Abstract  Disasters frequently create demands that outstrip available existing medical and societal resources. This may be particularly problematic for giving medical care, because disasters may destroy the infrastructures necessary to both provide patients care and keep new health problems from emerging. Disaster may, for example, not only strike care providers and hospital facilities directly; they may decimate communities’ capacities to provide food to the population and carry out critical waste disposal services. All these effects may be most important to policymakers and care providers deciding triage priorities during disasters. Referring to just these two examples, food and waste disposal services, for instance, care providers should treat first not only other care providers, who can, then, take care of others, but food preparers and waste disposal personnel, likewise, to save the most lives. These two examples are just a few among many that warrant priority for this same reason.

Keywords  Medical ethics • Values • Moral principles • Ethics of care • Psychological considerations • Allocation of resources • Triage • Tiering
Introduction

Disasters frequently create demands that outstrip available existing medical and societal resources. This may be particularly problematic for giving medical care, because disasters may destroy the infrastructures necessary to both provide patients care and keep new health problems from emerging. Disaster may, for example, not only strike care providers and hospital facilities directly; they may decimate communities’ capacities to provide food to the population and carry out critical waste disposal services. All these effects may be most important to policymakers and care providers deciding triage priorities during disasters. Referring to just these two examples, food and waste disposal services, for instance, care providers should treat first not only other care providers, who can, then, take care of others, but food preparers and waste disposal personnel, likewise, to save the most lives. These two examples are just a few among many that warrant priority for this same reason.

This ethical question, whom care providers should first treat, is, perhaps, the most profound and controversial ethical question that disasters may pose. Disasters vary, of course, widely. They include pandemics; natural disasters, such as earthquakes, hurricanes, and floods; and nuclear accidents. Each kind of disaster raises different ethical issues. Yet, many remain common to all.

This discussion will focus on these common ethical issues. It will use infectious disease as the principal paradigm representing other disasters. The use of this disaster as a paradigm may be particularly useful, because, with infectious diseases, new ethical problems may arise at different stages, over time. For instance, during pandemics, a first task may be to identify people already infected or possibly infected and to then isolate them so that they do not pass on their virus to others. Next, contacts must be reached. All such patients must, of course, also, be treated, but the numbers infected may increase and, indeed, multiply every week.

The discussion that follows will outline ethical issues that can arise during disasters at both the policy and clinical levels. Initially, conflicting frameworks and values will be discussed. The limitations of ethical analysis in resolving these conflicts will then be presented.

Since, “the facts” are a first step in ethical analysis, possible psychological reactions of both patients and care providers during disasters will next be enumerated.

Objectives

- To outline the ethical issues that may arise during disasters at both the policy and clinical levels.
- Frameworks and values will be discussed, including the limitations of ethical analysis.
- There will be a focus on allocation of resources, psychological reactions of both patients and providers, and practical implications for policymakers and practitioners.
These reactions may vary and be quite uncertain. Both of these considerations may profoundly affect and, indeed, alter what policymakers and care providers should best do. One plan may be best “on paper”. If, though, in practice, this plan is impossible to implement due to, particularly, people’s emotional reactions, the best-laid plans may prove suboptimal.

Ethical concerns involving the allocation of limited resources, this most pressing of ethical issues, then, for all of the reasons stated previously, will be the focus of the following discussion. Specific issues addressed will include, also, the practice known as “tiering”, which occurs when more patients than are expected continue to “arrive” over time; a scheme, based especially on respecting peoples’ relations with each other, posed in New Zealand; and finally international obligations.

Practical implications for policymakers and clinicians, finally, will be discussed. It will be suggested that although several ethical considerations that arise during disasters remain controversial, other ethical guidelines, now developed, can be quite helpful.

**Ethical Frameworks and Values**

The foremost ethical issues posed by disasters involve triage and treatments, when resources are limited. The favoured values are utility and saving the greatest number of lives.

These decisions, in context, are, however, difficult and complex. In an outbreak of influenza, for instance, treatment may be most effective if given to patients within 48 h. If, then, this cut-off is used, this raises the question how this time of exposure should be determined.

Should care providers merely ask people? If they ask, people may lie. Parents, for example, having learned of this cut-off time “through the grapevine”, may say that their children have been exposed for less than this 2-day window in the hope that they will, then, be among those first treated.

A further, more self-evident ethical conundrum that may arise during disasters is the degree to which people should be given equal access to life-saving procedures. Patients may have emotional or physical conditions, already, for example, such that they need another person to help take care of them. A question raised in regard to these patients, then, is how, if at all, their dependency on this other person should be factored in, if it is factored in at all.

**Moral Principles**

Due to these people’s greater dependency, they require more resources. Thus, if they are treated equally, in theory, fewer lives could be saved. From a utilitarian standpoint, treating these people equally may, then, not be warranted. Yet, the principle of justice, in the sense of all people’s lives being equal, might require that
these patients be treated equally, even though this end result would most likely be nonutilitarian in its ultimate, net effect. The ethical principles of utility and justice may, then, here be in conflict.

As this example exemplifies, however, this use of justice is only one of the ways in which justice can be viewed and applied. Other equally valid meanings of justice are to help most those who are worst off and giving all an equal opportunity to live a full life. As will be discussed, this last application may support, rather than conflict with, the principle of utility. Ethical analysis may, then, serve to clarify the different ways “justice” can be applied during disasters. This may, in turn, help clarify what should be done.

Another value, preventing harm, may mean giving some resources during disasters to relieving patients’ suffering. Here, justice for those worst off might require providing some care to people greatly suffering, even though this might mean that some other patients, as a result, may die, when, otherwise, they might have lived. People unduly subject to suffering might be, for example, those who are bedridden and, thus, can’t be moved during disasters, but require ongoing analgesics for severe pain.

Another most difficult issue is how, if at all, treatment criteria should change if and when the number of people needing life-saving treatment greatly increases. This issue is the one referred to this as tiering.

Other additionally more problematic issues involve finding ways to communicate optimal advice and available resources as equally as possible among poorer persons, who may not have the same access to radios and televisons in some contexts and/or live in extremely rural settings. Still others involve limiting individuals’ freedoms, such as by restricting their freedom due to quarantines, contact tracing, and requiring the reporting of possible transmission of disease.

The Ethics of Care

A particularly heartfelt additional, ethical framework does not involve principles at all. Instead it primarily involves giving moral weight to people having and maintaining close, caring relationships with one another [1]. This perspective may be seen as including, during disasters, keeping people close to one another, as in the same family, together. Criteria for who is treated first during triage could, however, favour treating one family member, on utilitarian grounds, over another. Then, particularly, one family member may survive, when another may not.

This most excruciating ethical dilemma arose in one hospital, for example, after Hurricane Katrina. Due to the flooding that occurred around this hospital, only a few patients at a time could be rescued there by rescue boats.

Here, then, this other moral framework, the care perspective, might apply. Thus, these frameworks, themselves, in addition to different moral principles within the traditional framework using ethical principles, such as justice and utility, may conflict. This other framework, known as the Ethics of Care, may give greater moral weight to maintaining the relationships between these people by giving a parent and child or husband and wife, together, greater priority. Thus, in regard to the question,
who at a hospital “stranded” by a flood should be the first ones rescued, this different framework might give more priority to saving all one’s family members over applying usual more abstract ethical principles.

This second moral framework, the Care Perspective, also may apply more when care providers or others must decide when, if ever, they should put limited resources into relieving patients’ pain, as opposed to saving patients’ lives. Here, it is important to find some means of relieving patients’ pain, but, as just one example, sufficient numbers of care providers may no longer be available to both provide pain relief and give life-saving care.

As another example, further supplies of analgesics may no longer exist. Then, some care providers might, though, be willing to stay behind, as when others are being evacuated during a flood. They may, then, devote themselves to relieving the pain of these patients as best they can. Shalev has said, for instance, “When little can be done…, it is wise to reduce survivors’ loneliness” [2].

A related ethical question (which ethical analysis may be unable to resolve) is what care providers should do if a patient has severe pain they can’t relieve; he or she is expected to die, no matter what is or isn’t done; and he or she asks for active euthanasia [3, 4]. What, also, should they do if these patients have unbearable pain, but they aren’t competent? Or are children? And what if, in this last case, the child’s parents are present and plead with the care provider to relieve their child’s pain by ending the child’s lives? Should the parents requesting this make any difference?

Some of the strongest arguments, here, are self-evident. One value in regard to incompetent patients in extreme pain is, for example, justice: they should have equal access to obtaining pain relief. This application of justice may apply, even, or, perhaps, especially, if they are children [5]. Children may not understand what they are going through, for example, and may, as a result, suffer more. Moral arguments against these are that life is sacred and, in regard to competent adults versus other patients, that the former should have, at least, some autonomy to die as they want.

A consideration particularly complex is how much moral weight, if any, should be placed on these patients not understanding why they are in and/or being left in extreme pain. This lack of understanding could, on one hand, perhaps, be beneficial, because these patients wouldn’t know that their pain, short of death, might not be soon resolved. This same lack could, on the other hand, though, as already said, deprive them of the gains they could have from knowing why care providers can’t give them greater relief than they are.

How these many most difficult questions should be decided is itself, of course, also a critical question. A conventional approach and answer is that these decisions should be made by legislators since they represent the majority’s rule. Yet, ethically, this approach may, itself, be unacceptably problematic. This “majority” may be insufficiently aware of and/or responsive to the needs of the few. They may, therefore, be insufficiently sensitive to the needs of the “worst off” during disasters. These people may include those emotionally or physically ill or bedridden, as previously considered.

It may be that, in regard to how these decisions are made, then, in making these prior decisions, other approaches more likely to offset this risk should also or instead
be carried out. These approaches may include, for example, convening focus groups and other outreach efforts. These endeavours should be designed particularly to acquire greater input from those likely to be, and/or know those who would or might be, more disadvantaged during disasters than those closer to the average person among the greater population.

**Limitations of Ethical Analysis**

It is critical for policymakers and clinicians to know, when asking these questions, what ethical analysis can and can’t be expected to offer.

Ethical analysis can show the relative strengths and weaknesses of different arguments and this may help provide better answers, but it often can’t provide best answers. This is because reasonable persons may reasonably differ on which among sound, but mutually exclusive, core values, should prevail.

An example involving rationing is illustrative. As indicated previously, an ethical conflict may exist between the principles of justice and utility. A most difficult question exemplifying this conflict involves age. Justice might, for example, support all persons’ lives being valued equally, whereas utility might “give priority” not to saving the greatest number of lives but to maximizing the number of years; in net effect, those persons saved would live. This value then might give greater priority to people who are younger.

The moral weight, if any, that age should have may, then, also differ and depend on which meaning of justice is applied. That is, people could be treated “equally”, but not just in regard to their being able to continue to live. They could, instead, be given equal opportunity to live to an older age. According to this use of equity, treating a 30-year-old and 80-year-old equally might mean giving priority to the 30-year-old, since this would give the 30-year-old “more equal access” to living to be 80.

This second use of justice would accord more with the principle of utility and, accordingly, add stronger support to the ethical argument for deciding in favour of utility. This other, second conception of justice has been referred to as the “fair innings approach” [6].

This example of one’s considering different possible applications of the principle of justice illustrates how ethical analysis may increase one’s capacity to arrive at a better argument and, thus, how this analysis may make the end result better, even though this analysis may not give a “right” answer.

**Psychological Considerations**

Ethical policies should be based on as valid assessments of realities as are possible. Patients and care providers may have significant, different, psychological reactions.
The discussion in this section will consider both these groups’ reactions during pandemic disasters. This discussion should be paradigmatic in illustrating how these and other realities should be initially assessed when ethically analyzing other kinds of disasters, as well.

These examples illustrate the kinds of psychological realities that particularly policymakers should take into account when deciding which people’s treatment should be given priority during disasters.

In designing these policies, a key question is, always, who should decide them. People’s views differ, even in regard to the moral framework that should be used. Whose view should decide policy, thus, is a paramount question. This will be considered in a later section.

**Individual’s Psychological Behaviour**

A first significant behaviour people may have, prior to and during a pandemic, is to hoard medications. Here, as in other such situations, it could be hoped that people would not hoard treatments. This expectation may, however, not be met. As Gostin states, “This altruistic consensus is comforting, but may not reflect real behavior in a time of crisis...[which may include] hoarding, stockpiling, and black marketeering” [6]. If hoarding occurs, of course, less treatment supplies will be available.

A second psychological possibility involves family members quarantined in their homes. Here, as Gostin declares, “[H]ome quarantines can only be morally justified in contexts where residential units permit... asymptomatic individuals to remain confined without imposing risks on those with whom they live” [7].

Family members already exposed may be instructed to remain separate from others not exposed. Even if family members know the importance of staying apart, they may, though, engage in denial. Wanting to be with their loved ones, they may not comply.

Some people, also, may all live together in only one room. Then, for them, this desired separation may not be feasible. If other living arrangements aren’t possible, but they remain together, those families who live in just one room may be treated unequally. As, again, Gostin says, “Home quarantine... can create divisions based on social class, because the poor may not have homes adequate to protect the unexposed” [7].

As both these examples illustrate, people may respond during disasters based on their feelings for others. This is what, of course, the Ethics of Care approach to ethics takes most into account.

Some people, during disasters, care so much for loved ones that they choose to stay with them even at much greater risk to themselves. During floods, as those caused by hurricanes, for example, people may be stranded with family members who are bedridden in their homes. Then, those who could leave may, later, refuse to. They may refuse to enter rescue boats, for example, because they could not take these family members with them. Some have even refused to leave pets.
Parents, even if adequately informed, may, also, not take appropriate steps during disasters to vaccinate their children. They may, for instance, fear that vaccinations would pose unnecessary risks.

Further, when persons are first exposed to an infectious agent, they must be identified as potentially contagious. One means of early identification may be by detecting a rise in people’s temperature. People must not come in for this temperature testing. This testing could be involuntary. Yet, if it is not, they may, due to fear or denial, not come in.

Once identified, there may be a need for contact tracing to locate and isolate all other persons exposed to a person who is infected. As Lo states, “Public health investigations require… cooperation… to identify contacts…Voluntary measures generally promote cooperation more than do mandatory ones” [8]. Again, it might be hoped that people infected would identify these other people, but they may not. Here, they may fear stigma or feel shame.

Perhaps the greatest psychological concern that should be taken into account by policymakers and care providers before and during disasters is that people may panic [9]. In 1995, in the Democratic Republic of the Congo, in response to Ebola, for example, neighbours feared that even care providers and their families might be infected. These neighbours, reportedly, then, burned their homes [9: 449].

All these possible psychological responses suggest the need for appropriate preventive antidotes, to the degree that these can be implemented. In an effort to prevent panic, for example, due attention must be put, in advance, to achieving optimal, true, but reassuring communication [10]. Emphasis should be placed on informing the public as fully as possible what is being done, for example, to reduce this panic.

There is a tendency for people not faced with a crisis, on the other hand, to, at this time, overlook its importance to them. Resources should be allocated in advance, therefore, also, to try to help overcome this source of “resistance” so that the public can respond in the most effective as well as calmest way possible if and as a pandemic occurs.

Those responsible for having and making key resources available during a pandemic should do what is necessary, then, to be adequately prepared. This preparation includes stockpiling medications, having plans for delivering them, and anticipating how this can be best accomplished, so that those more disadvantaged, such as groups in outlying areas, can be adequately reached.

A gain from the practice of carrying out mock preparations for a disaster, such as a hurricane “drill”, is that institutions may find out that their plan is workable. This knowledge may have the desirable secondary effects of increasing both care providers’ and the public’s confidence that such a disaster can be survived.

At this same time that there is this need to plan and, perhaps, also carry out mock measures, there is a need when disasters, such as, again, hurricanes, threaten to not implement these plans prematurely. An example, here, is when the “real likelihood” of a hurricane’s striking a precise area is extremely remote. It would be possible in all such instances to institute full evacuation procedures at once. This could save lives but also effect extraordinary costs. Reasonable criteria regarding when these
responses should be triggered must be established beforehand, on the basis of the best evidence available.

Ethically, though, there is no place here for high-stake gambling. It is better here to be safe than sorry.

**Care Providers’ Psychological Behaviour**

During disasters, care providers should be able to offer emotional support to their patients, to the degree that they can, even and especially when their patients are having most severe reactions. When, for example, patients were feeling the panic previously described, due to fear that they would acquire Ebola in the Belgian Congo, care providers should have, when possible, sought to continue to see that these reactions are “misguided but self-protective behaviours”, so that with this accurate understanding of these patients, these care providers would remain most able to help them [9].

Still, care providers may, of course, be beset by feelings beyond their control. In the Democratic Republic of the Congo, at this time, for instance, care providers felt fear. Fifty-five percent feared having pain and suffering, 53 % feared a horrible death, 41 % feared being separated from their loved ones, and 23 % feared being abandoned [9].

During the SARS outbreaks that occurred throughout the world between November 2002 and July 2003, as another example, care providers feared that they, too, might also acquire SARS and that they, too, could inadvertently spread SARS to their families. SARS could be acquired from patients through respiratory droplets when they were within 6 ft of patients with SARS. In one SARS ward in Toronto, 90 % of the ward nursing staff became infected. In a hospital in China, 17 medical students acquired SARS after doing physical exams on SARS-infected patients [11].

Care providers detecting and treating patients with SARS also had to try to determine whether a patient’s fever was or wasn’t due to SARS. They knew that if they were wrong, this could result in several people’s lives, possibly, being lost due to SARS. This one instance of undetected SARS, then, could also continue to not be identified and go on to spread the infection. Care providers had to screen numerous people likely to have been exposed, so that they could separate those who might have SARS from others.

These fears, in addition to those for themselves and for their families, are, obviously, most distressful. Care providers, during disasters, also may find it highly stressful to not be able to treat patients as they would under normal circumstances [12]. Even when resources are available, care providers may not be able to obtain adequate follow-up for patients [13].

Another source of stress for care providers during disasters is that their role or roles may be unclear: “Although ideally an experienced triage officer is designated, it may fall to the individual clinician to make allocation decisions until order is restored” [14].
Their roles may conflict. If they serve both the roles of triaging and treating patients, for example, as indicated in this statement, when triaging, they may be the one deciding to treat or not to treat a patient, only later, in a treatment role, to be responsible for providing the same patient care.

Bursztajn and Brodsky, two psychiatrists, sought to study how care providers cope in what they hoped was a sufficiently analogous situation, a conflicting triage context to be generalizable to their behaviour during disasters. They studied care providers having such conflicting duties in a managed care setting.

They found, not surprisingly, that care providers feel “conflicted”. Care providers may regard their primary allegiance to be to the patient, but may, as a result of this, “inadvertently abandon their fiduciary duties”. This may, in turn, “undermine the doctor-patient alliance”. This alliance, they speculate, is “a protective factor” in care providers being able to better bear their feelings of uncertainty and grief [15].

Care providers may, alternatively, be so committed to their alliance with individual patients that they do not fully support allocation policies. They may even choose, out of loyalty to patients they have known and seen for years, to store meds for them, even when this might mean that they would not be able to distribute them more equally, as public policies might require, to others, later.

Their doing this would be seen as unconscionable from a traditional, principled point of view, since they would be violating justice in order to favour the interests of their own patients over those of others. As Lo states, “Physicians who urge an exception for a particular patient should also be willing to support an exception for other similar patients” [8].

From an Ethics of Care perspective, however, this might not be at least so self-evidently or unequivocally, ethically wrong. Care providers doing this could be viewed as, even if violating “more important” values, at least fulfilling their traditional commitment and an implicit promise to their patients to continue to put their interests first. Some of their patients might, in fact, expect this.

This dilemma of whether to treat all patients according to objective criteria, to the degree that this is plausible during a disaster, is best illustrated, perhaps, in regard to children. This is also, presently, still controversial.

There is first, here, a question of whether care providers’ more subjective medical judgments should play any role here, and if so, how much. These subjective medical judgments may be more potentially problematic in regard to children, it is argued, since children tend to evoke exceptional empathy. Thus, some report that, in general, during triage, children may be “overly” triaged or placed into groups such that care providers will treat them with greater priority than they should, based solely on the severity of condition [16, 17].

There is also present controversy on an altogether different theoretical level. People disagree on whether care providers should, in general, give children greater priority over others, less, or the same priority. From a utilitarian perspective, they will live longer. Yet, if they are treated equally, this will further more the principle of justice or equity, if applied in this way. Some argue, even, that only children of a given age, such as teenagers, should be “prioritized”. They assert that the death of an adolescent is a greater loss than that of a toddler or infant [18].
Children, clearly, have unique needs. Their body surface area-to-mass ratio and decreased subcutaneous tissue make them, for example, medically, more vulnerable to hypothermia. They also may be less able to communicate their needs and wants.

An additional problem involving children, and, more particularly, their parents’ exceptional feelings for them, noted previously, is how care providers can determine accurately such answers as how long a child – much less any patient – has been infected when these answers may determine whether they will be treated and, thus, possibly, whether this patient lives or dies.

One means of determining the duration of a patient’s infection is, for example, to ask, “When did [you or] your child first have this cough?”

A care provider asking a patient this question might choose not to divulge why he or she is asking this question. This ethically may be regarded rightfully as implicit deception by omission.

Care providers may want to view this in other ways, but the validity of any other view is open to question. Some ethical choices, such as this one, unfortunately, involve extreme and painful ethical and emotional costs.

This situation may be, then, highly problematic for some care providers, for both this reason and because the stakes, here, for patients, are so high. How patients answer may determine in triage situations, as I’ve said, whether they live or die.

If, indeed, care providers ask this same question to many patients and/or parents over time, these patients and parents may come to know, prior to these care providers asking them, what the consequences of their different answers, likely, will be. Thus, care providers may for this reason feel that they should lie. They may believe, rightly, that from the standpoint of utility, if they do lie, more patients will fare better. This may, of course, make this situation more problematic for care providers who don’t lie, as well!

For these kinds of reasons, then, also, it may be preferable for care providers to treat patients only on the basis of objective findings, to the degree, of course, that this is possible. These bases might not include, then, parents’ statements of how long their children have been stricken. Patients, also, then, would not be placed in the position of having to decide whether to lie, as parents might, especially, feel that they should and must, to try to most help their children.

Another psychological concern regarding care providers is the extent, if any, to which they will sacrifice the needs of their families for the public good. They, as others, might want greatly to put their loved ones’ needs first. This may mean to some that they should stay with them, as opposed to going to work to help far larger numbers of patients.

A question posed regarding this is what, if any, sanctions should be brought against care providers who, during disasters, place their own families’ interests above patients’, by not coming in to work at their hospitals, but, instead, remaining at their homes. One view is that care providers, “being care providers”, should be trusted to put their patients first. Another view is that care providers not coming in should lose their medical licence to practice.

In light of these stresses, some physicians who have treated patients with SARS afterwards formulated ten lessons for future doctors treating patients during
pandemics, to share what they had learned. One lesson was this: during disasters, mental health resources should be made available to both patients and staff [19].

The Allocation of Limited Resources

The predominant ethical question pandemics and other disasters raise is how limited resources should be rationed: “Triage results in categorization of patients… As a consequence, the central ethical challenge for clinicians and organizational leaders in … disasters will be the preferential management of some patients with the expected consequence of increased morbidity and even mortality for other patients” [20].

Triage

The primary ethical issue, here, is who, among many, should have greater priority for receiving limited medical supplies. Clearly, to enhance a population’s overall survival, it is necessary to treat first those who serve most critical functions. They must remain healthy to be able to help others.

Thus, the paradigmatic example of whom care providers should treat first is other care providers who provide direct care, but those who serve essential functions include many more groups. These people include, for example, other first responders, such as ambulance, fire, and humanitarian assistance personnel; security persons, such as police, national guard, and, I would argue, now, especially after 9/11, military personnel; those who provide essential products and services involving water, food, and pharmaceutical supplies; those maintaining critical infrastructures, such as transportation, utilities, and communication; and those maintaining sanitation, such as undertakers, cemetery workers, and waste removal personnel, among others [6].

This group includes, also, those responsible for continuing government functions. These people include key persons in executive, legislative, and judicial systems and those who support them [6].

Beyond those in these groups, however, the questions of priority become more taxing. One approach is, here, for example, to protect most, more vulnerable groups, such as the very old and very young, as already in part mentioned, since this, in some regard, most respects all peoples’ dignity, though this, at the same time, violates utility. Factually, though, these groups may actually not be those most vulnerable. “Seasonal influenza disproportionately burdens infants and the elderly, but highly pathogenic strains may affect young adults, as occurred with Spanish flu” [6].

The elderly are more vulnerable, but they also will benefit less, as said, because they will not have as long to live. Still, even though this statement is valid, people’s age may not, of course, reflect their actual health. Thus, making “cut-offs” on the basis of age alone is ethically, significantly problematic.
Justice, as stated here, also, may be applied in different ways. An 80-year-old could have the same access to treatment as someone 30, based on justice, but the “fair innings” principle might favour care providers treating younger adults, children, and pregnant women first.

Another more vulnerable group is the poor. The poor may be disadvantaged, relative to other groups, for many reasons. As said, for example, they may, relative to other people better off, lack the same access to the media which may inform the public where they should go and when. If poorer people receive less information or receive it in a less timely manner, they will be disadvantaged, accordingly.

As stated, “the poor” may also be disadvantaged if they live in smaller homes. They, may, in addition, suffer more, also for other reasons. If quarantined, for example, they may have a greater need for lost income. They also may not be in positions in which they can as easily take time off and still get paid.

A final example of a disadvantage the poor may experience may occur if they must travel to be at the front of a queue of people getting treatment. Policies may follow a “first-come, first-served” principle. If and when this is the case, poor persons may lack equal access to transportation. They may, for example, have to make several bus transfers to travel across a city. This may take more time than others take. This may allow others to arrive first and, thus, be before them in a queue.

**Tiering**

Perhaps the most troubling, more specific ethical problem raised, at least in theory, by a pandemic, is the question alluded to previously: What if the number of patients stricken increases over time and is more than was initially expected?

Suppose respirators are initiated on a small number of patients at first. Should this treatment be stopped after it has begun if the lives of more patients could be saved as a result of freeing-up these same resources? If so, how many more patients likely to be saved would this require? Three times as many? Ten times as many?

“Stopping” these respirators to save more patients’ lives is known as the “tiering” approach. Under this approach, the criterion for deciding who can receive treatment may become stricter over time, as the number of patients infected becomes greater. Moreover, ethically, saving the most lives then may mean having to withdraw resources from patients who are stable or even improving [21]. Should this be done?

A first question here is, as always, practical. Would patients, their loved ones, and/or society accept this? If the public receives prior information and education regarding the rationales for this approach, it may be that people could more readily accept this, if it becomes “necessary”. At some points, however, people may find such rationing schemes unacceptable, even if they, previously, have been informed.

It may be, though, that this need for respirators wouldn’t, in some circumstances, have to come about. It may be that volunteers could manually squeeze airbags to breathe for these patients. It may take just two volunteers, taking turns, to accomplish this [22].
This possibility raises, again, in this different context, the possible relevance of the Ethics of Care.

**A Model Example: New Zealand**

The National Ethics Advisory Committee (NEAC) in New Zealand recently (in 2006) put forth a document stating its basic ethical aspirations during a pandemic, for the public’s response [23].

This document stressed the importance of giving exceptional priority to people’s relationships. The NEAC, there, in general, puts “the community” first [24].

The NEAC would, for example, send volunteers to “rural people” to rescue them when necessary. It would also send volunteers to people’s houses when they couldn’t be reached by phones.

It would also seek to make up for past wrongs to a group there called the Māori that occurred in a prior pandemic in 1918. It would give this group priority during disasters. The ethical principle it would enact here is “compensatory justice” [26].

Here, a support team would, also, help staff cope with its many demands. Further, since staff would take on greater risks, as risking their contracting influenza due to caring for patients, treatments for staff would have priority if this occurred.

People would, also, in this event, contact and specially support these care providers’ families and express their exceptional appreciation of staff taking on this additional risk [2].

The public would be informed of all this. This priority is not, however, without bounds. If other patients’ needs are significantly greater than those of staff members, these other patients’ needs will prevail [2].

How, finally, here, would the NEAC resolve triage conflicts when some can receive medical care, but others can’t? This determination would be made on the basis of who would most benefit and, if this can’t be determined, decided on a random basis. Those making these decisions would not, however, discriminate against people with disabilities. Rather, extra support would be provided to those who take on exceptional responsibility for others [2].

This document states explicitly that policies that are constructed with “able” people in mind potentially disadvantage those with disabilities. Thus, this document recognizes and acknowledges that, especially during a pandemic, people with disabilities may be particularly vulnerable to being further disadvantaged by policies, unless special consideration is given to avoiding this outcome [2].

**International Obligations**

In a pandemic, all persons are at risk, but those living in more remote areas may have less direct access to treatment, as stated. They may, also, though, be at less risk
of exposure than others. Thus, even though these persons may, in this first way, be at greater risk, their greater, relative safety from becoming infected may offset this.

The same amount of resources may, then, ideally, perhaps, be initially provided to different places in the same city that have similar population densities. One approach to dividing resources after a pandemic begins, then, is to determine subsequently all these same areas’ needs on an ongoing, regular basis, such that if and when there are disparities, resources can be shifted from places doing better to those places not doing as well.

Ethically, analogously, better-off countries should consider other nations that have greater needs. These countries may also lack the same means to help themselves. As Gostin states, “This really can have devastating consequences for resource-poor countries that cannot compete economically for expensive countermeasures” [6].

The ethically highest road any country can take may be to help other nations, even though this is, to some degree, to the detriment of one’s own citizens. Here, the practical limiting factor may be, of course, what the people in the better-off country will tolerate.

People may, though, be more willing to make such sacrifices if they are better informed. Here, though, as with mock hurricane drills, there is again a real factor regarding what risks can be anticipated by other countries and what is their likelihood. Here, again, the facts and in this case the uncertainty of these facts may be, even in theory, as important in determining what a better-off country should do as any other factor.

Implications

Policy Requirements During Disasters

There are, in the view of Gostin (an eminent lawyer and ethical authority in this area), five major ethical principles that policymakers should particularly take into account when designing policies to be implemented during disasters [7].

The first principle, as noted, is utility. This principle typically involves saving the greatest number of lives. Some additional values not based on consequences should, possibly, prevail. An example, already considered, is the value of justice. Another is respecting persons, as by telling them the truth, keeping promises to them, and insuring that they are adequately informed.

An example, in another (non-disaster) context illustrating how important these latter, deontological, or non-consequence-based values, is our present practices when doing research. A person cannot be enrolled in a protocol against his or her will, since this would violate this person’s autonomy, despite the possible gain to others. Likewise, it may be also that during disasters, some similar dis-utilitarian outcomes should be absolute and built in. An example might be an absolute
prohibition against active euthanasia. Another example mirroring the New Zealand model might be equally treating people dependent on others. This might be done, despite its foreseeable result of saving fewer lives.

The second principle is to respect people’s dignity, as indicated already. Here, though, it may be that utilitarian concerns still should prevail even when there is only a threat of great harm to many. This “precautionary principle” holds that there is an obligation to protect populations against “reasonably foreseeable threats, even under conditions of uncertainty” [7]. Here, though, there is also an ethical requirement that the least restrictive or least intrusive alternative that will still “achieve the [same] objective” should be implemented [7]. An example is this: during pandemics, people’s interest in privacy, though important, is of only secondary importance.

The third principle of utmost importance is that of justice, also considered earlier: “Justice requires that the benefits and burdens of public health action be fairly distributed…” [7]. Here, as an example already discussed, people who are poor may have less direct access to acquiring protective medications and/or treatments. Again, compensatory practices may be adopted, though these, too, might go against achieving maximal utility.

The fourth principle is what Gostin refers to as procedural justice or fairness: “Procedural justice requires a fair and independent hearing for individuals who are subjected to burdensome, public health action” [7]. An example, here, is that people shouldn’t be subject to undergoing personal harm without their having access, at some time, to making an appeal. People, during a disaster, may, for example, as stated, lose income if they stop work to care for members of their family. If this occurs, it may be that they should be able to appeal for compensation, as on the ground that if they hadn’t cared for a family member at this time, he or she would have gone without it.

The fifth principle, which Gostin sees as “non-negotiable”, is “transparency”. This principle requires all institutions, including government officials, and care providers to make decisions in an “open and fully accountable manner” [7]. A foremost rationale for transparency is that if a policy is unfair, this requirement allows other people to better review this. Then, as a result, practices, later, can be changed. Ethically, also, of course, this respects all people, maximally, by keeping them more fully informed.

Groups should, then, be made available to provide these reviews, and these groups should be balanced. The judgments they make should not reflect, of course, a “tyranny of experts” [24].

**Clinicians’ Practices**

Present evidence suggests that during disasters, people have five most basic emotional needs: to feel safe, calm, connected, a sense of efficacy, and hope [25, 26].
It may be that care providers can meet most of these needs most effectively by gaining patients’ trust. This may be exceptionally possible during disasters. As Jay Katz, another most eminent attorney and ethicist, has said, “Vulnerable patients in their quest for relief of suffering may be readily inclined to place their trust in physicians” [27].

To do this best, of course, care providers must first be able to cope with their own emotions. They may, like others, for instance, feel fear. Still, if they do, they must keep these feelings in check, as by talking with other care providers, so that, if feeling this fear, they may hopefully reduce its intensity by then not feeling so alone.

Several empirically based approaches may also be helpful. One such approach is to “separate out” patients who do not need as urgent care, early on, to reduce “chaos” and improve “patient flow” [28]. Care providers can, in addition, provide “psychological first aid” by asking people to rate and then share their present level of distress. By doing this, they can observe themselves, as it were, as they observe others. They may help them reduce the intensity of whatever stressful emotions they are feeling [29]. Other optimal approaches are listed elsewhere [30, 31].

Two additional approaches care providers, themselves, may adopt may be less well known. First, despite the need, care providers should not try to be too courageous. Second, if at all possible, they should try not, as discussed, to mix two incompatible roles. They should not, if possible, for example, as explained, perform triage prior to treating patients.

**Care Providers Being Too Courageous**

Care providers must care for their own physical and emotional needs to be able to best care for others. Their psychological needs are like their patients’. Thus, they may be best able to reduce their intensity by attending to such personal physical needs as being warm, fed, and safe from danger [32]. Care providers, also, may fare psychologically better if, through planning, they are as prepared as they can be and, thus, gain comfort from this belief [33].

They should not, though, try to be heroes because their being too courageous during disasters can actually prevent the providers from being able to do all for their patients. How?

During disasters, care providers often are an overlooked, highly stressed group. They may be expected to carry on in ideal ways by those whom they treat. These “ideal” ways include, for instance, their being able to bear being away from their families without worrying, their always being “good” to their patients, and their not having the need to express their own worries, fear, and, even, despair [33].

Further, during disasters, care providers may feel it is right and, indeed, only right for them to help their patients as much as they can [10]. Thus, they may continue to do this, even when they themselves need sleep, food, and time for respite.

Care providers should, for this reason, it is advised, arrange to have a “buddy”. This buddy can tell those, when necessary, that they need to stop treating these
patients for any or all of these reasons. These buddies, in turn, should have some preparation for serving in this role themselves; they should, for example, be prepared to accept that their asking these care providers to sleep, eat, and take these times off may result in these care providers at these moments resenting them [10]!

Care providers should, also as noted, not accept taking on potentially conflicting roles, such as triaging and treating, if possible. If they perform these conflicting roles, patients may be more likely to perceive them as being more willing to betray their interests by switching back to “meeting the needs of the many”, if these care providers see this as necessary at a later time [34]. Their greater patients’ distrust of them may be as stressful as any other factor.

**Conclusion**

Disasters may pose unique ethical dilemmas. Care providers analyzing some of these dilemmas prior to their occurring may help suggest ways in which they can be best resolved or at least help prepare them for what may occur. Policymakers, likewise, by anticipating these problems, may be better able to reduce them.

These analyses usually won’t, though, provide right answers. Rather, reasonable persons will, still, reasonably disagree. Then, what may be important and, indeed, most important is that these disagreements are decided in a way that many or most see as sound and fair.

Such analyses may, on some occasions, however, suggest outcomes that may go against common logic. They may suggest, for example, that care providers triage people during disasters in a less than the most utilitarian way. This may involve their not pursuing only the greatest good for the greatest number. They may give, instead, some moral weight to values not based only on consequence, such as their respecting patients and treating them justly. They may even not give priority to ethical principles at all. They, rather, may give priority to an Ethics of Care.

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