Why catastrophic events, human enhancement and progress in robotics may limit individual health rights

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Abstract

Despite the fact that people usually believe that individual health rights have an intrinsic value, they have, in fact, only extrinsic value. They are context dependent. While in normal conditions the current societies try to guarantee individual health rights, the challenge arises in emergency situations. Ones of them are pandemics including current covid-19 pandemic. Emergency situations challenge individual health rights due to insufficient medical resources and non-random criteria of selection of patients. However, there are some reasons to assume that societal and technological processes in the near future will threaten permanently individual health rights in normal conditions. Such processes include progress in commonly available human enhancement technologies, and progress in robotics and automation. In this paper I show how individual health rights will be challenged in both scenarios including catastrophic events and future technological progress. In both cases, the idea of assisted dying is discussed as possibly the unique healthcare principle available for people whose individual health rights will be limited or canceled due to catastrophes or technological and financial exclusion. The special case of future space missions is also discussed as an example of an extreme environment affecting the way moral norms are viewed in health care ethics.

Keywords Rationing · Human enhancement · Robotics · Assisted dying · Healthcare ethics · Space missions

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1 Introduction

Individual health rights are usually perceived as human rights. We often treat them as inherent rights of every human being. They are a big achievement of Western civilization and an example of moral progress. However, this article discusses counterintuitive scenario in which individual health rights may be suspended. There are good reasons to believe that that scenario may come into reality in the near future. This is a scenario where technology influences social structures. Several issues are identified, which will challenge individual health rights in the near future. They include pandemics, progress in biomedical technologies and availability of human enhancement, unclear boundaries between therapy and enhancement (which will matter when biomedical enhancement technologies will be broadly available), development of robotics and automation which will lead to a replacement of humans by robots, and global catastrophes. The special case of humanity's future in space is also discussed.

2 Individual health rights in pandemics

The current covid-19 pandemic revealed many challenges for healthcare systems. One of them is an allocation of medical resources. Healthcare needs of the whole population never can be satisfied. Another challenging issue is a duty to care and to treat, often addressed to the medical personnel (Malm et al. 2008). The conviction, at least *prima facie*, that duty to care is a duty at least for medical personnel (but also for those working in other services) was confronted with the need to care for medical personnel themselves, who were often expected, and even demanded in many countries, to work beyond their means and at the risk of their lives. This is undoubtedly the paradox not only of principlism, in which the principle of beneficence (care for patients) clashes with the principle of autonomy and justice applied to medical personnel, but also of an ethic of care which is expected of patients, but from which medical personnel themselves are excluded.

Both issues, i.e., the health needs of the general population, as well as the *prima facie* duty of care, are relevant for individual health rights. If we assume that they are basic human rights, we should provide appropriate medical care for all people in need. An effective and efficient allocation of medical resources becomes a basic duty of government—and other responsible bodies—equal to duties such as providing electricity and an access to water. No one should be unreasonably discriminated in an access to medical resources in the same manner like no one should be unreasonably discriminated in an access to electricity and water. If an access to healthcare system is treated as a basic human right, limits in such access cannot be accepted. Let's imagine that some people are excluded from an access to water, or their access is limited or delayed. This is not acceptable. The same should be true about individual health rights but only if they have a status of basic human rights. Any limits in such access including delay and long waiting for medical treatment breaks such right.

By contrast, there appears to be strong reason to believe that individual health rights do not have a status of basic human rights. If this turned out to be true, it would open space for further limitations and exclusions. For instance, if patient A should wait a couple of months for treatment which is obligatory from point of view of her health (from point of view of her biological interests and psychological wellbeing), it means that government fails in its duty to care for individual health rights. The idea of basic human rights should be understood explicitly and literally.

Allocation of medical resources will be challenged more and more by overpopulation. An analogy with the Malthus law is useful here. The population growth increases geometrically, while medical resources will increase only arithmetically. The Malthus law works originally in relation to non-human biological populations, and should be applied to the human species in a careful way. Humans cope with challenges caused by natural selection by means of cultural evolution, including science and technology. This is why some authors argue that the Malthusian approach does not work in a human case because technology enables resources and food production for permanently growing population (Zubrin 2019). This is true but only to some extent because there is a large number of people excluded from an access to water and resources including medical resources. Technological progress does not preclude, although it may reduce, the negative effects of other factors. The effects of global warming, the accumulation of capital by the richest individuals and the richest countries, and many other factors cause a sizable portion of the global population to fall victim to Malthus' law. Another case in point is the health care problems in even the world's richest countries during the covid-19 pandemic, which did not escape the problems of inadequate medical resources. Individual health rights cannot be satisfied everywhere and for everyone even in normal conditions. Pandemics and other global catastrophic risks limit individual health rights. Pandemic meets criteria of global catastrophic risks such as a serious danger for a critical system, mechanisms of a global spread, and a failure in prevention and mitigation policy (Avin et al. 2018). Pandemics threaten human survival directly and by breaks in food production and global supply chain. Pandemics spread globally in a rapid way (Avin et al. 2018). Pandemics such as covid-19 cannot be prevented effectively. One of factors which seems to be beyond a full control, are human behaviors and individual immunity rate (Kilbourne 2008).

Covid-19 pandemic caused death of more than 5,238,032 people and infected more than 264,368,460 people (Johns Hopkins University and Medicine 2021). This is less than the Spanish flu pandemic, which caused death of no less than 20,000,000 people (Simonsen et al. 1998). Certainly some people have died as a result of limited access to medical resources. Another consequence of covid-19 pandemic is a limited access to medical treatments not correlated with covid-19. Individual health rights of many patients have been suspended and limited because of allocation of medical resources designed only for struggling with pandemic. This is a situation where individual health rights are limited and get a lower moral value than collective benefits such as a global health of population. However, for others, this is a situation where individual health rights of one patient are valued less than analogical individual health rights of another patient.

Because social isolation and distancing are the best countermeasures to pandemic, we may expect that such events may foster progress in AI and robotics which make possible online working and social distancing. In consequence, robots and AI systems will support humans to a more extent. In the distant future, however, the possibility of replacing humans for various activities cannot be ruled out. Pandemics—current covid-19 and future pandemics—may lead to side-effects such as faster progress in robotics and automation which, when supporting or replacing humans, may challenge individual health rights.

The impact of covid-19 pandemic became challenging for healthcare system even in the richest countries (Mannelli 2020). One of the biggest challenges for healthcare system during pandemic was rationing because optimal medical care cannot be provided for all patients (Scheunemann and White 2011). Rationing policy, often related to the moral principle of distributive justice, includes, among others, the concept of quality-adjusted life years (Scheunemann and White 2011). Good recommendations for the public health policy offers The Nuffield Council on Bioethics (moral equality, respect, and solidarity) (Nuffield Council on Bioethics 2020) but this does not remove the problem of balancing conflicting principles and rules against specific cases requiring the use of selection criteria.

The patient-centered approach is a *prima facie* obligation. However, in special circumstances, the patient-centered approach can be suspended in favor of a different approach, the so-called the public-centered approach, which acquires the status of an actual obligation in the understanding of those in power (Berlinger et al. 2020). A tool of last resort in the medical care of emergency situations is triage policy, which in extreme situations includes the involvement of non-medical personnel or the transfer of patients to locations deemed unsafe (Berlinger et al. 2020). Such a scenario could happen in a hypothetical future pandemic. But back during the covid-19 pandemic, there were already instances of certain groups being excluded from the right to be vaccinated due to restrictions on the number of vaccines, and different countries used different priority criteria (Heilinger et al. 2020).

Individual health rights are in fact limited during covid-19 pandemic, and every future pandemic may increase that situation due to growing overpopulation, intensity of global migration and possibly more lethal form of virus. It is worth mentioning six utilitarian rules of triage discussed by Savulescu and colleagues in relation to short supplies of medical resources. They include the number of lives which can be saved, probability of success, duration of treatment, number of resources involved in treatment, length of life, and quality of life (Savulescu et al. 2020). There is no doubt that a utilitarian approach is the only possible approach for medical care in global catastrophes. But as guided by the principle of utility, it necessarily fails to recognize individual health rights as absolute moral constraints.

Individual health rights may be limited by the criterion of social worth which is controversial and, at least in normal conditions and according to our common sense intuitions, should not be applied to healthcare policy as a *prima facie* obligation. However, it is hard to ignore the importance of the concept of social worth. It is certainly a more correct concept than the often used term group interest and group good, which is unclear on utilitarianism grounds. Utilitarianism recognizes only the sum of the goods of individuals. However, it is difficult to equate social worth with

the sum of the good of individuals. Social worth means a state that guarantees certain minimum necessary for proper functioning of society regardless of the good of particular individuals and even against their good. One might say that the problem is not the mere existence of social worth—social worth understood as above is, after all, the goal of every state. The problem arises when social worth requires the sacrifice or suspension of individual health rights. Under standard conditions, such a requirement does not arise and both types of worth, social and individual, can coexist. The concept of social worth interferes with individual health rights when the scarcity of medical resources forces the selection of patients according to criteria of utility to society, which is precisely what is considered social worth (Kinlaw et al. 2009).

On the one hand, the concept of social worth can be considered a concept rooted in common morality. It is a fairly intuitive concept. On the other hand, however, somewhat paradoxically, it leads to discriminatory consequences which reinforce the social exclusion of traditionally excluded groups. If we understand social worth to mean social utility, from this point of view, the least contribution to social utility is provided by groups such as seniors, people affected by other diseases, and persons with limited cognitive functions. Perhaps on the basis of virtue ethics and deontic ethics we should emphasize the rights of these groups as much as all others, but this conflicts with the principle of utility. Perhaps this is a moral luxury that humanity can only afford under conditions of prosperity, but not emergency situations. In emergency situations, health care decisions are often made to the exclusion of the wellbeing of these groups (Parsons and Johal 2020).

If a global catastrophe in the future leads to the collapse of civilization, humanity may revert to a lifestyle appropriate to hunter-gatherers (Gowdy 2020). It is difficult to say whether this will not result in analogous changes in the system of ethical standards and bioethical principles that would lead to a return to the principles inherent in hunter-gatherer groups. The healthcare criteria of humanity, which would in the future return to the standards of living proper to hunter-gatherers, may be based even more on the criteria of social worth and social utility. Moreover, the dominant healthcare ethic may be a military ethics whose selection criterion is to help those soldiers who can return to the battlefield most quickly.

3 Individual health rights in the era of biomedical technologies and human enhancement

Pandemics and other emergency situations cancel or, at least, limit individual health rights. However, such limitation may happen in “normal” conditions. While previously discussed cases may be perceived as exceptional and temporary, other non-catastrophic factors may permanently limit individual health rights and introduce new standards in healthcare ethics. By new standards I do not mean the creation of new—if at all possible—moral principles and rules, but rather the modification of conditions and criteria for the application of already existing principles and rules. However, I do not exclude the possibility of modifying already known principles and rules, for example, the privacy rule.

Non-catastrophic factors include progress in biomedical technologies associated with human enhancement. Human enhancement includes different technologies which are aimed at improving human body and mind. They may be therapeutical or they may be aimed at more trivial purposes which are not necessary for survival from medical point of view. However, in both cases, the main idea of enhancement states that targeted individual uses technology to improve her physiological capacities (but, hypothetically, also psychological, cognitive and moral capacities)—or to receive new functions and possibilities. For the sake of argument let's assume that such technologies involving genetic editing, brain-computer interfaces and implants, will be broadly available and morally permissible. By moral permissibility, I mean the functional status of biomedical human enhancement similar to the status of abortion today. In many liberal democracies it is legally and morally permissible, but there are countries where it is banned, as finally many individuals in various countries have moral objections to abortion.

How far such future human enhancements may be related to individual health rights? Human enhancements will change substantially the status of individual health rights. As far as every individual will have access to human enhancement technologies, her wealth will become a main criterion. We may expect a transition from national healthcare systems as basic healthcare units to privately and individually purchased human enhancements. This is an idea explored in science-fiction movies focused on medical technologies of the future. However, reference to science-fiction scenarios is not required here to guess that rapid progress in biomedical technologies will be an object of special interest of richer part of human population. Consequently, a permanently growing demand for healthcare will lead to a situation where the most effective medical care may be provided only by individually purchased human enhancements. For instance, a proper way to cope with some disease will be purchasing of implants or gene editing. Standard alternatives like currently applied surgical operations or other treatments may be in a short supply, lower quality, and available only for a some part of patients in need.

Today, human enhancement is often seen as the ultimate alternative. Such is, for example, the status of germline gene editing (GGE). GGE is banned for clinical purposes, but if it is discussed at all in various moratoria, its possible future acceptability is usually allowed in the absence of alternatives. On the other hand, let us imagine that the future, for various reasons, including overpopulation, will lead to a scenario in which conventional procedures will be considered the last resort and human enhancement will be the starting point. Only that expensive and available for few.

The status of individual health rights in the era of human enhancement technologies will be challenged also by an unclear boundary between therapy and enhancement. Let's assume that someone will decide to purchase human enhancement, for instance by gene editing of some of her physical capacities which, during enhancement procedure, will be in relatively good condition. However, let's assume that such enhancement will provide good health in her elderly and eliminate a risk of at least of some of diseases. Such persons who will purchase such kinds of medical enhancements will change substantially ethical status of the rest, unenhanced people. Their individual health rights which today are considered as basic and

inviolable, may be cancelled. Someone who will not purchase particular human enhancement at her age 20 or 30, may be excluded from medical healthcare system in her elderly. Such person did not do her best to eliminate or at least to reduce the risk of future diseases by application of human enhancements when it was possible. Consequently, individual health rights will change their status from basic and inherent (however, they are never inherent even today) to correlated with wealth, future thinking and commercial approach to biomedical technologies. We can further complicate our thought experiment by introducing a GGE, where a given type of therapeutic or preventive modification will only be possible for prospective parents to apply at the embryonic stage. Failure to do so in a timely manner—or lack of resources to do so—could result in a lower quality of life, and perhaps even an earlier death, for such an unmodified child.

While our common sense's ethical thinking makes us prone to guarantee individual health rights for therapeutical purposes, this is not necessary true about non-therapeutical interventions. Mentioned hypothetical example of future enhancement is such case—this is not an obligatory medical intervention which corrects current pathological state or prevent disease in the near future. This is a kind of correction which is difficult to place under the label of therapy or enhancement. Association of individual health rights with individual purchase of enhancement technologies, aimed at therapy or enhancement, may weaken an ethical status of these rights. It is worth remembering that the quality of life may deteriorate rather than improve in the future due to environmental degradation and overpopulation. Perhaps some form of biomedical human enhancement will become necessary to maintain some satisfactory quality of life. If one of the goals of medicine is to maintain a certain level of quality of life, then lack of access to enhancement is equivalent in consequence to lack of access to medical care. In both cases, the result will be a diminished quality of life. Perhaps instead of talking about individual health rights, we should talk about individual enhancement rights and only on this basis propose, according to the principle of justice, equal access to enhancement, at least as long as it is correlated with a systematically deteriorating quality of life at the population level.

4 Individual health rights in the era of robotics and automation

Robotics and automation are another, next to human enhancement, social characteristics of our civilization, and reliable prospect for the future. Progress in robotics and automation will enhance influence of human enhancement technologies for patterns and norms in healthcare policy, and vice versa. Both of them are permanent prospects, in contrast to mentioned temporary catastrophes. However, it is worth keeping in mind that both robotics and human enhancement may work also as countermeasure to hazardous effects caused by different catastrophes. Growing automation will replace humans in these areas where they are especially sensitive to hazardous effects of pandemic. We can also imagine such enhancement technologies which will prepare humans to various negative effects caused by different kinds of global catastrophes.

While replacement of humans by robots does not reduce the moral and ontological value of replaced persons—they are still the same valuable human beings, such replacement reduces their social utility. Social utility, of course, does not affect mentioned value and dignity of human being. As far as human populations live in normal conditions, progress in robotics will challenge only such issues like organization of daily life of millions of people who, possibly permanently, lose jobs.

Another challenge arises in emergency situations. It is worth keeping in mind that emergency situations basically mean different kinds of catastrophes. However, emergency situation, basically temporary, may become permanent when conditions of life on Earth will become relatively hard for an average inhabitant due to overpopulation, climate change and other collateral factors. In such conditions, individual health rights which, always possess only extrinsic value—may become a privilege of professionally active part of society. People unemployed due to robotics may remain excluded from healthcare system, and there will be good reasons, from social point of view (the principle of social utility), to limit an access to healthcare system in situation when such system is not able to provide healthcare for everyone in need.

This is one of possible long-run negative consequences of robotics. This is definitely a dystopian scenario and is the type of possible futures that we as humanity want to avoid. We cannot predict if progress in robotics and automation will have only negative consequences for individual health rights. One of possible scenarios assumes something exactly opposite. Common robotics may increase global wealth and, consequently, healthcare system will be very effective and available for everyone, including healthcare service provided by medical robots.

5 Recommendations for the future—individual health rights in emergency situations, era of robotics and human enhancement

If scenarios discussed above come into reality in the near future, humanity will face a challenge of limited or suspended individual health rights. One of scenarios is connected with global catastrophic risks including pandemics. Such catastrophic events will challenge the idea that all lives are equal. That idea is a good example of moral progress from exclusivist to inclusivist morality (Buchanan and Powell 2018). As far as environmental conditions are normal, current healthcare ethics is based on the idea of equality. During future pandemic, use of weapons of mass destructions or ongoing effects of climate change, the demand for intensive medical support will exceed supply far more than today. If we assume that the dominant strategy in public health ethics today is a weak version of rule utilitarianism, we can assume that the suspension of certain moral rules appropriate to this approach will occur much more frequently and on a wider scale than it does today.

Suppose, therefore, that the situation in question becomes a reality. Many people who would normally have access to medical care will be denied it. Let us assume that even under these conditions the principle of beneficence will still be recognized as an important principle in medical ethics. Then medical personnel may still be obligated to care for well-being of patients. But what might this concern look like under conditions of a lack of medical resources for vast numbers of people? One

of the options may become the concept of assisted dying, which in conditions of mass shortage of medical resources may be the only way to realize the principle of beneficence.¹ If the progression in robotization continues, then medical robots may perform assisted dying procedures, which will not only solve the medical staff shortage, but also free up medical staff to perform controversial procedures.

The problem that arises here is whether the conscience clause in such a situation would have the right to apply if assisted dying is understood as a kind of “therapy.” Another issue, which is difficult to resolve, is whether medical robots, if they were capable of administering assisted dying, would not possess other therapeutic skills that could perhaps save at least some of those in need of help, rather than killing them. However, this implies a selection problem with respect to patients who are equal in all respects, some of whom would receive therapeutic support from medical robots, and some of whom could only receive assisted dying. Second scenario discussed in this paper—a permanent limitation of individual health rights due to progress in robotics and human enhancements, is more challenging for the idea of assisted dying. Humans may be prone to accept assisted dying applied to people excluded from medical care during temporary catastrophic events. However, such idea applied as a standard and permanent procedure may cause objections. This paper discusses hypothetical scenario which will happen in ecological conditions different from ours. We may expect that assisted dying understood as an equivalent of individual health rights for excluded people will be implemented gradually, and in its very beginnings will be applied only very rarely. Probably that solution will not be desirable by global population as such, and people will try to protect standard individual health rights. If the idea of moral progress is right, we may assume that only harsh environmental conditions, and collateral social and economic issues will force humanity to apply assisted dying as a form of individual health rights. This is a good starting point for further elaboration of the idea of moral progress which, at least to some extent, is dependent on environmental conditions.

One of the most important factors affecting future development of bioethics and healthcare ethics will be robotics. Progress in robotics may be like a double edged sword. Benefits which motivate humanity to invest in robotics, may cause hazardous long-run effects. One of such by-products of robotics may be replacement of humans. In consequence, social utility of humans—relevant for individual health rights, will decrease.

The same progress in robotics is discussed also in terms of benefits for healthcare systems. It may be expected that at least to some extent, robotics and automation will solve the challenge of a medical staff shortage. However, that scenario, even if realized in some point in the future, may be not sufficient to provide required level of medical care for all people in need.

¹ See the concept of Ben Colburn, who suggests that assisted dying should not be viewed solely in terms of an alternative to palliative care (Colburn 2019).

6 A special case of humanity in space

When considering probable scenarios for the future of humanity that take into account the increasing role of robotics and biomedical human enhancement, it is impossible to rule out a situation in which humanity will pursue a fairly intense program of space exploration and exploitation. Let us assume that space missions will be popular and attractive for scientific and commercial reasons, and perhaps space will also be seen as a new habitat for humans.

The relative massification of space exploration may generate particular difficulties for health care. A solution may be the concept of biomedical human enhancement, which may even be considered as a mandatory procedure. Failure to apply it may result in the loss of the right to medical care in the extreme environment that is space. It will also be difficult to both predict and probably prepare all the medical resources necessary to deal with all the possible health problems and accidents that may occur in space. Can these logistical difficulties justify the imposition of even radical forms of biomedical human enhancement? It seems that yes, if the criterion of informed consent is maintained.

The space environment is worth mentioning also because it will be extreme in a special way. One can imagine a situation in which, at least in the initial stages of space exploration, every participant in the mission will be obliged to provide work for the population living or working in space. The notion of social worth and the principle of social utility acquire a literal meaning here. Would humanity be able to accept the parallel existence of two ethical systems and two environments where in one, on Earth, we would respect individual health rights at least as long as possible, and in the other, in space, we would from the beginning adopt an ethical system that approves assisted dying as a routine procedure in many cases that on Earth are treated as relatively simple medical cases? The answer depends in part on whether the space environment will be considered an extreme environment requiring ethics appropriate to extreme environments, such as drawing on battlefield ethics, or whether humanity will seek to blur the ethical and bioethical differences between the terrestrial and space environments.

7 Conclusions

Individual health rights are not an inherent value. They possess only extrinsic value which is strongly context dependent. They are ones of the best achievements of moral progress in a human transition from exclusivist to inclusivist morality. Covid-19 pandemic showed how individual health rights are threatened and limited when medical resources are in a short supply. Some groups of vulnerable patients have been devaluated when compared with others (Parsons and Johal 2020). Future catastrophic events will exacerbate that tendency. While devaluation of individual health rights of some of patients may be understandable during catastrophes such as pandemics, their permanent limitation and

suspension caused by advances in robotics and human enhancement technologies may be more challenging to our common sense morality. In the light of discussed scenarios, current rationing strategies based on principles such as equality, utility and prioritizing the worst-off might not work. New criteria of selection may ignore individual health rights and refer to social worth. One possibility might be to make assisted dying the only procedure available and required by the beneficence rule. The environment of long-term space missions, in turn, demonstrates the moral specificity of extreme environments and the dependence of moral norms in healthcare ethics on environmental conditions and the availability of medical resources.

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