Since January 2020 Elsevier has created a COVID-19 resource centre with free information in English and Mandarin on the novel coronavirus COVID-19. The COVID-19 resource centre is hosted on Elsevier Connect, the company's public news and information website.

Ethics, Medicine and Public Health 17 (2021) 100653

Available online at
ScienceDirect
www.sciencedirect.com

Elsevier Masson France
EM|consulte
www.em-consulte.com/en

LETTER TO THE EDITOR

COVID-19 vaccine: Risk of inequality and failure of public health strategies

KEYWORDS
COVID-19;
Inequality;
Public health;
Sars-CoV-2;
Vaccine

Dear editor,

COVID-19 pandemic, since 2020, has caused significant health, social, medical-legal and economic problems worldwide [1—5]. After considerable scientific efforts, and a heated debate on various bioethical issues [6], some effective vaccines against SARS-CoV-2 were produced.

Since they were put on the market, these vaccines have been widespread in most of the world's rich and developed states.

However, since the beginning of the worldwide vaccination campaign, it was clear that these vaccines would not be widely usable by low income/developing countries [7]. In fact, analyzing the pre-orders of about 10 billion doses of vaccines against COVID-19 — including most of the 2021 manufacturing capacity — it is clear that most of these doses will be destined to rich and industrialized countries. Countries that pre-ordered most of the doses were Canada, USA, United Kingdom, Australia, European Union and Japan. A much smaller number of doses was pre-ordered by the poorest countries or by the so called COVAX joint fund (World Health Organization). Thanks to this joint fund, by the end of 2021, it is hoped that 2 billion doses will be distributed to low-middle-income countries. However, at the moment, the vaccination campaign is carried out mainly in high-income countries and, therefore, in developing countries there is still a considerable exposure and spread to COVID-19 [8]. In addition, it is important to stress that both the distribution of vaccines in low-middle-income countries and vaccination campaigns will take a long time. So, actually, rich countries will get access to COVID-19 vaccines earlier than poor ones. In some low-income countries, widespread vaccination coverage will be achieved after 2023 [9]. This means that the richest citizens of the world can be vaccinated and can prevent the consequences, even deadly, of COVID-19, while the poorest citizens will be much more exposed to the infection with potentially serious risks to their health. Obviously, this situation generates a serious inequality, once again, based on the wealth of a nation or a single citizen [10].

Today's reality is, therefore, marked by a considerable contradiction with respect to the provisions for the protection of human rights over time.

In fact, as early as 1948, Article 25 of the Universal Declaration of Human Rights stated that ''Everyone has the right to a standard of living adequate for the health and well-being of himself and of his family, including food, clothing, housing and medical care and necessary social services''. In 1966, article 12 of International Covenant on Economic, Social and Cultural Rights (United Nations), stated: ''The States Parties to the present Covenant recognize the right of everyone to the enjoyment of the highest attainable standard of physical and mental health [...] The prevention, treatment and control of epidemic, endemic, occupational and other diseases...''. In 1999, article 10 of additional protocol to the American convention on human rights in the area of economic, social and cultural rights stated that: ''In order to ensure the exercise of the right to health, the States Parties agree to recognize health as a public good and, particularly, to adopt the following measures to ensure that right [...] Universal immunization against the principal infectious diseases; Prevention and treatment of endemic, occupational and other diseases [...] Satisfaction of the health needs of the highest risk groups and of those whose poverty makes them the most vulnerable''.

These statutes, pacts etc. are certainly reassuring to read but, unfortunately — as demonstrated by the current evolution of the anti-COVID-19 vaccination campaign — seem to be just theories, fair, admirable but with a reduced real and practical feedback.

The inequality of the distribution of vaccines against SARS-CoV-2 has not only bioethical consequences but also public health consequences.

In fact, the possibility that billions of people will not be vaccinated before 2023 will cause a continued uncontrolled spread of COVID-19 around the world. One of the main risks of this constant spread is the development of further variants of SARS-CoV-2 that could, in the future, also make totally ineffective vaccines today on the market with significant consequences on global health and the world economy. In fact, the greater the number of subjects infected by SARS-CoV-2, the greater the risk of producing new viral variants. The most effective solution to reduce this risk is to drastically reduce the spread of the virus and the number of infected subjects.

As a result, a global effort will be needed which must involve above all high-income countries. In fact, it is

considered that COVAX Joint is not, alone, sufficient to meet the need for vaccines in low-middle-income countries. Therefore, the participation, including economic participation, of the richest and most developed states will be of crucial importance. Only in this way will it be possible to vaccinate the maximum number of citizens with positive bioethical implications but also with optimal global health results.

It is precisely in these moments of critical emergency that National Health Systems, world governments, pharmaceutical companies, can demonstrate that the health equity and health equality are not only a just and reassuring theory, but are inviolable rights of every human being.

Funding

No funding was received for this article.

Disclosure of interest

The authors declare that they have no competing interest.

References

[1] Cioffi A, Cioffi F, Rinaldi R. COVID-19 and abortion: the importance of guaranteeing a fundamental right. Sex Reprod Healthc 2020;100:538, http://dx.doi.org/10.1016/j.srhc.2020.100538.
[2] Cioffi A, Rinaldi R. COVID-19 and healthcare-associated infections. Int J Risk Saf Med 2020;31:181—2, http://dx.doi.org/10.3233/JRS-200056.
[3] Cioffi A, Rinaldi R. COVID-19 and medical liability: a delicate balance. Med Leg J 2020;88:187—8, http://dx.doi.org/10.1177/0025817220935879.
[4] Montanari Vergallo G, Bersani G, Rinaldi R. COVID-19 and psychiatry: can mental illness justify further exceptions to the obligation to stay at home? Riv Psichiatr 2020;55:245—9, http://dx.doi.org/10.1708/3417.34002.
[5] Marinelli E, Busardò FB, Zaami S. Intensive and pharmacological care in times of COVID-19: a ''special ethics'' for emergency? BMC Med Ethics 2020;21:117, http://dx.doi.org/10.1186/s12910-020-00562-7.
[6] Cioffi A. Coronavirus disease 2019: is everything lawful to create an effective vaccine? J Infect Dis 2020;222:169, http://dx.doi.org/10.1093/infdis/jiaa216.
[7] Mullard A. How COVID vaccines are being divvied up around the world. Nature 2020, http://dx.doi.org/10.1038/d41586-020-03370-6 [Online ahead of print].
[8] Our World in Data. Coronavirus (COVID-19) Vaccinations, 2021. Oxford Martin School. Available to: https://ourworldindata.org/covid-vaccinations.
[9] The Economist. More than 85 poor countries will not have widespread access to coronavirus vaccines before 2023, 2021. The Economist Group. Available to: https://www.eiu.com/n/85-poor-countries-will-not-have-access-to-coronavirus-vaccines/.
[10] Cioffi A. Public and private health services: wait times for health services and the risk of inequality from the Italian perspective. Popul Health Manag 2020, http://dx.doi.org/10.1089/pop.2020.0091 [Online ahead of print].

A. Cioffi [a,*], F. Cioffi [b]
[a] *Department of Anatomical, Histological, Forensic and Orthopaedic Sciences, Sapienza University of Rome, Rome, Italy*
[b] *Fertilitas Day Surgery Reproductive Medicine, Salerno, Italy*

* Corresponding author.
E-mail address: an.cioffi19@gmail.com (A. Cioffi)

Received 5 March 2021;
accepted 14 March 2021
Available online 19 March 2021

https://doi.org/10.1016/j.jemep.2021.100653