The Ethics of Disaster Planning: Preparation vs Response[1]

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We are morally obligated to plan for disaster because it affects human life and well-being. Because contemporary disasters affect the public, such planning should be public in democracies and it should not violate the basic ethical principles of normal times. Current Avian Flu pandemic planning is restricted to a response model based on scarce resources, or inadequate preparation, which gives priority to some lives over others. Rather than this model of 'Save the Greatest Number,' the public would be more ethically served by a model of 'Save All Who Can Be Saved,' which is based on adequate preparation. And where events exceed adequate preparation, scarce resources should be allocated fairly.

What persons in authority intend to do and carry out in disasters is an ethical matter, because it involves human well-being. Disaster preparation occurs in normal times and disaster response occurs immediately after a disaster or when one is imminent. Both preparation and response require plans and both kinds of plans have ethical aspects. Is there an ethics of disaster preparation planning distinct from an ethics of disaster response planning?

One reason for stipulating a distinction between planning for, or in, preparation, and planning for, or in, response, is that the unexpected may occur, so that unanticipated actions and rules of action are required in response. For example, there could be a plan for the orderly evacuation of a place, but in an earthquake, exit routes might be blocked, requiring the improvisation of new exit routes and evacuation methods. Perhaps the preparation plan did not require helicopter rescues, but developing circumstances do, so that it is in the response plan. A change like this does not entail a change in ethical principles, provided the intention that everyone be safely evacuated is present in both plans. One way in which to avoid apparent contradictions between preparation plans and response plans is to make the preparation plans sufficiently general. For example, safe evacuation of all occupants is stated as a primary goal in the preparation plan and several exit routes are specified beforehand, but the choice of exit route is left open, to depend on actual circumstances.

But suppose there is a different kind of change, whereby a rule involving human well-being is different in the preparation and response plans. Perhaps it is known beforehand that preparation will be inadequate, and plans are made to save a limited number. Can such a response plan be ethically justified or is it unethical? Perhaps we should consider how crises other than contemporary disasters have been morally assessed.

Medical Triage in War

The unexpected and sudden harms incurred in war have been systematically addressed with principles and practices of triage since the Napoleonic era. The reality of mass casualties and the imperative of officials to deal with them still evokes military medical history in contemporary discussions of disaster. Thus, on page 1 of *Triage and Justice*, Gerald Winslow begins with a fairly standard definition of triage that links civilian disaster with war.

> *Triage* . . . The medical screening of patients to determine their priority for treatment, the separation of a large number of casualties, in military or civilian disaster medical care, into three groups: those who cannot be expected to survive even with treatment, those who will recover without treatment, and the priority group of those who need treatment in order to survive.[2]

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[1] This paper is largely based on a draft of Naomi Zack Chapter 1 in *Ethics for Disaster* Lanham Md, Rowman and Littlefield 2009, but it has benefited substantially from revision prompted by the editors and an external reviewer for this journal.

[2] Gerald R Winslow *Triage and Justice* University of California Press 1982 p 1

In a now-classic 1992 essay. 'Triage and Equality,' Robert Baker and Martin Strosberg distinguish between two kinds of triage deriving from modern wars, the egalitarian model and the utilitarian or efficiency model.[3] Baron Dominique Jean Larrey, who was Napoleon's surgeon general, developed the egalitarian model of triage. Larrey's system of sorting and transporting the wounded was based on the principle that 'those who are dangerously wounded must be tended first, entirely without regard to rank or distinction'.[4] Larrey's objective was not the communal utilitarian goal of restoring the wounded for the sake of the war objective, but the utilitarian goal of treating the most gravely wounded, who would receive the greatest benefit from immediate care, and die without it. Baker and Strosberg explain how Larrey's model of 'methodical succor' allocates scare resources to maximise results, without detriment to anyone's interests: the gravely wounded are saved; the lightly wounded may be saved in the future should they be seriously wounded and they are not harmed by waiting for treatment in the present; the moribund are not harmed because they would not benefit from treatment. Baker and Strosberg further note that 'methodical succor' is common practice in contemporary emergency and intensive medical care.[5]

Baker and Strosberg pinpoint how the efficiency model of medical triage departs from the egalitarian model. The efficiency model seeks to maximise the results of medical triage in terms of the military requirement that at any given time there be as many physically able soldiers as possible. According to J. Tristram Engelhardt and Albert Jonsen's reprisal of Raul Ramsey, 'Speedy restoration of the fighting function is the objective. *The more difficult cases wait, regardless of the seriousness of their need*.' A famous application of this principle was recorded by Dr. Henry Beecher in his memoir of the distribution of penicillin in North Africa during World War II. Instead of dispensing the drug to soldiers with broken bones incurred during battle, it was given to those infected with venereal disease from patronising brothels. The second group could be more quickly returned to the front, although the moral objection was considered to be significant.[6]

Michael Gross draws out an even sharper contrast between egalitarian and utilitarian triage in war. According to the First and Second 1949 Geneva Conventions, 'Only urgent medical reasons will authorise priority in the order of treatment to be administered' (Geneva Convention I, II, 1949, Article 12, Paragraph 3). Moreover, the 1977 Geneva Protocols extend this principle to include enemy wounded (Protocol I, 1977b, Article 10, paragraph 453). However, the US Department of Defense in 1988 directed that the goal of medical triage was the 'maximum number of salvageable soldiers,' which contradicts both the order of treatment and preferred subjects for treatments, specified by the Geneva Protocols.[7] NATO's directives are also based on salvage.

Two important points emerge from this discussion of war triage, as it relates to disaster. First, medical triage in war occurs under special pressures, when little can be done to augment preparation. Scarcity of supplies, time, and resources is intractable, so the primary ethical concerns are restricted to the best response. Furthermore, it is a legitimate expectation that some will be maimed or die. By contrast, it is possible to prepare for disaster and casualties need not be taken for granted, beforehand. Second, observers agree that over time in democratic societies, a conflict between public ideals of fairness and practitioners' goals of efficiency will be resolved in favor of fairness, even under the pressures of war. If justice is preferred to efficiency as a model for war triage, there should be a lesson here concerning relevant moral principles for disaster triage. But while disaster does not have the same urgency of outcome as war, because lives beyond those who are fighting in the war may be at stake,

[3] Robert Baker and Martin Strosberg, 'Triage and Equality: An Historical Reassessment of Utilitarian Analyses of Triage' *Kennedy Institute of Ethics Journal* vol 2 no 2 (1992) pp 103-123

[4] *Ibid* p 110 from Dominique Jean Larrey '*Surgical Memoirs of the Campaign in Russia*' trans J Mercer Philadelphia, Cowey and Lea 1882 p 109. However, the situation was not as clear-cut as Beecher's account implies, because it was not known at the time whether penicillin would be effective in the treatment of war wounds. See Micael L Gross *Bioethics and Armed Conflict: Moral Dilemmas of Medicine and War* Cambridge, MA, MIT Press 2006

[5] *Ibid* pp 111-114

[6] *Ibid* pp 103-4

[7] Gross *op cit* 2006 pp 137-41.

disaster is more unpredictable and disorganised than war. Robert Veatch suggests that the preference of egalitarian measures over efficiency for allocating transplanted organs preserves ideals of justice in ways that are relevant to triage plans in mass disaster. Veatch proposes that following the deliberations of the Ethics Committee of the United Network for Organ Sharing, there should at least be broad discussion of the egalitarian versus efficiency models.[8] Medical scarce resource triage may furnish comparative examples in-between war and disaster, but it is part of normal life in contrast to the exceptionality of war and disaster. Shared moral ideals not only have the best chance of being realised in normal life, but they likely to come out of normal life. In disaster casualties, unlike war, there is no higher or further purpose, beyond saving the lives of victims.

To understand the public preference for fairness over efficiency, we need to remember that in the long run peace and normal life are eventually restored, allowing the values of the civilian public to reassert themselves. Contemporary disasters affect civilians, in the midst of their ordinary lives. For that reason alone, normal ethical perspectives would be expected to inform acceptable disaster preparation. As well, disaster preparation itself would be expected to have more resemblance to normal forms of planning than to planning how to respond with scarce resources in war, because only the life and well being of those involved in the disaster are directly affected, in comparison to the protective role of soldiers.

Ethics of Planning in Ordinary Life

Once we have the structure of ordinary planning in mind, and some clear intuitions about how planning is an ethical matter, it may be possible to answer the question of whether disaster response plans can have different guiding ethical principles than disaster preparation plans. In normal, more or less predictable, everyday life, there is no distinction between preparation or plans/principles *for* action and execution or plans/principles *of* action. The plans of action are usually straightforward applications of the plans for action, so that application mirrors preparation. Most, if not all, professional activities, construction projects, and items manufactured for human consumption, begin with plans, blueprints, or lists of ingredients, which have to be approved by government or administrative authorities, before action can legally be taken. Building codes, for example, require that architectural, environmental-impact, and safety measures be detailed in plans, which must be approved before construction can begin. It is assumed that construction will then take place according to the approved plans, and to make sure that it does, different stages of construction are inspected by officials who report to the agencies that approved the plans. The approved ingredients listed on containers of medication and food are supposed (i.e., both required and assumed) to be present in the proportions listed within the containers. Professions governed by codes of ethics approved by their members function on the assumption that these codes will not be violated in practice. When they are violated, practitioners may be guilty of malpractice, incurring criminal, as well as civil and professional penalties.

In general, human commercial and professional life takes place according to prior plans that have been approved to safeguard against danger and fraud. The nature of the approved plans, the match between approved plans and consequent action and production, and the quality of the products and action, are all subject to ethical principles, which are largely implicit. Moreover, the relevant information about plans and ingredients is accessible to those who will be affected by them. This openness of relevant information is based on the assumption that people have a right to know about products and services insofar as they are affected by them. It goes without saying that consumers, buyers, patients, and clients should not be harmed by professional services and business products, and that they should not be deceived about what they are getting. When it is known beforehand that they may be harmed by a product (e.g., cigarettes) or an activity (eg, sky diving), it is considered appropriate that the end consumer or user assume some of the risk involved, so that sellers or service providers are not fully liable for any resulting harm.

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[8] Robert M Veatch 'Disaster Preparedness and Triage' *The Mount Sinai Journal of Medicine* vol 72 no 4 (July 2005) pp 236-241

The widespread acceptance of the *Principle of No Harm* [PNH] gives rise to legal and financial liability when harm has occurred. When professionals, manufacturers, business people, and sellers submit appropriate plans that are in due course approved, part of the motivation for the approval process is the avoidance of liability or responsibility for harm. The other part of the approval process implicitly rests on the moral importance of PNH in itself, although even that is not the complete moral picture. At the base of avoiding harm for both legal and moral reasons is the positive value of human well-being. According to the general *Principle of Well-Being* [PWB], products and services should contribute to the well-being of end users and consumers. It is, moreover, understood that well-being is loosely construed to include pleasure and entertainment, as well as prosperity, convenience, and health. (For instance, if fast food and sugar-laden snacks did not taste good, so that their nutritional deficits were the whole truth about them, their desirability would plummet.)

The general presumption that goods and services promote human well-being is not only a standard for what is produced and performed, but it motivates planning itself and makes prudence a virtue. The carpenter who measures twice and cuts once not only makes good book shelves, but is a good carpenter. Good planning not only makes the practitioner a good practitioner, but also reflects positively on her moral character. As a result, planning is both morally and practically required for all important endeavours, and it is itself subject to moral scrutiny, apart from its results. Planning is a required duty of trustees, stewards, and guardians. Planning is a general responsibility of every adult, as an integral part of caring for oneself and for others to and for whom we have prior obligations.

Ethics of Disaster Planning

In normal life, we can count on work more or less going according to plan, whereas in disasters, our best plans may not be applicable. That we do not know beforehand which parts of our plans for disaster will fail to be applicable, itself puts restrictions on the whole dimension of planning for disaster. First, insofar as planning is part of preparation, it has to occur before a disaster is present or imminent; if not done beforehand, it is likely to be influenced by immediate pressures that could cloud moral judgment. Disaster planning as part of preparation needs to be unbiased, and so long as there is assumed to be time, there is no reason to compromise on what ought to be done, because preparation occurs in normal times. Second, disaster preparation planning has to be general, but not so general as to be morally or factually vacuous. Third, disaster planning ought to express our best moral principles and not go against them, but it must also be practical, or possible to execute. And fourth, we are obligated to plan optimistically, in the sense that we ought not to make plans that we know will violate existing moral principles, or that we do not believe will achieve desired goals. That is, optimistic planning is based on the assumption that it is possible to plan well.

The known fact of contingencies, in the absence of knowledge of precisely what those contingencies will be, entails that disaster preparation is not the same thing as disaster rehearsal. No matter how many mock disasters are staged according to prior plans, the real disaster will never mirror any one of them. Disaster preparation planning is more like training for a marathon than training for a high jump competition or a sprinting event. Marathon runners do not practise by running the full course of twenty-six miles, but rather get in shape by running shorter distances and building up their endurance with cross training. If they have prepared successfully, then they are in optimal condition to run the marathon, over its pre-determined course and length, assuming a range of weather conditions, predicted or not. This is normal marathon preparation.

But imagine preparing for a mystery marathon on undisclosed terrain, of an unspecified length, which could begin at any time. There would be many different ways to prepare for those uncertainties and participants would be in varied stages of preparation, when the start of the mystery marathon were announced. Rehearsal would be even more clearly out of the question than in the case of the normal marathon. Of course, one need not participate in either a normal or a mystery marathon and human well-being is not at stake (beyond optional

choices), so it is not necessary, much less morally required to prepare for it. But we do not have a choice about whether a disaster will occur where we happen to be, or when, and our responsibilities for ourselves and others require that we do prepare.

To summarise, disaster preparation is an ethical matter and it is mandatory. The planning component of this preparation must be general enough to allow for unforeseen contingences and it must take place in normal times, before a disaster occurs or is imminent. Disaster plans must be consistent with normal planning principles of not intending harm and positively preserving human well-being. Furthermore, the disaster plan, as part of preparation, is distinct from both the action in any particular response and the principles governing such action. And finally, in an open, democratic society, the general disaster plan(s) should be public information, because the public will be affected. It follows from this that if the plans do not conform to PNH or PWB, they should be revised or if they cannot be revised, there should be extensive public discussion about which harms are unavoidable.

Current Avian Flu Pandemic Planning and Wider Ethical Implications

Although disaster planning is not a new human enterprise - we are a relatively prudent species - planning for specific probable disasters may be new projects for the policy analysts and ethicists called upon to consider them as new dangers. It is natural that these experts, under a present sense of urgency, direct their planning efforts to specific contingencies, which is to say that they construct plans for response. Indeed, the absence of general preparation plans, deliberately constructed in what are assumed to be normal times, and explicitly based on PNH and PWB, is a striking feature of much contemporary disaster literature. However, to the extent that specific emergency response plans are presented as ethically sound disaster preparation plans, a crucial part of the deliberative process has been left out, especially when those response plans adopt guidelines pertaining to human well-being that would not be accepted in disaster preparation plans, and not accepted by the public if it were informed about them.

There are at least three big obstacles for an adequate response to an Avian Flu pandemic, based on what is now known about the disease and existing medical infrastructure. First, even if enough flu vaccine could be produced to inoculate half or more of the population against Avian Flu, the specific strain(s) of Avian Flu that would hit is very difficult to predict far enough in advance to make enough vaccine, and any strain that does hit could mutate in unpredictable ways.[9] This is the problem of a changing viral target. The second obstacle to an adequate Avian Flu pandemic response at this time is that it takes months to develop an effective vaccine once the target virus has been identified. This entails that the epidemic would be well underway before the right vaccine could be available. Both the changing target and the time frame required to grow the vaccine are problems with prevention and there is no easy solution to them at present. The third big obstacle to an adequate response is that there are limited resources, in numbers of hospital beds, ventilators, and anti-viral medications. This entails that it is now unlikely to be possible to treat everyone who will become ill with the virus.[10]

At present, there seems to be a model for Avian Flu response plans, which purports to delineate the allocation of scare resources in a principled way. The model is evident in ethical guidelines submitted in 2007 by the Ethics Subcommittee of the Advisory Committee to the Director of the US Centers for Disease Control and Prevention,[11] a 2006 report of the

[9] See W Waut Gibbs and Christine Soares 'Preparing for a Pandemic: Are we ready?' *Scientific American, Special Report* (November 2005). For more recent information see also www.influenza.com

[10] This is a working assumption in all current Avian Flu response plans. See note 19 below, for references to individual state plans in the US.

[11] Kathy Kinlaw and Robert Levine '*Ethical Guidelines in Pandemic Influenza – Recommendations of the Ethics Subcommittee of the Advisory Committee to the Director*,' Centers for Disease Control and Prevention (February 15, 2007) http://www.cdc.gov/od/science/phec/panFlu_Ethic_Guidelines.pdf

University of Toronto Joint Centre for Bioethics Pandemic Influenza Working Group,[12] and more specific articles about scarce triage in conditions of inadequate resources.[13] The guidelines specify the need of government officials to control contagion by limiting normal institutional gatherings (e.g. school attendance) and social contact at commercial and entertainment venues; provisions for quarantine are also deemed necessary. Normal emergency triage is invoked, which entails that those who are likely to benefit from immediate medical attention should receive treatment first, deferring treatment of moribund cases and those with very minor complaints. Most readers and members of the public would find all of the foregoing components of the response plan model well in accord with common sense, as well as morally acceptable.

However, there are two further aspects of the current model for Avian Flu response that require closer moral scrutiny, because they depart from egalitarian principles taken for granted in normal life. The first is that priority of immunisation and treatment should be given to health care professionals and providers of vital public services and utilities. The second is a 'triage of triage,' whereby not everyone who would benefit from immediate medical attention in a first order triage would get it, owing to different levels of scarcity. Some writers suggest that 'remaining life years,' 'pre-existing medical conditions,' and more vague measures of 'human worth' be assigned numerical 'ranks' in order to determine whether treatment will be given to specific individuals. For Avian Flu, ventilators are likely to be the most desired scarce resource and it has been suggested that patients already on ventilators for non-flu conditions or those with the flu who are not responding as well as anticipated, be removed from ventilators so that the ventilators can be reassigned.[14]

It should further be noted that the current versions of pandemic response plans all stipulate that open public discussion of the plans is necessary. While the plans are presently being discussed by emergency personnel on many local levels, throughout the US,[15] as of this writing (March 2009) there appears to have been no widespread public promulgation of the strategy of triage of triage or identification of preferred recipients of treatment. In semi-private discussion among health care professionals, it may seem as though in a pandemic, the patient is no longer the individual human being, but the community.[16] From this perspective, measures that would not be acceptable for individual care, but seem to insure the survival of 'the community,' appear to be more ethically acceptable.

Preparation vs Response Planning

A response plan is not the same as a plan for preparation. To prepare means 'to become ready.' Becoming ready for a pandemic has an element of engagement consisting of being able and willing to act, and an element of having what it takes for a desired outcome. In a war, a small group of soldiers might be able and willing to engage an enemy, believing in advance that

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[12] University of Toronto Joint Centre for Bioethics Pandemic Influenza Working Group, '*Stand on Guard for Thee: Ethical Considerations in preparedness planning for pandemic influenza*,' November, 2005. http://www.utoronto.ca/jcb/home/documents/pandemic.pdf

[13] See for example L Gostin JD '*Medical Countermeasures for Pandemic Influenza: Ethics and the Law*' JAMA (2006) pp 295:554-556; J Hick MD and D O'Laughlin MD 'Concept of Operations for Triage of Mechanical Ventilation in an Epidemic' *Academic Emergency Medicine* 13 (2006) pp 223-229.

[14] See for instance, Hick *ibid*

[15] In May 2006 and May 2007, I attended community ethics discussions held by the Lane Country Medical Association Emergency Medicine Task Force, in Eugene, Oregon. Current resources in the literature on mass triage were referenced and there was discussion of issues of scarce resource allocation, immediate decisions, and liability on the part of medical personnel.

[16] The term 'altered standards' has not been defined, but generally is assumed to mean a shift to providing care and allocating scarce equipment, supplies, and personnel in a way that saves the largest number of lives in contrast to the traditional focus on saving individuals. For example, it could mean applying principles of field triage. See Agency for Healthcare Research and Quality, US Department of Health and Human Services 540 Gaither Road, Rockville, MD 20850,www.ahrq.gov '*Altered Standards of Care in Mass Casualty Event*' Contract No. 290-04-0010, Prepared by Health Systems Research, Inc. AHRQ Publication No. 05-0043 (April 2005) pp 1-53, pdf. Quote p 10, consulted June 2007.

most of them will die and that the enemy will not be defeated. They may have prepared themselves psychically for the engagement, but this does not mean that they are materially prepared to defeat the enemy. An army might be prepared for the same enemy so that its response has the same psychic component as the small group, but their greater number and more extensive weaponry would constitute the kind of preparation likely to have a successful outcome.

For any probable disaster, preparation would require both the material and active response capabilities that would make a successful outcome likely. In an Avian Flu pandemic this would require sufficient immunisation materials, anti-viral medication, and trained personnel, so that those who would receive medical treatment for emergencies in normal times would receive it in the pandemic. The present problem is with sufficient material and skilled medical personnel - to the point where experts have said that the world is no better prepared for a current pandemic than it was almost a century ago when 40 million died in the Spanish Flu pandemic![17] But we could be prepared if we had sufficient material and trained personnel. A preparation plan would describe exactly what was needed for different degrees of epidemic severity: how many immunisation units, what and how many anti-viral doses, how many hospital beds, and how many ventilators, plus, the numbers of personnel and the training required for them to successfully deploy these resources. In other words, a preparation plan could restructure the conditions of response, so that adequate response can be envisioned beforehand, as not violating the ethical principles of normal life, because resources will be scarce.

The difference in ethical principle between response and preparation plans (that may not yet even exist) is a difference between *Save the Greatest Number* [SGN] and *Save All Who Can be Saved* [SALL]. Save the Greatest Number is the operating principle behind many current disaster response plans in the United States, where it is also frequently invoked in volunteer efforts, such as CERT (Community Emergency Response Team) training.[18] However, SGN is an ethical principle that cannot be accepted without qualification. It appears to derive from the philosophical ethical tradition of *utilitarianism* and *consequentialism*, although it is a (possibly dangerous) simplification of the principles of that tradition. SALL captures a general moral consensus of western democratic societies.

SGN is morally limited, because the greatest number who can be saved depends on the context we are considering. If a bridge is well-maintained against collapse, and the community has an adequate emergency response plan, then everyone who can be saved will have been saved if the bridge never collapses, or if it does collapse and there is a successful rescue. Both are examples of SALL. But suppose that the bridge is not maintained, it collapses, and a number of people are crushed. The rescue effort may apply SGN to the survivors, but lost forever are those who would not have been crushed had the bridge been well-maintained. If there has not been inadequate preparation for the rescue, the application of SGN will result in even fewer 'saves.' Thus, although SGN can always be fulfilled in an immediate situation, there may still be losses that could have been prevented. SGN is therefore a limited, because relative, utilitarian principle. SALL is more comprehensive and more stable for the same disaster, because it requires that preparation and prevention, as well as response, be considered. If the bridge is adequately maintained and does not collapse, or if it collapses and there is a well-prepared rescue response, then everyone who could and can be saved, will be saved. The difference between SGN and SALL, which are both utilitarian principles, is that SALL takes preparation as well as response into account.

Preparation is not response. By the time we have to respond, or are thinking about how we have to respond, the time to prepare will have passed. Preparation, unlike response, by its nature takes place in normal times, without the pressures of having to act immediately. It is

[17] For instance, given the shortage of mechanical ventilators, family members may be called upon to provide manual ventilation, as they were in 1918 (See note 9, above.)

[18] 'First, present citizens the facts about what to expect following a major disaster in terms of immediate services. Second, give the message about their responsibility for mitigation and preparedness. Third, train them in needed life saving skills with emphasis on decision making skills, rescuer safety, and doing the greatest good for the greatest number.' See CERT https://www.citizencorps.gov/cert/

during preparation in normal times—that is, normal in contrast to the disaster being prepared for—that we are obligated to work out the moral principles that will guide specific plans of response. This includes examining our existing moral principles and applying them to future stages of preparation, itself. Our existing moral principles dictate not only how we intend to respond, but what further preparation is necessary.[19]

There is nothing mysterious about what 'our' existing moral (or ethical) principles are, because they are based on values that in the Western tradition, at least, are the result of millennia of religious and humanistic study and practice. Moreover, these principles and values are immediately recognisable as right, to those who minimally share the heritage of a democratic society.

1 Human life has intrinsic worth.
2 Everyone's life is equally valuable.
3 Everyone has the same right to freedom from harm by others.
4 Everyone is entitled to protection from harm by non-human forces.

Democratic government is obligated, and assumed, to support 1-4, which are general social principles. These principles become ethical rules for individuals in the following ways.

5 We are obligated to care for ourselves and our dependents.
6 We are obligated not to harm one another.
7 We are obligated to care for strangers when it doesn't harm us to do so.

This list is incomplete and might be expressed differently, but it captures the common morality of peaceful, normal life in democratic societies.[20] It should therefore serve as an ethical ideal when the physical order and resources that support normal life are interrupted, impaired, or destroyed by disaster. It, or something like it, should guide preparation for disaster.

The common ethical values of peaceful life ought to be recognised in disaster planning as part of the preparation for disaster which is undertaken in normal times. In disasters themselves, or in the formulation of response plans, these values may function as ideals. To the extent that a specific response plan falls short of such ideals, to that extent does it fail to be moral or ethical. An ethical response plan requires adherence to common ethical principles. To call a response plan 'ethical,' it is not sufficient, as the current trend suggests, to simply append the label 'ethical' to an issue involving human well-being and recommend that those carrying out the response not be held legally liable for the results of actions that would not be considered ethical in normal times.

It is not ethics that are relative to circumstances, but the goodness or badness of circumstances that are relative to expectations. In this sense, bad circumstances are not an excuse for bad ethics. In many parts of the world, including some areas of the US, large numbers of people live amid great physical danger without the amenities taken for granted by those who are by comparison privileged. We do not thereby indemnify those who are disadvantaged from ordinary ethical obligations, even though the trauma and deprivations they suffer may be equal or worse to what we who are privileged would experience in a disaster. From the perspective of

[19] See James C Thomas, Nabarun Dasgupta, and Amanda Martinot 'Ethics in a Pandemic: A Survey of the State Pandemic Influenza Plans,' *American Journal of Public Health*, supplement 1 97, No. S1. (2007) The authors note that following World Health Organization recommendations, in November 2005, the US President's Homeland Security Council published a national strategy for a pandemic influenza plan in which the main responsibilities for planning and responding lie with state and local governments. In many of the resulting state plans, there is little specific attention paid to ethical issues or the need for ethical deliberations. Thomas et. al. emphasise that such ethical deliberation would have to occur during the preparation phase, because it would be too late to implement it after a pandemic began. They conclude, 'History will judge our generation's response to the next pandemic in large part by our ability to act ethically.'

[20] The list does not contrast or unify the major moral systems of virtue ethics, deontology and consequentialism. I begin to do that in 'Philosophy and Disaster' *Homeland Security Affairs Journal*, vol II,1,artl 5 (April, 2006) (http://www.hsaj.org/hsa/vol1II/issi/art5) and in Zack *Ethics for Disaster* Chapters 2 and 3.

a life that is normally relatively privileged, difficult and dangerous circumstances that exist elsewhere, while privileged normal life unfolds 'here,' are not considered a moral holiday for those experiencing the difficulty and danger. Therefore, those who normally live relatively privileged lives ought not to give themselves a moral holiday when they plan how to respond to what would be a disaster for them. If we think that it is wrong for strong governments in poor societies to enforce life and death disparities in medical treatment, how can it be right for us to enforce such disparities in our disaster? We call 'unjust' those societies that allow infants, elderly, and disabled members to die of treatable diseases, while medical treatment is available to a selected few. How, then, can we call such policies 'ethical,' when they are incorporated into disaster response plans for our own society?

Disaster preparation should take place in normal times, under the same moral guidelines that we customarily accept. As indicated in the Avian Flu pandemic examples, experts have left out the entire stage of planning as part of preparation and gone straight to the kind of emergency response planning that could be appropriate after a disaster has struck or is imminent. But since any pandemic will occur in waves, over a period of months, it is not clear what motivates this rush. Nevertheless, in general, our best preparation at any given stage may be inadequate in the event of a sudden and unexpected catastrophe.

The foregoing ethical analysis entails that we should not plan beforehand about how to allocate scare resources. Yet, common sense or prudence might suggest that we should engage in that exercise, as part of being prepared for events that cannot be precisely predicted or rehearsed. So this now brings us back to the question of how scarce resources ought to allocated, back to the question of how to triage triage itself. The philosopher John Rawls is helpful here. In his famous thought experiment on justice, Rawls advocates that the planners of a just society, with scarce resources, deliberate behind a 'veil of ignorance' concerning their own interests. The deliberators are not to know whether they themselves are rich or poor, young or old, or members of dominant or disadvantaged racial and ethic groups.[21] Of course, in reality, people cannot easily forget their own interests in this way and history yields few examples of such 'ignorant' deliberation having been undertaken, among even the most altruistic of government or institutional framers. Rawls's point, however, is that democratic political theorists ought to examine and critique basic government structures and institutions against the standard of the thought experiment of the veil of ignorance, because that 'original position' (in Rawls's terminology) will guarantee fairness. Fairness for Rawls is his conception or application of justice, whereby justice is the primary virtue of any society. Can we apply this idea of a 'veil of ignorance' toward a fair allocation of scarce resources in a disaster? While Rawls had the basic structures of society in mind, rather than specific policies, his 'model' of the veil can be applied to specific policies.

In the present case of framing a response plan to an Avian Flu pandemic, the planners ought not to know if they are themselves elderly, already ill, disabled, or young and healthy. Neither should they know whether they are poets, kindergarten teachers, clergy, cops, or the government officials, public policy experts, medical personnel, or commissioned ethicists, *who they already are*. The aim is to approximate a condition in which members of groups who are likely to get preferred allocations of scarce resources, are not the ones crafting response plans. This is not to say that such individuals are not fine human beings of high moral principles, but merely to ensure a structure of fairness. It is interesting to note that Winslow, who applies Rawlsian principles of deliberation and justice to triage, considers it acceptable in disaster to give priority in scarce medical resource allocation to medical personnel, police, and firemen. However, Winslow's justification is not the straightforward utilitarian calculation that this will save more lives in the long run, but the presumption that those 'behind the veil' who did not know their occupations, would choose such allocation. According to Winslow's Rawslian reasoning, they would choose it because it would promote greater equality of access to treatment, particularly for those who are most in need of such treatment. (That is, according to a Rawslian 'difference principle,' unequal distribution is justified if those worse off benefit from it.) [22]

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[21] John Rawls, *A Theory of Justice* Cambridge, MA: Belknap Press, Harvard University Press 1971 Chapter 1.
[22] Winslow *op cit* 1982 pp. 143-154.

The distinction between a direct utilitarian allocation of scarce resources and a utilitarian allocation that is voluntary, is exactly the distinction Baker and Strosberg draw between egalitarianism and utilitarianism. That is, egalitarianism may have utilitarian goals, but it must be voluntary, whereas measures to maximise utilitarian goals need not be voluntary, or chosen by all who participate and are affected.[23]

One way to practically ensure fairness about who gets to decide what the response plan should be, given scarce resources, would be to enable the broad public discussion of how scarce resources ought to be allocated. Such public discussion is in fact a stated requirement of the response plan model now widely accepted, although it has not yet occurred in either 'town meeting' formats in the US or by means of media promulgation of the model itself. In a democratic society, it is an empirical question how those who are not now likely to get either immunisation or anti-viral treatment, or their advocates, would 'vote,' when it comes to the allocation of these scarce resources. And, it would seem to be ethically imperative to ask the public, as a matter of principled, democratic public policy. Would most people prefer that vital public service personnel receive priority in the allocation of scarce resources in a disaster? And if they would, what kinds of safeguards would be appropriate to make sure that those who received priority treatment did continue their rescue efforts? Notice that if the public does prefer priority treatment for medical and public service personnel, this issue will have been moved to preparation planning, in a principled way.

Broad public discussion of the allocation of limited resources in emergencies should be a vital component of disaster preparation in a democratic society, a component thus far overlooked. The outcome may be no change in the recommended resource allocation hierarchies in present response plans. It is also possible that strong public objection by those unlikely to receive treatment, and/or their advocates, could motivate and invigorate that part of preparation which would result in adequate supplies of vaccination and anti-viral materials for an Avian Flu pandemic. Perhaps this view is overly optimistic about the degree of public interest in its own welfare. Perhaps the public at this time is only capable of reacting when policies in effect in a pandemic or other disaster are directly experienced as unethical. Again, this is an empirical question which could only be answered through the kind of communication that is a requirement of adequate preparation.

Broad communication during preparation would give a literal meaning to the use of the term 'community' in mass triage response plans. The community would consist of participating discussants, including advocates for whose who do not speak. This community of discourse would constitute and represent all those likely to be affected by a disaster. The idea that 'the community is the patient' is a standing heuristic in public medicine during normal times. But, during normal times, this is an abstract heuristic idea and the individual remains the patient in practice. The normal use of the term 'treating the community' directs attention to social issues and measures that will enhance individual health and well-being. However, it is not clear what constitutes 'the community' during an event with mass casualties, in contexts where concern is expressed for 'saving the community.' Is the community the neighborhood, town, city, county, or state? Does the community include the moral values taken for granted in normal times? Can the community be saved if much of its material infrastructure is destroyed? When 'save the community' is another way to say 'save the greatest number of individuals in the community,' it is difficult to see how anything more than a rhetorical purpose is served, along the lines of, 'Communities are good, this plan saves the community, therefore this plan is good.'

Saving the Greatest Number

At present in emergency preparation, the operating moral rule for rescue professionals, which is not quite a law, but in most cases is accepted as not in violation of law, and thereby has the protection of law after the fact, is this: Save the Greatest Number [SGN]. It's not known

[23] Baker and Strosberg *loc cit* 1992 pp. 105-6, 111-114

beforehand what SGN may entail in any given case, because what the greatest number is will depend on time constraints, hazards to rescue operations, and limits in resources of personnel and materials. In medical terms, SGN of course translates into 'triage.' Sort the injured into: those who are likely to die from mortal injuries, those who have minor injuries, and those who require quick medical attention but are likely to survive if they get it. The third group are treated first. This is the emergency protocol in situations of normal emergencies, such as vehicular accidents.[24]

But, as noted, mass casualties may evoke another kind of triage, in response to limited resources, when it is impossible to treat all those who are likely to survive if they get quick medical attention.[25] When SGN is applied to exclude from treatment the elderly, already ill, and those lacking good long-term prognoses, SGN has become *SGN, Who___* [SGNW], where the blank is filled in by the pre-determined characteristics of patients who will receive treatment. Moreover, the dynamic nature of catastrophes and unpredicted damage may result in greater resource scarcity, so that the blank in SGNW has to filled in or revised in an immediate situation.[26]

There are two moral problems with SGNW. First, it puts arbitrary power over life and death in the hands of individuals, in ways that are not transparent to the public, either before or after the fact. While such individuals may have the legitimacy of official administrative or medical positions in disaster situations, they are not otherwise certified, or so far as the public knows, morally qualified, to hold and execute such power. In fact, it is by no means answerable what such 'moral qualification' could be. Second, the model or formula SGNW accepts a limitation of resources before the fact, when there may still be time to ensure that there are enough resources, through more extended preparation. The fact that SGN is in accord with common sense and ordinary prudence gives it an appearance of moral legitimacy. And the justification for filling in the blank in 'Who_____' with medical personnel, for example, promises that the greatest number will indeed be saved this way. Furthermore, SGNW need not preclude saving those who do not match the required description, but only giving those who do match it, priority. However, there is much left unanswered by SGNW. Is it possible to save all who are given priority? Would members of the public accept SGNW if they knew beforehand that they would not be given priority? What should be done with the loved ones of those who are given priority and how will that further affect SGN?

Ideally, what should happen in a disaster is that everyone who can be saved after a catastrophic event, is in fact saved - *Save All Who Can be Saved* [SALL]. And if we cannot envision SALL, in normal times, while there is still time to prepare, then we have not fulfilled our obligation to plan for disasters. There is nothing mysterious about SALL, because it is the rule for normal emergency preparation. For example, in July 2006, after a woman was killed by a collapsed panel in Boston's 'Big Dig' tunnel, the governor of Massachusetts took over the investigation of structural problems with the tunnel and the tunnel was closed pending complete investigation and repair.[27] The reasoning here could not have been SGN, which would have resulted in triage after another accident.[28] Instead the reasoning was (i.e., seems to have been) SALL. By shutting down the tunnel for a complete inspection and repairs, everyone who can be saved from future collapses will have been saved, beforehand, or at least that would be the goal.

[24] For emergency triage rules, see *Community Emergency Response Team Participation Manual*, developed for Department of Homeland Security, United States Fire Administration, Emergency Management Institute, by Human Technology, Inc. McLean, Virginia, June 2003, Unit 4, Part 2. The published triage rules for disaster are essentially the same as those used in normal emergencies. In the US, individual states have EMS protocols, usually available on-line.

[25] For example, prognosis for recovery may be part of a triage protocol. See for example, John L Hick, MD, Daniet T O'Laughlin MD 'Concept of Operations for Triage of Mechanical Ventilation in an Epidemic,' *Society for Academic Emergency Medicine* (ISSN 1069-6563, Pll lSSN 1069-6563483, pp. 223-229.

[26] Such indemnification is usually secured with professional employment of rescue personnel and extended to trained volunteers in emergencies.

[27] For the latest report on the investigation of the Boston's Big Dig construction investigation, see Matthew J Wald, 'Late Design Change is Cited in Collapse of Tunnel ceiling,' *New York Times*, Nov. 2, 2006, A17.

[28] Such triage would probably follow a calculation that the risk of future collapses in any one trip through the tunnel was an 'acceptable risk.' For a definition of 'acceptable risk,' see http://health.enotes.com/public-health-encyclopedia/acceptable-risk.

A similar preventative principle seems to be at work in efforts to build vehicles capable of withstanding collisions, and requiring that they contain passenger restraints, and that passengers use them. But, with the Big Dig, the intention was to prevent future accidents from a specific cause by eliminating that cause (faulty construction). This is probably an example of disaster prevention (although if the tunnel were re-fortified against external stresses, it would be disaster mitigation). In the design and manufacture of vehicles the intent is to minimise the damage from collisions, which is, strictly speaking *disaster mitigation*.[29] Thus, some disaster preparation involves prevention of causes (for a further example, efforts to apprehend terrorists before they carry out acts of terror), whereas other forms of disaster preparation involves having an effective response after the disaster has occurred. Clearly, both forms of preparation are important. And if we are not adequately prepared we will be stuck with SGN after a catastrophe, or morally compromise ourselves with SGNW beforehand.

But what happens if SALL is applied, with adequate prior preparation, a disaster occurs, and there are still not enough resources to save everyone who can be saved? Is it then morally justified to operate under SGNW? Unless there has been broad public discussion about what characteristics should be used to fill in the blank, the answer is, No. In the absence of principled consensus, no one has the right to 'play God.' So what should be done by those who have to decide who to save, in situations when everyone who could be saved given adequate resources, cannot be saved as a result of resource limitations? It seems as though the only fair way to make such decisions would be randomly, or on a first-come, first-serve basis. Indeed, during a pandemic, all ill patients will not present themselves for treatment at the same time. And during rescue efforts in other disasters, survivors will either present themselves for treatment, or rescuers will find them and treat them as they find them. When large numbers of survivors needing treatment are present at once, it is difficult to imagine forms of selection that go beyond normal emergency triage. The fact of limited resources cannot give some people arbitrary power over the life and death of others. All that the fact of limited resources does in situations where people suffer through no fault of their own, is put both aid providers and sufferers, in a very bad, insecure situation. We are left with, FSALLBP, *Fairly save everyone who can be saved, with the best preparation*.

How are we to determine 'the best preparation' given competing needs for resources? Do we, for example, choose more health care for normal times or more supplies for a possible pandemic? In a democracy, the answer to this question needs to be decided by open discussion and public opinion. Ideally, the best preparation will be enough preparation to avoid using scarce resources as a justification for planning responses that violate the broad ethical principles of normal times.

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[29] *Disaster mitigation* encompasses mainly structural aspects of preparation that will lessen the effects of a catastrophic event. See http://www.gdrc.org/uem/disasters/1-info-role.html