



CDC's State of Vaccine Confidence Insights Report

Updated (Bivalent) COVID-19
Booster Dose Report

December 23, 2022

Date Range: August 30 – September 12, 2022

CDC partners can now report vaccine-related rumors directly to CDC. To report a rumor, go to: 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:^{a,b}

- Some consumers, news outlets, and medical professionals are concerned about the availability and eligibility requirements of the updated (also known as bivalent) COVID-19 booster dose.
- Consumers have questions and concerns about the safety of the updated COVID-19 booster dose, especially given reports of a lack of human trial data for the currently authorized formulation prior to being authorized.
- Consumers have questions and concerns about the effectiveness of the updated COVID-19 booster dose, as well as if it is even needed.
- Some health experts question whether combined messaging to promote uptake of both updated COVID-19 boosters and seasonal influenza vaccine is a helpful strategy.

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

- Continue working with trusted messengers, community leaders, and members of the public to craft and disseminate messages that promote the availability, eligibility, safety, and effectiveness of the updated COVID-19 booster dose.
- Ensure equitable vaccine access for racial and ethnic minority groups that have had reduced access to COVID-19 vaccines, such as Black or African American and Hispanic or Latino communities (see [COVID-19 Vaccine Equity](#)).
- Disseminate data about the effectiveness and safety in humans of the updated COVID-19 booster dose, when available (see December 2, 2022 edition of CDC's [Morbidity and Mortality Weekly Report](#)).
- Partner with healthcare workers and local community leaders to craft and disseminate messages about reasons eligible individuals should receive the updated COVID-19 booster dose.
- Conduct and support research that evaluates the effectiveness of the updated COVID-19 booster doses against circulating SARS-CoV-2 variants, as well as how this effectiveness compares to that of the original formulations of COVID-19 vaccines.
- Create venues or mechanisms to hear and respond to communities' questions and concerns, such as town halls, hotlines, and social media.
- Work with trusted messengers and other community partners to craft and disseminate messages about the safety and effectiveness of receiving the updated COVID-19 booster dose and the annual influenza vaccine at the same time, especially as new findings emerge.

^aThemes for this report come from integrated and thematic analyses of data from sources listed in the appendix.

^bSocial media citations can be found in [this linked document](#).

Contents

4

[Themes That Might Impact Vaccine Confidence](#)

4

[Some consumers, news outlets and medical professionals are concerned about the availability and eligibility requirements of the updated COVID-19 booster doses](#)

6

[Consumers have questions and concerns about the safety of the updated COVID-19 booster dose especially given reports of lack of human trial data](#)

8

[Consumers have questions and concerns about the effectiveness of a bivalent COVID-19 booster dose, including if a booster dose is even needed](#)

11

[Some health experts and evidence suggest that combining messaging promoting uptake of the updated COVID-19 booster dose and the annual influenza vaccine at the same time might not be effective for all people](#)

12

[Peer-Reviewed References](#)

16

[Appendix: Inputs and Sources](#)



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 help educate their constituents and build vaccine confidence by addressing the themes in this report:

<https://centersfordiseasecontrol.sharefile.com/d-s9e9b821333834511bca4292dc829695f>

Aims and Methods

By rapidly reviewing and analyzing numerous sources and inputs (see [Appendix](#)), the State of Vaccine Confidence Insights Report emphasizes major themes currently 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.

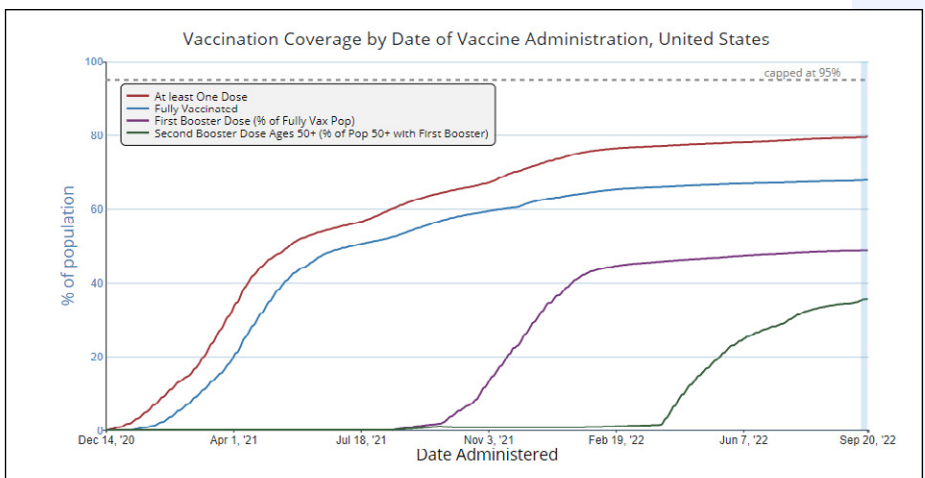
How do you classify this theme/information?			
High risk	Moderate risk	Low risk	Positive sentiment
<ul style="list-style-type: none"> May lead to vaccine refusals and decreased uptake Wide reach, pervasive 	<ul style="list-style-type: none"> Potential to trigger hesitancy to vaccination Moderate reach, modest dissemination 	<ul style="list-style-type: none"> Concerning, but low risk to vaccine confidence Limited reach, limited dissemination 	<ul style="list-style-type: none"> Could increase vaccine confidence, intent, or motivation Variable reach and dissemination

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

Themes That Might Impact Vaccine Confidence^c

Some consumers, news outlets and medical professionals are concerned about the availability and eligibility requirements of the updated COVID-19 booster doses

Despite continued SARS-CoV-2 transmission¹ and regional spikes of infection,^{2,3} the widespread uptake of the monovalent COVID-19 booster dose—which became widely available and recommended to all eligible individuals in Fall 2021—was lower than uptake of the primary series of the monovalent COVID-19 vaccines.¹ The discrepancy between coverage of the initial monovalent booster and primary series uptake¹ may be attributed to many factors, such as a potential diminished concern for infection, a potential acceptance of the risk of infection, a possible evaluation of preventive efforts as unnecessary or ineffective, or diminished concern relative to decreases in the enforcement of non-pharmaceutical preventive measures like masking.⁴



In an effort to increase protection against the evolving variants of SARS-CoV-2 (the virus that causes COVID-19) updated formulations of the Moderna and Pfizer-BioNTech COVID-19 vaccines were authorized by the Food and Drug Administration (FDA) in August 2022.⁵ The newly updated bivalent booster formulations contain two messenger RNA (mRNA) components to protect against both the initial SARS-CoV-2 virus plus newer variants.⁶ Half of the vaccine targets the original variant, while the other half targets the BA.4 and BA.5 Omicron subvariant lineages.⁶ The updated COVID-19 booster dose is administered as a single dose at least two months after completing any monovalent primary series or previously received monovalent booster dose(s) (see also [Clinical Guidance for COVID-19 Vaccination](#)).⁷ Individuals are considered up to date with their COVID-19 vaccines if they have completed a COVID-19 primary series and received the most recent booster dose recommended for them by CDC.⁸

In September 2022, the White House announced an updated COVID-19 booster dose initiative which includes securing 170 million doses of the updated COVID-19 vaccines for distribution to the American public.⁹

^cCitations in this report are illustrative examples and are not the total number of instances of the corresponding themes.



Perceptions, Concerns, and Threats to Vaccine Confidence

- Slow updated booster dose uptake¹⁰ may indicate some consumers perceived updated booster vaccination as not an immediate necessity. Some consumers' comments express a range of opinions, such as the belief that any waning protection from the primary series suggests an overall lack of vaccine effectiveness¹¹ and that emerging circulating variants are not targeted by the updated booster dose.¹²
- Some consumers expressed concern regarding the authorization of the updated booster dose, such as the lack of human studies¹³ during the reporting period, and vaccination administration errors.^{14,15}
- Some consumers are not fazed by the notion of receiving a COVID-19 booster dose annually, as many have already formed a habit of receiving a seasonal influenza vaccine.^{16,17,18}

Commonly asked questions and queries from the public^d

- Who is eligible for the updated COVID-19 booster dose?^e
 - Currently, anyone aged 5 years or older who has completed at least a primary series is eligible for a updated booster dose, regardless of the number or type of prior booster doses received so long as at least two months have passed since their last COVID-19 vaccine dose.⁸ Note that while people ages 6 years and older may receive an updated booster from either Pfizer or Moderna, children age 5 years old "are only currently recommended to receive the updated (bivalent) Pfizer-BioNTech booster, and they can get this booster whether they received the Pfizer-BioNTech or Moderna primary series."⁸
- Where are the updated COVID-19 booster doses available?^d
 - To locate COVID-19 vaccines and booster doses, the CDC suggests consumers may "search vaccines.gov, text your ZIP code to 438829, or call 1-800-232-0233. There are several other ways you can look for vaccine providers near you in the United States. Ask your doctor, pharmacist, or community health center, or visit their website. Contact your state health department. Check your local pharmacy's website to see if vaccination appointments are available. Some pharmacies may offer vaccines to those who walk-in without making an appointment ahead of time."¹⁹ It should be noted that "CDC cannot schedule, verify, reschedule, or cancel a vaccination appointment."¹⁹
- Does infection-induced immunity provide more protection than a COVID-19 vaccine dose?^d
 - COVID-19 vaccination causes a more predictable immune response than infection with the virus that causes COVID-19. Getting a COVID-19 vaccine gives most people a high level of protection especially against more severe COVID-19 and can provide added protection for people who already had COVID-19. Getting a COVID-19 vaccination is a safer way to build protection than getting sick with COVID-19. COVID-19 vaccination helps protect you by creating an antibody response without having to experience sickness. Getting vaccinated yourself may also protect people around you, particularly people at increased risk for severe illness from COVID-19. Getting sick with COVID-19 can cause severe illness or death, and it is challenging to reliably predict who will have a mild or severe illness. If you get sick, you can spread COVID-19 to others. You can also continue to have long-term health issues after COVID-19 infection.²⁰

Identified misinformation themes that may impact vaccine confidence

- Some social media users believe infection-induced immunity from SARS-CoV-2 provides more protection than a COVID-19 vaccine and, therefore, entirely obviates the need for a vaccine.²¹

^dThese questions come from online data sources such as social media, news stories, Google Trends, and CDC-INFO.

^eCDC-INFO.

- Some social media users believe COVID-19 vaccines and booster doses are not necessary^{22,23} and exist to bolster pharmaceutical company profits²⁴ or governmental control.²⁵
- Some social media users believe additional and successive COVID-19 vaccines will inhibit immune response.²⁶

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

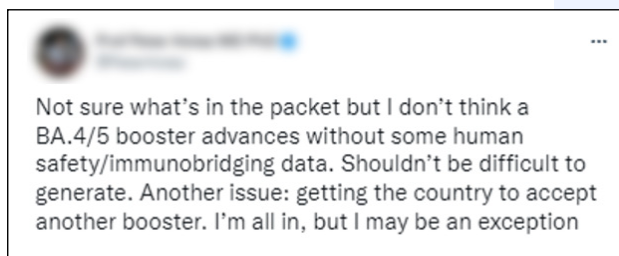
- Continue working with trusted messengers, community leaders, and members of the public to craft and disseminate messages that promote the availability, eligibility, safety, and effectiveness of the updated COVID-19 booster dose.
- Ensure equitable vaccine access for racial and ethnic minority groups that have had reduced access to COVID-19 vaccines, such as Black or African American and Hispanic or Latino communities (for more information, see [COVID-19 Vaccine Equity](#)).

Consumers have questions and concerns about the safety of the updated COVID-19 booster dose especially given reports of lack of human trial data

As the COVID-19 updated booster dose became available in the United States, consumers have had questions and concerns about its safety.^{27,28} Some health officials have also expressed concerns over the FDA's new strategy of approving new updated COVID-19 boosters based on studies conducted in mice instead of humans (other bivalent boosters, including a BA1 plus ancestral variant bivalent, were studied in humans, but a BA4/5 plus ancestral variant bivalent was not studied in people).^{5,28} Tests on human subjects continued after the updated booster dose release; data from both Moderna and Pfizer indicate that the safety of the updated COVID-19 booster doses are comparable to the original COVID-19 vaccine formulations.^{29,30} In addition, data on the clinical benefits of the updated booster have been recently published demonstrating benefit of the updated booster in preventing symptomatic COVID-19.³¹

Perceptions, Concerns, and Threats to Vaccine Confidence

- Some healthcare professionals have spoken out about the FDA's new approval strategy believing that it might result in waning support for COVID-19 booster vaccines.²⁸
- Some consumers are questioning whether the updated COVID-19 booster doses will create stronger variants of SARS-CoV-2 resulting in a decline in the effectiveness of the COVID-19 vaccines and booster doses.^d
- Some social media users are concerned that the updated booster doses will not be effective against new and emerging variants of the SARS-CoV-2 virus.³²
- Consumers have questions about the updated COVID-19 booster doses' interaction with the previous COVID-19 primary series.^d





Commonly asked questions and queries from the public

- Where can I get the updated COVID-19 booster dose?³³
 - To locate COVID-19 vaccines and booster doses, the CDC suggests consumers may “search vaccines.gov, text your ZIP code to 438829, or call 1-800-232-0233. There are several other ways you can look for vaccine providers near you in the United States. Ask your doctor, pharmacist, or community health center, or visit their website. Contact your state health department. Check your local pharmacy’s website to see if vaccination appointments are available. Some pharmacies may offer vaccines to those who walk-in without making an appointment ahead of time.”¹⁹ It should be noted that “CDC cannot schedule, verify, reschedule, or cancel a vaccination appointment.”¹⁹
- Is the updated COVID-19 booster dose safe for me to receive if I am immunocompromised?^d
 - Yes, not only are they safe for people who are immunocompromised, but it is highly recommended that people who are immunocompromised receive the updated booster dose.³⁴
- Which brand, Moderna or Pfizer-BioNTech, of the updated booster dose should I receive?^d
 - Both the Moderna and Pfizer updated booster dose will protect against the BA.4 and BA.5 Omicron subvariants, as well as the original SARS-CoV-2 virus.⁸ Currently, Pfizer-BioNTech is authorized for individuals ages 5 and older, and Moderna for ages 6 and older. It is recommended that people receive either updated booster dose at least two months following primary or booster vaccination.⁵
- Can consumers mix monovalent and updated COVID-19 vaccine doses?^d
 - It is stated on the CDC website that “people ages 6 years and older can get a different product for their updated (bivalent) booster than they received for their primary series or last booster,” while children age 5 years old “are only currently recommended to receive the updated (bivalent) Pfizer-BioNTech booster, and they can get this booster whether they received the Pfizer-BioNTech or Moderna primary series.”⁸
- Can I receive the influenza vaccine with the updated COVID-19 booster dose?^d
 - Yes, you may receive the updated COVID-19 booster dose and influenza shot at the same time.³⁵ CDC is currently encouraging physicians to offer both vaccines during a patient’s clinical visit.³⁵ Although ideally it is recommended that patients receive the influenza vaccine by the end of October, influenza vaccination should continue through the flu seasons as long as influenza viruses are still circulating and unexpired flu vaccine is available.³⁶

Identified misinformation themes that may impact vaccine confidence

- Some consumers believe the updated COVID-19 booster dose is not ready for release and those who take it are guinea pigs for pharmaceutical companies’ studies.^d
- Some social media users believe COVID-19 is no longer a threat, and no further vaccines or protection measures are needed to curtail the disease.³⁷
- Some social media users believe the updated booster dose was only released to extend the pandemic and emergency use mandates.³⁸
- Some social media users believe the lack of safety trials in humans is evidence of a corrupt vaccination authorization system.^{39,40,41}
- Some social media users believe harm from COVID-19 vaccines and booster doses is greater than or equal to harm incurred from SARS-CoV-2 infection.⁴²
- Some social media users believe the updated booster dose is a scam and a new vaccine will come out every season so the government and pharmaceutical industry can keep making money from COVID-19.⁴³



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

- Continue to work with researchers and community leaders to ensure any serious side effects or adverse events from the updated booster dose are reported. Monitor the Vaccine Adverse Event Reporting System (VAERS) for similar data.
- Disseminate data about the effectiveness and safety in humans of the updated COVID-19 booster dose, when available (see December 2, 2022 edition of CDC's [Morbidity and Mortality Weekly Report](#)).
- Ensure that healthcare providers have up-to-date information on the safety and effectiveness of the updated COVID-19 booster dose so they can discuss it with their patients.

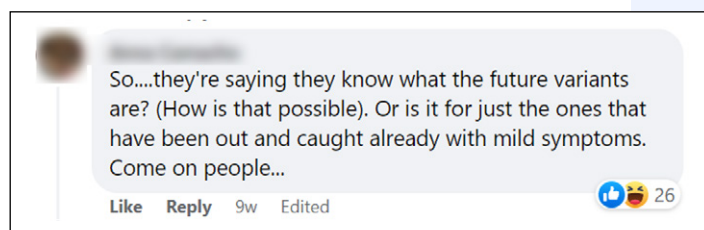
Consumers have questions and concerns about the effectiveness of a bivalent booster dose, including if a booster dose is even needed

Similar to past COVID-19 vaccine and booster dose rollouts, many consumers and social media users had concerns about the updated booster dose. Both Pfizer and Moderna report data showing that their updated bivalent vaccines elicited a higher immune response against Omicron subvariants than their companies' monovalent COVID-19 vaccines.^{44,45} Conflicting advice from public health professionals, misinformation, and personal opinions might negatively impact vaccine confidence and prevent individuals from seeking vaccination with the updated booster dose.



Perceptions, Concerns, and Threats to Vaccine Confidence

- Some social media users are concerned that the updated booster dose will not protect against new variants.^{46,47,32}
- Consumers expressed their confusion about why a Vaccines and Related Biological Products Advisory Committee (VRBPAC) member voted against approving the updated COVID-19 booster dose.⁴⁸
- Some social media users and medical professionals are expressing their support for the updated COVID-19 booster dose.⁴⁹
- Social media users are concerned that the variants targeted by the updated booster dose are no longer circulating in the population.^{50,51}
- Consumers are concerned about whether the updated COVID-19 booster dose is effective,^{52,53} how it compares to the original COVID-19 monovalent vaccines,^{54,55} and whether it is needed.⁵⁶



Commonly asked questions and queries from the public

The following questions are information voids for which there are currently no answers due to lack of available data:^{f,57}

^fThese were information voids identified by the Insights Unit when reviewing CDC updated COVID-19 booster dose web content. As such, there is no source for these.



- Will the updated COVID-19 booster dose protect against future variants?
- How long will the updated COVID-19 booster dose provide protection against acquiring SARS-CoV-2 or developing severe illness from SARS-CoV-2?

The following questions are commonly asked by consumers:

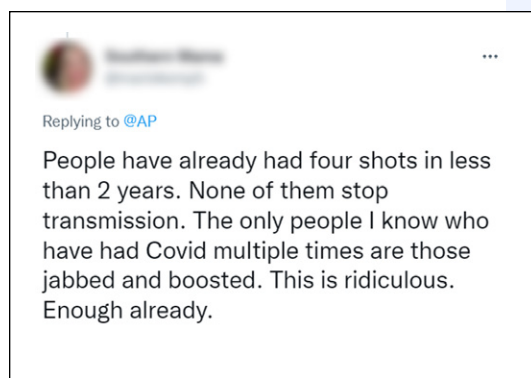
- How is the updated COVID-19 booster dose different from original COVID-19 vaccines?^d
 - The updated COVID-19 booster dose contains two messenger RNA (mRNA) components of SARS-CoV-2 virus: one is a component of the original SARS-CoV-2 virus and the other is a component that is in both the BA.4 and BA.5 lineages of the omicron variant of SARS-CoV-2.⁵
- Can consumers mix the brand of the updated COVID-19 booster doses with their primary series and first booster dose?^d
 - Any age-appropriate mRNA vaccine can be used if a booster dose is FDA-authorized for use in a specified population regardless of the brand of previous doses received.⁵⁸
- How effective is the updated COVID-19 booster dose?
 - Findings published in the December 2, 2022 [Morbidity and Mortality Weekly Report](#) indicate that bivalent boosters provided significant additional protection against symptomatic SARS-CoV-2 infection in persons who had previously received 2, 3, or 4 monovalent vaccine doses.

Identified misinformation themes that may impact vaccine confidence

- Some social media users believe one of the previous COVID-19 vaccines or booster doses were ineffective, so the updated vaccine will not be effective.^{59,60}
- Some social media users believe the updated COVID-19 booster dose is so ineffective that it is more accurately called a placebo.^{61,43}
- Some social media users believe COVID-19 is not a problem anymore so the FDA should not grant Emergency Use Authorization for the bivalent booster dose.^{62,63}
- Some social media users believe the updated COVID-19 booster dose will cause more variants.⁶⁴
- Some social media users believe the updated COVID-19 booster doses are unneeded because they do not prevent transmission,⁶⁵ are not effective,^{66,67} or are not necessary.^{68,22}

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

- Partner with healthcare workers and local community leaders to craft and disseminate messages about reasons eligible individuals should receive the updated COVID-19 booster dose.
- Conduct and support research that evaluates the effectiveness of the updated COVID-19 booster doses against circulating SARS-CoV-2 variants, as well as how this effectiveness compares to that of the original formulations of COVID-19 vaccines.
- Create venues or mechanisms to hear and respond to communities' questions and concerns.





Some health experts question whether combined messaging to promote uptake of both updated COVID-19 boosters and seasonal influenza vaccine is a helpful strategy.

Many pharmacies and medical providers offer the updated COVID-19 booster dose along with the annual influenza vaccine in the same visit.^{69,70} Studies that compared coadministration of COVID-19 vaccines and seasonal influenza vaccines with separate administration of these vaccines did not identify any specific safety concerns.⁵⁸ Additionally, CDC guidelines confirm that individuals can get a COVID-19 vaccine and a influenza vaccine at the same time if eligible and timing coincides.³⁶ Yet while some public health experts are promoting simultaneous uptake,^{71,72} others caution that taking the influenza vaccine too early in the influenza season is not optimal for longer-term immunity^{73,74} if influenza season is expected to peak around December and January.^{75,76} However, influenza activity this year is early in the U.S. and influenza vaccinations should currently be administered as soon as possible.

Perceptions, Concerns, and Threats to Vaccine Confidence

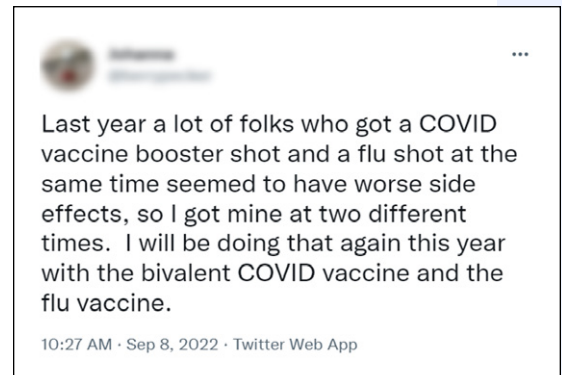
- Social media users are concerned about experiencing more intense side effects from receiving the updated COVID-19 booster dose and annual influenza vaccine at the same time.^{77,78}
- Some social media users are sharing their experiences with receiving the updated COVID-19 booster dose and annual influenza vaccine simultaneously, stating the side effects are normal and without adverse reactions.^{79,80}

Commonly asked questions and queries from the public

- Does combining both the seasonal influenza vaccine and any of the COVID-19 vaccines make either less effective?^d
 - Studies that compared coadministration of COVID-19 vaccines and seasonal influenza vaccines with separate administration of these vaccines found similar levels of immunogenicity and similar or slightly higher reactogenicity; effectiveness was not assessed.⁵⁸
- What are side effects from coadministration of the updated COVID-19 booster dose and the annual influenza vaccine?^d
 - Studies that compared coadministration of COVID-19 vaccines and seasonal influenza vaccines with separate administration of these vaccines found no specific safety concerns and similar or slightly higher reactogenicity.⁵⁸
- Can I get a COVID-19 vaccine and an influenza vaccine during the same visit?^d
 - Yes, you can get a COVID-19 vaccine and an influenza vaccine at the same time if you are eligible for both and the timing coincides.³⁶
- What is the best timing for both the influenza shot and the updated COVID-19 vaccine?^d
 - Even though both vaccines can be given at the same visit, people should follow the recommended schedule for either vaccine: If you haven't gotten your currently recommended doses of COVID-19 vaccine, get a COVID-19 vaccine as soon as you can, and ideally get an influenza vaccine by the end of October. Flu vaccination should continue in November, December and later as long as influenza viruses are still circulating.³⁶



- Is it safe to get a COVID-19 vaccine and an influenza vaccine at the same time?^d
 - Studies conducted throughout the COVID-19 pandemic indicate that it is safe to get both a COVID-19 vaccine and an influenza vaccine at the same visit.³⁶
- Will side effects from the coadministration of a seasonal influenza vaccine and the updated COVID-19 booster dose be more severe than getting each separately?^d
 - A recent [CDC study published in JAMA](#) (Hause et al., 2022) suggests people who received a seasonal influenza vaccine and an mRNA COVID-19 booster dose at the same time were slightly more likely (8% to 11%) to report systemic reactions including fatigue, headache, and muscle ache than people who only received a COVID-19 mRNA booster dose, but these reactions were mostly mild and resolved quickly. The findings of this study are consistent with safety data from clinical trials that did not identify any serious safety concerns with coadministration.
- When will influenza activity begin this season 2022-2023 and when will it peak?^d
 - The timing of influenza is difficult to predict and can vary in different parts of the country and from season to season.³⁶ You can find information about the flu season at the CDC's [Weekly U.S. Influenza Surveillance Report](#).



Identified misinformation themes that may impact vaccine confidence

- Some social media users believe getting the seasonal influenza and COVID-19 vaccines simultaneously is harmful.⁸¹

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

- Conduct and support research that evaluates the effectiveness of the updated COVID-19 booster doses against circulating SARS-CoV-2 variants, as well as how this effectiveness compares to that of the original formulations of COVID-19 vaccines
- Create venues or mechanisms to hear and respond to communities' questions and concerns, such as town halls, hotlines, and social media.



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

Direct Report Data Sources

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



Research and Literature Data Sources

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

Third Party Report Data Sources

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