The Heart of the Precautionary Principle in Democracy

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The cornerstones of the precautionary principle—transparency and inclusiveness of decision-making, action in the face of uncertainty, and accountability—are fundamental, not only to the practice and science of public health, but also to the success and maintenance of democracy. Both public health and democracy flourish when information is broadly disseminated and understood, when principles, benefits, and costs are publicly debated, when decision-making is shared by those affected by the policies, and when public interest is seen as more valuable than private gain. Both are diminished when information is withheld and data twisted, when the terms of the argument predict its outcome, when actions to protect and advance the health of the public are defeated by small private interest groups, and when government gives equal weight to corporate interests as to public well being. In the case of the public health debate, the danger is increased with the deification of a skewed view of science.

The precautionary principle, which says that action should be taken when there is evidence that not to do so would cause harm, is being used increasingly to shape policy in Europe and elsewhere. Decades—sometimes centuries—before the understanding of germs, bacteria, viruses, infection, and immunology, leaders in public health improved health by implementing policies that were later supported and explained by an advanced understanding of basic science. The precautionary principle *is* based in science, in the two branches of science central to public health: epidemiology and bio-statistics. It is no coincidence that so many contributors to this special topic issue of *Public Health Reports* have cited the model and experience of John Snow. The branch of science that he established has laid the foundation for the greatest improvements in health in mankind's history. Now, instead of developing policy to improve health and protect the public based on these proven scientific methodologies, proponents of an activist public health are fighting a rear-guard action to protect the cornerstones of public health. Where opponents of an activist public health agenda, which includes the implementation of the precautionary principle, have succeeded is in having health science narrowly defined in terms of laboratory science, physiology, and biochemistry. This limited definition ignores the breakthroughs in occupational safety, environmental science, maternal and childcare, infection control, sanitation, and behavioral

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health that preceded the advanced developments in bacteriology, immunology, and genetics.

This is not to denigrate the more recent sciences or curative methods; it is to remind us that we have many tools, many means at our disposal. From Hippocrates to John Grisom to Henry Bowditch, leaders in public health and medicine admonished their followers and the public to look at environments and behavior, to construct healthier housing and schools, to have clean water and air, to think more about prevention than about cure. We should use all methods that discern patterns, cause and effect, and determinants of health. To ignore the evidence of epidemiology and bio-statistics is to compound error through inaction. And inaction in the face of preventable disease is unacceptable.

Why are we at this apparent impasse and what can we do about it? We must face several issues—raised in these articles and elsewhere—that appear to thwart the adoption of the precautionary principle for public health. One is the misunderstanding about what is and what is not science, and here public health must reclaim and reassert the importance and worth of its basic sciences. But the other impediments say as much about the beliefs of our society and the stage of our democracy as they do about public health, and those battles must be joined to others.

First is the issue of transparency, the information available to the society as a whole, and the truth about the benefits of decisions to act or to not act. There are many dilemmas here; often, the source of facts and information are the very industries or interests who oppose action. We have seen this with the tobacco, lead paint, petroleum, pharmaceutical, and asbestos industries, whose control of information, doctoring of studies, support for biased research, and suppression of information have made it impossible for the public and independent analysts to share in unbiased information. From the auto manufacturers who, 40 years ago, knowingly and willfully produced cars that killed to those manufacturers who, two years ago, utilized defective tires that killed, the ability to withhold information is powerful. From drug manufacturers who contract the right to suppress research studies critical of their products to those who blatantly report false findings, the ability to publish untruths and half-truths in peer-reviewed journals is destructive of the public's capacity to make informed judgments. But that control of information is exacerbated when public bodies and the fourth estate abet the misinformation. The dismissal, banishment, or even punishment of critics and whistle-blowers within public agencies or government contractors makes it hard for the public to gain access to dissenting views. When private interests, such as the gun lobby, promote congressional bans on gathering and publishing information, or when administrators "gag" employees critical of pro-industry policies, it becomes virtually impossible for the average citizen or even institutions to gather that information themselves.

The lack of data and information is often an excuse for inaction in the face of real harm. If one of the hallmarks of our democracy is inclusiveness of decision-making, then the ability of a handful of powerful interests to deny the existence of critical information, or to hire apparently objective experts without revealing those relationships, is destructive to the interests of both public health and democracy. Inclusion also means the consideration and costs of a *full* range of alternatives, which must also mean a full range of the societal, long-term, and non-direct costs of inaction. In the face of overriding evidence, not only of global warming, but also of the health, environmental, and ecological costs of inaction, our society still does close to nothing while opponents of action divert us with both fantastic consequences of action, and self-serving and unique theories on the nature of the universe. When three petrochemical scientists, supported by the industry, are invited to appear before a congressional committee to argue that global warming is a myth, and the 300 leading, award-winning scientists urging our nation to take strong, aggressive action on the issue are ignored, the entire notion of transparency and inclusiveness is moot.

Action in the face of uncertainty—a third element of the precautionary principle—is both its most vulnerable and intellectually most important one. The other three may be morally more important, but to admit that we do not have, and may never have, all the evidence we would like is to engage in an intellectual quest that underpins public health. To the modern observer, insisting that doctors wash their hands between patients seems not just obvious, but also benign. But without the "evidence" that was to come much later, this request seemed to many baseless, and the opposition came from men of science who wanted hard proof of cause and effect, not just an accumulation of observation and relationships. Practice changed before bacteriology would "prove" the reason for doing so, but the better our laboratory and diagnostic science, the harder it seems to accept the fact that we should act in the face of uncertainty. For example, the relationship between air pollution and pulmonary disease seems so clear to anyone working with communities subject to inordinate pollution. But if we don't measure certain particulates, if we don't yet see the physiological change, then lack of transparency and

lack of certainty can lead to inaction. However, if we take to heart the requirement of doing no harm, also quoted widely in these articles, we are moved to make the logical decision to act.

This brings us to the fourth cornerstone of the principle, accountability. It is here that our society has the most to overcome. Too much of our inaction in the past and the present is because we have implicitly decided that some risks are easier for our society to bear because they fall disproportionately on the poor, on workers, on people of color, on our soldiers, and on the people of other countries. Also, our inaction is because we have implicitly decided that the costs are too much to bear when they fall on corporations, the wealthy, and the politically powerful.

The articles in this issue, with case studies ranging from silica and lead to tobacco and anthrax, from Agent Orange to the blood supply, bear this out. For years, in the face of overwhelming evidence from neutral sources, harmful products and practices were allowed to continue while a great many people sickened and died. We need, as a nation, to examine what it is that allows this to happen again and again, but we also need to incorporate the elements of the precautionary principle, whether or not we make it a national policy.

The courts in our nation are an important part of policy-making, but to rely on them is to obviate our ability to make decisions in the face of uncertainty. To rely on them is to relinquish responsibility for including the public in the more meaningful way that is the basis for democracy. If we had true transparency and inclusiveness in decision-making, and true accountability and responsibility, we would have the public understand the basis for decision-making and participate in making decisions in the face of uncertainty. The series of surgeon generals' reports on tobacco and smoking over the last four decades is instructive. The evidence has been mounting for centuries on the harm done by tobacco, but certainly by the first Surgeon General's Report, it was overwhelming. Yet, other than increasingly serious warnings on cigarette packages, restrictions on advertising won through a lawsuit, and some restraint on sale to minors, not much changed in 40 years. It took leaks of information, an incorruptible whistle-blower, and indignant attorneys general from states whose health care budgets were ballooning, to force a major change in policy. As welcome as this was, it is a sorry and inefficient way to make policy. And we must admit the changes in the tobacco industry are not half of what could and should have been made if the health of the nation were the guiding principle in decision-making.

Instead, as one of this issue's authors so clearly states, our guiding principles are very different: industry has the right to produce what it will; products are assumed safe until proven otherwise under a system that makes it almost impossible to prove; private profit is more of a right than the right of society as a whole to have healthy conditions; and public health is a narrow interest while private industry represents a broader public good.

These are dangerous principles—dangerous to our health and dangerous to our society. It is not a sin, nor is it surprising, that private industry puts profits before health; it should not shock us that they go to extraordinary lengths to protect their ability to manufacture and sell, unfettered by *any* interference by government. We have been shocked when they have lied, cheated, and broken the law; we have been surprised when they have shown a total disregard for life or health, but we would be naïve to think that their interests lie with society's as a whole. The recent outrage at corporate greed has not been because they put profits before people; it has been because they did not obey even the rules of corporate finance and reporting. To correct the latter will not address the former. It is the role of public health and of government to seek and protect the greater good. That is at the heart of the precautionary principle, and at the center of our democracy.