# COVID-19 State of Vaccine Confidence Insights Report

**Report 25** | **May 12, 2022** | Date Range: February 22 – March 14, 2022

## Summary


### Major Themes:

- Consumers and news outlets expressed their frustration and lack of trust in CDC.
- Continuing and Evolving Themes:
  - Consumers expressed pandemic fatigue and stated they would no longer practice prevention and mitigation strategies.
  - The public continues to have questions and concerns about pediatric COVID-19 vaccines while others eagerly await Emergency Use Authorization (EUA) for children under 5 years old.
  - Consumers continue to have questions and concerns about the safety of COVID-19 vaccine.
  - Consumers continue to discuss their support or opposition to COVID-19 boosters.

***Ways to take action.***

Federal, state, and local partners should continue to work together to explain the rationale for updated guidance, respond to gaps in information, and confront misinformation with evidence-based messaging. These efforts aim to increase confidence in COVID-19 vaccines and expand vaccine uptake. Partners should provide regular updates on the benefits, safety, side effects and effectiveness of COVID-19 vaccines and clearly communicate what is not known. Additionally, partners should share clear, complete, and accurate messages about COVID-19 vaccines and take visible actions to build trust in the vaccine, the vaccinator, health care, and public health.

For findings and ways to act from our other reports, see previous *Insights Reports*.

**Resources:** The following link contains social media resources such as graphics, language, and social media calendars that our partners can use to address the issues raised in this report: https://centersfordiseasecontrol.sharefile.com/d-s2e4ccd561695450d80e81dde23ad0867

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The findings and conclusions in this report are those of the author(s) and do not necessarily represent the official position of the Centers for Disease Control and Prevention (CDC).

# Aims and Methods

By rapidly reviewing and analyzing numerous sources and inputs (see Appendix), the COVID-19 State of Vaccine Confidence Insights Report emphasizes major themes influencing COVID-19 vaccine hesitancy and uptake. These are characterized by the level and type of threat to vaccine confidence, degree of spread, and directionality. In addition, by examining how consumers think and feel, social processes, and the practical issues around vaccination, the Insights Report seeks to identify emerging issues of misinformation, disinformation, and places where intervention efforts can improve vaccine confidence across the United States.

The information in this report is only a snapshot, and certain populations may be underrepresented. Images and quotes are illustrative examples and are not meant to comprehensively cover all content related to the highlighted themes.

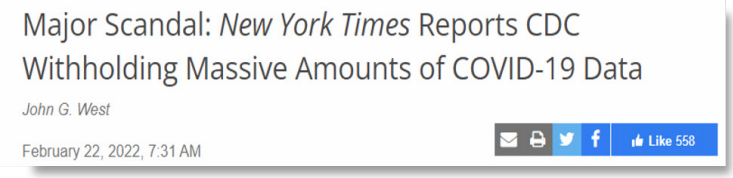
| How do you classify this theme/information? | | | |
|---|---|---|---|
| **High risk** | **Moderate risk** | **Low risk** | **Positive sentiment** |
| ▪ May lead to vaccine refusals and decreased uptake<br>▪ Wide reach, pervasive | ▪ Potential to trigger hesitancy to vaccination<br>▪ Moderate reach, modest dissemination | ▪ Concerning, but low risk to vaccine confidence<br>▪ Limited reach, limited dissemination | ▪ Could increase vaccine confidence, intent, or motivation<br>▪ Variable reach and dissemination |

| How has this theme/idea changed over time (since last report or over the course of multiple reports)? | | |
|---|---|---|
| **Increasing**<br>Information spreading rapidly | **Stable**<br>Information remaining constant at prior level | **Decreasing**<br>Information is not gaining further traction and there has been no indication of additional activity |

# Major Themes Affecting Vaccine Confidence [a]

## Consumers and news outlets expressed their frustration and lack of trust in CDC

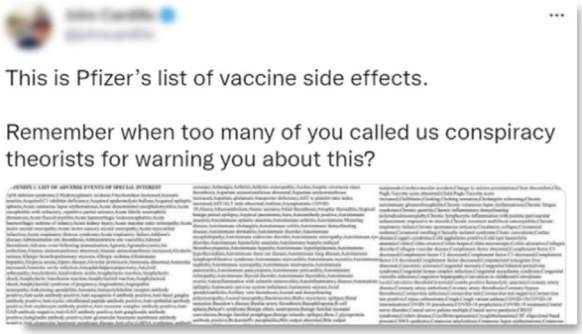
On February 20, 2022, the New York Times published an article titled "The CDC Isn't Publishing Large Portions of the COVID-19 Data It Collects." Subsequently, other news and editorial outlets published articles on this topic with varying degrees of inflammatory language.[1,2,3] Google searches related to the article or news story concerning CDC's data sharing practices increased by up to 650% during this reporting period.b Moreover, news outlets released articles discussing the public's lack of trust in public health, science, and CDC.[4,5]




Additionally, some news outlets and social media users discussed the release of a Pfizer document, Cumulative Analysis of Post-Authorization Adverse Event Reports of Pf-07302048 (Bnt162b2) Received Through 28-Feb-2021, that presented data on reported adverse events following vaccination.[c,6,7,8] However, much like information about the Vaccine Adverse Event Reporting System (VAERS), the adverse events in the Pfizer document are an inventory of all reported events and their frequency regardless of their link to the Pfizer-BioNTech COVID-19 vaccine.9 Some used the release of this information as evidence that the public cannot trust CDC and the media.[10,11,12]

***Perceptions, Concerns, and Threats to Vaccine Confidence***

- Almost half of respondents (49%; N=1,068) in a YouGov poll (released March 11, 2022) said their trust in CDC had gone way down or slightly down since the start of the pandemic.[13,14]
- A majority of respondents (56%; N=2,301) in a Partnership for Public Service poll (released March 1, 2022) did not trust the federal government to do what is right.[15,16]
- Consumers expressed their beliefs that the unreleased data proves CDC lied to the public and cannot be trusted.[c,17,18,19,20]
- Some consumers believe CDC is not releasing data depicting that COVID-19 vaccines are not safe or effective, even though the unreleased data are said to be related to COVID-19 hospitalizations, booster dose uptake, and wastewater analysis.[d,21,22,23,24]
- Some online users claimed that Twitter was banning online references to vaccine deaths from the VAERS data.[25,26,27]
- Some social media users believe the recently released Pfizer document proves that the vaccines are not safe.[c,28,29,30]
- News outlets and social media users also discussed how CDC's COVID-19 guidance was confusing, untrustworthy, or unsafe for the general public.e[31,32,33,34] Some social media users claimed CDC was changing its COVID-19 guidance for political reasons.[c,35,36,37]




***Misinformation Themes***

- The recently released Pfizer document proves that COVID-19 vaccines are not safe and is evidence of a conspiracy between the COVID-19 vaccine manufacturers and the government.[f,38,39]
- CDC withheld data depicting that COVID-19 vaccines are not safe or effective.[40,41]

***Content Gaps and Information Voids identified/mentioned by consumers and news outlets***

- Why has CDC not released all the available data on COVID-19 booster doses, hospitalizations and wastewater analyses?[42,43,44]

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[a]Citations in this report are illustrative examples and are not the total number of instances of the corresponding themes.
[b]Google Trends
[c]Tanaq Social Listening Report
[d]CDC-INFO
[e]CDC's Communication Surveillance Report
[f]Project VCTR

- CDC provides extensive publicly available summary reports plus datasets from multiple sources, including vaccine uptake, cases, deaths, and wastewater. Descriptions of data sources and FAQs are found at the websites listed - FAQ: COVID-19 Data and Surveillance | CDC and CDC COVID Data Tracker
- CDC must balance the use of data provided with how these data may be shared, released and maintained under applicable federal laws. CDC collects COVID-19-related data through more than a dozen national surveillance systems in collaboration with federal partners, local and state health departments, and academic and private sector partners. About half of health departments have the capacity to link their COVID-19 case, death, and vaccine data. However, CDC is unable to do this type of linkage with the de-identified data it receives from states. In addition, this voluntary data collection framework indicates that states collect data using different methods, which often generate disparate, non-comparable data sets. Using this approach to gather data limits CDC's ability to aggregate and link these data on a national level. For this reason, not all data are suitable for immediate release due to incompleteness or potential inaccuracies, lack of generalizability, sample sizes that are too small for meaningful interpretation, security risks, and privacy and ethical concerns. CDC endeavors to be a responsible steward of data that are shared and to ensure accuracy, completeness, and appropriate representation.
- The National Wastewater Surveillance System (NWSS) is new (established in September 2020) and states have implemented systems at different rates. CDC waited to make data available through COVID Data Tracker until we had reasonable coverage in all 10 HHS regions. We reached that point in January 2022, and the COVID Data Tracker wastewater page went live February 2, 2022. Wastewater RNA concentrations (the raw data coming into NWSS) are not directly comparable across jurisdictions. NWSS produces three metrics to enable comparison -- percent change/trends, detection proportion, and relative level. All wastewater data, including the raw concentrations, are available through a public data request process that has been in place since early 2021.

- Has CDC released all the available data on the safety and effectiveness of COVID-19 vaccines?[45,46]
  - CDC collects a significant amount of vaccine-related data. Depending on the source and type of data, sometimes it has missing data. Or it may include personally identifiable information, which hinders the interpretability of the data or the ability to share it. CDC works to communicate and publish timely and transparent information about the safety of vaccines to public health officials, healthcare providers, and the public.[47]
  - Data from the Vaccine Adverse Event Reporting System is publicly available and can be downloaded here: https://vaers.hhs.gov/data.html
  - Data from the Vaccine Safety Datalink (VSD) network are available by request from the National Center for Health Statistics Research Data Center (NCHS RDC). More information on the VSD data sharing program can be found here: https://www.cdc.gov/vaccinesafety/ensuringsafety/monitoring/vsd/accessing-data.html.
- Are the adverse events reported in the recently released Pfizer document proof that COVID-19 vaccines are not safe?[48,49]
  - No. Multiple analyses from CDC and others have found all approved or authorized COVID-19 vaccines to be safe. Rare serious adverse events are identified and publicly reported. You may find more information by going to: Ensuring COVID-19 Vaccine Safety in the US | CDC
  - The Pfizer document is a comprehensive listing of all reported adverse events or health issues described following vaccination, regardless of whether the vaccine caused them. Tracking such events is a requirement for pharmaceutical companies, Food and Drug Administration (FDA), and CDC to identify possible safety signals, particularly rare events that may not have been possible to detect during clinical trials. An adverse event is simply an event that has occurred after vaccination — it does not mean the vaccine caused the problem. And many of these events are likely to be purely coincidental. Adverse events related to the Pfizer-BioNTech vaccine are similar to many routine vaccines. The adverse events are mild and short lasting (pain at injection site, fever). Finally, for more severe adverse events, there is a detailed process to determine whether these are related to vaccination or not. FDA and CDC use several different sources of dataa to closely monitor vaccine safety and identify events that occur more often after vaccination compared to how often they typically occur in the general population.[50] The Pfizer report did not include any comparison of adverse events in unvaccinated people.
- Why does CDC continue to update their COVID-19 vaccination and mitigation guidance?[51,52]
  - CDC has continued to review isolation and quarantine recommendations for various populations throughout the COVID-19 pandemic. Recommendations take into account the societal impact (e.g., critical infrastructure and health care worker staffing shortages) and the latest science on disease severity and when and for how long a person is most infectious. CDC will continue to evaluate these recommendations as more data become available.[53]

***Misinformation Themes***

- The recently released Pfizer document proves that COVID-19 vaccines are not safe and is evidence of a conspiracy between the COVID-19 vaccine manufacturers and the government.g,[41,42,43]
- CDC withheld data depicting that COVID-19 vaccines are not safe or effective.[44,45,46]

***Ways to take action:***

- Coordinate with federal, state, local agencies, and partners to share clear, complete, and accurate messages about COVID-19 vaccines and take visible actions such as culturally appropriate messaging/education and community engagement to build trust in the vaccine, the vaccinator, and the system.
- Communicate transparently about the process for authorizing, approving, making recommendations for, monitoring the safety of, distributing, allocating, and administering COVID-19 vaccines, including data collection, analysis, and reporting.
- Provide regular updates on the benefits, safety, side effects, and effectiveness of COVID-19 vaccines and clearly communicate what is known, what isn't known, and what is being done to find out what isn't known.
- Proactively address and help stop the spread and harm of misinformation via social media platforms, partners, and trusted messengers.
- Engage communities in a sustainable, equitable, and inclusive way using two-way communication to listen, build trust, and increase collaboration.

[9]Project VCTR

# Continuing and Evolving Themes Affecting Vaccine Confidence

The themes below have been noted in previous reports and continue to undermine vaccine confidence. The information highlighted below focuses on what is new or different from previous reports. For additional context and previous recommendations on these themes, see previous *Insights Reports.*

## Consumers expressed pandemic fatigue and stated they would no longer practice prevention and mitigation strategies

Consumers continue to discuss how they are done or want to stop following COVID-19 prevention and mitigation strategies. Many online consumers expressed their elation in everyday occurrences with the hashtags #returntonormal[54] and #backtonormal.[55] Some online discussion verbalized concerns against prematurely lifting precautions[49] which could cause successive waves of infection.[56,57] Despite conflicting viewpoints from some consumers, the majority of online discussions have already moved from pandemic to other issues.[58,59] This shift might be due to the declining infections with the virus that causes COVID-1960 and stalled vaccination rates for the primary series and booster doses.h News and other online outlets continue to publish articles discussing how the public is tired of COVID-19 and discussions around it.[61,62,63] The most recent update to the CDC Community Levels (which determines community risk levels by reviewing several indicators, such as the number of new COVID-19 cases in an area, the share of hospital beds in use, and hospital admissions) indicates more than 98% of the US population is in a location with low or medium COVID-19 Community Level, indicating to some that COVID-19 is no longer a concern.[64,65]

On March 1, the White House detailed an as-yet unfunded[66] National Preparedness Plan for COVID-19[61] comprising of four key aspects: protection against and treatment of infections with available therapies, preparation for new variants, prevention of economic and educational shutdowns, and assistance with vaccination efforts outside of the U.S.[66,67] Meanwhile, the Federal Aviation Administration's masking requirement, initially set to expire on March 18, has been extended until April 18.68,69 These events, coupled with international conflicts,[70] domestic economic stressors,[71] and political messaging,[72] may have led to consumers expressing varying sentiments ranging from a desire to be done with prevention-related activities[73,74] to a belief that the COVID-19 pandemic is over[75,76] Some sources have described this as "pandemic fatigue."[77,74]

***Perceptions, Concerns, & Threats to Vaccine Confidence***

- Some consumers believe the United States may be approaching, or is already in, an endemic stage.[78,76]
- Some understand the word 'endemic' to mean that infection with the virus that causes COVID-19 is not concerning[79] or that serious COVID-19 outcomes are unpreventable.
- Online users questioned whether testing and other pandemic-related services would be available in the absence of the political will to fund these efforts.[80]

***Misinformation Themes***

- President Biden declared the pandemic is over.[81]
- Guidance from governmental health authorities' "flip-flops" 82 or may not "follow the science."[83]
- Stalled vaccination uptake rates indicate the pandemic is over.[84,85]
- CDC and government officials knew mitigation efforts like vaccines, masks, and tests would be ineffective but continued to push them for political gain.[86,87,88]

***Content Gaps and Information Voids***

- As the number of COVID-19 cases declines, is it still necessary to receive a primary series of COVID-19 vaccine or booster dose?[89]
  - COVID-19 vaccines are effective at protecting you from severe outcomes and death from the virus that causes COVID-19, even if you have had COVID-19 in the past. Vaccination is an important tool to help us get back to normal.90
- As state and local governments update their COVID-19 community mitigation recommendations, should masks still be worn in indoor public places?[91,92]

h HHS Current Events Tracker

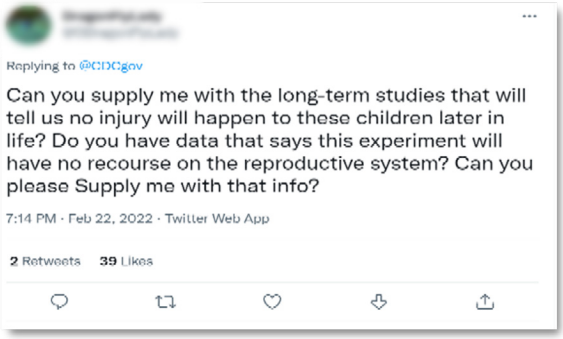
  - When making decisions about community-level and individual-level prevention strategies, health officials, stakeholders and individuals should consider CDC's COVID-19 Community Levels approaches within their local context.[93]
  - Layered prevention strategies, such as staying up to date on vaccines, screening testing, ventilation, and wearing masks, can help limit severe disease and reduce the potential for strain on the healthcare system. CDC recommends using county COVID-19 Community Levels to help determine which COVID-19 prevention measures to use for individuals and communities.[94]
  - COVID-19 Community Levels do not apply in healthcare settings like hospitals and nursing homes. Instead, healthcare settings should continue to follow CDC's infection prevention and control recommendations for healthcare workers.[95]
- Should masks and vaccines still be utilized as governments update their COVID-19 community mitigation recommendations for travel?[96,97]
  - Masks and vaccines continue to be safe and effective ways to protect against infection from the virus that causes COVID-19.
  - Everyone is recommended to stay up to date with their COVID-19 vaccines.
  - Mask use recommendations are available at: Use and Care of Mask | CDC
- Guidance from governmental health authorities' "flip-flops" [85] or may not "follow the science."[86]
- Stalled vaccination uptake rates indicate the pandemic is over.[87,88]
- CDC and government officials knew mitigation efforts like vaccines, masks, and tests would be ineffective but continued to push them for political gain.[89,90,91]

***Ways to Take Action***

- Develop and amplify messages explaining why vaccines and staying "up to date" on COVID-19 vaccinations are still crucial to preventing severe illness from COVID-19, including illness caused by emerging variants.
- Disseminate messages about community-level risk (CDC Community Levels) and the importance of the corresponding COVID-19 mitigation measures, such as masking, screening, testing and quarantining.
- Address new misinformation themes regarding vaccines to increase or maintain vaccine confidence in COVID-19 vaccine and booster doses.

## The public continues to have questions and concerns about pediatric COVID-19 vaccines while others eagerly await EUA of these vaccines for children under 5 years old

Three months after Pfizer initially submitted data to the FDA to obtain EUA for their COVID-19 vaccine in children ages under 5 years, parents eagerly await updates on the approval process while pushing to allow off-label use.[98,99,100] Also, worsening some parents' frustrations and adding to feelings of abandonment and governmental indifference, many cities and counties have lifted mask requirements.[i,j,101,102,103,104] However, many, including public health officials and political figures,[105,106,107] remain opposed to vaccination of not only this age group, but all children.[108,109,110] Adding to this, some studies have shown decreased effectiveness or decreased antibody response in younger children, as compared to adults, further adversely affecting vaccine confidence for this age group.[111,112,113]




In addition, a recent online poll[114] showed that 57% of parents with children ages under 5 years reported not having enough information about COVID-19 vaccine safety and effectiveness. Moreover, 39% of this cohort said federal health agencies' information about COVID-19 vaccines was confusing.[115] Searches for "when will covid vaccine be available for kids under 5" increased by 300% during this reporting period.k

***Perceptions, Concerns, and Threats to Vaccine Confidence***

- Many parents feel they have done everything in their power to protect their children from COVID-19 and are growing impatient as a vaccine remains elusive.[116,117,118]
- The government is doing nothing to protect children ages under 5 years from COVID-19.[119,120,121]
- Parents are hesitant to vaccinate children after a study showed the Pfizer-BioNTech COVID-19 vaccine offered little protection against the Omicron variant and had decreased vaccine effectiveness (VE) against serious illness.[122,123,124] The MMWR study showed that, among children aged 5 through 11 years, the COVID-19 vaccine effectiveness14 to 67 days after receipt off the second dose was 46%.
- Consumers are worried about the unknown long-term side effects from COVID-19 vaccines.[125,126,127]

***Misinformation Themes***

- The COVID-19 vaccine is not effective in children.[128,129,130]
- COVID-19 vaccines are ineffective and are not required for healthy children, as touted by some public health and government officials.[131,132]
- Kids are not at risk of infection with the virus that causes COVID-19.[133,134]
- The COVID-19 vaccine is an experiment and simply a ploy by Big Pharma to make money.[135,136,137]

***Content Gaps and Information Voids***

- Why should children and teens get vaccinated against COVID-19?h
  - Children are as likely to be infected with the virus that causes COVID-19 as adults and can get very sick, have short- and long-term health complications, and spread the virus to others, including at home and school. Children infected with the virus that causes COVID-19 can also develop serious complications like multisystem inflammatory syndrome (MIS-C)—a condition where different body parts become inflamed, including the heart, lungs, kidneys, brain, skin, eyes, or gastrointestinal organs. Children with underlying medical conditions are more at risk for severe illness from COVID-19 compared to children without underlying medical conditions.[138]
- Are children eligible for a booster?[l]
  - Everyone ages 12 years and older should get a COVID-19 booster when they are eligible. Currently, a booster is not recommended for children younger than 12 years.139

[i]CDC-INFO
[j]CDC's Communication Surveillance Report
[k]Google trends
[l]CDC-INFO

- Is severe illness or death likely after COVID-19 vaccination in children?[k]
  - Serious adverse events after COVID-19 vaccination are rare but may occur. CDC provides timely updates on serious adverse events. Myocarditis and pericarditis after COVID-19 vaccination are rare in children. Reports of death after COVID-19 vaccination are rare.[140]

- The COVID-19 vaccine is not effective in children.[125,126,127]
- COVID-19 vaccines are ineffective and are not required for healthy children, as touted by some public health and government officials.[128,129,130,131]

Kids are not at risk of infection with the virus that causes COVID-19.[132,133]

***Ways to Take Action***

- Encourage pediatricians, public health authorities, and community leaders to describe the benefits of COVID-19 vaccination in children at eligible ages.
- Disseminate information containing accurate infection and hospitalization data in children.
- Provide up-to-date messages about the timeline for vaccination in children ages under 5 years.

## Consumers continue to have questions and concerns related to the safety of COVID-19 vaccines

Vaccine mis/disinformation[141,142,143] as well as reported cases of vaccine adverse events and side effects such as myocarditis,[144,142,143] encephalomyelitis,[m,144] chronic fatigue syndrome,n worsening migraine episodes,[145,146] sudden hearing loss,[147] menstrual and fertility disorders,[148] blood clots,[149,150] cancers,[151] and deaths[152,153,154] following COVID-19 vaccinations have continued to contribute to concerns about vaccine safety. Studies which support and reinforce COVID-19 vaccine safety were published and circulated during this reporting period, including a recent CDC study that showed myocarditis was less frequently reported as an adverse event following vaccinations with boosters as opposed to vaccinations with second primary doses among adolescents.[157] Likewise, a 6-month VAERS study conducted among people who received Pfizer-BioNTech or Moderna COVID-19 vaccines in the United States showed that most adverse events were mild and transient.[158,159] Also, COVID-19 mRNA vaccines were found to be safe in pregnancy[162] and to have the potential of conferring passive immunity to infants through transplacental transfer of antibodies.[163]

On WHO social listening tool, 'Pfizer' was the top hashtag, top rising hashtag, top keyword and top rising keyword.o Moreover, on CDC-INFO, some consumers made requests for studies focused on long-term effects of COVID-19 vaccines to be conducted.p

***Perceptions, Concerns, and Threats to Vaccine Confidence***

- Online users misrepresented the 9-page Pfizer report on adverse reactions currently circulating on social media to falsely claim that vaccines are dangerous.[164,165,166,167,168]
- Some consumers and news outlets expressed concerns about the impacts of COVID-19 vaccines causing adverse events, side effects, comorbidities and sudden deaths.[169,170,171]
- Several online consumers and websites expressed opposition to vaccines following severe allergic reactions and deaths among specific individuals (21 year old Texan,[172] NYC firefighters,[173,174] and a 5 year old from Illinois[175]) who received COVID-19 vaccines.
- Although debunked,[178], false online claims stated that a recent study proves mRNA vaccines could convert mRNA into DNA.q,[176,179,180]

***Content Gaps and Information Voids***

- What are the side effects of COVID-19 vaccines?[196,197]
  - Common side effects include pain, redness, swelling, tiredness, headache, muscle pain, and fever.[198,199] Severe allergic reactions and adverse effects that could cause a long-term health problem are extremely rare.[200,201]
- What is the risk of myocarditis after mRNA COVID-19 vaccination?[202]
  - The known risks of COVID-19 illness and its related, possibly severe, complications, such as long-term health problems, hospitalization, and even death, far outweigh the potential risks of having a rare adverse reaction to vaccination. This includes the possible risk of myocarditis or pericarditis.[203]
  - Most patients with myocarditis or pericarditis who received care responded well to medicine and rest and felt better quickly. Patients can usually return to their normal daily activities after their symptoms improve.[204]
  - Infection with the virus that causes COVID-19 increases the likelihood of myocarditis much more so than vaccination.[205,206]
- Do COVID-19 vaccines weaken the immune system?[207]
  - No studies have shown receiving COVID-19 vaccines weaken the immune system while numerous studies have documented the effectiveness of COVID-19 vaccines in preventing severe illness and death from COVID-19. For more information see: COVID-19 Vaccine Effectiveness and Safety | MMWR (cdc.gov).
- What are the effects of COVID-19 vaccines on fertility?[208]
  - Several studies have found no evidence that COVID-19 vaccines affect fertility in women or men.[209,210,211]

[m]WHO EARS
[n]Google Trends
[o]WHO EARS
[p]CDC-INFO
[q]Project VCTR

- What are the effects of COVID-19 vaccines on pregnancy?[212]
  - There is no evidence that COVID-19 vaccines increase the risk of preterm birth, low birth weight, or stillbirth. Infection with the virus that causes COVID-19 during pregnancy may increase the risk of severe illnesses, hospitalizations and deaths in mothers and newborns.[213] A recent MMWR found that completion of a 2-dose mRNA COVID-19 vaccination series during pregnancy might help prevent COVID-19 hospitalization among infants less than 6 months old.[214]
- Do the mRNA COVID-19 vaccines alter DNA inside human cells?[215,216]
  - There is no evidence that the mRNA COVID-19 vaccines alter a person's DNA.[217] COVID-19 vaccines do not change or interact with your DNA. The genetic material delivered by mRNA vaccines does not enter the nucleus of your cells, which contains DNA.191.[218,219]
- Does adverse event data in the Pfizer report indicate that vaccines are dangerous?[220]
- The Pfizer document is an inventory of adverse events, or health issues reported following vaccination, regardless of whether the vaccine caused them.[221]

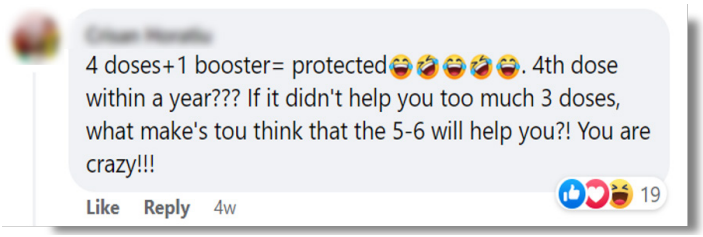
***Misinformation Themes***

- COVID-19 vaccines cause a significant number of deaths.[222]
- For people in their twenties, the risk of death is seven times higher after vaccination than from infection with the virus that causes COVID-19.[223,224]
- COVID-19 vaccine-related myocarditis and other COVID-19-related complications caused the deaths of two teenage boys[225] and nine US soldiers.[226,227]
- COVID-19 vaccines contain "strange life forms"[228] and can be transcribed into human DNA.[229]
- COVID-19 vaccines are not vaccines but experimental gene therapy.[230,231]
- COVID-19 vaccines cause recipients to develop vaccine-induced acquired immune deficiency syndrome (VAIDS).[232]
- Conservative news outlet claimed that athletes are either injured,[233] dead,[234] or require an EKG (heart recording)[235] following COVID-19 vaccination.
- The World Council of Health released a guide for followers to "spike protein detox" after vaccination.[236]

***Ways to Take Action***

- Create and disseminate simple, clear messages about the process for authorizing, approving, making recommendations for, monitoring the safety of, distributing, allocating, and administering COVID-19 vaccines, including data handling.
- Provide regular updates on the benefits, safety, side effects and effectiveness of COVID-19 vaccines and clearly communicate what is known, what isn't known, and what is being done to find out what isn't known.

## Consumers continue to discuss their support or opposition to booster doses




Consumers continue to question possible authorization and eligibility for a fourth dose (i.e., a second booster). Searches for "cdc booster data" rose by 400% during this reporting period.[r] On March 11, 2022, a Pfizer-BioNTech representative stated that an additional booster would be necessary due to waning immunity while supporting data would be submitted to the FDA for approval.[237,238] Moderna also believes an additional booster will be necessary.[239] However, only 38% of eligible adults report being likely to receive a booster.[s] Currently, everyone 12 years and older should get a booster when eligible. Those who are 12 years and older and are moderately/severely immunocompromised may receive a second booster. Everyone 50 years and older may also get a second booster.[240] Although data from the CDC COVID Data Tracker show 48.2% of fully vaccinated US adults have received a booster dose, adults who have not received a booster dose yet are less likely to receive future booster doses than adults who already have[s]

### *Perceptions, Concerns, and Threats to Vaccine Confidence*

- Some consumers support an additional booster of COVID-19 vaccine, comparing it to a yearly flu shot.[241,242,243] Others are uninterested in additional doses, claiming two or three doses total is their limit.[244,245,246]
- Social media users are worried the booster is causing heart and breathing problems.[247,248,249]
- Conflicting messages from global public health authorities, increased profits for vaccine companies,250,251 and unclear data on benefit of vaccination may negatively impact vaccine uptake.[252,253,254]

### *Content Gaps and Information Voids*

- What are the side effects of COVID-19 boosters?[t]
  - So far, reactions reported after getting a booster are similar to those after the two-dose or single-dose primary shots. Fever, headache, fatigue, and pain at the injection site were the most commonly reported side effects. Overall, most side effects were mild to moderate. However, as with the two-dose or single-dose primary shots, serious side effects are rare but can occur.[255]
- Are people who received COVID-19 vaccines abroad eligible for Moderna or Pfizer-BioNTech vaccine boosters in the United States?[t]
  - Yes. CDC has detailed guidance for COVID-19 vaccination for people who received 1 or more doses outside of the United States. Refer to Clinical Guidance for COVID-19 Vaccination | CDC.[256]
- Should immunocompromised people receive a fourth dose of the COVID-19 vaccine?u
  - People ages 12 years and older who are moderately/severely immunocompromised **should receive a total of 4 doses** of mRNA COVID-19 vaccine to stay up to date. The 4 doses include a primary series of 3 doses of an Pfizer-BioNTech or Moderna COVID-19 vaccine, plus 1 booster of an Pfizer-BioNTech or Moderna COVID-19 vaccine (4th dose).[257]
- Do people need a booster dose to be considered fully vaccinated?u
  - Fully vaccinated means a person has received all recommended doses in their primary series of COVID-19 vaccines. Up to date means a person has received all recommended doses in their primary series of COVID-19 vaccines and a booster when eligible.[258]

### *Misinformation Themes*

- Some consumers believe the Pfizer CEO was lying about the need for a fourth dose and it is only a plan for Pfizer to make more money.[259,260,261]
- The first, second, and third doses did not work at preventing the spread of the virus that causes COVID-19, so neither will a fourth dose.[262,263,264]
- The CDC failed to release timely data, making some believe the government is hiding data showing most adults did not require an additional COVID-19 booster.[265,266,267]

### *Ways to Take Action*

- Provide information to the public when data is available about the safety and benefits of an additional booster.
- Explain side effects associated with vaccination and how they compare to long-term effects and adverse events of COVID-19.
- Disseminate messages showing who is eligible and who should get an additional booster dose.

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[r]Google trends
[s]HHS Current Events Tracker
[t]CDC-INFO
[u]CDC-INFO

# Appendix: Inputs and Sources

| Type | Input | Cadence | Sources | Tactics for Utilization |
|---|---|---|---|---|
| **Social Media Listening & Media Monitoring** | Communication Surveillance Report | Daily on weekdays | ▪ Google news<br>▪ Meltwater<br>▪ CrowdTangle<br>▪ Native platform searches | ▪ Share of voice topic analysis to identify themes<br>▪ Emerging topics |
| | Meltwater | Daily | ▪ Facebook, Twitter, Instagram<br>▪ Blogs<br>▪ News media<br>▪ Online forums | ▪ Share of voice topic analysis<br>▪ Emerging theme topics<br>▪ Identify high reach/velocity topics |
| | OADC (Office of the Associate Director of Communication) Channel COVID-19 Post metrics | Weekly | ▪ Sprout Social<br>▪ Native OADC account analytics | ▪ Analyze # of posts, topics<br>▪ Success of messages, # of impressions, reach, # engagements |
| | OADC Channel Comment Analysis | Daily on weekdays | ▪ Native platform searches | ▪ Sentiment analysis<br>▪ Identify message gaps/voids |
| **Direct Reports** | CDC-INFO Metrics | Weekly | ▪ CDC-INFO inquiry line list<br>▪ Prepared response (PR) usage report | ▪ Cross-compare PR usage with inquiry theme analysis<br>▪ Sentiment analysis<br>▪ Identify information gaps/voids |
| | VTF Media Requests | Weekly | ▪ Media request line list | ▪ Leading indicator for news coverage<br>▪ Identify information gaps/voids |
| | Web Metrics | Weekly | ▪ Top pages<br>▪ Google search queries<br>▪ Top FAQs<br>▪ Referring domains | ▪ Identify information gaps/voids,<br>▪ Identify keywords/search terms, changes in web traffic |
| **Research** | Poll Review | Weekly | ▪ Harris Poll, PEW research, Gallup Poll, KFF<br>▪ New data related to vaccine hesitancy | ▪ Identify socio-behavior indicators related to motivation and intention to vaccinate |
| | Literature Review | Weekly | ▪ PubMed, LitCovid, ProQuest Central, Altmetric<br>▪ New data related to vaccine hesitancy | ▪ Identify current vaccination intention<br>▪ Identify barriers to vaccination |
| **Third Party Reports** | Tanaq Social Listening +Media Monitoring Report | Weekly | ▪ Meltwater<br>▪ Sprout Social<br>▪ First Draft<br>▪ Native platform searches | ▪ Trending topics<br>▪ Demographic and geographic conversation monitoring |
| | CrowdTangle content insights report | Biweekly | ▪ Facebook | ▪ Top pages (voices), groups<br>▪ General trends/sentiment analysis<br>▪ News analysis through posts |
| | First Draft News Vaccine Misinformation Insights Report | Monthly | ▪ Proprietary methods | ▪ Media trends analysis<br>▪ Emerging threats and data deficits<br>▪ Online vaccine narratives |
| | Project VCTR | Weekly | ▪ Proprietary methods | ▪ National and regional trends in negative attitudes toward vaccination<br>▪ Conversations around Legislation |
| | Virality Project | Weekly | ▪ Proprietary methods | ▪ Mis- and disinformation trends related to COVID-19 vaccines |