



New Role of Bioethics in Emergency Situations on the Example of COVID-19

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Abstract

The COVID-19 pandemic has dramatically changed existing norm perception both in medical practice and in society. In the context of limited resources and absence of a known treatment protocol, this change particularly affected healthcare system, doctors, and the distribution of a life-support therapy. One of the main bioethical dilemmas presented by coronavirus epidemic is the discrepancy between public health ethics, characterized by the fair distribution of limited resources and public safety orientation, and patient-specific clinical ethics. The COVID-19 pandemic forced health workers into tragic situations that they had never previously experienced, when lack of available health care workers, ventilators, or hospital beds creates a necessity to classify and prioritize patients to determine who will get (or will not get) what type of care and where. Another important issue is the digital control of citizens who must reduce their freedom for the sake of the health of other citizens. This caused great concern among many people, who fear that the current situation will lead to their manipulation in the future. There is also a question of responsibility among politicians and authorized organizations for the health of not only the population of their country, but also the entire planet. These and other current issues require bioethical expertise.

Keywords Bioethics · Pandemic · COVID-19 · Ethical principles · Medicine · Justice

Today, in the twenty-first century, our civilization is facing a range of global problems: the preservation of peace on Earth, environmental and food problems, overpopulation, global poverty, as well as problems of health and quality of life. As a result, there are large-scale issues waiting to be resolved, not least through bioethics. Updating and implementing the principles of bioethics has become particularly important in the context of the COVID-19 pandemic.

A brief historical retrospect should help to understand the importance of bioethics in the situation in which the world has found itself since the coronavirus outbreak. German theologian and pastor Fritz Jar (1895–1953), who, as the scientist Hans Martin Sass notes, was called the father of biological research ethics, proposed in 1926 a novel term bioethics (Bio-Ethik), recognizing the sacredness of life. Acknowledging an interaction between self-care and caring

for others, Jar replaces the dignity of respect for the law with the dignity of compassion for all “living growth factors,” i.e., for life in all its forms [1].

In 1971, V. R. Potter published a book “*Bridge to the future*” [2], in which he expanded on the concept of “bioethics,” 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 value systems of human morality.” [2]. According to Potter, the purpose of a new bioethics discipline was to build a bridge between the two concepts: science and human nature. In his work, Potter prioritized the problem of survival in the modern world. However, in his other work “*Global bioethics*,” Potter describes bioethical theory in a close connection with environmental ethics. Here he further develops the idea of a close interaction of ethics with ecology, medicine, and science, focusing on the ethics of survival and global ethics [3].

Modern bioethics is not only a result of deep scientific transformations and achievements, but also as a consequence of a fast developing globalization process, and the increasing

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importance of international collaboration in solving global problems.

A combination of high potential and real danger of modern biotechnologies, taking precautionary and preventive measures without prior humanitarian expertise assigned a special socio-regulatory status to bioethics. Today, bioethics is the science of searching, evaluating, and selecting criteria for a moral attitude to the living (definition-F. N.) [4].

A range of issues covered by bioethics, though striking in their diversity, are under the priority of universal values: life, health, well-being, and justice. Another characteristic feature of bioethics lies in its interdisciplinary nature, allowing medicine, law, philosophy, biology professionals, and representatives of various religious denominations to equally participate in bioethical discussions.

There is a consensus in the international community on the basic principles of bioethics, reflected in various declarations and recommendations, most fully reflected in the document “universal Declaration on bioethics and human rights” (UNESCO, 2005) [5]. These include:

- Human dignity and human rights
- Good and harm
- Autonomy and individual responsibility
- Informed consent
- Persons who do not have the legal capacity to give consent
- Recognition of human vulnerability and respect for the integrity of the individual
- Privacy and confidentiality
- Equality and equity
- Non-discrimination and stigmatization
- Respect for cultural diversity and pluralism
- Solidarity and cooperation
- Social responsibility and health
- Sharing benefits
- Protection of future generations
- Protection of the environment, biosphere, and biodiversity

Many principles of bioethics were challenged by the COVID-19 pandemic, and various professional groups including doctors, philosophers, and journalists were quick to claim that bioethics “failed” the COVID-19 exam [6].

This article will briefly consider the above mentioned statement; however, a serious analysis is yet to be conducted. The argument presented below is only a first impression and an attempt to understand what is happening.

Severe infectious diseases such as AIDS, SARS, Ebola, and COVID-19 accompanying social experiments are firmly embedded in human life. The current epidemic suddenly and radically destroyed all existing ideas about the norm both in medical practice and in society. Limited resources

and an absence of a treatment protocol affected doctors and the distribution of a life-support therapy. One of the main bioethical dilemmas presented by the coronavirus epidemic is the discrepancy between public health ethics, characterized by the fair distribution of limited resources and public safety orientation, and patient-specific clinical ethics. Medical professionals operate under the “rule of salvation”—help everyone using all available means. However, the COVID-19 pandemic forced health workers into tragic situations that they had never previously experienced, when lack of available health care workers, ventilators, or hospital beds creates a necessity to classify and prioritize patients to determine who will get (or will not get) what type of care and where. Who should be treated: a young person without an education, a driver or a pizza delivery man, a world-famous scientist or a prominent person of culture, whose future work can potentially benefit humanity? How does one decide who to save, who to support with artificial respiration, and who to condemn to death? An answer as informed by a doctor’s moral duty would be to do whatever is necessary to treat each and every individual. This is a one-on-one relationship, however, and when there are hundreds and thousands of patients, as seen during war times and epidemics, another set of ethics starts to operate, which could seem callous from the point of view of ordinary moral norms.

Over the past decades, when faced with epidemics that can be considered as emergencies, the public response in general and medical community in particular was largely informed by the ethics viewpoint. Thus, according to the principles developed during the Social Justice and Flu Convention held in Bellagio, Italy, in July 2006, interests of vulnerable populations and individuals should be of primary importance when planning and responding to avian flu outbreaks or flu pandemics. The Convention was organized by Johns Hopkins University with the participation of the Rockefeller Foundation.

A working group of the Joint Centre for Bioethics at the University of Toronto identified the following key ethical issues that should be taken into account when planning response actions to a pandemic:

- obligation of health workers to provide medical services during an infectious disease outbreak;
- restriction of freedom in the interests of public health through such measures as quarantine;
- determination of priorities, including an allocation of scarce resources such as vaccines and antiviral drugs;
- guidance on global management, such as recommendations for travel and tourism.

The following are recognized as the most important values in planning response actions to a pandemic: personal freedom, protection of society from possible harm,

proportionality, privacy, responsibility to provide health services, interaction, equality, trust, solidarity, and good governance.

Only adherence to these moral principles and their incorporation into sanitary-epidemic, medical, economic, legal, administrative, and social technologies can ensure success and prevent unjustified risks for all population groups [7].

Over the past decades, the main focus of bioethics has been modern biomedical technologies: cloning, genetic engineering, and assisted reproductive technologies. It has recently expanded to include a new understanding of end-to-end technologies: robotics, artificial intelligence, virtual and augmented reality, internet, and social media. Without disputing the importance of ethical expertise of the above mentioned technologies, we must admit that bioethics was not ready for COVID-19. The pandemic placed health workers in tragic situations that they had never experienced [7].

Discussions about providing quality medical care include many questions of bioethics. In 2020 following the example of Chinese authorities, governments of many countries hastily introduced medical and social protocols based on utilitarian ethics—conduct radical selection in intensive care units (ICU) and refuse to provide a number of medical services that can be delayed [8].

Textbooks on bioethics contain numerous philosophical dilemmas that question the morality of constantly applying utilitarian calculus to human lives. One of the most widely known moral dilemmas was devised by the British philosopher Philippa Foot, which describes an unmanageable train, rushing towards five people, who are tied to the rails [9]. By switching the points, one can divert the trolley to another track thus saving these five lives; however, the cart will kill one person who is also tied to the rails on the other track. What are the person's actions? If decision-making process is solely based on the mathematical outcome of a choice, many might likely consider sacrificing one human life to save five others.

However, should not we also take other values into account when solving this philosophical exercise or when facing an ethical dilemma in real life?

Even the Nuffield Council for bioethics in the UK, which is considered to be the world's premier research center for bioethics, fails to provide a standard ethical approach or guidelines for professionals to follow in critical situations. The Council follows different ethical principles in different reports; namely, for every new critical situation a small discussion group is formed in order to make a "life and death" decision and develop an "ethical compass." In mid-March of 2020, the Italian society of anesthesia, analgesia, resuscitation and intensive care (SIAARTI) published recommendations for the allocation of intensive care to patients with COVID-19. In the worst case scenario of exceptional, resource limited circumstances, it is recommended to

comply with the "first come, first served" basis when there is no longer any available ICU [10].

The Hungarian medical chamber, followed by the Russian Government, released a series of utilitarian selection guidelines that focus on saving more lives and giving priority to patients with a higher chance of survival.

In contrast, there are certain existing attempts to follow a consultative path, to establish a dialogue between the government and the public on issues of action during the epidemic. For example, in March 2020 in Chicago, 50 bioethics experts from various practical and academic institutions formed a group to discuss various issues of bioethics (Chicago bioethics coalition COVID-19 (CBC)). Members of the group have weekly meetings and exchange plans on the topics of (1) distribution of beds, ventilator units, and ECMO; (2) policies and committees for triage of patients; (3) policies for visitors; (4) distribution of the antiviral drug remdesivir; and (5) distribution of the vaccine. The group sought to become a public resource for making tough medical and public health decisions [11].

The main goal of Chicago coalition is achieving social justice through encouraging coordinated efforts to ensure that health resource allocation plans use a regional approach and do not depend on the isolated hospital. The CBC tried to participate in the reallocation of health human resources within medical institutions, resuscitation equipment, etc., which proved difficult to implement due to the heterogeneity of medical centers, religious and secular health systems, public hospitals, unwillingness to implement standard policies and to share resources. The group's failure to coordinate actions of institutions in various health and social care systems raised questions about the role and place of bioethicists during pandemic [11].

COVID-19 is testing the seriousness with which bioethics is treating principles of justice. Excellent work has been done on site to initiate important discussions on the nuances of how to allocate limited resources. Questions about what principles should guide sorting decision-making have become the new focal point of conversations, when previously principles "first come, first served," "life cycle," "lottery," "doctor's judgment," "short- or long-term survival forecast," "maximizing life expectancy," and "instrumental value to others" dominated, and each religious and enclave group had its own priorities.

Therefore, in mid-March, both the Hastings Center and the Nuffield Council published ethical guidelines for responding to COVID-19 [12]. According to the Nuffield report, public health measures must be evidence-based and proportionate, minimize coercion and intrusion into human lives, and treat people equally in terms of morals. Moreover, not only the purpose of interventions, but also scientific evidence, values, and judgments on which they are based, must be communicated to the public.

Then, on April 14, 2020, the Council of Europe's Bioethics Committee stated that access to health care should be fair regardless of limited resources [13]. In addition, medical criteria should be applied to prevent discrimination against vulnerable groups, such as people with disabilities, elderly, refugees, and immigrants.

Many believe that doctors are not reflective, that they simply do not have the luxury of time to think about anything other than medical reasons, and that a patient with COVID-19 in palliative care might not be resuscitated [6].

This is, however, not the case. A number of American doctors believe that to provide psychological support during the coronavirus pandemic to medical personnel, hospitals should create multidisciplinary teams, similar to those in oncology. They created a new organization at Foch hospital in France that:

- regularizes information from public health physicians (and epidemiologists) and academic recommendations to guide action in a new situation.
- holds meetings for clinicians from various disciplines involved in the revision of therapeutic practices to encourage transdisciplinary thinking.
- brings together all available scientists (biologists, sociologists, anthropologists, philosophers, lawyers) to develop an informed and legitimate decision, accepted with full responsibility by medical professionals.

The main goal of the team is to help physicians to resolve contradictions between their clinical practice and the standards set by good clinical practice under normal conditions [14].

The idea of creating an “ethical support cells” to help clinicians to make complex medical decisions is also supported by the French National Ethics Committee (CCNE). Developing this approach may be vital in the context of COVID-19 and possible future pandemics.

The Committee believes that we should not submit to the panic created by COVID-19, discarding the basic bioethical principles. Only through maintaining a doctor-patient relationship and commitment to society as a whole, we can guarantee that the heroic efforts of medical professionals will not be wasted, and the moral integrity of participants will be preserved. After all, when the pandemic is over, we will still have to look into each other's eyes, not just at the screen [15].

Questions regarding the treatment of patients uninfected with COVID-19 are even more complex. For example, the Hungarian government ordered the country's hospitals to vacate up to 60% of their hospital beds to accommodate patients with COVID-19, leaving patients with other pathologies without medical care in a vulnerable state, and providing almost no help for COPD patients.

Unfortunately, many countries found themselves in a similar situation.

Ambiguous statistical information raised issues of its reliability and revealed different approaches to recording COVID-19-related cases and deaths in different countries. A study conducted by the Boston Consulting Group (BCG) showed that despite the WHO recommendations, the world's largest megacities used different approaches in recording death rate of their residents from coronavirus. The study “Moscow and other megacities and countries in the fight against the pandemic” evaluated the data collection practice of 16 major cities, including Moscow, Berlin, New York, London, Madrid, Stockholm, Tokyo, and Beijing, of their respective pandemic victims [16]. Overall, there are three key approaches to recording and reporting COVID-19 fatalities. Following the first approach, cases where COVID-19 is the main cause of death form a separate group, as done by London and Beijing, and Moscow until April 2020, when it switched to the second approach, according to the BCG report. According to the second approach, cases where COVID-19 is the main cause of death are grouped together with the cases where COVID-19 infection was diagnosed but is not the main cause of death. However, cases with obvious external cause of death, such as injuries, even with confirmed COVID-19 diagnosis are not included in this group. Thus, the main data in the BCG report was obtained from the 13 cities, namely, the majority. Finally, eight cities estimate mortality based on a monthly mortality rate data, allowing to estimate a rate of super mortality during the pandemic. BCG states that most cities publish combined data on COVID-19-related mortality among all patients with primary and concomitant diagnosis, with only Moscow providing a group-based mortality breakdown. Therefore, it is currently not yet possible to conduct a full international comparison of the effectiveness of different cities in the fight against coronavirus.

The search for a life-saving vaccine presented another separate issue. Many countries, including Russia, are now involved in this process, which in turn gave rise to bioethical concerns: from accelerated clinical research to the vaccine rollout. In this context it is worth recollecting the scandal in the Philippines where in 2017 and 2018 dozens of children who were vaccinated against dengue fever died. The only dengue vaccine available on the market was Dengvaxia produced by a French company Sanofi Pasteur that admitted that their product may be harmful to young children.

COVID-19 pandemic is not the first in the history of mankind. In the twenty-first century, we have experienced attacks of avian flu, swine flu, and SARS, which prompted discussions in social circles on issues of ethics, law, and health organization problems that arise in society. Therefore, preparatory measures for future pandemics must be based on ethical values:

- decisions must be reasonable,
- open and transparent,
- comprehensive,
- clear to all,
- sensitive and accountable.

Planning and response strategies in health, epidemiology, and veterinary medicine should involve civil society, religious groups, and the private sector. Any measures should consider interests of most vulnerable population groups. The most important values to base a planning a pandemic response on are:

- personal freedom,
- public protection from possible harm,
- proportionality of actions,
- privacy,
- obligation to provide medical service [17].

Even though Russia among other countries has taken competent and serious measures to significantly reduce the damage caused by COVID-19 pandemic, there were certain ethical problems:

- 1) When conducting anti-epidemic measures, state policy restricted citizens' personal freedom, the right granted by the Constitution of the Russian Federation (article 2) and which is the highest value of humanity [18]. While violation of citizens' rights is justified in order to protect public safety, restriction of freedoms cannot be unreasonably strict. It must be limited to the necessary extent to ensure the safety of others, it cannot violate international obligations, or be associated with discrimination on any grounds.

Although the President of the Russian Federation did not declare quarantine measures during COVID-19 pandemic, restrictions imposed on the state territory imply the responsibility of citizens under a quarantine—administrative and even criminal responsibility for non-compliance with the isolation regime and infecting others [19]. The procedure for applying the regulatory rules was determined by the WHO international health regulations, after it had declared a coronavirus pandemic on March 11, 2020 [20].

- 2) The COVID-19 pandemic presented ethical challenges associated with a disclosure of private case information (violation of the right to confidentiality, privacy, protection of personal data) [21], availability and distribution of medical care in resource-limited circumstances [22]. A number of legislative acts regulate the specifics of informed consent and medical confidentiality in exceptional circumstances. [23].

- 3) Another difficult ethical challenge was brought by extreme working conditions that threatened the lives of medical professionals and their loved ones. In FZ “About bases of health protection of citizens of the Russian Federation” Chapter 9 “Medical workers and pharmaceutical workers, medical organizations” [24] stipulates the constitutional right of every person “...to work in conditions meeting safety requirements...” (point 3, article 37 of the Constitution) [25]. The feasibility to provide proper working conditions laid grounds for special protection of physicians and encouragement of their work through a Decree of the Government of the Russian Federation under COVID-19 [26].
- 4) In the context of a pandemic, health care executives are responsible for implementing strict regulation of restrictive measures, informed by the risk/benefit ratio data [27]. In order to keep citizens fully informed about the state of affairs, all actions should be carried out with active interaction with the population [24].

The result will depend on the effectiveness of this interaction: population compliance with the regulations and their level of trust in authorities. Trust can only be established if the restrictions are complimented by social protection measures and a high quality of medical care; the latter is problematic without domestic and international knowledge and experience in the treatment of a new infection.

It is currently impossible to assess the adequacy of restrictive and punitive measures. It is a long-term process, as was in the case of an influenza A(H1N1) pandemic that swept the world in 2009. The analysis of conducted restrictive measures was carried out 2 years later, which validated the measures that violated the rights of individuals [28].

Even though the main focus of this article is healthcare, there are many other issues that require scientific analysis and public discussion.

A good example of another important issue brought by the pandemic is an imposed control of citizens who had to reduce their freedom for the sake of health of other citizens. Following WHO recommendations, many countries have introduced universal testing, isolation, and other social distancing measures that restrict individuals' physical interaction. However, there was a country specific difference in the implementation of restrictive measures: some countries impose a state of emergency, while others tighten border controls.

The pandemic highlighted a new specific role of digital technologies, demonstrating a wide possibility of their application. For instance, they allow the prompt regulation of safety of citizens in public places. However, many people fear that the current situation will allow their manipulation in the future. On the downside, there is a proliferation of false information and fake news on the internet, creating

a new term “infodemia.” The internet itself is not the cause of misinformation, but it facilitates spreading false rumors and lies faster and further than ever before. At the same time, it is an important tool for governments, health authorities, and scientists to quickly disseminate important information to the general public. The Web Foundation published a policy brief (Covid Policy Brief Misinformation_Public) with recommendations for governments, companies, and citizens to promote accurate information, free expression, and open knowledge. The brief is based on international human rights standards, emphasizing the need for a detailed approach to balancing public health and safety with the right to freedom of expression and privacy [29].

Various professional groups like doctors, entrepreneurs, and officials found themselves extremely vulnerable in a new medicalized reality. These groups together with ordinary citizens were charged with responsibility in a bioethical and legal sense for their actions and decisions. This includes not implementing emergency/extraordinary government measures, not performing professional duties, and deviating from numerous and confusing emergency rules. The situation has shown that health and life of others depend on the individual actions of each of us.

It is clear that there is also a question of responsibility among politicians and authorized organizations, i.e., the World Health Organization, for the health of not only the population of their country, but also the entire planet. These and other current issues require bioethical expertise.

Planning and preparing responses to a pandemic of infectious diseases should be based on proven scientific methods and public health principles. To prevent a health crisis, it is necessary to have discussions on ethical issues and values, with particular attention to the needs and rights of economically and socially vulnerable groups. COVID-19 pandemic has shown incapacity of health systems to address complex ethical issues that arise quickly during a crisis.

Preparations for a pandemic should be informed by a broad approach to ethical values. The absence of a pre-agreed ethical framework leads to loss of trust, loss of morale, fear, and misinformation.

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References

- Hans-Martin, S. (2013). Postscript. Fritz Jar. Essays in bioethics, pp 126–129 (133 pages), Publisher LIT Verlag Münster, 2013
- Bingham, N. E. (1972). Potter, Van Rensselaer. Bioethics: Bridge to the future. Englewood Cliffs, N. J. Prentice-Hall, 1971 (196 pages). *Science Education*, 56, 440–441. <https://doi.org/10.1002/sce.3730560329>.
- Potter, V. R. (1988). *Global bioethics* (p. 219). Michigan State University Press.
- Nezhmetdinova, F. (2013). Global challenges and globalization of bioethics. *Croatian Medical Journal*, 54, 548–550. <https://doi.org/10.3325/cmj.2013.54.83>
- Universal declaration on bioethics and human rights (UNESCO, 2005). https://www.un.org/ru/documents/decl_conv/declarations/bioethics_and_hr.shtml
- Harter TD, Homan ME (2020). Forgotten communities: What bioethics should learn from COVID-19. <http://www.bioethics.net/2020/06/forgotten-communities-what-bioethics-should-learn-from-covid-19/>
- Kubar, O. I. (2020). Ethical comments on COVID-19. *Russian Journal of Infection and Immunity*. 10(2):287–294. (In Russ.) <https://doi.org/10.15789/2220-7619-ECO-1447>
- Sándor J (2020). Bioethics for the pandemic. <https://www.project-syndicate.org/commentary/bioethics-principles-for-covid19-response-by-judit-sandor-2020-05?barrier=accesspaylog>
- Foot, P. (1967). The problem of abortion and the doctrine of the double effect. // *Oxford Review* 5:5–15. PhilArchive copy v1. <https://philarchive.org/archive/FOOTPO-2v1>
- Clinical ethics recommendations for the allocation of intensive care treatments in exceptional, resource-limited circumstances (2020). <http://www.siaarti.it/SiteAssets/News/COVID19%20-%20documenti%20SIAARTI/SIAARTI%20-%20Covid-19%20-%20Clinical%20Ethics%20Recommendations.pdf>
- Klugman C, Michelson K, Parsi K (2020). Local bioethicists respond to the pandemic: The birth of the COVID-19 Chicago Bioethics Coalition (CBC). <http://www.bioethics.net/2020/06/local-bioethicists-respond-to-the-pandemic-the-birth-of-the-covid-19-chicago-bioethics-coalition-cbc/>
- Ethical framework for health care institutions responding to novel coronavirus SARS-CoV-2 (COVID-19) (2020) <https://www.thehastingscenter.org/wp-content/uploads/HastingsCenterCovidFramework2020.pdf>
- DH-BIO statement on human rights considerations relevant to the COVID-19 pandemic (2020) <https://rm.coe.int/inf-2020-2-statement-covid19-e/16809e2785>
- Stoeklé HC, Benmaziane A, Beuzebec P, Hervé C (2020) COVID-19: The need for “emergency multidisciplinary team meetings”. <http://www.bioethics.net/2020/05/covid-19-the-need-for-emergency-multidisciplinary-team-meetings/>
- Haseltine WA (2020) What AIDS taught us about fighting pandemics. <https://www.project-syndicate.org/onpoint/what-aids-taught-us-about-fighting-pandemics-by-william-a-haseltine-2020-05?barrier=accesspaylog>
- The Boston Consulting Group (BCG) (2020) Moscow and other megacities and countries fighting against the pandemic. <https://ria.ru/20200623/1573337024.html>

17. World Health Organization (2016) Guidance for managing ethical issues in infectious disease outbreaks. <https://apps.who.int/iris/handle/10665/250580>
18. Constitution (Basic law) of the Russian Federation (2001). On protection of the population and territories from emergencies of natural and technogenic character: Federal law of 21.12.1994 No. 68 (ed. from 03.07.2019), On technical regulation: Federal law of 27.12.2002 No. 184-FZ (ed. from 28.11.2018) p31
19. On the introduction of additional sanitary and anti-epidemic (preventive) measures aimed at preventing the emergence and spread of a new coronavirus infection (COVID-19): Resolution of the Federal penitentiary service (FSIN) of Russia, On the introduction of additional sanitary and anti-epidemic (preventive) measures aimed at preventing the emergence and spread of a new coronavirus infection (COVID-19): Resolution of the Federal penitentiary service (FSIN) of Russia, On the state of emergency: Federal constitutional law of 30.05.2001 No. 3-FKZ (ed. from 03.07.2016)
20. Stand on guard for thee. Ethical considerations in preparedness planning for pandemic influenza. A report of the University of Toronto Joint Centre for Bioethics. November 2005. URL: http://www.jointcentreforbioethics.ca/people/documents/upshur_stand_guard.pdf
21. On personal data: Federal law of 27.07.2006 No. 152-FZ (ed. from 31.12.2017), On immunoprophylaxis of infectious diseases: Federal law of 17.09.1998 N 157-FZ (ed. from 28.11.2018)
22. On protection of the population and territories from emergencies of natural and technogenic character: Federal law of 21.12.1994 No. 68 (ed. from 03.07.2019)
23. On the introduction of additional sanitary and anti-epidemic (preventive) measures aimed at preventing the emergence and spread of a new coronavirus infection (COVID-19): Resolution of the Federal penitentiary service (FSIN) of Russia], On isolation, medical examinations (or) medical supervision, hospitalization: Resolution of the Federal service for supervision of consumer protection and human welfare Saint Petersburg No. 78–03–09/722020] the circulation of medicines: Federal law of 12.04.2010 No. 61-FZ (ed. from 27.12.2019)
24. On the circulation of medicines: Federal law of 12.04.2010 No. 61-FZ (ed. from 27.12.2019)
25. Constitution (basic law) of the Russian Federation. Moscow, 2001. 39 p.
26. On the bases of tourist activity in the Russian Federation: Federal law of 24.11.1996 No 132-FZ (ed. from 02.12.2019)
27. On information, information technologies and information protection: Federal law of 27.07.2006 No. 149FZ (ed. from 02.12.2019)
28. Ethical guidelines in pandemic influenza, prepared by ethics subcommittee of the advisory committee to the director. CDC February 15, 2007. URL: <http://www.cdc.gov/od/science/phac/panFlu-Ethic-Guidelines.pdf>
29. Covid policy brief misinformation_public. https://docs.google.com/document/d/1XwcQDtr_aSYbL7mU2biLt9cqwTzZdoDEIia5knO2on0/edit

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