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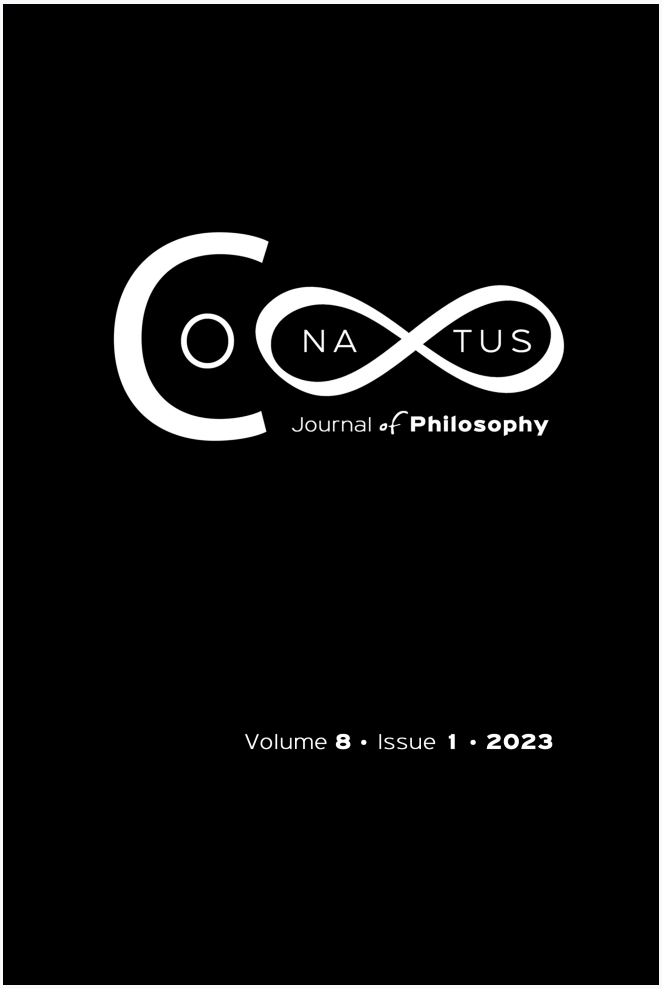

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The Possibilities, Limits, and Complexities of Triage in COVID-19 Regime

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Abstract

The new and prevailing Corona virus (COVID-19) pandemic is an extremely contagious virus. Scientific research has gone far in the study and treatment of the virus. One of the things known about it at present is that its spread depends on social contact. In this paper, I consider the challenge that allocation of scarce medical resources poses in the fight against COVID-19. Millions have been infected, just as the number of diseased also runs in thousands. The allocation of scarce medical resources during the COVID-19 pandemic regime poses a challenge to healthcare providers. In attempting to save the lives of COVID-19 patients, how should we allocate ventilators or vaccines? Since ventilators, or as at present vaccines, are scarce compared to the number of patients that need it for survival, who should get one? To address this challenge, healthcare providers often resort to triage, especially in Emergency Departments (EDs) and intensive care units (ICUs). In this paper, I discuss the possibilities, limits, and complexities associated with the principle of triage in the distribution of scarce medical resources in the treatment and attempt to save the lives of COVID-19 patients. I contend that triage as a principle of distribution of scarce health resources fails in the distribution of scarce life-saving resources to COVID-19 patients. I aim to show that the triage protocol approach fails in terms of clinical and non-clinical evidence as well as regarding procedural issues associated with its application.

Keywords: *COVID-19; complexities; medical utility; scarcity; social utility; triage*

I. Introduction

Coronavirus (COVID-19) recently emerged as a new and novel coronavirus in China. Its rapid spread has gained national and international recognition, hence posing a global health emergency and challenge. The coronavirus disease, otherwise known as COVID-19,

is a highly transmittable and pathogenic viral infection caused by severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2), which emerged in Wuhan, China and spread around the world.[1] The management of the COVID-19 pandemic in terms of containment and treatment leads to severe scarcity of the needed medical resources. This is because the number of victims, just as we often have in other pandemics, outweighs the available resources. When the demand for medical treatment and resources significantly outweighs available resources, it becomes imperative to make drastic and urgent decisions about "who will and will not" receive these scarce resources. A significant challenge for healthcare providers is how to develop triage protocols to guide the allocation of scarce critical care resources during pandemic incidents, as we presently have in the COVID-19 regime. COVID-19 as a pandemic has engendered a situation whereby the number of patients jostling for scarce medical resources or treatment far outstrips the available resources. The scarcity of resources could be of critical care beds, shortages of mechanical ventilators, vaccines and other life-saving treatments or supports. It could be shortage of health personnel in comparison to the number of patients that needs attention. In some cases, it could be scarcity of one or all these resources. The scarcity of resources creates a situation in which too many patients demand available resources which cannot go round. This leads to the problem of "rationing" or "prioritization" of the limited available resources. Who should get and who should not get? This is how the principle of triage arises and becomes relevant to the treatment of COVID-19 as a pandemic. Triage is a principle of distribution of scarce health resources/medical treatment often aimed at maximizing the value of survivability. Triage is often described as a utilitarian principle for distribution of scarce medical resources based on the severity of patients' conditions, especially in the ICUs, and the EDs. It is based on the opportunities or chances of survival of patients. The decisions of how to choose who should receive intensive care and who should not in a pandemic period (as with presently in the COVID-19 case) presents a panoply of legal, medical and moral problems. In this paper, I will focus on the moral dimensions of the problem.

In the ongoing fight against corona virus (COVID-19), virtually all the countries are faced with this problem of scarcity of medical resources as a result of the large number of infected patients. In this situation, physicians and other health workers often resort to the principles of triage as a distributive principle. What is triage? What are the prospects

[1] Muhammad Adnan Shereen, et al., "COVID-19 Infection: Origin, Transmission, and Characteristics of Human Coronaviruses," *Journal of Advanced Research* 24 (2020): 91-98.

of triage? How does it work? As a procedure of distributive justice, does triage accommodates moral equality and fairness in the fight against COVID-19? Are there some limits, as well as complexities to triage as a principle for distribution of scarce medical resources?

In this paper, I discuss the possibilities, limits, and complexities associated with the principles of triage in the distribution of scarce medical resources in the fight against the Corona virus (COVID-19) pandemic. In discussing this, I aim to demonstrate that triage fails considering the limits and complexities associated with it. I will show this failure in terms of clinical and non-clinical evidence, as well as the procedural issues associated with the application of triage. This becomes important because physicians and other health workers that apply the principle of triage during COVID-19 often assume that it is the best principle of distribution to be used for allocation of scarce medical resources in a pandemic like the COVID-19 one. It has also been erroneously assumed that it is problem-free since it is the best in a pandemic situation like COVID-19.

In pursuing this task, the paper is divided into five sections. The first section, this introductory aspect, presents the anatomy of the paper as well as what each section is about and what to be expected from each section. The second section carries out an elaborate discussion of triage as a principle of distribution of scarce medical resources generally. What triage is and the way it operates as a principle of distribution of scarce medical resources will be elaborated. The third section demonstrates the failure of triage as a distributive principle vis-à-vis its limits and complexities. In this section, it will be demonstrated that triage as a principle of distribution of scarce medical resources is relevant and attractive but bedeviled by several limits and complexities. The limits and complexities will be identified and shown to be responsible for its failure in the fight against the COVID-19 pandemic. This is against the view or assumption that triage is the best principle of application for the distribution of scarce medical resources in the fight against the COVID-19 pandemic. In the fourth section, an attempt will be made towards some recommendations. These recommendations will be with a view to suggest ways whereby the limits and complexities identified with the application of triage principle in a pandemic situation like the COVID-19 one could be overcome by improving triage to work better. This will be followed by the fifth but the last section, which is the conclusion where the major issues discussed in the paper will be summarized. I now turn to the next section for the discussion of triage as a principle of distribution of scarce medical resources.

II. Triage as a procedure of distribution of scarce health resources

The question of "how do we justify the selection criterion of those who will receive priority treatment (especially during a pandemic) among a large group of severely ill-patients?" makes the principle of triage very relevant to medical practice. According to Iserson et al., "triage" is most commonly used to mean the sorting of patients for treatment priority in EDs and in multi-casualty incidents, disasters, and battlefield settings.[2] Similarly, for others, triage as an outgrowth of battlefield medicine, is the practice of sorting patients according to the urgency of their needs under emergency conditions in which such needs are likely to be urgent and medical resources scarce.[3] Etymologically, the term "triage" is derived from the French word *trier,* to sort, it was originally used to describe the sorting of agricultural products.[4] In medical practice, triage is used for the assignment of degrees of urgency to wounds, diseases or illnesses, to decide the order or treatment of a large number of patients or casualties. It serves as a principle of deciding the order of treatment of patients or casualties.

Triage is sometimes described as a process of determining the priority of patients' treatment based on the severity of their condition when resources are insufficient for all to be treated immediately. It involves the evaluation and categorization of the ill, sick, or wounded when there are insufficient resources for medical care of everyone at once or immediately. It aims at deciding which patients should be treated first based on how sick or seriously injured they are. It further aims at sorting victims, as of a battle, pandemic, or disaster, to determine medical priority to increase the number of survivors. According to Childress, triage involves, first, a determination of the need for treatment and its probable success or futility and, second, the establishment of priorities for treatment and evacuation. Similar formal policies have been adopted for civil disasters, such as nuclear destruction and earthquakes. These policies often give priority to those who perform critical roles.[5]

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[2] Kenneth V. Iserson, and John C. Moskop, "Triage in Medicine: Part 1: Concept, History, and Types," *Annals of Emergency Medicine* 49, no. 3 (2007): 275.

[3] James F. Childress, "Triage in Neonatal Intensive Care: The Limitations of a Metaphor," *Virginia Law Review* 69, no. 3 (1983): 547-561.

[4] Gerald R. Winslow, *Triage and Justice: The Ethics of Rationing Life-Saving Medical Resources* (Berkeley, CA: The University of California Press, 1982), 169.

[5] Childress, 547-561.

Historically, the practice of triage arose from difficulties emanating from war, and it remains closely associated with military medicine. As opined by Iserson and Moskop, the earliest documented systems designed to distribute health care systematically among wounded and sick warriors date back only to the 18th century.[6] Hence, medical utility has been the major impetus for and the major determinant of systems of triage.[7] According to Iserson and Moskop, beginning in the 18th century, military surgeons developed and implemented the first battlefield triage rules in the West; little is known about triage elsewhere.[8] Most scholars attribute the first formal battlefield triage system to the distinguished French military surgeon Baron Dominique-Jean Larrey, Chief Surgeon of Napoleon's Imperial Guard.[9] Larrey recognized a need to evaluate and categorize wounded soldiers promptly during a battle. Based on this, his target was to treat and evaluate those requiring the most urgent medical attention. Sometimes, triage in war implies assigning priority to the worst off, rather than the best off.

Moreso, subsequently, John Wilson (British Naval Surgeon) was credited with the next major contribution to the military triage.[10] In 1846, in particular, Wilson argued concerning triage that to make their efforts most effective, surgeons should focus on those patients who need immediate treatment and for whom treatment is likely to be successful, deferring treatment for those whose wounds are less severe and those whose wounds are probably fatal with or without immediate intervention.[11] Larrey's proposal is that priority goes to the most seriously injured while Wilson's dictum is that the hopelessly injured should not be treated. However, triage in its primary sense is the sorting of patients for treatment in situations of at least modest resource scarcity, according to an assessment of the patient's medical condition and the application of an established sorting system or plan.[12] It is important to point out that Larrey's original intention was not targeted at triage as a principle of distribution of scarce medical

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[6] Iserson, and Moskop, 276.

[7] Childress, 551.

[8] Iserson, and Moskop, 276.

[9] Christopher R. Blagg, "Triage: Napoleon to the Present Day," *Journal of Nephrology* 17, no. 4 (2004): 629-632.

[10] David E. Hogan, and Julio Rafael Lairet, "Triage," in *Disaster Medicine*, eds. David E. Hogan, and Jonathan L. Burstein, 12-28 (Philadelphia, PA: Lippincott Williams and Wilkins, 2002).

[11] James Watt, "Doctors in the Wars," *Journal of the Royal Society of Medicine* 77, no. 4 (1984): 265-267.

[12] Iserson, and Moskop, 278.

resources. In reading his autobiography, one cannot help than to be fascinated by his outrage over the wanton and unnecessary loss of life caused by unsystematic, ad hoc and haphazard treatment of casualties in the Napoleon's Grand Army. In response to this, his primary concern was not to allocate scarce medical resources but to stop the wastage by developing a system of "prompt and methodical succor received by the wounded on the field of battle."[13] This was targeted at assigning treatment priorities to the wounded casualties at the battlefield.

In terms of systems and types of triage, the most common types are ED triage; inpatient (ICU) triage; incident (multicausality) triage; military (battlefield) triage; and; disaster (mass casualty) triage.[14] In brief, ED triage is designed to identify the most urgent (or potentially most serious) cases to ensure that they receive priority treatment, followed by the less urgent cases on a first-come, first-served basis. Inpatient triage has to do with decision making about patients that require hospitalization, but the assessment conditions are made according to some system or plan during scarcity of resources. The incident triage is designed to respond to an emergency that creates multiple casualties, whose numbers outstrip the available medical resources. The military triage is designed to determine treatment for injured or wounded soldiers in the battlefield. The objective of the military triage is simple and clear: to save the most salvageable so that they can contribute to the common good which is victory in the battlefield. The disaster triage is designed to determine who receives treatment and who will not after a natural (example, earthquake or volcanic eruption) or manmade disaster that leads to too many casualties in the face of limited resources. But hospital emergency provides yet a better setting for triage system. In a three-category system, a triage officer identifies a patient's need as "immediate" (posing a threat of death or serious physical impairment if not treated immediately), "urgent" (requiring prompt but not immediate treatment), or "nonurgent."[15]

Triage systems in most cases and situations have been tailored towards promoting the utilitarian principle of utility maximization which holds that an action is right if it promotes the greatest balance of good over evil for the greatest number of people, otherwise wrong. In line with this, Winslow asserts that triage systems characteristically are based on an implicit or explicit utilitarian rationale. They all have

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[13] Dominique J. Larrey, *Surgical Memoirs of the Campaign in Russia*, trans. John C. Mercer (Philadelphia: Carey and Lea, 1832), 109.

[14] Iserson, and Moskop, 278.

[15] Childress, 550.

been designed to produce the greatest good for the greatest number, to serve the common good, or to meet human needs most effectively and efficiently under conditions of scarcity.[16] Often times, this goal of targeting the production of the greatest good for the greatest number of people contributes to the limits and complexity of triage as a principle for the distribution of scarce medical resources in a pandemic hospital situation as it is the case with COVID-19 presently. This is the argument of the paper which will be pursued anon, in the next section. However, it is important to note that utilitarianism as a theory is not the only possible justification for triage. Triage could also be justified on right-based ethics. But in any case, it should be noted as well that I am not arguing for the justification of triage. That's not the focus of the paper. More on this claim subsequently. I now turn to the discussion of the argument of the paper.

III. Triage Application to the Distribution of Health resources in the COVID-19 Regime: Possibilities, Limits, and Complexities

In this part of the paper, I discuss the possibilities, limits, and complexities of triage as a principle of the distribution of scarce medical resources during a pandemic period. COVID-19 is a pandemic ravaging humanity since December 2019, till present. Hitherto, there are some scientifically tested and confirmed vaccines (AstraZeneca, Johnson & Johnson, Moderna, Pfizer) for the cure, prevention and boosting of immune system against coronavirus. As a matter of fact, clinical trials for COVID-19 therapies have been completed. This is important because in the containment, treatment and the overall management of covid-19 pandemic, only the science-data and evidence are largely regarded as persuasive. As people are being affected in thousands in most countries of the world, health workers are being overwhelmed because the number of patients is outstripping the available medical resources. This has led and keeps leading health workers to adopt and apply the principle of triage in the treatment of COVID-19 patients in the real hospital situations, especially in ICUs of EDs. Physicians in such situations have resorted to the principle of triage believing it is the best option for such a situation. They resort to triage as the best method during scarcity of medical resources in a pandemic without paying adequate attention to its limits and complexities, as we have in the COVID-19 regime presently. This reinforces the importance of the argument of this paper to call the attention of the medical personnel

[16] Winslow, 21.

as well as the decision makers to these limitations, complexities, and challenges.

There is no doubt that it is quite possible to adopt and apply triage system in a pandemic period as we have with the present COVID-19 pandemic. This possibility started in the 18th century with Surgeon Baron Dominique Jean Larrey; Chief Surgeon of Napoleon Guard, which was necessitated by the need to categorize wounded soldiers according to the severity of their injury to know who receives treatment first because of shortage of medical resources and personnel, as discussed in the previous section. This was also necessary to determine the level of salvageability of each patient or soldier to maximize the available resources. Since then, till the present, triage system has been in operation, in one form or the other, especially during pandemics, as we have today. However, there is a need to discuss its limits and complexities as impediments to the application of triage in the COVID-19 pandemic in particular and all pandemics in general. This task is the focus of this section of the paper and the entire business of the paper. In doing this, it is pertinent to note that I am not arguing for a utilitarian justification of triage principles rather I am arguing to demonstrate the limits and complexities of triage which could be utilitarian or otherwise.

First, the *modus operandi* of triage protocol is too complex to give us a specific direction in a pandemic period. Triage system focuses on the utilitarian rationale of distribution based on the production of the greatest good for the greatest number as the most effective and efficient approach to maximize scarce medical resources during a pandemic period. The utilitarian stipulation of "the greatest good for the greatest number" as the effective way of operating triage is too complex and diverse. It is not specific enough on how to determine which patient(s) constitute the greatest number. The requirement of the greatest good for the greatest number may vary from one locality to the other. To corroborate this view, Childress asserts that more significantly, the utilitarian rationale may vary depending on which individuals and groups are included in the blanket "greatest number." The greatest good for one group, such as those needing medical care, may not be in the best interests of the society as a whole.[17] This is not just a problem to the utilitarian rationale of distribution which is embedded in a triage system. In addition to that, it leads to complexity and creates a limit for triage since it does not specify the category of patients that constitute "the greatest number" during a pandemic,

[17] Childress, 551.

as we have presently in COVID-19. Such ambiguous and arbitrary stipulation does not help in an emergency like the COVID-19 one.

For example, the greatest number for one group, such as those needing medical care, may not be in the best interests of the society as a whole. Among COVID-19 infected patients, we have politicians, health workers, businessmen and women, civil servants, among others, all need urgent medical care and attention. Which group should constitute the greatest number that should enjoy the greatest good, such that the best interests of the society as a whole is represented and protected? This question is important because not all of them will get the needed medical care. The utilitarian principle of utility, which sometimes serves as the focus of triage in a pandemic period like the COVID-19 regime does not help. Among politicians, health workers and many other people, it is not clear whose interest serves the best interest of the society. This is complex to ascertain with utilitarian rationale recommended by a triage protocol. It also poses a limit to the operation of triage in a pandemic. Even if the line for the greatest number can be drawn, it is not the case that utility has the final say in the distribution of scarce medical resources in a pandemic. Silva et al. recognizes this by maintaining that "utility is not necessarily the first or sole ethics principle to consider when allocating resources such as ventilators in a pandemic influenza."[18] Triage could also be justified from the point of view of right-based ethics or even from a contractarian viewpoint of justification. Hence, utilitarianism does not hold the sole key for the moral justification of triage as a distributive principle in a pandemic like COVID-19.

From the discussion of triage above, it is clear that the systems of triage target how to determine those patients that are "salvable" or "salvageable" because of their focus on effectiveness and efficiency. Maximization of the principle of salvageability is the focus here. But salvageability possesses two different meanings in terms of medical utility and social utility. For example, giving priorities to infected health workers in a COVID-19 regime is already emphasizing social utility because the focus will be that they should recover quickly and go back to their duty post assisting to take care of other patients, and the earlier, the better. Social worth or what White et al. described as "social value" refers to "one's overall worth to society. It involves summary judgments about whether a person's past and future contributions to

[18] Diego S. Silva, et al., "Contextualizing Ethics: Ventilators, H1N1 and Marginalized Populations," *Healthcare Quarterly* 13, no. 1 (2010): 32-36.

society's goals merit prioritization for scarce resources."[19] Herreros et al. also asserts that the social value of any act or person depends on a myriad of factors, many of which are difficult to measure. Even if this putative social value could be measured, healthcare professionals are neither trained nor fit to make this assessment.[20] This creates a serious problem when social value becomes the yardstick or criterion for determining who should get scarce medical resources or attention when it cannot go round.

But when achieving medical utility becomes the focus of a triage system, we will surely have a different picture and result, the attention will shift from the value placed on the health workers to medical needs of every patient as an autonomous individual who also need medical salvageability and whose life matter just like the life of every other person. These two different views of salvageability as a utilitarian maximizing value lead to different moral values. According to Childress, medical utility recognizes the value of life; social utility recognizes the differential value of specific or general functions. The latter infringes the principle of equal regard for life. Appeals to social utility may be justified in some crises but there is a heavy presumption against them.[21] The point is that the application of triage to the distribution of scarce medical resources during COVID-19 does not specifically state whether medical utility or social utility should take paramount importance. This complicates the different senses of salvageability. The inability of triage to distinguish different senses of salvageability which it sets to maximize further leads to the complexity of triage as a principle of distribution of scarce medical resources in the COVID-19 regime. Also, "the principle of maximization of lives saved is insufficient in conditions of severe scarcity,"[22] as we have presently in the COVID-19 pandemic.

Often time, triage system is carried out in a way to accommodate the "common good." But how do we define the "common good?" According to Jonsen and Garland, "the common good" includes, not only ends to be realized, such as fairness, to be expressed and respected but also involves other values that may not be defined from the

[19] Douglas B. White, et al., "Who Should Receive Life Support during a Public Health Emergency? Using Ethical Principles to Improve Allocation Decisions," *Annals of Internal Medicine* 150, no. 2 (2009): 132-138.

[20] Benjamin Herreros, et al., "Triage during COVID-19 Epidemic in Spain: Better and Worse Arguments," *Journal of Medical Ethics* 46, no. 7 (2020): 455-458.

[21] Childress, 553.

[22] Sabine Michalowski, et al., *Triage in the COVID-19 Pandemic: Bioethical and Human Rights Considerations*, Technical Report (Essex: Essex Autonomy Project and the Ethics of Powerlessness Project, University of Essex, 2020), https://repository.essex.ac.uk/27292/.

beginning. To determine the "common good," it becomes necessary to specify the relative weight of these various ends, values and principles. For example, how much weight should be accorded to the expression of the equal value of human life? This value may be so fundamental that it should not be sacrificed short of the exigencies, and even then, only when many lives or the community itself is at stake. Perhaps it should not be sacrificed at all in the practice of medicine.[23] Triage protocol often does not recognize the principle of fairness.

The limit and complexity of triage become evident as it does not recognize or respect the moral principle of fairness. In the application of triage protocol, there is no room for fair treatment of all the involved parties as individuals that deserve equal treatment. By disregarding and neglecting the principle of fairness in the allocation of scarce medical resources by triage, it consequently disregards and relegates the expression of the principle of equal value of human life. But human life matters and should matter equally. Triage protocol willingly sacrifices this principle. As we live in a morally pluralistic society, it is difficult if not impossible to agree on a set of criteria to establish that one person is intrinsically more worthy of saving than another. This leads to a big limitation to its application as an approach to distributing life-saving scarce resources to COVID-19 infected patients. This becomes important because of a huge difference between equal value of life and equality of life. Triage often focuses on equality of life, which is about social worth, to the detriment of equal value of life, which is about equal moral consideration. Triage system could not clearly handle the distinction between medical utility and social utility. A triage system that incorporates social utility must consider the patient's medical need as well as general social worth. Triage fails in this regard because of its limit.

Triage also is limited in terms of the best chances of survival of patients in a pandemic. In most cases, triage focuses on the best chances of survival of patients as a criterion for allocating scarce medical resources. This method is good because it is not bad in itself; after all, it aims at achieving a good possible result for the society or public during a pandemic as we have in COVID-19 today. However, it comes with a limitation. Assigning priority to COVID-19 patients with the best chances of survival no doubt incorporates medical utility. This produces the greatest good for the greatest number of COVID-19 patients.

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[23] Albert R. Jonsen, and Michael J. Garland, "Moral Policy: Life/Death Decisions in the Intensive Care Nursery," *Medical Dimensions* 6, no. 4 (1977): 27-35; Childress also recognized this point in Childress, 555-556.

A triage system that bases its exclusive predictions on the chances of survival faces some limitation. The limitation is that medical utility is only guided by medical outcomes. And medical outcomes cannot be predicted with accuracy. Particularly, in the fight against the present COVID-19, this limitation is real because not all issues related to COVID-19 are known, yet. The prediction of medical outcome in the COVID-19 regime is as restrictive as what is known about it presently is restrictive. Medical outcome is restrictive as the knowledge available about COVID-19 is. Also, the diagnosis and prognosis of COVID-19 patients do not only differ but change with time depending on the body mechanism of each patient. Some are symptomatic while others are asymptomatic even after testing positive to COVID-19. According to Wang et al., one of the major challenges in treating patients with Coronavirus disease 2019 (COVID-19) is predicting the severity of the disease. They developed a new score for predicting progression from mild/moderate to severe COVID-19.[24] This changing condition and prognosis of each patient would not be able to be accommodated by a triage system, hence creates a limitation.

Furthermore, even at the level of prediction based on chances of survival, some patients will be excluded because they would have been written off. This, in a way violates the principles of equality and justice, whereas the real claim of each patient is that his or her life must be valued equally with others. Triage in this regard, negates or violates the principle of equal regard for human life. Sadly, the problem is further complicated when there is no agreed conception of justice to determine the focus of a triage system. In Kirby's words:

> The allocation of scarce health resources poses significant challenges for decision makers. This is because there is no shared conception of justice for determining what health resources a person has a just claim to, and there is no existing social consensus regarding which ethics principles and values should inform health resource allocation.[25]

Triage using only chances of survival in the allocation of scarce medical resources is limited and insufficient. White and Katz acknowledge that "ethically, using only chance of survival to hospital discharge is

[24] Ming Wang, et al., "Predicting Progression to Severe COVID-19 Using the PAINT Score," *BMC Infectious Diseases* 22, no. 498 (2022).

[25] Jeffrey Kirby, "Enhancing the Fairness of Pandemic Critical Care Triage," *Journal of Medical Ethics* 36, no. 12 (2010): 758.

insufficient because it rests on a thin conception of "accomplishing the greatest good.""[26] This is a big limitation in the application of the triage principle.

Another limitation and complexity of triage is on the degree of the urgency of treatment of patients during a pandemic like the COVID-19 one. Triage protocol is a delayed process. It takes some time to take patients through the triaging process. And sequel to this, patients' waiting time may be extended. This is not good enough, particularly in some situations requiring the most urgent attention of physicians by COVID-19 patients. This leads to loss of hope in the system by patients and their relatives. When this happens, some patients struggle or look for a way to bypass the triage station during busy periods. This is possible because such patients are faced with emergency, or in other words a threat of death. As human beings, we have that natural instinct to look for alternative sources of survival.

A cursory look at the above arguments on the limits and complexities of triage protocol will reveal that the failure of triage is evident in clinical, nonclinical, and procedural aspects or criteria of triage. On clinical criteria in triage, the issues concern diagnosis and prognosis. Taking triage decisions based on diagnosis and prognosis will end up discriminating against some people; example; the aged or the elderly. It will not be fair to all COVID-19 patients since prognosis differs from patient to patient. Also, some patients are symptomatic while others are asymptomatic. A triage decision based on clinical considerations is likely going to lead to exclusion of some patients based on the assessment of overall fitness or frailty, cognition and mood, function, mobility, and co-morbidities. On the nonclinical criteria for triage decision, we have the application of some principles (randomization, priority to healthcare workers, priority to larger number of life years including quality adjusted life years and prioritization based on other social worth considerations).

Each of these nonclinical principles for arriving at a triage decision is complex and has some limitations. Such limitations include the inability of triage to identify vulnerable populations and deal with the prevailing health disparities among patients. This justifies the claim that the limits and complexities of triage has nonclinical support. The procedural issue of triage deals with the importance of fair and transparent decision making and the issue of blinded triage. Blinded triage is a triage process that involves the health and triage officers looking at only the case notes or files of patients without having to look at the individual patients to

[26] White, et al., 132-138.

avoid bias. There are some advantages and disadvantages on this. For example, the advantages include the reduction of risk of subjectivity, enhancement of efficiency and consistency. The disadvantages also abound, such as the inability of triage officers or health professionals to identify specific and peculiar challenges of patients. This sometimes could lead to a serious problem. Triage (blinded or not) also fails on the account of procedural evidence. The next section deals with some recommendations for modification and improvement of triage to overcome the above highlighted limitations and complexities.

IV. Recommendations

However, to remedy and improve triage application from these limits and complexities in the COVID-19 pandemic in particular, and all pandemics in general, I suggest the following: (i) First, governments and policy makers should endeavor to prevent the scarcity of life-saving medical resources/treatments, especially during a pandemic like the current one. There should be a robust pandemic plan that adequately addresses all issues and accommodates all segments of the society even before the occurrence of a pandemic, with proper public enlightenment because it is said that "a stitch in time saves nine" and "a predicted war never consumes a cripple." Having adequate preparation would go a long way in reducing the burden of a pandemic since a pandemic must at one point or the other occur. Along this line, there may also be a need for some countries to broaden the sense of medical and nursing practice as professions beyond what it is at present. This is important because, as human beings (physicians and non-physicians), we should never lose sight of that deep need in human nature to care for others, even during a pandemic like the COVID-19 one; (ii) if resources eventually become scarce, there is a need for a multi-value ethical framework that will corroborate and enlarge the application of triage principle. A single-principle strategy will not always be adequate. This is in line with the White's et al. recommendation:

> We propose an alternative to the single-principle strategy proposed by previous working groups-one that strives to incorporate and balance saving the most lives, saving the most life-years, and giving individuals equal opportunity to live through life's stages.[27]

[27] Ibid.

This will go a long way to better take care of the moral complexities involved in the distribution of scarce life-saving medical resources in a pandemic which limits triage; (iii) there should not be a blind review of patients in triage protocol because it neglects the social condition and identities of patients. Also, triage system should not be based on the social worth of patients; rather triage decisions would be better if placed in the hands of triage teams rather than individual triage officers. Triage decisions should not be exclusively restricted to clinical decisions. Each triage protocol should have a solid clinical and ethical basis. People who are not health-care workers should be included in the team. This will increase the diversity of input into triage decisions. Also, in so doing, there will be greater efficiency, consistency, and foreseeability with regard to the application and implementation of the triage principle. In all these recommendations, there is a serious need for meaningful public engagement because we live in a pluralistic society and deciding on the allocation of lifesaving scarce medical resources during a pandemic is not just an expert scientific judgment but a value judgment as well. In addition, since it has been established that both individual and public behavior play important role in public health emergencies like the COVID-19 pandemic, government at different levels with the aid of health workers should seriously enlighten the public and the general citizenry about the need for attitudinal change during pandemics. This is important since it has been identified that public health responses to infectious diseases require changes in individual behavior.[28] This, in no small measure, would go a long way in curtailing the spread of a pandemic like the COVID-19 one. And the lesser the spread, the better managed and contained. The more the spread, the more victims and the more there would be scarcity of resources hence bringing up the relevance of triage as a principle for the distribution of scarce medical resources. With these recommendations, I move to the next and last section of this paper, the conclusion.

V. Conclusion

In this paper, I examined the use and application of triage system in the allocation and distribution of scarce lifesaving medical resources/ treatments in an emergency pandemic period like the COVID-19 one. I argued that triage fails in its present form and structure because

[28] Rubee Dev, et al., "Impact of Biological Sex and Gender-Related Factors on Public Engagement in Protective Health Behaviors during the COVID-19 Pandemic: Cross Sectional Analyses from a Global Survey," *British Medical Journal Open* 12, no. 6 (2022): e059673.

of some complexities and limits associated with its applications and operations, as argued above. I attempted to argue this position with the utilitarian greatest good for the greatest number principle; maximization of salvageability; common good; and chances of survival. The paper neither claimed nor argued for the justification of triage by utilitarianism. The complexities and limits of triage were proven to cut across the three stages of hospital situations, especially in ICUs and EDs; clinical stage, non-clinical stage, and procedural stage involved in the application of triage. I conclude that in pandemics, triage in its present form and structure omits morally relevant considerations that should be included into allocation decisions during a public health emergency like the COVID-19 pandemic. This is contrary to the assumption that triage as a principle of distribution of scarce medical resources during a pandemic like the COVID-19 one could be applied without some hitches. In view of this complexities and limits, some recommendations have been made to improve and remedy the application of the triage system during a pandemic, as we currently have the COVID-19 pandemic.

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