

# Disaster Preparedness and Triage: Justice and the Common Good

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## Abstract

“Triage” is a term generally referring to the social practice of sorting or categorizing. While it originally had an innocent, commercial meaning referring to sorting crops according to quality, the term quickly took on a more ominous meaning referring to classifying battlefield casualties into three groups: those too well-off to be treated and then, among those more seriously wounded, one group that will get medical attention and another that will not. The moral problem is how to distinguish between the latter two groups. The Hippocratic oath has been utterly useless in helping us do this sorting, since the oath commands the clinician to remain loyal to the individual patient and give no attention to the choice between two patients with different needs.

Baker and Strosberg show that historically the British sorted following utilitarian principles, giving priority to the patients who could benefit the most even if they were not in greatest need, while the French arranged patients who could be helped in order of greatest need even if it was not maximally efficient to do so. Understanding how contemporary organ transplant policy utilizes triage can help us clarify our mass disaster triage policy. Two organ transplant examples—tissue typing for kidneys and geographical priority for allocating livers—show that American social policy, when forced to choose between allocating on the basis of efficiency or allocating on the basis of justice, will consider both principles, but give equal or dominant priority to justice—even though this priority is understood to be relatively inefficient. Since health care professionals have a recognized preference for efficiency over justice and lay people are inclined towards justice, leaving mass disaster triage policy in the hands of health professionals will predictably structure the policy in a way that conflicts with the moral priorities of the lay population. Formal public debate that recognizes the conflict between efficiency and equity—professional and lay priorities—is therefore essential.

**Key Words:** Triage efficiency, utilitarianism, equity, justice, kidney allocation, liver allocation, transplantation.

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IT IS WITH A SENSE OF AWE AND RESPECT that I come to New York City to talk about the ethics of disaster triage. I lived in the New York area as a child and again for ten years while I was at the Hastings Center in Westchester County. I have always had great affection for this city, and since the fateful September 11 of 2001 that affection has become even more intense.

But why should a moral theorist from Washington come to New York City to talk about the ethics of triage? We had our own smaller scale, but nevertheless horrific, tragedy. From my office window that morning I could see the smoke rising from the Pentagon. But New Yorkers experienced the ultimate case in disaster triage.

In particular, why should a moral theorist whose special area of interest is allocating organs be participating in a conference on the ethics of emergencies and disasters? When I asked her that question, Dr. Rhodes told me that she thought there

were important connections between allocating organs and disaster triage. The more I have thought about it, the more that seems right to me.

## The Concept of Triage

Most people probably understand the term “triage” from its battlefield use. Its original use was much more innocent. The *Oxford English Dictionary* mentions an 1825 example of sorting coffee beans into three categories: (a) best quality, (b) middling, and (c) badly broken beans called “triage coffee” (1).

By the mid-twentieth century, in World War II, battlefield nurses were dividing the wounded into three categories: (a) those with wounds so minor they do not need immediate attention; (b) those who are critical and can receive significant benefit from immediate attention; and (c) those beyond hope, for whom resources should not be wasted. This battlefield classification still does not, however, explicitly commit to the moral notion of ranking on the basis of using scarce resources where they can do the most good.

By 1974 *Time* magazine was reporting a somewhat more negative sense of the term, stating that triage is “a common sense if callous concept that

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teaches that when resources are scarce, they must be used where they will do most good" (2). Here triage is clearly associated with a kind of "utilitarian" reasoning. We should get the greatest possible benefit out of limited resources. We should do so even if it means sacrificing some people who have the greatest need. The priority is for the aggregate good, even if it is unjust or unfair to those in greatest need.

The real story of the ethical principles of triage in disaster is more complicated. It is especially so when health professionals are involved. The complexity can be discerned when one attempts to compare the ethics of triage with the traditional ethic of medicine, the Hippocratic Oath.

### The Uselessness of the Hippocratic Ethic

All disaster triage is a violation of the Hippocratic Oath. This is true whether we are considering civilian emergencies or battlefield decision making. The ethic of the Oath, at least as it has been interpreted in modern medical ethics, is simple: the physician's sole duty is to promote the welfare of the patient and to protect the patient from harm. A physician or nurse arriving at a disaster scene would, according to the Hippocratic Oath, take one patient as his or her focus of attention. He or she would take care of that patient until that patient's needs were met and then turn to another patient. In the Hippocratic world it is immoral to let your attention be diverted to others in need, even those who you can help more. The greater needs of another do not permit the Hippocratic physician to abandon the patient under his or her care. Neither does the fact that the physician could do more good *in toto* if the patient of the moment were abandoned.

Fortunately, the Hippocratic ethic has been abandoned by almost all people who have thought about the issues involved (3, 4). It has been abandoned not only for disaster triage, but also for normal clinical medicine. It is a terribly implausible ethic: it requires no informed consent; it has a bizarre confidentiality clause; it has no notion of the rights of patients; and it includes no notion that ethics is social.

Any plausible, more social ethic will open the door to the possibility that a physician can take some limited risks with his or her patient for the good of others in society. For example, with proper consent and monitoring, physicians can engage in research involving human subjects (even though, by definition, research is done for the purpose of producing generalizable knowledge, not for the welfare of the individual patient). Responsible

physicians are involved in public health efforts (even though, by definition, these efforts are expended for the health of the public, not the welfare of the individual patient). Some physicians are involved in the procurement of organs for transplants (even from living donors who will not benefit from the surgery, which puts the donor at risk and is certain to cause pain and suffering).

Likewise, responsible physicians respond to mass disaster, even though it requires that they think socially rather than individually. Fortunately, we have outgrown the Hippocratic ethic. The Oath has been abandoned by some. At some schools, it is no longer recited by medical students as they begin their medical careers. It is no longer the foundation of the ethical code of the profession (5). It was decisively rejected when the American Medical Association (AMA) adopted its most recent major revision in 1981 (6). In fact, from its origins, the AMA has always included a dimension of social ethical responsibility in its code of ethics, a perspective totally absent from the Hippocratic tradition (7).

In routine clinical medicine, there may be a case to be made that a clinician ought to provide undivided attention to the patient in front of him or her and let someone else worry about allocating resources (8). Resources have to be allocated; there is no escaping that task. But bedside clinicians may not be the right people to do this. They have been taught throughout their careers that their duty is to their individual patients. When rationing requires a choice between the clinician's own patient and some other persons in need, there is good reason to fear that bedside clinicians will over-commit resources to their own. That is the inevitable outcome of an ethic of loyalty.

Even when they try to take a more neutral perspective, they may be particularly poor allocators. With professional specialization and professional commitment comes a bias in favor one's own area of expertise. Lawyers not only have a self-interest in allocating enormous sums for legal fees; they also really believe that such efforts do great good. Professional artists would want more funds spent on art, clergy on religious activities. It is only natural that clinicians believe that great good comes from clinical activity. These beliefs get incorporated into allocational decisions.

The same occurs within medicine if bedside allocation decisions are made. Cardiologists believe in cardiology; surgeons in surgery; psychiatrists in psychiatry. This probably comes in part from values held before specialization decisions are made. It is confirmed by years of hands-on experience. Clinicians doing bedside rationing would not only

have a sense that they are violating the ethic of the profession; they would also be bad rationers.

For all of these reasons, we turn to others to do the allocating. Department heads or administrators or hospital boards may make valid allocational decisions. Perhaps a “triage nurse” in the admitting area can abandon the patient perspective sufficiently to become a good allocator. For the routine case, clinicians beyond that triage point should simply stay with their patients.

While the case for separating clinical and allocation roles makes sense in normal medical care, it makes no sense in a mass disaster. When health professionals arrive on a disaster scene, no one is—in advance—their “patient.” Every victim has some kind of presumed moral claim on the nurse’s attention. Even for those providing hands-on, one-on-one care it would be immoral to stay with a patient until one literally can do no more—until every bit of good that can be provided has been provided. In a disaster, the moral mandate must be to take only certain patients. It is immoral not to move on after a certain point. This poses a moral dilemma: which patients to take and when to move on?

### **The Dilemma: Two Principles of Triage**

The essence of disaster triage is that many people are simultaneously suffering from many kinds of serious injuries. All of them are drawing upon limited rescue resources. And the limited number of available health care professionals cannot respond adequately to all demands at the same time.

There are two major options—two moral principles. (a) Those victims for whom we can do the most good could be top priority. That approach rests on the utilitarian principle. (b) Alternatively those with the greatest need could be top priority. That approach is based on the principle of justice.

Some with the greatest need are beyond saving. Others with great need can be saved, but doing so will require extraordinary resources. In order to save them, many others with lesser injuries will have to be abandoned. Utilitarians observe that, in some cases, more good can be done in aggregate by targeting those with lesser injuries. Doing the most good for the community of victims would require simply abandoning those who are the worst off. Utilitarians say that that is too bad, but it must be done. Those who would give first priority to the principle of justice reject this option. They would sacrifice the goal of doing as much good as possible. They would let some with minor, but efficiently treatable needs go unattended so that they can do whatever they can for those with the most severe treatable injuries.

While professional health care ethics has generally had utilitarian inclinations, that is not the only option. Many philosophers and many lay people are committed to helping the worst off, even if it means reducing the aggregate good accomplished. This is the ethical perspective of many religious thinkers, including those within the Jewish and Christian traditions (9–11). It is also the perspective of many of today’s most respected secular thinkers (12–15).

### **The Baker/Strosberg Analysis**

The most sophisticated analysis of the concept of triage applied to health care is by Robert Baker and Martin Strosberg (16). They note that the British and the French provided two different moral approaches to medical triage.

They attribute the British view to two eighteenth-century physicians, both of whom were associated with the development of the hospital as a place in which to treat the masses. John Aiken and Thomas Percival were concerned about dealing with large numbers of hospital admissions, especially in epidemics such as typhoid. Their principle was to “efficiently optimize outcomes.” Influenced by the British utilitarianism of their day, they assumed that the goal was to do as much good in aggregate as possible—to improve mortality and morbidity statistics as much as possible—even if that meant sacrificing some who were among the worst off. This is a perfect example of utilitarian reasoning, consistent with British utilitarian philosophers such as David Hume, Jeremy Bentham, and John Stuart Mill.

This reasoning is also consistent with the normal intuitions of most physicians and other health professionals. The Hippocratic ethic maximizes good for the individual patient. When physicians found themselves in social situations in which they had many potential patients, all needing care at the same time, they simply extrapolated their Hippocratic, benefit-maximizing ethic to the community. Triage ethics in this tradition considers the community of people to be the “patient.” The goal is to maximize the good done for the patient group in aggregate.

As a practical matter, this meant classifying patients into three groups: (a) some with injuries too trivial to command immediate attention; (b) some so poorly off that it would be inefficient to treat them; and (c) those who could be treated efficiently if they were given immediate attention. Any utilitarian, including these important eighteenth-century British physicians, could figure out

that little benefit would come from treating group (a), and that the maximum benefit would come from giving group (c) priority before group (b).

Baker and Strosberg go on to show that there was an alternative, originating during the Napoleonic wars. Napoleon's surgeon general, Baron Dominique Jean Larrey (1776–1842), was outraged by the unsystematic treatment of battlefield casualties in Napoleon's Grand Army. He developed a system of "sorting" or "triage." Unlike the "British method," however, it was not based on efficiency. "Those who are dangerously wounded must be tended first, entirely without regard to rank.... Those less severely injured must wait until the gravely wounded have been operated on and dressed" (16). The hopelessly dying were left untreated on the battlefield. It made no sense to treat the worst off if it did no good whatsoever. Once that group was set aside, the ranking was based on severity of injury, not on efficiency in treating.

Baker and Strosberg then summarize, pointing out that the surgeon general marched under the banner of "Liberty, Equality, Fraternity." The emphasis was on egalitarianism. Each dangerously wounded but potentially salvageable patient was given a chance. Priority was given to the sickest salvageable patient first. This stood in contrast with the British, who held that those who could most efficiently be made well came first, even if they were not the sickest.

### **The American Organ Transplant Experience**

Similar dilemmas have arisen in the organ transplant world in contemporary times. We know there are fewer organs available than there are people who need them, just as there will be fewer rescue personnel in a disaster than will be needed. In both cases there is nothing realistic that we can do to fully meet all the needs of all who are in need.

In the case of organs, scarcity is inherent. In the case of a disaster, we could potentially put more and more money into disaster preparedness, but at some point it would become irresponsible to siphon off resources so as to be "perfectly prepared." We will never be perfectly prepared for a 9/11 type of catastrophe (or a tsunami). Increasing resources to that point would leave other important projects dangerously underfunded. In the case of organ transplants, we will never be perfectly prepared either. Currently, there are simply not enough organs for everyone who needs one. Even in some ideal future in which many organs will come from non-human sources (e.g., animal organs, artificial organs), the costs of producing enough for every person who could potentially

benefit would be staggering. It would mean costs beyond what any society, no matter how rich, would be able to pay.

Two transplant examples may help shed light on how American society has handled the allocation of resources that are inherently scarce. Understanding how our culture contends with the inevitable scarcity in transplant organs may help us understand how we should ration health care in a mass disaster, in which resources will also be scarce. Both examples suggest that public policy tends to favor equality over efficiency.

### **HLA Tissue Typing for Kidney Transplants**

In the 1980s we learned that kidney transplant rejection was related to a system of histocompatibility antigens (referred to as HLA antigens). The worse the HLA match, the greater the likelihood of graft rejection. Every kidney recipient has six antigen loci that may potentially match those of the organ donor. Since there are many possible antigens at each locus, the chances of a perfect match are small. Thus, giving an available kidney to the person on the waiting list with the best HLA match would maximize the probability of graft survival, and bring as much benefit as possible from each organ transplanted. By the mid-1990s graft survival with no mismatches was 5% better than with all six antigen loci mismatched (90% vs. 85%, one-year survival) (17). Any good utilitarian would recommend the policy that emerged, of giving an advantage in kidney allocation based on degree of HLA match. (The difference is not as great today, since we have developed better immunosuppression regimens.)

Although this strategy was adopted in good faith, we soon discovered a problem. HLA antigens are racially correlated, and the organ donor pool matched one race better than others. Giving priority based on HLA match de facto meant that one race would get priority over others for kidneys. A black and a white person on the waiting list with equal need would soon have significantly different waiting times for organs.

In addition to race, we learned that other sociological factors predicted a successful kidney graft. One age group did better than others; one socioeconomic group did better; even one gender did somewhat better. If we were consistent utilitarians, we would take all this information into account in allocating organs. We would give kidneys preferentially to young, white middle-class males. The result would be a public system allocating a major health benefit on the basis of race, age, income, and gender.

Health professionals soon realized that this was not acceptable. It was efficient in maximizing benefits, but it was grossly discriminatory. Of course, we would not give an organ to a patient who had no chance of benefiting, but that was not the issue. The problem was that we had reliable data showing that people of a certain age, race, income group, and gender did predictably slightly better. From the point of view of a person with an unusual HLA type (say, one that matched the donor for no antigens), 85% one-year graft survival was attractive. Fairness required giving such persons a right of access, even though we knew on a statistical basis that this patient would not do quite as well as someone with a perfect match. Once we understood this problem, we changed the allocation formula to give blacks and others who were known to match a better chance to receive an organ. We refused to give advantages to higher income people and males, even though we knew they would do a little better. Eventually, partly because of better immunosuppression and partly out of concern for fairness, we almost completely eliminated HLA as a factor in allocating kidneys. Justice held utility in check, at least to a significant extent.

### Livers

In the late 1990s, we encountered a similar problem in allocating livers (18). Should a liver go to the sickest salvageable patient or to the one who would benefit the most (even though he is not the sickest)? This controversy played itself out in a debate over whether livers should be allocated on a "locals-first" policy or whether they should go to sicker patients at a regional level before healthier patients in the same community where the liver was obtained.

Three efficiency issues led to the belief that a locals-first policy would be more efficient. First, transporting organs to distant communities with worse-off patients would give organs to patients who, because they were sicker, had less chance of survival. Second, the transportation time would mean greater cold-ischemia time and thus a risk of organ deterioration. Third, there was a fear that if organs went to patients in distant communities, there would be less willingness of people to donate. Hence, the controversy modeled well the choice between fairness (measured in terms of getting organs to those who were worse off) and efficiency (allocating organs locally even though they went to healthier patients).

Transplant surgeons favored the locals-first policy (19, 20). That is exactly what we would pre-

dict once we understand that health professionals tend to be utility maximizers. In Hippocratic fashion they attempt to maximize utility to their individual patient and then (by analogy) seek to maximize utility to the community as a whole.

The Clinton administration favored transporting organs to the sickest who could benefit (21). Again, this is what would be predicted from a liberal administration inclined to emphasize greater equality of access to health care. The locals-first policy was thought to be more efficient, but came at the expense of the worst-off patients, who have a chance to benefit. In terms of the Baker/Strosberg account of the history of triage, the British would side with the transplant surgeons in favor of locals first. The French would side with the Clinton administration, which sought equal access across communities.

The result was some degree of compromise, but primarily a victory for the justice perspective. When locals on a waiting list had the highest degree of urgency, they got priority, but regional candidates with the highest degree of urgency took precedence over locals who had less urgent need. That is, public policy tends to favor equality of access, based on need, over efficiency. Clinton's Secretary of Health and Human Services, Donna Shalala, required the national transplant program to rearrange allocation to achieve more equal access. Transplant surgeons were predictably annoyed. Their profession historically has chosen utility-maximizing as the goal. But the American public, influenced by liberal egalitarian concerns, has traditionally favored more equal access.

### Implications for Disaster Triage

The implications for a triage plan for a mass disaster seem quite clear. Maximizing aggregate benefit in a disaster plan would divert resources from the sickest in favor of the most efficient to treat. This approach, which requires sacrificing the worst off, is compatible with the traditional core ethic of the health professions, but is incompatible with the liberal political philosophy of the French and American cultures. Our culture's commitment is to liberty and justice for all, not to efficient maximizing of aggregate good. Public policy devoted to the ethical principle of justice or fairness will offer the worst off in the community a chance to be more equal to those who are better off. It will strive to better the lot of the worst off who can be helped, even if that sacrifices some efficiency.

The question, therefore, is whether we should in disaster relief retreat to the utilitarian ethic, making an exception to the ethic of justice that

generally prevails in American ethics. In doing so, we would follow the utilitarian ethic of the British and the historical biases of the medical profession. Or should we adhere to the classical moral commitment of the French and American revolutions, the ethic of the Judeo-Christian tradition and its secular, justice-oriented analogues? This would give a priority to the worst off, even if it is inefficient to do so.

### The Deliberations of the UNOS Ethics Committee

The Ethics Committee of the United Network for Organ Sharing (UNOS) took up the question of whether allocation should be utilitarian or justice-based. The result could be predicted by anyone who knew the historical tendencies of health professionals and lay people when it comes to this controversy. The committee was split right down the middle.

Half the committee wanted to give kidney tissue typing high priority. They wanted to consider HLA as a predictor of good outcome and also wanted to keep livers for local use. The other half wanted fairer allocation, downplaying tissue typing in kidney allocation and giving livers to sicker patients beyond the local level. This division of opinion reflected the division in committee membership: there were equal numbers of surgeons and lay people.

Every physician on the committee favored utilitarian allocations. Every non-physician favored justice-based allocation. Leaving triage policy to one group or another will predetermine the policy. For organ transplant, the UNOS Ethics Committee explicitly negotiated a political compromise. Justice theorists insisted on an absolute priority for needs-based allocation. Surgeons insisted on an absolute priority for maximizing benefits. (There were no non-surgeon physicians on the committee at the time.) A compromise was reached whereby utility and justice would have equal priority in formulas to allocate organs.

Leaving policy formation to health professionals or lay people will predetermine what the triage policy will be. There should be a full-scale public debate about how we will balance efficiency and equity in our disaster triage policy. Perhaps the outcome will be a political compromise in which no one will be completely satisfied. The result is likely to include a willingness to ignore the cries of the worst off when intervention is certain or very likely to fail. There will also be a willingness, especially among lay people, to target resources for the worst off who can be helped. There will also be a concern about efficiency, especially among

health professionals, and a desire that scarce health resources not be squandered.

In various situations, the Americans have sided alternatively with the British and the French models of triage, with concern for utility and for justice. Both concerns deserve a hearing when a disaster policy is made explicit.

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