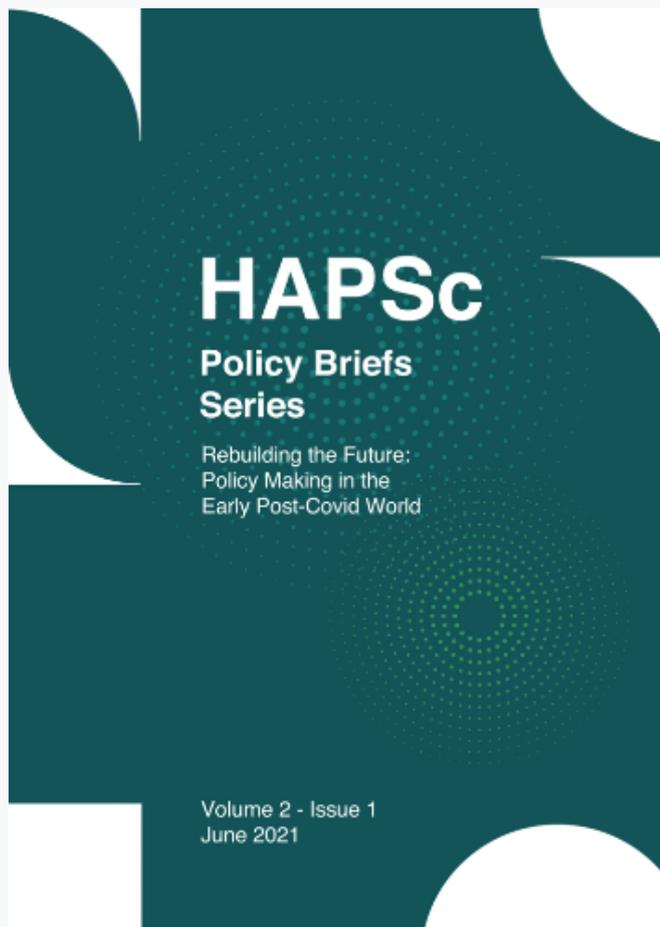


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### The Anti-Vaccination Movement: A Serious Threat to Public Health

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# The Anti-Vaccination Movement: A Serious Threat to Public Health<sup>1</sup>

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## Abstract

The accomplishment of the ‘‘herd immunity’’ is the most important challenge in the Early Post Covid World. However, the challenge becomes even more complicated when a large amount of the general population refuses to get vaccinated because of various fears and concerns. Although the digital age has numerous benefits, social media platforms can create a gap between pro-vaccination supporters and anti-vaccination supporters. The strong presence of the latter on social media can be worryingly harmful for each country’s vaccination procedure. Despite the indisputable efforts of every country to limit the spread of the vaccine hesitancy, we observe that the number of the anti-vaccination supporters has increased. As a result, this urgent and dangerous situation demands decisive actions, in order to secure public health. It is true that a lot of countries are making efforts to encourage vaccination and to combat anti-vaccination campaigns. Information about the risks and benefits, research for new vaccines, improvement of vaccine supplies are some of the strategies that the states are practicing. But are they enough? The strategies for the resolution of the problem should be more specific and more focused on the real problem. In this policy brief we suggest a number of measures that would be able to contribute to a stronger Immunization System. Some of the recommendations are the association between the WHO and vaccine manufacturers, the collaboration between public and private field, organized campaigns for vaccination, powerful online pro-vaccination campaigns, the contribution of certain specialists, the possibility to get vaccinated by other channels, simpler supply and transporting, penalties to health personnel who refuse to get vaccinated, stricter laws for ‘‘herd immunity’’, assessment reports by the WHO in case of insufficient supplies.

**Keywords:** vaccination; anti-vaccination movement; herd immunity; Covid-19; public health; social media platforms; misinformation; WHO; pandemic; pro-vaccination.

## Introduction

Vaccination of the general population is the only way to fight a pandemic, but what happens when part of the population refuses to get vaccinated? The COVID-19 pandemic poses a very serious global threat, making the appliance of drastic measures urgent for every country. Each government, each society, each administrative unit has to take care of its own members, so as to make a universal impact. Therefore, the international community, adhering to the instructions given by the World Health Organization (WHO), attempts to achieve the much-discussed ‘‘herd-immunity’’ through mass vaccination. However, we observe an aggressively developing campaign referred as the ‘‘Anti-vaccination Movement’’. This phenomenon is related to the trend of opposition to vaccines because

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of various fears or notions. A concerning amount of population spreads the idea of refusing vaccination against COVID-19 through books, documentaries, and social media. Consequently, this movement hampers the progression towards immunity and stands in the way of hope that our lives will someday return to regularity. It is necessary to confront decisively the anti-vaccination hesitancy and publicly expose the dangers of refusing to get immunized for such a contagious virus, as SARS-COV2.

### **Current situation regarding the anti-vaccination movement**

To bring this pandemic to an end, a high percentage of the population needs to be immune to the virus. The importance of vaccines should be undeniable as they can prevent diseases and infections, to prolong progressively life expectancy. For example, children's diseases such as smallpox and rubella have been greatly reduced through vaccines and polio has been nearly eradicated. Within less than 12 months after the beginning of the COVID-19 pandemic, various research teams responded decisively to this threat and developed vaccines that protect from SARS-CoV-2. However, the negative attitude of an amount of people to vaccines can, unsurprisingly, be a limiting factor to the vaccination process. Mercury content, autism association, possible side effects and even the new conspiracy theory of microchip injection via the vaccine have been commonly found in anti-vaccination messages (Pullan & Dey, 2021). In some cases, anti-vaccine activists are fabricating stories of deaths that never occurred (Szabo, 2021). Many Europeans, for example, have doubts because of the fast rate at which the vaccines were tested and approved, and the latest fears over the AstraZeneca vaccine have added to their concerns. There is no doubt that in the digital age, the social media platforms have a major impact to this anti-vaccination trend. According to the survey of the Center for Countering Digital Hate, 409 Anti-Vaxx social media accounts with a total of 58 million followers have been found. The 147 most popular accounts had gained at least 7.8 million followers since 2019, an increase of 19% (Burki, 2020). For example, a research from BBC found that the number of followers of pages sharing extreme anti-vaccine content in French grew in 2020, from 3.2m to nearly 4.1m like. (BBC, 2021). A US poll in May showed only about half of Americans were committed to taking a vaccine (Kuchler, 2020).

In addition, nowadays, Google is a very useful tool to demonstrate the public opinion regarding vaccines. Google Trends display population-adjusted data reflecting the popularity of the search at a given time. A recent research about Google searches relating to anti-vaccination terminology in association with COVID-19 showed that the terminology frequently used by anti-vaxxers includes terms such as "mercury", "autism" and other specific words, which depict various other worries, in

combination with the words “Covid-19” and “vaccines”. Furthermore, a different Google Trends search was conducted about sentences including the terms “coronavirus vaccine” and “safe” or “dangerous”. These specific words were chosen to cover a wide range of possible anti-vaccination search terms. They are the ones most frequently used by the anti-vaccine claims. The results of the research illustrate that the interest in anti-vaccination search terms in relation to COVID-19 vaccines peaks in early-mid March 2020. At the same time in the USA, where these search terms are most prevalent, human vaccine trials start. The interest remains intense, especially in autism-related search terms, and those including the terms “safe” or “dangerous” (Pullan & Dey, 2021).

Anti-vaccination social and online messages, according to several research surveys, will include emotional propaganda, false allegations, story recounts and intense concerns about vaccine safety. On the other hand, pro-vaccination posts, in general, aim to address their reports with facts, statistics and various evidence-based documents (Pullan & Dey, 2021).

A paper published in *Nature* in 2020 mapped online views on vaccination. Anti-vaccination clusters, despite their smaller overall scale, manage to get deeply involved with undecided groups of people in the main online network, whereas pro-vaccination clusters are more passive, according to the writers. They anticipated that the anti-vaccination campaign will overwhelm pro-vaccination supporters online in ten years (Johnson, et al., 2020). It is true that anti-vaccination groups have a much larger social media presence than pro-vaccination groups. If a person is in doubt about vaccines and decides to do an online research, websites and document regarding the anti-vaccination claims may appear first in the list of results. This is reasonable, as these websites and documents are more “user-friendly”, in comparison to scientific-based pro-vaccine websites. As a consequence, this may discourage more individuals to proceed to vaccination (Burki, 2020).

Global anti-vaccine messaging is threatening to prolong the pandemic. Some extremely rare cases of blood clots caused the United States to pause roll-out of the Johnson & Johnson vaccine, and many European states have stopped or restricted use of the AstraZeneca vaccine for similar reasons. However, those communities have other vaccine alternatives, which is not the case for many other countries. In March, Cameroon and the Democratic Republic of the Congo halted use of the Oxford–AstraZeneca vaccine, and the African Union has stopped procurement (Hotez, 2021).

## **Recommendations**

A passive reaction is not anymore acceptable in order to eliminate the problem of the anti-vaccination trend and as a result, encourage the vaccination progress. Consequently, a common, coordinated communication and collaboration at global level is needed. Therefore, it is reasonable to propose

some recommendations which may contribute to a more effective vaccination and immunization policy.

An effective policy could be the establishment of a clear framework for helpful collaboration between the WHO and the vaccine manufacturers, to encourage data sharing and deep research of possible vaccination needs. Every country should inform regularly the WHO about the procedure, the progress or the obstacles that might occur. The WHO, in turn, should be available and take into consideration the data shared by each country. After the estimation of the situation, the Organization should take suitable measures in order to protect each country.

When supplies are insufficient, the WHO should directly and rapidly inform the countries by assessment reports about the risks of a group of population not being vaccinated. As a result, the doses will be provided to the group who needs to be vaccinated, even with some delay.

In addition, information and communication is very important in modern society. The vaccination campaigns addressed to different groups such as, healthcare professionals, adolescents, parents, older adults, would be an essential tool. This demands, of course, the participation of local institutions (schools and universities, health insurance companies).

Attempting to convince a vocal vaccination denier to change their mind in a public debate is unlikely to succeed. The purpose of the public debate with the denier is not to persuade him to change his mind. Even if it is set up to look as such, a public discussion is not actually a dialogue between the participants. The audience is the public. The dialogue is an excellent opportunity to educate those audience members who are hesitant, convince sceptics and strengthen the knowledge and arguments of all against anti-vaccine rhetoric (WHO, 2016).

Online pro-vaccination campaigns should have a more significant presence on social media platforms. The websites can be more attractive and user-friendly. The information given should be simple and accessible, as they address to all the members of the society.

Online pro-vaccination campaigns will have more powerful impact in association with online seminars with specialists (infectious disease specialists, representatives of pharmaceutical companies etc.). The seminars should raise awareness to the general public, coordinate Q&As, Live Chats and encourage the participants to visit relevant sources.

Although social media platforms, such as Facebook, have started detecting fake news and misinformation, the algorithms should be more sensitive and identify fake news and as a result, limit their spread.

We may also take into consideration that vaccines should be accessible to other fields as well. For example, vaccination by pharmacists, onsite vaccination in hospitals ward etc. This will increase the vaccination rates.

Another idea in order to encourage people to get vaccinated, is the vaccination at home. Individuals can have the capability to apply via an online platform and schedule a vaccination date where Task Forces can arrive at their home and vaccinate them.

An effective way to reduce fear, concerns and psychological pressure that may emerge due to the vaccination, is the contribution of appropriate psychological support. Psychologists can be recruited by social, medical and educational structures to support the pro-vaccination campaigns.

Furthermore, simpler and not complicated regulations regarding the regional vaccine packaging and labeling should be practiced in order to transport supplies more easily in countries when there is shortage. It is necessary to organize properly the places that will host the pharmaceuticals (European Commission Directorate-General for Health and Food Safety, 2020).

Activate a constant collaboration and communication network between individual sectors/ factors and public health authorities. In this way, these two essential sectors will be more able to monitor the progress of vaccine proposals and to correspond to vaccine demands.

Moreover, social services should play a more active role in cases such as incidents of health personnel refusing to comply with the obligatory vaccination programs of each State, and thus ensuring a much safer public health environment for everybody.

Governments should be stricter regarding ‘herd immunity’ by implementing the appropriate legal framework. When the majority of the population is immune, the society is less threatened by a virus or bacteria infecting its members. It is less possible for a disease to spread when the number of not vaccinated people is insignificant as the vaccinated ones create a ‘wall’ of immunity around them.

Regular analysis of epidemiological data and statistical predictive models is necessary, as priority will be given to population groups, who are either vulnerable or are most likely to spread the virus.

We ought to encourage innovative vaccine researches, new technologies that will definitely help the improvement of the vaccine industry. On the other hand, if we wish to improve the vaccine industry, we first have to identify the factors that pose an obstacle to its development and eliminate them successfully.

## Conclusions

Vaccine hesitancy has existed since the appearance of the first vaccines in the late 18th century. Voltaire wrote that the English were “fools and madmen” because of their adoption of vaccination. Opponents of immunization, once perceived as fairly marginal groups, now have a global influence and their numbers are growing (Kuchler, 2020). The World Health Organisation’s top ten threats to global health in 2019 included vaccine hesitancy, the reluctance or refusal to vaccination despite vaccine availability (World Health Organization, 2019). We might easily conclude that all these policies can, ideally, be implemented by the beneficial contribution of the WHO at an international level. It is time to take further action in order to ensure the preservation of high level of global public health immediately.

“The greatest enemy of knowledge is not ignorance, it is the illusion of knowledge”.

-Stephen Hawking.

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