



# CDC's State of Vaccine Confidence Insights Report

Quarter 3 Report

January 26, 2023

Date Range: July 1 – September 30, 2022

**SPECIAL UPDATE:** CDC partners can now report vaccine-related rumors directly to CDC. To report a rumor, go to: [www.cdc.gov/report-rumors](https://www.cdc.gov/report-rumors) and start the subject line with "Rumors:" and in the question box, give as much information about the rumor as you can, including a description of the rumor, where you heard it, and how many times you have heard it.

**Centers for Disease Control & Prevention,  
COVID-19 Response, Vaccine Task Force**  
Vaccine Confidence & Demand Team, Insights Unit

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).



# Summary

## Major themes identified from social media, news, and other sources that may impact vaccine confidence:<sup>a,b</sup>

- Consumers continue to have questions about the availability and effectiveness of the updated COVID-19 booster dose, including coadministration with the annual influenza vaccine.
- Consumers continue to have questions about the safety of the updated COVID-19 booster dose as well as the primary series, especially related to myocarditis.
- Consumers and news outlets express concern about the spread of monkeypox and the public health response.
- Consumers continue to express pandemic fatigue, especially with the continued transmission of SARS-CoV-2 and the monkeypox virus.

## Ways public health and partners can take action to improve vaccine confidence.

- Create communications materials with data explaining why and how updated vaccines were developed. Additionally, explain why booster doses continue to be important and necessary.
- Continue to research the effectiveness of the updated COVID-19 booster dose on humans and publish data as soon as it is available (see December 2, 2022 edition of CDC's [Morbidity and Mortality Weekly Report](#)). Also, gather and disseminate additional data on side effects and effectiveness of coadministration with the updated COVID-19 booster dose and influenza vaccine.
- Collaborate with community leaders, health care providers, and health care workers to craft and disseminate messaging to encourage individuals to receive the updated COVID-19 booster dose when eligible.
- Provide easy-to-read clinical findings showing the safety of all U.S.-approved vaccines. These findings should include data on reproductive health and risks of myocarditis and blood clots.
- Collaborate with trusted messengers to explain all the benefits of the updated COVID-19 booster dose while reducing inaccurate messaging that discourages vaccine use.
- Promote positive vaccine experiences, emphasize vaccine safety, and communicate the rarity of adverse events from the updated COVID-19 booster doses.
- Reassure consumers that staying up to date with COVID-19 vaccines is still recommended.

<sup>a</sup>Themes for this report come from integrated and thematic analysis of data from sources listed in the appendix.

<sup>b</sup>Social media citations can be found in [this linked document](#).

# Contents

## 5

[Themes That Might Impact Vaccine Confidence](#)

## 5

[Consumers continue to have questions about the availability, eligibility, and effectiveness of the updated COVID-19 booster doses, including coadministration with the annual influenza vaccine.](#)

## 8

[Consumers continue to have questions about the safety of the updated COVID-19 booster dose and the primary series, especially related to myocarditis.](#)

## 10

[Consumer and news outlets express concern about the spread of monkeypox and the public health response.](#)

## 14

[The U.S. public continues to demonstrate pandemic fatigue and a desire to end the use of all mitigation measures.](#)

## 16

[Sources Cited in Report](#)

## 23

[Appendix: Inputs and Sources](#)



- Immediately share updated information about any significant changes in monkeypox cases.
- Clinical partners might consider technical assistance from the CDC-funded [National Network of STD Clinical Prevention Training Centers](#) (NNPTC) to create an inclusive clinical environment.
- Partner with government and nongovernment groups that focus on the HIV epidemic to identify best practices for engaging and communicating with the LGBTQ+ community and reducing stigma in the general population.

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-s6719166fb0ef45efa3f71b52ea8f7113>



# Aims and Methods

By rapidly reviewing and analyzing numerous sources and inputs (see [Appendix](#)), the State of Vaccine Confidence Insights Report emphasizes major themes influencing 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
<ul style="list-style-type: none"> <li>May lead to vaccine refusals and decreased uptake</li> <li>Wide reach, pervasive</li> </ul>	<ul style="list-style-type: none"> <li>Potential to trigger hesitancy to vaccination</li> <li>Moderate reach, modest dissemination</li> </ul>	<ul style="list-style-type: none"> <li>Concerning, but low risk to vaccine confidence</li> <li>Limited reach, limited dissemination</li> </ul>	<ul style="list-style-type: none"> <li>Could increase vaccine confidence, intent, or motivation</li> <li>Variable reach and dissemination</li> </ul>

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



# Themes That Might Impact Vaccine Confidence<sup>c</sup>



**Consumers continue to have questions about the availability, eligibility, and effectiveness of the updated COVID-19 booster doses, including coadministration with the annual influenza vaccine.**

On August 31, 2022, the U.S. Food and Drug Administration (FDA) amended the emergency use authorizations of the Moderna COVID-19 vaccine and the Pfizer-BioNTech COVID-19 vaccine to authorize bivalent formulations of the vaccines for use as a single booster dose at least two months following primary or booster vaccination. The updated (also known as bivalent) COVID-19 booster dose contains two messenger RNA (mRNA) components of SARS-CoV-2 virus, one of the original strain of SARS-CoV-2 and the other one in common between the BA.4 and BA.5 lineages of the omicron variant of SARS-CoV-2.<sup>1</sup>

**New omicron boosters are now available, but it's unclear how effective they will be**

PUBLISHED SAT, SEP 3 2022 9:00 AM EDT

**Spencer Kimball**  
@SPENCEKIMBALL

As of September 20, 2022, the U.S. government has procured over 170 million doses of the updated COVID-19 booster dose for distribution and administration. This is part of a planned fall and early winter campaign that will include primary (monovalent) and booster (bivalent) vaccines intended to maximize availability and uptake across age groups to ensure population protection against circulating strains. It is expected that many vaccination providers will offer updated COVID-19 booster doses, but not all providers are expected to continue carrying primary series COVID-19 vaccines.<sup>2</sup>

## Perceptions, Concerns, and Threats to Vaccine Confidence

- Some social media users are sharing their experiences after receiving the influenza vaccine and updated COVID-19 booster dose simultaneously.<sup>3,4</sup> Others are proposing reasons to space them out.<sup>5,6</sup>
- Some social media users are looking forward to receiving the updated COVID-19 booster dose and are encouraging others to receive the vaccine as well.<sup>7,8,9</sup>
- Some social media users are skeptical of the effectiveness of the updated COVID-19 booster dose in humans because they had only been tested in mice and human safety data were not yet available during the reporting period.<sup>10,11,12</sup> Such data are now available (as detailed in the CDC's November 4, 2022 *Morbidity and Mortality Weekly Report*), indicating that adverse reactions are rare, typically mild, and comparable to the monovalent COVID-19 booster dose.

Spencer Kimball

The one that has not been tested on humans? To my knowledge it's only been tested on a very small group of mice. So with that fact it's a big NO!

Like
Reply
10w

23

<sup>c</sup>Citations in this report are illustrative examples and are not the total number of instances of the corresponding themes.



- Some social media users believe the updated COVID-19 booster dose will soon be outdated as new SARS-CoV-2 variants evolve.<sup>13</sup>
- Some studies show that the updated COVID-19 booster doses do not confer a better immune response than the original COVID-19 vaccine formulations.<sup>14,15,16</sup> However, other studies also show that the updated COVID-19 booster dose enhances antibody response.<sup>17,18,19</sup>
- Some social media users have not been able to find pharmacies with the updated COVID-19 booster dose.<sup>20</sup>
- Data from the July 2022 KFF COVID-19 Vaccine Monitor show that vaccinated adults who have not yet gotten a booster are most likely to cite feeling they have enough protection from their initial vaccination or a prior infection (57%), just not wanting a booster (52%), and thinking the boosters are not effective (48%) as reasons why they have not gotten a booster dose.<sup>21</sup>
- Data from the September 2022 KFF COVID-19 Vaccine Monitor show that even awareness of the updated COVID-19 booster dose is modest, with about half of adults saying they have heard “a lot” (17%) or “some” (33%) about the updated booster, 31% saying they have heard “a little,” and one in five saying they have heard “nothing at all” about the updated booster doses.<sup>22</sup>
- Some parents interested in vaccinating their young children find that it has been challenging to get appointments for the primary series.<sup>23,24</sup>

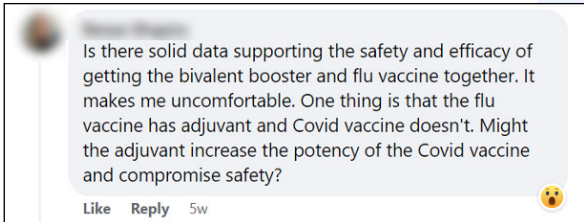
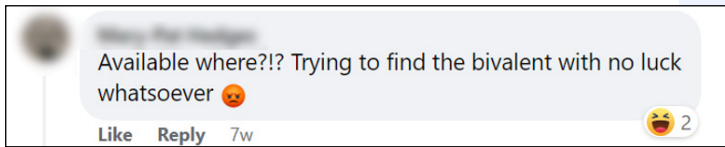
COVID-19 VACCINES | CORONAVIRUS PANDEMIC

### Some Philadelphia parents scramble to find COVID-19 vaccine appointments for their young kids

By Zoë Read · July 4, 2022

**Commonly asked questions and queries from the public<sup>d</sup>**

- What are the eligibility criteria for receiving the updated COVID-19 booster dose?<sup>e</sup>
  - Everyone ages 5 years and older is recommended to receive 1 bivalent mRNA booster dose if they have completed a primary series with any FDA-approved or FDA-authorized COVID-19 vaccine. Children age 5 years are recommended to receive the Pfizer-BioNTech bivalent booster dose. People ages 6 years and older are recommended to receive either the Moderna or the Pfizer-BioNTech bivalent booster dose. The booster dose is administered at least 2 months after the last primary dose. For people who previously received 1 or more monovalent booster doses, the bivalent booster dose should be administered at least 2 months after the last monovalent booster dose.<sup>25</sup>
- Can COVID-19 vaccines and routine immunizations be administered at the same time?<sup>d</sup>
  - In accordance with general best practices for immunizations, routine administration of all age-appropriate doses of vaccines simultaneously is recommended for children, adolescents, and adults for whom no specific contraindications exist at the time of the healthcare visit. This includes simultaneous administration of COVID-19 vaccine and other vaccines. However, there are additional considerations for Moderna, Novavax, and Pfizer-BioNTech COVID-19 vaccines if administering an orthopoxvirus (monkeypox) vaccine.<sup>25</sup>



<sup>d</sup>These questions come from online data sources such as social media, news stories, Google Trends, and CDC-INFO.

<sup>e</sup>CDC-INFO.



- Can individuals receive the influenza and COVID-19 vaccines at the same time?<sup>d</sup>
  - Yes, you can get a COVID-19 vaccine and an influenza vaccine at the same time if you are eligible and the timing coincides.<sup>26</sup>
- Is there data showing that it is safe to receive the influenza and COVID-19 vaccines at the same time?<sup>27</sup>
  - Studies conducted throughout the COVID-19 pandemic indicate that it is safe to get both an influenza vaccine and a COVID-19 vaccine at the same visit. A [CDC study published](#) this summer showed people who got an influenza vaccine and an mRNA COVID-19 booster vaccine at the same time were slightly more likely (8% to 11%) to have reactions including fatigue, headache, and muscle ache than people who only got a COVID-19 mRNA booster vaccine, but these reactions were mostly mild and went away quickly. The findings of this study are consistent with safety data from clinical trials that did not find any safety concerns with receiving both vaccines at the same time.<sup>28</sup>
- Where can individuals receive the updated COVID-19 booster dose?<sup>29</sup>
  - Use [Vaccines.gov](#) to find a location near you, then call or visit their website to make an appointment.<sup>30</sup>
- When will effectiveness data for the updated COVID-19 booster dose be available?<sup>31</sup>
  - During this reporting period, CDC has not published any studies about the effectiveness of the updated COVID-19 booster in human populations.
- How long should you wait after having COVID-19 to receive the updated COVID-19 booster dose?<sup>32</sup>
  - If you recently had COVID-19, you **may** consider delaying your next vaccine dose (primary dose or booster) by 3 months from when your symptoms started or, if you had no symptoms, when you first received a positive test.<sup>33</sup>



**Misinformation themes that may impact vaccine confidence**

- Some social media users claim the updated COVID-19 booster dose was developed for the pharmaceutical industry to profit.<sup>34,35,36</sup>
- Some social media users believe the vaccine is only necessary because previous boosters didn't work.<sup>37,38,39</sup>
- Some social media users believe the updated COVID-19 booster dose is ineffective and unnecessary.<sup>40,41,42</sup>

**Ways public health and partners can take action to improve vaccine confidence**

- Create communications materials with data explaining why and how updated vaccines were developed. Additionally, explain why booster doses continue to be important and necessary.
- Continue to research the effectiveness of the updated COVID-19 booster dose on humans and publish data as soon as it is available (see December 2, 2022 edition of CDC's [Morbidity and Mortality Weekly Report](#)). Also, gather and disseminate additional data on side effects and effectiveness of coadministration with the updated COVID-19 booster dose and influenza vaccine.
- Collaborate with community leaders, health care providers, and health care workers to craft and disseminate messaging to encourage individuals to receive the updated COVID-19 booster dose when eligible.



## Consumers continue to have questions about the safety of the updated COVID-19 booster dose and the primary series, especially related to myocarditis.

Concerns over vaccine safety continue to contribute to vaccine hesitancy and reduced vaccine uptake among consumers and their families, especially children. One of the main safety concerns associated with mRNA vaccines for COVID-19 is the risk of myocarditis (inflammation of the heart muscle) or pericarditis (inflammation of the outer lining of the heart).<sup>43</sup> CDC and its partners are actively monitoring reports of myocarditis and pericarditis after COVID-19 vaccination. Active monitoring includes reviewing data and medical records and evaluating the relationship to COVID-19 vaccination.<sup>44</sup> Reports of myocarditis and pericarditis following COVID-19 vaccination have been rare, primarily affecting adolescent and young adult males, and most patients with myocarditis or pericarditis who received care responded well to medicine and rest and felt better quickly.<sup>44</sup>

1 in 5000 chances of myocarditis among healthy children who are at minimal risk for any serious problems related to Covid. May you live long enough to stand trial for the crimes you are perpetrating against children @POTUS

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

- Some social media users and consumers are concerned about the risk of severe adverse events from the updated COVID-19 booster dose, such as heart issues, strokes, and death.<sup>45,46,47,48,49,50,e</sup>
- Some consumers are concerned about any long-term side effects of the updated COVID-19 booster dose,<sup>51,52</sup> such as blood clots and changes in menstrual cycles.<sup>53,54</sup>
- Rare cases of myocarditis and pericarditis have occurred in adolescent and young adult males between the ages of 12 and 29 years after receiving mRNA COVID-19 vaccines,<sup>43,55</sup> leading [some](#) parents to have concerns about the safety and clinical trial data of the updated mRNA COVID-19 booster vaccines.<sup>56</sup>
- Medical experts are also emphasizing the rarity of developing myocarditis after COVID-19 vaccination, encouraging consumers to receive COVID-19 vaccines.<sup>55</sup>
- Some pregnant individuals are reluctant to receive the updated COVID-19 booster dose, claiming the vaccines are too novel to trust. Additionally, they are concerned about the long-term effects the vaccine may have on their children.<sup>57</sup>
- Pregnant individuals are concerned about the lack of representation in COVID-19 vaccine clinical trials.<sup>57,58</sup>

You know what I was thinking this fine morning?  
Myocarditis, pericarditis, blood clots, and strokes are known potential side effects of covid vaccination. That is not my idea of "safe."

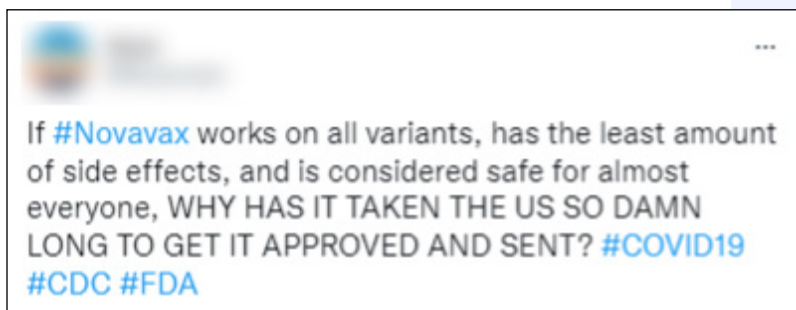




### Commonly asked questions and queries from the public

- What are the side effects of the updated COVID-19 booster dose on pregnant people?<sup>59</sup>

- Side effects can occur after receiving any of the available COVID-19 vaccines, especially after the second dose for vaccines that require two doses, or after a booster. People who are pregnant have not reported different side effects from people who are not pregnant after vaccination with monovalent mRNA COVID-19 vaccines (Moderna and Pfizer-BioNTech vaccines). Although rare, some people have had severe allergic reactions after receiving a COVID-19 vaccine. Talk with your healthcare provider if you have a history of allergic reaction to any other vaccine or injectable therapy (intramuscular, intravenous, or subcutaneous).<sup>60</sup>



- Why is CDC recommending COVID-19 vaccines for children if myocarditis is a known side effect?<sup>d</sup>

- 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, including the possible risk of myocarditis or pericarditis.<sup>44</sup>
- What are the side effects of the updated COVID-19 booster dose?<sup>d</sup>
- Reactions reported after getting an updated COVID-19 booster dose are similar to those after the two-dose or single-dose primary shots. Most side effects were mild to moderate. The most commonly reported side effects were fever, headache, fatigue (tiredness, and pain at the injection site).<sup>61</sup>

### Identified misinformation themes that may impact vaccine confidence

- Some social media users believe the updated COVID-19 booster dose will cause spontaneous abortions.<sup>62,63</sup>
- Some social media users believe myocarditis is more common in young men following vaccination than after SARS-CoV-2 infection.<sup>64</sup>
- Some social media users believe that the symptoms following COVID-19 vaccination are worse than the symptoms of COVID-19.<sup>65,66</sup>

### Ways public health and partners can take action to improve vaccine confidence

- Provide easy to read clinical findings showing the safety of all U.S.-approved vaccines. These findings should include data on reproductive health, and risks of myocarditis and blood clots.
- Collaborate with trusted messengers to explain all the benefits of the updated COVID-19 booster dose while reducing exaggerated messaging that discourages vaccine use.
- Promote positive vaccine experiences, emphasize vaccine safety, and communicate the rarity of adverse events from the updated COVID-19 booster doses.

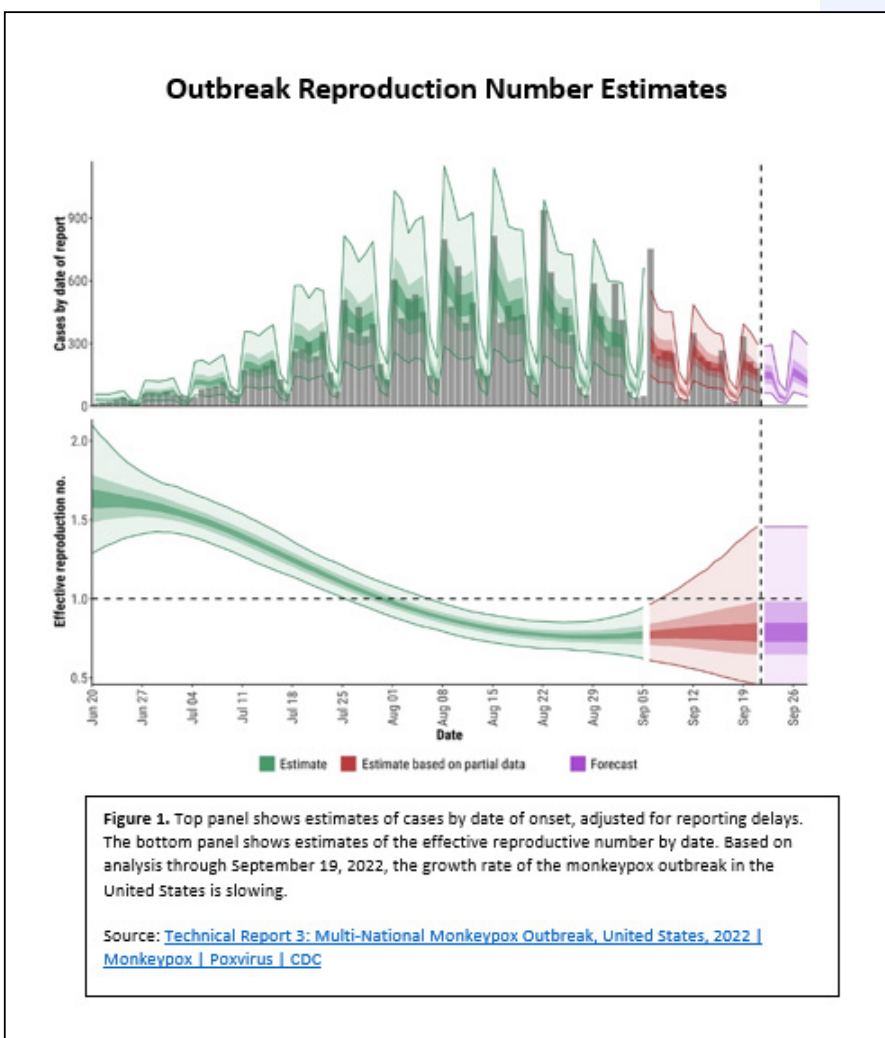


## Consumer and news outlets express concern about the spread of monkeypox and the public health response.

On October 14, 2022, CDC published the Monkeypox State of Confidence Insights Report. The report is available here: [CDC’s Monkeypox State of Vaccine Confidence Insights Report](#).

On July 23, 2022, the World Health Organization declared monkeypox a Public Health Emergency of International Concern.<sup>67</sup> As of September 30, 2022, 26,522 cases of monkeypox have been reported in the United States.<sup>68</sup> Following this, New York,<sup>69</sup> California,<sup>70</sup> and Illinois<sup>71</sup> have declared states of emergency. In early July, the Biden-Harris administration made an additional 144,000 doses of the JYNNEOS vaccine available to states and jurisdictions as part of the administration’s comprehensive strategy to combat monkeypox.<sup>72</sup> A month later, HHS Secretary Xavier Becerra also announced he will declare the ongoing spread of monkeypox virus in the United States a Public Health Emergency (PHE).<sup>73</sup>

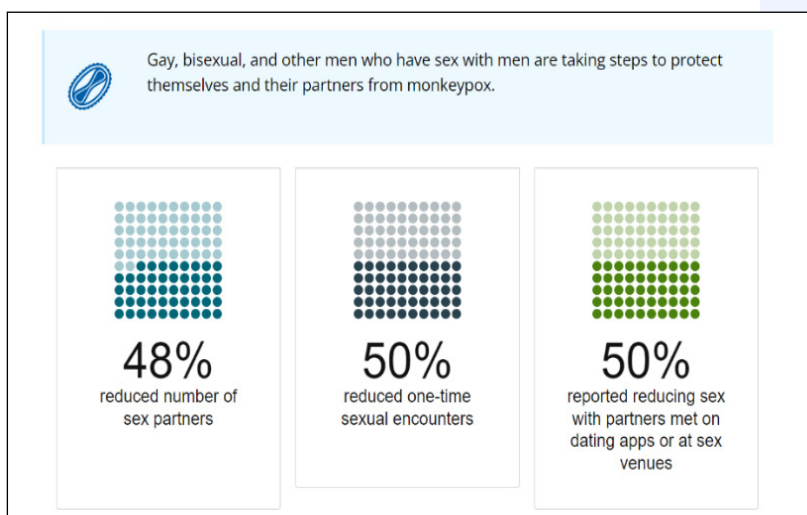
After three months of steady growth,<sup>74</sup> monkeypox cases are decreasing globally as more people get vaccinated and change their sexual behavior in response to the outbreak.<sup>75</sup> In a [technical report](#) published on September 29, 2022, CDC assessed that daily monkeypox cases in the United States would most likely continue to decline or plateau over the next two to four weeks; this assessment remained unchanged in a subsequent [technical report](#) published on October 21, 2022. CDC has moderate confidence in this assessment but notes the possibility that incidence could increase again.<sup>76</sup>



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

- A survey by The Annenberg Public Policy Center of the University of Pennsylvania surveyed 1,850 U.S. adults. Results showed that about 1 in 5 of those surveyed (19%) are either somewhat worried (14%) or very worried (5%) about getting monkeypox in the next three months, while 81% are not too worried (41%) or not at all worried (40%). In addition, 66% of respondents either do not believe there is a vaccine for monkeypox or are not sure.<sup>77</sup>

- An online survey conducted by Emory University with American Men’s Internet Survey (AMIS) of gay, bisexual, and other men who have sex with men (MSM) conducted in early August found half of respondents reported that they had changed their behavior and reduced sexual partners and encounters due to the monkeypox outbreak.<sup>78</sup> Therefore, continued effective health communication and protective behavior messaging, coupled with strong and equitable vaccination uptake, are necessary to sustain declines in cases. If these efforts are not sustained, there is a possibility that the declining trends could be reversed, and the incidence of new cases could increase again.



This is from an interim data analysis and, therefore, findings are subject to change.<sup>78</sup>

- Some consumers believe the government is not doing enough to stop the monkeypox outbreak.<sup>79,80,81</sup>
- Some public health officials and experts are conflicted about whether the monkeypox outbreak in the U.S. can be contained.<sup>82,83,84</sup>
- Some social media users and consumers are frustrated about the lack of available monkeypox testing and vaccines.<sup>85,86,87,88,89</sup>
- Some social media users are concerned by the government’s lack of guidance to address monkeypox transmission in schools, college campuses, county jails, and airplanes.<sup>90,91,92</sup>
- Some social media users are frustrated that guidance and news media have disproportionately focused on monkeypox incidence among the MSM population.<sup>93,94,95</sup>
- Consumers and public health officials are concerned with the growing misconception that only members of the LGBTQ+ community are at risk for monkeypox.<sup>96,97,98</sup>
- Some social media users are confused about the sudden absence of monkeypox media attention.<sup>99,100,101</sup>



**Commonly asked questions and queries from the public**

- How is monkeypox transmitted and spread?<sup>102,103</sup>
  - Monkeypox can spread from person to person through direct contact with the infectious rash, scabs, or body fluids. It also can be spread by respiratory secretions during prolonged, face-to-face contact, or during intimate physical contact, such as kissing, cuddling, or sex.<sup>104</sup>
  - A person with monkeypox can spread it to others from the time symptoms start until the rash has fully healed and a fresh layer of skin has formed. Some people have been found to have infection but no symptoms. To date, however, there is no evidence that monkeypox spreads from people with no symptoms. CDC will continue to monitor for new or changing information about transmission.<sup>104</sup>



■ Where can I get the monkeypox vaccine?<sup>d</sup>

- In some large cities, monkeypox vaccines may be available at the health department, public health clinics, hospitals, or even at large social gatherings or venues where people who engage in behaviors that may increase their chances of getting monkeypox can get vaccinated. In other areas, monkeypox vaccines may only be available from the health department. Contact your local health department to see what the vaccination options are in your community. A [monkeypox vaccine locator tool](#) has been launched by Building Health Online Communities (BHOC). This tool is not affiliated with CDC but can help you find locations that provide the monkeypox vaccines near you.<sup>105</sup>

## Rising monkeypox cases alarm LGBTQ activists

There have been almost 2,100 reported cases in the U.S., the CDC says.

By [Kiara Alfonseca](#)  
July 20, 2022, 8:40 PM

■ Is it safe to get the monkeypox vaccine with COVID-19 or influenza vaccines?<sup>d</sup>

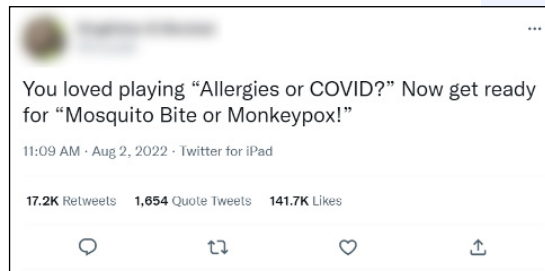
- Currently, there are no data on administering the JYNNEOS vaccine (approved for the prevention of monkeypox) at the same time as other vaccines. Because JYNNEOS is based on a live, attenuated non-replicating orthopoxvirus, JYNNEOS typically may be administered without regard to timing of most other vaccines. This includes simultaneous administration of JYNNEOS and other vaccines, including an influenza vaccine, on the same day, but at different anatomic sites if possible.<sup>106</sup>
- However, there are additional considerations if administering a COVID-19 vaccine ([Interim Clinical Considerations for Use of COVID-19 Vaccines](#)): People who previously received COVID-19 vaccination (i.e., Moderna, Novavax, or Pfizer-BioNTech) may be given orthopoxvirus vaccine (either JYNNEOS or ACAM2000) without a minimum interval between vaccinations. Those who previously received orthopoxvirus vaccination (either JYNNEOS or ACAM2000), particularly adolescent or young adult males, might consider waiting 4 weeks before receiving a COVID-19 vaccine (i.e., Moderna, Novavax, or Pfizer-BioNTech) because of the observed risk for myocarditis and pericarditis after receipt of ACAM2000 orthopoxvirus vaccine and COVID-19 vaccines (i.e., Moderna, Novavax, or Pfizer-BioNTech) and the unknown risk for myocarditis and pericarditis after JYNNEOS administration.<sup>106</sup>

■ Who is eligible to receive the monkeypox vaccine?<sup>a</sup>

- In the current outbreak, you may want to get vaccinated if you might have **already been exposed** to monkeypox if:<sup>105</sup>
  - You have been identified as a close contact of someone with monkeypox.
  - You learn that one of your sex partners in the past 2 weeks has been diagnosed with monkeypox.
  - You are a man who has had sex with other men, or if you are a transgender or nonbinary person, and in the past 2 weeks you have had:
    - » Sex with multiple partners or group sex.
    - » Sex at a commercial sex venue (like a sex club or bathhouse).
    - » Sex at an event, venue, or in an area where monkeypox transmission is occurring.
- In the current outbreak, you may want to get vaccinated if you **might be exposed** to monkeypox in the future if:<sup>105</sup>
  - You are a man who has sex with other men, or if you are a transgender or nonbinary person and in the past 6 months have had any of the following:



- » A new diagnosis of one or more sexually transmitted diseases including acute HIV, chancroid, chlamydia, gonorrhea, or syphilis.
- » More than one sex partner.
- You are a person who in the past 6 months has had any of the following:
  - » Sex at a commercial sex venue (like a sex club or bathhouse)
  - » Sex at an event, venue, or in an area where monkeypox transmission is occurring.
- You are a person whose sexual partner identifies with any of the above scenarios.
- You are a person who anticipates experiencing any of the above scenarios.
- How can someone distinguish monkeypox symptoms?<sup>107</sup>
  - People with monkeypox get a rash that may be located on or near the genitals (penis, testicles, labia, and vagina) or anus (butthole) and could be on other areas like the hands, feet, chest, face, or mouth. The rash will go through several stages, including scabs, before healing. The rash can initially look like pimples or blisters and may be painful or itchy. Other symptoms of monkeypox can include fever, chills, swollen lymph nodes, exhaustion, muscle aches and backache, headache, and respiratory symptoms (e.g., sore throat, nasal congestion, or cough). You may experience all or only a few symptoms. Sometimes, people have flu-like symptoms before the rash. Some people get a rash first, followed by other symptoms. Others only experience a rash.<sup>108</sup>



**Identified misinformation themes that may impact vaccine confidence**

- Some social media users believe monkeypox is only sexually transmitted.<sup>109,110,111</sup>
- Some consumers believe monkeypox was bioengineered in a lab.<sup>112,113,114</sup>
- Some social media users believe only gay men can be infected with the monkeypox virus.<sup>115,116,117</sup>
- Some social media users believe the monkeypox outbreak was a fear campaign orchestrated by the government because cases disappeared so abruptly.<sup>118,119,120</sup>



**Ways public health and partners can take action to improve vaccine confidence**

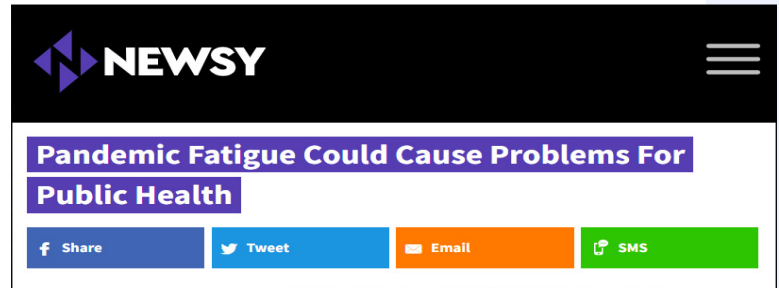
- Immediately share updated information about any significant changes in monkeypox cases.
- Clinical partners might consider getting technical assistance from the CDC-funded [National Network of STD Clinical Prevention Training Centers](#) (NNPTC) to create a more inclusive clinical environment.
  - The NNPTC also offers regular clinical update webinars on the monkeypox virus and has a free [clinical consultation line](#) to answer clinicians' questions about the monkeypox virus and STIs.
- Partner with government and nongovernment groups that focus on the HIV epidemic to identify best practices for engaging and communicating with the LGBTQ+ community and reducing stigma in the general population.



## The U.S. public continues to demonstrate pandemic fatigue and a desire to end the use of all mitigation measures.

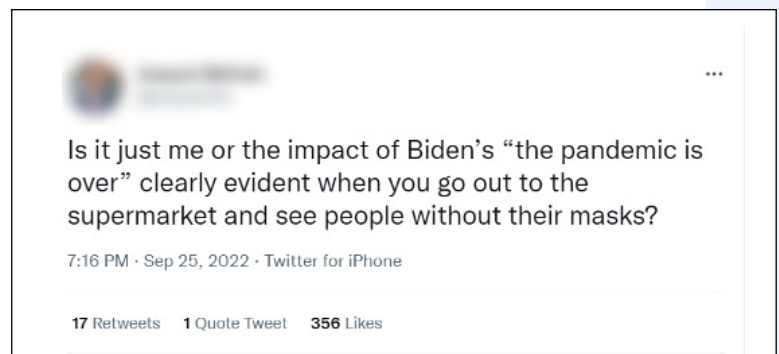
A few months after the initial rollout of COVID-19 vaccines, many consumers reported feeling a sense of pandemic fatigue, i.e., a demotivation to follow recommended protective behaviors, emerging gradually over time and affected by a number of emotions, experiences and perceptions.<sup>121,122,123</sup>

Pandemic fatigue could have unintended consequences on public health, including a reduction or elimination of funding for infectious diseases that could lead to future outbreaks.<sup>124</sup> Given the rise of variants such as BA.4 and BA.5, U.S. health officials are still urging consumers to take precautions against reinfection and serious illness.<sup>125</sup> A sense of pandemic fatigue among U.S. consumers is evident through vaccine uptake data, poll results, and social media posts.



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

- Some social media users are concerned they will have to receive a COVID-19 booster every eight weeks.<sup>126,127,128</sup>
- Public health experts and medical professionals continue to encourage unvaccinated individuals to receive their primary dose of a COVID-19 vaccine and vaccinated individuals to receive an updated COVID-19 booster dose, if eligible.<sup>129,130,131</sup>
- Many social media users are frustrated and apathetic towards the constant influx of COVID-19 information about vaccines.<sup>132,133,134</sup>
- Some social media users are using President Biden's remark to spread messages that the COVID-19 pandemic is over.<sup>135,136,137</sup> This could negatively impact vaccine confidence if individuals believe there is no longer a reason to receive a COVID-19 vaccine.<sup>138</sup>
- Some social media users are looking forward to receiving the updated COVID-19 booster dose and are encouraging others to receive the vaccine as well.<sup>7,8,9</sup>
- The September KFF Vaccine Monitor survey finds about half (53%) of parents of children ages 6 months through 4 years old say they will "definitely not" get their child vaccinated for COVID-19. The proportion who say they will "definitely not" get their young child vaccinated for COVID-19 has increased from surveys taken earlier this year, when the vaccines were not yet available. Reported vaccine uptake among children ages 5-11 has also slowed slightly in recent months.<sup>22</sup> This plateau in vaccine uptake could be indicative of pandemic fatigue.





- An August Gallup poll found that a majority of U.S. Americans believe the pandemic is not over. However, an acceptance that life will never be the same as it was before the pandemic began might cause pandemic fatigue as consumers abandon COVID-19 mitigation measures and accept high likelihood of infection.<sup>139</sup>

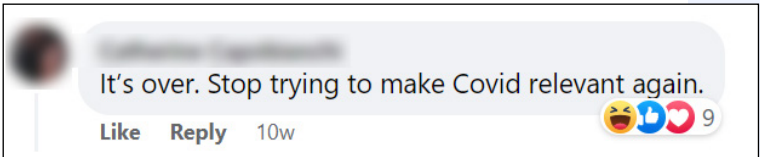
POLITICS AUGUST 10, 2022

## Americans Less Optimistic About COVID-19 Situation

BY JEFFREY M. JONES

**Commonly asked questions and queries from the public**

- How can the updated COVID-19 booster dose protect against new and future COVID-19 variants?<sup>d</sup>
  - New variants of SARS-CoV-2, the virus that causes COVID-19, are expected to occur. CDC is working with state and local public health officials to monitor the spread of all variants. Staying up to date with your COVID-19 vaccines reduces your risk of severe illness, hospitalization, and death from COVID-19.<sup>140</sup>
- Why should I bother to get the updated COVID-19 booster dose when there are breakthrough COVID-19 cases occurring?<sup>d</sup>
  - COVID-19 vaccines available in the United States are effective at protecting people from getting seriously ill, being hospitalized, and dying. As with other vaccine-preventable diseases, you are protected best from COVID-19 when you stay up to date with the recommended vaccinations, including recommended boosters.<sup>33</sup>
- How can I find out more information about emerging variants?<sup>d</sup>
  - Numerous variants of the virus that causes COVID-19 are being tracked in the United States and globally during this pandemic. CDC is working with public health officials to monitor the spread of all variants and provide an estimate of how common they are in the nation and at the regional level. This data can change over time as more information is available.<sup>140</sup>



**Identified misinformation themes that may impact vaccine confidence**

- Some social media users claim the pandemic is over.<sup>141,142,133</sup>

**Ways public health and partners can take action to improve vaccine confidence**

- Collaborate with health care providers on the importance of vaccination and create talking points to encourage patients to receive the updated COVID-19 booster dose when eligible.
- Reassure consumers that staying up to date with COVID-19 vaccines is still recommended.



## Sources Cited in Report

- Alfonseca, K. (2022, July 20). *Rising monkeypox cases alarm LGBTQ activists*. ABC News. <https://abcnews.go.com/Health/lgbtq-groups-slam-government-handling-monkeypox/story?id=87119869>
- Alsoussi, W. B., Malladi, S. K., Zhou, J. Q., Liu, Z., Ying, B., Kim, W., Schmitz, A. J., Lei, T., Horvath, S. C., Sturtz, A. J., McIntire, K. M., Evavold, B., Han, F., Scheaffer, S. M., Fox, I. F., Parra-Rodriguez, L., Nachbagauer, R., Nestorova, B., Chalkias, S., ... Ellebedy, A. H. (2022). *SARS-CoV-2 Omicron boosting induces de novo B cell response in humans* (p. 2022.09.22.509040). bioRxiv. <https://doi.org/10.1101/2022.09.22.509040>
- Annenberg Public Policy Center of the University of Pennsylvania. (2022, July 29). *Survey: 1 in 5 Americans Fear Getting Monkeypox but Many Know Little About It*. <https://www.annenbergpublicpolicycenter.org/survey-1-in-5-americans-fear-getting-monkeypox-but-many-know-little-about-it/>
- Anthes, E. (2022, July 15). Demand for Monkeypox Vaccine Exceeds Supply, C.D.C. Says. *The New York Times*. <https://www.nytimes.com/2022/07/15/health/monkeypox-vaccine-supply.html>
- Bekiempis, V. (2022, July 18). Monkeypox: US experts issue warning amid limited vaccines and testing. *The Guardian*. <https://www.theguardian.com/world/2022/jul/18/monkeypox-vaccines-testing-us-latest-warning-threat>
- Bhowmik, S. (2022, August 1). *Reduced severity of COVID-19 in pregnant women during the Omicron wave*. News Medical. <https://www.news-medical.net/news/20220801/Reduced-severity-of-COVID-19-in-pregnant-women-during-the-Omicron-wave.aspx>
- Branswell, H. (2022, July 19). *With monkeypox spreading globally, many experts believe the virus can't be contained*. STAT. <https://www.statnews.com/2022/07/19/monkeypox-spread-many-experts-believe-the-virus-cant-be-contained/>
- Callaway, E. (2022). New Omicron-specific vaccines offer similar protection to existing boosters. *Nature*, 609(7926), 232–233. <https://doi.org/10.1038/d41586-022-02806-5>
- Centers for Disease Control and Prevention. (2020, February 11). *Myocarditis and Pericarditis After mRNA COVID-19 Vaccination*. US Department of Health and Human Services, CDC. <https://www.cdc.gov/coronavirus/2019-ncov/vaccines/safety/myocarditis.html>
- Centers for Disease Control and Prevention. (2020, February 11). *Variants of the Virus*. US Department of Health and Human Services, CDC. <https://www.cdc.gov/coronavirus/2019-ncov/variants/index.html>
- Centers for Disease Control and Prevention. (2022, August 22). *Impact of Monkeypox Outbreak on Select Behaviors*. US Department of Health and Human Services, CDC. <https://www.cdc.gov/poxvirus/monkeypox/response/2022/amis-select-behaviors.html>





- Centers for Disease Control and Prevention. (2022, September 14). *Possible Side Effects After Getting a COVID-19 Vaccine*. US Department of Health and Human Services, CDC. <https://www.cdc.gov/coronavirus/2019-ncov/vaccines/expect/after.html>
- Centers for Disease Control and Prevention. (2022, September 20). *Updated: CDC Fall Vaccination Operational Planning Guide*. US Department of Health and Human Services, CDC. <https://www.cdc.gov/vaccines/covid-19/downloads/cdc-fall-vaccination-operational-planning-guide.pdf>
- Centers for Disease Control and Prevention. (2022, September 28). *Monkeypox Vaccination Basics*. US Department of Health and Human Services, CDC. <https://www.cdc.gov/poxvirus/monkeypox/vaccines/vaccine-basics.html>
- Centers for Disease Control and Prevention. (2022, September 29). *Technical Report 3: Multi-National Monkeypox Outbreak, United States, 2022*. US Department of Health and Human Services, CDC. <https://www.cdc.gov/poxvirus/monkeypox/cases-data/technical-report/report-3.html>
- Centers for Disease Control and Prevention. (2022, October 21). *Technical Report 4: Multi-National Monkeypox Outbreak, United States, 2022*. US Department of Health and Human Services, CDC. <https://www.cdc.gov/poxvirus/monkeypox/cases-data/technical-report/report-3.html>
- Centers for Disease Control and Prevention. (2022, October 18). *Monkeypox in the U.S.: Frequently Asked Questions*. US Department of Health and Human Services, CDC. <https://www.cdc.gov/poxvirus/monkeypox/about/faq.html>
- Centers for Disease Control and Prevention. (2022, October 18). *Monkeypox in the U.S.: Signs and Symptoms*. US Department of Health and Human Services, CDC. <https://www.cdc.gov/poxvirus/monkeypox/symptoms/index.html>
- Centers for Disease Control and Prevention. (2022, October 20). *COVID-19 Vaccines While Pregnant or Breastfeeding*. US Department of Health and Human Services, CDC. <https://www.cdc.gov/coronavirus/2019-ncov/vaccines/recommendations/pregnancy.html>
- Centers for Disease Control and Prevention. (2022, October 21). *JYNNEOS Vaccine*. US Department of Health and Human Services, CDC. <https://www.cdc.gov/poxvirus/monkeypox/interim-considerations/jynneos-vaccine.html>
- Centers for Disease Control and Prevention. (2022, October 25). *Getting a Flu Vaccine and a COVID-19 Vaccine at the Same Time*. US Department of Health and Human Services, CDC. <https://www.cdc.gov/flu/prevent/coadministration.htm>
- Centers for Disease Control and Prevention. (2022, October 26). *FAQs for the Interim Clinical Considerations for COVID-19 Vaccination*. US Department of Health and Human Services, CDC. <https://www.cdc.gov/vaccines/covid-19/clinical-considerations/faq.html>



- Centers for Disease Control and Prevention. (2022, November 1). *Stay Up to Date with COVID-19 Vaccines Including Boosters*. US Department of Health and Human Services, CDC. <https://www.cdc.gov/coronavirus/2019-ncov/vaccines/stay-up-to-date.html>
- Centers for Disease Control and Prevention. (2022, November 14). *Use of COVID-19 Vaccines in the United States: Interim Clinical Considerations*. US Department of Health and Human Services, CDC. <https://www.cdc.gov/vaccines/covid-19/clinical-considerations/covid-19-vaccines-us.html>
- Centers for Disease Control and Prevention. (2022, November 16). *U.S. Monkeypox Case Trends Reported to CDC*. US Department of Health and Human Services, CDC. <https://www.cdc.gov/poxvirus/monkeypox/response/2022/mpx-trends.html>
- Centers for Disease Control and Prevention. (2022, November 21). *Frequently Asked Influenza (Flu) Questions: 2022-2023 Season*. US Department of Health and Human Services, CDC. <https://www.cdc.gov/flu/season/faq-flu-season-2022-2023.htm>
- Chalkias, S., Harper, C., Vrbicky, K., Walsh, S. R., Essink, B., Brosz, A., McGhee, N., Tomassini, J. E., Chen, X., Chang, Y., Sutherland, A., Montefiori, D. C., Girard, B., Edwards, D. K., Feng, J., Zhou, H., Baden, L. R., Miller, J. M., & Das, R. (2022). A Bivalent Omicron-Containing Booster Vaccine against Covid-19. *New England Journal of Medicine*, 387(14), 1279–1291. <https://doi.org/10.1056/NEJMoa2208343>
- Continuing the Declaration of a Statewide Disaster Emergency Due to the Ongoing Spread of the Monkeypox Virus in the State of New York, Executive Order [Hochul] No. 20.1 (2022). <https://www.governor.ny.gov/executive-order/no-201-continuing-declaration-statewide-disaster-emergency-due-ongoing-spread>
- Croft, J. (2022, July 27). *Fauci Urges Fight Against Stigma of Monkeypox*. WebMD. <https://www.webmd.com/a-to-z-guides/news/20220727/fauci-urges-fight-against-stigma-of-monkeypox>
- Diamond, D. (2022, August 27). Officials 'cautiously optimistic' about falling monkeypox cases. *Washington Post*. <https://www.washingtonpost.com/health/2022/08/26/monkeypox-cases-falling/>
- The Editorial Board. (2022, July 21). Virus threat is on the rise—And so is indifference. *Baltimore Sun*. <https://www.baltimoresun.com/opinion/editorial/bs-ed-0724-virus-surg-ing-again-20220721-zres6ayrznfxdmpen2jcn32hje-story.html>
- Fadulu, L. (2022, August 26). Monkeypox Cases Are Declining in New York City and Globally. *The New York Times*. <https://www.nytimes.com/2022/08/26/nyregion/monkeypox-cases-nyc-worldwide.html>
- Figuroa, A., & Gaines, D. E. (2022, September 3). *Marylanders encouraged to get new COVID vaccine that targets Omicron variant*. WTOP News. <https://wtop.com/maryland/2022/09/marylanders-encouraged-to-get-new-covid-vaccine-that-targets-omicron-variant/>



- Food and Drug Administration. (2022, August 31). *Coronavirus (COVID-19) Update: FDA Authorizes Moderna, Pfizer-BioNTech Bivalent COVID-19 Vaccines for Use as a Booster Dose* [News release]. US Department of Health and Human Services, FDA. <https://www.fda.gov/news-events/press-announcements/coronavirus-covid-19-update-fda-authorizes-moderna-pfizer-biontech-bivalent-covid-19-vaccines-use>
- Francis, E. (2022, July 13). WHO warns covid 'nowhere near over' as variants spike in U.S., Europe. *Washington Post*. <https://www.washingtonpost.com/health/2022/07/13/covid-pandemic-wave-who-ba5-variants/>
- Gupta, D. S. (2022, July 31). *Dr. Sanjay Gupta: While monkeypox cases rise, why are we waiting for the cavalry to rescue us?* CNN. <https://www.cnn.com/2022/07/31/health/monkeypox-response-cavalry-sanjay-gupta/index.html>
- Haines, M. (2022, September 29). *Many Americans in No Rush to Get Bivalent COVID-19 Booster*. VOA. <https://www.voanews.com/a/many-americans-in-no-rush-to-get-bivalent-covid-19-booster-/6769239.html>
- Hause, A.M., Marquez, P., Zhang, B., Myers, T. R., Gee, J., Su, J. R., Blanc, P. G., Thomas, A., Thompson, D., Shimabukuro, T. T., & Shay, D. K. (2022). Safety Monitoring of Bivalent COVID-19 mRNA Vaccine Booster Doses Among Persons Aged  $\geq 12$  Years — United States, August 31–October 23, 2022. *MMWR Morbidity and Mortality Weekly Report*, 71(44), 1401-1406. <http://dx.doi.org/10.15585/mmwr.mm7144a3>.
- Hause, A. M., Zhang, B., Yue, X., Marquez, P., Myers, T. R., Parker, C., Gee, J., Su, J., Shimabukuro, T. T., & Shay, D. K. (2022). Reactogenicity of Simultaneous COVID-19 mRNA Booster and Influenza Vaccination in the US. *JAMA Network Open*, 5(7), e2222241. <https://doi.org/10.1001/jamanetworkopen.2022.22241>
- Hetter, K. (2022, July 1). *Should parents get the vaccine for their kids under 5?* CNN. <https://www.cnn.com/2022/07/01/health/children-under-5-covid-vaccine-parents-wellness/index.html>
- Jones, D. (2022, August 5). *Monkeypox explained: How to protect yourself and what to watch out for*. NPR. <https://www.npr.org/2022/07/24/1113197119/monkeypox-symptoms-prevention-vaccines-what-to-know>
- Jones, J. M. (2022, August 10). *Americans Less Optimistic About COVID-19 Situation*. Gallup. <https://news.gallup.com/poll/396134/americans-less-optimistic-covid-situation.aspx>
- Kimball, S. (2022, September 3). *New omicron boosters are now available, but it's unclear how effective they will be*. CNBC. <https://www.cnbc.com/2022/09/03/covid-19-omicron-shots-available-but-their-effectiveness-is-unclear.html>
- Langmaid, V. (2022, July 14). *What is monkeypox, and how can you stay safe as it spreads?* CNN. <https://www.cnn.com/2022/07/14/health/monkeypox-questions-update/index.html>



- Lewis, T. (2022, July 14). U.S. Monkeypox Response Has Been Woefully Inadequate, Experts Say. *Scientific American*. <https://www.scientificamerican.com/article/monkeypox-testing-and-vaccination-in-u-s-have-been-vastly-inadequate-experts-say1/>
- Link-Gelles, R., Ciesla, A. A., Fleming-Dutra, K. E., Smith, Z. R., Britton, A., Wiegand, R. E., Miller, J. D., Accorsi, E. K., Schrag, S. J., Verani, J. R., Shang, N., Derado, G., & Pilishvili, T. (2022). Effectiveness of Bivalent mRNA Vaccines in Preventing Symptomatic SARS-CoV-2 Infection — Increasing Community Access to Testing Program, United States, September–November 2022. *Morbidity and Mortality Weekly Report*, 71. <http://dx.doi.org/10.15585/mmwr.mm7148e1>
- Lopes, L., Hamel, L., Sparks, G., Montero, A., Presiado, M., & Brodie, M. (2022, July 26). *KFF COVID-19 Vaccine Monitor: July 2022*. KFF. <https://www.kff.org/coronavirus-covid-19/poll-finding/kff-covid-19-vaccine-monitor-july-2022/>
- Luo, J., & Gellad, W. F. (2022). Myocarditis and pericarditis risk after covid-19 vaccination. *BMJ*, 378, o1554. <https://doi.org/10.1136/bmj.o1554>
- Monkeypox Vaccine Locator*. (n.d.). Building Healthy Online Communities. Retrieved November 21, 2022, from <https://mpoxvaxmap.org/>
- Office of Governor Gavin Newsom. (2022, August 1). *Governor Newsom Proclaims State of Emergency to Support State's Response to Monkeypox* [Press release]. <https://www.gov.ca.gov/2022/08/01/74502/>
- Office of the Governor. (2022, August 1). *Governor Pritzker Issues Monkeypox Virus Public Health Emergency Declaration to Coordinate Statewide Response* [Press release]. <https://www.illinois.gov/news/press-release.25247.html>
- Pandemic Fatigue Could Cause Problems For Public Health*. (2022, August 29). Newsy. <https://www.newsy.com/stories/pandemic-fatigue-could-cause-problems-for-public-health/>
- Perrone, M. (2022, July 28). *Under fire, US officials say monkeypox can still be stopped*. Associated Press. <https://apnews.com/article/science-health-xavier-becerra-government-and-politics-70904bf657eba552539a71050bde5f8a>
- Phan, K. (2022, July 9). *Photo promotes false claim that COVID vaccines end pregnancies*. Associated Press. <https://apnews.com/article/fact-check-covid-vaccine-abortion-pregnancy-safety-381256900307>
- Read, Z. (2022, July 4). *Some Philadelphia parents scramble to find COVID-19 vaccine appointments for their young kids*. WHYY. <https://whyy.org/articles/philadelphia-parents-covid-19-vaccine-appointments-children-under-five/>



- Scheaffer, S. M., Lee, D., Whitener, B., Ying, B., Wu, K., Jani, H., Martin, P., Amato, N. J., Avena, L. E., Berrueta, D. M., Schmidt, S. D., O'Dell, S., Nasir, A., Chuang, G.-Y., Stewart-Jones, G., Koup, R. A., Doria-Rose, N. A., Carfi, A., Elbashir, S. M., ... Diamond, M. S. (2022). *Bivalent SARS-CoV-2 mRNA vaccines increase breadth of neutralization and protect against the BA.5 Omicron variant* (p. 2022.09.12.507614). bioRxiv. <https://doi.org/10.1101/2022.09.12.507614>
- Seitz, A. (2022, September 1). *White House: How about a COVID-19 boost with that flu shot?* Associated Press. <https://apnews.com/article/covid-health-flu-government-and-politics-64173cef2985d9f8951e04812477248d>
- Slisco, A. (2022, May 5). FDA Limits Use of Johnson & Johnson COVID Vaccine Due to Risk of Thrombosis. *Newsweek*. <https://www.newsweek.com/fda-limits-use-johnson-johnson-covid-vaccine-due-risk-thrombosis-1704030>
- Sloat, S. (2022, July 15). *Menstrual changes after Covid vaccines may be far more common than previously known*. NBC News. <https://www.nbcnews.com/science/science-news/menstruation-changes-covid-vaccines-rcna38348>
- Smiley, J. D. (2022, July 19). *Study finds heart conditions extremely rare after COVID-19 vaccination*. Medical News Today. <https://www.medicalnewstoday.com/articles/new-evidence-finds-heart-conditions-extremely-rare-after-covid-19-vaccination>
- Sparks, G., Lopes, L., Hamel, L., Montero, A., Presiado, M., & Brodie, M. (2022, September 30). *KFF COVID-19 Vaccine Monitor: September 2022*. KFF. <https://www.kff.org/coronavirus-covid-19/poll-finding/kff-covid-19-vaccine-monitor-september-2022/>
- Thomas, L. (2022, July 17). *Low rate of COVID-19 vaccination among high-risk pregnant women*. News-Medical.Net. <https://www.news-medical.net/news/20220717/Low-rate-of-COVID-19-vaccination-among-high-risk-pregnant-women.aspx>
- Treisman, R. (2022, July 26). *As monkeypox spreads, know the difference between warning and stigmatizing people*. NPR. <https://www.npr.org/2022/07/26/1113713684/monkeypox-stigma-gay-community>
- US Department of Health and Human Services. (2022, July 7). *Biden-Harris Administration to make an additional 144,000 doses of JYNNEOS vaccine available to states and jurisdictions for monkeypox response* [Press release]. <https://www.hhs.gov/about/news/2022/07/07/biden-harris-administration-make-additional-144000-doses-jynneos-vaccine-available-states-jurisdictions-for-monkeypox-response.html>
- US Department of Health and Human Services. (2022, August 4). *Biden-Harris Administration Bolsters Monkeypox Response; HHS Secretary Becerra Declares Public Health Emergency* [Press release]. <https://www.hhs.gov/about/news/2022/08/04/biden-harris-administration-bolsters-monkeypox-response-hhs-secretary-becerra-declares-public-health-emergency.html>
- Vaccines.gov. (n.d.). *Find COVID19 vaccine locations near you*. US Department of Health and Human Services. Retrieved November 21, 2022, from <https://vaccines.gov>



Wang, Q., Bowen, A., Valdez, R., Gherasim, C., Gordon, A., Liu, L., & Ho, D. D. (2022). *Antibody responses to Omicron BA.4/BA.5 bivalent mRNA vaccine booster shot* (p. 2022.10.22.513349). bioRxiv. <https://doi.org/10.1101/2022.10.22.513349>

Wisconsin Department of Health Services. (2022, September 7). *DHS Encourages Wisconsinites to Make a Plan to Get Boosted Against COVID-19 this Fall* [Press release]. <https://www.dhs.wisconsin.gov/news/releases/090722.htm>

World Health Organization. (2020, December 10). *Pandemic fatigue: Reinvigorating the public to prevent COVID-19*. <https://www.who.int/europe/publications/i/item/WHO-EURO-2020-1573-41324-56242>

World Health Organization. (2022, July 23). *WHO Director-General declares the ongoing monkeypox outbreak a Public Health Emergency of International Concern* [News release]. <https://www.who.int/europe/news/item/23-07-2022-who-director-general-declares-the-ongoing-monkeypox-outbreak-a-public-health-event-of-international-concern>



# Appendix: Inputs and Sources

## Social Media Listening & Media Monitoring Data Sources

Input	Cadence	Sources	Tactics for Utilization
Communication Surveillance Report	Daily on weekdays	<ul style="list-style-type: none"> <li>• Google news</li> <li>• Meltwater</li> <li>• CrowdTangle</li> <li>• Native platform searches</li> </ul>	<ul style="list-style-type: none"> <li>• Share of voice topic analysis to identify themes</li> <li>• Emerging topics</li> </ul>
Meltwater	Daily	<ul style="list-style-type: none"> <li>• Facebook, Twitter, Instagram</li> <li>• Blogs</li> <li>• News media</li> <li>• Online forums</li> </ul>	<ul style="list-style-type: none"> <li>• Share of voice topic analysis</li> <li>• Emerging theme topics</li> <li>• Identify high reach/velocity topics</li> </ul>
OADC (Office of the Associate Director of Communication) Channel COVID-19 Post metrics	Weekly	<ul style="list-style-type: none"> <li>• Sprout Social</li> <li>• Native OADC (Office of the Associate Director of Communication) account analytics</li> </ul>	<ul style="list-style-type: none"> <li>• Analyze # of posts, topics</li> <li>• Success of messages, # of impressions, reach, # engagements</li> </ul>
OADC Channel Comment Analysis	Daily on weekdays	<ul style="list-style-type: none"> <li>• Native platform searches</li> </ul>	<ul style="list-style-type: none"> <li>• Sentiment analysis</li> <li>• Identify message gaps/voids</li> </ul>

## Direct Report Data Sources

Input	Cadence	Sources	Tactics for Utilization
CDC-INFO Metrics	Weekly	<ul style="list-style-type: none"> <li>• CDC-INFO inquiry line list</li> <li>• Prepared response (PR) usage report</li> </ul>	<ul style="list-style-type: none"> <li>• Cross-compare PR usage with inquiry theme analysis</li> <li>• Sentiment analysis</li> <li>• Identify information gaps/voids</li> </ul>
VTF Media Requests	Weekly	<ul style="list-style-type: none"> <li>• Media request line list</li> </ul>	<ul style="list-style-type: none"> <li>• Leading indicator for news coverage</li> <li>• Identify information gaps/voids</li> </ul>
Web Metrics	Weekly	<ul style="list-style-type: none"> <li>• Top pages</li> <li>• Google search queries</li> <li>• Top FAQs</li> <li>• Referring domains</li> </ul>	<ul style="list-style-type: none"> <li>• Identify information gaps/voids,</li> <li>• Identify keywords/search terms, changes in web traffic</li> </ul>



### Research and Literature Data Sources

Input	Cadence	Sources	Tactics for Utilization
Poll Review	Weekly	<ul style="list-style-type: none"> <li>• Harris Poll, PEW research, Gallup Poll, KFF, Annenberg Public Policy Center</li> <li>• New data related to vaccine hesitancy</li> </ul>	<ul style="list-style-type: none"> <li>• Identify socio-behavior indicators related to motivation and intention to vaccinate</li> </ul>
Literature Review	Weekly	<ul style="list-style-type: none"> <li>• PubMed, LitCovid, ProQuest Central, Altmetric</li> <li>• New data related to vaccine hesitancy</li> </ul>	<ul style="list-style-type: none"> <li>• Identify current vaccination intention</li> <li>• Identify barriers to vaccination</li> </ul>

### Third Party Report Data Sources

Input	Cadence	Sources	Tactics for Utilization
Tanaq Social Listening +Media Monitoring Report	Weekly	<ul style="list-style-type: none"> <li>• Meltwater</li> <li>• Sprout Social</li> <li>• First Draft</li> <li>• Native platform searches</li> </ul>	<ul style="list-style-type: none"> <li>• Trending topics</li> <li>• Demographic and geographic conversation monitoring</li> </ul>
Washington St. Louis iHeard	Weekly	<ul style="list-style-type: none"> <li>• Proprietary methods</li> </ul>	<ul style="list-style-type: none"> <li>• Survey results</li> <li>• Emerging threats and data deficits</li> <li>• Vaccine narratives</li> </ul>
Project VCTR	Weekly	<ul style="list-style-type: none"> <li>• <a href="#">Proprietary methods</a></li> </ul>	<ul style="list-style-type: none"> <li>• National and regional trends in negative attitudes toward vaccination</li> <li>• Conversations around Legislation</li> </ul>