



The pandemic of the unvaccinated: a Covid-19 ethical dilemma



Introduction

During the first wave of the Covid-19 pandemic, beginning February 2020, the effective strategies for decreasing the number of new cases and mortality were quarantine, contact tracing, screening and isolation, as well as personal measures such as handwashing, mask wearing, and physical distancing.^{1–3}

On December 11 2020, the Food and Drug Administration (FDA) issued an Emergency Use Authorization for the Covid-19 vaccine. At the time, the third wave of Covid-19 with a predominance of the Alpha variant (also known as the B.1.1.7) emerged in Israel. The Israeli Ministry of Health (MOH) approved the distribution of the BNT162b2 Pfizer vaccine on December 20 2020, prioritizing high risk patients such as individuals older than 60 years, those with severe comorbidities, nursing home residents and healthcare workers. Due to a rapid increase in the number of cases and hospitalizations, the government also imposed a lockdown on January 8th 2021. Two months later, a significant drop in hospitalizations and in severe cases was observed, particularly among individuals older than 60 years. Subsequently a drop in cases was observed in younger age groups, indicating that the decline in cases was largely attributed to vaccination.⁴

The fourth wave of Covid-19 emerged on June 2021 with a rise in daily cases, predominantly the Delta variant (AY.4.2) peaking at over 10,000 during September 2021.⁵

Due to an observed waning efficacy of the Pfizer vaccine against infection by the prevalent Delta variant, the MOH authorized an emergency third dose of the vaccine that was again, distributed gradually according to risk prioritization.⁶ Thanks to a high vaccination rate, no further lockdown was imposed. With only minimal restrictions the economic impact was minimal compared to previous waves of Covid-19.⁷

The increasing number of cases emphasized the distinction between the vaccinated and the unvaccinated. With almost 70% of the Israeli population vaccinated, unvaccinated individuals were more likely to suffer from severe disease, require mechanical ventilation and/or ECMO and were more likely to require ICU hospitalization. Most vaccinated patients did not require any medical intervention. The post-vaccine pandemic was described as the “Pandemic Of The Unvaccinated”.⁸

The Pandemic of the Unvaccinated

During the peak of the fourth wave, 90% of the most severe Covid-19 patients were unvaccinated patients.⁹ The use of ECMO machine was offered as a last resort for Covid-19 patients with severe pulmonary compromise.¹⁰ The total number of ECMO machines available in Israel is 82. One third of them are intended as backups for those in

use. During mid-September 2021, 46 Covid-19 patients were on ECMO, six additional machines were in use for other indications leaving only a handful of machines available for new patients. All the Covid-19 patients on ECMO were unvaccinated or only partially vaccinated.¹¹ The scarcity of the ECMO machines and intensive-care operators, forced the medical caregivers to prioritize certain patients. The unvaccinated patients tended to be younger with a higher survival rate. The critically ill patients who were vaccinated were usually older, with more comorbidities and lower chance of survival.¹⁰ The younger but unvaccinated patients were prioritized.

The fifth wave emerged in Israel on December 2021 with the predominance of the Omicron variant (B.1.1.529). New and expensive treatments for Covid-19 were approved by the FDA and were purchased by the Israeli government. Medications such as Remdesivir and Baricitinib demonstrated improved survival for selected high-risk patients. The MOH decided that the medications be given for patients over the age of 60 or the unvaccinated. The unvaccinated were prioritized once again.

The Israeli public healthcare system offers many of the advantages of a socialized medical system. Vaccines, including the Covid-19 vaccine, are widely and freely available for all.^{12,13} The limited number of public medical resources available during the pandemic, however, has raised a new ethical dilemma which is not easily addressed; Is it justified that the unvaccinated patients will be prioritized for ECMO or additional novel treatments at the expense of vaccinated individuals with lower chance of survival from severe disease? There is a medical logic in providing the most scarce but effective treatments for those with the best prognosis, but is it the most ethical decision, given that the vaccinated patients with a poorer prognosis had taken responsible steps to avoid infection by getting vaccinated? Does the distinction between the vaccinated and the unvaccinated patients withstand the ethical premises of good medical practice?

Many arguments can be brought against the prioritization of the unvaccinated. First, they have knowingly endangered themselves and the vulnerable around them such as the elderly, young children and immunocompromised individuals, as it is known that vaccinations reduce the risk of Delta and Omicron variants infection and accelerate viral clearance.¹⁴ Second, as predicted by E. Goldman in his letter, “How the unvaccinated threaten the vaccinated for COVID-19: A Darwinian perspective”, the virus SARS-CoV-2 can mutate into many variants and the unvaccinated serve as a reservoir for the virus to continue to multiply. When most of the population is vaccinated, natural selection will favor a variant that is resistant to the vaccine.¹⁵ In this way the vaccinated contribute to the persistence of the virus.

The unvaccinated patients can also be compared to organ recipients who are opposed to donating organs themselves. According to the Israeli law, candidates who have been registered as donors for at

least 3 years before listing will be prioritized for receiving organ donation when needed. As described by professor Jacob Lavee et al., the organ candidates who refuse organ donation themselves are called “free-riders” and the prioritization for organ donation by law is called “reciprocal altruism”- for acting in ways that benefit others in need of organs – one will receive priority in getting an organ that one should need.¹⁶ However, while registered donors are prioritized for organ donation when needed, vaccinated patients are not prioritized for scarce medical treatments although their undeniable contribution to society by herd immunity, decreasing the burden of disease etc.¹⁷

New answer to an old dilemma

Opposition to vaccinations has existed for as long as there have been vaccinations. In the early 1800s, Edward Jenner demonstrated that an intentional infection from a sample drawn from a lymph node of a cowpox blister can provide protection against smallpox. Jenner met with immediate public criticism on various grounds including sanitary, religious, scientific, and political objections. Years later, the Anti Vaccination League and the Anti-Compulsory Vaccination League were formed in response to laws mandating vaccination. Although vaccination is considered to be one of the greatest achievements of public health in the modern era, decreasing mortality and morbidity of various infectious diseases including elimination of poliomyelitis in the Americas and the worldwide eradication of smallpox, vaccine hesitancy is still believed to be responsible for decreasing vaccine coverage and an increasing risk of vaccine-preventable disease outbreaks and epidemics.^{18,19}

One can argue that many of the unvaccinated are victims of misinformation and fake news. Studies have shown that individuals who delayed or refused vaccines are significantly more likely to have looked for vaccine information on the internet, where inexact or negative content regarding vaccinations is predominant. For example, in a study simulating a patient’s search for advice on the potential link between MMR and autism using the Google search engine, Scullard and collaborators have reported that only 51% of the websites provided the correct information about the fact that no association has ever been demonstrated. The scientific community does not always excel at providing information in an accessible and user-friendly way. For example, the removal of thimerosal, a mercury-containing preservative, from vaccines for children in the US even though there was no evidence of mercury poisoning as a result of those vaccines, was perceived as a confirmation for the anti-vaccination movements.¹⁸ Vaccination compliance has been shown to be associated with the ability to detect fake news as well as higher levels of education.^{20,21}

An epilogue – in the spirit of the Hippocratic Oath

Despite criticism on the part of the medical community towards the unvaccinated,²² the answer to this dilemma can be found within the Hippocratic oath and its modern versions such as “The revised 2017 WORLD MEDICAL ASSOCIATION DECLARATION OF GENEVA”²³ which sets the individual physician free from personal judgment and provide the best medical care for all patients without discrimination, the same as a patient with lung cancer will receive the best medical care regardless of him being a smoker or not. However, the limited health resources during the pandemic required making tragic choices which might challenge this principle. The World health organization (WHO) offers 4 possible ethical principles for resource allocation during the pandemic: “Equality”, “Best outcomes”, “Prioritize the worst off” or “Prioritize those tasked for helping others” such as health care workers, first responders etc. All allocation principles may be relevant or justified at different stages of resource scarcity. Irrelevant characteristics of specific groups such as ethnicity, race or creed should play no

role in any resource allocation during a pandemic, which reflects the commitment to treating all patients with equal respect.²⁴

Summary

Unfortunately, stigma and discrimination as a prism for allocating health-care services is already embedded in our society, however it should not be institutionalized.²⁵ Governments and public health educators have the responsibility to engage citizens with trustworthy scientific information. Society-centric health care policy based of ethical principles of fair allocation and public health education will allow physicians to focus on providing the best patient-centric medical care. The better and more creatively we approach this issue today the safer and healthier the general public will be tomorrow.

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