

In the News

Vaccines

- Pfizer vaccine approved for ages 16 and older
 on its way to all states
- Moderna vaccine FDA vote is expected this afternoon (3:10 – 5:15 PM ET)
- Dr. Robert Redfield, director of the Centers for Disease Control and Prevention, has warned the country could reach 450,000 fatalities before Feb. 1, days short of the oneyear anniversary of the first known COVID-19 death in the U.S.





In the News

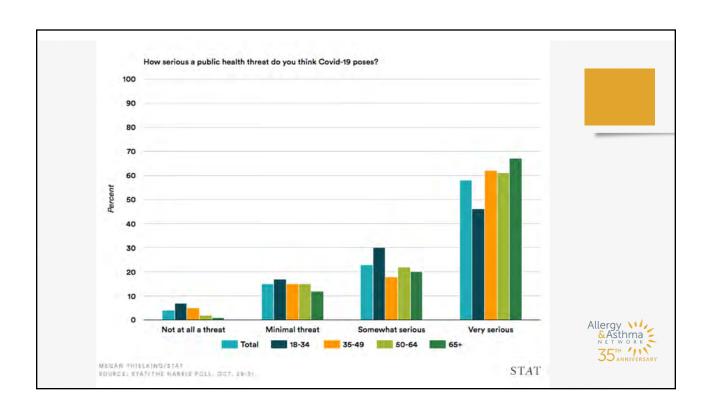
Holiday season:

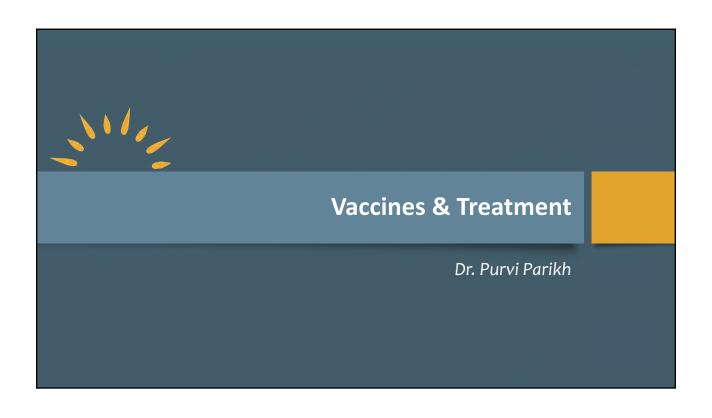
- Dr. Fauci warns that the Christmas/New Year perioid may be even more of a challenge than Thanksgiving
 - He said nobody wanted to modify or shut down the holiday season, but "we're at a very critical time... we've got to not walk away from the facts and the data. This is tough going for all of us".
 - He and his wife are not seeing their 3
 daughters for Christmas for the first time
 since they were born (and his birthday is on
 Christmas Eve!). He reports that it is painful.

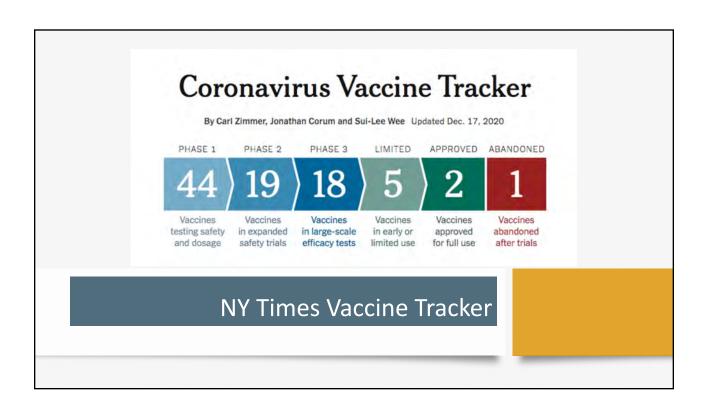












Four Main Types of Vaccine in Development

mRNA Vaccine

- · Pfizer & Moderna
- 2 doses
- Teaches cells how to make a protein that triggers an immune system response, rather than injecting live or dead virus material

Vector Vaccine

- · AstraZeneca, Janssen, Sputnik
- 1 − 2 doses
- Introduces a bit of coronavirus' genetic material into the cells, which your immune system then learns to identify and overcome



Four Main Types of Vaccine in Development

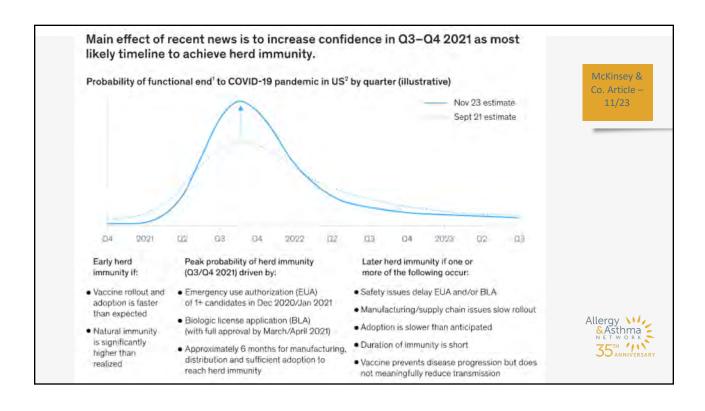
Protein Subunit Vaccine

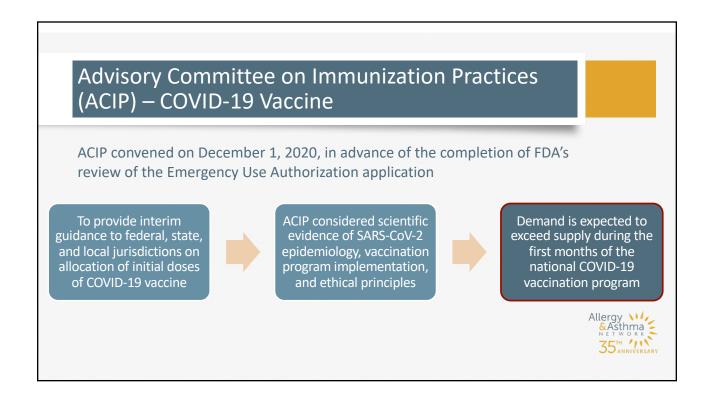
- Sanofi & Novavax
- 1 2 doses
- Delivers fragments of the virus to trigger an immune response

Whole, Killed Vaccines

- Sinovac
- 1 dose
- Virus is crippled or killed triggers an immune response







High Risk Populations

Health Care Settings

- Direct or indirect exposure to patients or infectious materials
- Critical to preserve the capacity to care for patients with COVID-19 or other illnesses

Long Term Care

- Adults who reside in facilities that provide a range of services
- Medical & personal care
- High rates of underlying medical conditions



CDC - Interim Guidance on Vaccine

Initial phase of COVID-19 vaccination program - vaccine will be offered to:



Future recommendations based on vaccine availability

Also prioritize:

 Elderly (>70 years) who reside in multigenerational households



Vaccine Hesitancy

- World Health Organization: This is a major threat to global health
- Even vaccine availability does not guarantee sufficient population vaccination as evidenced by vaccine hesitancy
- Previous research indicates that vaccine compliance remains variable and inconsistent
 - Successful inoculation against this disease will require widespread public educational campaigns regarding vaccine safety and efficacy

Dror, A.A., Eisenbach, N., Taiber, S. et al. Vaccine hesitancy: the next challenge in the fight against COVID-19. Eur J Epidemiol 35, 775–779 (2020). https://doi.org/10.1007/s10654-020-00671-y



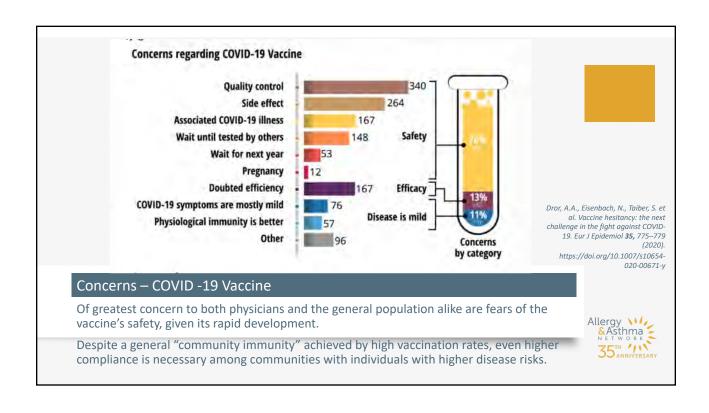
Acceptance rates for future COVID-19 vaccination healthcare professionals compared with the general population œ Doctors **General population** Nurse (338)(211)(1112)P<0.01 Seasonal influenza vaccine "Da yau 92% 69% 66% vaccinate for seasonal influenza?" P<0.01 P<0.01 **Future** COVID-19 vaccine "Would you 78% vaccinate yourself for COVID19?" P<0.01 **Future** COVID-19 vaccine "Would you 60% vaccinate your child for COVID19?" * Positive response rate (%)

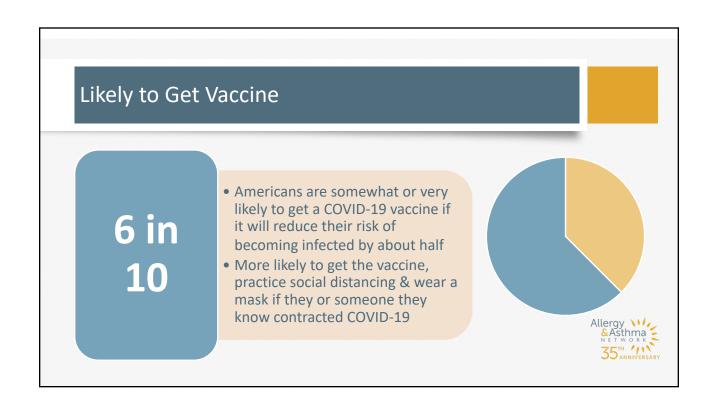
Acceptance Rates

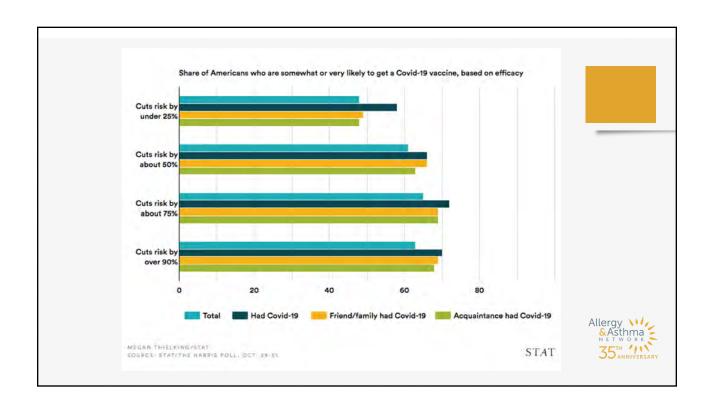
People currently vaccinated against seasonal influenza have a strong tendency to accept a future COVID-19 vaccine

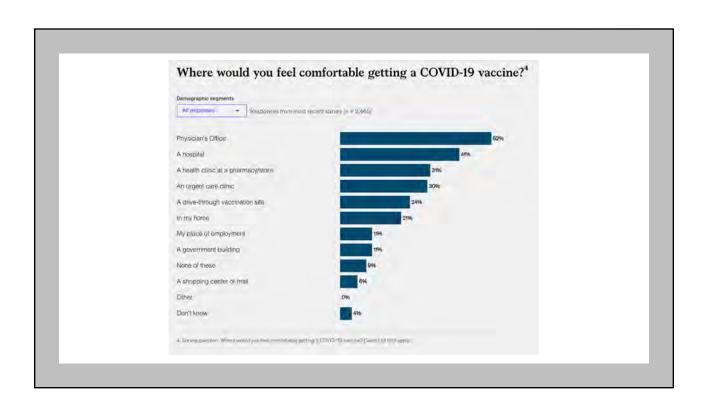
Acceptance for a COVID-19 vaccine among physicians & nurses overall is lower than their acceptance rates of seasonal influenza vaccination

Dror, A.A., Eisenbach, N., Taiber, S. et al. Vaccine hesitancy: the next challenge in the fight against COVID-19. Eur J Epidemiol 35, 775–779 (2020). https://doi.org/10.1007/s10654-020-00671-y









Social Media Role

As access to technology has improved, social media has attained global penetrance

Individuals can quickly share content globally without content editorial oversight

Considerable public health concerns are raised by antivaccination messaging on such platforms

Feeds vaccine hesitancy, including the compromise of public confidence in vaccine development



Reports of Allergic Reactions in the UK

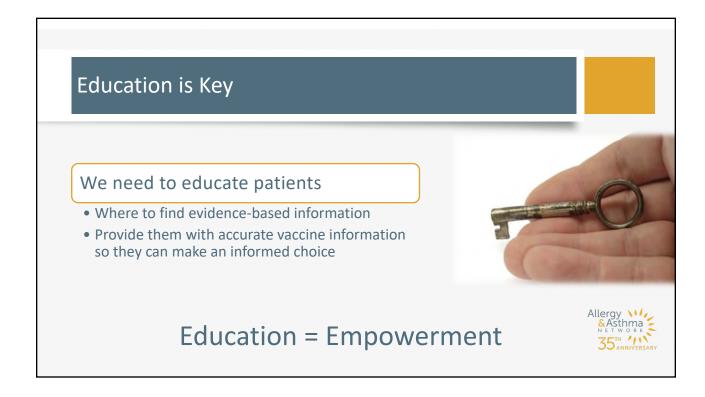
Media reports that health officials in the UK have advised people with a history of significant allergic reactions not be given the Pfizer/BioNTech vaccine

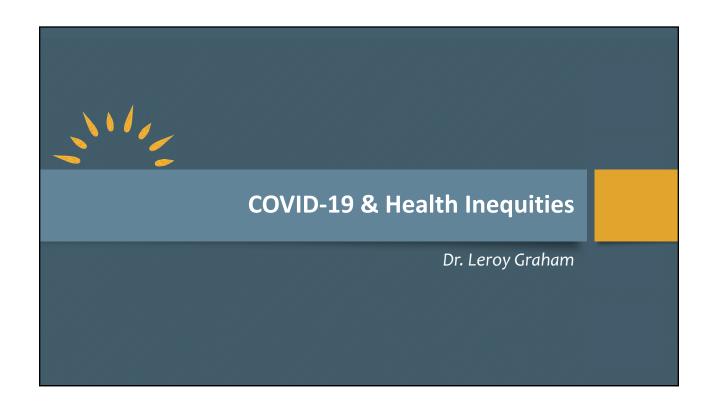
• 2 National Health Service workers with a history of anaphylaxis reported an anaphylactic reaction to the vaccine

You cannot become allergic to a virus

- Viruses commonly cause allergy type symptoms they can irritate the immune system in a way that mimics allergic reactions
- Cause inflammation and MIMIC an allergic reaction







Racial Disparities in COVID-19 Pandemic

Race	Share of Population	Share of Deaths	Share of Cases
White (non-Hispanic)	61.1%	51.1%	44.5%
Black	12.3%	21.1%	18.7%
Hispanic	17.8%	21.1%	28.8%
Asian	5.4%	3.7%	2.8%
Native American	0.7%	0.9%	1.2%



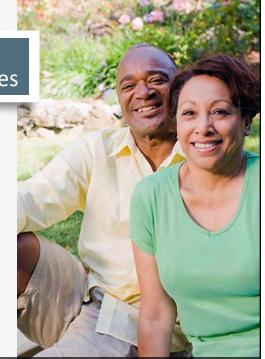
Covid-19 Tracking project, NPR 9/23



The impact of chronic disease and other factors on COVID-19 outcomes

Several factors and chronic diseases have been shown to be associated with severe and fatal COVID-19 infections to include:

- Adults age 65 and over
 - Lower immune function (reduced ability to effectively fight infections) and increased inflammatory response causing increased organ damage (heart, lungs, kidneys)
 - Complicating pre-existing conditions (heart, kidney or lung conditions) often made worse by a serious infection such as COVID-19
 - Lung function decreases with age often making older adults unable to breath without a high levels of oxygen and/or a ventilator due to a pneumonia as produced by Covid-19



The impact of chronic disease and other factors on Covid-19 outcomes

Low Socioeconomic Status (SES) and Poverty

Substandard and often overcrowded housing with increased harmful environmental exposures, limited ability to socially distance and increased risk of COVID infection

Reliance on often overcrowded public transportation with increased infection risk

More likely to be essential workers in public facing service and retail industries

More likely to have inadequate or no health insurance complicated by limitations in coverage and attempts to rescind or weaken the Affordable Care Act (ACA) in current political climate



The impact of chronic disease and other factors on COVID-19 outcomes



Weakened Immune Systems

- Individuals undergoing chemotherapy for cancer or other chronic diseases
- Individuals with primary immunodeficiencies (weakened immune systems) to include HIV/AIDS or other conditions
- Individuals undergoing cancer chemotherapy
- Those who have received organ transplants who may require medications that reduce the effectiveness of their immune systems to fight infections.



The impact of chronic disease and other factors on COVID-19 outcomes



- Poorly controlled Chronic Lung Disease to include Asthma and COPD as reduced lung function increases the chance for respiratory failure due to COVID infection
- Poorly controlled heart disease or poorly controlled hypertension as the severe lung infection and secondary infection may result in heart failure and a three-fold increased risk of death
- Poorly controlled Diabetes as this has been associated with a three-fold increase in death
- Obesity as a factor associated with poorly controlled chronic diseases and a possible "blunting" or limitation of of the body's response to severe infection



The impact of chronic disease and other factors on COVID-19 outcomes

- Certain neurological conditions to include:
 - Multiple Sclerosis
 - Parkinson's Disease
 - Motor Neuron Disease
 - Myasthenia Gravis
 - Recent CVA (stroke)

These conditions are often associated with weakened muscles that support breathing, swallowing or clearing of secretions complicating the lung infection caused by COVID. Also many of these diseases are treated with anti-inflammatory medications that may weaken the body's response to infection



Pandemic Stress • Americans experiencing mental health concerns given longevity of pandemic stress • Females & Communities of Color are 1.5X more likely than males/whites to be concerned about household responsibilities • Parents are 5X more concerned about career impact & family household responsibilities than non parent employees

Practical Challenges

- These factors that can lead to asthma disparities also can lead to disparities in vaccination of communities
- We need to improve access to the vaccine

FACTORS THAT CAN LEAD TO ASTHMA DISPARITIES



 ACCESS TO CARE – Limited or lack of transportation can result in patients missing or rescheduling doctor appointments and forgoing or delaying medication use.



 INCOME – Poverty can affect access to healthcare and health insurance, forcing low-income patients to skimp on medical care, including preventive medications.



 ENVIRONMENTAL ALLERGENS AND IRRITANTS – People with asthma who live in urban areas with substandard housing are exposed to more asthma triggers, including mold, dust mites, cockroaches and mice, cigarette smoke and vehicular exhaust from nearby highways.



 EDUCATION INEQUALITY — A lack of knowledge and understanding of the disease can lead to problems such as using asthma inhalers incorrectly or not following through on treatment.



 LANGUAGE AND CULTURAL DIFFERENCES — People with asthma who speak Spanish as a primary language may struggle to get appropriate health services.

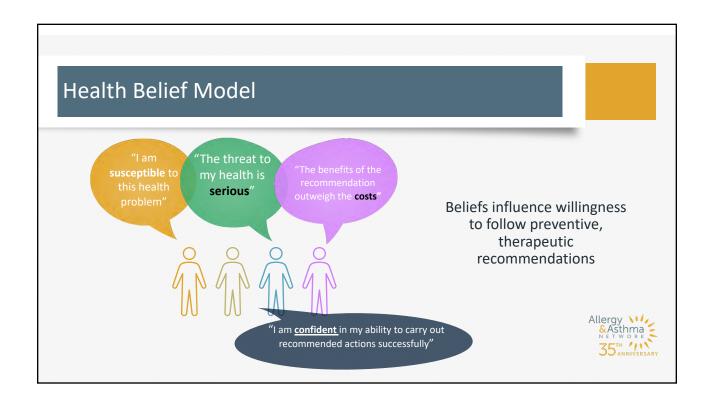
What Can Be DONE Now?

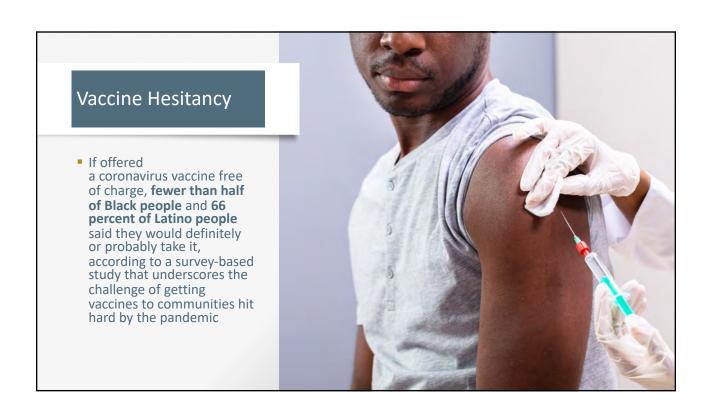
- Access to COVID Testing coupled to efficient and expedient result reporting and contact tracing
- Screen for comorbidities and risk factors associated with excessive COVID morbidity and mortality
 - Cardiovascular Disease/Hypertension
 - Lung Disease (Asthma/COPD/ILD)
 - Diabetes
 - Obesity
 - · Older Age
 - ? Medications

- Assisted Utilization of Validated Self Assessment Tools
- Enhanced Functional Health Literacy in the context of COVID-19









Black Americans: High Level of Distrust in Government

Not participating in large numbers in COVID-19 clinical trials

Most hesitant group to get a vaccine once one is available

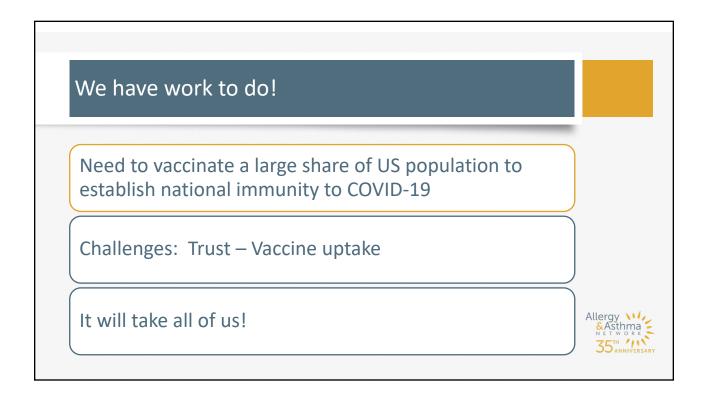
- Skepticism is rising
- Blacks 2 ½ times more likely to contract COVID-19
- 5 times more likely to die

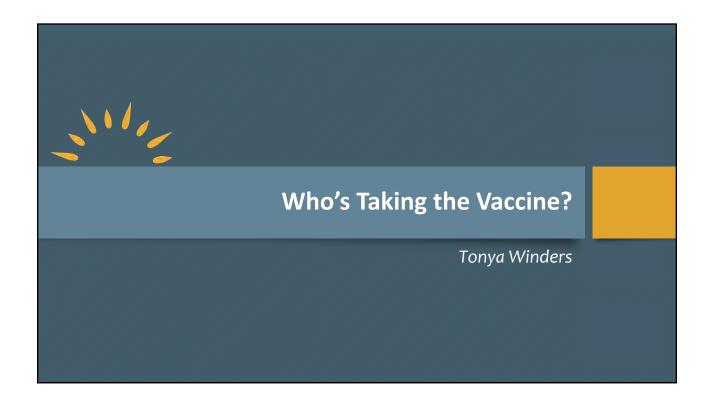


National Medical Association

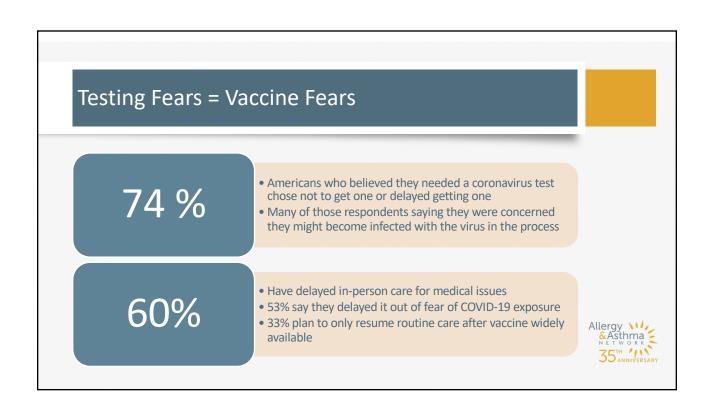
- Represents African American physicians and patients
- Has established a task force to review the findings of vaccine trials "to help provide a bridge of communications to the Black community"
- Dr. Leon McDougle President of NMA – he will get vaccinated himself when the task force signs off
- Said vaccine developers have generally supported efforts to diversify their trial participants.
- But they could be doing more to build long-term relationships in communities of color.







Under which timeframe of COVID-19 vaccine availability would you	be most likely to get vaccinated? 2,3 (n = 2,466)
Demographic categories All Responses	
I'd volunteer for clinical trials I'il get the first vaccine granted under EUA I'll get the vaccine after clinical trials I'd wait 3 to 12 months after its been on the market I'd get it once I'm confident it's safe I'm unlikely to get vaccinated Unlikely Response percentages by type	
All responses	



"With a vaccine likely not making its way to the general public until spring at the earliest, the healthcare community needs to do a better job of helping Americans get back to routine care now,"

"Early diagnosis can save lives and putting off preventative care and chronic disease treatment could make the difference between life and death. Chronic diseases take a toll on the body each day. Delays in diagnosis and treatment will cause, for many people, irreversible damage, require more aggressive and less effective treatments, and contribute to a higher death rate. As Benjamin Franklin advised, 'An ounce of prevention is worth a pound of cure.'"



- Harvey W. Kaufman, MD

Senior medical director, Head of the Health Trends Research Program for Quest



3 Former Presidents are Taking the Vaccine

- Bill Clinton
- George W. Bush
- Barack Obama:
 - "I will be taking it, and I may take it on TV or have it filmed so people know that I trust this science," Obama said in an interview on SiriusXM radio. "If Anthony Fauci tells me this vaccine is safe and can immunize you from getting COVID, absolutely I'll take it."







Director of the National Institute of Allergy & Infectious Diseases

Dr. Anthony Fauci:

- If the new coronavirus vaccine developed by Pfizer is approved by the FDA, Anthony Fauci, MD, the director of the National Institute of Allergy and Infectious Diseases, said he will take it.
- Fauci added that he trusts Pfizer and the FDA and has confidence in the vaccine's approval.
- "I'm going to look at the data," he told MSNBC on Tuesday. "But I trust Pfizer. I trust the FDA."







Pastor, Musician, Marriage Masterpeace, Inc.

- Montell Jordan:
- I am still researching the pros and cons of taking the vaccine.
- Conflicting messaging regarding the success % (Pfizer announced 90%+ and then said there was an error and it was actually around 60%) is an issue
- Politicizing the vaccine as a Republican or Democratic "rescue" rather than a human response is a challenge for me.
- Past undisclosed and unfair experimentation on people of color (Tuskegee Experiment) has me concerned over transparency.
- I would be more open to a world approved vaccine opposed to an "American" created vaccine, based on racial concerns within our nation.
 I have trust issues.
- Government has not suggested that scientists have created the vaccine, but have ascribed credit to pharmaceutical organizations for creating the vaccine. I trust science more than the corporations... and if those factions can't agree (Pharma and Science) I can't agree to receive a vaccine the medical world hasn't come to agreement on. My "no" is not a "forever no," but this is my current stance







Immediate Past President – American College of Allergy, Asthma & Immunology

- Dr. J. Allen Meadows:
 - Yes, I will 100% get the immunization. The whole thought that this was "rushed to market" is false. The government "red tape" was shortened.
 - Even assuming theoretical risk, I much rather take my chance with the immunization than with COVID
 - I hope to get the RNA vaccine because it integrates into your genetic info in hopes that it will last longer. Unfortunately, I've been told I will not make the first cut of doctors to get the immunization since I am not hospital based. I am also concerned I will be required to wait hours in a COVID infested waiting room at the local health department to be immunized.









Medical Director, Office of Equity & Diversity Children's Mercy Kansas City







Dr. Bridgette Jones:

- Yes, I will get the vaccine because as a mother, wife, and daughter I owe it to myself and those I care about to protect myself if I can.
- I also owe it to my community and my patients to decrease my risk of getting the virus and spreading it to others.
- Finally, as a physician scientist who has worked along side those at the NIH and FDA, I trust the expertise and wisdom of the very dedicated staff within those agencies. I also have trust in the rigorous processes within those agencies which have been refined over to time to provide equity in how science is conducted and applied.



Physicians Yes Purvi Parikh – □ No Dr. LeRoy Graham -☐ No Allergist/ **NOML Program: Immunologist** Higher risk due Enrolled my to age parents in the Comorbid Moderna trial conditions Wouldn't send (hypertension, my loved one for something I mechanical didn't feel was aortic valve) Exercise, take Plan to take it care of myself & myself

plan to take the

vaccine.

