

In the Wake of Terror

Medicine and Morality in a Time of Crisis

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Triage in Response to a Bioterrorist Attack

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Bioterrorism and Triage

In a letter dated August 30, 2001, and read before the U.S. Senate Committee on Foreign Relations on September 5, 2001, Joshua Lederberg (2001b, 6), a Nobel laureate, focused on the threat of biological warfare; that is, "use of agents of disease for hostile purposes." Noting that up to a dozen countries have developed such a capability, he further observed:

Considerable harm could be done (on the scale of, say, a thousand casualties) by rank amateurs. Terrorist groups, privately or state-sponsored, with funds up to SI million, could mount massive attacks of 10 or 100 times that scale. Important to keep in mind: if the ultimate casualty roster is 1,000, there will have been 100,000 or 1,000,000 at risk in the target zone, legitimately demanding prophylactic attention, and in turn a draconian triage. Several exercises have given dramatic testimony to how difficult would be governmental management of such incidents, and the stresses on civil order that would follow from inevitable inequities in that management.ⁱ

Among numerous difficult issues that such bioterrorist attacks raise are several ethical ones, particularly those surrounding draconian triage in light of the limited surge capacity of the health care system, including public health and medical care. One question is whether inevitable inequalities in access to

medical resources in any system of triage, rationing, or allocation in response to a bioterrorist attack are necessarily, as Lederberg suggested, inevitable in the sense of injustice and unfairness. Justice in its formal sense requires that *we* treat equals equally and similar cases similarly, and fairness at a minimum requires impartial treatment. Unless triage, rationing, and allocation are always unjust and unfair, a claim that is implausible, the critical ethical question concerns which material criteria of justice are defensible. If formal justice requires treating similar persons in a similar way, it is essential to determine which similarities (and dissimilarities) are morally relevant, and this is the function of material criteria. Different theories of justice in general and in relation to specific problems, such as rationing health care, identify different properties or characteristics as relevant and allocation that befits those properties or characteristics (Beauchamp and Childress 2001).ⁱⁱ

Two policy analysts note:

Earlier, policymakers spoke of the general problem of allocating scarce medical resources, a formulation that implied hard but generally manageable choices of a largely pragmatic nature. Now the discussion increasingly is of rationing scarce medical resources, a harsher term that connotes emergency – even war-time – circumstances requiring some societal triage mechanism. (Rettig and Lohr 1981)

This comment focuses on problems of distributing health care in the society at large, but it applies with particular force to distributing various kinds of health care, for example, vaccines, prophylactic measures, therapy, and supportive care, after a bioterrorist attack. Rationing and triage do seem harsher than allocation in ordinary discourse. But even a rigorous distributional system, which may seem harsh and even draconian, may not be unjust and unjustified by utilitarian or egalitarian approaches. Some ethicists favor the “more neutral and descriptive language of patient selection” (Kilner 1990, xi). However,

I focus here on the model of triage, because it is commonly used, widely discussed, and perhaps the most instructive, but I also use the language of rationing, allocation, distribution, and selection, as appropriate.

“Triage,” a French word meaning sorting, picking, grading, or selecting according to quality, was first applied in English (as early as 1717) to separation of wool by quality and later to separation of coffee beans into three classes: best quality, middling, and triage. The last class, consisting of bad or broken beans, was the lowest grade. The French under Napoleon developed a system of sorting casualties in war, but did not call it triage until later. Triage in war implied giving the worse-off, rather than the best-off, priority (within limits). In the U.S. Civil War, treatment was usually provided in turn without regard to wounded soldiers’ specific conditions. However, in World War I, the U.S. Army adopted the idea of a sorting station from the French and the British armies as well as the term triage, which, by World War II, was not as widespread as the term sorting. One statement of U.S. military policy is that triage-sorting

implies the evaluation and classification of casualties for purposes of treatment and evacuation. *It is based on the principle of accomplishing the greatest good for the greatest number of wounded and injured men in the special circumstances of warfare at a particular time.* The decision which must be made concerns the need for resuscitation, the need for emergency surgery and the futility of surgery because of the intrinsic lethality of the wound. Sorting also involves the establishment of priorities for treatment and evacuation (emphasis added; Rund and Rausch 1980, 9).

Similar formal policies have been adopted for civilian disasters, such as a nuclear disaster and earthquakes. As a result of the great increase in emergency rooms, hospitals established triage systems in the early 1960s to facilitate treatment of emergency patients. In such systems, a triage officer quickly assesses the patients’ needs as immediate (posing threat of death or serious physical impairment if not treated immediately), urgent (requiring prompt but not immediate treatment), and nonurgent, or in a more complex

five-category system as life-threatening, urgent, semirurgent, nonurgent, and no need for care.ⁱⁱⁱ

Thus triage largely refers to particular systems of allocation or rationing but is not equivalent to allocation, rationing, or distribution in general. As a specific system, triage sorts or grades persons according to their needs and probable outcomes of interventions. In its more formal developments, it classifies persons according to set categories. Furthermore, medical triage is a form of allocation or rationing under critical or emergency circumstances, where decisions must be made immediately about particular patients because some of them probably have life-threatening conditions and not all of them can be treated at once.

Utilitarian and Egalitarian Approaches to Triage

Medical and Social Utility

Triage is one way to ration health care when caregivers cannot meet everyone's needs at the same time and to the same degree. Systems of triage, whether informal or formal, all have an implicit or explicit utilitarian rationale – they were designed to produce the greatest good for the greatest number by meeting human needs most effectively and efficiently under conditions of scarcity. They are designed to satisfy the formal criterion of justice – to treat similar cases similarly and equals equally – and their material criteria for distribution, at a minimum, focus on patients' needs and/or probability of successful treatment.

Those who deny that triage has a utilitarian rationale fail to distinguish *medical utility* from *social utility*. And those who recognize but reject utilitarian triage often ignore this

distinction too (see, for example, Baker and Strosberg 1992). In addition, critics may fail to see that utility is one important principle alongside several others, that it merits serious consideration at every point, and that, in certain forms, it is compatible with egalitarian approaches. Indeed, there is a *prima facie* moral duty, although not an absolute one, to produce the greatest good for the greatest number, subject to other moral limits and constraints.

In its simplest formulation, the principle of utility requires that we assess actions, practices, and policies according to whether or not they fulfill this duty. In medical utility the relevant population includes only those who currently have medical needs or are at risk for such needs. Allocation decisions that seek to maximize the welfare of that population compare respective needs and probabilities of benefit of different parties in order to do the greatest good for the greatest number.

If triage is understood as the classification of persons in need or at risk in order to satisfy medical utility, assigning priority to the best off or the worst off or some mix should depend less on principle than on the technologies, and when, if ever, additional resources can be expected. For instance, what can and should be done for persons who have been exposed to or are at risk of exposure to different biological agents will vary from context to context.

Pesik, Keim, and Iserson (2001, 644) identified several factors that they believe should and should not be considered in rationing scarce resources in response to a terrorist attack. All of the criteria they proposed involved medical utility, but one also involves (narrow) social utility, whereas the criteria they oppose mainly involve (broad) social utility. Their list is generally sound, but it neglects some important social

functions or special responsibilities that may merit attention and priority in the event of a bioterrorist attack.

<u>Should Consider</u>	<u>Should Not Consider</u>
Likelihood of benefit	Age, ethnicity, or gender
Effect on improving quality of life	Talents, abilities, disabilities, or deformities
Duration of benefit	Socioeconomic status, social worth, or political position
Urgency of the patient's condition	Coexistent conditions that do not affect short-term prognosis
Direct multiplier effect among emergency caregivers	Drug or alcohol abuse
Amount of resources required for successful treatment	Antisocial or aggressive behaviors

Degree of need and probability of success, particularly the latter, have been featured in triage systems based on medical utility. The relevant and morally justifiable material criteria in the context of a terrorist attack include likelihood of benefit, effect on quality of life, duration of benefit, and urgency of need (Pesik et al. 2001). Another criterion focuses on the amount of resources required; this is what others sometimes call the principle of conservation (Winslow 1982, 73-76, 142-143). “The likelihood of benefit using minimal resources takes precedence to maximize the efficient use of scarce medical supplies” (Pesik et al. 2001, 644). In short, “practitioners must prioritize intervention to those who will benefit most from the fewest resource” (Pesik et al. 2001, 644). Their criteria and their concentration on probable benefit with the fewest resources are justifiable within a framework of medical utility in response to a bioterrorist attack.

More problematic, however, is their claim that this formulation “widens the scope of patients for whom medical intervention is deemed futile” (Pesik et al. 2001, 644). It is a

mistake to use the language of futility to characterize a judgment made on the basis of medical utility. Medical interventions should be deemed futile only when they cannot be performed because of the patient's condition, would not produce a physiological effect, or would not produce benefit (Beauchamp and Childress 2001, 133-35, 161-62). When medical interventions are denied to particular individuals in order to provide them to others who have a higher probability of benefit with use of fewer resources, that is a matter of utility, not futility. Those interventions would not necessarily be futile for individuals who do not receive them; rather they are unjustifiable in the system of utilitarian triage as long as resources are limited. Describing such a triage system as widening the scope of futility ignores the harsh reality and invites self-deception.

Another criterion that Pesik and colleagues propose is “direct multiplier effect among emergency caregivers.” Even though it seeks to maximize medical utility, it is also a criterion of (narrow) social utility, because it assigns priority on the basis of a specific social function. It is important not only to distinguish medical utility and social utility, while recognizing that they may overlap at points, but also to distinguish two types of social utilitarian judgments: narrow and broad social utility.

Triage has often included social utility, as well as medical utility, in military and civilian disasters. It seeks to salvage those in need, and salvageability may reflect both medical and social judgments. For instance, according to a major text on surgical triage in the military, “traditionally, the military value of surgery lies in the salvage of battle casualties. This is not merely a matter of saving life; it is primarily one of returning the wounded to duty, and the earlier the better” (Winslow 1982, 11). A similar expansion of salvageability in triage occurs in civilian disasters, such as plans in San Francisco to cope

with a devastating earthquake or national plans to cope with nuclear destruction (Winslow 1982). In the debate about triage after nuclear destruction, Thomas O'Donnell (1960, 70), a moral theologian, maintained that "those casualties whose immediate therapy offers most hope for the conservation of the common good should receive first priority." Furthermore, "unless the individual is considered as very important to the common good, and is salvable, it would seem unreasonable for the medical personnel to expend their efficiency on a few when it could be conserved for the greater number in more remediable need." This proposal, he noted, was in accord with national policy regarding a nuclear disaster (O'Donnell 1960, 70). Even though the language of "conservation of the common good" appears to be unduly broad and vague, triage that reflects such conceptions generally operates with a narrow formulation of social utility limited to specific functions and roles within a circumscribed context.

Even the strongest opponents of social utilitarian frameworks of rationing may recognize exceptions to a more egalitarian approach, such as a lottery or queuing. For instance, Paul Ramsey (1970) generally called for random allocation of scarce life-saving medical resources once judgments of medical utility had been made and scarcity remained. His egalitarian reasoning focused on the equal worth of human lives (Ramsey 1970, 255). In addition, he stressed the difficulty, if not impossibility, of securing agreement about relevant social values in an unfocused, pluralistic society, such as ours. Generally, a "society is largely an unfocused meshing of human pursuits" (Ramsey 1970, 275). Nevertheless, Ramsey accepted limited social utilitarian exceptions to an egalitarian framework in certain circumscribed or focused contexts; for instance, he justified assigning priority to persons at risk when they can discharge specific functions

highly valued by the community in a crisis or emergency such as an earthquake. These functions would be similar to those performed by sailors on a lifeboat after shipwreck (Ramsey 1970).

In the lifeboat analogy, a pluralistic community, with a variety of values and goals, becomes focused in some disasters as a result of a substantial threat to its survival. Its survival becomes an overriding goal, in part because it is a condition for realizing other goals. Ramsey sometimes suggested that a community could justifiably become focused on goals other than survival and use those goals to identify exceptional social functions for which people should be saved. At any rate, he rejected exceptions based on individuals' broad social worth (their overall social value) in a pluralistic society. He only admitted exceptions based on specific and urgent instrumental social value, judged according to essential social functions, in limited and focused circumstances: "Triage decisions are all a function of the narrowly defined, exceptional purposes to which a community of men may have been reduced. In these terms, comparative social worthiness can be measured" (Ramsey 1970, 258). A society, or parts of a society, under a bioterrorist attack would become such a focused community, with its very survival possibly at stake. Hence, judgments of narrow social utility could be justified in such a setting.

In the case of natural or man-made disasters, victims most in need of help – on whom normally we would lavish resources – must simply be set aside, and nothing be done for them. First priority must be given to victims who can quickly be restored to functioning. They are needed to bury the dead to prevent epidemic. They can serve as amateur medics or nurses with a little instruction – as the triage officer directs the community's remaining medical resources to a middle group of the seriously but not-so-seriously injured majority. Even among these, I suppose a physician should first be treated. (Ramsey 1970, 258)

Most of the criteria that Pesik and colleagues excluded, as I suggested, pertain to broad social utility or social value. Nevertheless, in concentrating on medical utility and

one criterion that combines medical utility with narrow social utility (the direct multiplier effect among emergency caregivers), they failed to see that a bioterrorist attack may threaten the social system as well as the health care system, and that some social functions other than those related to health care may be essential to prevent major social disruption. Hence, in some contexts, political position, which they excluded, could be essential to communal survival. Later I return to how we might determine essential specific social functions and roles.

Egalitarian Perspectives

How do these different conceptions of utility in triage systems fit with egalitarian concerns? It is important to stress that they are not all equally problematic from an egalitarian standpoint. First, in contrast to what some egalitarian critics claim, medical utility does not infringe the principle of equal regard for individual persons and their lives. My claim presupposes that counting numbers of lives is compatible with a principle of equal regard for human lives, but this presupposition has been challenged. For example, John Taurek (1977) contended that numbers should not count in deciding whether to distribute a lifesaving drug to save five persons or to save one person when it is not possible to do both. Let's suppose that a drug could save either the five or the one, but not all, because of their respective medical conditions. Taurek (1977, 303) proposed the following in response to such an example:

Here are six human beings. I can empathize with each of them. I would not like to see any of them die. But I cannot save everyone. Why not give each person an equal chance to survive? Perhaps I would flip a coin. Heads, I give my drug to these five. Tails, I give it to this one. In this way I give each of the six persons a fifty-fifty chance of surviving. Where such an option is open to me it would seem to best express my equal concern and respect for each person.

By contrast, I maintain that numbers should count and that they can count without

infringing equal concern or respect for each person. Without considering all of Taurek's positions, I contend that it is implausible for him to suggest, as he does (1977, 315-316), that saving the many over the one is like saving the rich over the poor. Instead, as Derek Parfit (1978, 301) held in criticizing "innumerate ethics," "if we give the rich priority, we do not give equal weight to saving each. Why do we save the larger number? Because we *do* give equal weight to saving each. Each counts for one. That is why more counts for more."

Making such a judgment of medical utility may even be morally required in some cases. Even when an owner of a drug has to decide how to use it, we can argue that he or she has an obligation to attempt to save more people, if possible, over the one person, absent more stringent, special moral relations such as contracts. In the context of a bioterrorist attack, citizens would believe that they have as much right to medical care as any others. Taurek would explain this moral intuition by a sense of prior social agreement about the use of a resource, perhaps involving social contributions through taxation.

Although medical utility does not infringe the principle of equal regard for individual lives, social utility does. But judgments of social utility are themselves variable, as I have stressed in distinguishing broad and narrow social utility. Either one infringes the principle of equal regard or respect. Judgments of broad social utility recognize the different social value of people's lives taken as a whole, including their various functions and roles. By contrast, judgments of narrow social utility recognize the different values of specific social functions and roles and assign priority to individuals discharging certain functions and performing certain roles.

Judgments of broad social utility infringe on equal regard, and it is not justifiable to use them as a basis for rationing in general or in an emergency, such as a bioterrorist attack. Nevertheless, it is possible to justify triage based on narrow social utility, at least when focused on specific and urgent functions and essential services in some crises and emergencies.

Even if a narrow social utilitarian framework is adopted together with medical utility, reasons may exist to include other egalitarian considerations and approaches.

Egalitarians often favor approaches, at least within the limits of medical utility, that express transcendence of persons over their social role and provide rough equality of opportunity. Hence, some prefer a mechanism, such as a lottery or queuing, that embodies these values.

One possibility that merits public deliberation is a weighed lottery (Elster 1989, 47-48, 113-115; Elster 1992, 110). From a social utilitarian standpoint, it is crucial to ensure that enough individuals survive who can discharge essential social functions, but it may not be necessary to save all individuals who hold such roles. Indeed, it may be fair and just to put essential workers and their families at some risk through a weighted lottery, in which these individuals would receive additional weights to ensure that enough of them will be saved to meet defined social needs, including but not limited to the provision of health care. In this system, some persons in essential social roles would not receive treatment. One position holds that using a lottery or queuing in rationing, rather than social utilitarian allocation, would probably have the result that those in social power who are at risk would take steps to increase the supply of resources in order to reduce their risk of exclusion.

Several considerations support a possible role for a lottery, even if it is heavily weighted, in the context of tragic choices in response to a bioterrorist attack. As Barbara Goodwin (1992, 178) observed, “Quite unphilosophical human beings have resorted to the lottery to make tragic choices in the context of natural or man-made disasters for a long time. When a group of people must distribute some unavoidable evil between themselves, they will almost instinctively choose a lottery as the method even if in the early stages of the discussion each is concerned to assert why she herself should not receive the evil allocation.” In addition, the optimal context for the lottery, if it is to be just and viewed as just, is a “consensual group,” particularly one with a common purpose.

As we have seen, however, when a group has a common purpose, when it becomes a focused community, it may be possible to make some allocative decisions on the basis of (limited) social utilitarian criteria; for example, who is necessary for the community’s survival? Nevertheless, if the only common purpose is that each individual in the group wants to survive, for example, patients awaiting an organ transplant or those in the intensive care unit, a lottery or first-come, first-served, which Ramsey calls “an ongoing lottery,” may embody equal respect, impartial treatment, and fairness in the competition, if medical utility does not determine the outcome. Thus, a lottery would express and symbolize some fundamental values, and it would be a way around the lack of consensus in an unfocused, pluralistic society about social utilitarian allocation criteria. In some circumstances of tragic choice, people rightly view the lottery as an acceptable way to allocate goods and burdens because of the limits of mindful choice, the blindness or impartiality of the lottery, and “the moral judgment that people should be treated as absolutely equal where basic life chances (chances of life or survival) are involved”

(Goodwin 1992, 178).

In the 1990s lotteries were used several times to distribute new drugs that were available in only limited supply. Sometimes candidates for these agents, such as protease inhibitors to treat AIDS, either proposed or agreed to a lottery within certain limits set by medical utility. For instance, when Hoffman-LaRoche decided to offer Inviarase to patients with advanced AIDS outside current clinical trials, Dr. Alberto Avendano of the National Association of People with AIDS proposed a lottery, and both the drug manufacturer and the Food and Drug Administration agreed. Sixty percent of the first 2,000 slots were set aside for patients with CD4 counts less than 50mm. According to Dr. Avendano, “The lottery seemed the closest to the most fair way.” (Naughton 1995, 14-15) Although some held that patients with AIDS who had participated in clinical trials should have priority, others stressed the symbolic value of the lotteries. As Evan DeRenzo put it, “Lotteries say that after you meet medical criteria, all persons should have an equal shot at the good of society. Lotteries celebrate an understanding that all humans are endowed with equal dignity: (Naughton 1995, 14-15).

Perhaps the closest society can come to a community of consent is to ensure transparency and public participation in setting procedures and material criteria for triage in response to a possible bioterrorist attack, and it should do so.

Public Justification: Transparency, Participation, and Cooperation

My points presuppose a context of public justification. Even when criteria for rationing or triage are set primarily or exclusively by physicians, they operate in a public context. Secrecy is often impossible, as well as ethically problematic, in part because of the public nature of much health care, especially in hospitals. Because a health care team is

involved, criteria must be justifiable to all participants. Even triage decisions in intensive care units are “public.” They are made “in the presence of and with the involvement of a wide variety of interested spectators, other physicians and nurses, along with family members and friends” (Knaus 1989). One might even add administrators, insurers, and regulators. Thus, “public accountability” is necessary to ensure adequate representation of our pluralistic society. In addition to these general reasons for transparency and public accountability in setting triage criteria, specific reasons apply in the preparation for a possible bioterrorist attack.

Triage that may be required in response to such an attack may look very different from conventional triage in the emergency room and other civilian contexts, in part because of immediate uncertainty and diagnostic challenges. Emergency physicians Pesik, Keim, and Iserson (2001) propose that “to address these issues [raised by weapons of mass-destruction-terrorism—WMD-T] to the maximum benefit of our patients, we must first develop collective forethought and a broad-based consensus that these decisions must reach beyond the hospital emergency department.” They continue: “Critical decisions like these should not be made on an individual case-by-case basis. Physicians should never be placed in a position of individually deciding to deny treatment to patients without the guidance of a policy or protocol” (Pesik et al. 2001, 642). Physicians, together with “emergency care providers, personnel, hospital administrators, religious leaders, and medical ethics committees need to engage in bioethical decisionmaking before an acute bioterrorist attack” (Pesik et al. 2001, 642).

This recommendation is too restricted; it has to be extended to ensure both transparency and public participation, in a context of public justification.^{iv} Public trust

will be essential in a bioterrorist crisis. Hence, the public must have confidence in the procedures and standards of triage. Some people, perhaps many, will not receive vaccination, prophylaxis, or treatment. As a result, criteria must be publicly articulated and defended in advance.

Beyond public articulation and defense, procedures and standards of triage have to be developed with public participation, and here I go beyond the list of participants identified by Pesik and colleagues to include the general public. Public participation rests on several foundations. It is a matter of justice – the right to participate in decisions, especially government decisions, that may have a fundamental impact on life chance – and a matter of symbolic values, particularly the equal value of all, as well as a matter of building and maintaining public trust.

Organ allocation in the United States is instructive. Criteria for selecting recipients for organs from the waiting list are public and they were developed and modified with public participation, in part because the public's role is so crucial; it is they who provide the organs, and their trust is essential to their willingness to donate (Childress 1997). In response to a bioterrorist attack, maintaining the social order as well as the system of health care will depend on public cooperation, while some, perhaps many, individuals suffer and die. For voluntary cooperation, the public must perceive the triage as necessary and the procedures and standards as fair.

Public officials may be reluctant to disclose information to and invite the participation of the public in preparing for a possible bioterrorist attack because they view members of the public as nonparticipants in and perhaps even as obstacles to effective responses. In contrast, others hold that the public should be viewed as a capable partner and a capable

ally; that a “generally effective and adaptive collective action” is possible, and that “failure to involved the public as a key partner in the medical and public-health response could hamper effective management of an epidemic and increase the likelihood of social disruption” (Glass and Schoch-Spana 2002). These authors propose five useful guidelines for integrating the public into planning responses to bioterrorism: “(1) treat the public as a capable ally in the response to an epidemic, (2) enlist civic organizations in practical public health activities, (3) anticipate the need for home-based patient care and infection control, (4) invest in public outreach and communication strategies, and (5) ensure planning that reflects the values and priorities of affected populations” (Glass and Schoch-Spana 2002, 217). Whether their proposal of a network of public responders is excessively optimistic, at minimum, there must be basic public confidence, trust, and cooperation; otherwise social disruption will be a high risk.

Public justification will be all the more difficult, but all the more indispensable, if criteria of triage are partially social utilitarian, even in the narrow sense. Determining which social functions are essential requires broad societal participation in order to reflect “the values and priorities of affected populations” (Baker and Strosberg 1992). Social utilitarian systems of allocation are inherently unstable and require either non-disclosure and deception or coercion for their maintenance. Instead individuals in need or at risk in contexts of limited medical resources will consent only to egalitarian criteria (Baker and Strosberg 1992). Certainly, a strongly egalitarian approach, such as a lottery or queuing, has widespread and justifiable appeal. However, in asserting their broad claim, Baker and Strosberg failed to distinguish medical utility from social utility and narrow from broad social utility. As a result, they failed to establish that triage based on medical

utility, together with narrow social utility in an emergency created, for instance, by a bioterrorist attack, would not be publicly justifiable and stable, especially if the public has participated in the process of setting the criteria.

Another important issue that requires public attention concerns the families of essential social personnel. The status of families may be particularly important if a bioterrorist attack converts the initial victims into secondary agents, that is, individuals who can infect others. Even though this is not true for anthrax, it is true for several other possible biological agents including smallpox and plague. For instance, in May 20-23, 2000, Denver, Colorado, conducted a bioterrorism exercise called Operation Topoff. As this simulated attack unfolded, participants learned that plague aerosol had been covertly released three days earlier at the city's center for the performing arts, with over 2,000 cases of pneumonic plague, many deaths, and hundreds of secondary cases. Richard Hoffman and Jane Norton (2000), both of Colorado Department of Public Health and Environment, noted that

As more cases were identified, an anticipated issue emerged: who should receive antimicrobial prophylaxis? The governor's committee debated whether to limit prophylaxis to close contacts of infectious cases or offer it more widely (e.g., to all health-care workers, first responders, and public safety workers *and their families*) to gain the support and participation of key workers. The committee decided on the latter approach, but not unanimously (emphasis added).

The rationale in providing antimicrobial prophylaxis to families of key workers, as well as workers themselves, focused on the need to secure their voluntary cooperation, which would be critically important. The public's trust would also be critically important, and it would be contingent in part on the public's perception that triage is necessary and fair.

This point also emerges from an analysis of the 2001 exercise Dark Winter, in which decision makers were presented with a fictional bioterrorist attack involving smallpox and had "to react to the facts and context of the scenario, establish strategies, and make

policy decisions.” According to one summary of the lessons of the exercise,

Dark Winter participants worried that it would not be possible to forcibly impose vaccination or travel restrictions on large groups of the population without their general cooperation. To gain that cooperation, the President and other leaders in Dark Winter recognized the importance of persuading their constituents that there was fairness in the distribution of vaccine and other scarce resources, that the disease-containment measures were for the general good of society, that all possible measures were being taken to prevent the further spread of the disease, and that the government remained firmly in control despite the expanding epidemic. (O’Toole, Mair, and Ingelsby 2002, 982)

Engendering and maintaining the public’s trust will be more likely if the public has participated in setting procedures and material criteria and hence in determining what to emphasize in medical utility, which functions and roles are essential in judgments of narrow social utility, whether to include families as well as individuals whose functions and roles are essential, whether to provide prophylaxis and other treatments to all individuals in certain roles or to have a weighted lottery, and so forth. Such determinations are not clear cut, as the Denver experience indicated (“The committee decided but not unanimously”), and the public should participate in making them. As noted, the issues become even more difficult when, to contain infectious diseases, quarantine becomes necessary. The observation is sound that “The public will not take the pill if it does not trust the doctor.”

When societies confront tragic choices, where fundamental social-cultural values are at stake, they must “attempt to make allocations in ways that preserve the moral foundations of social collaboration” (Calabresi and Bobbitt 1979, 18).

Notes

ⁱ. Although this letter (Lederberg 2001b) is very similar to a statement that Lederberg presented to the same committee on August 24, 2002, some of the language differs. Instead of “draconian triage,” Lederberg referred to “massive triage.” And, instead of “the stresses on civil order that would follow from inevitable inequities in that management,” he noted “the stresses that control of such incidents would impose on civil order” (Lederberg 2001a). These different statements reflect a difference in tone if not in substance.

ⁱⁱ. I have drawn some ideas about and formulations of these ethical issues, including a few paragraphs,

from Childress, *Practical Reasoning in Bioethics* (1997).

iii. Much of the previous two paragraphs derives from Childress (1997, 195-196). For this history, see Winslow (1982) and Rund and Rausch (1980), among others.

iv. We also have to ensure that physicians, public health professionals, and other health care professionals are at the table when government officials formulate policies for possible bioterrorist attacks. One lesson from the Dark Winter exercise is that, "After a bioterrorist attack, leaders' decisions would depend on data and expertise from the medical and public health sectors"; another is that, "To end a disease outbreak after a bioterrorist attack, decision makers will require ongoing expert advice from senior public health and medical leaders" (O'Toole et al. 2002, 981-82). But prospective policies should also reflect those data, expertise, and advice.

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