Ethical problems in the assignment of scarce resources and intensive care in SARS-CoV-2 pandemic healthcare

Thoughts based on principles, criteria, rights and responsibilities

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Abstract

The purpose of this document is to identify some ethical problems in healthcare processes within the context of the SARS-CoV-2 pandemic in Colombia, and propose a collection of ethical principles and criteria which will allow healthcare institutions and workers to make ethically supported and legally feasible decisions. These decisions should especially focus on protecting the core of the fundamental rights of patients and workers, in an extraordinary context characterized by structural inequity and a discrepancy between the supply and demand of healthcare goods, resources and services. Ultimately, this will mitigate moral stress, maximize the benefits derived from the use of scarce resources, and modulate the associated ethical and legal risks. (Acta Med Colomb 2020; 45. DOI: https://doi.org/10.36104/amc.2020.1952).

Key words: *bioethics, coronavirus infections, pandemics, assignment of healthcare resources, critical care.*

Introduction

The SARS-CoV-2 pandemic continues to spread throughout the world, with new cases of contagion and fatal victims, setting up a group of exceptional circumstances for healthcare decision making (1). As of May 2020, there have been more than four million people infected and 200,000 deaths (2). These figures have been reached in a short period of time, affecting areas with a high population density and people from different age groups, especially elderly people, without complete clarity yet on the pathophysiological mechanisms or availability of a specific treatment or vaccine. As of today, it may be stated that the disease is characterized by high contagion and high speed of transmission, an uncertain clinical course, difficult detection and asymptomatic carriers, as well as lack of knowledge regarding whether the presence of antibodies against the virus confers immunity to a subsequent reinfection.

Based on Italy´s experience, an estimated 10 to 25% of patients hospitalized for COVID-19 will require advanced life support (ALS) resources, even for several weeks in some cases (3). However, the needed resources may be scarce due to their simultaneous demand worldwide or their high specialization. This is the case of physical and technological resources (such as Intensive Care Unit [ICU] beds, ventilators, infusion pumps, extracorporeal membrane oxygenation systems, etc.), the supplies for ensuring the protection of healthcare personnel (biosecurity and personal protective equipment), medications (antivirals, possible vaccines), tests to diagnose the causative agent (for symptomatic and asymptomatic individuals) and expert caregivers.

While at the time of this writing there has been no collapse in the availability of healthcare resources in large cities such as Bogotá (where, on the contrary, we are cur-

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rently experiencing underutilization of ICU beds due to the effects of quarantine and the reorganization of healthcare services), in other regions with fewer resources (Amazonas, Tumaco, etc.) structural inequity problems of the social security system and public policies can already be seen. In this context, the time may come when, for example, there will not be enough ICU beds for admitting and treating seriously ill people, and physicians will be faced with a conflict of moral responsibilities in which they will need to choose which patients will receive care and which will not, as has happened in Spain, Italy and the United States.

Various strategies have been implemented to deal with this issue: planned adaptation of healthcare services, such as telephone consults; transformation of areas which are not traditionally used for intensive care; reconstitution of inpatient and ambulatory healthcare teams, even in non-conventional sites such as hotels and hostels; broadening the capabilities of other healthcare professionals to support the care of patients with mild, moderate and critically severe disease; and modification of healthcare standards and resource management at a national level (4).

In addition to these strategies, there is another which we consider to be vitally important: to propose a group of principles to healthcare professionals and institutions which will guide ethically feasible and legally substantiated decision making in situations in which there is a discrepancy between the supply and demand of healthcare resources; as well as objective criteria for prioritizing the assignment of these resources in such a way as to preserve the right to health and public trust in the healthcare system. While we are facing an exceptional situation, this does not justify accepting the infringement of people's dignity (patients, relatives and caregivers) or the dehumanization of the healthcare process (1).

For the purposes of this reflection, we propose the following ethical principles for SARS-CoV-2 pandemic health care: dignity, equity, non-discrimination, autonomy, beneficence, non-maleficence, utility, reciprocity, solidarity and transparency.

The decisions should promote the protection of the basic nucleus of patient and healthcare workers' rights. For the former, the right to health (access to the ICU and criteria for prioritizing scarce resources); the right to make autonomous, free and informed decisions; the right to die with dignity (end-of-life decisions, palliative care, therapeutic effort adaptation [TEA], treatment refusal, advanced directives), and the right to the protection of personal information. For the second: the right to life, professional autonomy and the right to try. Consequently, a set of responsibilities is generated on the part of institutions and healthcare professionals.

1. Ethical principles for assigning scarce resources

The right to health is understood based on the principle of equity, which proposes the distribution of resources, goods and services according to need, avoiding unjustified discrimination and addressing the rights of those who are especially vulnerable to injury and injustice (5). This means that if a patient has a life-threatening condition which requires the ICU, he/she may have access to this type of specialized care without negative discrimination based on age, gender, lifestyle, beliefs, or social or economic condition, among others.

However, given the previously described context, it is plausible to foresee that the right to health will not be able to be fully guaranteed for all seriously ill people, nor will the required diagnostic tests be available. The public health and clinical care settings differ in that, in the first, the objective is to promote public health, minimizing morbidity and mortality through collective strategies and actions; while in the second, clinical actions are guided by the patients' individual preferences, together with the best available evidence (6).

For the purposes of this analysis, we propose the following normative principles:

Dignity

According to this principle, all people are endowed with intrinsic moral value, and thus may not be objectified or used as a means, since they are ends in themselves. The dignity of the person also includes the posthumous dignity of the body (cadaver), which may not be desecrated, mutilated or instrumentalized against the will of the person as expressed while living (7).

Equity

The material principle of distributive justice which proposes the distribution of goods, resources and services according to need, in keeping with the law of just opportunity and impartiality.

Non-discrimination

A principle related to justice, according to which all people, as individuals with rights, must have equal opportunity to enjoy goods, resources and services. A person may not be deprived of the required care on the grounds of age, nationality, functional diversity, or "social usefulness", among others.

Autonomy

A principle related to the capacity of people, as moral agents, to choose a group of principles around which to undertake a life plan. According to this principle, people have the ability to make free decisions, in accord with their values and preferences, in the context of a society with pluralist aspirations, and within the limits imposed by the rights of third parties and the common interest.

Beneficence

A principle equivalent to the patient's best interest, to the concept of a good life (quality of life) which each person chooses in terms of his/her values and preferences, in the context of a society with pluralist aspirations.

Non-maleficence

This principle ratifies the moral obligation to prevent injury to third parties by adjusting professional conduct to good clinical practices and the measures for patient prevention and safety.

Proportionality

A principle which links the obligations of beneficence and non-maleficence, the relationship between means and foreseeable outcomes, and between individual rights and collective responsibilities (8).

Utility

A principle which determines the morality of actions according to their relationship to the wellbeing of individuals and communities, seeking to attain the maximum general benefit at the lowest possible cost (5).

Reciprocity

This principle is understood, in this context, as the appropriate and proportional retribution given to those who take on a moral risk which is greater than the general risk (5).

Solidarity

The mutual assistance principle or duty based on the recognition of the interdependence of moral agents. This principle, unlike the distributive justice duties, does not refer to the relationship between the State and individuals, but rather emerges from the agents themselves (5).

Transparency

This formal principle demands that the protocols for assigning scarce resources be public and that their rules be discussed and validated by all the interested parties (procedural equity).

2. Protocols for access to ALS resources

The need for triage

In this situation of disproportion between demand and the possibility of successfully caring for the patients, the triage protocols are an indicator of an institution's adequate preparation for catastrophic circumstances. At the same time, they are instruments which support the making of difficult decisions in individual cases. These protocols should reflect the moral perspective of the community, as well as ethical and clinical standards (9).

Triage is a tool which tries to establish a reasonable order for access to a scarce medical resource. In the context of an imbalance between supply and demand of resources and services, we suggest that institutions should prepare for this situation by designing triage protocols which will require constant review and updating according to the epidemic's behavior, the availability of resources and the guiding principles of distributive justice (10, 11).

A committee may be charged with the design of a specific triage protocol, as well as decisions on rationalization of resources in particular cases. This committee, in turn, should consist of a subcommittee to propose the triage protocol and another to retrospectively evaluate its results (12). It is advisable for these collegiate committees to be constituted by critical care, palliative care and clinical bioethics specialists, and that their decisions be communicated both to clinical personnel as well as patients and their relatives. This will reduce misunderstandings and protect the physician-patient relationship, channeling the negative emotions of these decisions (13). Thus, the pressure on physicians in these situations will be relieved by distributing the responsibility for decision making among several people or to the institution itself as a support (1).

The triage protocols "should seek to respond to the following circumstances: (i) Level of care required, (ii) Initiation of life support, (iii) Withdrawal of life support and (iv) Beginning of palliative measures in the event that life support is not initiated or is withdrawn" (1).

Likewise, clinical decisions should be recorded in the medical chart, along with the constant forecast of resource distribution for each case according to its progression, and the dialogue on advance directives and end of life decisions. These are fundamental factors which will demonstrate and preserve, for all the parties involved, the principles of proportionality and distributive justice in this exceptional situation.

Ethical criteria for access to ALS in the context of the SARS-CoV-2 pandemic.

The main purpose of critical care is to maximize the number of lives saved in terms of criteria such as survival, quality of life and functionality. The ICU is a scarce, costly and highly technified resource which should be reserved for patients who have a reasonable possibility of recovery. It should not be assigned to patients whose prognosis will not be altered by admission, and who do not require constant monitoring or the exclusive interventions of critical care.

In this scenario, it is essential to publicly and demonstrably guarantee that the prioritization criteria will only be used when all reasonable possibilities for having the necessary healthcare resources available have been exhausted. When distributing healthcare resources, all patients who may need them must be considered, whether or not they are affected by COVID-19, in order to not turn the latter into invisible victims of the pandemic who will suffer the consequences of delayed medical interventions and continuity of treatment for chronic conditions.

This conflict of duty due to scarce resources is described in the Spanish Ministry of Health report as "the tension between utilitarianism (to obtain the maximum benefit with regard to the patients cared for and saved compared to those put off) and humanitarianism (all extremely ill people deserve to receive appropriate life support treatment)" (14).

Of the prioritization criteria for healthcare which have been suggested in the reviewed literature, there are some which we consider to be inexpedient, such as: age as an isolated criterion, order of arrival, disability-free survival and social usefulness or value, as these are value judgments subject to individual prejudice and reinforce negative social representations regarding vulnerable populations.

Some countries have chosen to limit ICU admission for older people (65, 70, 80 years, in some cases). While the years gained and the completion of the life cycle are relevant variables (12), age as an isolated fact is an insufficient criterion without considering other medical and prognostic factors (15), which favors an unjustified discrimination based on chronological age (16).

Likewise, generic admission criteria are not recommended either, such as "the sickest first", since, in some cases, this would imply an overextension of the therapeutic effort; or "first come/first served", which could lead to caring for people who are less ill or have little chance of survival, or delay those who have had to overcome greater barriers to access (17).

Neither are criteria like social usefulness or value morally justifiable, since they may be arbitrary value judgments based on discriminatory categories such as gender, race or class (18). Likewise, the concept of "disability-free survival" is not acceptable, since its ambiguous and ethically debatable nature could promote discriminatory practices against people with diverse functionality. Thus, as White and Lo have stated: "The categorical exclusion of generic groups of patients from the possibility of receiving mechanical ventilation is ethically problematic" (19).

The desirable criteria should be objective and public. For this, it is necessary, first of all, to perform a comprehensive assessment of the patients, their clinical parameters and prognoses, to determine the intensity of medical interventions based on the principle of proportionality (18). The assessment should combine the following factors:

1. The patient's age.
2. The seriousness of the disease on admission.
3. The presence of other serious diseases.
4. The presence of irreversible neurological or cognitive impairment.
5. Multiple organ failure.
6. The probability of survival.
7. The possibility of prolonged support.

To ascertain these variables, White et al. (17) propose the following scale:

- **Probability of survival**: quantified using instruments such as the *Sequential Organ Failure Assessment Score* (SOFA) (20), which calculates the short-term survival prognosis.
- **Long-term survival prognosis:** quantified according to the patient's comorbidities.
- **Guarantee of the maintenance of the life cycle** (21): reflected in the chronological age.

According to this scale, the greater the probability of short-term survival, the fewer the comorbidities and the lower the age, the greater the therapeutic intensity justified. The definition of therapeutic intensity in this context should incorporate specific severity scores (e.g. APACHE, SAPS, MPMO), functional prognosis scales (e.g. Karnofsky, Barthel, etc.), comorbidity indices (Charlson) (22), fragility scales and specific ICU admission criteria in patients with pneumonia (23), among others (24).

The Sociedad Española de Medicina Intensiva, Crítica y Unidades Coronarias (SEMICYUC) [Spanish Society of Intensive, Critical and Coronary Unit Medicine] (15) proposes a classification of priorities for using intensive care resources:

- **Priority 1:** critical and unstable patients who require continuous monitoring and intensive care, which cannot be provided outside of the ICU.
- **Priority 2:** patients who need intensive monitoring and have, or are in imminent danger of having, multiple organ failure. Some of them may not need invasive mechanical ventilation, but they have high oxygen requirements.
- **Priority 3:** critical and unstable patients with little possibility of recovery.
- **Priority 4:** patients whose benefit from critical care is minimal or improbable because they either have a disease which may be treated in another area (intermediate care) or they have advanced disease or are in the process of terminal functional decline.

According to this classification, ICU admission is recommended for Priority 1 patients and, in hospitals where intermediate care is available, Priority 2 patients may be admitted, while Priority 3 and 4 patients will not be admitted to the ICU (15). The latter should have TEA measures such as do-not-resuscitate orders (4) and the immediate and permanent implementation of palliative care and strategies for accompaniment in dying with dignity and without abandonment. Patients with clinical conditions such as recurrent cardiac arrest, metastatic cancer with a poor prognosis, severe burns covering a significant proportion of body surface, specific terminal organ failure and advanced neurological conditions or those with a poor survival prognosis (9), terminal functional decline syndrome, and complex or highly complex chronic diseases (25), among others, may be included in these categories.

It is recommended that, if a physician decides not to take these criteria into account and selects a priority 3 or 4 patient for intensive care, his/her decision should be considered exceptional, will undergo collegiate review, will be public and will be subject to subsequent accountability.

Secondly, once the patient candidates for ICU admission are classified, their bio-psychosocial information in the medical chart, needs, preferences and values should be investigated more thoroughly, in order to act according to the principle of beneficence, which interprets the best interests of the patients based on the exercise of autonomy.

Thirdly, it will be necessary to concurrently and continuously evaluate if the patients who have already been admitted to the ICU, given the progression of their disease, are candidates for TEA, understood as "the adjustment of treatment and care objectives to the clinical situation of the person when he/she has an advanced incurable, degenerative or irreversible disease, or a terminal disease, when they do not fulfill the principles of therapeutic proportionality, do not serve the person's best interests and do not represent dignified living for him/her" (26), implementing effective palliative care and freeing the resources for other patients. It should be noted that the determination of futility or disproportion of a care measure belongs to the healthcare team, and therefore does not require the patient's or representative's informed consent, that it is equally ethical to not begin or to withdraw the various measures, and that the TEA criteria should be clear from admission for the patient, relatives and healthcare team (1).

Therapeutic effort adaptation must be differentiated from therapeutic refusal, also known as withdrawal, which is a free and informed decision by which a person objects to a medical action which is indicated by *Lex Artis* or the scientific evidence.

Since healthcare workers or those who perform critical services for society (such as policemen or firefighters) assume a greater than normal risk, they may be prioritized based on the principle of reciprocity for diagnostic tests, ALS, vaccines, personal protective equipment, and medical treatment, in order for them return to their activities quickly and in the best possible condition, which positively and directly benefits society. The reciprocity criterion does not apply to power, wealth, politics or fame. This position, which is not universally supported, is shared by the Spanish Bioethics Committee (16) as well as the "Guidelines for managing ethical issues in infectious disease outbreaks" published by WHO (5). With regard to boys, girls and adolescents, the principles of overriding interest and preponderance of rights should be applied, and therefore their care takes priority over other societal actors (16).

Clearly, under normal circumstances, it is the attending physicians, with the support of other healthcare team members, who make the decisions regarding access to healthcare resources and TEA. These decisions must be based on scientific evidence and recorded in the clinical chart. However, in these extreme circumstances in which there are conflicts of duty, there are different positions regarding how the decision should be made. Some argue that it should be made by the attending physician, others say it should be made by an *ad hoc* committee of physicians, or that ethics committees or hospital bioethics departments should be consulted. However, it must be recognized that this will be more difficult in saturation situations, and therefore the direct care team, supported by institutional protocols, will generally be the ones who must make the decision. This course of action respects the right to professional autonomy.

The decisions to assign scarce resources, even when supported by protocols and interdisciplinary teams, may affect the professionals who make them. Due to the human implications of these decisions, the people involved in making them should have access to psychological support and psychotherapeutic guidance. It should be made clear from the beginning that triage, the decisions to not supply resources, and TEA, if in accord with *Lex artis* and aimed at the common good, are not subject to legal reproach.

The Colombian National Bioethics Council "recommends that institutions strengthen their own hospital ethics committees or those of other institutions, through a system of consults and early warning, which will help them make decisions catering to the respect for human dignity and rights" (27).

3. Patient and healthcare workers' rights in the context of the SARS-CoV-2 pandemic

The right to make autonomous, free and informed decisions

Individuals, or their legal representatives, have the right to make free, informed and autonomous decisions, a right which is embodied in the informed consent process (26). Given the context of care during the pandemic, it is foreseeable that some patients may not be able to make decisions on their own and that it may not even be possible to contact their representatives. In these cases, the physician must make decisions which are in the patient's best interest (his or her fundamental rights), recording them in the medical chart.

Colombian jurisprudence and regulations recognize exceptions to the duty to inform and request the legal determination of patients, such as: the patient's mental status, in the absence of relatives; an urgent or emergent situation; when the patient has undergone the same procedure repetitively and is familiar with it; when the patient gives up this right, and therapeutic privilege, among others. However, these are exceptional situations, not the rule (28).

It is especially valuable for the healthcare team to understand the patient's values and preferences when making decisions. Thus, advance directive documents (ADDs) are especially useful, which, while regulated in Colombia by Resolution 2665 of 2018 (29), unfortunately, are not as disseminated as could be wished.

The ADDs "may be filled out by legally capable and competent individuals and also by adolescents between 14 and 18 years old who have chronic or terminal diseases, according to Law 1733 of 2014" (29).

The attending physician has the responsibility to ask on admission if the patient has an ADD and, if not, to encourage the patient to draft one using the two most easily accessible methods in the hospital context, which are:

a. In the presence of two witnesses

b. Recorded by the attending physician in the medical chart.

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It is essential to do this before the patient's condition deteriorates and he or she is no longer able to express his or her wishes. While some healthcare institutions already have ADD formats attached to the medical chart, these may be found on the Ministry of Health and Social Protection web page (30) or that of the Fundación Pro Derecho a Morir Dignamente de Colombia [Colombian Foundation for the Right to Die with Dignity] (31). It must be noted that ADDs are direct consents projected over time, which must be respected by relatives and the healthcare team.

It is worth noting that "advance directives expressed through videos or audios and other technological methods are admissible, as well as through alternative communication languages" (31). This fact is especially relevant given the biosafety measures which must be instituted with regard to fomites, to avoid contagion.

The right to die with dignity.

This right allows people to make end-of-life decisions which limit what third parties may or may not do in regard to their lives, health and integrity. It includes the possibility of making decisions about situations such as: ICU admission, palliative care, TEA, palliative or terminal sedation, treatment refusal, place of death, religious or spiritual support, the naming of a third party to make decisions, participation in research, formalizing an advance directive, and euthanasia (where legal), among others.

When the decision is made to refuse treatment or to choose TEA, non-abandonment and comprehensive palliative care focused on the management of physical and psychological symptoms, as well as care for the patient and his/her family, should be guaranteed.

Accordingly, it is important to design end-of-life family support and communication strategies; for example, using technological devices (tablets, cell phones), when possible, with the support of mental health professionals.

In this process, the right to the protection of personal information must be safeguarded, restricted only by the demands of the temporary public health measures.

The right to try

This right refers to the possibility of trying all the "existing scientific possibilities" (Ruling T-057 of 2015) to address a desperate situation, when all the available options have been exhausted (18).

Faced with the possibility of healthcare systems being saturated by complicated COVID-19 cases, it is reasonable to try extraordinary strategies, such as the design of crisis mechanical ventilators which may be a priceless resource in the midst of this healthcare emergency (18) (although their effectiveness and safety must be verified and supervised), or the strategies implemented in Italy, such as the 3-D printing of ventilator parts or adaptors to allow two patients to simultaneously use the same ventilator. This right also refers to research activities for developing antiviral agents and vaccines, respecting the research ethics principles, the current regulatory framework and the fundamental rights of the participants.

Likewise, the training of healthcare personnel on skills for managing acute respiratory diseases and basic mechanical ventilation for non-experts, and the setting up of alternative hospitalization areas for complicated patients, are reasonable measures in light of the crisis. The interpretation of Article 7 of Law 23 of 1981 (Medical Code of Ethics) allows the inference that in emergency situations, a physician may care for patients outside of his or her specialty, if necessary, as long as his or her competencies are assured or expert accompaniment and supervision are arranged.

The Colombian Association of Medical Schools (ASCOFAME [Translator's note: its acronym in Spanish]) carried out a "virtual course on basic ICU training with an emphasis on COVID-19 management for healthcare professionals" in April, in which 22,862 people in Colombia and 1,586 in other countries participated. Parts of this document were used for the training on ethical aspects (available at: http://virtual.ascofame.org.co/).

In this same vein, the importation process or issuing of health licenses by regulatory or control agencies (e.g. INVIMA) for rapid diagnostic tests, or the use of experimental medications or techniques, should be expedited, as long as the urgency does not lead to neglecting good practices and the best standard of care.

The responsibility to safeguard or support and protect healthcare workers and vulnerable populations

Due protection of healthcare professionals' right to life and health implies that institutions must safeguard the wellbeing of people involved in caring for patients, and provide the necessary biosafety guarantees to avoid their contagion in the work setting. Trainees, medical students and healthcare workers should be recognized as especially vulnerable populations, along with older staff, those with chronic diseases or those with functional diversity (6).

It is important to encourage teaching and awareness raising efforts aimed at the community through mass media to avoid the stigmatization of healthcare workers by the citizens. This phenomenon has already been seen in our setting, where there are difficulties in accessing transportation, food supply areas and specific health care (non-COVID-19) due to the general fear of contagion.

The psychological damage healthcare professionals may experience should be foreseen, and timely mental health intervention measures instated.

Conclusions

In common medical practice, there are different scenarios in which scarce resources must be assigned based on the principle of distributive justice, such as ALS or transplant medicine. However, the situation caused by the SARS-CoV-2 pandemic constitutes a scenario which requires the distribution of resources under exceptional circumstances and confronts professionals and institutions with a conflict of moral duties. Therefore, publicly known protocols are needed, considering the ethical principles and medical criteria which can guide decisions affecting both COVID-19 patients as well as those with other conditions. These protocols should be constructed and applied from the perspective of respect for professional autonomy.

One fundamental purpose in the approach to this problem of the restriction of rights is the preservation of the basic core of these rights, whose main axis is respect for the ontological dignity of people and their constitutional guarantees.

The medical criteria which guide decision making in these circumstances should be objective, reviewable, comprehensive and contextualized to the particular conditions of each patient, which includes considering his or her preferences and values, through the informed consent or ADD process.

Once the triage protocol is applied, patients who cannot benefit from ALS measures may not be abandoned, and, therefore, access to comprehensive palliative care will be a priority in the context of the right to die with dignity.

Healthcare institutions are responsible for safeguarding the integrity of their workers by supplying the biosafety elements required for caring for patients, and preserving workers' rights.

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