed to unnecessary care¹⁸ and nearly 30% more have been attributed to administrative costs.⁶ Health-care industries are powerful opponents of reforms that might deprive

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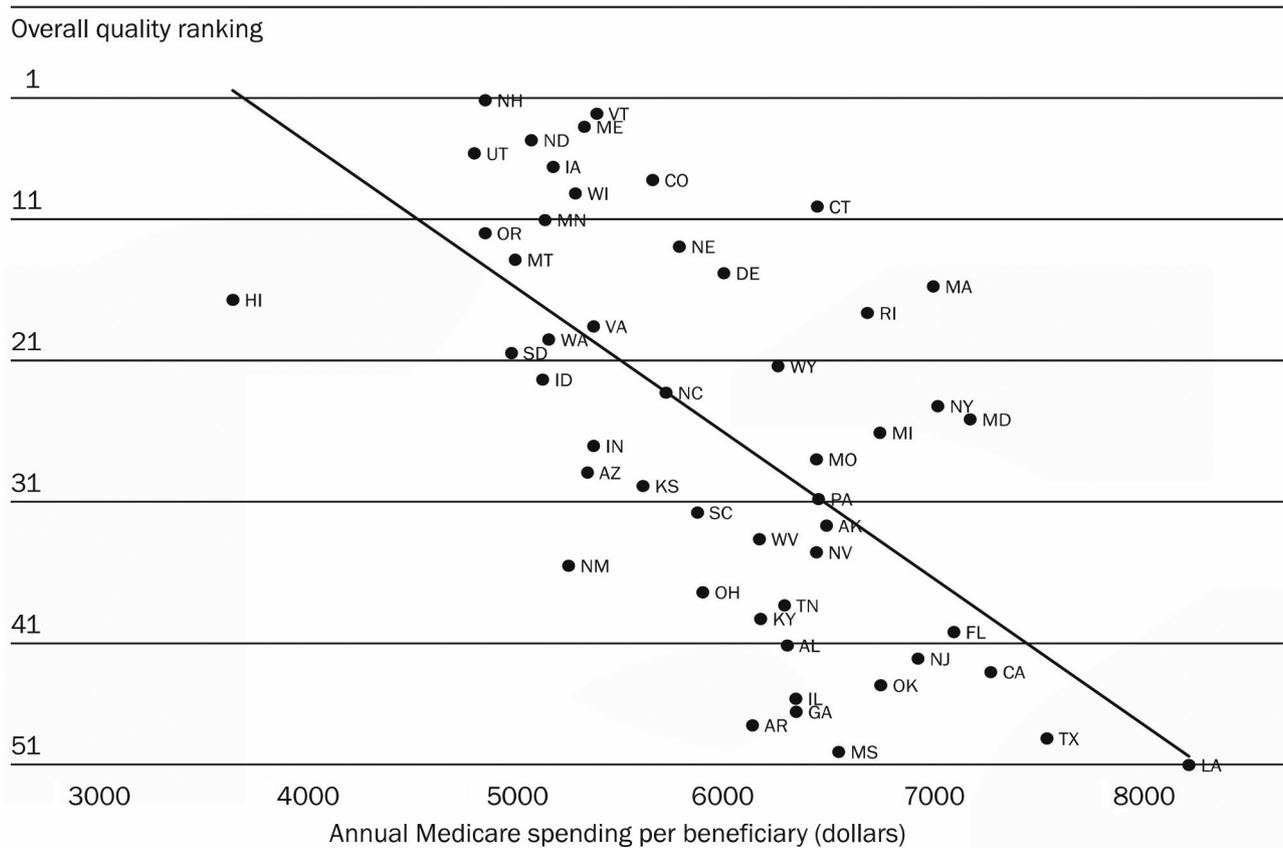


FIGURE 1. Relationship between quality and Medicare spending, 2000–2001: at the state level, a \$1000 increase in spending per beneficiary was associated with a decrease in overall quality rank of 10 ($P < 0.001$).³ Reproduced with permission from Professor Baicker and from the publisher (copyrighted and published by Project HOPE/Health Affairs,³ available online at www.healthaffairs.org).

them of profits.¹⁹ For instance, the Advanced Medical Technology Association, America’s Health Insurance Plans, the American Hospital Association, the American Medical Association, and the Pharmaceutical Research and Manufacturers of America have all opposed earlier health-care reform proposals.²⁰

**PHARMACEUTICAL INDUSTRY MODELS
MARKET ADVANTAGE STRATEGIES**

The pharmaceutical industry provides a model for studying strategies that the corporations use to gain market advantage. Recognized tactics include the suppression and misinterpretation of scientific evidence,^{21–25} leading to the systematic overestimation of the efficacy and safety of new products; original studies,^{26,27} meta-analyses,²⁸ and cost-effectiveness analyses²⁹ are often biased when funded by industry. The hiding of adverse effects includes pressuring scientists^{30,31} and the US Food and Drug Administration to not disclose them and to maintain that such effects are “trade secrets.”^{32,33} Rofecoxib (Vioxx; Merck & Co, Whitehouse Station, NJ)³⁴ is one example in a growing list of newer^{30,35,36} and older drugs³¹ for which safety warnings—intended to protect public health—were delayed to boost the company’s revenues. For instance, as for rofecoxib (Vioxx; Merck & Co, Whitehouse Station, NJ),³⁷ the potential risks of

rosiglitazone (Avandia; GlaxoSmithKline, Middlesex, United Kingdom)³⁸ were downplayed by their manufacturers, despite evidence to the contrary.

As depicted in Figure 2, the strategies used by the pharmaceutical industry target professionals, the general public, and regulatory bodies, with sophisticated advertising, the control of continuing medical education, the refined skills of drug representatives,⁴⁵ powerful media techniques,⁴⁰ and massive lobbying.⁴⁴ These activities are often legal and efficacious. For instance, well-promoted and expensive brand-name medicines are used more often than older, cheaper, generic versions. Research is slanted toward marketable, often-used products and away from drugs needed for urgent but short-term medical needs (such as antibiotics for resistant bacteria or antimalarial drugs).⁴⁶ Pharmaceutical companies spend more on marketing than on research⁴⁶ and few of the new products developed each year by pharmaceutical companies are innovative.²²

The strategies described above are intended to generate large gains, a goal that might be justifiable in itself. High profits may well be appropriate when a company fills a real societal need with breakthrough discoveries leading to improved health. Still, such advances often derive from basic research funded by tax-payers, such as National Institutes of Health-supported studies. In fact, important innovations were made before and outside

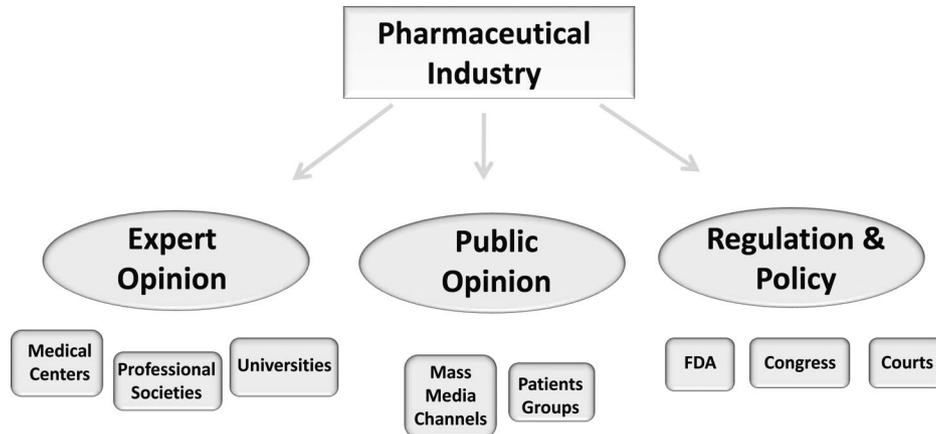


FIGURE 2. Pharmaceutical industry targets constituencies (squares) using diverse vehicles and funding strategies (ovals) to gain market advantage: Targeting professionals with biased evidence, ghost writing, research funding, and agenda setting, gifts and fees to physicians^{22,39}; mass advertising with sophisticated media techniques, leading to a conceptual framing of illness^{40–42}; influence on regulatory bodies, such as the Food and Drug Administration⁴³; financial leverage, used to hire the best lawyers in litigation; and the foremost lobbying power in Washington, spending over \$1.2 billion over the last decade.⁴⁴

the patent system that was designed to protect intellectual knowledge and foster scientific progress. Polio, smallpox, and rabies vaccines, as well as penicillin, were discovered before the current race for patent filings and for the stock market.⁴⁷ Salk is quoted to have said: “Who owns my polio vaccine? The people! Could you patent the sun?” Nobel Prize winners Fleming and Florey did not patent penicillin because they felt “it should belong to humanity.” Banting sold the patent for insulin for \$1 so that it could be affordable. Industry was useful for refining these discoveries, but human minds can and do innovate without financial incentives.⁴⁷

The pharmaceutical industry provides an example of the conflict that commonly arises when business goals diverge from the broader societal good. Drug therapies are favored over political responses to social challenges and maladjustment.⁴⁸ Social, economic, spiritual, psychologic, and educational problems are considered as diseases to be treated in the context of mental health with agents promoted by pharmaceutical industries.⁴⁹ To increase use of methylphenidate, pharmaceutical companies directly approach teachers to diagnose attention deficit hyperactivity disorder.⁵⁰ Mild depression, framed as a “biochemical imbalance,”⁴⁸ is often treated with antidepressant drugs, despite their unproven efficacy for this condition.⁵¹ Alternative solutions, such as community arrangements that reduce stress, loneliness, or suffering (and that are likely to benefit society at large), are much less commonly prescribed than the pharmaceuticals or medical procedures that are promoted by the health-care industry.⁴⁹

THE OVERUSE OF PROFITABLE MODALITIES IN HEALTH CARE

Successful marketing by technology-based industries of drugs, devices, or procedures leads to the increased use of expensive, more-profitable therapies over cheaper, nonpatented modalities, such as prevention, the promotion of quality, and palliative care. Proven therapies that are not protected by patents—and are therefore associated with a relatively

weak industry base, such as cardiac rehabilitation⁵² or folic acid in pregnancy⁵³—often reach less than a third of potentially eligible populations, in contrast to the rapid uptake of new patented drugs and costly procedures. Table 1 illustrates the differential implementation of knowledge in coronary care, where costlier procedures are favored over more cost-effective modalities. Lifestyle changes for diabetes or hypertension are prescribed far less often than medications.^{58,59} Nonpatented, cost-effective, and safe medications, such as thiazides, are underutilized.⁶⁰ Therefore, the overall costs of healthcare rise unnecessarily. Because resources are limited, universal healthcare coverage, an issue of social justice, becomes less attainable.⁶¹

Figure 3 proposes a conceptual model, generalizing observations such as those presented in Table 1, to be tested in future research, of the overuse of profitable modalities in health care.

HEALTH RISKS IMPOSED BY OTHER INDUSTRIES

Health-care expenses are only a fraction of the health-related toll that society incurs from a free market. To maxi-

TABLE 1. Cost Effectiveness and Implementation of Common Practices for Coronary Care

	Angioplasty to 1 or 2 Coronary Vessels	Physician’s Assistance to Quit Smoking	Cardiac Rehabilitation
Cost/QALY*	>\$80,000 ⁵⁴	Cost saving ⁵⁵	\$5000–\$9000 ⁵⁶
Rate of utilization in eligible patients†	70%‡	30% ⁵⁷	30% ⁵²

*QALY, Quality Adjusted Life-Year.
 †Percentage of eligible patients receiving the treatment, in large US population surveys.
 ‡Estimate based on US database (Courtesy of the National Cardiovascular Data Registry; John Spertus, personal communication).

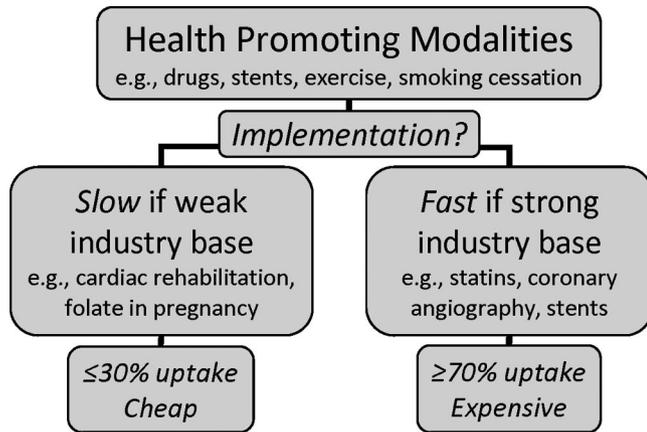


FIGURE 3. Proposed model for industry’s influence on implementation of health promoting modalities.

mize profits, many other industries generate products potentially harmful to health, with limited concern for safety issues and externalizing the costs of their activities to society.⁶² The tobacco, chemical, and food industries pose threats to public health and use strategies similar to those of the drug industry by hiring their own researchers, funding research at universities, sitting on corporate boards, applying sophisticated media tactics, and using lobbyists to influence legislative bodies and regulatory agencies.^{63–66}

Industries use a variety of tactics to maximize profits. As described for the pharmaceutical industry above, one tactic is to downplay a product’s risk, despite evidence to the contrary. “Doubt is our product,” a slogan found in internal tobacco company documents (promoting uncertainty about the damage caused by smoking)⁶⁴ describes a tactic shared by other industries; campaigns have questioned the adverse health effects of beryllium, lead, mercury, vinyl chloride, and other toxic chemicals.^{64,65}

For instance, the advertisement of lead-based paints continued, despite studies showing the risk of brain damage to children.⁶⁵ The control of leaded paints and gasoline may now be viewed as a public-health triumph, with a reduction in blood lead levels associated with a significant increase in the IQs of children; the increase in IQ, in turn, could generate an economic gain of \$100 to \$300 billion for each age cohort in the USA.⁶⁴ However, for decades, industry successfully delayed regulation for lead measures and, similarly, other manufacturers now oppose the imposition of safety measures for a variety of compounds, including mercury, also a neurotoxin in infants, which has now been labeled the “21st century’s lead.”⁶⁴

Food industries expand sales by marketing to vulnerable target groups, such as children and minority groups. In poor neighborhoods, junk food is often more readily available than fruits or vegetables.⁶⁷ The health risks entailed by US corporate tactics have global implications and can especially affect people in developing countries.⁶⁶ For instance, the worldwide practices used to market infant formulae violate the International Code of Marketing of Breast-milk Substitutes adopted by the World Health Organization, which is

based on the strong evidence that breast-feeding is the best option for infants.⁶⁸

A variety of other industries have used powerful corporate tactics against the regulation of oil, gas, coal, pesticides, and other products that threaten workers’ safety, and increase environmental pollution and the risk of global warming.⁶⁹ Widespread harm to public health is also caused by the marketing of products such as alcohol, food, cars, and guns.⁷⁰ Again, the most vulnerable targets of these practices may be children, the poor, and the least educated. These groups are especially affected by increasingly sophisticated advertising in which youth marketers use advances in psychology, anthropology, and neuroscience to lead children to become profitable consumers.⁷¹ To amplify audience exposure, cross-marketing uses multiple media channels⁷² such as movies with smoking actors,⁷³ TV entertainment programs with promoted sweetened beverages,⁷⁴ or, increasingly, electronic venues (video games, the Internet, cell phones); this strategy has been linked to childhood obesity.⁷⁵

CORPORATE POWER AND THE PUBLIC GOOD

In the previous examples, obligations to shareholders appear to override considerations of public health, not necessarily because of misguided executives,⁷⁶ but because firms are, by design, driven by profit. Master of Business Administration students choose profits over people when asked whether a harmful drug should be removed from the market, a response expected by the system⁷⁷ and not eliminated by the teaching of business ethics.⁷⁸ Corporate social responsibility (CSR) was proposed more than 70 years ago, when the Dean of the Harvard Business School said that “the only way to defend capitalism is through leadership which accepts social responsibility and meets the sound needs of the great majority of our people.”⁷⁹ Today, however, CSR is often used to improve a company’s public image, as expressed by a professor of business strategy: “Advertisement of the adoption of CSR provides a sustainable advantage among competitors through improved appearance.”⁸⁰ This analysis of CSR included the following statement: “Companies should not allow social responsibility to divert their attention from the main goal, which is to maximize shareholder value ... Behind the pressure to adopt social responsibility is the profit motive. Putting people before profits is the wrong tactic.”⁸⁰ This opinion implies that when the public good is at odds with corporate goals, the latter will prevail in the corporations’ decision-making processes.

A societal mechanism in the USA that enables industries to operate in ways that undermine public health has been the incremental corporate acquisition, through various Supreme Court rulings over the past 100 years, of the constitutional rights of a “natural person.” Through these rulings, the corporate entity has come to hold various rights and freedoms, including the right to free speech, the right to sue, the right to engage in diverse and integrated for-profit activities, freedom from unwarranted search and seizure, and the benefits of an unlimited lifespan and the limited liability of shareholders for corporate practices. These rights, and that of political speech, allow corporations to disproportionately in-

TABLE 2. Spectrum of Corporate Activities With Potential Impact on Public Good^{1,64,66,69,81–88}

Domain and Activities	Potential Consequences
Science: support for researchers and universities; ghost writing; suppression of unfavorable findings; claims of junk science against public health research; tampering with research data.	Threat to independence of research. Slanting of research and education away from theoretical questions and toward marketable products. Distortion of scientific evidence to limit exposure to liability and to maintain product sales.
Public relations: mass advertising; sophisticated use of media such as with the use of video news releases or undeclared payment to expert spokespersons.	Framing public agenda and discourse. Creating favorable corporate image disguised as news. Conveying distorted information.
Government: “revolving door,” that is, alternating movement of people between legislative bodies or regulatory agencies and industry positions or lobbying firms.	Priority in legislative and regulatory decision making that favors industry over the public interest.
Politics: lobbying, gifts, travel invitations, and contributions to election campaigns.	Corporate influence on political processes disproportionate to citizens and in favor of corporate interests over the public interests.
Regulation and taxation: promote deregulation and resist regulatory agency monitoring and enforcement; tax avoidance tactics.	Increase of unchecked externalities such as environmental pollution. Reduced payments to government for services to all citizens while increasing health burdens.
Litigation: use of superior finances to fight back, harass, or intimidate opponents and delay regulatory enforcement.	Weakening of public-health defenses.
Philanthropy: contribution to various cultural groups; creating or funding third-party groups to facilitate cross-subsidies of the activities mentioned above (“shell corporations”).	Misleading public debate by creating a positive image; co-opting community groups to add social respectability and gain support for industry positions.
Global Activities	Potential Global Impact
Global trade influences on international agreements by monopolies of transnational organizations.	Overruling government laws and regulations that protect public interests such as labor rights and environmental or workplace conditions. Global warming.
Intellectual property: selective dissemination of products to paying markets; patenting indigenous people’s heritage and life forms such as crop seeds.	Exclusion of poor countries from the benefit of life-saving innovations. Appropriation of public domains.

fluence the democratic process, ensuring that priority is given to industry interests over public health.

To assert these rights, corporations have developed a spectrum of tactics, reviewed elsewhere^{81,82} and summarized in Table 2, with a potentially negative effect on the public good.

The free market has accelerated the growth of modern industries, with many benefits to society, but now corporate power has become a threat to free competition. For example, the drug market is neither free nor competitive, including as it does patents, secret pricing, oligopoly, and fraud.⁴⁶ Corporations have gained influence and power beyond the reach of citizens, which endangers democratic processes and the public good.

UNBALANCED INFLUENCE OF CORPORATIONS ON DEMOCRATIC PROCESSES

Lobbyists have access to legislators and administration officials, which gives them the power to influence the development and passage of legislative bills. To gain a competitive advantage through public policy, corporate lobbying has reached massive proportions (with 32,890 registered lobbyists, annually spending more than \$2 billion in Washington, DC), thus reducing the capacity of democracy to respond to citizens’ concerns.¹ The extent of lobbying of elected officials by corporations has recently been illustrated during the 2008–2009 debate about health-

care reform. The health industry sector may have spent more than half a billion dollars on lobbying in 2009,⁸⁹ with large increases in financing by insurance companies, health maintenance organizations,⁹⁰ and pharmaceutical companies.⁹¹ Corporations target fiscal contributions to legislators serving on the congressional committees that have responsibility for their industry, such as health care,^{92,93} with generous donations to members of the Senate Finance Committee.^{94,95} Such large contributions give corporations access to legislators far exceeding access granted to individuals and consumer groups.

Corporate power can have an adverse effect on the world economy. Jeffrey Sachs, a prominent economist, recently commented:

An equally deep crisis stems from the role of big money in politics. Backroom lobbying by powerful corporations now dominates policymaking negotiations, from which the public is excluded. The biggest players, including Wall Street, the automobile companies, the healthcare industry, the armaments industry, and the real-estate sector, have done great damage to the US and world economy during the last decade. Many observers regard the lobbying process as a kind of legalized corruption, in which huge amounts of money change hands, often in the form of campaign financing, in return for specific policies and votes.⁹⁶

SOCIAL DETERMINANTS OF HEALTH

A considerable body of evidence strongly suggests that health is to a large extent determined by the social environment, including factors such as income, education, stress, social support, and the built environment.^{97,98} Relative poverty (rather than absolute income) contributes to bad health,⁹⁹ perhaps as profoundly as does genetic history, smoking, or lack of exercise, although the multiple underlying mechanisms have not been fully clarified.¹⁰⁰ The widening economic inequities within and between nations,^{88,101} associated with a poorly regulated free market and the growth in influence and power of corporations, harm public health.⁹⁶

Some research suggests that the mass privatization of an economy can itself lead to increased mortality, particularly where social capital is low, suggesting that caution is warranted in corporate globalization, especially in developing countries.¹⁰² The current dominant economic model, under which corporations operate with very weak restraints in the pursuit of profit, suggests that free market successes pose formidable challenges to social justice in public health.^{85,103} Overall, it appears that capitalism, successful for investors, has become a threat to the important values of democracy, including education, culture, free competition, and public health.¹

LIMITATIONS

The current review does not address the undeniable benefits to public health provided by social infrastructures and the medical innovations facilitated by modern industries. It may well be that the benefits of the free market override the harms ascribed to its excesses, but additional analyses and discussion are needed to reach that conclusion. The vulnerability of health to the excesses of modern capitalism suggests that more research is required to better understand the causes of that vulnerability and to encourage potential solutions to it. The blame might be attributable, at least in part, to a deterioration of the original construct of the free market toward more stringent neoliberal economics that emphasizes, among other tenets, deregulation of the market, reduction in the size and influence of government, and the privatization of public services. Adam Smith, an original proponent of the free market, strongly opposed the establishment of corporations and the idea of trade secrets as being contrary to market principles.¹⁰⁴

Indeed, our analysis does not allow a clear definition of the causal entities for the current problem. Is it only corporations? Is it the poorly regulated free market? Is it the capitalistic system and over-consumption? Is it a stock market that promotes accelerated growth of expectations and “gambling” through electronic trading of shares or monetary instruments rather than realistic profits in exchange for tangible goods and services? Is it the set of psychosocial and political constructs, disinformation, and corruption that have emerged from a combination of these factors? Or is it because competition, which is essential to free markets, tends to alienate values such as trust, solidarity, collaboration, community, and caring—key elements in health and health

care?¹⁰⁰ These questions warrant further economic and sociological analysis.

Finally, the scope of this article does not allow us to appropriately discuss potential remedies. Solutions that reduce the influence of corporations on public health⁸⁵ might include limiting the power of the corporate entity to lessen its influence on the democratic process, the increase of shareholder influence, and the strengthening of government regulation.¹⁰⁵ Buffered interfaces¹⁰⁶ between science and monetary interests, between medicine and business, and between government regulation and industry could ensure the integrity of research, the adherence to professional values, and the protection of public interests. Academic curricula in schools of public health could include a focus on the corporate entity as a social determinant of health, and examine the relationships between corporate economic indicators and public-health measures.^{85,105} Because the practice of medicine has become more business oriented, with economic implications, the curricula of schools of medicine could also introduce students to such concepts.

CONCLUSIONS

Health and health care appear to suffer at many levels from corporation-controlled markets. This cumulative harm has a disproportionately strong influence on vulnerable populations, such as children, the poor, the sick, and the least educated. The excesses of capitalism pose grave challenges to social justice and public health, and the American dream, which praises “market justice,” may have become a nightmare for health and for health care.^{107,108} Recognition of the severity of these problems may lead physicians and public-health professionals to develop creative solutions and recommend policy changes that would protect and promote the health and welfare of all citizens in a more equitable society.

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