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Medical, social and ethical issues related to COVID-19

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Abstract

The recent pandemic caused by the novel coronavirus strain (COVID-19) has suddenly and radically shattered all ideas about the norm, not only in medical practice but also in society. This has particularly affected the healthcare system, physicians, and the distribution of life-sustaining therapy in the context of limited resources and the absence of a known treatment protocol. One of the main ethical dilemmas of the coronavirus epidemic has been the confrontation between public health ethics, reflected in the fair distribution of limited resources and a focus on public safety, and patient-centred clinical ethics. Ultimately, the COVID-19 pandemic is putting medical staff in tragic situations that they have never faced. And in the case of a shortage of medical staff — doctors and nurses, ventilators and other life-supporting devices for patients or even just beds in hospitals, it frequently becomes necessary to classify patients and decide an order to determine who, where and what kind of help will receive (or not receive) and in what queue to provide it. Another important problem was the problem of digital control of citizens, who must limit their freedoms for preserving the health of other citizens. The fear is widely shared that the situation will allow manipulation citizens in the future when there is no epidemiological need. Also, the problem of the responsibility of politicians and authorized organizations for the health not only its people but all over the world arises. These and other questions today require bioethical expertise.

Keywords: bioethics, pandemic, COVID-19, ethical principles, healthcare, medicine, justice, health.

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Introduction. Today, in the 21st century, it can be stated that our civilization has faced a whole range of global problems, including the problems in maintaining peace on Earth, ecology, comestibles, population problem, poverty reduction of most of humanity, and health and quality of life. As a result, large-scale problems arise to be solved, and the bioethics aspect of this context is quite significant. The COVID-19 pandemic has become particularly important in updating and implementing bioethics principles.

A summary historical retrospective should help to understand why it is so important to use bioethics experience in the world's situation in the COVID-19 pandemic context.

The book *Bioethics: A Bridge to the Future* by V.R. Potter was published in 1971 [1]. The concept of bioethics was introduced by the author, defining it as "*a new field of knowledge that combines biological knowledge with knowledge of the system of human and moral values .... I took bio to represent biological knowledge, the science of living systems, and I took ethics to represent knowledge of the value systems of human morality*" [1]. According to Potter, the creation of a new bioethics discipline was supposed to bridge two concepts, science and human nature. In this work, Potter prioritized the problem, which is the problem of survival in the modern world. At the same time, in his other work, *Global Bioethics*, Potter's concept was formulated based on the close relationship between bioethical theory and environmental ethics. Here, he continued to develop the idea of close interaction of ethics with ecology, medicine, and science, placing special emphasis on survival and global ethics [2].

According to a scientist named Hans Martin Sass, Fritz Jahr (1895–1953), a German theologian and pastor and was called the father of biological research ethics, proposed the term Bio-Ethik, in which the main aspect is the sacredness of life [2]. Although recognizing the interaction between caring for oneself and caring for others, Jahr replaced dignity of respect for the law with dignity

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of compassion for all living factors of growth, that is, for life and all its forms [2,3].

The emergence of modern bioethics was the result of global changes both at the level of profound transformation and achievements in modern science and as a result of the globalization process, which is reflected in the speed of its development and in the growing influence of the importance of mutual activities in the international community to solve global problems.

The potential high degree and real danger of contemporary biotechnologies' achievements, the prevention and non-admission of their use without preliminary humanitarian expertise have assigned a special socio-regulatory status to bioethics. Today, the science of searching, evaluating, and choosing a criterion for a moral attitude toward living things is represented by bioethics [2,4].

Bioethics covers a striking range of issues due to its diversity, but is united in prioritizing universal values such as life, health, wellbeing, and justice. Its interdisciplinary nature is another characteristic aspect of bioethics, where representatives of medicine, law, philosophy, biology, and representatives of various religious confessions take an equal part in bioethical discussions [2].

A consensus was formed in the international community on the basic principles of bioethics, which are reflected in various declarations and recommendations, and are most fully presented in the document “Universal Declaration on Bioethics and Human Rights” (UNESCO, 2005) [5]. These primarily include the following:

– human dignity and human rights;
– good and evil;
– autonomy and individual responsibility;
– informed consent;
– persons who do not have the legal capacity to consent;
– human vulnerability recognition and respect for an individual's integrity;
– personal privacy and confidentiality;
– parity, fairness, and legal equality;
– non-admission of discrimination and stigmatization;
– respect for cultural diversity and pluralism;
– solidarity and cooperation;
– social responsibility and health;
– sharing of benefits;
– protection of future generations;
– and protection of the environment, biosphere, and biodiversity.

However, many bioethics principles in the context of the COVID-19 pandemic are facing serious challenges. Various professional groups (doctors, philosophers, and journalists) were quick to declare that bioethics failed the COVID-19 exam [6].

In this article, we will try to consider briefly its veracity. However, it is important to note that a serious analysis has not been performed yet. The reasoning given below is a first impression and an attempt to understand the situation.

Serious infectious diseases such as acquired immunodeficiency syndrome, atypical pneumonia, Ebola fever, and COVID-19, as well as related social experiments have become firmly established in human life.

All ideas about the norm has been suddenly and radically destroyed by the current pandemic, not only in medical practice, but also in society. This particularly affected doctors and the distribution of life-sustaining therapy under conditions of limited resources and the absence of a known treatment protocol.

The confrontation in public health ethics, which manifests itself as equitable distribution of scarce resources and a focus on public safety, and patient-centered clinical ethics has been one of the main bioethical dilemmas of the coronavirus epidemic. The doctor acts using the rule of salvation, which is to help everyone by all available means. Ultimately, the COVID-19 pandemic has raised tragic situations that health professionals have never faced.

It is often necessary to categorize patients to determine what care and who to prioritize when healthcare professionals, artificial lung ventilation devices, or hospital beds are insufficient [7]. Who should be treated: a young man without education, a driver, a pizza delivery person, a world-famous scientist, or a cultural figure who can continue to bring enormous benefits to humanity? How to decide who must be saved, who must be provided with an artificial lung ventilation device, and who will be doomed to death?

The doctor's moral duty, as it is usually understood, is to do whatever is necessary to heal each individual person; this is one-on-one relationships. But when there are hundreds and thousands of sick people, such as during wars and epidemics, another extreme ethics begins to operate, which seems monstrous from the point-of-view of ordinary moral norms.

Over the past decades, the public, primarily the medical community, having faced with epidemics that can be considered as emergencies actively responded from an ethical point-of-view. Thus, the interests of individuals and the population's vulnerable groups should be paramount when planning measures and responding to outbreaks of avian influenza or pandemic; this is according to the principles developed at the July 2006 conference on

social justice and influenza held in Bellagio, Italy. The meeting was organized by Johns Hopkins University with the participation of the Rockefeller Foundation [8].

Key ethical issues that should be considered when planning a pandemic response was identified by a working group of the Joint Center for Bioethics in the University of Toronto. These are as follows:

– the healthcare professionals' obligation to provide medical services during an infectious disease outbreak;

– freedom restriction for the interest of public health through measures such as quarantine;

– setting priorities, including the distribution of scarce resources such as vaccines and antiviral drugs;

– and guidance in global management, such as travel advice.

The most important values recognized in planning pandemic responses are personal freedom, protection of society from possible harm, proportionality, privacy, responsibility in providing health services, interaction, equality, trust, solidarity, and lean leadership. Only adherence to these moral foundations and their inclusion in the complex of sanitary-epidemic, medical, economic, legal, administrative, and social technologies can ensure success and prevent unreasonable risk for all population groups [9].

In recent decades, bioethics has focused mainly on modern biomedical technologies such as cloning, genetic engineering, and assisted reproductive technologies. Recently, they have been supplemented by bioethical understanding of end-to-end technologies, including robotics, artificial intelligence, virtual and augmented reality, the internet, and social media. Without challenging the importance of ethical reviews of these technologies, we must admit that bioethics proved insufficiently ready for COVID-19. The pandemic placed healthcare professionals in tragic situations they have never faced [10].

There is a lot of bioethics in the debate about quality healthcare. First, governments of many countries in 2020 hastily implemented medical and social protocols following the Chinese authorities, based on a utilitarian ethic, which is to perform radical selection in intensive care units, and the refusal to provide a number of medical services that can be delayed.

Ethics textbooks contain numerous philosophical dilemmas that challenge the morality of consistently applying utilitarian calculus to human lives. Philippa Foot, a British philosopher, developed one of the most widely known dilemmas, which is represented by an uncontrollable trolley running toward five people tied to the rails [11]. Those five lives can be saved by changing the switch over and moving the trolley to a different track, however, the trolley will kill one person who is also tied to the rails. What will you do? Solely basing it on the choices' mathematical outcome, many would probably find it right to interfere and sacrifice one human life to save five others. However, should we not consider other values in this dilemma as well as in real life?

The Nuffield Council in the UK is considered the world's premier research center for bioethics, and even it lacks a standard ethical approach or guideline to be followed in working groups set up in critical situations. In different reports, it follows different ethical principles. In other words, a small group that makes decisions on the scale of life and death and develops a kind of ethical compass for a specific situation is created each time [12].

The Italian Society of Anesthesia, Analgesia, Resuscitation, and Intensive Care (SIAARTI, Società Italiana Anestesia, Analgesia, Rianimazione e Terapia Intensiva) issued guidelines for the allocation of intensive care to COVID-19 patients in mid-March this year. This includes adherence to the “right of the first” principle for worst cases when there are no more intensive care units [13, 14].

A series of utilitarian patient selection guidelines was released by the Hungarian Medical Chamber, which focus on saving more lives and prioritizing patients with a higher chance of survival [15].

The Russian Federation government did the same. In January 31, 2020, its decree No. 66 “On Amendments to the List of Diseases Posing a Danger to Others” added coronavirus infection to the list of socially significant diseases and diseases that pose a danger to others (coronavirus infection 2019 nCoV) [16]; and then, by the Decree of the Government of the Russian Federation of April 3, 2020 No. 432 “On the specifics of the implementation of the basic compulsory health insurance program under condition of evolution of threat of the spread of diseases caused by a new coronavirus infection” [17]. The head of the Russian Federation government, referring to part 81 of article 35 of the Federal law “On compulsory health insurance in the Russian Federation” until December 31, 2020, declared the following:

– suspension of the implementation of preventive measures in terms of medical examination;

– suspension of medical care provision in inpatient and day hospital conditions in a planned manner;

– and limitation of the prescription of certain instrumental and laboratory tests (such as computed

tomography, magnetic resonance imaging, ultrasound examination of the cardiovascular system) strictly according to the referral of a doctor providing primary health care on an outpatient basis.

Types of care that cannot be postponed or if delayed can predict serious health disorders on patients (cancer, cardiovascular and endocrine system diseases, and the operation of dialysis centers) remained unchanged.

Thus, the medical department's resources and manpower were partially freed to admit the growing flow of sick patients.

Proactive measures were taken only in territories where an infection outbreak was expected, but there resources and manpower for timely admission of patients are limited because all medical organizations available are set up in settlements to provide assistance to infectious patients (Order of the Government of the Russian Federation of April 12, 2020 No. 974-r "On repurposing of medical organizations located in closed administrative-territorial entities and monotowns, on the territory of which enterprises of the nuclear industry and (or) other individual industries are located, to provide assistance to patients with coronavirus") [18].

In the context of the coronavirus emergency, government regulation for the market of drugs, vaccines, and medical equipment was required. Thus, by the Decree of the Government of the Russian Federation of June 3, 2020 No. 816, drugs that have proven their efficacy for the treatment of a new viral infection and were included in the temporary guidelines of the World Health Organization (WHO), the Russian Federation, Great Britain, and other countries, immediately appeared to be in short supply [19]. With this decree, depending on their need for drug provision on admitted patients, the system for drug distribution to medical and preventive institutions was activated.

By the Decree of the Government of the Russian Federation of April 3, 2020 No. 430 (entered into force on April 6, 2020) until January 1, 2021, the peculiarities of the circulation of medical devices intended for use in military operations, emergency situations, emergency prevention, prevention and treatment of diseases that pose a danger to others, and diseases and injuries resulting from exposure to adverse chemical, biological, and radiation factors, were approved [20]. This included protective equipment for medical workers, devices for resuscitation measures, and equipment for hospitals.

Test systems recently created in diagnosing new coronavirus infection, which did not go on sale but were distributed to medical and preventive treatment facilities that provide outpatient and inpatient medical care to the population, developed a similar situation (Resolution of the Government of the Russian Federation of April 15, 2020 No. 507 "On the temporary order of distribution in the Russian Federation of test systems for diagnostics of a new coronavirus infection") [21].

To establish a dialog between the government and the public on issues of action during a pandemic, attempts to follow a deliberative path were made. For example, in the United States, a coalition was created in Chicago to discuss bioethics issues, which consists of 50 bioethics experts from various practical and academic institutions (Chicago Bioethics Coalition (CBC) on COVID-19 in March 20, 2020). Video meetings were held weekly and they exchange plans as follows:

(1) distribution of beds, departments of artificial lung ventilation and extracorporeal membrane oxygenation;

(2) triage committee policies;

(3) visitor policies;

(4) antiviral drug, Remdesivir, distribution;

(5) and vaccine distribution.

The group sought to become a public resource for hard medical and public health decisions that can and should be made [22].

The coalition's main aim is social justice, encouraging a coordinated effort to ensure that plans for medical resources allocation do not differ from hospital to hospital, but take a regional approach instead. The CBC tried to get involved in reallocating medical personnel resources in medical institutions, resuscitation equipment and others, but proved difficult to implement because of medical centers' heterogeneity of religious and secular health systems and public hospitals' resistance in adopting model policies and sharing of resources. Questions were raised about the role and place of bioethics specialists during the pandemic because of the group's failure to coordinate efforts on institutions of different health and social care systems [22].

COVID-19 tests the boundaries of how seriously the field of bioethics takes the principle of justice. On the one hand, the local level had done a remarkable work in raising questions and discussing the details on how to allocate limited resources the best way possible. Questions about what principles should guide possible triage decisions became a new standard of conversation. Principles including first come, first served, life cycle, lottery, physician judgment, prognosis of short- or long-term survival, maximization of life expectancy, and instrumental value to others dominated; however, each religious and enclave group had their own priorities in all cases.

For this reason, both the Hastings Center and the Nuffield Bioethics Council issued ethical guide-

lines on responding to COVID-19 in mid-March [23]. Public health measures, according to the Nuffield report, must be evidence-based and proportionate, minimize coercion and invasion of human lives, and treat people equally in moral terms. Moreover, the purpose of the interventions, as well as the scientific knowledge, values, and judgments they are based on, must be communicated to the public.

Then, on April 14, 2020, the Council of Europe's Bioethics Committee stated that access to healthcare should be equitable even under conditions of limited resources [24]. In addition, to prevent discrimination against vulnerable groups, such as people with disabilities, elderly, refugees, and migrants, medical criteria should be followed.

Because doctors do not have the luxury of time to think seriously about anything other than medical indicators, many people believe that they do not reflect. This is when it is necessary to make a decision in the middle of the night on which of the two patients receives the device for artificial lung ventilation and who is subsequently provided with palliative care, in which death is the expected outcome, and therefore easily make decisions "not to resuscitate" for patients with COVID-19, through the prism of medical indicators [25].

However, this is not the case. According to a number of American doctors, hospitals should create multidisciplinary teams for psychological support of doctors, following the example of those existing in oncology and well-proven ones, during the coronavirus pandemic. Such a team was created at Foch Hospital in France to support professionals, and this new organization is engaged in the following:

– organizes information from public health physicians (and epidemiologists) and academic recommendations to guide action in a new situation;

– holds meetings with clinicians representing all disciplines involved in this redefinition of therapeutic practices in favor of basic transdisciplinary thinking;

– and brings together all available scientific specialists (biologists, sociologists, anthropologists, philosophers, and lawyers) to develop a reasoned and legitimate decision, taken with full responsibility by medical workers.

The team aims to help doctors resolve contradictions observed between their clinical practice and the standards established by good clinical practice under normal conditions [26].

With an initiative to create ethical support cells in assisting clinicians with difficult medical decisions, the French National Ethics Committee also supported this approach. Development of this approach could be vital under the conditions of the COVID-19 pandemic and possible future epidemics.

The committee thinks that basic bioethical principles during the COVID-19 panic must not be abandoned. We can ensure that the heroic efforts of healthcare professionals are not wasted and the participants' moral integrity is preserved only by maintaining the doctor–patient relationship and our commitment to society in general. After all, when the pandemic is over, we still have to look each other in the eye and not just at the screen [26].

Issues related to the treatment of patients not infected with COVID-19 are even more complex. For example, to accommodate patients with COVID-19, the country's hospitals were ordered by the Hungarian government to vacate up to 60% of their beds. Therefore, patients with other types of pathology are essentially deprived of medical care and became vulnerable [15]. Practically no assistance is provided to patients with chronic obstructive pulmonary disease in such conditions. Unfortunately, the situation is the same in many countries.

In different countries, ambiguous statistical information raised problems in its reliability and revealed different approaches in recording COVID-19 cases and deaths. Despite the recommendations of WHO, large megacities in the world take into account the mortality of their residents from coronavirus infection in different ways. Such conclusions can be drawn from the study by The Boston Consulting Group (BCG) stating that "Moscow and other megacities and countries in the fight against the pandemic," which evaluated the practice of data collection on victims of the pandemic in 16 of the world's largest cities, including Moscow, Berlin, New York, London, Madrid, Stockholm, Tokyo, and Beijing [27].

In general, three key approaches in the accounting and reporting of deaths from COVID-19 were developed worldwide. In the first approach, a separate group is formed from those who died from COVID-19 as the main cause of death. This is what Singapore, London, and Beijing did from the BCG sample; Moscow also did it until April 2020, when it switched to the second approach. In the second approach, cases from the first group are presented together with cases where there is COVID-19 but is not the main cause of death. Not included in this group are deaths due to obvious external causes, such as injuries, in the presence of confirmed COVID-19. Majority of the BCG sample (13 cities) form their data this way. Finally, eight cities estimate mortality based on a monthly data of the number of deaths, which allows estimates of supermortality during the pandemic. With regard to the publication of these data, according to BCG,

most cities publish their data on deaths on all patients with both primary and concomitant diagnosis of COVID-19. According to analysts, only Moscow divides the number of deaths by all groups. Based on the BCG data, it can be assumed that conducting full-fledged international comparisons on the effectiveness in the fight against the coronavirus infection by various cities is not yet possible.

The search for a life-saving vaccine is a separate issue. Many countries, including Russia, have joined this process today. Here bioethical problems also arise, starting from accelerated procedures of clinical trials to questions on the vaccination procedure. Suffice to recall the scandal in the Philippines when dozens of children who have been vaccinated against Dengue fever died in 2017 and 2018. Dengvaxia, produced by the French company Sanofi Pasteur, was the only Dengue vaccine available in the market. Sanofi Pasteur acknowledged that their product could put young children at risk.

The COVID-19 pandemic is not the first in human history. Only in the beginning of the 21st century, we have survived the attack of avian, swine influenza, atypical pneumonia; and in social circles, issues of ethics, law, and problems in organizing healthcare that arise in society were widely discussed repeatedly. It is obvious that measures to prepare for pandemics that will haunt humanity in the future must be based on ethical values, and the decisions made must be as follows:

– reasonable;
– open and transparent;
– comprehensive;
– understandable to everyone;
– empathetic;
– and accountable.

Planning and response strategies for health, epidemiology, and veterinary medicine should involve civil society, religious groups, and the private sector. Any measures performed should take into account the interests of the population's most vulnerable groups. When planning a response to a pandemic, critical values should be as follows [28]:

– personal freedom;
– protection of society from possible harm;
– proportionality of actions;
– privacy protection;
– the obligation to provide medical services;
– interaction;
– equality;
– trust;
– and solidarity and lean leadership.

Russia, like other countries, has taken competent and serious measures that have significantly reduced the impact of the COVID-19 pandemic. At the same time, certain ethical problems arose here, too.

1. In state policy, when implementing anti-epidemic measures, there is a restriction on citizens' personal freedom, which is stated in the Constitution of the Russian Federation (Article 2) and is recognized as the highest value of humanity. This citizens' rights violation is justified for the purpose of protecting public safety. At the same time, it must be reasonably strict and limited to the extent necessary to ensure the safety of others; and it should not entail a violation of the international obligations of the state or be associated with discrimination on any grounds [29]. Although the President of the Russian Federation did not announce quarantine measures during the period of the COVID-19 disease, the restrictions imposed on the state's territory imply citizen's responsibility, which occurs under quarantine conditions, namely administrative and even criminal liability for non-compliance with the isolation regime and infecting other people with the virus [30]. The procedure for applying these regulatory rules was determined by the fact that WHO declared a pandemic of coronavirus infection on March 11, 2020 and the entry into force of the WHO international medical and sanitary rules [31].

2. In the context of the COVID-2019 pandemic, associated ethical challenges are the disclosure of private information about patients (violation of the right to medical secrecy, the right to privacy, and guarantees of personal data protection) [32] and the availability of medical care in conditions of limited resources and the need for their distribution [33]. Enshrined in a number of legislative acts are legal norms governing the specifics of informed consent and medical secrecy in special situations of medical care [34].

3. It is also complicated from an ethical standpoint the fact that need for healthcare professionals to fulfill their professional duty puts them in conditions of an immediate threat to their health and the health of their loved ones. In the Federal law “On the Basics of Health Protection of Citizens in the Russian Federation” (Ch. 9) “Healthcare professionals and pharmaceutical workers, medical organizations” [35], the constitutionally enshrined right of every person “to work under conditions that meet safety requirements…” is provided (cl. 3, Article 37 of the Constitution of the Russian Federation) [36]. Providing medical care for COVID-19, where conditions are impracticable, gave rise to the implementation of special protection for healthcare professionals and rewards for their work (Resolution of the Government of the Russian Federation for COVID-19).

4. In an epidemic, society, which is represented by decision makers in healthcare, is faced with

the need to strictly regulate restrictive measures, taking into account all the data on risk and benefit ratio. The policy should be performed with active interaction with the population, truthfully and completely informing citizens about the situation and the feasibility of the measures taken [37].

The result will depend on the effectiveness of the interactions, namely the population's fulfillment of the instructions and citizens' trust in their actions. This trust will be established only when these restrictions are supported by the population's social protection measures and high quality of medical care. The latter is extremely difficult with the absence of knowledge and experience in the treatment of a new infection, not only in Russian medicine but also in the world.

Currently, assessing the adequacy of restrictive and punitive measures is not possible. This takes time, as was the case with the influenza A (H1N1) pandemic that swept the world in 2009. The analysis of the restrictive measures was performed 2 years later, and the feasibility of the measures taken and the justification of the violation of individual rights was confirmed [9].

In this article, the focus was on healthcare. Obviously, there are still many questions that need scientific analysis and public discussion. For example, the control on citizens who had to reduce their freedoms for the sake of others' health is another problem in a pandemic. Following the recommendations of WHO, many countries have introduced overall testing, isolation, and other social distancing measures that limit physical interaction of people. At the same time, ways of applying these measures are different among countries, where a state of emergency is introduced by some and tightening of border controls is implemented in others.

New specific role of digital technologies was clarified, which demonstrated the wide possibility of their application. On the one hand, many people nowadays fear that the current situation will manipulate citizens in the future. However, the safety of citizens in public places is quickly and efficiently regulated by these technologies. On the other hand, there is a lot of false information and news on the internet. There was even a term “infodemia”. Although the internet itself cannot be considered a cause of misinformation, but it helps spread rumors and lies faster and further than ever before. However, at the same time, it is an important tool for governments, health authorities, and scientists to quickly distribute important information to the general public.

A COVID Policy Brief Misinformation Public was published by the Web Foundation with guidance for governments, companies, and citizens to promote accurate information, free expression of opinion, and open knowledge [38]. They are based on international human rights standards, highlighting the need for a detailed approach in balancing public health and safety with the right to freedom of expression and privacy [30].

Moreover, in the new medicalized reality, certain professional groups (doctors, entrepreneurs, officials, and controllers) turned out to be extremely vulnerable. These groups and ordinary citizens turned out to be deliberately guilty in the bioethical and legal sense of their actions and decisions. This relates to the (un)implementation of emergency or extraordinary government measures, (un)fulfillment of professional duties, and deviations from numerous and convoluted emergency regulations. The situation showed that the health and life of others depend on each of our actions.

Obviously, the problem also arises of the responsibility of politicians and authorized organizations (for example, WHO) for the health not only of the population of their country, but of the entire planet Earth. These and other current issues require bioethical expertise.

CONCLUSION

In the case of pandemic, the planning and preparation of response measures to infectious diseases should be based on proven scientific methods and public health principles. With a focus on the needs and rights of economically and socially disadvantaged populations, a discussion on ethical issues and value priorities must be held before a health care crisis erupts. The COVID-19 pandemic has revealed that healthcare systems need better preparations in dealing with the complex ethical issues that rapidly emerge during the crisis.

A broad approach to ethical values must be a basis in pandemic preparedness measures. The lack of preliminary agreed ethical frameworks entails the loss of trust and morale, fear, and disinformation in society.

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