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## Natural disaster and rationing of care

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### 1. Introduction

The current COVID 19 crisis has elicited an interesting and vexing ethical problem of concern to all practitioners dealing with older patients: how to ration medical interventions when the demand of interventions overwhelms the resources. Though it may be tempting to ration care based on age and life expectancy, we find this approach undefendable from an ethical viewpoint. The authors of this article are geriatric oncologists, with no special training in medical ethics. The article is meant as a starting point for the discussion of a problem likely to become more and more common with the aging of the population and the mounting costs of health care. For example, when cytotoxic chemotherapy was the main treatment of systemic cancer, it was relatively easy to recognize individuals for whom the treatment was contraindicated, due to short life expectancy and risks of complications [1]. With new form of biological therapy risk of toxicity may not be anymore a selection criteria and the number of patients requiring these treatments may overwhelm the resources of the health care system.

### 2. Clinical Case

At the end of February 2020, a prominent professor of medicine from Milan, in the Lombardy region of Italy, went to a renowned ski resort in the Trentino region. The professor is 80 and retired, as in Italy any professional is forcibly retired after age 70. He is in excellent health with no medical conditions, biking 20 miles every day, and able to trek 10 miles a day on the snow. While on vacation the epidemic of COVID 19 broke out in Italy and a curfew was established by the Italian government so that the professor could not return home. Currently he is healthy but should he develop pneumonia:

- He could not receive care locally as all the hospital beds in Trentino are reserved for the residents of the region;
- He will be shipped to Lombardy where he will have access to an oxygen mask but not to a ventilator, as the regional government decreed that artificial ventilation be reserved for individuals younger than 75. This decision was based on the idea that one may save more life/years, when ventilators are scarce, by reserving them for younger patients.

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The professor has no problem with this restriction and employees his claustal days writing scientific and historical articles. Despite the professor's graciousness his situation outlines a major ethical issue whose questions include:

1. Is it legitimate to ration life-saving interventions in emergencies?
2. Is it legitimate to ration life-saving interventions based on chronological age?

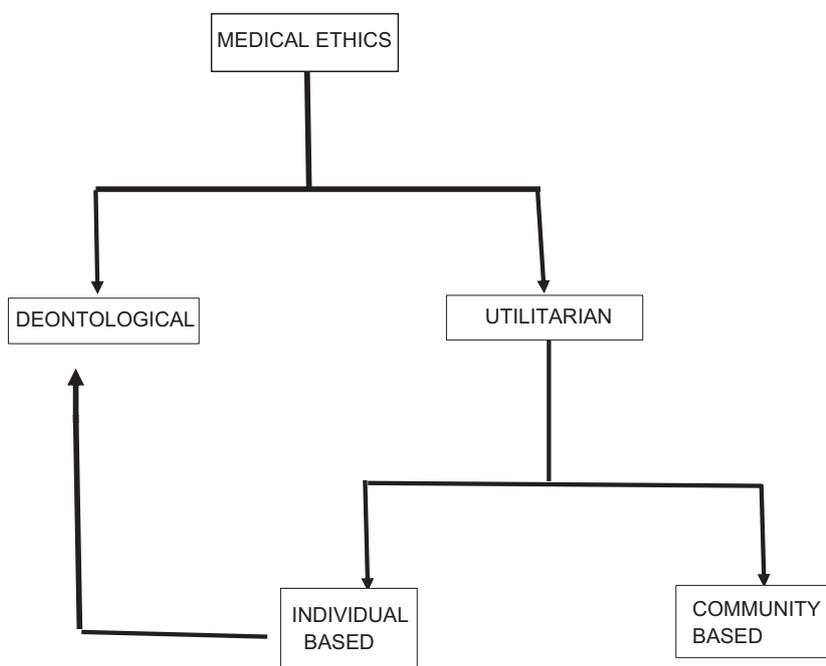
To address these questions, we will review the principles of medical ethics and how they should be applied in the specific situation.

### 3. Principles of Medical Ethics

Fig. 1 illustrates two different ethical constructs that are involved in this problem [2]. Deontological ethics is based on the second Kantian moral imperative, according to which every human life has the same value, or best said one cannot prioritize the saving of one human life over another. According to this principle, rationing is unacceptable under all circumstances. The pillars of deontological ethics include patient autonomy, beneficence, non-maleficence and justice as articulated by Beauchamp and Childress. In other words, a patient has the right to accept or refuse a life-saving medical intervention based on personal preferences. Though our patient was in agreement with the dispositions of the Italian government, nonetheless his autonomy was infringed upon as the ventilatory option was denied to him "a priori." Also, the disposition of the Trentino government refuted the principle of justice, as it used residence or citizenship as a criterion to ration care. This criterion would deny access to life-saving treatment to the millions of undocumented immigrants currently in Europe and North America.

In contrast, the goal of utilitarian ethics is to obtain the highest benefits with the lowest cost. In Fig. 1 we show that utilitarian and deontological ethics may converge when the evaluation of benefits includes individual values in each medical decision. For some patients the benefits of adjuvant chemotherapy of cancer may be worth the additional cost and toxicity while for others it may not be worth it. According to the principle of autonomy, the patient is the final arbiter of what is worth his/her while. When the patient is incompetent the decision needs to be based on previous dispositions (living will) or on the judgement of a health care surrogate. One cannot emphasize enough the importance of a living will to provide treatment according to the principles of deontological ethics.

The application of utilitarian ethics according to community values is, to say the least, problematic for practitioners educated not to express value judgements. There are two subtypes of community-based



**Fig. 1.** The deontological (Kantian) ethics holds that every person is invaluable. The utilitarian ethics gives a value to the choice (individual based) or to the person (generally based on the economic value).

utilitarian ethics. One is based on pure economic considerations. According to this principle, the life of an industrial CEO should be saved preferentially over the life of a homeless person, as the latter is not economically productive, or simply would burden the society with the cost of a treatment he/she cannot pay for. As a matter of fact, in a capitalistic society, economic means do affect to some extent access to health care. Yet to screen patients for treatment based on their economic value is undefendable both from an ethical and a legal viewpoint.

The other form of community-based utilitarian ethics privileges individuals with the best life-expectancy and those whose contribution to the society's management is most important, such as health care professionals and security forces. This type of ethics may be the rule in a totalitarian society, but it may become acceptable even in a democratic society in case of an emergency, for example on a battlefield [4], where people are triaged into three groups: those who will die despite medical treatment, those who will heal without medical treatment, and those for whom medical treatment may make the difference between life and death. If having to distribute limited health care resources, it might be reasonable to concentrate them on people who are able to survive.

#### 4. Discussion of the Case

Clearly, in view of the COVID 19 epidemics the Italian government had decided that it was appropriate to adopt the medical ethics of a natural disaster situation. A definition of natural disaster in medicine is wanted [3] but it is reasonable to assume that a disaster is any situation in which the demand for care overwhelms the availability and therefore care needs to be rationed.

The answer to the first question: is it legitimate to ration health care in the course of a natural or man-made disaster is clearly yes. Though the determination of who is salvageable is subjective to some extent it is reasonable to prioritize those patients whose life may be saved by the treatment. We should underline again that reserving life-saving

health care to the residents or the citizens of a nation contradict the principle of justice. This decision may be politically wise but policy-like foolish. It opens the door to the possibility that Italian citizens traveling abroad be denied life-saving care in the course of a disaster. And in any case it is ethically unsustainable, as it implies that a human life is worthier than another based on geographical or ethnical origin.

The answer to the second question is more complicated and, in our opinion, it should be no for two reasons:

1. Chronologic age is a poor marker of a person's life expectancy and resilience [5]. Given his excellent health, the professor of medicine might have had a physiologic age of a 60 year old.
2. While it appears legitimate to prioritize salvageable individuals for life-saving treatment, life expectancy should not be a criterion. First because life expectancy is difficult to determine [5], second because nobody has the right to decide how worthy is even a short life expectancy. If life expectancy were to be a criterion a thirty year old with metastatic breast cancer would also be ineligible for ventilatory support, even if this person were still active in the community and in the family.

#### 5. Conclusions

As anticipated in the introduction, we did not plan to provide definitive answers to the questions we posed and we will welcome any comments to our paper.

The COVID 19 epidemic highlights the ethical dilemma of when it is legitimate to ration health care. While the epidemic may be compared to a natural disaster or to a battlefield, the problem of rationing may become compelling even in non-emergent situations. The aging of the population by itself may overwhelm the capacity to provide care. We can draw three provisional conclusions:

1. It is ethically acceptable to ration life-saving care in the course of a disaster. Though the definition of a national emergency is wanted, it is

acceptable to consider an emergency as any situation in which the demand of life-saving care exceeds the availability. It is unacceptable, however, to limit life-saving care to the resident of a certain region or country, as this provision refutes the principle of justice.

2. Age and life-expectancy are not legitimate categories to assign life-saving treatment. Salvageability is and so is the prioritization for certain groups of individuals such as active health professionals or members of the security forces.
3. This epidemic is an opportunity for everybody to revisit the issue of living wills. Given the fact that health care resources may become scarcer with the aging of the population, it is a civic duty to make one's preference known in advance and avoid in this way overburdening the sanitary system. As geriatric oncologists we have the duty to illustrate to our patient what is a realistic prognosis in each individual case and allow people to manage their end of life.

### Declaration of Competing Interest

The authors do not report any conflict of interest.

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