The Collapse of Global Public Health and Why It Matters for New York

Laurie Garrett

Modern public health was invented in New York City. The science and policies that form the core of public health arose in London, Paris, Berlin, and Boston at the end of the 19th century, but it was in New York City that bands of sanitarians, germ theory zealots, and progressive political leaders created the world's first public health infrastructure. From its inception, New York City was a global trading post, its very survival dependent on its multilingual, diverse population. New York City surpassed colonial competition by opening its harbor to ships and immigrants from all over the world. In so doing, New York City also opened itself up to the world's diseases. The city had only two options: close itself off and suffer economically or open its arms to the world while creating systems within the city to control disease. For 200 years, New Yorkers fought off epidemics and pestilence. Vital statistics, clean water, pasteurized milk, mass vaccination, less-hazardous workplaces, public sewers—these were hallmarks, achieved one agonizing step after another, of New York's public health system.

To be effective, a 21st century public health infrastructure can no longer be confined to New York City, Los Angeles, or the United States. It has to be global in scale. The measures that ensured longer lives for New Yorkers at the dawn of the 20th Century must be implemented planetwide a century later if disease in one earthly ecosphere can be held at bay. Such a global public health infrastructure must embrace not just the essential elements of disease prevention and surveillance that were present in wealthy pockets of the planet during the 20th Century, but also new strategies and tactics capable of adjusting to global changes. The collapse of governments, war, poverty, environmental damage, population pressure, and failure to maintain the public health infrastructure are to blame for the remarkable declines in health and life expectancy seen in many parts of the world.

DEFINITIONS

The legitimacy of public health suffers because of the lack of a clear definition. Public health is a negative. When it is at its best, nothing happens. There are no epidemics; food and water are safe to consume; citizens are well informed regarding personal habits that affect their health; children are immunized; the air is breathable; factories obey worker safety standards; there is no class-based disparity in disease or life expectancy; and few members of the public go untreated when they

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The author is with *Newsday*, New York City.

Correspondence: Laurie Garrett, Medical and Science Writer, *Newsday*, 2 Park Avenue, New York, NY 10016. (E-mail: lgarrett@newsday.com)

develop addictions to alcoholic or narcotic substances. In the absence of failures in these areas, politicians faced with budget crises or dictators eager to expand their local and regional power may feel justified in slashing government health budgets. Public health systems are extremely fragile and are among the first government functions to suffer under societal stress. Even if epidemics emerge, such as human immunodeficiency virus (HIV), Ebola, pneumonic plague, or drug-resistant tuberculosis, national leaders are often insulated from the danger because they typically are wealthier than the imperiled citizens and have access to elite health coverage.

Struggling for a definition of public health, the Institute of Medicine (IOM) arrived at the following: “The committee defines the mission of public health as fulfilling society’s interest in assuring conditions in which people can be healthy.”¹ In other words, no agreement was reached as to what constitutes “public health” other than ensuring that people are healthy. In the absence of a coherent definition of the discipline, it is no wonder its advocates struggle to defend their budgets and policies. During the 1980s, the IOM found that every state lost funding and personnel in all areas except provision of clinical health care. Such vital services as drinking water and food quality control, environmental and occupational health, laboratories, and disease control lost money and personnel.

In March 1999, the Centers for Disease Control and Prevention conducted a public opinion poll; 57% of questioned Americans cannot properly define public health, even when given clear descriptions from which to select. Most said that they had “negative evaluations” of the public health system, and the survey group said contaminated drinking water, toxic waste, air pollution, bacterially contaminated food, and pesticides, respectively, represented their greatest health fears.

PUBLIC HEALTH AND MEDICAL CARE

The IOM also found it difficult to distinguish medicine from public health. Although the two pursuits classically share few interests and often are in direct conflict, political pressures over the course of the last half of the 20th century have blurred the borders between the two. In the United States, “public health” has become, incorrectly, synonymous with medicine for poor people. Few Americans at the millennium think of public health as a system that functions in their interests. Rather, it is viewed as a government handout for impoverished people.

Racial discrepancies are severe in public health. US public health has a truly sorry racial legacy that has never been successfully addressed. African Americans and, to a lesser degree, Hispanics and Native Americans are severely alienated from the system and are least likely to participate in population-based control efforts, such as mass immunizations, HIV education campaigns, sexually transmitted disease (STD) efforts, and well baby programs.

In New York City before World War I, New York Public Health Commissioner Dr. Hermann Biggs and colleagues demonstrated that public health not only had little to do with organized medicine, but also might often be antagonistic to physicians. Public health opposed schemes that placed individual health in primacy over the good of the public as a whole. Biggs battled doctors over the naming of tuberculosis patients. For example, doctors wanted discretion for wealthy clients, whereas Biggs demanded safety for all New Yorkers. Public health fought on behalf of the community, placing special attention on the poorest, least advantaged elements of that community for it was amid conditions of poverty that disease usually arose.

BETRAYAL OF TRUST

Curative medicine is not public health. The individualized medicine approach to population health promotes overuse. Western models of individualized medicine are costly and often offer little benefit in terms of life expectancy. They fail to address the fundamental roots of bad health in poor countries, such as unclean water and lack of vaccines. On the other hand, public health has never dealt well with illicit drug and alcohol issues. This inability has encouraged strong political support for the criminalization of, versus treatment for, substance abuse. As a result, the population as a whole has continued to have its health threatened by needle-borne diseases such as hepatitis B, C, and D and HIV.

Public health is not an ideology, religion, or political perspective. History demonstrates that whenever such forces interfere with or influence public health activities, a general worsening of the populace's well-being usually follows. As envisioned by its American pioneers, public health is a practical system, or infrastructure, rooted in two fundamental scientific tenets: the germ theory of disease and the understanding that preventing disease in the weakest elements of society ensures protection for the strongest (and richest) in the larger community.

I believe that public health is a bond—a trust—between a government and its people. Citizens entrust government to oversee and protect the collective good health. Individuals agree to cooperate by providing tax monies, accepting vaccinations, and abiding by rules and guidelines set by government public health leaders. If either side betrays that trust, the system collapses like a house of cards.

In a recent book, I described clear examples of such a betrayal of trust, betrayal by both citizens and governments: the 1994 outbreak of pneumonic plague in the city of Surat, in the Gujarat State of India; the outbreak of Ebola virus disease in Zaire in 1995 and in Uganda in 2000; the growing global epidemics of drug and alcohol abuse; multidrug-resistant tuberculosis in many countries; increasing incidence of preventable childhood diseases in the former Soviet states; the gradual decline in US public health infrastructure and capacity over the course of the last century; and the growing worldwide threat of bioterrorism and biowarfare.² The same problems that torment developing countries—acquired immunodeficiency syndrome (AIDS), emerging illness, multidrug-resistant tuberculosis, and bacterial resistance to antibiotics—continue to threaten New York.

PUBLIC HEALTH HISTORY

Vital statistics data from England, Wales, and Sweden show that, in 1700, the average male in those countries lived just 27 to 30 years. By 1971, male life expectancy had reached 75 years. More than half that improvement occurred before 1900; even the bulk of the 20th century increases in life expectancy were due to conditions that existed prior to 1936. In all, 86% of the increased life expectancy was due to decreases in infectious diseases, and most of the decline in infectious disease deaths occurred prior to the age of antibiotics. In the United Kingdom, for example, between 1838 and 1949, when antibiotic treatment was introduced, tuberculosis deaths declined 87%, from nearly 4,000 per million people to 500 per million. Between 1949 and 1969, the tuberculosis death rate fell only another 40 million cases, to 460 cases per million, or 9%.

Given this progress, it may seem paradoxical to hear that there are voices of discontent, including my own, decrying the global state of public health, claiming

that the triumphs of our time are transient, under siege, even doomed. At the close of the 20th century, life expectancies were soaring, not just in wealthy industrialized nations, but in many of the world's poor countries as well. In 1999, the World Health Organization (WHO) forecast that, in 2025, average life expectancy globally will reach 73 years, up from just 48 in 1955. In 1955, some 21 million children died before their fifth birthday; in 1995, only 11 million died.

Yet, these promising trends disguise profoundly disturbing local and regional reversals. The double epidemics of tuberculosis and AIDS set sub-Saharan Africa's hard-fought health advances spiraling backward toward the 19th century. Life expectancies shot downward regionally in the 1990s, and infant mortality rates jumped upward. By 1998, for example, Malawi's average life expectancy rate had fallen below its pre-World War II levels, thanks almost entirely to HIV. By 2000, the situation was so dire that the World Bank declared the AIDS pandemic its "number one priority," and World Bank president James Wolfensohn vowed that, "No sensible AIDS program would be stopped for lack of money."² Never before had a public health issue been given such prominence in the bank's portfolio.

HEALTH IN AMERICA AND ABROAD

Serious problems lurk beneath the veneer of America's political and economic world domination. By 1997, some 43.4 million Americans, more than 15% of the population, had no health insurance. In 1998, that figure jumped to 44.3 million, or 16.3% of the population. Since 1993, when the Clinton administration first initiated the US health care reform debate, the uninsured population had grown by 4.5 million, which included 1 of every 4 children in the country. An additional 71.5 million Americans lacked health care insurance for at least part of 1997, with a disproportionate percentage of the uncovered drawn from Hispanic, African American, and poor white populations. The government's health safety net, Medicaid and Medicare, did not protect a third of all Americans from living below the poverty line. In addition, many who were insured had coverage under plans that put a straitjacket on their care, limiting them to the medical practices deemed cost-effective within a profit-making paradigm.

The combined impact of mounting numbers of uninsured Americans, slashed public health budgets, and widespread antigovernment sentiment could be felt in the rundown county health offices, clogged public hospital emergency rooms, and mounting squabbles over which diseases most deserved federal research dollars. Antigovernmentalism compounds the problem. Rampant antigovernmentalist fervor in the United States targets, among other things, public health programs, such as those for vaccination of children and registration of infant birth defects.

"Two-thirds of all deaths under the age of 65 are now postponable, if not preventable," American Public Health Association President Dr. Joyce Lashoff declared in 1991.² Yet, with each passing day, Americans increasingly put off vital health care needs, clogged public hospital emergency rooms, or went bankrupt trying to pay their medical bills. At its core, public health is a governmental project that suffers from today's "antigovernmentalism."

Managed care is a serious challenge to adequate public health. Economics has only aggressively addressed public health and medical issues in the last decade, presenting strong financial arguments in favor of preventive and population-based approaches to health. But, health care companies and governments largely make

decisions about health spending based on different priorities. In Europe and North America, this means spending is skewed toward massive outlays for end-stage disease intervention, while basic needs for the health of the people go unmet. In poor countries, corruption, military priorities, and singular epidemics, such as tuberculosis and HIV, can tilt all public health spending away from basic infrastructural needs.

America had reached a critical health juncture, the seriousness of which is written in the numbers. Studies in 1997 showed that 56% of the uninsured put off treatments due to lack of funds, and 47% found it difficult or impossible to obtain needed medical care. The 21st century opened on a new age of market globalization, joyfully embraced by some, dreaded by others. Massive, rapid change could irrefutably be forecast and pose interesting and troubling questions for public health.

Pharmaceutical industry practices are a pressing public health problem nationally and internationally. Drug companies will increasingly become the focus of tension as drug resistance against affordable agents mounts, and there is an impact on life expectancies. HIV is a lesson in this regard, for pressure in affluent circles skewed resources away from public health approaches, such as vaccine research and development, prevention campaigns, and contact tracing, and pointed them instead toward a search for a cure. As a result, we are now saddled with an extraordinarily costly drug regimen of only minimal efficacy and are playing catch-up in pursuit of both a vaccine and effective prevention interventions for countries with heterosexual adult infection rates in excess of 5% of those 18 to 50 years old. From a global point of view, we sacrificed public health for individualized medical attention that has proven to be the most costly ever offered as a solution to an infectious disease.

At a time when the former Soviet public health infrastructure is moribund, when HIV is devastating sub-Saharan Africa, when impoverished India is spending a fortune on nuclear weapons development at the expense of the health of its populace, and when long-antagonistic groups are taking advantage of the end of Cold War policing to slaughter ethnic enemies, public health is in a shambles. It cannot meet its basic 21st century core duties, that is, ensure the public's safety at the community level, much less handle the new challenges posed by globalization. The safety of individual communities is eroding amid dwindling commitments to protection of the drinking water supply, food supply, and hygiene systems. The drugs and pesticides that had ensured miraculous improvements for the Northern Hemisphere during the second half of the 20th century are losing effectiveness.

The growing number of antibiotic-resistant diseases need desperately to be addressed and will pose a serious health problem in the future. Strains of streptococci, for example, will undoubtedly be resistant to available antibiotics. Examples of such lurking microbial threats, and humanity's apparent impotence to deal with them, abounded at the millennium, with the three most potentially catastrophic being HIV, malaria, and tuberculosis. In 1998, according to WHO, the three microbes combined claimed 5 million lives. In 1999, WHO reported that 53.9 million people globally had died in 1998: 31% had suffered cardiovascular diseases, 25% infectious diseases, and 13% cancer; the remainder was comprised of deaths due to accidents, respiratory and digestive diseases, maternal childbirth fatalities, and 6% "other."

By 1999, the UN Population Fund proudly announced that the global popula

tion had grown from 1 to 6 billion during the 20th century, but using a “low” fertility rate projection, the population increase was slowing and would only reach 7.5 billion by 2040, then would actually begin to decline.³ If true, that would mean that wise government and careful management of Planet Earth’s resources could allow humanity and nature to coexist without horrendous damage to the globe’s biodiversity and ecological integrity. Such a rosy forecast would, of course, presuppose control of key socially destabilizing events, such as acute resource scarcities, pandemics, and use of weapons of mass destruction, including bioweapons.

WEALTH AND HEALTH

The wealth gap exacerbates public health stress. Public health systems are the first government functions to suffer under a severe wealth gap. History shows that public health prospers when class disparities are lowest and there is a large, self-interested middle class. Today, however, globally and in the United States specifically, we are witnessing a record wealth gap, which poses a serious threat to public health.

From 1989 to 1998, the poorest fifth of American society lost an average of \$587 in real annual income, while the richest 5% of the country gained \$29,533. During the 1990s, median American family income increased by \$600, and thanks to personal real estate and investment values, net family worth jumped \$11,900. However, debt also rose during the decade, driving more families to the edge. The number of families classified as “very poor”—those living on less than \$8,018 per year—increased, and as the 1999 Annual Report of Children’s Defense Fund put it, “We have 5 times more billionaires but 4 million more poor children.”

A key study executed by Fordham University found that, despite overall economic growth, the American social-health index had fallen steadily since its peak in 1973. The index annually evaluated 16 social factors (e.g., number of impoverished children, adults lacking health insurance, and average weekly earnings in real income terms), rating them on a scale of 0 to 100. In the United States, this index topped at 77.5. By 1993, it was down to 40.6, and it continued to fall thereafter.²

Public health, as a discipline and practice, lost its way during the Western health transition, largely because the models of infectious disease prevention did not translate neatly into the chronic disease paradigm, which except for the case of tobacco, was approached as a matter of individual behavior. Public health thus became not the Great Protector, but the Great Chastiser, telling people that they were personally responsible for their own illnesses (e.g., diet, exercise, alcohol). This message rested on often contradictory data, and the public eventually stopped listening or only heeded selectively. In the United States, for example, Americans reduced their cholesterol intake, but increased their overall caloric intake; thus, the majority of the population became obese.

The job of public health in the later 20th century became an increasingly political one, forcing its advocates to defend not only their policies, but also the role of government itself. To be fair, public health always was a very political pursuit. After all, its budgets were politically controlled, and implementation of public health principles invariably came up. It was hard to escape the word *infrastructure*. Such a deceptively banal-sounding term utterly failed to convey the millions of lives that might be long and healthy, or short and tragic, based on whether an infrastructure existed.

BIOTERRORISM

The threat of bioterrorism is growing at an uncontrollable pace, with smallpox, for example, being cultivated as a means of warfare. Public health has spawned a virtual bioterrorism prevention industry in North America and Europe. A backlash has also emerged, claiming the threat is overblown post-Cold War paranoia. Public health must insist that its role in local bioterrorism detection and response is paramount, while at the same time resisting efforts to militarize the issue completely. By collaborating with law enforcement, it might risk public credibility, especially in minority communities, and it must take great pains to keep its relationship with military and law enforcement authorities cordial, but at arms length.

If anthrax were released in Grand Central Station one morning, who would be the first in New York City to realize such a dastardly act had been committed? Surely, it would not be some mythical sensory device or the law enforcement officials wielding the contraption. It would be members of the public health infrastructure, alerted by hospital reports of unusual illnesses cropping up from Brooklyn to the Bronx. Protection of the health of citizens from both bioterrorism and emerging illness will depend on a strong public health infrastructure for surveillance and response.

Public health in the 21st century will rise or fall, then, with the ultimate course of globalization. If the passage of time finds ever-widening wealth gaps, disappearing middle classes, international financial lawlessness, and still-rising individualism, the essential elements of public health will be imperiled, perhaps nonexistent, all over the world. Capital will be skewed away from social service infrastructures in such a scenario, particularly those that meet the needs of the poor. Few public health barriers will be in place to prevent global spread of disease, and ever more drugs will be rendered useless by microbial resistance. UN agencies, including WHO, will witness further deterioration in their funding and influence, and political instability will foster increasingly irrational nation-state and rogue activities, perhaps including bioterrorism.

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