

A LOOK AT THE ANTI-VACCINE MOVEMENT AND ITS IMPACT ON COVID-19

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ANTI-VAX CONCERNS

Anti-vaxxers reject all vaccines and have more extreme claims about the Covid-19 vaccines:

DNA Mutation

Dr. Carrie Madje posted a video online, gaining more than 300,000 views, where she claimed that “the Covid-19 vaccines are designed to make us into genetically modified organisms”⁶ implying that mRNA vaccines alter the recipient’s DNA. This claim is not true, the mRNA from the vaccine does not alter or interact with the recipient’s DNA in any way. The mRNA stays in the cytoplasm where it codes for the spike protein of SARS-CoV-2, triggering an immune response. The mRNA is then degraded by normal cellular processes⁷.

Microchips

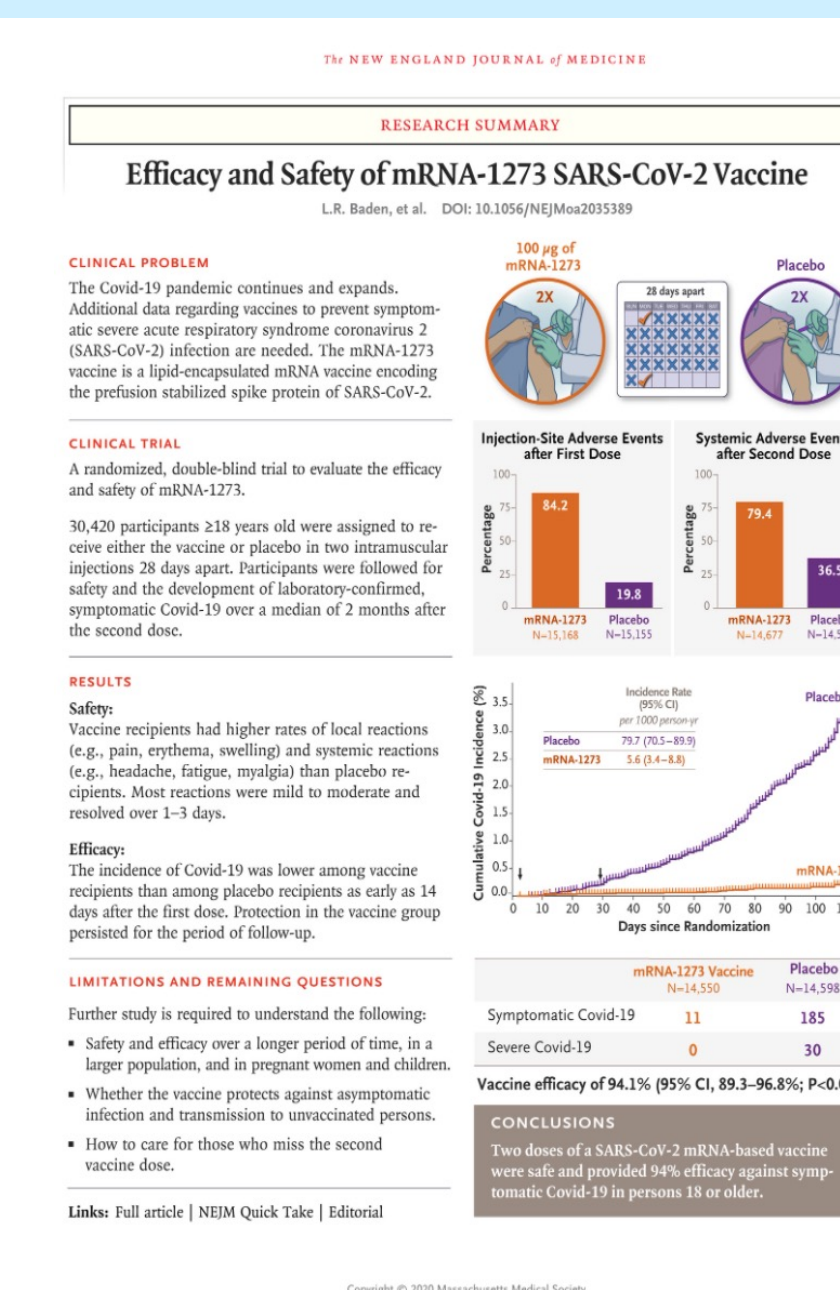
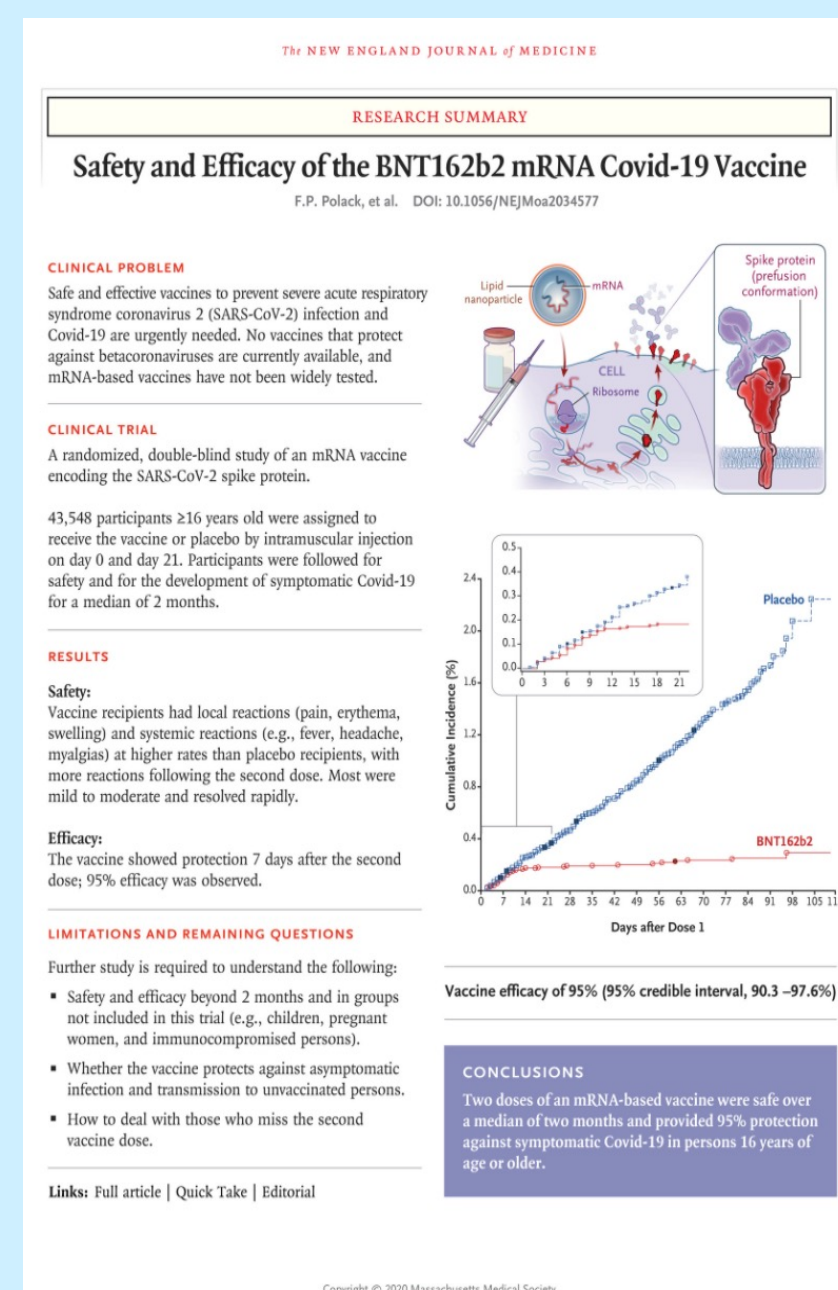
On Facebook, a video of a news clip about ApiJect Systems, a company designing a prefilled injector to deliver vaccines with high speed and efficacy on a large scale⁸, was posted that had text over it claiming that the Covid-19 vaccines contain microchips that will track the location of the patient⁹. The injectors do contain microchips, but the microchips are not injected into the patient to gather information, they remain on the packaging of the vaccine and are designed to prevent counterfeiting and to tell the immunizer the expiration date of the product⁸.



Comment on Facebook post about vaccines containing microchips⁹

Image from anti-vax protest showing how anti-vaxxers fear Covid-19 vaccines will threaten their autonomy

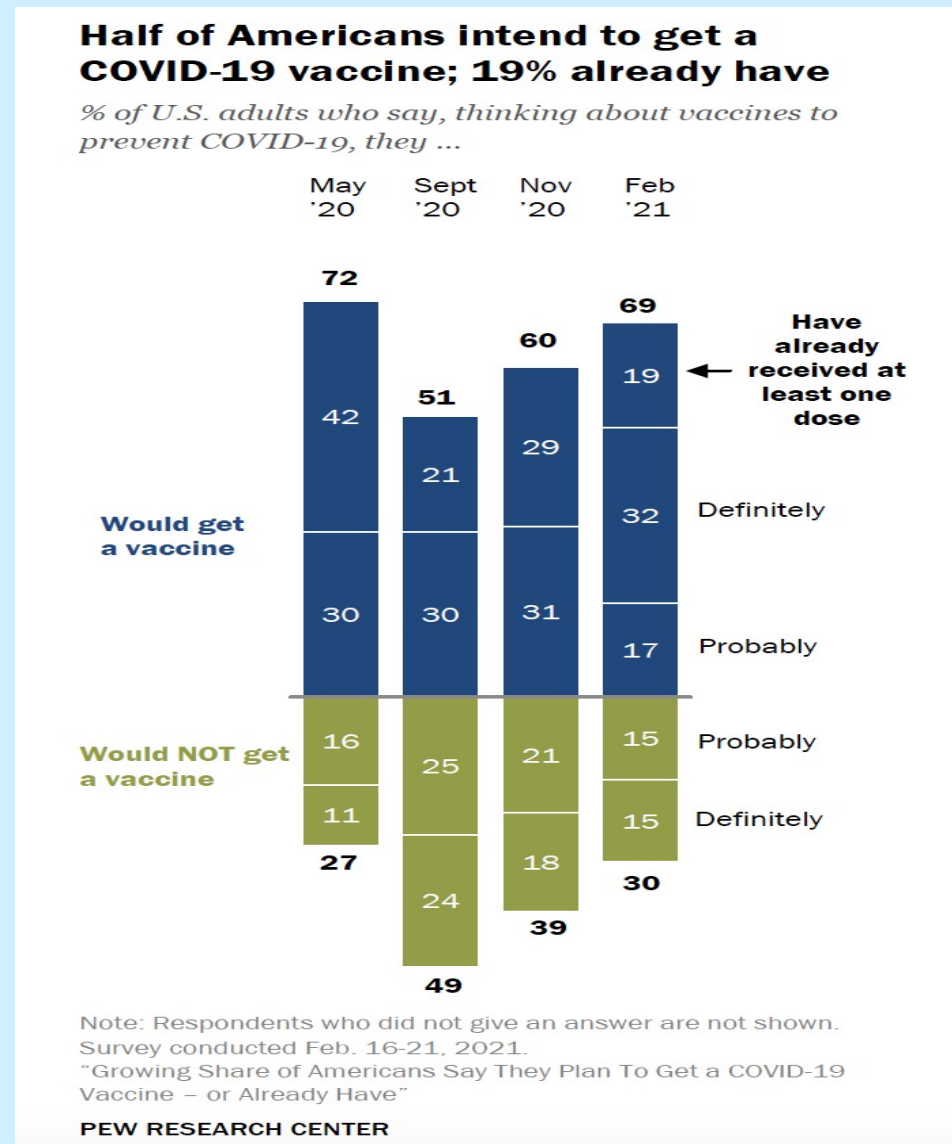
SAFETY & EFFICACY OF MRNA VACCINES



The Pfizer-BioNTech vaccine showed to be 95% effective in preventing Covid-19¹⁰. The Moderna vaccine showed to be 94.1% effective in preventing Covid-19 in clinical trials¹¹. Both vaccines were proven to be safe with similar side effects that lasted for approximately 48 hours: headache, fever, fatigue, pain at injection site, and swelling^{10,11}.

INTRODUCTION

Three vaccines have been approved in the U.S. under the FDA’s Emergency Use Authorization for Covid-19. The Pfizer and Moderna Covid-19 vaccines use mRNA technology to trigger an immune response. The mRNA vaccines have been met with vocal opposition by anti-vaxxers and online anti-vax accounts have increased their followers by 25% since 2019 alone¹.



30% of Americans answered they would not get vaccinated, which threatens herd immunity.

VACCINE HESITANT CONCERNS

A growing number of Americans who have never considered themselves anti-vaxxers before are hesitant to get a Covid-19 vaccine because concerns about:

Speed of Development

The process to develop/approve vaccines typically takes 5-10 years, but the Covid-19 vaccines were approved in under a year, raising concerns about safety². The pandemic made development of a vaccine a priority of scientists globally in effort to control the spread of the virus, so the process was streamlined, accounting for the speed of approval, but safety was not compromised³.

Unknown Long-Term Effects

The Pfizer and Moderna vaccines are the first mRNA vaccines approved for use in humans, so people are hesitant to get the vaccine for concern about unknown long-term effects. However, mRNA vaccines are not unknown entities and have been studied for several decades. In 1993, an mRNA vaccine was injected into mice⁴ so there is confidence in safety from past research.

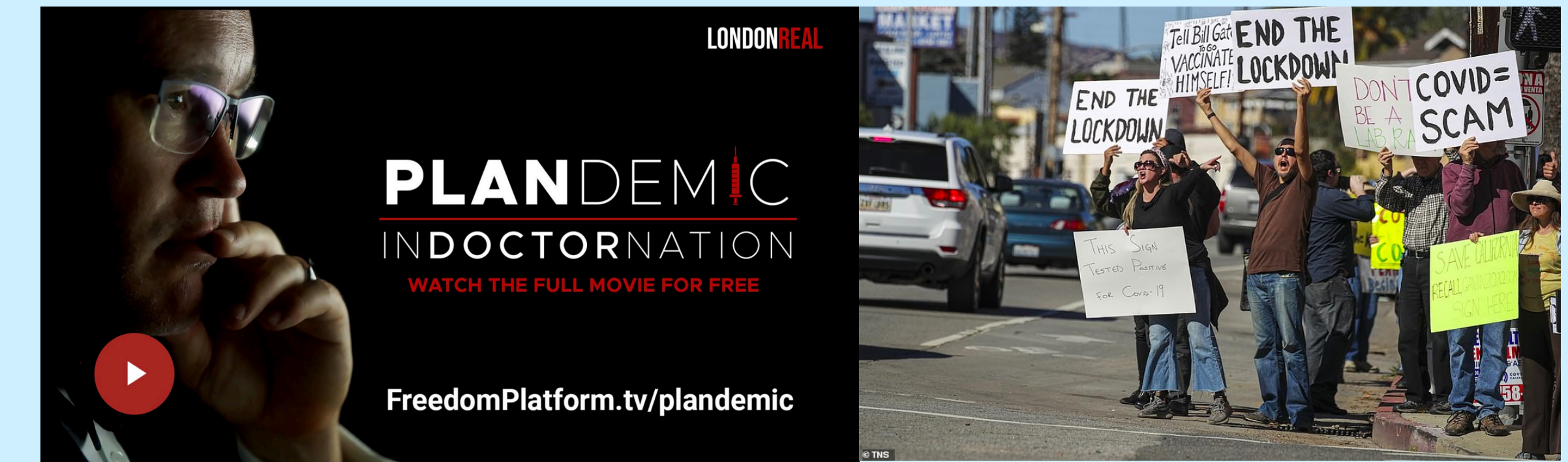
Lack of trust in Government/Medical Professionals

Concern about getting the vaccine stems from being misled by leaders during the pandemic previously. Former President Trump had expressed that the virus is being used as an election year weapon³ while the FDA approved the use of hydrochloroquine as a treatment for Covid-19 before rescinding the decision for lack of evidence of benefit from treatment⁵. Leaders need to be transparent with the public during the pandemic to avoid confusion.

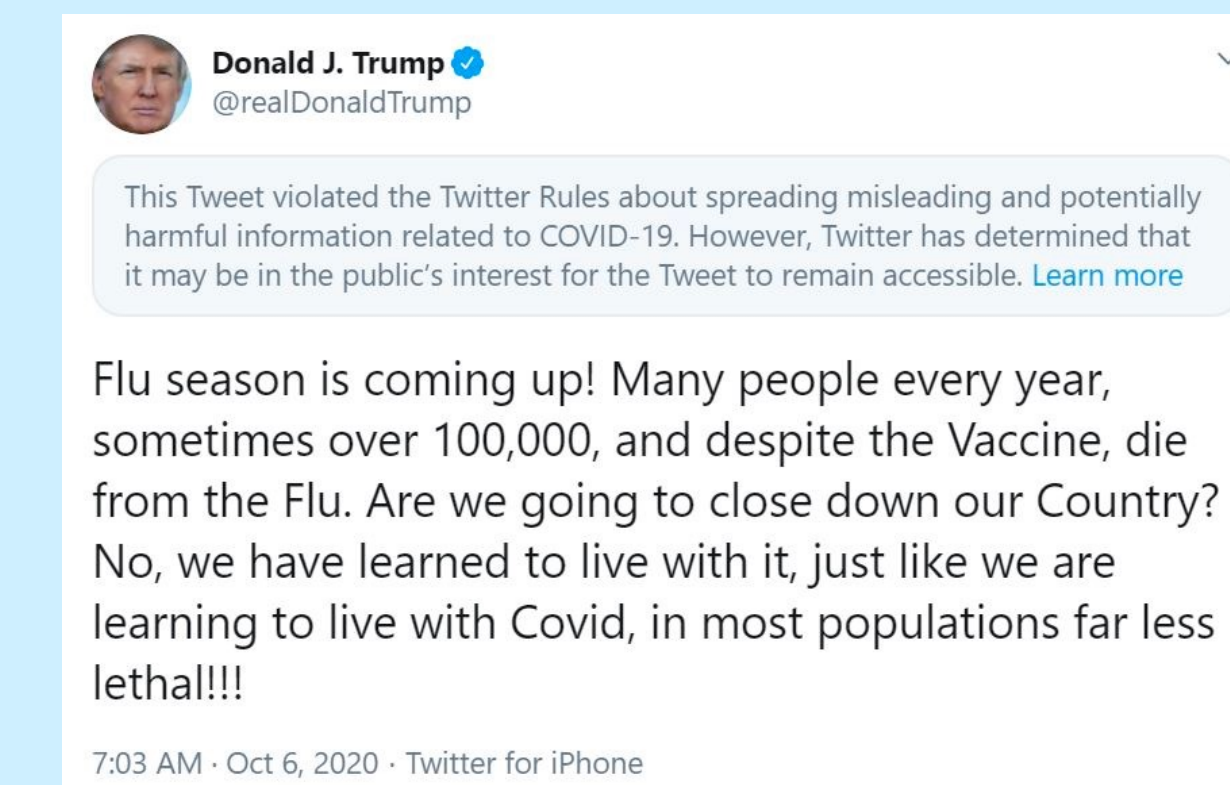
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DOWNPLAYING COVID-19 SEVERITY

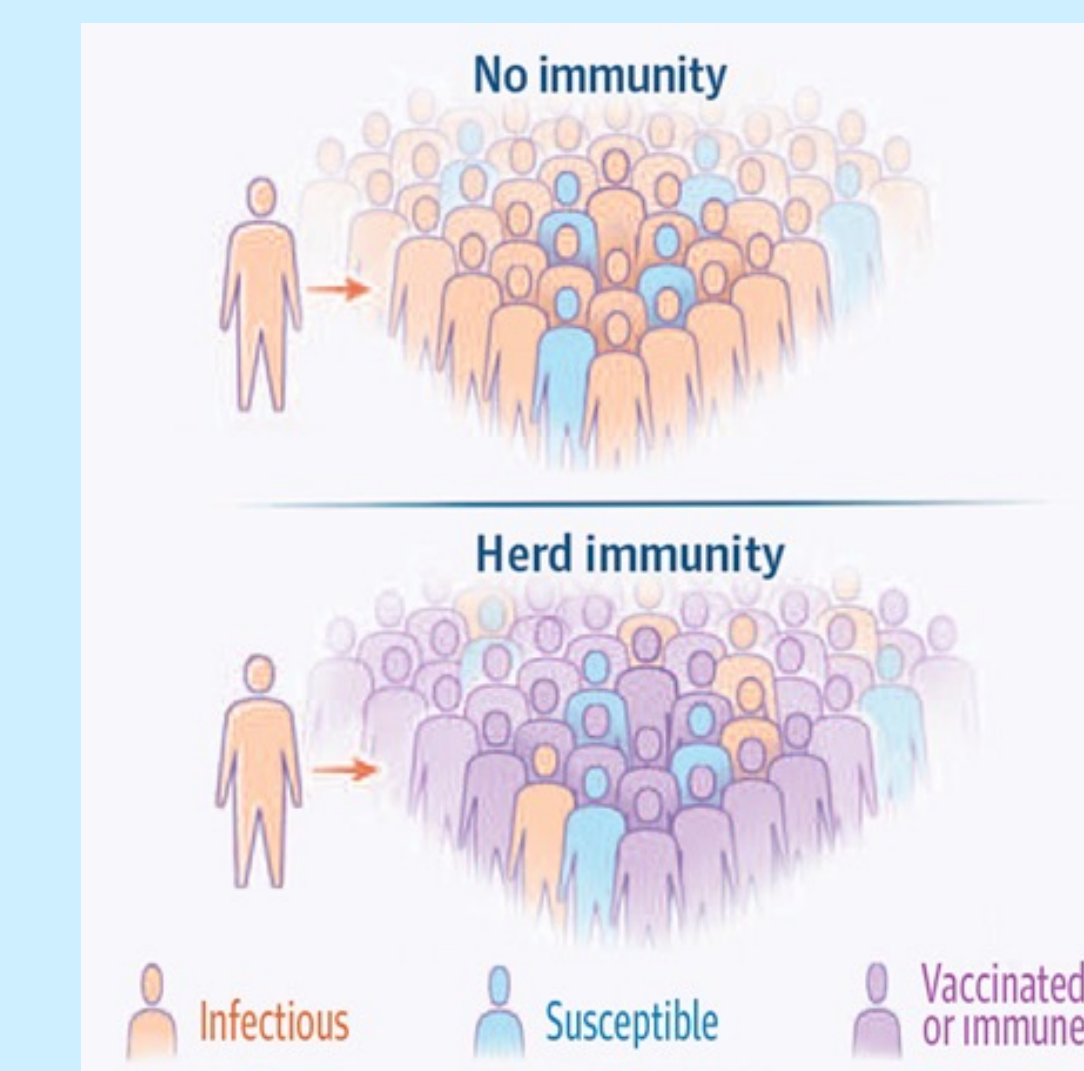


Plandemic encouraged anti-vaccine behavior, claiming that governments created Covid-19 on purpose to limit civil liberties, using the virus to increase vaccination rates, pushing the pro-vaccine agenda¹². A protest at Dodger Stadium, a mass vaccination site, on January 30, 2021 was inspired by *Plandemic*¹³.



"It's Like the Flu"
WHO estimates 29,000-650,000 people die from flu-related causes the annually. While over 2,978,000 people have died from Covid-19 related causes since March 2020¹⁴

THREAT TO PUBLIC HEALTH: HERD IMMUNITY



Increasing vaccine hesitancy endangers public health because decreasing vaccination rates affect herd immunity. Herd immunity protects a population from an infectious disease by controlling the spread of the disease. For a herd immunity to be effective, 70-90% of the population needs to have immunity either from previous infection or vaccination¹⁵.

The percentage of the population that needs to be immune for herd immunity to be effective for Covid-19 is not yet known. Given how highly transmissible SARS-CoV-2 is, a higher percentage most likely will be required to stop the spread of Covid-19, so if 30% of Americans refuse to get vaccinated it can prolong the pandemic and endanger public health.

CONCLUSION

The potential long lasting effects of the anti-vaccine movement’s efforts during the pandemic may be the deepening or spreading of mistrust of vaccines, negatively impacting public health. To combat misinformation about vaccines, it is best to not engage with anti-vax content online so less attention is drawn to misinformation. People should be directed to sources with factual information by their healthcare provider. Leaders and medical professionals must be transparent in communication with the public so that people are less likely to be exposed to inaccurate information.