COVID-19 vaccinations & financial incentives

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Reviews

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Introduction

COVID-19 is an infectious respiratory disease caused by the SARS-CoV-2 virus that was first identified in November 2019 in Wuhan, China. This disease has quickly spread to a pandemic threatening the entire world. Standard method of diagnosis is real-time reverse transcriptase polymerase chain reaction (RT-qPCR) testing from a nasopharyngeal swab or sputum sample, and antibody analysis from a blood serum sample. In addition to laboratory diagnosis, COVID-19 disease can be diagnosed based on symptoms and risk factors, and the result of a chest CT (computed tomography) scan showing signs of pneumonia. This disease has serious health and social consequences, which is why it is so important to promote its prevention, namely the vaccination program (1).

The symptoms of COVID-19 are very diverse, but the most common are: fever, dry cough, fatigue and sputum production. Other symptoms include shallow breathing, muscle or joint pain, sore throat, headache, chills, nausea or vomiting, stuffy nose, diarrhea, hemoptysis and conjunctival congestion. If a person develops such symptoms, they should stay at home and immediately consult a health care specialist to determine further actions. It is also important to follow hygiene rules, such as frequent hand washing and disinfection of surfaces, and the use of protective masks to avoid infection or the spread of the virus (2).

The COVID-19 pandemic, caused by the SARS-CoV-2 virus, has had and continues to have a major impact on a global scale, including fatalities and social and economic disruption, also affecting the European Union and its Member States. Vaccines against COVID-19 can be a lifesaver in the fight against the virus and help protect those at risk of infection, including healthcare workers, the elderly and patients with chronic diseases. In addition, these vaccines effectively limit the spread of the virus. That is why it is so important to widely promote vaccination against COVID-19 and ensure the safety and effectiveness of these vaccines, which allows the return to normality in social and economic life (3).

The first COVID-19 vaccine was developed and launched within a year of lab trials. This event is an extremely important breakthrough in the scientific field. Work on the development of the vaccine began on January 11, 2020, when the genetic sequence of the SARS-CoV-2 virus was published. The first registered vaccine was an mRNA preparation developed by Pfizer-BioNTech, which was granted marketing authorization on December 2, 2020 in the United Kingdom (as a temporary supply procedure) and on December 21, 2020 in the European Union (as a conditional marketing authorization). The time from the discovery of the genetic sequence of the virus to the registration of the vaccine was short of 350 days, which is a significant step forward in the field of vaccinology (4).

COVID-19 vaccination in Poland

As of October 16, 2024, 58576631 vaccinations against COVID-19 were carried out in Poland. So far, 22876655 people have been vaccinated with the first dose of the COVID-19 vaccine, 19759150 people have been vaccinated with the second dose, 193926 people have been vaccinated with the third dose, and 15746900 people have been vaccinated with the booster dose (5). The COVID-19 vaccination report in Poland, broken down by province, is presented below:

Table 1. Report of vaccinations against COVID-19 in Poland by province, as of: 10.16.2024

Voivodeship	Total number	First dose	Second dose	Third dose	Booster dose	Percentage of vaccinated people with at least 1 dose
Dolnośląskie	4715433	1807546	1565366	13502	1329019	63,00%
Kujawsko-pomorskie	3169499	1223561	1056361	10442	879135	58,89%
Lubelskie	2637142	1057782	918664	11749	648947	50,03%
Lubuskie	1624548	647522	541439	5037	430550	64,39%
Łódzkie	3802967	1471371	1296077	15368	1020151	60,24%
Małopolskie	4855999	1909347	1670004	12751	1263897	56,65%
Mazowieckie	9400159	3589353	3129738	34228	2646840	67.23%
Opolskie	1347732	532107	466365	4491	344769	54,30%
Podkarpackie	2316681	973519	837323	7091	498748	45,94%
Podlaskie	1600977	654094	566702	5621	374560	55.79%
Pomorskie	3902845	1498983	1305483	13187	1085192	64,87%
Śląskie	6906811	2667056	2319200	17908	1902647	59,40%
Świętokrzyskie	1625206	652507	562946	5168	404585	52,92%
Warmińsko-mazurskie	2024550	788309	685959	8894	541388	55,61%
Wielkopolskie	5923986	2340023	1935506	18844	1629613	67,68%
Zachodniopomorskie	2722090	1063575	902017	9644	746854	63,02%
Whole country	58576631	22876655	19759150	193926	15746900	61,26%

The data presented above shows that the number of people vaccinated with the third dose of the COVID-19 vaccine is significantly lower compared to the number of people vaccinated with the second dose of this vaccine. In some voivodships in Poland, even a hundredfold fewer people were vaccinated with the third dose of the vaccine compared to the second dose. This definitely indicates a decrease in interest in vaccines (5).

Financial incentives

In 2021, Rockford Public Schools (RPS), which is located in the USA, announced that students aged 12 and older will receive $50 gift cards for receiving the Covid-19 vaccine. O. Erdema et al. showed that financial incentives increased the vaccination rate of children by 2.64 to 4.23 percentage points over a baseline rate of 38 percent. Vaccination rates at the time would have been between 2.64 and 4.23 percentage points lower if there were no gift cards. Studies examining the uptake of vaccines by the whole population (not just children) indicate a similar, but in this case, smaller increase. A. Barber et al. show Ohio's "Vax-a Million" lottery increased vaccine uptake by 0.7 percentage points, study conducted by B. Acharya found that after analyzing 39 states, lotteries increased vaccine uptake by 2, 1% (6, 7, 8).

A study conducted at the University of Toronto found that a $1,000 financial incentive for people who are hesitant to get the COVID-19 vaccine can increase the vaccination rate to as much as 87%. According to the authors, most developing countries are still not even half vaccinated against COVID-19, however, vaccination is still considered an essential tool in the fight against the pandemic, and the findings related to the effectiveness of financial incentives can also be applied to other socially important goals, such as actions to combat climate change. An example would be the use of financial incentives to change behavior in the community (9).

V. Nandur, a doctoral student at the University of Toronto and one of the three co-authors of the study, points out that this finding has applications beyond the field of vaccinology and could be used in other areas to influence community behavior change. In his research a group of 2,500 people was asked if they planned to take a COVID-19 vaccine that met one of three conditions: it was free, effective or had no side effects. It turned out that the percentage of people who answered "yes" varied depending on the given condition and averaged around 70%. In the next step of the study, the researchers asked participants who answered "no" what amount would induce them to take the vaccine. The results showed that a financial incentive of $500 increased the rate of willingness to be vaccinated to 80%, while a $1,000 increase to almost 87%. According to the authors of the study, these results can help not only in encouraging people to get vaccinated against COVID-19, but also in other social areas where financial incentives can help influence community behavior. The study found that between 13 and 15 percent of participants were unwilling to receive a COVID-19 vaccine under any circumstances and for any amount of money. This is in line with previous research suggesting that vaccine doubters are not a homogeneous group, meaning that public health strategies need to target specific audiences. Even monetary incentives, i.e. money added as a motivation for getting vaccinated, are not a guarantee of effectiveness and in some cases can backfire (10).

Another interesting finding was that COVID-19 vaccines are free actually reduces the number of people willing to take them. People approach something that is free more wary and cautious. It should be emphasized, however, that this issue requires further research. The study also found that younger people and political conservatives had the strongest doubts about vaccines (11).

Serbia have introduced an offer to encourage people to get vaccinated. People who get vaccinated at the mall vaccination centers will receive shopping vouchers as an additional reward. This initiative gained great popularity, which was confirmed by long queues in the shopping centers, where vaccination points were set up. The first hundred people who were vaccinated received shopping vouchers as an incentive. This initiative to speed up the vaccination process has been very positively received. It was intended to speed up the vaccination process, which has slowed down in recent weeks due to anti-vaccine beliefs and conspiracy theories (12).

Nevertheless, it seems that every country has a different approach to similar types of incentives. Scientists from the University of Warsaw and the GRAPE Group asked over 6,000 Poles about their attitude to vaccinations. This study shows that the willingness to be vaccinated decreases - which is not surprising if the interviewed person had to pay PLN 70 for the vaccine. At the same time, if the respondents received such an amount, it would not significantly change their attitude to vaccination against COVID-19 - the percentage of positive responses did not increase (13).

The Polish government has introduced further facilitations to increase the number of people vaccinated against COVID-19. People who took the first dose of the vaccine could be vaccinated with the second dose at any point and during mass events. In addition, the National Immunization Program Lottery offered a chance to win valuable prizes such as hybrid cars, electric scooters and substantial cash prizes. It started on July 1 and was conducted by Totalizator Sportowy with the support of state-owned companies. Local governments could also join this initiative. The lottery was intended to encourage vaccination and was another way to increase the number of vaccinated people in Poland. Registration for the lottery took place online on a specially prepared website, in order to register, it was necessary to provide your personal data and a telephone number to which information on the results of the draw was to be sent. Lottery participants also had to provide their PESEL number and information on the date and place of vaccination (14).

The government also introduced additional solutions to promote the National Vaccination Program and encourage local governments to cooperate. Each municipality that joined the program received financial support from the government, however, the amount granted depended on the number of inhabitants. In addition, the government offered to provide additional prizes to municipalities that achieve the best rates of vaccination coverage. The first 500 communes that reach the level of 75% vaccination of their inhabitants received a prize of 100000 PLN, additionally the commune that achieved the highest level of vaccination in Poland received doubled prize. The money received by the communes could be used for any purpose, which in turn was supposed to allow the development of the local community. The introduced solutions were intended to encourage local governments to promote vaccination and join the National Vaccination Program, as well as to speed up the vaccination process in Poland (14).

Financial bonuses for primary care physicians who were successful in increasing the number of patients vaccinated were also intended to help achieve herd immunity against COVID-19. According to the order of the President of the National Health Fund, which entered into force on July 27, 2021 clinics could receive two forms of financial gratification: a partial bonus and a total bonus. This decision was intended to encourage more GPs to be more proactive in vaccinating their patients. Increasing the rate of vaccination was especially important in the face of the growing number of infections and the threat of further variants of coronavirus. This shows that primary care physicians are important partners in the fight against the pandemic and should be appreciated and rewarded for their contribution to health care (14).

General practitioners received a partial bonus for the percentage increase in the share of vaccinated patients in their population in two age groups: 12-55 and over 55, as of July 1, 2021. The amount of the bonus was dependent on the time in which the clinic carried out vaccinations, as well as on the age of the patients. The rate for vaccination of people over 55 was higher, as well as for vaccinations carried out from mid-July to the end of August and September that year. The aim of this program was to provide special protection for older patients and to ensure that vaccination rates are as rapid as possible. Thanks to such a reward system, GPs had more incentives to speed up the vaccination process, which, in the face of the increase in the number of infections and the threat of new variants of coronavirus, is particularly important for ensuring the safety of health and life of patients (14).

In addition to partial bonuses, a primary care clinic could receive an annual bonus for achieving one of the five thresholds for vaccinating its patients against COVID-19. These thresholds started at 60% and ended at over 80%. Each vaccination threshold was assigned a different financial rate. The amount of the total bonus was calculated by multiplying the rate assigned to a given threshold by the number of all patients over 12 years of age who were registered with a primary care physician (according to data as of 1 July). The overall bonus was one-off and was paid by January 15, 2022 (15).

An exemplary action was undertaken by some private companies from Rzeszów (Poland), which decided to give employees a bonus for getting vaccinated against COVID-19. Amid rising Omicron virus infections, city of New York has offered residents $100 for a booster shot and a similar offer appeared in Rzeszów. Patients were to receive money for vaccination against COVID-19 - 100 PLN in cash, as well as a gift packages, including free preventive examinations, with a total value of approximately 400 PLN. The total amount of funds raised for this purpose by the sponsors was not disclosed but it was reported to “exceed expectations” (16).

Discussion

A significant number of researchers are convinced that the introduction of financial incentives is ethical and can bring social benefits. For example, studies of G. Persad et al. suggest that financial incentives are a way to overcome barriers to vaccination, such as transportation costs and finding care for children. In turn, J. Savulescu argues that such incentives compensate for the risks people take for the public good of herd immunity. In other words, money can be seen as a reward for the sacrifices people make for the good of their society. C.A. Wong implies that small financial incentives can be an effective way to offset the costs people incur for vaccinations, such as transportation and childcare. According to him, such incentives can benefit more people and have a positive impact on public health (17, 18, 19).

However, some researchers believe that vaccination is a social obligation and that financial incentives may be considered "compulsory" and morally controversial. For example, E.A. Largent and F.G. Miller consider financial incentives a misuse of public resources and question their morality. It is worth emphasizing that the introduction of financial incentives must be carefully thought out and targeted, taking into account the possible risk of negative social effects (20).

Financial incentives for COVID-19 vaccination have raised some concerns, for example because they may displace pro-social incentives. Consequently, this may lead to less healthy and socially beneficial behavior when no payments are offered. There is also the risk of a general deterioration in morality and sense of civic responsibility. Secondly, the offered payments can create suspicion among people and increase their hesitation to engage in specific behaviors, especially when no payments are offered. Research has shown that people can interpret offering money as suspicious, which may result in disengagement from the activity or even raise further suspicions about the possible motivations involved in offering money. As a consequence, financial incentives may not be an effective way to motivate people, especially if they are viewed as suspicious or disproportionate (9).

Financial incentives also raise concerns about changing human values, such as attitudes towards money and financial incentives. The introduction of payments for specific behaviors can affect how people perceive the value of money and what value they attribute to other values, such as morality or social action. Moreover, there is a concern that the introduction of financial incentives may undermine people's sense of self-determination and make them feel compelled to behave in certain ways. People may feel compelled to act only because of money, and not because of a genuine belief or positive emotion resulting from the behavior. Research shows that financial incentives can influence self-perceptions, attitudes and values, which means that the introduction of such incentives must be well thought out and properly targeted so as not to cause negative social effects (21).

The US authorities have proposed various financial incentives to increase the number of people vaccinated against COVID-19. President Joe Biden suggested an idea to pay $100 to each person vaccinated. Each of these forms of incentives has its advantages and costs. One approach that has proven effective are gift cards, the introduction of such cards can bring financial benefits to people who have made the decision to be vaccinated, while increasing vaccination rates. Studies show that gift cards have proven to be an effective way to increase the number of people vaccinated, contributing to the improvement of public health (22).

Conclusion

Mass vaccination is the best way to fight the pandemic, but reaching large numbers of people can be challenging for a variety of reasons, including vaccine concerns. Covid-19 case is no exception, health experts and leaders are scrambling to find ways to persuade unvaccinated people to get vaccinated. Many people are scared and may not see the benefits of being vaccinated, only the risks. Therefore, it is important to educate and inform the public about the benefits and risks of increasing the number of people vaccinated and preventing the spread of the disease.

The introduction of financial incentives must be carefully thought out and take into account the potential social impact. In general terms, financial incentives are one of the approaches to increasing immunization rates, but their effectiveness may depend on the social context and their implementation should be tailored to each country or region.

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