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Bioethics of pandemics and disasters within the context of public health ethics and ethics of social consequences

Rudolf Novotný,[1] Zuzana Novotná,[2] Štefánia Andraščíková,[3] Juraj Smatana[4]

Abstract

Introduction: Public health ethics addresses moral dilemmas arising from balancing individual healthcare needs with societal interests. Ethical considerations in public health during pandemics and disasters aim to reduce mortality rates and minimize social injustice through fair principles. *Objective*: This paper analyzes public health ethics and ethical values in allocating resources during mass casualty incidents. The intersection of public health ethics, applied bioethics, and ethics of social consequences (through non-utilitarian consequentialism) guides addressing serious public health challenges in catastrophic scenarios. The application of the given interaction is significant for professional medical ethics. *Methodology*: The paper employs inductive, deductive, and normative methods of bioethics and the methodology of ethics of social consequences. *Conclusion*: The paradigmatic disparity between the bioethics of pandemics and disaster bioethics lies in the fluid application of bioethical principles and the accentuation of utilitarian demands depending on the severity and scale of mass casualty incidents. Applied bioethics in crisis situations respects the approaches of public health ethics and attempts to increase positive social outcomes. The application of (scarce) resource allocation criteria and triage of patients is derived from ethical decisions beneficial to public health and *lege artis* approaches of medical bioethics. The paper presents professional and ethical criteria for medically inappropriate treatment within the framework of patient triage; we approach crisis ethics from the perspective of maximization of benefit. Age is not an exclusion criterion of acute healthcare provision in crisis situations. Ethics of social consequences as a form of non-utilitarian consequentialism allowing for social consequences bridges public health ethics and applied bioethics.

Keywords: disaster, pandemic, applied bioethics, ethics of social consequences, classification, medically inappropriate treatment, public health

Introduction

Public health is referred to as the science of promoting health and preventing illnesses across society. Public health ethics discusses moral problems arising from the intersection of individual health needs and communal objectives while pursuing objectives in health programs. The ethical challenges of public health during crises intertwine with disaster and pandemic bioethics Ethical approaches in public health aim to mitigate morbidity and mortality, minimize social injustice, and uphold fairness. Scarce human and material resources, characteristic of mass casualty incidents, require serious moral decisions in terms of resource allocation, which inevitably raises questions of justice (especially distributive justice). Denying health needs during disasters, for any potentially legitimate reasons, means denying human rights (Afolabi, 2018).

The difference between public healthcare's focus on population and society and the individualist focus on bioethics is the difference between public healthcare and politics, on the one hand, and clinical medicine, on the other. In bioethics, an inclination towards civic freedoms and individual autonomy prevails in clear opposition to utilitarian, paternalistic, and community inclinations towards public health. As an applied discipline, bioethics endeavors to establish universal codes of professional conduct and decision-making within clinical practice, informed by moral and social considerations.

[1] Faculty hospital of J. A. Reiman in Prešov; novotny.r@fnsppresov.sk; ORCID: 0000-0002-4363-3954
[2] University of Prešov (Slovakia); zuzana.novotna@unipo.sk; ORCID: 0000-0002-2034-5124
[3] University of Prešov (Slovakia); stefania.andrascikova@unipo.sk; ORCID: 0000-0001-7960-6168
[4] Faculty hospital of J. A. Reiman in Prešov; smatana.j@fnsppresov.sk

A critical ethical discourse in public health necessitates alignment with the basic values of society and specific communities. Most public health laws and regulations pursue the moral objective of supporting and protecting citizens' lives, yet conflicts may arise between individual health rights and governmental obligations. Economic and social factors influence public health measures, requiring careful analysis of spending and revenue. While health is a fundamental human need and good health is highly valued, it is not the only need, and neither is good health the only value (Callahan & Jennings, 2002).

Bioethics traditionally focuses on individual decision-making, while macro-issues relating to context and background are considered irrelevant. The ethical imperative is to save lives, save individuals, and protect the population. In his work Macro-Triage in Disaster Planning, Henk Ten Have states that what is best for disaster victims can only be determined "through focusing on the larger context of human reality beyond the immediate emergency situation" (Ten Have, 2014).

During mass casualty incidents, the focus of triage shifts from individual benefits to communal benefits. Utilitarian triage schema aims to maximize overall medical benefits using scarce resources. Within this schema, much depends on the definition of the pursued 'good'. The utilitarian model has three main medical reasons: preservation of life versus delay of death, alleviation of suffering, and decrease in long-term morbidity and disability. The realization of these goals can only be determined retrospectively (Barilan, Brusa & Halperin, 2014).

'Disaster' generally refers to events that begin suddenly and the consequence of which is "immense need and insufficient resources" (O'Mathúna, Gordijn & Clarke, 2014). During a disaster, the local population's ability to react adequately is lost, leading to requests for aid from outside the affected area. It also results in disruption and destruction of local social, economic, and health networks, systems, and organizations, which leads to the inability to manage everyday life (Lateef, 2011).

The nature of the disaster as such requires group management. Professional teamwork becomes highly necessary. Relations between the medic and the patient are morally different from the perspective of a standard deontological ethos. During disasters, a general type of theory is selected, the one which is acceptable for all and permits a change of stance and codes of practice. If humanity as a whole is considered, the utilitarian approach can appear more correct. Theories based on community can more easily accept disaster ethics than more liberal theories focused on autonomy (Mallia, 2015).

Triage during pandemics and disasters

Carlo Petrini believes that there is an urgent need for discussion of the nature and principles of 'ethical triage', especially in cases of large-scale medical emergencies. In his view, the utilitarian approach is the highest priority (Petrini, 2010). Beauchamp and Childress discuss the strengths of utilitarian ethics which reside in the acceptance of the role of utility in public policy, where it is necessary to effectively divide available resources. The theory envisions morality as primarily promoting the good in society, as a higher purpose. Utilitarianism requires the suppression of individual autonomy and proprietary rights in a broader sense than what is expected in standard situations of public health, which is a convincing argument in the case of disasters (Beauchamp & Childress, 1994). Prioritization criteria during triage decision-making mostly depend on specific value systems (Doležal et al., 2021).

The term triage concerns the method of sorting injured individuals. Triage is used at sites of disasters, where the number of afflicted persons is significantly higher than the number of available medical personnel. It offers a chance of survival to those who will benefit from it most of all. Triage is a dynamic process of sorting injured individuals into categories, choosing the right treatment, and subsequent transportation. Thus, it does not mean that the first injured is also the first to receive treatment. What matters is the determination of acuteness so that timely

treatment can be ensured. Individuals who are severely injured or in critical condition are treated with priority (Powers & Daily, 2010). The treatment does not start before triage completion. The objective of triage is to provide maximum help to as many people as possible (Greaves, 2006).

Futile treatment, from the perspective of benefit to the patient, is a treatment that does not lead to saving lives or maintaining the quality of life. From an ethical perspective, medicine is not obliged to offer futile treatment. Futile treatment can be evaluated in terms of quantitative, qualitative, and physiological futility. Quantitative futility expresses the measure of the probability of a positive change in a patient's condition as a result of treatment. Qualitative futility evaluates the quality of life during the treatment. As a part of the patient's autonomy, the patient should (also) make their own decisions regarding qualitative and quantitative treatment. Physiological futility is defined as the health condition when the physiological systems of a patient are in such a poor condition that there is no known medical intervention that could reverse it. Only a doctor can declare physiological futility due to their specialized knowledge. Futile treatment is a domain of palliative medicine and end-of-life decision-making; it is closely tied to the patient's autonomous consent (Novotný, Novotná & Andraščíková, 2020).

The Guide on the decision-making process regarding medical treatment in end-of-life situations drawn up by the Council of Europe states that a doctor is only obliged to provide appropriate treatment without impinging upon the respect for the patient's freedom and informed consent. The prerequisite for implementation or continuation of treatment is a medical indication (Council of Europe, 2014). For the allocation of scarce resources in intensive care, the 13/2020 Statement of ČSARIM (Czech Society of Anaesthesiology and Intensive Care Medicine) declares that the continuation of intensive care which has been assessed as inappropriate is in direct opposition to ethical principles of medicine. Continuing to provide intensive care to a patient who is no longer indicated for it based on the development of their health condition, assuming the care in question is inappropriate and unnecessarily burden to the patient, is not 'de lege artis' (Šustek & Černý, 2021).

Novotný, Novotná, Andraščíková and Firment (2021) present a medical evaluation of treatment inappropriateness during pandemics based on the organ system failure (quantitative inappropriateness) and the progression of a clinical state (qualitative inappropriateness). Physiological inappropriateness of treatment is assessed by an index of frailty and terminal deterioration, where the patient's physiological systems are in a terminal condition that cannot be reversed by any medical intervention.

German professional societies for allocation of scarce resources in relation to the COVID-19 pandemic gave their standpoint stating that when intensive care is indicated, there are primarily three levels of assessment of a patient's health condition, which correlate with the above-mentioned medical assessment criteria for treatment inappropriateness. In their standpoint, they define autonomy as the consent of a patient or their guardian. The last point of the standpoint describes "prioritization itself", which besides circumstances related to the patient's health condition also involves consideration of available capacities (Marckmann et al., 2020).

If capacities are insufficient when allocating scarce resources, i.e., a quantitative, qualitative, and physiological inappropriateness of treatment, a medical indication of ending or not the allocated treatment is the deciding factor in clinical practice, which means that it will not be possible to fully exercise the patient's autonomy principle.

Discussion

Medically defined treatment inappropriateness in triage during pandemics, for the sake of preserving human dignity, applies the principle of normative justice, which prevails over the

autonomy principle. Preservation of human dignity also respects the necessity to prioritize treating symptoms as part of palliative care in persons who will not be provided with acute care; this is also decision-making in the patient's best interest. The normative basis for triage guidance comprises not only justice but also benefit maximization. Benefit maximization in circumstances where resources are scarce can mean different things: it can refer to saving the greatest possible number of people, saving the greatest possible number of years of life, or saving the greatest possible number of quality-adjusted life years (QALY – Quality Adjusted Life Year). The principle of maximizing the number of lives utilizes 'acute' indexes, especially SOFA (Sepsis Related Organ Failure Assessment Score) (White et al., 2009; White & Lo, 2020). The principle of maximizing years of life assesses comorbidities and utilizes validated prognostic models such as the index of frailty or suggested improvements to the comorbidity index. Saving as many years of life as possible favours young people, while maximizing QALY favours those who can live a long, healthy, and independent life (Ehni, Wiesing & Ranisch, 2020).

As a criterion, chronological age is insufficient when making decisions during triage. Age is usually correlated with comorbidities and prognosis (White et al., 2009; White & Lo, 2020). Age is a relevant criterion in triage under the condition of social solidarity between generations. Based on their age, people are divided into generations, with younger generations having a higher priority over older generations. During the COVID-19 pandemic in the Netherlands, a social consensus was reached regarding the concept of fair innings, i.e., young people have a greater claim to life-saving interventions. Fair innings applied in this way cannot be considered discriminatory towards the elderly. Dutch bioethicists helped to discard the idea of using age (e.g. > 80 or even > 70) as a criterion for absolute exclusion during triage (Verweij et al., 2020).

A long-term prognosis as the decisive criterion for triage adjusting for comorbidities favours younger patients over older ones, and people without disabilities over those with disabilities. Thus, there is a clear imbalance between maximizing benefits and avoiding discrimination of groups marked by frail health. The principle of benefits maximization presupposes its clear definition for individual phases of scarce resource allocation. The primary criterion is short-term survival, while long-term survival is a secondary criterion. It is necessary to carefully evaluate short-term and/or long-term survival chances using medical criteria, tests, and valid scoring systems for survival prediction (Jöbges et al., 2020).

The principle of justice entails non-discrimination based on age, race, disability, sexual orientation, religion, insurance, wealth, or social standing. It gives due attention to vulnerable groups (the elderly, minorities, people with disabilities) during a pandemic.

The pandemic of the acute respiratory syndrome coronavirus 2019 (COVID-19) raised ethical questions regarding the provision of proportional and fair medical care. Evidence-based tools are useful for supporting an evidence-based ethical framework. An overview of 169 articles in the MEDLINE, EMBASE, Google Scholar, and LitCOVID databases provided instructions for the ethical distribution of resources (O'Sullivan et al., 2022).

The articles incorporated at least two out of three following concepts within their inclusive criteria: acute resource limitation, distribution or decision-making, and ethical view. In 169 articles, 31 ethical values and principles were identified. The most mentioned ethical values and principles include equity, reciprocity, transparency, justice, duty to care, liberty, utility, stewardship, trust, and proportionality. Most authors do not support the utilitarian approach while a small number of them believe that this principle should be applied in crisis situations to decide on how resources should be allocated (Ram-Tiktin, 2017).

The articles emphasize the importance of giving special consideration to marginalized groups of the population that may struggle to access healthcare; social inequalities; obstacles when accessing healthcare and COVID-19 testing; a higher rate of infection transmission among those working with the public; and unjust distribution of vaccines worldwide. Ethical

values differ depending on the local culture. It is evident that lower-income countries with lower resources face much more complicated decisions in resource allocation when applying the principle of equity and social justice (O'Sullivan et al., 2022).

The WHO document from 2020 titled Access to COVID-19 Tools (ACT) Accelerator was created under the guiding principle: "No one is safe until everyone is safe". Four pillars correspond to specific categories of 'COVID-19 tools': diagnostics, therapeutics, vaccines, and health systems. Decision-making should be driven by seven values, four of which are substantial: human well-being, respect for persons and communities, fairness, and solidarity.

Three values of administration and governance – transparency, participation, and responsibility – concern the decision-making and monitoring of the legitimacy and trustworthiness of decisions. Human well-being means to "protect and promote human well-being, including physical and mental health, social and economic security, human rights, and child development, through effective, coordinated development, manufacturing, and deployment of COVID-19 tools, while minimizing harmful effects". To "recognize the equal moral status, interests and rights" means a manifestation of respect for persons and communities, while fairness means to "ensure equitable access to and benefit from COVID-19 tools global" and "honouring obligations while avoiding unjust discrimination". Lastly, solidarity means to "act in a manner that acknowledges the interdependence of countries and populations and that individual well-being is dependent on the control and suppression of the virus across the world through COVID-19 tools". The document also states that it is necessary to consider compromises between values due to proportionality and decisions that are most relevant from an ethical standpoint. There is no established formula; in some contexts, certain ways of thinking can be more relevant or more urgent than others. Value compromises must be explicitly evaluated and substantiated by a transparent explanation (Moon, 2022).

The methodology of non-utilitarian consequentialism in the theory of ethics of social consequences lists humanity, human dignity, and moral rights as fundamental values. It also lists secondary values, such as justice, responsibility, moral duty, and tolerance. Implementation of the aforementioned values relates to positive social consequences which express the consequentialist value orientation of this theory. In particular, primary, i.e., fundamental values differentiate between ethics of social consequences and other versions of consequentialism, especially utilitarian ones (Kalajtzidis, 2020; Kalajtzidis, 2019; Gluchman, 2005; Gluchman, 2004; Gluchman, 1996a).

Values and value judgments of the abovementioned documents (Moon, 2022) correlate with the value structure of ethics of social consequences as versions of non-utilitarian consequentialism of social consequences for mass casualty incidents. Ethics of social consequences demands that values and principles comprise the point of departure for moral thinking and action. Values are prioritized on the condition that their realization should lead to positive social consequences. Fair treatment within bioethics can be achieved through value implementation.

Ethical behaviour of medics during pandemics and disasters limits the negative consequences of not providing healthcare as well as negative social consequences (in the case of triage, this means the provision of palliative care, treating pain, and delaying suffering). In the case of triage during mass casualty incidents, medical professionals act according to the demands of public health ethics within triage schemes but also respect the values of humanity and human dignity. The objective of triage is to save the greatest possible number of human lives successfully and to accomplish a predominance of positive social consequences through which the good in the social and moral community is achieved. This correlates with the requirement that public health ethics and disaster bioethics should search for the preference of activities with a majority of positive social consequences, the purpose of which stems from

their ability to aid in ensuring the achievement of moral good within the boundaries of the ethical structure of non-utilitarian consequentialism (Gluchman, 1996b).

The justice principle in triage means that all patients with a comparable prognosis should have equal access to the necessary medical aid, based on predetermined medical and ethical criteria.

Conclusion

The main goal of triage of patients during the COVID-19 pandemic is saving the greatest possible number of lives without infringing upon patients' rights. The main principles of triage to be observed during the pandemic are benefit maximization and fairness. The main objective is to save lives and preserve the patient's dignity. During pandemic triage, the patient's autonomy is fully respected from the perspectives of both public health ethics and bioethical principles. When exercising professional criteria of medically inappropriate treatment during triage, the patient's autonomy regarding their consent to treatment is backgrounded in the event of insufficient scarce resources.

During disasters, the objective of triage is to provide as much aid as possible to as many people as possible; professional medical criteria of triage are prevalent. This involves individual evaluation of the patient's health condition where acute symptoms are decisive and other factors which influence the treatment success rate are not considered. According to the principle of normative justice, the patient's overall health condition before the current acute harm is not evaluated.

In the case of disasters, this is a considerable difference in comparison with triage protocols during the COVID-19 pandemic, where the overall evaluation of the patient takes into consideration all important factors influencing the treatment success rate (current disease, comorbidities, overall health condition), and the past diseases are also relevant if they influence the chances of survival (Marckmann et al., 2020).

Triage during pandemics identifies groups of patients according to the degree of disability. Depending on which group patients are placed in, they may lose the chance for their life to be saved. The beneficence principle for the individual is medically perceived individually, with regard to the immediate possibility of influence on the patient's health condition. Professional medical criteria for triage prevail over values of human rights and autonomy.

When it comes to patient triage, full focus on medical reasons for effective utilization of resources introduces the risk of amplifying inequalities in health care (Verweij et al., 2020). The use of an evaluation of current health condition by a numerical scale in triage corresponds to pure utilitarian preference. One of the weaknesses of consequentialism is treating all patients equitably, which can be an obstacle when attempting to achieve the best possible results. In triage processes in bioethics of disasters, the maximization of saved years of life as a more consistent utilitarian approach is not utilized.

The fluidity of bioethical principles and values in situations with scarce resources confirms the strategy of the theory of non-utilitarian consequentialism, which formulates partial objectives, where in certain situations, the achievement of a smaller number of positive effects can be considered the right course of action assuming that prevalence of positive (including social) effects over negative ones is preserved (Gluchman, 2001).

Medical professional ethics in situations of public disaster should clarify the transition from dominating deontological preference to utilitarian or consequentialist preference, which relates to priorities of value judgments in healthcare. Therein lies the complementary significance of philosophical theory. Methodology of non-utilitarian consequentialism in ethics of social consequences is appropriate for application in public health ethics and through its focus on the importance of values it helps connect the micro- and macro-ethical dimensions of disaster bioethics (Gluchman, 2016).

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