

Project - Assignment 2

Vaccination against COVID-19

Group 1.3

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Introduction

Nowadays, people are interdependent more than ever and therefore rely on each other in their day-to-day lives: people rely on the supermarkets for food, on doctors to cure their illnesses and on shops to provide them with clothes. However, this reliance can sometimes have disastrous consequences. In 2020, the COVID-19 pandemic spread worldwide, which affected not only the world economy but also people's everyday lives. The coronavirus led others to not being able to be in close proximity to each other, which made the interdependency on others in society even more clear. Therefore, a solution is needed on how to deal with a way of living that is so different from what we are used to.

In the desperate need to deal with this situation, different approaches have been put forward, ranging from the obligation to wear masks to whole countries being locked down. Furthermore, governments have been allocating an unprecedented amount of resources towards vaccination development. However, a potential vaccine would only work if the population is also willing for its uptake, which consequently leads to the question of how governments can decrease vaccination hesitancy. Siegrist and Zingg (2014) for example strongly recommend increasing vaccination rates among health care workers, as these are often perceived as role models by the public.

In this paper, we therefore aim to design a message that motivates healthcare workers to get vaccinated against COVID-19. Consequently, this paper will include characteristics of the threat COVID-19, the psychological theories as to why people want or do not want to get vaccinated, the coverage of (social) media on COVID-19, the effects of the media on people's beliefs, the design of the message, and the effectiveness of the message.

Characterizing the Threat and the Situation

COVID-19 and its Consequences

'Severe acute respiratory syndrome coronavirus 2' (SARS-CoV-2), also called COVID-19, is a currently appeared contagious disease caused by the new coronavirus (WHO, 2020), which now leads to consequences for the individual, but also for society.

Emergences like fever, dry cough and tiredness are the most common symptoms for people (Cheng & Shan, 2020). Other less common symptoms can be complaints such as aches and pains, for example headaches or a sore throat, nasal congestion, conjunctivitis, enterorrhagia, loss of taste or smell, a skin rash, and discolouration of fingers or toes (WHO, 2020). The majority of people recover

without the need of professional treatment in hospitals, however, around 20% of people who get infected by COVID-19 are in a health-threatening situation due to the inability to breathe normally (WHO, 2020). Furthermore, the virus could have a fatal influence on the cardiovascular system and people infected can suffer from acute kidney failure (Lotfi et al., 2020).

Next to the individual consequences, a pandemic, such as the current COVID-19 pandemic, can have detrimental effects on the way of living inside communities, societies and countries. An incomplete or ineffective strategy to deal with a crisis like a pandemic can have multiple negative impacts. Some impacts that can occur, according to Kasperson et al. (1988) are enduring mental perceptions, images, and attitude, local impacts on the economy, political and social pressure and social disorder.

Contagion of COVID-19

According to the WHO (2020), the coronavirus, like many viruses, is contracted mainly from person to person through respiratory droplets emitted by an infected person. Coughing, sneezing and even talking can easily spread the virus through the air and put people nearby in danger of being infected. The spread of the virus is more likely when people are in close contact and when people do not protect themselves by, for example, standing at least 6 feet apart from other people or wearing masks that cover their mouth and nose (WHO, 2020).

There is an indication that people without symptoms can carry the virus as well as contacting it (Lotfi et al., 2020). COVID-19 can be also contracted when a healthy person touches a surface contaminated with the virus on it. The reason for this is that an infected person can spread the virus by touching surfaces and people who touched this particular surface are likely to touch their eyes, nose or mouth from where the virus can be transmitted into the body (Lotfi et al., 2020).

People most at Risk of getting Infected

There are several aspects accounting for the severity of a COVID-19 infection in different individuals. Generally, elderly and individuals with underlying health conditions are most vulnerable to a severe course of an infection with the coronavirus (Clark et al., 2020). However, Lotfi et al. (2020) state that children are just as likely to develop COVID-19, yet being less likely to develop severe symptoms. Among children under 18, those under the age of one are at most risk for severe symptoms.

Next to increasing age, there are some diseases and health conditions especially known to be a risk factor when being infected with COVID-19. Those are, amongst others, HIV/AIDS, chronic kidney disease, diabetes, cardiovascular diseases, and chronic respiratory diseases, with an estimate of 1.7 billion people having at least one of these health conditions and thus being at increased risk (Clark et al., 2020). Furthermore, one would expect individuals with close contact with those infected with COVID-19 to be at increased risk of getting infected themselves. Confirming those expectations, a

study conducted by Nguyen et al. (2020) found that front line health care workers are at increased risk of being tested positive compared to the general community.

Infection Prevention

There are several ways to decrease the risk of an infection. Important prevention measures accessible to the public are stated by the WHO (2020). First, the WHO (2020) stresses the importance of physical distancing which means that crowds and unnecessary travelling should be avoided. If physical distancing as in staying home and not meeting other people is not possible, it is advised to keep a distance of at least one meter to other individuals and wearing a face mask covering both nose and mouth (WHO, 2020). Another measure to prevent an infection with COVID-19 is to disinfect one's hands with a sanitizer consisting of at least 60% alcohol and wash one's hands with soap for at least 20 seconds on a regular basis, especially when entering shops and restaurants or other public areas (Lotfi et al., 2020).

Next to prevention measures applicable on an individual level, there are measures taken by the government or institutions such as the health care sector to counteract the spread of COVID-19. Such preventive measures are most importantly isolating affected individuals and lockdowns within certain cities (Lotfi et al., 2020). Another preventive action would be, next to isolating affected individuals, tracking the contacts of patients with other individuals (Lotfi et al., 2020).

As the measures to prevent an infection mentioned above are needed because of the missing possibility to vaccinate, and the treatment of patients is mainly symptomatic, the development of a vaccine and a large-scale vaccination would be the best way to reduce the risk of a further rapid spread of the coronavirus (Lotfi et al., 2020).

Vaccination to Ameliorate COVID-19 Situation

As described in the previous paragraph, there are several measures taken to 'flatten the curve' of new infections across the globe; face masks, hand and respiratory hygiene and distancing policies (World Health Organization, 2020; Lotfi et al., 2020). Those measures prevent aerosols and droplets from spreading, thus getting into the body of other individuals, leading to new infections.

However, those preventive actions come with several problems, including private and social costs but especially significant economic costs (Newbold et al., 2020). Therefore, the general community as well as public agencies and governmental institutions hope for the development of a vaccination to ease the current prevention measures.

Vaccines can act in two different ways: it either prevents infection by inducing an immune mechanism or the vaccination helps to fight already infected cells (Sell, 2019). Either way, the vaccine enables the creation of antibodies, thus the need to contract the virus is avoided. When a large proportion of a given population is immunised, the concept of herd immunity applies, which can

either be achieved through human to human transmission or in means of vaccination (John & Samuel, 2000). The latter is to be preferred in this case.

The immunisation of a majority of individuals might already be enough to beat back the spreading of COVID-19 thus current measures could be eased and further damage to society and economy can be reduced.

Psychological Theory To Understand Potential Individual Responses

Psychometric Paradigm - Vaccination Concerns

There is a good chance that people feel concerned about the risks of vaccinations due to a high magnitude or a high perceived dread. How these variables play into account can be explained with the psychometric paradigm.

According to Sjöber (2007), the Psychometric Paradigm is an approach focused on explaining how the general population interprets risks. People rate the risk based on the perceived dread, new-old and magnitude. Perceived dread in this context means the general population's concern about the possible effects of the risk. The new-old variable includes information like the time since this issue first occurred or the knowledge of mankind about it. The magnitude is the overall affected population. However, depending on the socio-demographic background, the risk shown in these scales is perceived differently for each individual (Sjöber 2007).

According to the WHO (2020), the vaccinated target population exceeds 80% for some vaccines. Therefore, it can be deduced that there is a high magnitude for vaccines. Because of this high magnitude, it can be assumed that people are concerned with the risks of vaccines. According to the vaccine information statement by the CDC (2017), many people experience mild consequences of vaccination (CDC, 2017). Albeit fussiness, redness, a light fever or a headache, up to 33% of vaccinated children are affected by mild consequences of vaccination. These are the high magnitude, low dread effects that are possible. However, the opposite is also possible: 1 in a million can experience more severe effects such as long term seizures, coma, and permanent brain damage (CDC, 2017). With these possible consequences combined with the individual differences in perceiving these risks and previous experiences with vaccinations, it is likely that there will be people holding an aversion or even fear of vaccines.

Protection Motivation Theory - Vaccination Willingness

Furthermore, it is important to understand what makes someone willing to execute certain protective actions. For this, it is essential to take a look at the Protection Motivation Theory (PMT). According to Floyd, Prentice-Dunn, and Rogers (2000), the PMT-model gives an indication of the reasons why people adjust their mindset and their behaviours the moment they encounter a risk. The PMT-model can be split up in the threat-appraisal process and the coping-appraisal process. In the threat-appraisal

process, someone starts assessing the situation for certain threats. The more threatening a situation feels, the more likely a person is to adapt to the threat. In the coping-appraisal process, someone starts assessing how well they think they will be able to execute and solve the hazard they are potentially dealing with. People will evaluate if the adapted behaviour will do what it is supposed to do (response efficacy) and if someone can execute the adapted behaviour (self-efficacy) (Floyd et al., 2000).

In addition, some studies give more insight into the predictors that fall under the threat-appraisal and the coping-appraisal. According to Ling, Kothe, and Mullan (2019), self-efficacy, response efficacy, susceptibility and severity were the main forecasters for the motive to carry out the behaviour.

To illustrate what makes people willing to execute protective actions, Chor et al. (2009) tested how inclined healthcare workers in Hong Kong were to get vaccinated for pre-pandemic situations. More than half of the participants refused to get vaccinated. Chor et al. (2009) found that this was because healthcare workers were scared of the after-effects of vaccinations. In addition, healthcare workers were not sure about the effectiveness of vaccinations (Chor et al, 2009). They found that the main motives to vaccinate were the desire to feel safe and the desire to listen to the recommendations from health authorities.

Thus, people will execute protective actions when they feel threatened and feel capable of handling the threat themselves with the action that is required.

Available Information on Vaccination against COVID-19

News Coverage

The available public information on COVID-19 vaccination was analysed. Therefore, 5 recent newspaper articles and 5 different social media posts were regarded as representative cases to gain insights into available media information (see Appendix A). Articles from news organizations in the US, UK and Germany have been investigated for the different viewpoints of experts and vaccine critics, framing, as well as tone-of-voice.

Overall, most articles were optimistic about a potential corona vaccine, while also addressing risks and concerns of the public through expert information. Gallagher (2020), for example, reported in his article that a safe vaccine would not only protect people's health but also allow lockdowns to be lifted, therefore enabling the economy to recover more rapidly.

Further, experts in all of the selected articles emphasized that safety is of utmost importance, since any potential side-effect can have detrimental effects. This holds especially since the speed of vaccine development has been unprecedented, which could raise further questions about safety. Moreover, even though three of the articles highlighted that regular safety standards will hold in any case, several articles also reported the (single) case in a large scale vaccine-trial, where a woman

showed symptoms of a rare neurological disease, consequently putting all testing on halt (Newey, 2020; Boseley, 2020, Gallagher, 2020, Vergin 2020). Although experts in the respective articles framed this as a sign that safety mechanisms are working, this shows that already such minor indications of side effects will most likely gain major media attention.

Next, only two articles took a more elaborate view on opposing viewpoints by the public towards vaccine development, stating that confidence rates in vaccination against COVID-19 have been dropping significantly between march and june in the UK (Newey, 2020). Similarly for the US, Elbeshbishi & King (2020) report that a large number of Americans are still sceptic about any vaccination with distrust for the speed of development, however, these two articles still proposed arguments against these more critical viewpoints in the end. Therefore it can be concluded that there was only little media coverage in regards to vaccination hesitancy.

The articles were also analysed in regards to recurring frames and tone-of-voice. In the context of media coverage, framing describes the process of embedding information into a certain storyline or central idea, whereas the tone of voice refers to the general attitude of the article towards the people it addresses (Scheufele, 1999; Kutschreuter, 2011). Tone of voice was distanced and non-emotional in all of the regarded articles. Likewise, a strong framing of the topic was also not apparent, as mostly the articles just summarized expert's opinions. Hence, the news coverage neither showed strong framing nor an overly biased tone-of-voice.

Concludingly, the majority of the analysed articles emphasized the importance of safety in the process of vaccine development, while still addressing the risks from the view of experts. Therefore, it can be assessed that the regarded news articles generally cover the topic unbiased, without specific framing.

Social Media

In addition to the opinions that can be given within the media, it is of vital importance within our analysis to take into account the opinions that people share on social network sites (SNS's) since they are not only sources of information but can also influence the risk perceptions of people since they are considered amplification stations (Fellenor et al. ,2017).

Within this analysis, five Twitter thread posts have been included that consist of people's opinions about the SARS-CoV-2 vaccine. These posts were chosen randomly, met the requirement of having more than 120 characters and are included in the appendix for review. Here is a summary of the various opinions.

After analyzing the posts, we can argue that most of them are positive or show positive arguments about the COVID-19 vaccine. Only one of the posts is clearly negative (Twitter thread 3), highlighting the adverse effects that the vaccine could have in people with obesity based on previous studies on the influenza vaccine. One is neutral (Twitter thread 1), taking an informative approach and

advising on how the vaccine should be distributed. It argues that health workers and staff should be the first to receive the vaccine as it would reduce the transmission of COVID. Two of the posts (Twitter thread 4 & 5) focus on the positive results that the different phases of experimentation of the firsts vaccines in development have had, such as, for example, that they provide antibodies and positive immune responses. Although one post has a more informal tone of voice than the other, in both posts it is also emphasized that these results are preliminary and that, in case of having an efficient vaccine, the virus would not end instantly and that the measures taken so far such as using face masks and having distance should continue to be implemented. (Twitter thread 2) shows a position totally in favour of the possible vaccine and also criticizes and uses a conflict frame against anti-vaccine posts that assure that vaccines could cause transverse myelitis, denying them with counter-arguments.

From these posts, it is clearly observed that the people who showed a positive stand about the vaccine but emphasized that the measures should be maintained, are either experts or have dealt with experts on the subject. In this case, a virologist and an Ex-administrator of Medicare Centers in the USA (Twitter threads 4 & 5 respectively). The post that shows the negative stand, is made by a person who specifies to be an armchair researcher of industrial biotech, which shows that he is not an expert on the subject (Twitter thread 3). The neutral position is held by an assistant professor of health law, which would explain why this post is more related to facts and focuses on what would be the ideal distribution in case of an efficient vaccine (Twitter thread 1). The positive and critical post comes from a health professional who covers another field (Child neurologist) but clearly shows in his biography to be an advocate for vaccination (Twitter thread 2).

From this analysis, it can be concluded that healthcare workers, healthcare experts and people involved in healthcare as for example insurance administrators, tend to have positive opinions about vaccines and their administration. Experts in other fields or more linked to academia and teaching, tend to share exact information based on their field of study and it can also be concluded that laypeople and anti-vaccine organizations as well as natural doctors, are against the vaccination in general and can reach to misrepresent or facilitate suspicion about the COVID vaccine based on other, previous vaccines for different viruses.

Effects of Newspaper/Social Media on Perception and Behaviour

Risk Information Seeking and Processing Model

After analyzing the different opinions and information shown in the mass media and on SNS's (Twitter), the researchers identified the effects they could have on people's perceptions and behaviour. In order to discuss the effects of the different discourses in mass and social media, the Risk Information Seeking and Processing (RISP) model and the Social Amplification of Risk Framework

(SARF) will be used.

The RISP model is used to explain the direct and indirect causes that lead people to search for information in a more systematic and deep way, requiring more effort by the individual. According to Yang et al. (2014), the RISP model suggests that the so-called *information insufficiency* is the main motivation for the active search and systematic processing of risk information. In addition to the latter, *General channel beliefs (GCB)* and *Perceived information gathering capacity (PIGC)* complete the direct motivations for information seeking and processing (Yang et al. , 2014).

According to the risp model, three direct variables are required for a more systematic search for information. Through these, we can analyze the effect of SNSs and Traditional mass media. GCB has to do with how trustworthy social media and traditional information is. PIGC is a personal perception of how capable the individual feels to search for information on these information sources and Information Insufficiency on how much information the individual believes he needs to be confident of his knowledge and act (Liao et al, 2018). In case that the information channel is considered reliable, the individual trusts his ability to navigate and search for information and the individual feels the need for information. Then the individual will be more motivated to carry out a systematic and intensive search for information and process it (Yang et al. , 2014).

If these requirements are not met, the individuals will opt for a more trivial and routine search, which could lead to misinformation, especially if the information search is carried out on social networks. This can be caused because “false news spreads more rapidly on the social network Twitter than real news does” (Dizikes, 2018). As mentioned by Kuttschreuter et al. (2014), social networks tend to be used as complementary information channels and many times it might be used just to confirm information that was found on other channels or official messages, not as the main source itself.

Social Amplification of Risk Framework

Moreover, SARF will be used to provide a cohesive model to further understand the effect of mass and social media on individuals' perceptions and behaviour. To aid this effort we have to acknowledge that SARF was originally designed to understand the relationship between mass media and individuals, which, because of the power of social media has become a far more complicated process. Nevertheless, Fellenor et al. (2017) also argue that the main assumptions of SARF, that people depend on media to understand the risks around them, still holds, although there seems to be a dynamic two-way relationship between social and traditional media.

Essentially, Social Amplification of Risk Framework (SARF) proposes that risk events elicit public responses that can be amplified/attenuated by psychological, social or cultural processes (Kasperson, 1988). In the tradition of SARF, individuals on social media and traditional news media

can be seen as amplification stations, who perceive and communicate risk-related signals. These signals then get amplified or attenuated during the reception, as well as again during the transmission of information. Most of the tweets as well as the newspaper articles provided an objective and moderate to positive perspective on vaccination-risks. Therefore, we conclude that risk amplification was most likely not apparent, since amplification is usually influenced by volume as well as the dramatization of risk-information (Kasperson, 1988).

Potential Fear Appeal Message

Target Group

According to the BBC, healthcare workers will receive the first vaccinations in many countries if a covid vaccine gets approved. Therefore it makes sense focusing on the healthcare staff as a target group, as they pose the frontline of covid immunity (Bailey, 2020). The study of Chor et al. (2009) however, showed that among healthcare workers, there is a high rate of vaccination refusal of over 50%. For the intervention, this implies that a lot can be done among these people to improve the overall situation. Additionally, certain healthcare workers are alongside many elderly people. Some others, like midwives, are close to newborns. Those two groups of people are especially vulnerable towards effects from viruses like influenza (Fisman, Bogoch, 2017). An additional factor concerning the effectiveness is the possibility of reaching more people through healthcare workers. If the healthcare staff is convinced of the effectiveness of the intervention, they might be able to also convince their patients in an effort leading to herd immunity.

Message Design

As a result, a fear appeal message was designed in order to promote vaccination among health care workers (Appendix B). Fear appeal messages are aimed to change behaviour through eliciting fear in the recipient of this message (Tannenbaum, Hepler, Zimmerman, Saul, Jacobs, Williams, Albarracin, 2015). Although using fear appeal usually does not backfire, there are still some elements that have to be taken into account, to ensure the effectiveness of the fear appeal message. These elements include the need to elicit high levels of fear, the need for a self-efficacy message, the need for personal relatedness and severity, and the possibility of having an only one-time commitment (Tattenbaum et al., 2015).

Firstly, the message needs to elicit high levels of fear. While a moderate amount might also be sufficient, the highest possible effectiveness can be achieved through high levels (Tannenbaum et al., 2015). Therefore, a realistic picture of a seemingly dying patient was chosen, since it confronts people with the possibility of dying.

Secondly, the message should contain an efficacy message that convinces the target group that they are able to carry out the desired behaviour (Tannenbaum et al., 2015). The message is

considered to be more effective when the message personally relates to the recipient. Since our target audience is healthcare workers, it is personally related to them by telling them to save themselves, but to also save their patient. Consequently, the title “Save yourself, save your patient, get your COVID vaccination” was chosen, as to indicate that the message recipient has the possibility of preventing the presented situation. Furthermore, the official site of Centers for Disease Control and Prevention was provided, in order to allow people to find additional information themselves.

Thirdly, Tannenbaum et al. (2015) suggest that message effectiveness can also be improved by suggesting one-time commitments, as well as especially underlining the personal relation and severity of the risk. For one-time commitments, it was not necessary to stress this, since it is common knowledge that vaccinations usually only take place once or twice. Consequently, the designed message was supposed to increase feelings of responsibility for themselves and patients, through the presented image.

Effectiveness of the Message

For the message to bring the desired behaviour, it is important that the message is effective. The message is expected to be quite effective for several reasons.

Firstly, the message seems to adhere to the aforementioned elements of fear appeal messages. It elicits fear in the recipient by showing a seemingly dying patient. In addition, it is important that the message contains an efficacy message. This message does contain an efficacy message, referring to getting the COVID-19 vaccination. Furthermore, the message does not show that healthcare workers are more at risk, since this is not the case. However, the message could still be seen as quite effective, since we tried to show personal severity in the responsibility healthcare workers have for themselves, but more importantly, for their patients. These patients are more often at risk, which makes it personally more important for healthcare workers to get vaccinated. Lastly, fear appeal messages seemed to be more effective when it only asked the recipient to do the task once. Getting the COVID-19 vaccination is a task that only needs the recipient to take action for it once, maybe twice.

Secondly, the message also adheres to the main appraisals of the PMT-model. The picture shown in the message can feel quite threatening for people, since, as mentioned before, confronts people with death. This can elicit fear that people would like to reduce. In addition to this, recipients get the tools to deal with the threat themselves adequately. They have the message which tells them what to do: get the COVID-19 vaccination. Recipients of this message are able themselves to get the vaccination. Furthermore, a site is given which gives them more information on the topic, which can also help them with their own response efficacy.

In conclusion, the message will be quite effective, since it adheres to the PMT-model and the fear appeal of messages.

Conditions Enhancing the Effectiveness of the message

There are several conditions that should be met in order to improve or make a risk message more effective are mentioned by Sellnow et al. (2009) as the best practices in risk communication of which five are the most important and these are: making the message interactive so that people are included in the dialogue about the problem and can express their opinions about the problem and possible solutions. Another good practice has to do with being honest and not just try to hide the truth to avoid causing fear in people because this can have a counterproductive effect. Besides these practices, designing the message based on a cultural and demographic context, for instance, taking into account age, residence place, or social group can enhance the effectiveness of the message. Using credible sources of information to spread the message is important so that people believe and finally always think that risk communication is a process that must be continuous and not only when a risk event happens, in this way people will trust the source of the message in the future. In addition to these practices, the conditions for effective fear appeal mentioned previously will play an important role in the message effectiveness (Sellnow et al, 2009).

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Appendices

Appendix A

Newspaper article 1

Covid-19: we have no idea where vaccine will come from, says expert

Comments follow news of delay to Oxford trial after one of UK volunteers fell ill

- [Coronavirus - latest updates](#)
- [See all our coronavirus coverage](#)



▲ Samples from vaccine trials are tested at Oxford University earlier this summer. Photograph: John Cairns/AP

Nobody can know where the first safe and effective vaccine against Covid-19 will come from, warned one of the UK's leading medical experts, as the trials of the frontrunner, from Oxford University, were put on hold.

The Oxford vaccine appeared to be storming ahead, amid hopes it would have the data to get it approved by a regulator before the end of the year. Last month, Donald Trump was said to be considering pushing for it to be fast-tracked in the US before the presidential election in November.

But the phase 3 trials, the final stage involving tens of thousands of people, have been paused because of the illness of one of the UK volunteers. Studies are also under way in the US, Brazil and South Africa, with a view to getting a quicker answer because of the greater numbers of cases in those countries.

Sir Jeremy Farrar, the head of Wellcome and an infectious diseases specialist, said vaccine development “is an inherently risky endeavour, and you cannot back on a single vaccine candidate. You have to have a portfolio, you have to be pragmatic that not all of these vaccines in late stage development will make it through.”

Safety is absolutely critical, he said. Large-scale trials and follow-up of people who have been vaccinated after licensing were vital.

Farrar, who is also a member of the government’s Sage scientific advisory body, called for scientists worldwide to share their data, as Oxford/AstraZeneca has. It is “absolutely critical that we know what’s happening in the US and Europe in China and Russia and everywhere else, developing these vaccines”.

No country should assume they can buy up the stocks they need and ignore the rest of the world, he said. “There is no value in vaccine nationalism. It’s not a way out of the pandemic. It won’t speed things up - in fact, it’ll slow things down. And we have no idea where the best vaccine that is safe and effective will come from.”

The UK health secretary, Matt Hancock, said he was not overly concerned about the decision by the pharmaceuticals firm AstraZeneca to halt vaccine trials, he said, adding that it had already overcome a similar delay.

“This is a normal part of a vaccine development that, when you find a problem, the system is paused while you investigate that particular problem,” he told LBC radio.

“What it underlines is that we won’t bring forward a vaccine unless it is safe, no matter how enthusiastic I am for a vaccine.”

Hancock told Sky News: “It is obviously a challenge to this particular vaccine. It’s not actually the first time it has happened to the Oxford vaccine and it’s a standard process in clinical trials.”

Asked if it was a setback, Hancock said: “Not necessarily - it depends on what they find when they do the investigation. There was a pause earlier in the summer and that was resolved without a problem.”

He told LBC the UK had “other irons in the fire”. The government has ordered 340m doses of six different vaccines, which was “far more” than was needed for the UK population, said Hancock.

“This is a pause not a stop so I am hopeful [AstraZeneca] will be able to resume but only if it is safe to do so.”

A spokesman for [AstraZeneca](#), the company working with Oxford University, told the Guardian the trial had been stopped to review the “potentially unexplained illness” in one of the participants.

The spokesman stressed that the adverse reaction was only recorded in a single participant and said pausing trials was common during vaccine development.

Share your story

Share your stories

If you have been affected or have any information, we'd like to hear from you. You can get in touch by filling in the form below, anonymously if you wish or contact us [via WhatsApp](#) by [clicking here](#) or adding the contact +44(0)7867825056. Only the Guardian can see your contributions and one of our journalists may contact you to discuss further.

+ Tell us

An anonymous source familiar with the situation told the [New York Times](#) that the person with a suspected adverse reaction had been enrolled in a phase 2/3 trial based in the UK.

The volunteer had received a diagnosis of transverse myelitis, an inflammatory syndrome that affects the spinal cord and is often sparked by viral infections, according to the individual. Independent investigators have been called in to find out whether or not the condition is vaccine-related.

Newspaper article 2 (Elbeshbishi & King):

Exclusive: Two-thirds of Americans say they won't get COVID-19 vaccine when it's first available, USA TODAY/Suffolk Poll shows

SARAH ELBESHBISHI, LEDYARD KING | USA TODAY



Two-thirds of U.S. voters say they won't try to get a coronavirus vaccine as soon as it becomes available, and one in four say they don't want to ever get it, according to a new USA TODAY/Suffolk Poll released the same week that [the number of COVID-19 cases surpassed 6 million](#).

"I don't plan on being anyone's guinea pig," said Ebony Dew, an independent from Capitol Heights, Maryland. "I don't plan on getting it at all."

More: [As Americans await a COVID-19 vaccine, health officials worry the US isn't ready for one](#)

The 40-year-old access control specialist questions the safety of a potential vaccine, echoing concerns shared by millions of Americans.

"I feel like their testing is a trial and error," Dew said. "And I also feel that they don't really know all that much about this virus, so how can they create a cure for it just yet?"

The poll of 1,000 voters follows similar surveys in the past month that indicate as many as one-third of Americans would decline a vaccine, fueled by mistrust of the Trump administration's push to speed up its development as well as a sizable slice of the country that generally opposes immunizations of any kind.

Paleologos on the poll: We're witnessing a citizenry growing distrustful of government, institutions



President Donald Trump has been promoting Operation Warp Speed, a multi-agency initiative to expedite production of COVID-19 tests, treatments and vaccines. Its goal is to produce and deliver 300 million doses of a vaccine by January. Three vaccine candidates are in Phase 3 trials in the United States, and more are expected to enter Phase 3 trials by the end of September, according to Alex Azar, secretary of Health and Human Services.

Experts say the level of public resistance to an immunization against a virus that has killed more than 185,000 Americans is concerning because it undermines the utility of the vaccine.

"If you have 330 million doses of vaccine and nobody wants it, it accomplishes nothing. You've got to use the vaccine. It's just as important as how effective the vaccine is," said Dr. David Salmon, a professor at the Bloomberg School of Public Health at Johns Hopkins University and an expert in global disease epidemiology and control.

More: How we're developing a COVID-19 vaccine at 'Warp Speed': Alex Azar

"You probably need between 70 and 80% of the population to get immune in order to really control COVID," he said. "And when I say immune, I mean both get the vaccine and the vaccine worked for them."

The USA TODAY/Suffolk Poll found that about two-thirds of the 1,000 voters surveyed – 67% – would either not take the vaccine until others have tried it (44%) or not take it at all (23%)

The other third of respondents were split between those who said they would take the vaccine as soon as it's available (27%) or those who were undecided (6%). Those 75 and older were by far the likeliest to say they would get the vaccine right away.

The poll, taken Aug. 28-31, surveyed registered voters by cellphone and landline and has a margin of error of plus or minus 3.1 percentage points.

Democrats (86%) are more likely than Republicans (61%) to get the vaccine at some point. Men and women were evenly split, but the youngest respondents (those under 24) and the oldest (those 75 and older) were the likeliest to get the vaccine either right away or after seeing how the initial immunizations went.

More: [Exclusive: The conventions over, Joe Biden leads Donald Trump by a narrower 50%-43% in USA TODAY/Suffolk Poll](#)

Hispanic voters (17%) and Black voters (15%) are less willing than white voters (31%) to take the vaccine as soon as it became available, according to the poll. The survey found that both groups also were likelier not to take the vaccine at all compared with whites.

[Some experts say](#) voters of color will need to be reassured about the vaccine because of often being treated poorly by those in the medical field.

Antonio Gonzalez, a Democrat from Portland, Oregon, is among those polled who would wait before getting the vaccine.

More: [Why volunteer for a vaccine clinical trial? Duty, love and a willingness to experiment, participants say](#)

"I think I would do a little bit of reading just to just to understand the process of this vaccine's creation and how it aligns up to what could be considered best practices for general vaccine creation," he said.

Eileen Burnatt-Hall, a Democrat from Palmdale, California, and Debra Hall, a Republican from Farmington, New Mexico, would immediately get the vaccine once it's available. Both likened it to the flu shot.

"I get the flu shot right away, so I don't know what would persuade me to wait," said Burnatt-Hall, 64. "All these people complain about getting the flu, but they don't (get) the shot so, I would just go ahead and do it."

More: [Coronavirus live updates: CDC tells officials to be ready for vaccine by November; steroids can help severely ill patients](#)

Forty-one percent of those surveyed would not get the coronavirus vaccine if the federal government required it versus 50% of those who said they would.

Dozens of doctors, nurses and health officials interviewed by Kaiser Health News and The Associated Press [expressed concern](#) about the country's readiness to conduct mass vaccinations, as well as frustration with months of inconsistent information from the federal government.

The gaps include figuring out how officials will keep track of who has gotten which doses and how they'll keep the workers who give the shots safe with enough protective gear and syringes to do their jobs.

David Brockman, an independent voter from Columbus, Indiana, would "consider" getting the vaccine but would be further put off if he was ordered by the government to get it.

"If they're forcing me to get something like that, it makes me think more that there's something behind it," he said.

As for the vaccine itself, Brockman is still unsure he can trust it. "I just don't know if that would be something that right away I would just like stick my arm out and say 'Hey, oh yeah, give it to me.'"

More: [Coronavirus vaccine on track for FDA approval by end of 2020, says Operation Warp Speed official](#)

[Scientists have also voiced concern](#) over the readiness of the vaccine, worried that pressure from Trump ahead of the Nov. 3 election might lead the FDA to approve the vaccine before it is fully tested.

Concern over political pressure comes after the Food and Drug Administration claimed blood plasma reduced deaths in coronavirus patients by 35% as justification for issuing an Emergency Use Authorization for plasma – another treatment the president has said is promising.

But Dr. Anthony Fauci, director of the National Institute of Allergy and Infectious Diseases, said he's confident that the experts in charge of the vaccine will not be swayed by politics.

Newspaper article 3 (Vergin):

Coronavirus vaccination: What are we actually waiting for?

Fast, faster, fastest: Developing an effective SARS-CoV-2 vaccine in record time — is it possible? And will it be the full answer to the pandemic? DW asked an expert a few basic questions about what we can expect.



'coronavirus-vaccination/a-54892787#'

More than [170 vaccine candidates against SARS-CoV-2](#) are in the running. Seven of them are in the third and final phase of clinical trials. Processes that normally take years are currently underway at record speed. It is a matter of life (and death), money and power.

That is why vaccine development is also a political issue. US President Donald Trump suspects that the [US Food and Drug Administration \(FDA\)](#) is deliberately slowing down work on an effective vaccine because it wants to prevent him from taking credit for successfully fighting a pandemic before the end of his term of office.



Donald J. Trump 
@realDonaldTrump

The deep state, or whoever, over at the FDA is making it very difficult for drug companies to get people in order to test the vaccines and therapeutics. Obviously, they are hoping to delay the answer until after November 3rd. Must focus on speed, and saving lives! [@SteveFDA](#)

1:49 PM · Aug 22, 2020

100.8K  See the latest COVID-19 information on Twitter

Which brings us back to science: What kind of credit are we talking about here? Will a vaccine really be the panacea it is often made out to be? We put those questions to the [immunologist Thomas Kamradt](#).

DW: When a vaccine is found, everything will be fine – at least, that seems to be many people's expectation. Is this expectation justified?

Thomas Kamradt: Personally, I would be satisfied if there were simply a safe vaccine that perhaps has to be refreshed every two years but that has a massive effect on how seriously the disease progresses.

Maybe the vaccination would not prevent you from getting the sniffles or other mild symptoms. But the minimum requirements would be that it prevents respiratory insufficiency and severe organ damage. So if you ask me what we are waiting for, it is this. If such a vaccine did nothing more than change a life-threatening disease into a mild disease, I would consider it a success. Anything beyond that would be a very big success.

'A Stone Age method'

Recently, there was a report of one new infection where a young man from Hong Kong tested positive for the virus for the second time. Until then, people had hoped that whoever had been through the infection once would be immune. Did the idea of "natural herd immunity" also die with this report?

Quite apart from this report: If you look at the rates of infection and mortality that would be needed to achieve herd immunity, it is a Stone Age method. And it would take for ever to reach such immunity.



What is more, we now also have to assume that immunity does not last for life. So I hope that nobody is looking to natural herd immunity as a solution anymore. Herd immunity as such can be achieved with vaccinations.

There are several strains of the novel coronavirus with which one can be infected again and again. What does this mean for the development of an effective vaccine?

The changes in the viruses are primarily of epidemiological interest because they allow infection clusters to be tracked. So far, there is no evidence that the differences between the various SARS-CoV-2 strains have any great relevance for how effective a vaccine would be. This is different with the flu.

New techniques

Let's talk about vaccine development, which is happening at an incredible speed. ↗ Some scientists warn against putting a potentially ineffective and unsafe vaccine on the market just to be as fast as possible. Does the speed of vaccine development also worry you as a scientist?

Not so far. So far, I am just excited about it! It usually takes well over 10 years for a vaccine to become so widely available that everyone can be vaccinated. The previous record is held by the Ebola vaccine, which took about five years to gain approval. And here everything is happening much faster.



There are several reasons for this. First, it was known from the viruses that cause SARS and MERS that the new coronavirus' spike protein is a good target structure for an immune response. This means that researchers did not have to start from scratch with a completely new virus.

There are also completely new techniques. Until not so long ago, developing a vaccine meant sending viruses all over the world to be cultivated in cell cultures and so on. But here, Chinese researchers put the sequence of the virus on the internet back in January. You could compare it with SARS and MERS viruses; everything went incredibly fast. So the first clinical phase 1 study could already begin in March; that was the mRNA vaccine from Moderna.

Stages of vaccine development

1 Virus analysis

What causes the body's immune response to the virus infection?



2 A vaccine is developed

Which components should go into the vaccine?



The speed of the whole process has also been increased because steps that normally take place one after the other are happening parallel to each other. For example, production facilities are already being created for vaccines that may never exist.

What must not happen at any price, however, is that safety tests are carried out less stringently than usual. As bad as the whole thing is, 80% of those who develop symptoms at all end up with only mild ones. This means that if I vaccinate against a disease like this one, I have to be very sure that I do not cause any harm. After all, I will be administering the vaccination to healthy people.

But you do not see any acute danger as far as the safety tests are concerned?

No, I do not see any indications for concern.

No risk despite the speed

If a vaccine becomes available, the question will arise about who will be vaccinated and, indeed, about who wants to be vaccinated at all. According to an analysis by the [Hamburg Center for Health Economics](#), the willingness of the EU population to be vaccinated against the novel coronavirus is declining. One of the biggest concerns for people is possible side effects. Do you understand this concern?

Communication is very important here. Even experts are amazed at what can be parallelized and sped up as a result. That costs money, but it is not a risk. But, of course, it must still be clear that safety checks cannot be carried out faster and less thoroughly than usual.

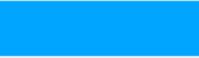
We are facing another illness wave: a flu wave. In your opinion, it is particularly important to be vaccinated against the flu this year? Why is that?

First, for personal protection, because we don't know yet whether the immune system is weakened by flu so that it becomes more susceptible to COVID-19.

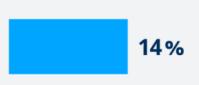
And secondly, so that not too much strain is placed on the health care system. Influenza also has a certain mortality rate. Symptoms can be similar, so that emergency rooms cannot immediately distinguish between COVID-19 and influenza.

If there are fewer influenza patients in the health care system because more people are vaccinated, there is more space to care for the really sick.

The most common reasons for opposing a COVID-19 vaccination*

I think the vaccine may not be safe enough  24%

I am concerned about possible side effects  21%

I do not believe that COVID-19 is dangerous for my health  14%

I reject vaccinations on principle  11%

It is best to let nature take its course  8%



Source: HCHE/ Uni Hamburg 2020 *Survey in DE, FR, NL, PT, IT, UK, DNK

Let us assume that there is a SARS-CoV-2 vaccine. Who should receive the first doses?

Ideally, the vaccine should be effective in elderly people. They have the more severe cases of the disease. The influenza vaccine, for example, is less effective in older people than in younger people, but this can be compensated for by the dosage. That is something clinical tests will have to show.

Then the vaccine should primarily be given to old people and those with preexisting conditions. And also to those who are particularly exposed and to those who have a particularly high risk of spreading the virus.

A young, healthy person living in a hut in the forest is perhaps the last person who needs to be vaccinated.

Thomas Kamradt is director of the Institute of Immunology at the University Hospital Jena and president of the [German Society for Immunology](#).

The interview was conducted by Julia Vergin.



Newspaper article 4 (Gallagher):

Coronavirus vaccine: When will we have one?

By James Gallagher
Health and science correspondent

⌚ 25 September 2020

f m t e Share

Coronavirus pandemic



REUTERS

Coronavirus still poses a significant threat, but there are no vaccines proven to protect the body against the disease it causes - Covid-19.

Coronavirus still poses a significant threat, but there are no vaccines proven to protect the body against the disease it causes - Covid-19.

However there are around 40 different coronavirus vaccines in clinical trials - including one being developed by the University of Oxford that is already in an advanced stage of testing.

Why is a coronavirus vaccine important?

The virus spreads easily, and the majority of the world's population is still vulnerable to it. A vaccine would provide some protection by training people's immune systems to fight the virus so they should not become sick.

This would allow lockdowns to be lifted more safely, and social distancing to be relaxed.

What sort of progress is being made?

Research is happening at breakneck speed. About 240 vaccines are in early development, with 40 in clinical trials and nine already in the final stage of testing on thousands of people.

- Trials of the Oxford vaccine show it can trigger an immune response, and a deal has been signed with AstraZeneca to supply 100 million doses in the UK alone.
- The first human trial data back in May indicated the first eight patients taking part in a US study all produced antibodies that could neutralise the virus.
- A trial using viral proteins to develop an immune response is underway.
- A group in China showed a vaccine was safe and led to protective antibodies being made. It is being made available to the Chinese military.
- Other completely new approaches to vaccine development are in human trials.

However, no-one knows how effective any of these vaccines will be.

When will we have a coronavirus vaccine?

A vaccine would normally take years, if not decades, to develop. Researchers hope to achieve the same amount of work in only a few months.

Most experts think a vaccine is likely to become widely available by mid-2021, about 12-18 months after the new virus, known officially as Sars-CoV-2, first emerged.

That would be a huge scientific feat, and there are no guarantees it will work.

But scientists are optimistic that, if trials are successful, then a small number of people - such as healthcare workers - may be vaccinated before the end of this year.

It is worth noting that four coronaviruses already circulate in human beings. They cause common cold symptoms and we don't have vaccines for any of them.

More about coronavirus



What do I need to know about the coronavirus?

- SOCIAL DISTANCING: [What are the rules now?](#)
 - SUPPORT BUBBLES: [What are they and who can be in yours?](#)
 - FACE MASKS: [When do I need to wear one?](#)
 - TESTING: [What tests are available?](#)
 - JOBS: [How will I be kept safe at work?](#)
-

What still needs to be done?

Multiple research groups have designed potential vaccines. However there is much more work to do.

- Trials need to show the vaccine is safe. It would not be useful if it caused more problems than the disease
- Clinical trials will also need to show vaccines provoke an immune response, which protect people from getting sick
- A way of producing the vaccine on a huge scale must be developed for the billions of potential doses
- Medicines regulators must approve it before it can be given
- Finally there will be the huge logistical challenge of actually immunising most of the world's population

The success of lockdowns has made the process slower. To know if the vaccine works, you need people to actually be infected.

The idea of giving people the vaccine and then deliberately infecting them (known as a challenge study) would give quicker answers. The concern is that it is too dangerous and would not be ethical at this stage to carry them out - [although some think it should not be off the table.](#)

How many people need to be vaccinated?

It is hard to know without knowing how effective the vaccine is going to be.

It is thought that 60-70% of people needed to be immune to the virus in order to stop it spreading easily (known as herd immunity).

But that would be billions of people around the world even if the vaccine worked perfectly.



- [Coronavirus lockdown: All you need to know about new measures](#)
- [Human trial of new vaccine begins in UK](#)

How do you create a vaccine?

Vaccines harmlessly show viruses or bacteria (or even small parts of them) to the immune system. The body's defences recognise them as an invader and learn how to fight them.

Then if the body is ever exposed for real, it already knows what to do.

The main method of vaccination for decades has been to use the original virus.

The measles, mumps and rubella (MMR) vaccine is made by using weakened viruses that cannot cause a full-blown infection. The seasonal flu jab takes the main strains of flu doing the rounds and completely disables them.

Some scientists, particularly those in China, are using this approach.

There is also work on coronavirus vaccines using newer, and less tested, approaches called "plug and play" vaccines. Because we know the genetic code of the new coronavirus, Sars-CoV-2, we have the complete blueprint for building it.

The Oxford researchers have put small sections of its genetic code into a harmless virus that infects chimpanzees. They appear to have developed a safe virus that looks enough like the coronavirus to produce an immune response.

Other groups are using pieces of raw genetic code (either DNA or RNA depending on the approach) which, once injected into the body, should start producing bits of viral proteins which the immune system can learn to fight. However, this approach is completely new.

Would a vaccine protect people of all ages?

It will, almost inevitably, be less successful in older people, because aged immune systems do not respond as well to immunisation. We see this with the annual flu jab.

It may be possible to overcome this by either giving multiple doses or giving it alongside a chemical (called an adjuvant) that gives the immune system a boost.

Who would get a vaccine?

If a vaccine is developed, then there will be a limited supply, at least initially, so it will be important to prioritise.

Healthcare workers who come into contact with Covid-19 patients would top the list. The disease is most deadly in older people so they would be a priority if the vaccine was effective in this age group.

The UK has also said other people considered to be at high risk - potentially included those with some conditions or from certain ethnicities - may be prioritised.

Follow James on Twitter

Newspaper article 5 (Newey):

Confidence in Covid vaccines has fallen since pandemic's peak, researchers reveal

It comes as the largest global study tracking attitudes to vaccines over five years revealed Europe as a hesitancy hotspot

By Sarah Newey, GLOBAL HEALTH SECURITY CORRESPONDENT

11 September 2020 - 6:00am



Researchers in Sydney work to produce the AstraZeneca/Oxford vaccine candidate - trials have been suspended to investigate an 'unexplained illness' | CREDIT: DAN HIMERRECHTS/EPA-EFE



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Confidence in potential Covid-19 vaccines has fallen since the pandemic peaked in the spring, with early data suggesting an increasing number of people in the UK would refuse a jab.

According to Prof Heidi Larson, director of the [Vaccine Confidence Project](#), around five per cent of Britons surveyed in March said they would not take a coronavirus vaccine – a figure that increased to 15 per cent by June.

Speaking at a press briefing on Thursday, Prof Larson suggested that increasing reluctance was linked to [falling fatality rates](#). In late March roughly 700 deaths were being reported a day, a figure that now hovers at around 10.

"We do see that [attitudes] are highly variable," said Prof Larson, a professor of anthropology at the London School of Hygiene and Tropical Medicine. "People are constantly weighing up the imminent threat of the disease with the apparent risk of the vaccine."

She added that more detailed figures around willingness to receive a Covid-19 jab are set to be published next month, while the Vaccine Confidence Project will shortly launch a survey of more than 15,000 people across the UK to understand regional attitudes.

Prof Larson's comments come as it emerged that AstraZeneca [suspended all trials of the Oxford University vaccine candidate this week](#), after a British participant developed symptoms indicating a rare neurological condition called transverse myelitis.

Precise details of the case remain hazy, but it has been reported that the woman involved has been discharged from hospital. AstraZeneca's chief executive, Pascal Soriot, has said that [medical tests are ongoing](#) and an independent safety committee is currently reviewing clinical trial data.



Prof Larson said that the paused trial should "send a signal to the public worried about the seeming speediness of these trials that in fact they do stop, there is safety rigour, they [are not skipping steps](#)".

But she added that the scientific community lacked some "empathy" when discussing the case. While experts rightly emphasised that suspensions are routine, few expressed concerns for the woman involved or hopes that she would recover.

Prof Larson also noted concerns that scientists have so far done a poor job of explaining how and why trials can currently take place so rapidly. Vaccine development usually takes at least five years, but is now happening at breakneck speed - with eight candidates already in large-scale phase three trials.

"There are good reasons for this [including]... the availability of a funding mechanism and the fact that the virus was categorised much earlier because of new technology," she said. "We should be featuring this as a great thing as it explains the speed - saying just how fast we are going creates anxiety."

Prof Larson was speaking at a press conference to launch the largest ever global survey tracking attitudes to vaccines over five years, which was published in *The Lancet* journal on Thursday.

The report – which covers the period between 2015 and 2019, before the coronavirus pandemic emerged – found that vaccine confidence remains low in Europe compared to other regions of the world.

Samoa's perfect storm | How the measles outbreak unfolded

A huge drop in vaccination rates has now killed more than 70 children in Samoa's devastating measles epidemic.

As parents mourn their dead, Brian Deer unpicks the myths and missteps that allowed measles to traumatisise a nation. [Read more](#)



Hesitancy has been linked to an increase in measles outbreaks across the continent, with a 120 per cent increase in cases detected in the [first six months of 2019](#) compared to the entirety of 2018. In August last year the UK, along with three other European nations, [lost their measles-free status](#).

But confidence rates have increased in several countries, including Finland, Italy, Ireland and the UK – where the proportion of people saying they “strongly agree” that vaccines are safe has risen from 41 per cent in November 2015 to 52 per cent in November 2019.

Prof Larson said that the increase in measles infections in Britain, despite growing trust in immunisations, signalled “that the slow dropping of uptake is related much more to access issues”.

Meanwhile in France, which has [long been a stalwart of vaccine hesitancy](#), confidence in vaccine safety increased from just 22 per cent to 30 per cent.

In contrast Poland has seen a significant drop in confidence: 64 per cent strongly agreed vaccines were safe in November 2018 compared to 53 per cent a year later. The study also showed just 19 per cent of people in Lithuania believe immunisations are safe.

The Philippines also saw a dramatic drop in vaccine confidence between 2015 and 2019, [in part due to a scandal around a dengue vaccine in 2017](#). Indonesia, Pakistan and South Korea have also seen substantial declines in confidence.

Prof Larson said the data paints a mixed picture and demonstrates that attitudes to immunisations are “wobbly”, meaning that “constant vigilance” is needed to counter hesitancy.

She added that a lack of trust in governments and political and religious extremism tends to exacerbate mistrust of vaccines, especially when combined with a deluge of misinformation.

Writing in an accompanying comment piece in *The Lancet* Dr Daniel Salmon, from the John Hopkins Bloomberg School of Public Health in the United States, said the latest research offered crucial lessons for a coronavirus world.

“Without substantial global investment in active vaccine safety surveillance, continuous monitoring of public perceptions, and development of rapid and flexible communication strategies, there is a risk of Sars-CoV-2 vaccines never reaching their potential due to a continued inability to quickly and effectively respond to public vaccine safety concerns, real or otherwise.

“With every crisis comes opportunity; it should not be ignored. Global investment in vaccine safety and communication infrastructure is much needed,” he said.

Protect yourself and your family by learning more about [Global Health Security](#)

Twitter thread 1

Govind Persad @GovindPersad · 10 sept.

En respuesta a @GovindPersad

We argue that #covid19 #vaccine allocation should be based on 3 #bioethics values:

- 1.Benefiting people and preventing harm
- 2.Prioritizing the disadvantaged
- 3.Equal concern

We then apply to priority groups discussed by @theNASEM [nationalacademies.org/news/2020/09/n.../6](https://nationalacademies.org/news/2020/09/national-academies-releases-draft-framework-for-equitable-allocation-of-covid-19-vaccines/) & others /2



National Academies Release Draft Framework for Equitable Allocation o...

Govind Persad @GovindPersad · 10 sept.

Priority vaccine access for health workers & staff both directly prevents harm & reduces COVID-19 transmission. So does access for others engaged in essential high-risk activities & for people in crowded or congregate living settings, which also prioritizes the disadvantaged. /3

1 2 1

Govind Persad @GovindPersad · 10 sept.

Access to vaccines for people with medical conditions that increase the risk of poor COVID-19 outcomes also prevents harm & prioritizes the disadvantaged. But because these conditions are ubiquitous, priorities will need to be set within this group. /4

1 2 1

Govind Persad @GovindPersad · 10 sept.

Prioritizing everyone >65 raises complex issues. While risk rises with age, age-based prioritization exacerbates socioeconomic & racial disparities: for instance, 30% of minority COVID-19 decedents are <65 cdc.gov/mmwr/volumes/6.../6. It also may not prevent COVID-19 spread /5



Govind Persad @GovindPersad · 10 sept.

Prioritizing research participants, as Nat'l Academy & others suggest, is more difficult to defend: it risks both allowing harm & exacerbating disadvantage, since participants are not more likely to be at risk, & are less likely to be disadvantaged. abcnews.go.com/Health/vaccine.../6 /6



As vaccines move into phase 3 trials, diversity must be at top of agenda
Ensuring Black and ethnic minority participation in coronavirus vaccine trials is key if we want a truly effective coronavirus vaccine, according to...
abcnews.go.com

1 2 1

Govind Persad @GovindPersad · 10 sept.

We suggest that if research participants are prioritized, it take a transferable form, where low-risk participants can nominate a loved one in a higher-risk group for priority--similar to directed organ donation. This could reduce harm and exacerbation of disadvantage /7

1 1 1

Govind Persad @GovindPersad · 10 sept.

And rather than addressing racial disparities via race-based vaccine allocation (likely to be ruled unconstitutional), prioritization should consider factors linked to #structuralracism, like occupational exposure & crowded/poor-quality housing that impedes social distancing. /8

2 1 1

Govind Persad @GovindPersad · 10 sept.

Last, because priority groups—health workers, ppl in high-risk jobs & housing, & w/high risk conditions--will likely exceed initial vaccine allotment, dividing initial allotment into priority categories as @prof_parag & others suggest arxiv.org/abs/2008.00374 could help /9

1 1 1

Assistant prof @UofDenver @SturmCOL, teaching #healthlaw. 2018-21 @GreenwallFdn Faculty Scholar in #Bioethics. @StanfordPhil/@StanfordLaw/@NIHBioethics alum.

Twitter thread 2

Dan Freedman, DO @dfreedman7 · 13 sept.

Not surprising that the antivaccine movement has jumped on the adverse event of transverse myelitis in Oxford COVID vaccine study. TM is very rare with 1-4 cases per million. There are cases of TM following vaccines but causality can be difficult to determine.

Thread. 1/n

[Traducir Tweet](#)

transverse myelitis (TM). TM is not an unusual adverse vaccine reaction. COVID vaccine manufacturers are liability free.



Kennedy News & Views

rubella, diphtheria, pertussis, tetanus and others in infants, children and adults. The researchers in Israel noted "the associations of different vaccines with a single autoimmune phenomenon allude to the idea that a common denominator of these vaccines, such as an adjuvant, might trigger this syndrome." Even the New York Times piece on the recent AstraZeneca trial pause notes past "speculation" that vaccines might

Dan Freedman, DO @dfreedman7 · 13 sept.

En respuesta a [@dfreedman7](#)

TM is spinal cord inflammation believed to be from a postinfectious autoimmune response. While a vaccine could plausibly trigger an immune process like TM, with such a rare disease you need big datasets to see if risk of TM after vaccine is  more than the background rate. 2/11

1 11 

Dan Freedman, DO @dfreedman7 · 13 sept.

Fortunately, the Vaccine Safety Datalink (VSD), 1 of the 4 vaccine monitoring systems in the US has millions of data points. This study looked at >63 "million" doses of vaccines & found no association with TM. 3/11

academic.oup.com/cid/article/63... 

interval [CI], 1.2–471.6; $P = .04$), and the estimated excess risk was 0.385 (95% CI, + to 1.16) cases per million doses.

PDF  **Help** 

Dan Freedman, DO @dfreedman7 · 13 sept.

Oxford vax wasn't part of this study from 2016 & any serious AE in a clinical trial should be thoroughly investigated by the DSMB. It's why they exist, just like vaccine monitoring systems. Antivaccine claims that TM is caused by vaccines are not supported by evidence 4/end

1 17 

Dan Freedman, DO @dfreedman7 · 13 sept.

Also, RFK Jr repeats the antivaccine lie that vaccines are not tested against a "true" placebo. I am currently enrolled in a saline placebo controlled study and have written a thread on saline placebo vaccine trials before.

Adding obscurity to the AstraZeneca trial results is the fact that control groups are given Pfizer's Nimenrix, a meningitis and pneumonia vaccine.

In a [tweet](#), Oxford University's Oxford Vaccine Group explained the decision, while seemingly indicating that it doesn't expect its

Child neurologist in Austin. Advocate of epilepsy, FND, vaccines & 3 legged Jack Russells named Kevin. Critical of quackery & conspiracy theories. Views mine.

Twitter thread 3

Gabor Erdosi       @gerdosi

Short thread.
If you're not through COVID-19 yet I really hope that you've spent the last couple of months preparing for it. Losing beer belly, being out in the sun, and eating nutrient dense, fat soluble vitamin-rich foods. Definitely don't rely only on vaccines if you're...

[Traducir Tweet](#)

7:18 p. m. · 5 ago. 2020 · Twitter for iPad

85 Retweets 15 Tweets citados 308 Me gusta

Gabor Erdosi       @gerdosi

En respuesta a [@gerdosi](#)
... (metabolically) obese. Why? By now, it's clear that obese are not only susceptible to more severe COVID, but also to influenza.
→ Overweight and obese adult humans have a defective cellular immune response to pandemic H1N1 Influenza A virus

Gabor Erdosi       @gerdosi

What's more, vaccines don't work quite as well in obese people as in the (metabolically) healthy. See e.g.
→ Obesity is associated with impaired immune response to influenza vaccination in humans

 Obesity is associated with impaired immune response to influenza vaccination in humans
[nature.com](#)

1 16 56

Gabor Erdosi       @gerdosi

Instead of relying on others' magic, take your health into your own hands.
"Compared with vaccinated healthy weight, obese participants had double the risk of developing influenza"
→ Increased risk of influenza among vaccinated adults who are obese

 Increased risk of influenza among vaccinated adults who are obese
[nature.com](#)

Study reader, armchair researcher. Molecular biology; industrial biotech. Metabolic profiling.
Interests: mucosal immunity, microbiota. Views never political!

Twitter thread 4

Dr. Angela Rasmussen  @angie_rasmussen

Big news today about another vaccine candidate. Take home messages:
-It's safe
-It's immunogenic (neutralizing antibodies and antigen-specific T cells)
-It's a good size (n=1077 patients, 543 of whom got the vaccine vs 534 controls)

However, we don't know if it's effective.

[Traducir Tweet](#)

The Lancet  @TheLancet

NEW—UK's #COVID19 vaccine is safe and induces an immune reaction, according to preliminary results hubs.ly/H0sK2Km0

[Mostrar este hilo](#)

Research in context
Evidence before this study Severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2)
Added value of this study We report the results of the first clinical study of ChAdOx1

Dr. Angela Rasmussen  @angie_rasmussen

En respuesta a [@angie_rasmussen](#)
I said similar things about the Moderna phase I trial results last week to [@nytDeniseGrady](#) @nytimes. The results are promising, but preliminary. Measuring immune responses to the vaccine is not the same thing as demonstrating vaccine efficacy.



First Coronavirus Vaccine Tested in Humans Shows Early Promise
The vaccine, developed by government scientists and Moderna, a biotech company, appeared safe and provoked an immune response in 45 peop...

Dr. Angela Rasmussen @angie_rasmussen · 20 jul.

For the Oxford vaccine, there is preclinical data showing efficacy at protecting against disease in rhesus macaques (monkeys), in this excellent study by @DrNeeltje and colleagues. That is very encouraging.

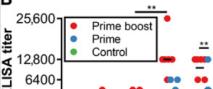
 ChAdOx1 nCoV-19 vaccination prevents SARS-CoV-2...
Severe acute respiratory syndrome coronavirus-2 (SARS-CoV-2) emerged in December 2019[1][1][2][2]...
biorxiv.org

3 31 204 ↑

Dr. Angela Rasmussen @angie_rasmussen · 20 jul.

They have also shown that this vaccine platform protects rhesus macaques against MERS-CoV, suggesting that the platform itself works for immunizing subjects against other betacoronaviruses.



B LISA titer


Group	LISA titer
Prime boost	25,600, 12,800, 6400
Prime	25,600, 12,800, 6400
Control	6400

C VN titer


Group	VN titer
Prime boost	480, 360, 240, 120
Prime	480, 360, 240, 120
Control	120

4 30 231 ↑

Dr. Angela Rasmussen @angie_rasmussen · 20 jul.

It's important to note that while this did not provide sterilizing immunity against #SARS-CoV2 (the monkeys can still get infected), it protected them against severe disease. That would still be a substantial public health benefit.

5 21 134 ↑

Dr. Angela Rasmussen @angie_rasmussen · 20 jul.

Normally it takes years to conduct a phase 3 trial that looks at efficacy. This is because you have to recruit and vaccinate thousands of subjects, then wait for enough of them to get exposed in the course of their daily lives to show they are protected.

4 29 178 ↑

Dr. Angela Rasmussen @angie_rasmussen · 20 jul.

Obviously, because of the pandemic, this will be shortened. I suspect any vaccine showing a shred of efficacy in phase 3 trials will be fast-tracked and approved. This will take a few months. I fear that people have unrealistic expectations of this time frame.

4 29 178 ↑

Dr. Angela Rasmussen @angie_rasmussen · 20 jul.

While the phase 3 candidates are being manufactured in advance, there still won't be enough vaccine to give it to everyone as soon as they achieve approval. Plus vaccines take a week or two to induce immune responses. Some vaccines may require a booster (looking at you Moderna).

—

Dr. Angela Rasmussen @angie_rasmussen · 20 jul.

So I want to emphasize that people should have realistic expectations. To "end the pandemic" and get back to normal, enough people have to get it and it has to work well enough that we can feel confident relaxing measures to prevent community transmission.

2 36 166 ↑

Dr. Angela Rasmussen @angie_rasmussen · 20 jul.

Vaccine approval doesn't mean that the pandemic is instantly over and things will revert back to normal overnight. We need to make sure there is widespread access to the vaccine. We need to win hearts and minds of vaccine skeptics.

2 57 222 ↑

Dr. Angela Rasmussen @angie_rasmussen · 20 jul.

The bottom line is that I'm cautiously optimistic about the vaccine data that's coming out, from Moderna and Oxford phase I/II human trials as well as monkey studies from Johnson and Johnson/Dan Barouch at Beth Israel and the Fuller lab at UW.

3 23 171 ↑

Dr. Angela Rasmussen @angie_rasmussen · 20 jul.

Clearly these vaccines induce immune responses and they appear to meet acceptable safety standards. However, this is still a marathon, and we're only halfway to the finish line. We need to manage expectations that we still will not have any vaccine until very late in 2020.

20 42 255 ↑

Dr. Angela Rasmussen @angie_rasmussen · 20 jul.

In the meantime, we must remain vigilant about the sacrifices that are needed to stop the spread, particularly in communities with surging case numbers. There is a long way to go before this is over and we must brace ourselves for the long haul.

Virologist @Columbia. Write @Forbes. Host responses to emerging viruses & systems-level mind-blowing. And pugs. 1X Jeopardy! loser. Rep: @anniescranton. she/her

Twitter thread 5

Andy Slavitt @ @ASlavitt

COVID Update July 7: I spent the last 24 hours with 3 scientists, all of whom have seen vaccine data, 2 of whom are former regulators, all of whom have opinion.

Will soon if interested.

[Traducir Tweet](#)

1:31 a. m. · 7 jul. 2020 · [Twitter for iPhone](#)

10,5 mil Retweets · 2 mil Tweets citados · 32,4 mil Me gusta

68 372 2,9 mil

Andy Slavitt @ @ASlavitt · 7 jul.
En respuesta a [@ASlavitt](#)
My core question was what the world is going to look like in 3 years but asked other things as well.
[\(Go into detail on vaccines and trials & everything on upcoming](#) [itter/how-to-tweet#source-labels](#)

Andy Slavitt @ @ASlavitt · 7 jul.
What's in this new normal? Will I be able to hug my mother?

The answers landed on "I hope so." But no promises. 15/
 68 372 2,9 mil

Andy Slavitt @ @ASlavitt · 7 jul.
Will people wear masks in the future?

Hope that we are more like Asia where this becomes a norm, particularly when people are sick. 16/
 54 410 4 mil

Andy Slavitt @ @ASlavitt · 7 jul.
Crowds, arenas?

Take it slowly. Masks and immunity and digital apps will help. But people will be taking risks.
Antibody therapies could make catching CV less deadly & therefore a more acceptable risk. 17/
 12 286 2,8 mil

Andy Slavitt @ @ASlavitt · 7 jul.
Starting with a slew of good news. 3/
 6 167 2 mil

Andy Slavitt @ @ASlavitt · 7 jul.
The vaccine data from Oxford (being run in Brazil looks strong). No real safety issues so far. Gives people the antibodies.
People are getting it post-COVID & some will in a challenge trial. 4/
 36 657 4 mil

Andy Slavitt @ @ASlavitt · 7 jul.
What "works" means— how long & for whom is less clear. But probably more like a flu vaccine (40%) vs MMR (97%).
There will be multiple vaccines after the first expected in the Fall. Each likely progressively better. 5/
 23 455 3,4 mil

Andy Slavitt @ @ASlavitt · 7 jul.
The monoclonal antibody therapy is also very exciting. Maybe even more so than a vaccine. If you get infected, it's another way to confer immunity & prevent it from advancing. 6/
 24 419 3,7 mil

Andy Slavitt @ @ASlavitt · 7 jul.
What will the time before a vaccine look like?
Crappy. Horrible response in the US. Way too many unnecessary deaths. Fall will be awful. 18/
 33 1,1 mil 5 mil

Andy Slavitt @ @ASlavitt · 7 jul.
Chance that the early vaccines turn out to be unsafe or don't pan out? Possible but low. 19/
 11 235 2,6 mil

Andy Slavitt @ @ASlavitt · 7 jul.
Will people be able to trust what they hear from the FDA or Trump Administration? It's an issue.
Will you?
Likely. Will look at the data.
Would you take a vaccine?
Depends on the data.
Expect there to be data before approval?
Yes.
Will you speak out no matter what?
Yes. 20/

Andy Slavitt @ @ASlavitt · 7 jul.
Therapy trials are easier and quicker than vaccine trials.
Frustration that some vaccine trials are moving too slowly & not sharing data other than in press releases. That's something people can advocate for. 7/
 9 337 3,1 mil

Andy Slavitt @ @ASlavitt · 7 jul.
Everyone—and I can't emphasize this enough— was a huge proponent of masks. Efforts to invalidate masks were considered absurd. 8/
 23 1,9 mil 8,9 mil

Andy Slavitt @ @ASlavitt · 7 jul.
The reason I mention these things is that the principal thing I learned is that the future will be defined by all of these things in combination: vaccines, therapies, masks, and other human interventions. 9/
 9 944 5 mil

Andy Slavitt @ @ASlavitt · 7 jul.
Mutations yes, but there wasn't much concern that vaccines could keep up.
Also viruses become less deadly over time and there is cross-immunity and other potential 10/
 14 254 3,2 mil

Andy Slavitt @ @ASlavitt · 7 jul.
This felt like a realistic glimpse into the future: continuously better. Not one dramatic moment.
No "life before vaccine" or "life after vaccine." But gradual changes. 21/
 14 526 3,9 mil

Andy Slavitt @ @ASlavitt · 7 jul.
The major takeaway: There absolutely is a light at the end of the tunnel even if it's hard to see sometimes. Even if our leaders have made this harder. Even if it's very dispiriting. 22/
 32 959 6,3 mil

Andy Slavitt @ @ASlavitt · 7 jul.
The hard things will pass if we're patient (which is hard) & pass more quickly if we make tougher decisions.
I know the marathon is harder to run when you don't know what mile you're at. But if you count on & help others, I view it better as a relay race. /end
 84 736 5,8 mil

Andy Slavitt @ @ASlavitt · 7 jul.
PS If people have different knowledge, feel free to add it.
In this area, I'm not an expert. Just trying to give the benefit of my network.

Andy Slavitt @   @ASlavitt - 7 jul.
T-cells more important and less understood than antibodies. 11/
🕒 17 RT 274 ❤️ 2,9 mil ⬤

Andy Slavitt @   @ASlavitt - 7 jul.
What is the FDAs hurdle for approving an EUA?
Safety and a 50% or greater chance of improvement. 12/
🕒 4 RT 164 ❤️ 2,1 mil ⬤

Andy Slavitt @   @ASlavitt - 7 jul.
In 6 months or so, so far science is doing as well as our leaders are doing poorly. 13/
🕒 18 RT 687 ❤️ 5,6 mil ⬤

Andy Slavitt @   @ASlavitt - 7 jul.
The future is always murky but given what I heard I asked: so, optimistic about reducing lethality but not eradication? Basically that's what it sounded like.
Yes, there will be a new normal. 14/
🕒 5 RT 432 ❤️ 3,4 mil ⬤

Ex-Obama health care head. Helper. Host podcast #IntheBubble. Listen: <http://smarturl.it/inthebubble>.

Founded @usofcare & @townhallvntrs. Insta: @andyslavitt.

Appendix B



**Save yourself
Save your patient
Get your Covid Vaccination**

More Information
on benefits
and dangers on
[cdc.gov](https://www.cdc.gov)