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NEWS & ANALYSIS

The Role of Medical and Public Health Services in Sustainable Development

by Edward P. Richards

Agenda 21¹ and the Rio Declaration on Environment and Development² puts a human face on sustainable development, clearly stating that sustainable development is development that leads to maximizing human potential while protecting the environment, but that if there is a conflict, human welfare must be determinative. This has created tension between activists from the developed world, who were generally opposed to development, and those from the developing world, who realized that development was essential for human welfare, even if it had environmental costs. This view of sustainable development, however, is clearly articulated in the introduction to Chapter 6 of Agenda 21, entitled "Protecting and Promoting Human Health."³ The remainder of Chapter 6 applies this approach to key populations and programs, delineating a detailed set of objectives for personal medical services, public health services, and environmental health issues.

Agenda 21 expands the traditional environmentalist focus on illnesses related to environmental pollution to a broad emphasis on basic medical care, preventive medicine, and the improvement of mental and physical health. This

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[Editors' Note: In June 1992, at the United Nations Conference on Environment and Development (UNCED) in Rio de Janeiro, the nations of the world formally endorsed the concept of sustainable development and agreed to a plan of action for achieving it. One of those nations was the United States. In August 2002, at the World Summit on Sustainable Development, these nations gathered in Johannesburg to review progress in the 10-year period since UNCED and to identify steps that need to be taken next. Prof. John C. Dernbach has edited a book, *Stumbling Toward Sustainability, that assesses progress made by the United States on sustainable development in the past 10 years and recommends next steps. The book, published by the Environmental Law Institute in July 2002, is comprised of chapters on various subjects by experts from around the country. This Article appears as a chapter in that book. Further information on *Stumbling Toward Sustainability* is available at www.eli.org or by calling 1-800-433-5120 or 202-939-3844.]*

1. U.N. Conference on Environment and Development (UNCED), Agenda 21, U.N. Doc. A/CONF.151.26 (1992) [hereinafter Agenda 21].
2. Rio Declaration on Environment and Development, UNCED, U.N. Doc. A/CONF/151/5/Rev. 1, 31 I.L.M. 874 (1992).
3. The introduction states:

Health and development are intimately interconnected. Both insufficient development leading to poverty and inappropriate development resulting in overconsumption, coupled with an expanding world population, can result in severe environmental health problems in both developing and developed nations. Action items under Agenda 21 must address the primary health needs of the world's population, since they are integral to the achievement of the goals of sustainable development and primary environmental care.

Agenda 21, *supra* note 1, ¶ 6.1.

parallels the World Health Organization's (WHO's) broad definition of health: "Health is a state of complete physical, mental, and social well-being and not merely the absence of disease or infirmity."⁴ In the developing world, health is very pragmatically related to development: if a significant part of the population is partially disabled by diseases such as malaria, or if whole professional classes are destroyed by the human immunodeficiency virus (HIV) and the acquired immune deficiency syndrome (AIDS), then this makes economic development much less efficient, which leads to unnecessary delay and environmental impact. Even in the United States there are serious access to medical care problems and failures in the public health system that impact economic development and well being.

While Chapter 6 is only one part of a much larger document, it is the chapter that most directly ties into global issues of concern outside the environmental policy debates. A core value in both Agenda 21 and the Rio Declaration is distributive justice, the notion that equality in access to basic goods and services is part of sustainable development, both as an issue of fairness and because sustained inequalities impede development and destabilize society. Distributive justice is very compelling when applied to medical and public health services. Assuring equitable access to health care and medical technology, within countries and across political and cultural boundaries, is both a global and local issue, and one that much more directly impacts the lives of individuals in the developed world than do many of the other concerns in Agenda 21. It also links the environmental issues in Agenda 21 and the Rio Declaration to the long-standing issue of cooperation between developed and developing countries in the control of disease. Whether it is the efforts to control malaria⁵ or the controversies over access to drugs to treat AIDS in subSaharan Africa, disease control is increasingly seen as a global concern. Chapter 6 has local implications in the United States because of this country's inability to provide basic health services to many members of society, and because even those with access to care through health insurance are increasingly dismayed by limitations on that care⁶

4. WHO, *Definition of Health*, at <http://www.who.int/aboutwho/en/definition.html> (last visited Dec. 22, 2001).

5. ROBERT S. DESOWITZ, *THE MALARIA CAPERS: MORE TALES OF PARASITES AND PEOPLE, RESEARCH AND REALITY* (W.W. Norton ed., 1991).

6. The shift from traditional health insurance to managed care created financial incentives for insurers to limit care and created conflicts of interest between patients and their physicians. See Edward P. Richards & Thomas R. McLean, *Managed Care Liability for Breach of Fiduciary Duty After Pegram v. Herdrich: The End of ERISA Preemption for State-Law Liability for Medical Care Decisionmaking*, 53 U. FLA. L. REV. 1 (2001).

and by not being treated with respect when seeking care.⁷

While there is no bright line dividing public health services from personal medical services, it is useful to distinguish them for analysis. Medical services are those that treat diseases and injuries in the individual. Public health is concerned with the community,⁸ and in some cases it may require interventions that are contrary to autonomy or even the best interests of the individual.⁹ Medical and public health services overlap in some cases, such as treatment for communicable diseases such as tuberculosis, cholera, and HIV, where the individual's illness poses a direct threat to the community. Public health measures such as drinking water sanitation and vaccinations are responsible for the dramatic increases in life expectancy over the last 150 years, and are critical to sustaining high density living. Medical services reduce individual suffering and improve an individual's ability to live a full life and work. Medical services have much less effect on average life expectancy than do public health measures, but make a huge difference in quality of life. In general terms, compared to the developing world, the U.S. medical and public health systems function quite well. The average life expectancy is well into the 70s and large-scale food or waterborne disease outbreaks are rare enough to be headline news. A more careful analysis, however, shows many inequalities in the system, some of which are sufficiently serious as to affect sustainable growth through losses in productivity and through the failure of distributive justice. The United States also suffers in comparison to Europe, although such comparisons can be misleading because of the more favorable demographics in most European countries.

Over the last 10 years there has been no progress in improving access to the medical care in the United States, and there are some indications that the quality of the available care has diminished due to economic pressures. The United States does not guarantee universal access to medical care. It relies on a combination of voluntary, employer paid health insurance, government entitlements through Medicare for the elderly, and a limited program for indigent persons not covered by employer paid health insurance. Approximately 40 million persons are not covered by any of these plans, and many of the persons with some coverage still do not have adequate access to medical care. Congress has been unwilling to assume the burden of universal access or of increasing employer mandates, and the states do not have the economic

7. Even more troubling is the fact that many have begun to question the assumption that the extremely expensive U.S. health care system at least delivers the highest quality of care to those with access. See *TO ERR IS HUMAN: BUILDING A SAFER HEALTH SYSTEM* (Linda T. Kohn et al. eds., National Academy Press 2000).

8. According to the National Institute of Medicine (NIOM):

Public health is distinguished from health care by its focus on community wide concerns—the public interest—rather than the health interests of particular individuals or groups. Its aim is to generate organized community effort to address public concerns about health by applying scientific and technological knowledge. These concerns include disease prevention and health promotion, encompassing physical, mental, and environmental health.

NIOM, *THE FUTURE OF PUBLIC HEALTH* (National Academy Press 1988) [hereinafter *FUTURE*].

9. For example, quarantine for a tuberculosis carrier is against the individual interests of the carrier, but is critical for the interests of society.

resources to bridge the gap. The public health system has suffered from decades of neglect, a lack of national standards, fragmentation of staffing and resources among thousands of legal jurisdictions, and a general lack of public support and funding. Public health problems are exacerbated by the access issues for basic medical services, which include many public health services. While the events of September 11, 2001, stimulated public and governmental interest in funding programs to fight bioterrorism, it is unclear whether these will benefit the general public health system.

In summary, the medical and public health systems in the United States are much more effective than those in developing countries. Given the wealth and technological sophistication of the United States, however, these systems do not serve the population as well as they might. They are particularly weak in access to basic medical services and in executing coherent national public health policy. More generally, they suffer from a failure of the federal government and American public to accept that basic medical and public health services are critical to a more just and economically sound nation.

This Article first develops criteria for whether medical and public health services meet Agenda 21 objectives for sustainable development as related to personal health and public health. It then applies these criteria to the United States, with particular reference to both 10-year and longer term trends. The Article concludes with recommendations on how the United States can better approach the objectives in Agenda 21.

Characteristics of Sustainable Development

The Rio Declaration and Agenda 21 both address personal and public health services.¹⁰ Agenda 21 is much more detailed and is more directly applicable to the United States. In the United States, the academic and political discussions of health policy are not put in terms of sustainable development. The environmental action groups that care about sustainable development have little overlap with health policy groups, yet the health goals for sustainable development as delineated in Agenda 21 are substantially the same as those of many health policy analysts in the United States. Both see medical care and public health services in terms of fairness, distributive justice, and productivity.¹¹ While these are very closely related to the goals of Agenda 21 and the Rio Declaration, this author has never heard of Agenda 21 or the Rio Declaration discussed by U.S. health policy scholars or decisionmakers. Analytically, the role of Agenda 21 in particular is filled by other internal U.S. policy documents, such as the Healthy People 2010 project of the U.S. Department of Health and Human Services.¹²

Agenda 21 assumes that there will be development and that development is essential to improving the lives of per-

10. As regards medical services and public health, the Rio Declaration is more directly applicable to the developing world.

11. "Health and development are intimately interconnected. Both insufficient development leading to poverty and inappropriate development resulting in overconsumption, coupled with an expanding world population, can result in severe environmental health problems in both developing and developed nations." Agenda 21, *supra* note 1, ¶ 6.1.

12. See U.S. Department of Health & Human Services, *Healthy People*, at <http://www.health.gov/healthypeople> (last visited Mar. 4, 2002).

sons in the developing world.¹³ Within this context, sustainable development is development that maximizes human potential while minimizing damage to the environment. As regards medical and public health services, Agenda 21 builds on the broad WHO definition of health by expanding it with a substantial set of specific objectives, activities, and implementation strategies.¹⁴ While Agenda 21 has a detailed set of objectives for medical and public health services, these can be reduced to a three-tiered approach to sustainable development: basic public health services; basic medical care and family planning services; and high technology medical services. Basic public health services can be further broken down into two layers: providing basic sanitation and controlling communicable diseases. While basic public health and medical services should be available to every person without regard to the economic development of the society they live in, the availability of high technology medical services, which are very resource-intensive, are constrained by the economic development of the underlying society. Although they are not essential to sustainable development in a given society, inequitable access to high technology medical services raise distributive justice issues that can destabilize sustainable development.

Basic Sanitation

From a sustainable development perspective, it is basic sanitation and communicable disease control that allow the evolution of more densely populated societies in which individuals live longer and healthier lives. The first layer of public health services concerns sanitation—the provision of safe drinking water and uncontaminated food and the disposal of wastewater and garbage to protect the drinking water and food supplies. If wastewater or garbage is allowed to contaminate drinking water, waterborne illnesses such as typhoid and cholera will ravage the population. The importance of public health increases with population density and patterns of economic development. Small, nomadic hunter-gatherer groups have fewer clean water, uncontaminated food issues than agrarian populations that live in the same place through time.¹⁵ The development of towns and cities made basic sanitation critical because as the volume of

clean food and water necessary to support the population increases, so does the volume of waste to be disposed of, which increases the chance of contamination, and because once illness broke out, it could spread through the population rapidly.¹⁶ At the same time, as density increases the population becomes more dependent on public health services and more dependent in general on the economic infrastructure. When yellow fever was raging in Philadelphia in 1789, a major concern was that the shippers and food sellers would flee the city and leave the sick and their caretakers without food and other supplies.¹⁷

Basic sanitation is also concerned with environmental health—the effect of conditions in the environment on human health. While environmental health concerns in the United States now revolve around industrial pollution, environmental health is a broader concept and includes natural environmental health risks such as mosquito-borne illnesses. If populations live in poorly drained areas outside the most northerly regions, yellow fever and malaria will take a significant toll on those communities. Colonial America was ravaged by communicable diseases, as were all major cities in Europe. Malaria and yellow fever continued to be problems in the developed world well into the 20th century and were only controlled through the modification of wetlands and extensive mosquito control efforts.¹⁸

The absence of basic sanitation services means that the population will suffer from high levels of infectious diseases and many deaths of children and young workers.¹⁹ This directly affects the ability of a country to maintain an efficient economy and implies great personal suffering from infected individuals and their families. When these diseases reach epidemic proportions, they can destabilize society²⁰ or even destroy entire civilizations, as happened to indigenous populations in the Americas and the Pacific islands.²¹ This basic level of public health was addressed by the sanitation movement, which was fueled by early epidemiological observations about the link between contaminated water and disease, before the germ theory of disease was recognized.²² Beginning in the middle 1800s, cities in Europe and the Americas began public works projects to provide clean drinking water and to dispose of wastewater safely.

*Communicable Disease Control*²³

The second layer of public health is the control of communicable diseases spread from person to person, such as syphi-

13. From the deep ecology perspective, this is a circular definition that ignores the consequences of human development on the non-human environment. Arguably, Neolithic tribes, Native Americans, and other nontechnological societies practiced a form of sustainable development that was more in harmony with the non-human environment.

14. Chapter 6 of Agenda 21 focuses on the following areas for protecting and promoting human health:

- a. Meeting primary health care needs, particularly in rural areas;
- b. Control of communicable diseases;
- c. Protecting vulnerable groups;
- d. Meeting the urban health challenge;
- e. Reducing health risks from environmental pollution and hazards.

Agenda 21, *supra* note 1, ¶ 6.2.

15. These nomadic groups were more susceptible to illness-driven extinction, however, because if a small group came into contact with contaminated food or water, everyone was likely to be ill at the same time, leaving no one to care for the ill. This was why measles and smallpox were so devastating to indigenous populations who were infected for the first time: the fatality rate for the disease was increased because there was no one healthy enough to fetch food and water and to care for the ill.

16. The Romans figured this out long before the discovery of the germ theory. They used aqueducts to bring in clean water and sewers to carry away wastes. This allowed them to maintain higher population densities and bigger cities than would be possible without some efforts at sanitation.

17. JOHN H. POWELL, *BRING OUT YOUR DEAD* (1949).

18. Ironically, draining wetlands and using chemicals such as dichlorodiphenyltrichloroethane (DDT) to control mosquito-borne illnesses is one of the most controversial issues in modern environmental protection.

19. Malaria still infects 500 million people in the developing world, leading to significant disability and personal suffering that impacts sustainable development by reducing the efficiency of the workforce.

20. WILLIAM H. MCNEILL, *PLAGUES AND PEOPLES* 160-65 (1976).

21. More recently, questions have been raised about the link between AIDS dementia and the genocide in Rwanda.

22. JOHN SNOW, *ON THE MODE OF TRANSMISSION OF CHOLERA* (London, Churchill 1855).

23. Agenda 21, *supra* note 1, ¶¶ 6.10-6.17.

lis, tuberculosis, measles, and polio.²⁴ These diseases are controlled through immunizations, treatment of infected persons, and the identification and management of infected persons when treatment is not possible.²⁵ The most effective strategies are based on immunizations that provide cheap and safe protection for years or even a lifetime. It was possible to eradicate smallpox because there was a cheap, effective, and easy-to-use vaccine for an easily identified disease that was only spread between humans. Polio is also on the way to eradication. Diseases such as tuberculosis that require isolation or difficult treatment, and that do not confer resistance, are much more difficult to control, as are diseases that do not confer immunity and that spread rapidly, such as syphilis or gonorrhea. In the last two decades, HIV/AIDS has joined the list of communicable diseases that must be controlled by this second layer of public health.

Basic Medical Care

Basic medical services, including family planning services and birth control technologies, are the second tier of health services that are essential for sustainable development. Medical care is built on top of public health services. If a population does not have basic public health services such as clean drinking water and uncontaminated food, the baseline level of disease will be so high as to consume all basic medical care resources.²⁶ Basic medical services are treatments to improve the well-being of individual patients. Basic medical services overlap with communicable disease control when individuals are immunized or treated to prevent the spread of diseases to others. These public health interventions also provide direct medical services benefits to the individual patients.

Basic medical services include nonsurgical injury treatment (first aid), ambulatory care, and the treatment of acute illnesses and chronic illnesses with simple drug regimes and with nonsurgical interventions. Such basic care can have profound effects on individual health and productivity, allowing people to avoid death from common injuries and to be healthy enough to continue to work and to not become dependent on family members. Basic medical services lead to a healthier population who are in turn better workers. Access to family planning services and birth control technology allows families to control the number of children they bear, which can improve the lives of the children and the chance that they will get an education. This also allows women to more fully participate in society.

High Technology Medical Care

The core technology in medical care is drugs. There are many effective drugs that can be manufactured cheaply and

used by personnel with limited medical expertise. Such drugs are a very cost effective form of medical technology and should be available to all persons as part of the basic medical services discussed above. Basic surgery such as Caesarian sections, appendectomies, and simple injury treatment is less cost effective than drug treatment since it requires more skilled personnel and more elaborate facilities, but simple surgery, combined with a clean and sanitary operating room and simple anesthesia, can be delivered in ways that are cost effective for even very poor societies. Yet this cost effectiveness depends on other infrastructure: simple surgery is cost effective if it is regionalized so you do not have to duplicate limited staff and technology. If you cannot move people to the surgery, which depends on roads and transportation, then it cannot be done in a cost effective manner.²⁷ This poses the central dilemma of providing medical services that depend on highly skilled personnel and/or high technology: the care becomes very expensive and depends on the general societal infrastructure.

The importance of this third tier of service to sustainable development is relative: it is clearly not achievable in any meaningful time frame in many developing countries, nor would be it desirable in these countries to divert resources from other necessary goals to achieve it. High technology medical services are not critical to sustainable development for developing countries. As economies mature and have sufficient resources to provide high technology medical services, access to these services becomes a significant distributive justice issue both within the developed countries who do not provide universal access and between developed and developing countries. Distributive justice is a core value in Agenda 21, both because of individual unfairness issues and because intersocietal and intrasocietal inequalities are destabilizing and can consume resources in civil wars and extraterritorial conflicts. This discussion is limited to sustainable development issues related to high technology medical services in the United States.²⁸

Basic public health and medical services, including basic surgical and hospital services, clearly advance sustainable development from both the individual welfare and societal good perspective. They reduce individual suffering and they improve the individual's ability to participate in the workforce and in society. The interplay between sustainable development and high technology medical care is more complex. In most cases high technology medical care does reduce individual suffering.²⁹ In many cases it prolongs productive life. In a significant number of cases it prolongs the lives of persons who do not contribute to the economy,³⁰ and many of these draw significant resources from the economy. While these lives have intrinsic merit, from

24. This is referred to as the second layer of public health not because it cannot be carried out at the same time as the first layer, but because it has a more limited return on the investment of resources. The return, however, is still high enough that it should be provided in all societies.

25. Such management may include isolation if the person has a disease such as drug-resistant tuberculosis, or workplace limitation where, for example, a typhoid carrier would be prohibited from working in food preparation.

26. This is the situation in many parts of subSaharan Africa. The limited medical care resources are consumed with managing patients that have diseases resulting from basic public health system failures.

27. Two extreme examples are the Australian outback and the interior of Alaska. Both are so sparsely populated that it is impossible to provide local access to medical care, but because they are relatively wealthy they can use air transport to access regional care.

28. Given that the wealthy developed countries have trouble financing universal access to high technology medical services for their populations, it is unlikely that any progress will be made in reducing the disparities in access between persons in developed countries and developing countries.

29. But not always, as the acrimonious debates over informed consent to cancer treatment illustrate. See *Arato v. Avedon*, 858 P.2d 598 (Cal 1993).

30. Advances in technology to salvage low-birth weight babies is a good example. While many babies who would have died 40 years ago are now saved, many are severely impaired.

an economic perspective they do not contribute to sustainable development.³¹

Assessment

This section focuses on the four evaluation criteria delineated above. Agenda 21 and the Rio Declaration were written for both the developed and developing worlds. For public health and medical care services there are profound differences between the United States and the developing world. Compared to the developing world, the U.S. system works very well, but compared to the developed world, especially the wealthier European countries, there are significant problems in the United States.³² This Article focuses on whether the United States has made progress toward sustainable development over the past 10 years. For both the public health and medical care systems in the United States, the past decade has seen the continuation of trends that can best be understood within a longer time frame.

In 1988, the National Institute of Medicine published a landmark study of the U.S. public health system entitled *The Future of Public Health*.³³ Although the book's title only refers to public health, the study commission's definition of public health also includes basic medical services.³⁴ The study was undertaken because of the growing concern that the U.S. public health and basic medical care system was no longer meeting the needs of the country.³⁵ This study de-

tailed the problems in the U.S. public health system at the time, and subsequent updates indicate that there has been little progress in addressing these issues.³⁶ The medical care system has been in a constant state of change since World War II, with the advent of high technology medicine, federally assured health coverage for the elderly and some of the poor, and the development of a widespread employer paid health insurance system. By the 1980s, these changes had dramatically increased the costs of medical care and started the trend that has dominated medical care policy for the past 25 years—the shift from unlimited reimbursement for all medically necessary care (for those with health insurance) to various forms of managed care that limit the physician's discretion in providing high technology medical services.³⁷ Concerns with the cost of care has limited the willingness of the government to address universal access to care during the last two decades.³⁸

Basic Sanitation

Does the United States Provide the Basic Sanitation Services Necessary for Sustainable Development as Measured by the Level of Water, Food, and Environmentally Related Illnesses in Society, Across All Social Strata?

In general, the U.S. sanitation system works well, with outbreaks of water and foodborne illnesses happening infrequently enough to be front page news. The major concerns with the system are that it is operating on the edge of disaster. Water sanitation depends on city water departments, private water companies, and individuals who take their own water from wells and surface water.³⁹ While individual water sanitation frequently breaks down, this usually affects a small number of persons. Breakdowns in municipal water systems are much more dangerous. Almost all municipal water sanitation programs are understaffed and underfunded, which is part of the larger problem of insufficient

31. From an economic perspective, longevity itself is a drag on the economy if a significant number of older persons retires and draws resources from the remaining workers. The United States must confront this issue as it restructures the Medicare and Social Security programs, which provide retirement income and medical care for much larger populations than were originally anticipated when the programs were initiated.

32.

The American health care system remains a paradox of abundance and weaknesses. It is the most expensive health care system in the developed world. Its academic medical centers deliver sophisticated care to patients with complex and serious illnesses. The United States is also a leader in developing new forms of medical technology and new medications. Although these innovations have had substantial benefits for health, they have also contributed to soaring health care costs. In addition, there is starvation in the midst of plenty: more than 40 million people lack health insurance, and millions of insured have inadequate coverage.

Arnold M. Epstein et al., *Health Policy 2001—A New Series*, 344 *NEW ENG. J. MED.* 673 (2001).

33. See *FUTURE*, *supra* note 8.

34. The study noted that:

Many public health agencies have become last-resort providers of personal medical care, draining vital resources away from populationwide services.

The committee endorses the conclusion of the President's Commission for the Study of Ethical Problems in Medical Care and Biomedical and Behavioral Research that the ultimate responsibility for assuring equitable access to health care for all, through a combination of public and private sector action, rests with the federal government.

The committee finds that, until adequate federal action is forthcoming, public health agencies must continue to serve, with quality and respect and to the best of their ability, the priority personal health care needs of uninsured, underinsured, and Medicaid clients.

Id. at 13.

35. More specifically, the study states:

This study was undertaken to address a growing percep-

tion among the Institute of Medicine membership and others concerned with the health of the public that this nation has lost sight of its public health goals and has allowed the system of public health activities to fall into disarray. Public health is what we, as a society, do collectively to assure the conditions in which people can be healthy. This requires that continuing and emerging threats to the health of the public be successfully countered. These threats include immediate crises, such as the AIDS epidemic; enduring problems, such as injuries and chronic illness; and impending crises foreshadowed by such developments as the toxic by-products of a modern economy.

Id. at 1.

36. *EMERGING INFECTIONS: MICROBIAL THREATS TO HEALTH IN THE UNITED STATES* (J. Lederberg et al. eds., National Academy Press 1992); Michael T. Osterholm, *Emerging Infections—Another Warning*, 342 *NEW ENG. J. MED.* 1280-81 (2000).

37. By 1999, all but 8% of persons in private insurance plans were in managed care organizations, and many Medicare, Medicaid, and other governmental insurance patients were also in managed care plans. R. Adams Dudley & Harold S. Luft, *Managed Care in Transition*, 344 *NEW ENG. J. MED.* 1087 (2001).

38. David Blumenthal, *Controlling Health Care Expenditures*, 344 *NEW ENG. J. MED.* 766 (2001).

39. Centers for Disease Control and Prevention (CDC), *Outbreak of E. coli O157:H7 and Campylobacter—New York, 1999*, *MORBIDITY & MORTALITY WKLY. REP.*, Sept. 27, 1999, at 803. See CDC, *A Survey of the Quality of Water Drawn From Domestic Wells in Nine Midwest States*, at <http://www.cdc.gov/nceh/emergency/WellWater/default.htm> (last visited Mar. 18, 2002).

staffing and funding of local health departments. Despite this, there have been few major disease outbreaks related to municipal water. The potential risk, however, is high, as demonstrated by a failure in the system in Milwaukee when the chlorination unit for the drinking water system added insufficient chlorine to kill the cryptosporidium that was contaminating the water system. More than 400,000 persons were infected by cryptosporidium, with significant morbidity and some loss of life.⁴⁰ There have also been questions raised about the ability of municipal water systems to detect and control terrorist attacks with either biological or chemical agents. While it is clear that most systems are not prepared to rapidly identify contamination with new agents,⁴¹ the nature of water treatment systems makes them somewhat resistant to such attacks.⁴² Although the risk from terrorist attacks is real, it will require a substantial amount of toxin, not just pouring in something from the chemistry lab.

Foodborne illness generally does not affect a large number of persons in a single outbreak, making it less obvious than the cryptosporidium outbreak in Milwaukee. It is, however, very widespread, with the Centers for Disease Control and Prevention (CDC) estimating that foodborne disease causes 76 million illnesses, 325,000 hospitalizations, and 5,000 deaths each year in the United States.⁴³ These outbreaks are related to food contamination and spoilage that occurs throughout the food chain, with a substantial amount of the spoilage occurring once the food has been sold to consumers who then improperly prepare and store it. The U.S. food sanitation system is divided between two major agencies, the Food and Drug Administration (FDA) and the U.S. Department of Agriculture, and state and local government health departments. No single agency has authority or imposes consistent standards over food. None of the agencies have adequate inspectors or other resources to properly carry out their own role in food inspection, and there is little coordination between agencies. At the consumer level, many individuals are no longer sophisticated enough in preparing and storing food to detect contaminated food or to prevent food from becoming contaminated through spoilage.

While the traditional environmental illnesses related to mosquito-borne illness such as malaria⁴⁴ and yellow fever are much less common in the United States, there have been outbreaks of St. Louis encephalitis, dengue fever, and, most recently, West Nile virus. These reflect local issues with mosquito control and the constant tension between mos-

quito control and other values such as wetlands preservation and limiting the use of pesticides in the environment. The West Nile outbreaks were unpreventable in that they represent the cost of rapid international transportation: mosquitos and other disease vectors can hitchhike across oceans much more efficiently than did the rats in the days of clipper ships.⁴⁵ However, the delays in detecting the presence of West Nile, which were complicated by poor communications between local and federal agencies, were preventable but not surprising given the problems with the public health infrastructure.

Industrial, agricultural, automobile, and wastewater pollution were tremendous problems in the United States in the 1960s, which lead to the passage of the Clean Water Act (CWA) and Clean Air Act (CAA). Both the CWA and the CAA have dramatically reduced air and water pollution over the past 30 years. They have not, however, solved health-related pollution problems in the United States. It is clear that in many urban centers air pollution levels are high enough to worsen respiratory diseases. While the evidence of harm from chemical water pollution is very limited, it is nonetheless worrisome and justifies continuing to reduce the release of pollutants into the environment. Biological pollution from sewage and agricultural runoff is still high in many places, posing real risks of bacterial and viral infections and requiring many lakes, rivers, and seashore areas to be closed for recreation to prevent bathers from contracting waterborne illnesses.

These are very real problems and do impact the health of society enough to have some effect on sustainable development. More importantly, they are symptoms of a system that has a limited ability to cope with new threats. In the face of terrorist threats, possible climate change, and other external forces, the U.S. sanitation system needs improvement. While some of these problems have a distributive justice component, such as sanitation and environmental pollution problems facing the poor, the major threats, such as the cryptosporidium outbreak in Milwaukee, cut across all strata of society. Poor food sanitation is not restricted to cheap restaurants, and diseases such as West Nile affect the poor and the middle class equally, as would terrorist attacks.

The biggest changes in the U.S. sanitation system were triggered by the CAA and the CWA. These have had profound impact on environmental pollution, including sewage management, and the last 10 years have seen continued gradual improvement in this area. The food sanitation and drinking water programs have not received much attention in comparison, and it is difficult to tell whether they are more effective than in the past but are facing worse problems, or whether they have declined in effectiveness. Consumers are certainly less sophisticated about safe preparation and storage of food than in the past, which is related to their having grown up in a world with refrigeration and a huge variety of preprocessed and packaged foods. There has been an increased awareness of the problems in these food and drinking water systems over the last 10 years: the West Nile outbreak highlighted communication problems between federal and local agencies; several waterborne disease outbreaks have highlighted the weaknesses in the drinking water treatment system; and the CDC's studies of

40. CDC, *Assessing the Public Health Threat Associated With Waterborne Cryptosporidiosis: Report of a Workshop*, MORBIDITY & MORTALITY WKLY. REP., June 16, 1995 (Recommendations & Reports No. RR-6).

41. Natural contamination does not change rapidly and is usually correlated with warming events such as heavy rain falls.

42. The major structural protections are the volume of water and the water's purity. The volume of water in a system is so large that it will dilute chemical agents below their toxic level, requiring an attacker to have a large volume of chemical toxins to be "successful." While biological agents can multiply, the purity of the water prevents bacteria from getting sufficient nutrients to grow effectively, and the residual chlorine will inhibit reproduction if it does not completely kill the agent.

43. Paul. S. Mead et al., *Food-Related Illness and Death in the United States*. 5 EMERGING INFECTIOUS DISEASES 607 (1999).

44. Robert D. Newman et al., *Malaria Surveillance—United States, 1999*, MORBIDITY & MORTALITY WKLY. REP., Mar. 29, 2002, at 15 (Surveillance Summaries No. SS-1).

45. Lyle R. Petersen & John T. Roehrig, *West Nile Virus: A Reemerging Global Pathogen*, 7 EMERGING INFECTIOUS DISEASES 611 (2001).

foodborne illness, combined with increased private litigation over foodborne illness, have raised calls from the U.S. Congress for unifying food regulation under one federal agency and for better federal oversight of local agencies. All of these concerns have been heightened by the events of September 11, which made the threat of terrorist attacks suddenly plausible. There has been new legislation and funding for bioterrorism, but no structural change in the overall regulatory system, and, most importantly, no increase in personnel and funding for routine enforcement.

Communicable Disease Control

Does the United States Provide Communicable Disease Control Measures Sufficient to Support Sustainable Development as Measured by the Morbidity and Mortality Caused by Communicable Diseases in Society, and Are These Costs Borne Equally by All Members of Society?

Communicable disease control, as discussed above, deals with the transmission of diseases between people, such as tuberculosis and measles, rather than with sanitation and environmental diseases.⁴⁶ Communicable diseases are very common in all societies including the United States. Influenza and the common cold infect tens of millions every year, with substantial loss of productive capacity. There are millions of cases of sexually transmitted diseases each year, excluding HIV, with significant complications such as pelvic inflammatory disease and infertility. There are estimated to be nearly a million persons infected with HIV in the United States, and there are at least 40,000 new cases a year, a number that has not changed for years. There have been approximately 500,000 deaths from AIDS in the United States over the past 20 years. While the death rate is declining due to new treatments, none of these are cures and it is expected that the death rate will begin to rise again as patients become resistant to newly introduced treatments.

The level of communicable diseases in the United States is high for a developed country, especially for HIV. While many cases of communicable diseases are not preventable, the United States does not do as effective a job in preventing communicable diseases as it should, and, historically, not as good a job as it has done in the past. Ironically, the success of public health in the 1940s and 1950s, leading to the eradication of smallpox worldwide, polio in the United States, and dramatically lower rates of other diseases such as measles and tuberculosis, undermined public support for public health. The general public, politicians, and even public health professionals believed that communicable diseases had been conquered and that the country should now focus on chronic diseases such as diabetes, heart disease, and cancer, the diseases of an aging population. Resources were shifted from public health to medical care because, as discussed in the section on basic medical services, the cost of the medical care system is so high that it consumes all available resources in the United States. Unfortunately, the U.S. medical care system, unlike the traditional public health system, is not freely available to all persons, and shifting dis-

ease control functions to the medical care system has made disease control less available to many persons.

Perhaps most importantly, as the risks of communicable diseases decrease, the society is less willing to tolerate intrusive disease control measures such as case investigation, and to accept immunizations that pose some risks of their own. This is best illustrated with the problem of smallpox control and the current problem it has spawned: a population that has no resistance to smallpox and no safe vaccine for global immunization, raising the specter of societal disruption and massive death rates if the United States were to suffer a terrorism attack with the smallpox virus.⁴⁷

Smallpox illustrates the extreme case for how once a disease no longer threatens the public, the public's tolerance for intrusive, expensive, or risky control strategies is greatly reduced. Smallpox was eradicated in the United States by the end of the 1940s and the last cases in the world were in the 1960s. The smallpox vaccine is a live virus vaccine⁴⁸ that has some side effects and can cause serious or fatal illness in an immunocompromised person.⁴⁹ When faced with the smallpox, these side effects and the approximately one-in-a-million chance of death from immunization was a very reasonable risk. As smallpox and other communicable diseases vanished through immunizations, the public became less tolerant of the risks of immunization. This led to vaccine-related litigation and to public pressure to end immunizations. When smallpox was declared eradicated, there was no more reason to immunize with the smallpox vaccine: if only it were really eradicated.

Smallpox was clearly eradicated in nature, but the problem was that we knew there were stores of smallpox in the former Soviet Union. Relying on representations that this was contained and was not being used for biological warfare agents, the United States recommended the discontinuation of routine smallpox immunizations in 1971, and within a few years there was no more smallpox vaccine being made.⁵⁰ There were a few small stores of vaccine maintained, with perhaps 25 million doses left worldwide.⁵¹ There were also no efforts to develop a safer vaccine that could be used in immunocompromised persons. The risk calculation was seen as simple: smallpox is gone, so we do not need to tolerate any smallpox vaccine-re-

46. Although environmental factors such as crowded housing, poor nutrition, and ineffective sanitation facilitate the spread of communicable diseases, many of these diseases spread independently of environmental factors.

47. MICHAEL T. OSTERHOLM & JOHN SCHWARTZ, *LIVING TERRORS: WHAT AMERICA NEEDS TO KNOW TO SURVIVE THE COMING BIO-TERRORIST CATASTROPHE* (Dell Publishing 2001).

48. It is not the smallpox virus but a very mild related virus that creates a cross-immunity to the smallpox virus.

49. There were very few immunocompromised persons before organ transplants, modern cancer chemotherapy, certain arthritis drugs, and, most commonly, HIV and AIDS.

50. Anthony S. Fauci, *Smallpox Vaccination Policy—The Need for Dialogue*, 346 *NEW ENG. J. MED.* 1319 (2002).

51. A recent discovery of approximately 85 million doses in a drug company freezer in the United States, plus the finding that the vaccine can be diluted and still work, gives the United States enough vaccine to immunize its population. Gina Kolata, *With Vaccine Available, Smallpox Debate Shifts*, *N.Y. TIMES*, Mar. 30, 2002, at A8. In some ways this may exacerbate the vaccine issue for the world at large: what if the United States is able to protect most of its population, but is the only country that can do so? In addition, vaccination will not help much of Africa because you cannot vaccinate persons with HIV, and that is a substantial fraction of the population in many African countries. For a discussion on the effect of smallpox vaccine on a person with HIV, see R.R. Redfield et al., *Disseminated Vaccinia in a Military Recruit With Human Immunodeficiency Virus (HIV) Disease*, 316 *NEW ENG. J. MED.* 673 (1987).

lated risks.⁵² Things changed, however, in 1994 when a defector from the Soviet Union told the Central Intelligence Agency that there were large stocks of smallpox virus in Russia that had been prepared for biological warfare. Subsequently, it has been impossible to determine whether these are intact or whether some have gotten into the hands of terrorists or rogue nations. Since smallpox immunity from a vaccination lasts less than 15 years, all the world is now susceptible to smallpox, a unique condition in post-Neolithic history. As was demonstrated when smallpox and measles were introduced into American indigenous populations who had no immunity, the disease destroys the entire society when everyone gets sick at once and there is no one to care for the sick. While it is impossible to estimate the potential damage in the developing world in countries with large populations infected with HIV, it has been estimated that smallpox could kill 60 million in the United States.⁵³ A public health risk is now a potential threat to all sustainable development.

Smallpox is the extreme case, as nothing else poses nearly the same level of risk to the United States or the world. It does, however, illustrate a more generalized problem in public health: as societal risk decreases, tolerance for individual risk and interference with individual rights decreases. The shift from an emphasis on communicable disease control to chronic disease treatment also left the United States unprepared for the HIV/AIDS epidemic. The United States has many more cases of HIV/AIDS per capita than other developed countries. This is rooted in a failure of public health in the 1970s, when gay bathhouses flourished in many major cities in the United States. The bathhouses allowed gay men to have high frequency, anonymous sexual contacts, greatly facilitating the spread of all communicable diseases and especially sexually transmitted diseases. This led to an epidemic of Hepatitis B, a deadly disease in its own right, but not to a closing of the bathhouses. Politicians and public health officials were more concerned about interference with individual rights than with communicable disease control. The bathhouse environment allowed HIV to spread widely before the first cases were diagnosed, and even after it was known that bathhouses were a major focus of spread, it took another two to three years to close the bathhouses. They have reopened in some cities, which helps explain why rates of new infection with HIV in some populations in the United States are as high as in South Africa.

The levels of communicable diseases in the United States, especially HIV/AIDS, are high enough to affect sustainable development. They pose distributive justice issues because the poor suffer disproportionately, both because access to medical care services is limited and because environmental factors in poor areas increase the spread of communicable diseases.⁵⁴ The communicable disease control system in the United States began its decline in the 1960s and

was at its weakest point in 1990. At that point, a resurgence of tuberculosis so frightened the general public and politicians in New York and some other urban centers that public health officials were encouraged to use more aggressive disease control strategies.⁵⁵ Since then, the CDC has pushed states to institute basic communicable disease control measures for HIV, such as named reporting of cases, and has recommended strengthening state and local disease control efforts. Unfortunately, without the pressure of a specific outbreak such as tuberculosis in New York, state and local politicians have been unwilling to fund additional staff and infrastructure for disease control. And as discussed in the section on basic medical care services below, there has been little progress in extending the medical services part of disease control to the uninsured over the last 10 years.

Basic Medical Care

Does the United States Provide Basic Medical and Family Planning Services Sufficient to Support Sustainable Development?

This Article discusses basic medical services separately from high technology medical services for two reasons. First, it is more consistent with Agenda 21 and planning in developing countries. Second, it highlights an ironic flaw in the U.S. medical care system: we have allowed basic medical services to be held hostage to high technology medical services. Accessing how effectively the United States delivers basic medical services is complicated by U.S. demographics. Many studies have compared the United States and Europe on broad indicators such as life expectancy and neonatal mortality, as well as on other average indicators of health. These studies do not control for differences in the distribution of wealth and education in the United States or for dramatic cultural differences between populations in the United States.

The poor are poorer in the United States than in Europe when access to public goods, including medical care, is included. The poor are more badly educated and, thus, more susceptible to adverse health habits, especially inappropriate nutrition. Some subpopulations, such as indigenous populations living on reservations, are outside many basic social and educational services. This creates a tension between the public health and medical care systems and the larger social welfare system in the United States: the public health and medical care systems are unable to significantly affect the demographic and behavioral factors that lead to an unhealthy population. This unhealthy population requires more medical services than the average population in wealthy European countries. Even if European style health services were instituted in the United States, many problems such as low-birth weight babies would remain because they are not fundamentally failures of the medical care system.⁵⁶

52. This risk was based on essentially no immunocompromised persons in the population. Today, in a population such as New York City with patients on immunosuppressive drugs and persons infected with HIV, the death and serious complication rate might be closer to 1 in 20.

53. OSTERHOLM & SCHWARTZ, *supra* note 47.

54. Prostitution and drug use, both having a high correlation to poverty, are major risk factors for HIV.

55. This encouragement included both political support and the revision of public health laws that had been weakened during the 1980s at the behest of civil libertarians.

56. This is not to excuse the demographic problems in the United States. They should be addressed on their own terms through the educational system and through social welfare programs.

Paying for Medical Care

The core problem with medical care in the United States is that it is not universally available.⁵⁷ More than 40 million Americans are uninsured and another significant number are underinsured. This coverage gap arises from the nature of health care finance in the United States. Unlike most developed countries, the government only pays for about 40% of the health care. Most of this is paid by the federal government through Medicare,⁵⁸ Medicaid,⁵⁹ the Social Security System, and the Civilian Health and Medical Program of the Uniformed Services (CHAMPUS).⁶⁰ The federal government pays 100% of Medicare, Social Security, and CHAMPUS. Medicare is a federal-state partnership, with the federal government providing 1 to 3 dollars for each state dollar. The remaining 60% is paid through nongovernmental insurance, mostly private health insurance paid through employer contributions. While there are some state-run charity hospitals, and although the federal government runs the Veterans Administration hospital, most government-paid care is provided by the same private contractor physicians and private managed care organizations that provide care to privately insured patients.⁶¹

The federal and state governments rely on private employers to provide health insurance to pay for care because this shifts the cost of care from the government to the private sector. The federal government does not require employers to provide health insurance because it recognizes that insurance distorts the job market and that the burden of insurance would make many low-wage businesses unprofitable. The federal government also limits the ability of states to require insurance or to regulate the benefits package in its stead.⁶² The result is that there are vast differences in coverage among available health insurance policies so that some consumers have much greater health care purchasing power than others. This is justified as necessary to assure the availability of insurance to both large corporate employers and marginal small businesses. Since most states do not mandate that employers provide health insurance,

few employers would carry insurance if only high value products were available.

Even with this range of policy options many employers do not provide insurance for employees, and few provide insurance for the growing body of contingent workers who work part time or as contractors. Employers see health insurance as an employee benefit that is used to recruit and retain employees. As this benefit gets more expensive, employers have to weigh its business value against its cost. In most cases the employer shifts more of the cost to the employee rather than terminating the benefit. In lower wage jobs, however, the cost of the benefit becomes a large part of the cost of the employee, and cost shifting is not an option because the employee cannot afford the cost. In these jobs, employer-provided health care is most clearly seen as a regressive tax that does not make economic sense.

Access to Care

The biggest group of uninsured are the working poor, those who work for business that do not provide health insurance but make too much money to qualify for Medicaid. These persons are generally unable to purchase care on their own. Indigent persons on government assistance (Medicaid) have better access to care, but may have trouble finding physicians willing to treat them in some communities. Persons on governmental old age assistance (Medicare) and private insurance have relatively good access to care, but as the government decreases the reimbursement for Medicare, some physicians are leaving the system.

In the 1980s there were several well-publicized cases where people were denied emergency care because they could not pay for the care and were uninsured.⁶³ This led Congress to pass the Emergency Medical Treatment and Active Labor Act (EMTALA).⁶⁴ EMTALA requires every hospital⁶⁵ that participates in Medicare or Medicaid⁶⁶ and that has an emergency room to evaluate⁶⁷ every person who presents him or herself to the hospital seeking emergency care⁶⁸ and to provide care, without regard to ability to pay, to every person who needs care to protect life or limb and to every pregnant woman in active labor. The purpose of this Act is to assure that everyone will have access to emergency medical care. This is pure federal cost shifting: EMTALA provides no money for this care and forces hospitals to either collect it from patients after they have been treated, or to try to offset the costs with charges against patients with insurance.

EMTALA does not solve the problem of access to medical services because it only provides for care for patients delivering babies or in need of emergency care to prevent immediate harm.⁶⁹ EMTALA provides no access for routine

57. One observer has stated:

It should be a no-brainer. Every citizen of the most prosperous nation in the world should have basic health insurance. Yet lack of health insurance remains one of the most glaring examples of how the United States differs from other countries. Despite a robust economy, the number of uninsured nonelderly persons increased steadily in the 1990s, reaching 43.9 million in 1998 before dropping slightly in 1999, to 42.1 million.

Steven A. Schroeder, *Prospects for Expanding Health Insurance Coverage*, 344 *NEW ENG. J. MED.* 847 (2001) (footnotes omitted).

58. Medicare pays for the care of essentially all individuals over the age of 65. Marilyn Moon, *Medicare*, 344 *NEW ENG. J. MED.* 928 (2001); see also John K. Inglehart, *Medicare and Prescription Drugs*, 344 *NEW ENG. J. MED.* 1010 (2001).

59. Medicaid is for children and the poor.

60. CHAMPUS provides care for dependents and survivors of active-duty personnel and retirees.

61. The U.S. Public Health Service (PHS) once operated hospitals in all the major ports and was responsible for caring for sailors and managing quarantine and ship inspections. These have been closed and most PHS corps physicians are either research scientists or are providing medical care in medically underserved areas and on Native American reservations.

62. Employee Retirement Income Security Act, as amended, 29 U.S.C. §§1001 et seq. (2002).

63. Emergency care that leads to hospitalization is so expensive that most people cannot pay for it on short notice unless they are insured.

64. 42 U.S.C.A. §1395dd (2000).

65. Except those in the Indian Health Service. See *Williams v. United States*, 242 F.3d 169 (4th Cir. 2001).

66. This is essentially every hospital that provides any care to the general public. *Holcomb v. Monahan* 30 F.3d 117 (11th Cir. 1994).

67. 42 U.S.C.A. §1395dd(a).

68. *Power v. Arlington Hosp. Ass'n*, 42 F.3d 851, 857 (4th Cir. 1994).

69. At least one commentator argues persuasively that EMTALA has not improved access even to emergency care because it has caused hospitals to move away from poor neighborhoods and to close their

medical (first aid) services, preventive services, or family planning services. Thus, in the United States, patients only have assured access to care when they have become so sick that the care is much more expensive and much less likely to be effective. While some communities have walk-in indigent care clinics that provide basic medical services, even these are usually difficult to deal with and very time-consuming. For the 40 million uninsured, and for some portion of the insured that are in medically underserved areas or who are insured by very limited plans, living in the United States does not give them much better access to basic medical services than they would have in many developing countries.

The United States does provide adequate basic medical services to most of its population at a level that supports sustainable development. But because the United States does not provide universal access to health care, the 40 million who are uninsured do not have access to basic medical services. Their health suffers and this reduces their ability to participate in the workplace.⁷⁰ This denial of basic care also violates the most basic principles of distributive justice. For these reasons, the United States does not meet the standards of Agenda 21 for sustainable development as it pertains to basic medical care. There have been no significant changes in access to basic medical services over the past 10 years because there has been no significant decrease in the number of persons in the United States with no health insurance.⁷¹

High Technology Medical Care

Does the United States Provide Access to Basic Technological Medical Services Necessary to Support Sustainable Development, and Does the United States Provide Equitable Access to High Technology Medical Services?

As used in this Article, basic medical technology includes simple surgery, hospital-based medical procedures, and hospitalization. High technology medical services include cardiac surgery, much of cancer chemotherapy, and other care that involves both specially trained medical staff and specialized facilities or pharmaceuticals. In general, the

emergency rooms. See David A. Hyman, *Lies, Damned Lies, and Narrative*, 73 IND. L.J. 797 (1998) and David A. Hyman, *Patient Dumping and EMTALA: Past Imperfect/Future Shock*, 8 HEALTH MATRIX 29 (1998).

70. The American College of Physicians-American Society of Internal Medicine (ACP-ASIM) states:

The lack of health insurance has important health and financial consequences for individuals and the nation. Millions of Americans are unable to receive the care they need, which endangers the health and lives of all patients, adds cost to the health care system, and reduces productivity. Furthermore, medical treatment for the uninsured is often more expensive than preventive, acute, and chronic care of the insured, because the uninsured are more likely to receive medical care in the emergency department than in a physician's office.

ACP-ASIM, *No Health Insurance? It's Enough to Make You Sick—Scientific Research Linking the Lack of Health Coverage to Poor Health* (1999), at <http://www.acponline.org/uninsured/lack-contents.htm>, quote from *Executive Summary*, at <http://www.acponline.org/uninsured/lack-exec.htm> (last visited Mar. 31, 2002).

71. Steven A. Schroeder, *Health Policy 2001: Prospects for Expanding Health Insurance Coverage*, 344 NEW ENG. J. MED. 847 (2001).

problem is the same as for basic medical services: lack of access because of lack of health insurance, except for persons needing emergency care. Thus, a patient with a minor medical condition and no health insurance may not be able to get care until the disease is far advanced, triggering EMTALA and access to care through the emergency room. This is neither humane nor cost effective.

There has been one significant change over the past 10 years, but it is has not been a positive one. While there has been no progress in reducing the uninsured population, many persons with health insurance found that their insurer had become a managed care organization or health maintenance organization (HMO) and was now limiting their access to hospitalization and high technology care.⁷² While most plans have limited their meddling with individual patient care, many have set global budgets for care that force physicians to ration care, or have specifically excluded various high technology treatments as experimental or otherwise outside the plan's scope of coverage.⁷³

Post-September 11 concerns with terrorism and bioterrorism have raised a new concern for the medical care system: surge capacity, which is the availability of beds, personnel, drugs, and equipment to care for a large number of sick or injured persons. Ironically, the medical system did not face this issue in the September 11 attacks because they were so effective that there were very few casualties. Nevertheless, there is a concern that a bioterrorism attack could generate a large number of infected persons. Most agents are neither uniformly fatal nor directly communicable: if the victims got effective medical care, which might include intensive care, most would survive. The federal government funded hospital bed construction after World War II⁷⁴ and the training of physicians both in medical school and residency training. As a result, by the 1970s most communities had a large surge capacity.

Unfortunately, surge capacity is expensive to maintain and its existence encouraged physicians to admit patients who might otherwise be treated outside the hospital. While there have been concerns raised about surge capacity related to influenza epidemics for many years, these did not materialize while the direct and indirect costs of what became "excess capacity" did. Both state and federal health planning efforts for the past 25 years have attempted to reduce this "excess," as opposed to "surge," capacity. Most communities have fewer hospital beds per 1,000 inhabitants than they did 25 years ago.⁷⁵ All other resources have also been reduced, and in many communities hospitals routinely refuse to accept emergency care patients by ambulance because their beds or special units are full.⁷⁶

As with basic medical services, the United States does not provide universal access to basic medical technology or to

72. Edward P. Richards & Thomas R. McLean, *Physicians in Managed Care: A Multidimensional Analysis of New Trends in Liability and Business Risk*, 18 J. LEGAL MED. 443, 446 (1997).

73. Richards & McLean, *supra* note 6.

74. Hospital Survey and Construction Act of 1946, Pub. L. No. 79-725, 60 Stat. 1040 (also known as the Hill-Burton Act).

75. Scott MacStravic, *Need New Beds? Throw Out Your Old Market Memo: Hospital Bed Numbers Have Gone From Oversupply to Imminent Shortage*, HEALTH CARE STRATEGIC MGMT., Oct. 1, 2001, at 1.

76. By closing the emergency room (ER) temporarily and diverting all patients to other facilities, the hospitals can refuse to admit ER patients without violating EMTALA. This is called going on "divert."

high technology medical services. This means that a significant number of persons are unable to obtain these services, except in an emergency. This leads to a less healthy population, which directly interferes with sustainable development, and it also poses distributive justice issues in violation of the objectives of Agenda 21. To the extent that the situation has changed over the past 10 years, access has diminished for many persons with health insurance. Concerns with caring for victims of a terrorist attack have raised questions about more effective ways to provide emergency services, but none of these proposals would affect routine medical services.

Recommendations

The problems in the U.S. public health system raise interesting contrasts with the objectives of Agenda 21 and the Rio Declaration. The core values of improved health, distributive justice, and environmental protection are the same in both documents and are also at the heart of reforming the U.S. public health system. Agenda 21 and the Rio Declaration go further, encouraging local empowerment, local democratic control, and increased legal liability. These objectives make sense for many developing countries with a history of exploitation by tyrannical rulers and the oppression of women and religious and ethnic minorities. In the United States, however, local control and legal liability have significantly limited the effectiveness of the public health system. Local control has so balkanized public health in the United States that there is no general agreement on the basic functions of public health departments.⁷⁷ Local control means that smaller communities will not have the necessary expertise for basic public health services because of the critical mass problem for professional staffing. Local control makes it much easier for interest groups to prevent public health enforcement, especially in technical areas where the general public is not well informed.⁷⁸ Legal liability has made it dif-

ficult to administer immunization programs, has limited the availability of contraceptives,⁷⁹ and has made it possible for interest groups to paralyze many public health activities.⁸⁰

Basic Sanitation

There are several interrelated weaknesses in the U.S. public health system.⁸¹ A key weakness is that the United States does not provide universal access to medical care services, yet many public health functions depend on the medical care system. For example, primary care physicians and emergency rooms are the first line for identifying outbreaks of foodborne or waterborne illnesses. Since many cases are not serious enough to merit emergency care, persons without health insurance often do not seek medical care. (Even many persons with insurance do not seek treatment because it is so difficult and time-consuming to see a physician under today's insurance system.) When infected persons do seek treatment, they usually receive symptomatic treatment without a definitive diagnosis in order to save time and money. They only receive a full diagnostic workup if they return after the treatment fails. Since most cases of foodborne and waterborne illness resolve without permanent injury, they are seldom diagnosed and reported to the health department. These problems can only be solved by solving the problem of universal access to health care.

A second flaw is that sanitation is left to underfunded and politically weak state and local health departments, rather than being overseen by the federal government. In contrast, environmental pollution is much more effectively regulated than is sanitation, with comprehensive federal laws regulating discharge, a major federal agency overseeing enforcement, and a huge private legal bureaucracy filing unending lawsuits under federal and state laws. Areas such as commercial food processing that are regulated by the federal government are subject to conflicting authority and very underfunded enforcement. The CDC is only an advisory agency and has no public health enforcement role. Congress has not passed national standards for foodborne and waterborne illness reporting and control, retail food inspection, animal control, and many other core areas of public health and sanitation. Areas such as drinking water, which are subject to federal standards, are primarily reviewed by state and local inspectors if they are reviewed at all. There is almost no private enforcement of sanitation regulations, outside of when sewage violates the CWA. Most state and local agencies do not have adequate legal expertise to even carry out basic enforcement.

For basic sanitation, the appropriate level of enforcement is the local level, but the appropriate level for standard setting, funding, and oversight is the federal level. There

77. The NIOM comments:

On the surface there appears to be widespread agreement on the overall mission of public health, as reflected in such comments to the committee as "public health does things that benefit everybody," or "public health prevents illness and educates the population." But when it comes to translating broad statements into effective action, little consensus can be found. Neither among the providers nor the beneficiaries of public health programs is there a shared sense of what the citizenry should expect in the way of services, and both the mix and the intensity of services vary widely from place to place.

FUTURE, *supra* note 8, at 3.

78. The NIOM went on to state:

Decision-making in public health, as in other areas, is driven by crises, hot issues, and the concerns of organized interest groups. Decisions are made largely on the basis of competition, bargaining, and influence rather than comprehensive analysis. The idea that politics can be restricted to the legislative arena, while the work of public agencies remains neutral and expert, has been discredited. Professional analysis and judgment must compete with other perspectives for policy attention and support.

Public health has had great difficulty accommodating itself to these political dynamics. Technical knowledge in fact plays a much more restricted role in public health decision-making than it once did, despite the fact that we now know more. The impact of politics is clearly evident in the rapid turnover among public health officials (the average tenure of a state health officer is now only 2 years); in a marked

shift toward political appointees as opposed to career professionals in the top ranks of health agencies; and in the gradual disappearance of state boards of health, which have dwindled by half (from nearly all states to 24) in only 25 years.

Id. at 4.

79. CARL DJERASSI, *THE PILL, PYGMY CHIMPS, AND DEGAS' HORSE* (Basic Books 1992).

80. Edward P. Richards & Katharine C. Rathbun, *The Role of the Police Power in 21st Century Public Health*, 26 J. OF SEXUALLY TRANSMITTED DISEASES 350 (1999).

81. For example, many of the recommendations that follow are equally valid for communicable disease control.

should be a national civil service system for public health professionals, especially those who manage health departments. This would create a career ladder to retain skilled professionals and would better protect them from the political pressures that make local public health enforcement so problematic. As with the classic Ibsen play, *The Enemy of the People*, health directors who put the public's health before politics have a short career in the United States.

Communicable Disease Control

The core problems of the communicable disease control system are the same as those for the basic sanitation system, with the added problem that communicable disease control is more intertwined with the medical care system. Very few medical care providers in the United States are knowledgeable about health and communicable disease control. Schools of public health in the United States require students to take courses in epidemiology, but not in disease control. Most of the epidemiology research is chronic disease epidemiology because that is where most of the health care dollars are spent. As a result, most epidemiology courses are taught by chronic disease epidemiologists, not communicable disease control experts. The study and management of cancer or diabetes provides little insight into the mechanisms of spread and control strategies for communicable diseases. Most problematically, chronic diseases are controlled by personal lifestyle changes and medication, not by exercise of the police power through disease reporting, investigation, and intervention.

For the past 20 years, medical care providers have been taught that the primary value in medical care services is the personal autonomy of the patient, as embodied in the doctrine of informed consent and privacy. Public health services must respect autonomy as feasible, but disease reporting, investigation, and intervention takes precedence over individual autonomy. Many medical care providers openly oppose disease reporting, and only a small percentage actually comply with the law and report listed communicable diseases. Medical care providers need to be educated about the importance of complying with public health laws. In addition, the government must address the financial pressures that make it more difficult for medical care professionals to participate fully in public health efforts.

This failure to comply with reporting laws is a symptom of the economic climate for medical practice in the United States. Whether in private practice or public clinics, physicians are under tremendous pressure to see as many patients as possible and to get them out of the office at the lowest possible cost. For example, if a patient comes in with a fever of unknown origin and some congestion in the lungs, that patient will probably be given a broad spectrum antibiotic and sent home, with no effort being made to diagnose the disease. If the antibiotic works, the patient is not seen again, and if the antibiotic does not work, the patient will come back and probably be given a different antibiotic. Even if the patient dies, there will probably be no effort to do a postmortem exam to determine the precise organism that caused the patient's death. Thus it is possible that there have been background cases of anthrax in the United States that were never detected because they were given antibiotics that treated the disease, and, if they died, it was never found out why. Before Legionnaire's disease was identi-

fied, it caused many deaths that were never diagnosed, as did the Hanta virus disease before it was identified. The United States needs to fund proper postmortem examination procedures and not leave it to the discretion of the health insurer, who has no interest in why a patient died. Every death from a communicable disease must be diagnosed. Ideally the United States would also set standards on antibiotic usage to encourage the specific diagnosis of communicable diseases and their sensitivity to antibiotics, both to identify patterns of disease spread and to limit the development of antibiotic resistant organisms.

Basic Medical Care

The great irony in the U.S. medical care system is that the only guaranteed care is emergency care. This assures that care will be received too late in many situations, and that it will always be much more expensive, intrusive, and dangerous than had it been provided either earlier in the course of the disease or as a preventive measure. Providing only emergency care also ignores one of the most important issues in community health: providing education and support to improve health habits such as better nutrition, exercise, and the cessation of dangerous habits such as smoking. It would be much cheaper, more humane, and efficient—all core values of Agenda 21—if routine care and preventive services were universally available.⁸² The problem with this has been a political and ethical one: if you provide routine care, but in doing so detect more serious illness, do you treat it? If you answer yes, then you have to provide for universal access to medical care, otherwise many of the persons you diagnose with more serious illnesses will be unable to obtain proper care.

The United States dodges this problem by not providing access to basic medical care, thereby avoiding the diagnosis of more serious illnesses that would require more than basic treatment.⁸³ As discussed above, the United States provides access to emergency medical care through EMTALA. EMTALA poses the same problem of treating conditions outside its scope, but in a less morally threatening way: EMTALA guarantees every patient who presents him or herself to a hospital emergency room a medical screening exam to determine if the patient has an emergency condition or is in active labor. If the patient does have an EMTALA qualified condition, he or she will be treated, but is responsible for paying for the treatment. As long as the treatment is offered, the hospital's duty is satisfied, even if the patient leaves rather than incur the costs of treatment. If the patient does not have a condition requiring emergency treatment under the Act, then the hospital has no duty to provide the care before assuring payment. If the patient is unable to assure payment, he or she is sent away even if a serious but non-emergency condition is found. This is seen as morally acceptable because of the limited purpose of EMTALA—assuring access to emergency care while sending patients with non-emergency conditions away is necessary because it preserves resources in crowded emergency rooms for real emer-

82. See Randall R. Bovbjerg & Frank C. Ullman, *Symposium: Health Insurance and Health Access—Reengineering Local Safety Nets*, 22 J. LEGAL MED. 247 (2001).

83. Most managed care plans do the same by making it so difficult to get an appointment with a physician that many subscribers do not bother to seek medical care unless they are seriously ill.

gencies. Politicians use EMTALA to diffuse calls for universal access to medical care, assuring the public that everyone one who needs emergency care can get it.

Solving the problem of coincidentally diagnosed conditions while providing basic medical services is very difficult, but could be handled through legislation defining a limited physician-patient relationship for special basic services clinics. Legally, this would be easiest to manage in government-run clinics that could be sheltered under sovereign immunity. A good model is the categorical clinics used for treating specific diseases, such as tuberculosis or sexually transmitted disease clinics. These treat a specific condition and do not treat other problems found at the same time. Private employer occupational medical departments have the same form of limited engagement in that they treat only occupational illnesses.⁸⁴ If they detect other conditions, their only duty is to inform the patient so that the patient can make other arrangements on his or her own. Of course this recommendation is based on the assumption that the United States is unable to provide universal access to medical care. And while such basic services clinics are inferior to universal access to medical care, they would dramatically improve access to medical services for the uninsured and for many who have limited health plans. This would improve health and productivity and serve distributive justice, thus bringing the United States closer to compliance with Agenda 21 goals for basic medical services.

High Technology Medical Care

There is one dominate problem for both low and high technology medical services: access. The current system in the United States is based on voluntary employer-funded health insurance. This has two significant effects on sustainable development. First, as discussed previously, it limits access to medical care, which results in a less healthy workforce and is a violation of basic principles of distributive justice. Second, it distorts economic development because it is a regressive tax on entry level and low-wage jobs. Within broad limits, health care costs are independent of salary, so that the cost of providing health care benefits may be a 50% or more surcharge on a full-time minimum wage employee, and much more on part-time workers. This regressive task distorts labor markets, which makes sustainable development more difficult to achieve and disproportionately harms low-wage earners.

Even during the record economic good times of the 1990s, there were only tiny improvements in access to health care, and new reports indicate that employers will cut insurance as the economy cools. Limited access to medical care is one of the most serious and intractable problems in the United States. It has terrible distributive justice implications, but it also has direct effects on economic development

in rural and inner-city areas. To the extent that it undermines public health services for the control of communicable diseases, it also poses risks to the insured population.

From the perspective of sustainable development, universal health insurance improves both individual health and the health of the population, which is good for development, and, theoretically, might reduce projected incremental costs as preventive services improve. There are also pure economic benefits. U.S. businesses compete with businesses throughout the world who do not have to pay for medical care costs out of corporate dollars. This may be because they are in the developing world, which has no health insurance, or because they are in developed countries that pay for health care from general taxes.⁸⁵ Shifting insurance to the government would also strengthen one of the most important advantages of the U.S. labor market—the ability to reallocate personnel to different jobs and companies as market conditions change. Decoupling health insurance from employment would increase labor flexibility. This linkage, which also includes pensions, drives companies to replace employees with contingent workers, who have no benefits at all and either must overpay for medical insurance or go without.

Conclusion

The U.S. public health and medical care systems do not serve the public effectively. This interferes with sustainable development in many ways, both through direct effects on the economy and through furthering an unjust society in contravention of Agenda 21 and the Rio Declaration. Ironically, the greatest impediment to reform is the general effectiveness of the system and powerlessness of those who are most marginalized in it. The greatest impediment to reform is public apathy. While the public clamors for the latest breakthroughs in pharmaceuticals and high technology medicine, there is little public support for a better public health system. To some extent this is due to ignorance—many people do not realize that they are endangered by ineffective disease control programs, even when the disease is as deadly as HIV. As the population increases, especially as urban crowding increases, the risk of disease and the problems of access to medical care will increase as well. Since the Rio Earth Summit, access to emergency care has been reduced significantly in urban areas, making it more difficult for the uninsured to get care in even the most serious situations and making it difficult for those with insurance to get true emergency care because so many emergency rooms are closed. The United States deserves a better public health and medical system, one that is consistent with the objectives of sustainable development and one that will both protect and empower all members of the society.

84. EDWARD P. RICHARDS & KATHARINE C. RATHBUN, *MEDICAL CARE LAW* (Aspen Publishers 1999).

85. This is a little simplistic. Government-mandated benefits in a few countries such as Germany are so expensive that German companies see the United States as a cheap place to open factories. Jay Reeves, *First Mercedes-Benz Plant in U.S. Near Completion*, CHATTANOOGA TIMES, Jan. 27, 1996, at A14.