Ethics and the Underpinnings of Policy in Biodefense and Emergency Preparedness

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Given that, globally, health professionals' involvement in crises—especially complex crises where human action plays a contributing role—has risen to new proportions,[1] emergency preparedness is an increasingly integral capacity of health systems. As the United States has come to see itself as vulnerable to violence, its leaders have begun to reorganize the country's health system around protection from terrorism and other health emergencies, upholding this as an essential element or "indispensable pillar" in their strategy for securing the homeland.[2] Biodefense and emergency preparedness have thus come to capture the energies and expertise of nearly all health professionals and, increasingly, to define the specific ends that organize their work.[3]

Here, I describe current initiatives in biodefense and emergency preparedness and argue that we should take care to shine the moral light on the epistemological commitments and assumptions about social life and the terms of social cooperation that shape these efforts. Specifically, I show how the policy surrounding biodefense and emergency preparedness emerges from flawed models for understanding present threats to public health and, with its particular conception of social relations and cooperation, raises profound ethical implications for the organization of society and health systems as well as for health professionals.

The current emphasis on biodefense and emergency preparedness also provides an excellent focal point for efforts to explore the relationship between epistemology and ethics and to help advance conversations about public health ethics. Most discussions have focused on which one of several candidates offers an ideal theoretical framework for public health. Yet if the field is to embrace an ethical identity, there is groundwork to do in epistemology.

The Makings of Biodefense

Health systems are teleological in that all energies and attentions are organized around a particular end: a healthy public. Erected on a "national vision of the role of public health as protector of the entire community (against pathogens that could attack anyone),"[4] biodefense and related emergency preparedness initiatives are based on the presumption that the country faces certain violence and disorder from acts of terrorism.[5] Securing protection from harm is the reigning purpose of social organization and cooperation on this scheme.

This is essential, some say, because the United States does face serious health threats from chemical, biological, and other weapons. From this per-

The author thanks Lisa S. Parker and members of the Duke University–University of North Carolina at Chapel Hill Bioethics Forum for their helpful comments on earlier versions of this essay.

Cambridge Quarterly of Healthcare Ethics (2005), **14**, 306–315. Printed in the USA.

spective, failure to prepare would "constitute a massive malpractice error of omission on the part of public health and medical authorities" (p. 719).[6] Health promotion enters in as a secondary aim. Proponents argue that emergency preparedness initiatives will lend strength to the public health infrastructure, enhance our understanding of the human immune system, and advance capabilities to address toxicologic disasters and new or reemerging natural infectious diseases.[7]

Few dispute that attention to bioterrorism and other health emergencies is justified. Still, many ethical challenges have been raised in response to the emphasis on biodefense and emergency response. Critics have taken issue with the proportionality of current efforts and lamented cuts on crucial fronts of public health.[8] Questions about the ethics of research under the threat of bioterrorism, and in the wake of emergency the allocation of resources in crisis, and acceptable limits of public health paternalism have generated vitriolic discussions.[9]

Yet it is also worth exploring more basic underpinnings, or underlying assumptions of emergency preparedness policy, for what they reveal about its architects' model of knowledge seeking and their conception of social organization. In particular, how might we describe the epistemic orientation reflected in these protectionist health policies? What conception of society—of relationships and social cooperation—prevails under such policy initiatives? And what, most importantly, are the ethical implications—for the public, the health system, and health professionals—of these guiding philosophical commitments?

Epistemological Leanings

It is possible to describe key elements of the quest to quell terrorism that, combined, reflect a distinctive epistemic orientation. A first feature is that knowledge seeking aims at control or, at minimum, containment of terrorist-induced or other health emergencies. As well, the epistemic stance that gives us biodefense identifies biological pathogens or other toxins unleashed by "evil" intruders or "small groups of fanatics"[10] as the cause of the "extreme events"[11] it hopes to control. Control and/or containment can be obtained, on this model, through integrating military, scientific, and medical means.

Health professionals' efforts in recent months serve as the best evidence of this epistemic disposition. Many find themselves working to secure funding from the "war chest" set aside by the federal government for research on biological pathogens and medical countermeasures.[12] Public health agencies, academic health centers, and physician specialists have organized task forces and defined competencies for readiness and have established protocols for emergency response.[13] Education in emergency preparedness—with emphasis on bioterrorism and weapons of mass destruction—currently constitutes part of the preferred curriculum for medical students and other health professionals in training.[14] Many health professionals have found themselves serving as participants in (highly controversial) studies of the smallpox vaccine.[15] Some are redesigning public health statutes and forging new links with law enforcement,[16] whereas others are reconstituting economic and strategic relationships between the nation's health system, government, and the pharmaceutical and biotechnology industries.[17]

Social Organization and Cooperation

Delving still deeper, we find that the architects of biodefense combine this

epistemic disposition that aims at control or containment of calamities with a specific conception of social life and social cooperation. To the extent that its primary organizing principle is security, the nation stands in a defensive posture, with leaders organizing its political, economic, and other capacities around preparing for future acts of aggression. The need for protection under this defensive posture has even been offered as a justification for taking preemptive aggressive action.

Protection from outside aggressors is central to this scheme. Yet also important is protection from members of the state who might threaten to undermine security. A second assumption, then, is that social relationships are construed as presumptively hostile and shaped by suspicion. Repeated emphasis on the threat of "deliberately introduced pathogens"[18] and requests for citizens to report on suspicious activities, for instance, reveal the hold that this view of social relations has in the current context.

A third feature of protectionist schemes is that those who benefit from living in a protected society do not need to give explicit consent to the terms of social cooperation or to any measures deemed necessary by those who provide protection in exchange.

How rich is the epistemic orientation that yields biodefense and related emergency preparedness initiatives and upholds them as priorities for public health? How well does the conception of social life and cooperation reflected here fare under closer ethical scrutiny?

Rethinking Ties between Terrorism and Health: Social Epidemiology and Ecological Knowing

Contemporary work in moral epistemology and social epidemiology can give guidance in these policy inquiries. Social epidemiology and, in particular, ecosocial theories in public health integrate biological and ecological analysis and understand health and disease as being, to a significant extent, socially produced. That is, they understand population health and well-being as biological expressions of social relations. They also take it as given that social relations influence our understandings of biology and health and our constructions of health and disease.[19] Key elements include a focus on how we biologically incorporate the material and social world and how this—which is also tied to exposure, susceptibility, and resistance—is shaped by social relations of power and patterns of production, consumption, and reproduction. Analysis of these interrelationships occurs at all levels—individual, group, and international.

These approaches are critical of and aspire to replace epistemological models that aim to isolate parts of nature and that serve to obscure "the constitutive part played by multiple and complex interconnections" (p. 9)[20] models that are deemed reductive and mechanistic. Modern medicine, and more recently public health—with its molecular turn—provide ripe environments for a reductionist approach to understanding and responding to terrorism and other health threats. Yet according to ecosocial theorists in moral philosophy and public health, richest in explanatory power are epistemic models that move back and forth between diverse subject areas, histories, and relationships (biological, social, economic, political), studying complex interactions among them and resisting simplistic, singular accounts of causation and control. This epistemological orientation has been described separately by one contemporary moral philosopher as "ecological knowing."[21] The approach underlying emergency preparedness

policy, in this view, represents a methodological myopia if not an outright retreat from advances in public health and moral epistemology.

Another notable feature of this disposition is that it reckons explicitly with the influence of knowers' surrounding social context and relationships, especially with the subject of inquiry. Stated differently: a knower's "situation is not just a place *from which to know*. . . . Situation is itself a place to know whose intricacies have to be examined for how they shape both knowing subjects and the objects of knowledge" (pp. 10–11).[22] From these models, a quite different picture emerges from the one that focuses principally on eradicating or mitigating damage wrought by catastrophic events brought on by angry intruders.

Rendering the richer assessment available from an ecological model, Vandana Shiva argues that "[t]he war against terrorism will not contain terrorism because it does not address the roots of terrorism" (p. 160).[23] She suggests that understanding and responding to terrorism calls for attending closely to the relationships between global economic structures that contribute to insecurity about systems of production and jobs in many countries, weakened democratic structures and processes, the erosion of cultural identity and political freedoms, and the "reactions" of "angry young men." In her view, "'*the ecology of terror*' [emphasis mine] shows us the path to peace. Peace lies in nourishing democracy and nurturing diversity" (p. 160).[24]

This epistemic orientation, then, would call for policy initiatives that aim to understand and address the social and political determinants of the health threat represented by terrorism. Such initiatives would reflect a deep understanding of the relational nature of terrorism, that is, the relationships between affluent nations such as the United States and those who would do them harm.

Notable too is the link between this epistemic disposition and a model of social cooperation that sees people as situated or embedded in relationships of various kinds (biological, cultural, social, economic, and political) and centers around cultivating and nurturing these. The end of social organization and cooperative efforts in this scheme is enhancing the capacities of people everywhere—above all the least advantaged—to determine their actions and the conditions of their actions and to flourish in conditions of relative equality. The promotion of social justice is the proper role of public and other health professionals in resisting terrorism and protecting and promoting health more generally.

From the perspective of methods in social epidemiology and work in moral epistemology, then, the epistemic orientation underlying emergency preparedness policy is reductionist in generating assessments of what threatens public health and, in turn, narrowly targeted scientific, medical, and technological fixes. The accompanying understanding of the terms of social cooperation presents a narrow and distorted view of social relations and the ends of social organization. All told, in this analysis it appears that current approaches fail to generate an adequate account of the terrorist threat and an effective health policy response. It also seems there are troubling implications for justice in a global context.

Concerns of social justice arise on the domestic front as well. Under the influence of this epistemic disposition and conception of the ends of social cooperation, resources stand to be diverted from urgently needed prevention and health promotion endeavors, from already underresourced hospitals, nursing, and other health professional shortages, and from the growing

population of underinsured or uninsured. Early evidence suggests that this is not mere conjecture.[25] Biodefense and spending for emergency preparedness, therefore, could serve to undermine the nation's health and perpetuate or worsen health disparities.

The evolving relationship with military and law enforcement officials and the mingling of objectives from these divergent fields under the current policy are other areas of mounting ethical concern. Allegations about how the FBI and military officials' secrecy may have hindered the CDC's investigation and, in turn, the swift and effective response to the anthrax-laced letters are especially poignant examples.[26] Most recently, health professionals have found frustration with Department of Defense officials over a study on the anthrax incidents that was censored for 2 years—and that is still not available in its entirety—on the basis of national security.[27] Feeling thwarted in their capacities to uphold their commitment to protecting the public (and themselves) in environs increasingly organized around national security is thus a major form of ethical distress facing health professionals.

The integration of health protection and promotion with law enforcement and national security creates particular tension for health researchers. Involvement in biodefense-related research—which has seen an increase in resources from $53 million in 2001 to $1.6 billion in 2004—is seen by some as compromising their commitment to health promotion. They worry that work aimed at "security" and carried out under the guise of biothreat agent analysis and assessment ultimately constitutes participation in an arms race and may ultimately violate hard-won international agreements like the Biological Weapons Convention.[28] Allied with the criticism that the prevailing epistemic model fails to generate an adequate account of the origins of terrorism and effective response strategies, there is concern that research aimed at national security may ultimately heighten the risks of harm to public health.

Liberties figure prominently among the ethical ideals at stake in the unfolding of emergency preparedness policy. Recall that a third assumption concerning the terms of social cooperation in protectionist states is that those who benefit from living in them do not need to give explicit consent to the emphasis on security or to any measures deemed necessary by those who provide protection in exchange. These can include sacrifices of liberty. Reflection and debate here, for example, can become construed as expressions of ingratitude and, at worst, harmful impediments given the apparently imminent nature of the threat.

There are surely several examples we might draw from. Yet this view manifested itself most clearly in debates regarding the smallpox vaccination program. Some supporters expressed contempt for those who raised questions about or rejected it altogether. There are, they argued, "moral and medical reasons to deplore the decisions of physicians and hospital officials who opt[ed] not to participate. . . . Their job is not to assess intelligence risks or second guess public health officials."[29]

Such contempt serves to undermine the ideals integral to a liberal, pluralist society, chiefly the right to protect one's bodily integrity and free expression. The willingness to stifle debate and defer to "experts" in authority also shows disdain for entertaining alternative positions that could help generate knowledge that contributes to policy.

Finally, at times the call to support biodefense and emergency preparedness initiatives has even taken on reli-

gious dimensions. Take the following remarks by President Bush to first responders in South Carolina:

> You know, the evil ones hit us. . . . We knew they were evil. . . . [W]e will stand squarely in the face of the evil ones who did not understand . . . who they were attacking. Out of the evil will come a more lasting peace if we're tough and firm. And out of the evil will come . . . renewal.[30]

It thus might seem that the terms of social cooperation include particular religious commitments.

Invoking religious concepts to some suggests that an emergency preparedness emphasis in public health has divine sanction and is thus necessary and inevitable. Beyond suggesting that there is no need for discussion and debate—a subtle but salient suggestion that could threaten free expression and democratic debate—it can communicate a message that to engage in this would constitute not just ingratitude, but a blasphemous affront. Such appeals are also troubling from an ethical perspective for their associations of religious ideals with public health, a field rightly free in a secular state from religious affiliation.

After exploring its epistemic commitments and assumptions about social life and social cooperation, biodefense and emergency preparedness policy initiatives seem ill suited to understand and address terrorism and other threats to health and quite likely to compromise critically important ethical ideals. The epistemic models and conceptions of social cooperation found in social epidemiology and contemporary work in moral philosophy—described by some in terms of "ecological knowing"—are better equipped to generate justified true belief concerning the nature of terrorism's threats and health policy that is more ethically defensible.

These conclusions suggest a need for vigorous debate on the course of current policy.

Reckoning with the Need for Emergency Response

Although we should strive to design policy that gets at "the roots" of terrorism and that has greater potential for promoting ethical ideals (or at least less likely to tarnish them), it will still be necessary to enlist health professionals in emergency preparedness. Although decisions on the proper definition of "readiness" must continue, current evidence suggests that protective equipment, personnel, facilities, and information on past experiences with bioterrorism are lacking.[31] This presents great concerns for health professionals, especially those who would serve as first responders, given pervasive expectations that they come forward to serve in a crisis. Indeed, along with (at times religiously inspired) calls from the nation's leaders, legal obligations and ethics codes compel health professionals to confront danger.[32]

It appears that requirements and entreaties for health professionals to face the grave dangers presented by bioterrorism or weapons of mass destruction fail to meet the ethical principle of proportionality. The expertise of health professionals would bring great benefit to public health in a disaster. But absent adequate resources, health professionals' capacities to protect their own bodily integrity in a crisis is severely impaired. This in turn poses serious risks for the public's health.

Taking a broad view, sustained financial support for strengthening the health system and its personnel has not been a priority for policymakers. This has contributed to an overburdened health system and an inadequate

pool of available health professionals as well as difficulties in recruiting.[33] Along with these largely economic concerns, social norms greatly undervalue caregiving work. This is now widely acknowledged by advocates for emergency preparedness policy. Yet expecting that health professionals will face danger for the sake of others without sustained financial support for the public health system and long-term, definitive strategies for shifting social norms toward heightened respect for caregiving risks exploitation. Even if they agree to heed the call to come forward in crises, with a weakened health system there can be little assurance that their efforts would prove effective.

Conclusion: Epistemology and Applied Ethics

The ethical implications of various choices for policy and practice can only be fully appreciated when we scrutinize the origins of social policy—its underlying epistemological orientations and understandings of social life. I have considered only one example, yet one might imagine how keen attention to epistemic concerns would strengthen our capacity to understand and respond more effectively and ethically to other contemporary challenges. The opportunity for moral engagement comes in exploring relations between social and institutional norms, assumptions, and processes—above all those involved in the pursuit of knowledge—and ethical (or unethical) practices and policies in public health. The critical point for conversations in public health ethics, then, is to recommend that the field explicitly embrace an epistemological orientation that serves to enhance rather than undermine understanding.

Among the usual suspects for a guiding ethical framework in public health—principlism, communitarianism, virtue ethics, social justice, and human rights[34]—social justice is most compatible with social epidemiology's methods and moral epistemology's "ecological knowing." A full defense of this claim is beyond my scope here. Yet a conception of social justice that shines the moral light on social and institutional norms and processes and economic structures to determine how these shape people's capacities for development and self-determination and equality holds promise in this respect. It rests on similar conceptions of persons, social relations, the ends of social organization, and moral reasoning. Indeed, moral reasoning in this conception of social justice devotes attention to particularity or contextual features (and relationships among them) that function to enhance or undermine people's prospects for achieving this and other ethical ideals in the course of a good life. Such approaches seem best disposed to generate a richer understanding of the social realities that public health interventions should address and produce policy that is ethically defensible. Future work at the intersections of epistemology and ethics in public health is surely warranted.

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