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Prioritizing healthcare workers' access to resources and treatment during public health crises
The COVID-19 case

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COVID-19 has overwhelmed healthcare systems globally imposing the dilemma of how to ethically ration healthcare resources to meet exponential demand. A much-debated question is whether healthcare workers (HCWs) –a society group greatly affected by the pandemic– should be offered priority access to healthcare resources and treatment. To contribute to this debate, this article discusses the emergence of the pandemic and how it affected healthcare systems' ability to meet demand. After discussing the impact of the pandemic on HCWs, this article presents and analyzes the main arguments in favor of prioritizing HCWs' access to resources and treatment during the current public health crisis and any other crisis with similar characteristics. It proceeds to presenting and analyzing the main arguments against HCWs' prioritization providing a comprehensive view of the debate. Finally, it rejects the main arguments against HCWs' prioritization with the purpose of better informing strategic decisions to effectively protect this key healthcare workforce.

Προτεραιοποιώντας την πρόσβαση των επαγγελματιών υγείας σε πόρους και θεραπείες κατά τη διάρκεια κρίσεων δημόσιας υγείας: Η περίπτωση της COVID-19

Περίληψη στο τέλος του άρθρου

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1. INTRODUCTION

"On December 31, 2019, the World Health Organization (WHO) was informed of an outbreak of «pneumonia of unknown cause»…"[1] that began spreading in China's Province of Hubei.[1] This newly-recognized pneumonia, later called "COVID-19", was "an illness caused by a novel coronavirus",[2] later called "SARS-CoV-2", which spread across the world, sparking an unprecedented public health crisis. On March 11, 2020, COVID-19 was finally declared by the WHO[3] a global pandemic. The lack of safe and effective treatments posed new challenges for health systems around the world, particularly given the multiple waves of this pandemic, often involving different variants and subvariants, each carrying the possibility of being more transmissible, more aggressive, potentially vaccine-resistant and occasionally able to cause more severe disease when compared to the original strain of the virus.[4,5] As of the writing of this article (4.3.2023), according to the COVID-19 Dashboard of the Center for Systems Science and Engineering at Johns Hopkins University, there have been 675,939,792 confirmed cases of COVID-19 and 6,876,974 deaths due to COVID-19 globally.[6] Among its primary victims have been the vast category of HCWs, who have paid one of the heaviest tolls in terms

of the number of lives lost, as well as one of the heaviest tolls in terms of the impact on their daily lives striving to save their patients while risking their own health and that of their families.

As the pandemic evolved, hospitals began to face the major challenge of treating overwhelming surges of patients with respiratory complications related to SARS-CoV-2. From the first wave of the pandemic through consecutive waves, it was evident that not even well-resourced countries possessed the required resources to meet this excessive demand.[7] A primary question imposed during a public health crisis, such as the COVID-19 pandemic, is whether HCWs deserve priority access to healthcare resources and treatment.

This paper presents the main argumentation in favor of and against prioritizing HCWs' access to healthcare resources and treatment, providing a holistic view that encompasses both sides of the debate. It begins with an overview of the emergence of the COVID-19 pandemic, then discusses the impact of the pandemic on HCWs, proceeds to presenting the argumentation supporting the prioritization of HCWs and finally rejects the major argumentation opposing such prioritization. As Chen et al[8] claim, some studies and guidelines, apart from HCWs, include in their scope other vital workers too, that is, those maintaining "critical infrastructure operating"[9] and(or) "ensuring continuity of functions critical to public health".[10] This article retains its focus on HCWs since this is one of the main categories affected by every public health crisis.

2. THE COVID-19 PANDEMIC

2.1. The emergence of the COVID-19 pandemic

By early 2020, SARS-CoV-2 had spread to every continent except Antarctica. Hospitals faced the major challenge of treating overwhelming surges of patients presenting respiratory complications related to SARS-CoV-2. From the first wave of the pandemic through consecutive waves that followed, it was evident that not even well-resourced countries were in a position to meet this excessive demand.[7] Even in the United States of America (USA) the scarcity of ventilators forced physicians to recommend the use of sleep apnea devices to treat COVID-19-induced pneumonia.[11] In addition to ventilators, hospitals fell far short of intensive care unit (ICU) beds, personal protective equipment, COVID-19 tests, respirators, prophylactic and therapeutic drugs and, later, vaccines,[12–15] all of which constitute vital medical resources. This situation led them, apart from anything else, to apply crisis standards of care. The most striking proof of the scarcity of resources was the early advice to healthcare practitioners by the US Centers for Disease Control and Prevention (CDC) to reuse N95 respirators (designed for single use) up to 5 times,[16] despite the fact that the virus is airborne[17] and the protection provided by respirators is crucial.

It was evident that resource allocation guidelines had to be reassessed in order to meet the exponential demand posed by the COVID-19 infections and to do so systematically and ethically.

2.2. The impact of the pandemic on healthcare workers

As the pandemic evolved and an increasing number of patients were at risk of severe illness and death, HCWs around the world fought not only to provide high-quality and compassionate care, but also to prevent the spread of the disease. However, it soon became evident that HCWs were disproportionately affected by SARS-CoV-2. Statistical data from the WHO indicate that "COVID-19 has exposed health workers and their families to unprecedented levels of risk".[18] In particular, "[w]hile health workers represent less than 3% of the population, in the majority of countries ... around 14% of COVID-19 cases reported to WHO are among health workers".[18] A study published in *Lancet Public Health* in 2020[19] showed that "front-line HCWs had at least a threefold increased risk of reporting a positive COVID-19 test and predicted COVID-19 infection, compared with the general community, even after accounting for other risk factors". According to the WHO, even an estimate of 115,500 deaths of HCWs for the time period between January 2020 and May 2021 is "much lower than the actual death toll (60% or more than reported to WHO)".[20]

HCWs also found themselves working under excessively stressful circumstances that negatively influenced their mental, emotional and physical well-being. The factors that exacerbated psychological stress among HCWs include "heavy workloads, long shifts, a high … (work-pace), lack of physical or psychological safety, chronicity of care, moral conflicts, perceived job security … workplace related bullying … lack of social support",[4] shortages of healthcare personnel and resources; limited protective equipment and measures; insufficient, nonspecific training; crowded high-demand clinical settings; fear of being infected or transmitting the virus to family members and stigmatization.[15] These high-stress levels were worsened by moral distress resulting from clinical tasks involving life-and-death decisions made at times in resource-constrained settings.[21] Moreover, HCWs, who had already experienced

stress before the pandemic, experienced even more stressors as they witnessed patients die often alone and far from their loved ones while suffering.[22] Such stress can lead to depression, burnout, sleeping disorders, post-traumatic stress disorder, decreased job satisfaction, increased skilled staff turnover and even suicide and death.[4,18,23,24] In the unfortunate but not infrequent cases when HCWs must be replaced due to their death, long-term illness, disability or leaving their post, the time-consuming and difficult processes of recruiting and training are required before the "next generation" of HCWs are ready to perform their skilled duties.

Overall, as Chirico et al[15] note, HCWs "are on the front line of the battle against SARS-CoV-2 and COVID-19 disease and are paying the highest price for this global health emergency" either as providers of healthcare services or as patients. Meanwhile, they have become more valued and harder to replace than ever. They have also become one of the key healthcare resources of this pandemic. This raises a major question: given the need to ration healthcare resources and prioritize patients, should not HCWs be offered priority access to available healthcare resources such as gloves, respirators, personal protective equipment, ventilators, beds in ICUs, vaccines, etc. and treatment such as antivirals and monoclonal antibodies? Apart from the need to ration scarce resources, doesn't the community have a moral obligation to prioritize HCWs' access to resources and treatment to compensate for their sacrifices and efforts to serve the community? Finally, if any triage protocol were to be applied during a public health crises similar to the current pandemic in order to determine the prioritization of society groups exposed to the virus, would not HCWs be prioritized as one of the most, if not the most, critical groups in a society's efforts to respond to the crisis?

3. PRIORITIZING HEALTHCARE WORKERS

3.1. Why healthcare workers should be offered priority access to resources and treatment

A fundamental utilitarian triage goal of many resource allocation guidelines applied in pandemics is to save as many lives as possible. One method to materialize this goal is by saving HCWs. Because HCWs play a crucial role in life-saving interventions, if they are saved, the lives of many more will be saved, resulting in a multiplier effect.[25] This may be achieved by offering them priority access to all available healthcare resources, especially the prophylactic ones, such as vaccines, and the therapeutic ones, such as ICU beds and ventilators. Indeed, as we are informed by the University of Oxford,[26] more than nine in ten countries studied internationally prioritized HCWs along with two other categories of patients for vaccination. Guidelines applying the utilitarian triage goal to save as many lives as possible were issued, for instance, in South Africa, Austria, Germany and Switzerland.[27]

By prioritizing and protecting HCWs, three goals are served: (a) They are protected from infection, which enables them to keep caring for their patients; (b) the risk of spreading a deadly virus to both societal and nosocomial settings may be mitigated; and (c) should they fall ill, their recovery is promoted, "which might allow them to return to work caring for others".[28] In contrast, should frontline HCWs be "incapacitated, all patients −not just those with COVID-19− will suffer greater mortality and years of life lost".[9]

Although it is claimed that social worth should be considered when establishing HCWs' priority access to resources and treatment in public health crises,[29] the prioritization of frontline HCWs' access to prophylactic and(or) therapeutic drugs and interventions rests not on their special worth, but "on their instrumental value",[9] which (a) lies "not only on their ability to provide care, but also on the difficulty in training and replacing"[30] them, and (b) enables them to keep patients alive; thus maximizing benefits, realizing a major goal of triage in pandemics and fulfilling the commitment to value each person's worth equally.

Healthier HCWs may contribute to better healthcare and societal outcomes. Protecting HCWs' physical and mental health by minimizing the risk of illness and eliminating most work stressors may mitigate their risk of making mistakes at work[15] because "physically and mentally exhausted (HCWs) are more likely to make mistakes and … (become) … infected".[15] In effect, "[p]reserving the lives of HCWs may help preserve one of the scarcest resources in this pandemic…":[14] HCWs themselves. In turn, this "has a direct bearing on the functioning of the entire healthcare system, which is paramount for the well-being of all societies".[14] As Beauchamp et al[31] highlight, "it is […] legitimate to […] give priority to individuals who fill social roles that are essential in achieving a better overall societal outcome". Moreover, ensuring "access to personal protective equipment",[4] tests and drugs may be ethically acceptable, based "not only on grounds of their instrumental value",[30] but, more importantly, on the fact that a public health goal is served:[30] viral transmission may be reduced, and HCWs may be protected from increased risk.[30]

Prioritizing HCWs acknowledges their high-risk task of treating COVID-19 patients. It is undeniable that for

the past three years, HCWs have provided highly skilled services under extremely strenuous conditions and have assumed a substantial risk while serving the community. This article, therefore, supports the argument that the community has an ethical "reciprocal obligation"[28] to offer them priority access to resources and treatment in recognition of their efforts and sacrifices. As Daffner acknowledges, reciprocity "[i]n most cases … is not construed as requiring an identical exchange, but a fair one in which, for instance, sacrifice is returned in kind".[28] Reciprocity, then, is a way to reward HCWs' past usefulness and sacrifice by recognizing that they have saved lives in the past and expecting that they will be in a position to save lives in the future.[9] Reciprocity may also discourage HCWs' absence from work for lengths beyond what could be considered reasonable and customary. In cases of HCWs' death, providing life insurance to HCWs' survivors instead of prioritizing HCWs themselves, as some propose,[32] represents a postmortem recognition of HCWs' contribution to fighting a public health crisis that supports their survivors, but does not directly reciprocate HCWs' sacrifices.

It should be noted that several European countries already support arguments in favor of HCWs' prioritization,[30] while the same arguments have appeared in prominent medical journals.[8] Additionally, state guidelines, e.g., in the United Kingdom, France and Spain, give explicit and absolute priority to HCWs for ICU beds and ventilators irrespective of their condition.[33]

Where justification for HCWs' prioritization cannot be built upon their contribution, it can be built upon the fact that their loss would have disastrous effects on the health system and society.[34] At the same time, the WHO reminds governments of "their legal and moral responsibility to ensure the health, safety and well-being" of HCWs.[18]

Finally, priority access to treatment and resources should be offered to frontline HCWs who are or will be in direct patient contact and those who handle infectious materials (both groups lacking the possibility to telework), since these HCWs are actually exposed to the virus at their workplace and may be infected there. This includes all HCWs entering a room while an infected patient is present – not only physicians and nurses. Their prioritization is essential to inform all decisions to effectively protect this key healthcare workforce. However, because HCWs' category is vast, it has been suggested that prioritization should be offered only to those who are "part of the COVID-19 response",[30] namely, those taking the actual risk to serve the society.

3.2. The counterarguments to affering healthcare workers priority access to resources and treatment

A first argument against HCWs' prioritization is that, since their prioritization rests on their ability to keep patients alive, this ability may be threatened if they fall ill. Earlier in the pandemic, it was argued that HCWs who fall ill might be in need of ventilators for an extended period and thus be unlikely to return to the frontlines in time to be part of the care response against COVID-19.[8,9,12,35] It should be stressed that this "multi-wave" pandemic has lasted more than three years, is not over yet and there has been rather ample time for numerous HCWs to recover, return to work,[8] provide their invaluable services to the sick and the community and be "of value (either) during a later stage of (this)… pandemic",[12] during "the (potential) seasonal recurrence of the virus"[30] or even in a future health crisis, particularly if other HCWs "fall ill or die, leaving a shortage of essential personnel".[12] According to a large-scale study from China,[36] only 5% of infected patients will present critical illness, while the majority of patients (81%) would have mild or no symptoms. According to a 2020 study in Poland, only a small percentage of patients (3.6%) develop acute respiratory distress syndrome,[37] possibly requiring admission to ICUs and ventilatory support. This data proves that the majority of HCWs could have "significant prospective instrumental value";[30] that is, they would probably be able to return to work soon enough to take care of their patients, or return to work in a second wave or in future pandemics.

Some argue that prioritizing HCWs unjustifiably overrides "the moral commitment to value each person's life equally".[8] This stance does not take into account that HCWs are not prioritized because of their life's higher value or worth when compared to that of other patients, but specifically because of their instrumental value;[9] that is, because of their ability to keep patients alive. At first, this argument answers the question of a lack of specificity regarding HCWs' instrumental value.[30] Their prioritization is an "essential requirement to preserve public health"[30] with regard to some resources. Therefore, although some have posited that this prioritization violates the ethical norm of putting the patient first,[8] we emphasize instead that this prioritization represents the way in which the patient is put first. By protecting and saving HCWs, more highly trained healthcare professionals are at the service of many more patients.

Some argue that HCWs have freely chosen their vocation and thus have accepted the related risks.[30] Consequently, they do not deserve priority access to resources and treatment. However, HCWs' free choice of vocation does not lessen their sacrifice or the community's strong moral com-

mitment to reciprocate the benefit. Hence, despite having willingly accepted the risks of their vocation, HCWs should still be given priority access to resources and treatment.

Finally, others argue that HCWs access to resources and treatment should not be prioritized because it is difficult to determine who HCWs are[8,32,38] and which HCWs are infected at work.[8,35] A solution to this problem could be to use lists that would *a priori* define all workers who fall into the category of HCWs. It is recommended to focus on frontline HCWs who are either in direct contact with patients or handle infectious material, and hence, are at high risk of contracting the virus at work. Meanwhile, as it is difficult to determine those HCWs that are infected at work, the vast majority of HCWs who are eligible for prioritization should not be deprived of their right to be prioritized, to avoid prioritizing a small percentage of them that become infected via nonoccupational exposure.

4. CONCLUSIONS

As it exceeds the scope of this article, an issue to be clarified is how to define essential workers who, while not being HCWs, continue in-person operations and are equally exposed to corresponding risks, thus benefiting the community during this pandemic and other public health crises. Then, it has to be decided whether to prioritize this category of workers too.

The value of HCWs' work at patients' bedsides has proven indisputable. The argument that if they become ill, they will not be able to return to work and care for patients, even if it was true, is weakened by new clinical data. Similarly, as maintained, the argument that "by prioritizing them, the commitment to equally value each person's life is not justifiably overridden" has proven frail as well. As explained, their prioritization does not violate the principle of putting the patient first, while the fact that by choosing their vocation they are accepting the risks therefrom does not lessen society's reciprocal obligation to reward them.

It is undoubtable that by saving them, the lives of many more will be saved. By prioritizing them, their protection from infection and their recovery is promoted. Their protection secures one of the scarcest resources of any health crisis, viz, HCWs themselves. Furthermore, it ensures that the risk of spreading the disease is mitigated. By their prioritization the society fulfils its moral commitment to reward their noteworthy sacrifice of putting their lives at risk in order to save as many lives as possible. No health system and no society could ever bear the repercussions of their loss and we are led to accept that priority access to healthcare resources and treatment should be offered to all frontline HCWs with workplace exposure to COVID-19 patients and(or) infectious material so far, as it concerns a public health crisis similar to the current pandemic. Their access to resources and treatment should be prioritized during all crises with the characteristics of a pandemic for being among the absolute protagonists of this and any future public health crisis.

ΠΕΡΙΛΗΨΗ

Προτεραιοποιώντας την πρόσβαση των επαγγελματιών υγείας σε πόρους και θεραπείες κατά τη διάρκεια κρίσεων δημόσιας υγείας: Η περίπτωση της COVID-19

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Η νόσος COVID-19 κατέκλυσε τα ανά τον κόσμο συστήματα υγείας θέτοντας το δίλημμα του πώς να διανεμηθούν με ηθικό τρόπο οι υγειονομικοί πόροι, ώστε να καλυφθεί η ραγδαίως αυξανόμενη ζήτηση. Το ερώτημα κατά πόσον οι επαγγελματίες υγείας –μια κοινωνική ομάδα επηρεαζόμενη τα μέγιστα από την πανδημία– θα πρέπει να λαμβάνουν προτεραιότητα ως προς την πρόσβασή τους σε ιατροφαρμακευτικούς πόρους και θεραπείες αποτελεί ζήτημα υπό ευρεία δημόσια συζήτηση. Προκειμένου να συμβάλει στην εν λόγω δημόσια συζήτηση, το παρόν άρθρο εξετάζει την ανάδυση της πανδημίας και τον τρόπο με τον οποίο αυτή επηρέασε την ικανότητα των συστημάτων υγείας να αντιμετωπίσουν τη ζήτηση. Μετά την παρουσίαση του αντίκτυπου της πανδημίας στους επαγγελματίες υγείας, το άρθρο παρουσιάζει και αναλύει τα κύρια επιχειρήματα υπέρ της προτεραιοποίησης της πρόσβασης των επαγγελμα-

τιών υγείας σε πόρους και θεραπείες κατά τη διάρκεια της παρούσας κρίσης δημόσιας υγείας, όπως και κατά τη διάρκεια οποιασδήποτε άλλης κρίσης με παρόμοια χαρακτηριστικά. Στη συνέχεια, προχωρά στην παρουσίαση και στην ανάλυση των κυριότερων επιχειρημάτων κατά της προτεραιοποίησης των επαγγελματιών υγείας, προσφέροντας με τον τρόπο αυτόν μια ολοκληρωμένη εικόνα της δημόσιας συζήτησης επί του υπό κρίση ζητήματος. Τέλος, το άρθρο αντικρούει τα κύρια επιχειρήματα κατά της προτεραιοποίησης των επαγγελματιών υγείας με σκοπό να αποτελέσει τη βάση στρατηγικών αποφάσεων για την αποτελεσματική προστασία του εν λόγω κρίσιμου επαγγελματικού δυναμικού.

Λέξεις ευρετηρίου: Επαγγελματίες υγείας, Κρίσεις δημόσιας υγείας, Πανδημία COVID-19, Προτεραιοποίηση, SARS-CoV-2

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