



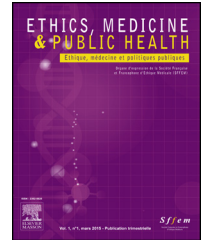
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## ORIGINAL ARTICLE

# COVID-19, triage decisions, and indirect ethics: A model for the re-evaluation of triage guidelines

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**Summary** The COVID-19 pandemic has overwhelmed healthcare systems in several countries and has led to situations in which the number of critically ill patients has exceeded the number of ICU beds and ventilators. In anticipation of a potential shortage of ventilators, many countries developed triage guidelines to handle such situations. However, at the current stage in the pandemic there have been a few initial indications that these guidelines may suffer from problems of feasibility. If these suspicions are confirmed in the time to come when systematic studies are conducted, this will provide a strong reason for re-evaluating the guidelines. This article provides a model for the re-evaluation of the existing triage guidelines that draws on insight into indirect ethics and which is designed to ensure that we can learn from the costly experiences during the course of the COVID-19 pandemic.

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The COVID-19 pandemic has overwhelmed healthcare systems and, in several countries, has been accompanied by a severe shortage of essential services and medical equipment. Most significantly, the large number of critically ill patients has, in some cases, led to a lack of sufficient ICU (intensive care unit) beds and ventilators. The attention that has been directed to this sort of shortage is both understandable and expectable. While rationing of medical

resources is well-known in healthcare contexts, the decision of who should have access to mechanical respiratory assistance in cases where the number of patients in critical need exceeds the number of available ventilators, will in most cases involve a direct choice between life and death [1]. As the authors of a recent article on this sensitive issue has put it, the allocation of ventilators constitutes one of the “toughest triage” decisions [2].

In order to handle the potential shortage of the acute treatment capacity, many countries have developed guidelines for prioritisation in cases involving scarcity. Even

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though these guidelines, as we will return to shortly, diverge on several points, there is also a large element of agreement across the recommendations [3]. However, in light of the fact that we are no longer in the first phase of the pandemic, the time has come to start considering to what extent the triage recommendations have worked. That is, whether the guidelines have provided hospitals and medical personnel with appropriate and useful guidance. At the present stage in the pandemic, it is still too early to provide a definitive answer to this question. However, as we will return to, there are some preliminary indications that application of triage guidelines may not have been without problems. If these indications are confirmed in the time to come when more thorough analyses are conducted, this will constitute a reason for reassessing the guidelines. The purpose of this article is to provide an overall framework for how triage guidelines should be reconsidered in cases in which there turns out to be a conflict between the contents of the guidelines and the ability to act on these guidelines when hospitals are overwhelmed and medical staff have to engage in life and death decisions. More precisely, the article will proceed as follows. First, a few preliminary words on the existing triage recommendations and their feasibility. Second, a model drawing on insights from standard ethical theory will be outlined for how triage guidelines should be re-evaluated. Thus, the overall purpose will be to show how one should proceed in the process of revising guidelines in order to provide both plausible and feasible assistance in future COVID-19 triage decision-making.

## Triage guidelines and feasibility

In anticipation of the shortage of ventilators, triage guidelines have been developed in many countries. These guidelines serve as professional advice and are generally not legally binding. They serve several interrelated purposes. For instance, they may facilitate triage decisions and provide some degree of transparency and objectivity. Furthermore, they may help in lifting part of the responsibility of the toughest decisions from the shoulders of individual clinicians [3]. However, most importantly, they are developed in order to ensure that triage decisions are ethically right. That is, they are borne by the highly plausible and widely shared assumption that triage decisions are not all equally right.

Whether the guidelines that have been developed have succeeded in qualifying triage decisions in the desired ways should of course be considered at some point. At the time of writing, infection rates are again very high in many countries and even though the number of ICU beds has been increased in many places it is unfortunately much too early to be sure that triaging will not be necessary. However, at some point in the course of the pandemic there will be sufficient grounds for re-evaluating the guidelines. A crucial question in this process will of course be whether the recommendations have actually succeeded in guiding triage decision-making in an appropriate manner. For the time being, this question cannot be answered. Systematic studies on the feasibility of the guidelines in countries that have been forced to engage in triaging have not yet been conducted. However, there are

a few indications that the guidelines may not have been as feasible as could have been desired.

For instance, in a recent article, Benjamin Herreros and his colleagues have reported their experiences during the outbreak of COVID-19 in Spain. The authors explain that national triage recommendations were developed at a late stage in the outbreak of the disease and that, in the lack of general guidelines, hospitals had to develop their own triage protocols. However, on the top of these initial problems, it is also underlined that: ‘‘If this delay were not enough, many of the aforementioned guidelines were eminently theoretical, lacking usefulness for clinicians who had to make clear, rapid, decision in their clinical practice’’ [4]. The result of this feasibility problem has been that ‘‘[t]riaging systems have been carried out and still are – according to local idiosyncrasies’’ [4]. As noted, it is currently difficult to estimate the generality of these problems. However, suppose that the massive pressure that has been placed on ICUs in some countries turns out to have led to similar challenges concerning usefulness and feasibility of the existing triage guidelines. How should a reassessment of these guidelines proceed to ensure that we can learn from such experiences? The purpose of the following section is to outline the contours of a model that attempts at providing an answer to this question.

## A model for the reassessment of triage guidelines

What we wish to suggest is that a scheme for the re-evaluation of triage guidelines should be based on considerations of *indirect ethics*. Such considerations constitute a standard ingredient in ethical theory and have been the subject of comprehensive theoretical discussion – mainly in the modern consequentialist tradition. The idea of indirect ethics can easily be illustrated.

Suppose as a simple analogy, that a parent wishes to take precautions to avoid that a young child burns her hands at the kitchen stove. In this case, a possible procedure might be to explain to the child precisely when the hobs are hot (e.g. ‘‘if this light is on, then this hob is hot, if the light is not on, it is not hot, and the same for the other hobs . . .’’). Obviously, this is not how parents would usually act. Rather, what most parents would wisely do is to tell the child not to touch the stove at all. Is the latter prescription correct if the goal is to avoid the child burning its hands? No, obviously not. There are many cases in which one can touch the stove without being burnt. However, given the level of maturity of the child, this simpler rule is more likely to satisfy to goal of avoiding burns than the much more complicated description of when the stove is hot and when this is not the case.

It is precisely the same pattern that may exist in some cases where ethical theories are put into practice. Drawing on the standard ethical terminology, there may be cases where the criterion of rightness (that is, the specification of when an act is morally right) does not coincide with the decision procedure (that is, the rule by which an agent’s decisions are guided). These are cases in which guidance by the criterion of rightness (analogous to the wish that the child should not burn its hands) would result in an outcome

that is worse than if the agent is guided by a simpler rule of thumb (analogous to the prescription “never touch the stove”). The task of an indirect approach to ethics is to develop those decision procedures which in real life application will lead agents as close as possible to acting in ways that are right according to the criterion of rightness [5–8].

As noted, it is a standard position in ethical theory that there may sometimes be circumstances under which an indirect ethical approach constitutes the only consistent way of putting ethical principles into practice. What we suggest is that, insofar as it turns out that COVID-19 triage recommendations are faced with problems of feasibility, an indirect ethical approach should be adopted. More precisely, this should be done by engaging in considerations indicated by the following three-step procedure:

- identify the most plausible ethical approach to triaging in a crisis situation where there is a shortage of ventilators;
- explore the practical obstacles that exist for clinicians in the application of triage guidelines;
- develop new guidelines which, given the practical obstacles, are most likely to lead to clinical decisions that are in accordance with the most plausible ethical approach to triaging.

A few comments should be added to each step:

- the first step in the process is to consider what constitutes the most plausible *in principle* approach to triaging when there is an imbalance between the number of patients in critical need and the number of ventilators. It might perhaps be expected that this is what has already been done in the existing triage recommendations. However, there are several reasons to doubt this. For instance, a principle that plays a dominant role in current guidelines is to maximise benefit. Principles concerning the maximisation of benefit figure in all existing triage recommendations [9]. However, this has been interpreted differently in different countries. There are differences about whether focus should be on long-term or short-term prognosis. Furthermore, there are differences with regard to whether one should maximise benefit by focusing on the number of lives saved or on the life years saved [10]. In cases where focus is placed on the latter, there are also differences with regard to whether one should only focus on life years saved or also on the quality of the life years saved. Given the assumption that these possibilities cannot all be equally plausible it seems fair to suggest that the differences between the national guidelines, at least in some countries, would benefit from reconsideration at the basic theoretical level. This is also indicated by the significance of the question as to whether a certain priority should be given to people whose lives are of instrumental value. For instance, existing guidelines differ with regard to whether healthcare workers should be prioritised [3]. Furthermore, if one moves beyond the question of maximisation of benefit to the question of how considerations of justice – such as whether a certain priority should be given to the worst-off – there are also significant differences between existing guidelines [3]. Thus, given the fact that both questions of benefit and justice (and how these considerations should be combined) are theoretically complex, it cannot simply be taken for granted that

the first step in the suggested procedure has already been properly answered by the existing triage guidelines;

- whereas the first step in the procedure constitutes a standard ethical challenge, this is not the case for the second step. On the contrary, this step will require studies involving healthcare workers at the ICUs where the number of patients has exceeded the number of ventilators. The explanations of why triage recommendations may have been difficult to follow and have perhaps been experienced as “lacking usefulness” may take many forms. For instance, they may concern a lack of the sort of knowledge that is required in order to be able to prioritise as recommended; a lack of theoretical guidance with regard to how values should be balanced in conflict cases; experiences of the fact that the recommendations appear morally dubious or that they require too much of the individual decision-maker; a lack of clarity with regard to decision procedures and overall distribution of responsibility; or the experience of stress or fatigue in overburdened healthcare personnel [11]. Several other explanations can be imagined. But the task at this step will be to uncover and carefully analyse the actual causes of inapplicability during the current COVID-19 crisis;
- the final step in the procedure will then be to combine the considerations and knowledge obtained at the previous steps. Specifically, the task will be to adjust the basic triage principles identified at step (1) to the practical conditions and obstacles revealed at step (2) in such a way that the resulting guidelines will lead to actual triage decisions that come as close as possible to what is ideally desirable.<sup>1</sup>

## Concluding considerations

Future reassessment of the triage guidelines that have been developed to handle the most acute pressure which the COVID-19 pandemic has placed on healthcare systems in several countries, will be important in order to assist healthcare personnel and, not least, to ensure that the right decisions are taken in cases involving a shortage of ICU beds and ventilators. As noted, the idea of indirect ethics is certainly not in itself new or innovative if seen from the perspective of academic ethical theory. However, we believe that a model for a re-evaluation of the existing guidelines that draws on the insights of indirect ethics as instantiated in the suggested

<sup>1</sup> It might be objected that if the guidelines that follow from adjusting the principles identified at step (1) to the practical conditions and obstacles identified at step (2), differ from the currently existing guidelines, then one cannot be certain that one can learn from the practical problems associated with the use of the current guidelines. However, this objection does not seem convincing. First, as noted, there may be many explanations of why guidelines are difficult to follow in practice. And these explanations need not all depend on the specific content of the guidelines. Second, and more importantly, it seems very difficult to believe that the guidelines that follow from the three-step procedure will differ radically from existing guidelines. For instance, as noted, a principle concerning maximisation of benefit figures in all existing guidelines and it is reasonable to expect that this will also be one of the basic principles identified at step (1).

three-step model has several advantages. First, it will spur theorists to engage in considerations of what constitutes the most plausible triage principles. Second, it will ensure that guidelines are based on an accurate understanding of the difficulties that are associated with the use of such recommendations in clinical practice. Third, it will help to ensure a revision of guidelines that aim at providing the best possible fit between principled validity and clinical usefulness. In our view, the suggested model may function as a heuristic device for the national or international ethical committees that develop triage guidelines. And, it will constitute a way of ensuring that we can learn from the costly experiences during the COVID-19 pandemic.

## Human and animal rights

The authors declare that the work described has not involved experimentation on humans or animals.

## Informed consent and patient details

The authors declare that the work described does not involve patients or volunteers.

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## Disclosure of interest

The author declares that he has no competing interest.

## References

- [1] Mannelli C. Whose life to save? Scarce resources allocation in the COVID-19 outbreak. *J Med Ethics* 2020;46:364–6, <http://dx.doi.org/10.1136/medethics-2020-106227> [Epub ahead of publication 9 April 2020].
- [2] Truog RD, Mitchell C, Daley GQ. The toughest triage – allocating ventilators in a pandemic. *N Engl J Med* 2020;382:1973–5, <http://dx.doi.org/10.1056/NEJMp2005689> [Epub ahead of print: 23 Mar 2020].
- [3] Jöbges S, Vinay R, Luyckx VA, Biller-Andorno N. Recommendations on COVID-19 triage: international comparison and ethical analysis. *Bioethics* 2020;34:948–59, <http://dx.doi.org/10.1111/bioe.12805> [Epub ahead of print 15 July 2020].
- [4] Herreros B, Gella P, Real de Asua D. Triage during the COVID-19 epidemic in Spain: better and worse ethical arguments. *J Med Ethics* 2020;46:455–8, <http://dx.doi.org/10.1136/medethics-2020-106352> [Epub ahead of print 18 May 2020].
- [5] Bales RE. Act-utilitarianism: account of right-making characteristics and decision-making procedure? *Am Phil Quart* 1971;71:257–65.
- [6] Hare R. *Moral thinking: its levels, method and point*. Oxford: Oxford University Press; 1981.
- [7] Parfit D. *Reasons and persons*. Oxford: Oxford University Press; 1984.
- [8] Brinkmann M. Indirect instrumentalism about political legitimacy. *Moral Philosophy Politics* 2019;6:175–202.
- [9] Jöbges S, Biller-Adorno N. Ethical guidelines on COVID-19 – and emerging international consensus. *Crit Care* 2020;24:1–5.
- [10] Liddell K, Skopek JM, Palmer S, Martin S, Anderson J, Sagar A. Who gets the ventilator? Important legal rights in a pandemic. *J Med Ethics* 2020;46:421–6, <http://dx.doi.org/10.1136/medethics-2020-160332> [Epub ahead of print 11 May 2020].
- [11] Ryus C, Baruck J. “The duty of mind: ethical capacity in the time of crisis.”. *Disaster Med Public Health Prep* 2018;12:657–62.