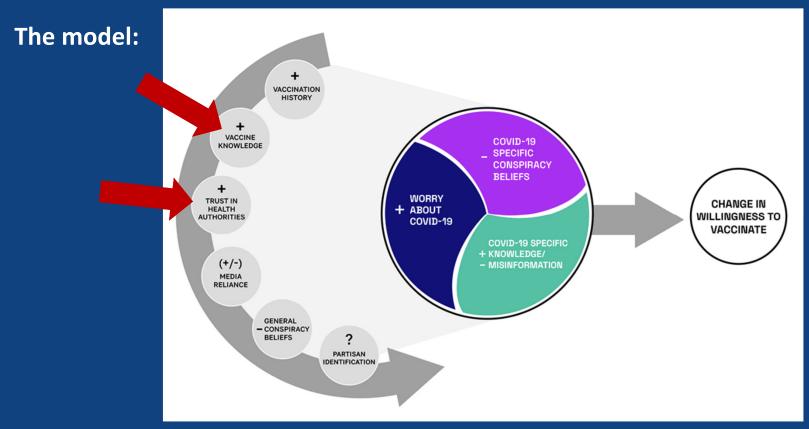
Science Communication by Federal Agencies

Kathleen Hall Jamieson

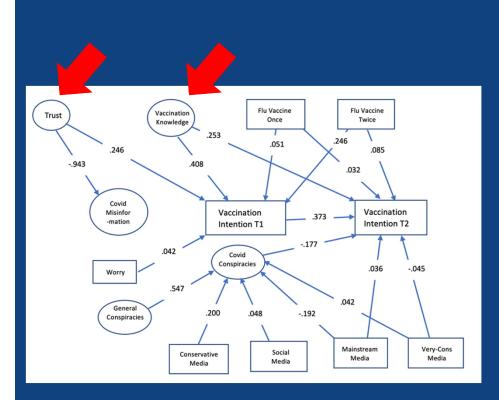
President's Council of Advisors on Science and Technology (PCAST)

March 24, 2022

Presupposition: foundational health knowledge matters



Jamieson, K. H., Romer, D., Jamieson, P. E., Winneg, K. M., & Pasek, J. (2021). The role of non–COVID-specific and COVID-specific factors in predicting a shift in willingness to vaccinate: A panel study. *Proceedings of the National Academy of Sciences*, 118(52).



- Standardized paths in SEM of predictors of change in vaccination intention. All paths were within 99% Cls. Paths for demographic and political controls are not shown.
- Of the 10,243 respondents recruited at wave 1, 82.9% had complete vaccination intention data at both waves 6 and 10, with similar attrition at both waves (834 not participating in wave 6 and 898 not participating in wave 10).

Jamieson, K. H., Romer, D., Jamieson, P. E., Winneg, K. M., & Pasek, J. (2021). The role of non–COVID-specific and COVID-specific factors in predicting a shift in willingness to vaccinate: A panel study. *Proceedings of the National Academy of Sciences*, 118(52).

Recommendations

- Establish a misconception monitoring, prevalence assessment, and response system for OSG, FDA, NIH, and within CDC (by centers) that builds on the CDC Insight project and the NIH CEAL iHeard St. Louis project
- Make all monitoring, prevalence assessment, and response data available to scholars in real time.
- Use direct contact with the public to communicate foundational knowledge and bolster trust
- Audit the language of all CDC, NIH, and FDA public-facing materials to flag and fix instances that increase public susceptibility to misconceptions

At least four offices/agencies monitor/recommend responses to health-related misconceptions.









Recommendation: Create an integrated, coherent, cross-agency response system



Office of the U.S. Surgeon General



A Community Toolkit for Addressing Health

Misinformation

Information that is false, inaccurate, or misleading according to the best available evidence at the time

Office of the U.S. Surgeon General

2021



1. Monitoring fraudulent claims about products

Beware of Fraudulent Coronavirus Tests, Vaccines and Treatments

"The FDA is actively monitoring for any firms marketing products with fraudulent COVID-19 diagnostic, prevention, and treatment claims. The FDA is exercising its authority to protect consumers from firms selling unauthorized products with false or misleading claims."

2. Public input to FDA

"In addition, the FDA is monitoring complaints of fake coronavirus treatments, vaccines, and tests. Consumers and health care professionals can help by reporting suspected fraud to the FDA's Health Fraud Program or the Office of Criminal Investigations."

3. Sharing health knowledge

Multilingual COVID-19 Vaccines Myths Social Media Toolkit



? Can I get #COVID19 from #COVID19Vaccines?

#COVID19Vaccines do not contain the live virus that causes #COVID19. Learn more about the #COVID19Vaccines development. www.fda.gov/COVID19Vaccines



? ¿Puedo contraer el #COVID-19 al vacunarme contra el #COVID19?

X NO

/ #VacunasFDA: Las vacunas aprobadas y autorizadas contra el #COVID19 no contienen el virus vivo que causa el #COVID19. Obtén más información sobre sobre el desarrollo de las vacunas contra el #COVID19 en https://go.usa.gov/xMmjF







THE UNIVERSITY OF PENNSYLVANIA

National Institutes of Health



The Community Engagement Alliance (CEAL) Against COVID-19 Disparities works closely with the communities hit hardest by COVID-19.

Our Mission

To provide trustworthy, science-based information through active community engagement and outreach to the people hardest-hit by the COVID-19 pandemic, with the goal of building long-lasting partnerships as well as improving diversity and inclusion in our research response to COVID-19.

CDC's COVID-19 State of Vaccine Confidence Insights Report:

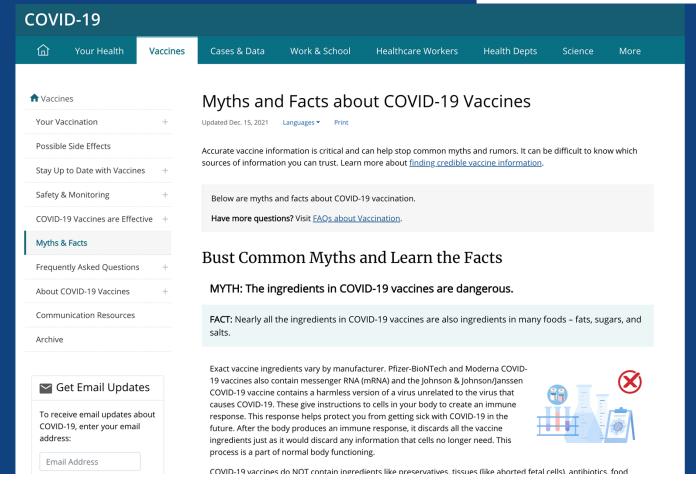


- Collects data from over 24 quantitative and qualitative data sources:
 - Digital media, social media, polls, literature, CDC-INFO, web metrics, etc.
- Identifies themes using integrated and thematic analysis
- Assigns a threat level to vaccine uptake and information spread
- Suggests actions for each theme
- Disseminates to c. 1000 internal and external partners

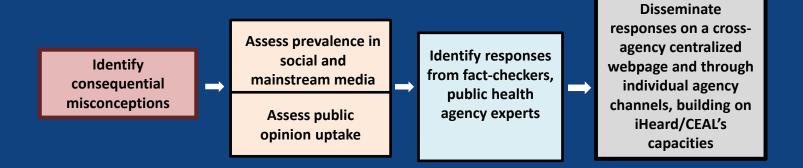
Гуре	Input	<u>Cadence</u>	Sources	<u>Tactics for Utilization</u>
Social Media Listening & Media Monitoring	Communication Surveillance Report	Daily on weekdays	• Google news • Meltwater • CrowdTangle • Native platform searches	* Share of voice topic analysis to identify theme * Emerging topics
	Meltwater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

Centers for Disease Control



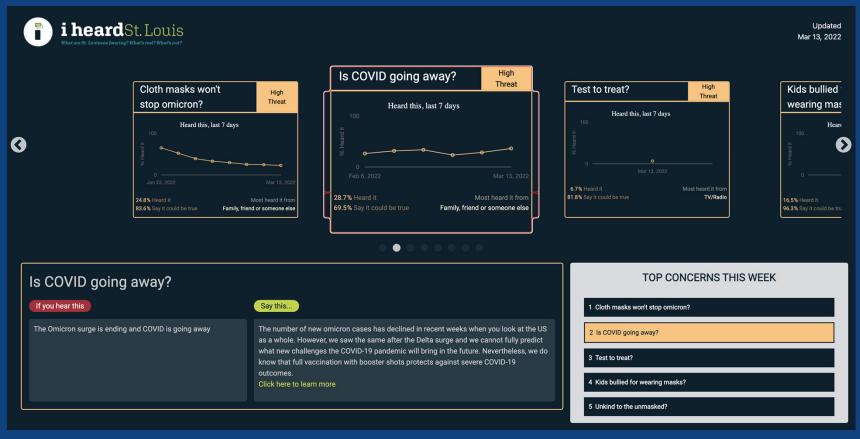


1. Monitoring, prevalence assessment, and response system for OSG, FDA, NIH, and CDC that builds on the CDC Insight project and the NIH CEAL iHeard St. Louis project



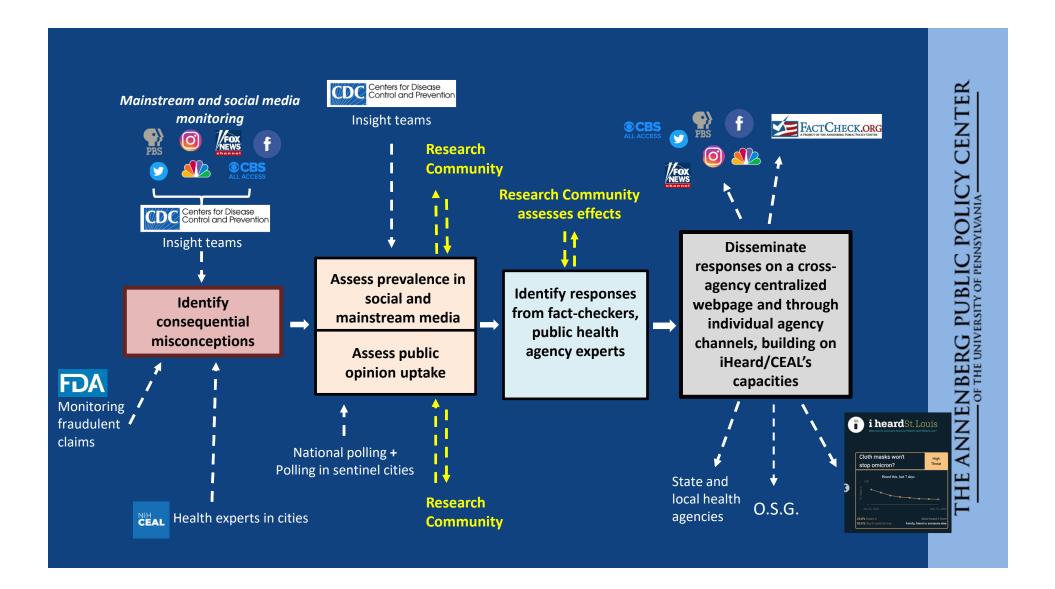
1. Possible model for website NIH/CEAL's iHeard St. Louis project





2. Make all monitoring, prevalence assessment, and response data available to scholars in real time.

Goal: Accelerate research on ways to increase public understanding of foundational health concepts and reduce public susceptibility to consequential misconceptions.



Use direct contact with the public

Foundational vaccination knowledge:

Understanding How Vaccines Work

Last reviewed February 2013

Diseases that vaccines prevent can be dangerous, or even deadly. Vaccines greatly reduce the risk of infection by working with the body's natural defenses to safely develop immunity to disease. This fact sheet explains how the body fights infection and how vaccines work to protect people by producing immunity.

The Immune System— The Body's Defense Against Infection

To understand how vaccines work, it is helpful to first look at how the body fights illness. When germs, such as bacteria or viruses, invade the body, they attack and multiply. This invasion is called an infection, and the infection is what causes illness. The immune system uses several tools to fight infection. Blood contains red blood cells, for carrying oxygen to tissues and organs, and white or immune cells, for fighting infection. These white cells consist primarily of B-lymphocytes, T-lymphocytes, and macrophages:

. Macrophages are white blood cells that swallow up and digest

★ For more information on vaccines, vaccine-preventable diseases, and vaccine safety:

http://www.cdc.gov/vaccines/conversations

The body keeps a few T-lymphocytes, called memory cells that go into action quickly if the body encounters the same germ again. When the familiar antigens are detected, B-lymphocytes produce antibodies to attack them.

How Vaccines Work

Vaccines help develop immunity by imitating an infection. This type of infection, however, does not cause illness, but it does cause the immune system to produce T-lymphocytes and antibodies. Sometimes, after getting a vaccine, the imitation infection can cause minor symptoms, such as fever. Such minor symptoms are normal and should be expected as the body builds immunity.

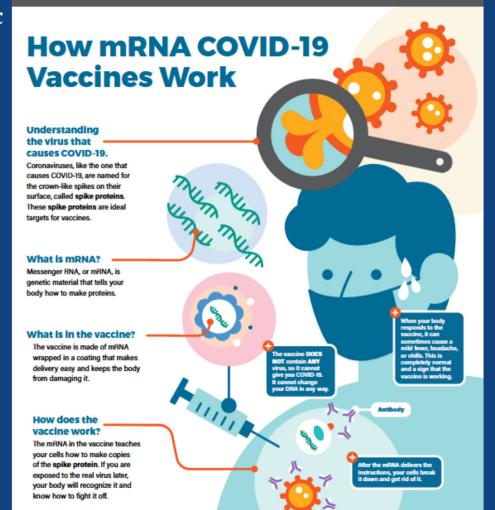
Once the imitation infection goes away, the body is left with a supply of "memory" T-lymphocytes, as well as B-lymphocytes that will remember how to fight that disease in the future. However, it typically takes a few weeks for the body to produce T-lymphocytes and B-lymphocytes after vaccination. Therefore, it is possible that a person who was infected with a disease just before or just after vaccination could develop symptoms and get a disease, because the vaccine has not had enough time to provide protection.

Types of Vaccines

Scientists take many approaches to designing vaccines. These approaches are based on information about the germs (viruses

Use direct contact with the public

Basic knowledge about mRNA vaccines:



3. Use direct contact with the public to communicate foundational knowledge and bolster trust Repofits of Cotting a COVID 10 Vassing

Benefits of Getting a COVID-19 Vaccine

Basic COVID vaccination

Knowlodgo



Updated Feb. 25, 2022 Languages ▼

COVID-19 Vaccination Is a Safer Way to Build Protection

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 you having to experience sickness.

Getting sick with COVID-19 can have serious consequences.

- Getting sick with COVID-19 can cause severe illness or death, <u>even in children</u>, and we can't reliably predict who will have mild or severe illness.
- You may <u>have long-term health issues after COVID-19 infection</u>. Even people who do not have symptoms when they
 are initially infected can have these ongoing health problems.
- People who are sick with COVID-19 may spread COVID-19 to others including <u>friends and family who are not eligible</u> for vaccination and <u>people at increased risk for severe illness from COVID-19</u>

COVID-19 Vaccines Are Safe for Children and Adults

THE ANNENBERG PUBLIC POLICY CENTER OF THE UNIVERSITY OF PENNSYLVANIA

Use direct contact with the public

Basic COVID-19 testing knowledge:

Need a COVID-19 test?

REASONS TO GET TESTED

> TYPES OF VIRAL TESTS

ACTIONS AFTER RESULT

> If you have COVID-19 symptoms

- At least 5 days after known or suspected exposure to COVID-19
- For screening (schools, workplaces, congregate settings, etc.)
- > Before and after travel
- When asked by a healthcare professional or public health official

Laboratory Test

- > Sample can either be a nasal swab or saliva
- Results usually in 1-3 days
- Results are reliable for people with and without symptoms
- > No follow-up test required
- > Common Example: PCR test

Rapid Test

- > Sample is usually a nasal swab
- Results usually in 15-30 minutes
- Results may be less reliable for people without symptoms
- > Follow-up test may be required
- > Common Example: Antigen test

If positive

- Isolate (at least 5 days). Learn more about <u>isolation</u> timelines and precautions.
- Seek a confirmatory, follow-up laboratory test if recommended by healthcare professional
- Monitor your symptoms

If negative

- If up to date on vaccines: return to normal activities. Wear a mask indoors in areas of high or substantial community transmission.
- If not up to date on vaccines and have symptoms or exposure, continue to <u>quarantine</u> for at least 5 days.
- If not up to date on vaccines and no symptoms or exposure: return to normal activities. Take steps to get up to date on vaccines to protect yourself and others.



Need additional help? CDC's Viral Testing Tool is an online, mobile-friendly tool that asks a series of questions, and provides recommended actions and resources based on the user's responses.

cdc.gov/coronavirus

3766304

3. Use direct contact with the public to communicate foundational knowledge and bolster trust

Share basic COVID-19 knowledge

- In 15 minute post-vaccination observation period
- Box and contents of government-provided at-home test kits
- The digital and physical waiting rooms of health care providers

3. Use direct contact with the public to communicate foundational knowledge and bolster trust

Messaging currently distributed during the 15 minute

post-vaccination observation period

VACCINE INFORMATION FACT SHEET FOR R CAREGIVERS

ABOUT SPIKEVAX (COVID-19 VACCINE, mRNA) AND THE VACCINE TO PREVENT CORONAVIRUS DISEASE 20 INDIVIDUALS 18 YEARS OF AGE AND OI

WHAT ARE THE RISKS OF THE VACCINE?

There is a remote chance that the vaccine could cause a severe al reaction would usually occur within a few minutes to one hour a vaccine. For this reason, your vaccination provider may ask you received your vaccine for monitoring after vaccination. Signs of include:

Difficulty breathing

- Swelling of your face and throat
- A fast heartbeat
- A bad rash all over your body
- Dizziness and weakness

Myocarditis (inflammation of the heart muscle) and pericarditis (inflammation of the lining outside the heart) have occurred in some people who have received the vaccine, more commonly in males under 40 years of age than among females and older males. In most of these people, symptoms began within a few days following receipt of the second dose of the vaccine. The chance of having this occur is very low. You should seek medical attention right away if you have any of the following symptoms after receiving the vaccine:

Signs of a severe allergic reaction

- Chest pain
- Shortness of breath
- Feelings of having a fast-beating, fluttering, or pounding heart

Side effects that have been reported in clinical trials with the vaccine include:

- Injection site reactions: pain, tenderness and swelling of the lymph nodes in the same arm
 of the injection, swelling (hardness), and redness
- General side effects: fatigue, headache, muscle pain, joint pain, chills, nausea and vomiting, fever, and rash

Side effects that have been reported during post-authorization use of the vaccine include:

- · Severe allergic reactions
- Myocarditis (inflammation of the heart muscle)
- Pericarditis (inflammation of the lining outside the heart)
- Fainting in association with injection of the vaccine

These may not be all the possible side effects of the vaccine. Serious and unexpected side effects may occur. The possible side effects of the vaccine are still being studied in clinical trials.

THE PROPERTY BY THE ABOUT OFFI PERFORMAN

Messaging currently on and in government-distributed, in-home testing kits

FOR FDA EMERGENCY USE AUTHORIZATION (EUA) ONLY

- This product has not been FDA cleared or approved but has been authorized by FDA under an EUA.
- This product has been authorized only for the detection of proteins from SARS-CoV-2, not for any other viruses or pathogens.
- The emergency use of this product is only authorized for the duration of the declaration that circumstances exist justifying the authorization of emergency use of IVDs for detection and/or diagnosis of COVID-19 under Section 564(b)(1) of the Federal Food, Drug and Cosmetic Act, 21 U.S.C. § 360bbb-3(b)(1), unless the declaration is terminated, or authorization is revoked sooner.
- For more information on EUAs please visit: https://www.fda.gov/emergency-preparedness-and-response/mcm-legal-regulatory-and-policy-framework/emergency-use-authorization
- For the most up to date information on COVID-19, please visit: www.cdc.gov/COVID19
- The Test is intended to aid in the diagnosis of a current COVID-19 infection. Please consult a healthcare professional to discuss your results and if any additional testing is required.
- Keep test kit and materials out of the reach of children and pets before and after use
 Do not use on anyone under two years of age.
- Do not open the kit contents until ready for use. If the test cassette is open for an hour or longer, invalid test results may occur.
- Do not use the test after the expiration date shown on the test cassette pouch.
- Do not use the test if the pouch is damaged or open.
- Do not reuse any kit components. Do not use with multiple specimens.
 Make sure there is sufficient light when testing.
- Do not use nasal sprays for at least 30 minutes before collecting a nasal sample
 Remove any piercings from the nose before starting the test.
- Do not use on anyone who is prone to nosebleeds or has had facial injuries or head

self-collected or pair-collected by another study participant from 108 individual symptomatic patients (within 7 days of onset) suspected of COVID-19 and 64 asymptomatic patients. All subjects were screened for the presence or absence of COVID-19 symptoms within two weeks of study enrollment. The Flowflex COVID-19 Antigen Home Test was compared to an FDA authorized molecular SARS-CoV-2 test. The Flowflex COVID-19 Antigen Home Test correctly identified 93% of positive specimens and 100% of negative specimens.

A: A positive test result means that antigens from COVID-19 were detected and it is very likely you currently have COVID-19 disease. There is a very small chance that this test can give a positive result that is wrong (a false positive result). If you test positive you should self-isolate at home per CDC recommendations to stop spreading the virus to others. Please consult the CDC recommendations regarding self-isolation at www.oct.gov/coronavirus. Seek follow-up care with your healthcare provider will work with you to determine how best to care for you based on

Q: WHAT IF YOU TEST NEGATIVE?

A: A negative test result indicates no antigens for COVID-19 were detected. It is possible for this test to give a negative result that is incorrect (false negative) in some people with COVID-19, and negative results are presumptive and may need to be confirmed with a molecular test. This means that you could possibly still have COVID-19 even though the test is negative. If you test negative and continue to experience symptoms of fever, cough and/or shortness of breath you should seek follow up care with your healthcare provider immediately. Your healthcare provider may suggest you need another test to determine if you have contracted the virus causing COVID-19. If you are concerned about your COVID-19 infection status after testing or think you may need follow up testing, please contact your healthcare provider.

I. It is possible he people with hirmed with a 'en though the of fever, cough hcare provider to determine if it your COVIDe contact your

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use under the Food and Drug Administration's Emergency Use Authorization.

SUMMARY

The new coronaviruses belong to the beta genus. COVID-19 is an acute respiratory infectious disease. Currently, patients infected by the new coronavirus are the main source of infection; infected people without symptoms can also infect others. Based on the current knowledge, the incubation period is 1 to 14 days, mostly 3 to 7 days. The main symptoms include fever, fatigue, and dry cough. Nasal congestion, runny nose, sore throat, myalgia, and diarrhea are found in a few cases.

WARNINGS, PRECAUTIONS, AND SAFETY INFORMATION

 Read the Flowflex COVID-19 Antigen Home Test Package Insert carefully before performing a test. Failure to follow directions may produce inaccurate test results.

in your communit

Q: WHAT IS THE DIFFERENCE BETWEEN AN ANTIGEN AND MOLECULAR TEST?

A: There are different kinds of tests for COVID-19. Molecular tests (also known as PCR tests) detect genetic material from the virus. Antigen tests, such as the Flowiers COVID-19. Antigen Home Test detect proteins from the virus. Antigen tests are very specific for the COVID-19 virus but are not as sensitive as molecular tests. This means that a positive result is highly accurate, but a negative result does not rule out infection. If your test result is negative, you should discuss with your healthcare provider whether an additional molecular test is necessary and if you should continue isolating at home.

Q: HOW ACCURATE IS THIS TEST?

A: The performance of Flowflex COVID-19 Antigen Home Test was established in an allcomers clinical study conducted between March 2021 and May 2021 with 172 nasal swabs

ACON Laboratories, Inc. San Diego, CA 92121, USA flowflexcovid.com Customer Support: 1-800-838-9502

> Number: 1151297702 Effective Date: 2021-11-06

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Use direct contact with the public

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- Monitor your symptoms

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cdc.gov/coronavirus

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Use direct contact with the public



In the digital and physical waiting rooms of health care providers

4. Audit the language of all CDC, NIH, and FDA public-facing materials to flag and fix instances that increase public susceptibility to misconceptions

Examples:

- Distinction between elimination and eradication is confusing
- Community immunity captures intended meaning better than herd immunity
- The name -- Vaccine Adverse Event Reporting System (VAERS) implies that the event is vaccine caused and that the causal relationship has been confirmed

Review categorical claims:

• Not "safe" but "safer than" or in the case of bioengineered crops: "as safe as conventionally grown crops"

Example: Press trying to clarify the confusion



Measles still poses threat to U.S. despite being "eliminated"



14-month-old Amelia Down sits on the lap of her mother Helen (left) as she receives the combined Measles Mumps and Rubella (MMR) vaccination at an MMR drop-in clinic at Neath Port Talbot Hospital near Swansea in south Wales on April 20, 2013. / GEOFF CADDICK/AFP/GETTY IMMGES

12 Comments / f 88 Shares / 🔊 78 Tweets / 🕲 Stumble / @ Email

More +

Measles may seem like a distant threat in the United States, but the Centers for Disease Control and Prevention are warning the disease still poses a danger to U.S. residents.

"Eradicate" vs. "eliminate"

Audit the language of all CDC, NIH, and FDA public facing materials to identify and change instances that increase public susceptibility to misconception

VAERS: change name and call data "unconfirmed" or "raw"



Dec. 6. 2021: RFK, Jr. testifies at the LA statehouse against Gov. Edwards' proposal to add Pfizer's COVID vaccine to Louisiana's childhood vaccine schedule

Recommendations

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Science Communication by Federal Agencies

Kathleen Hall Jamieson

President's Council of Advisors on Science and Technology (PCAST)

March 24, 2022