

Addressing Vaccine Hesitancy

Marwan Haddad MD, MPH, AAHIVS
Kasey Harding MPH



Continuing Education Credits

This activity has been planned and implemented by the Community Health Center, Inc./Weitzman Institute and is accredited to provide continuing education for the healthcare team.

This series is intended for physicians, nurse practitioners, physician assistants, pharmacists, nurses and other members of the health center team.

Please complete the survey – linked in the chat, and emailed to all attendees – to request your continuing education credit

A comprehensive certificate will be sent out at the end of the series, May 2021.



JOINTLY ACCREDITED PROVIDER™
INTERPROFESSIONAL CONTINUING EDUCATION



Disclosure

- With respect to the following presentation, there has been no relevant (direct or indirect) financial relationship between the faculty listed above or other activity planners (or spouse/partner) and any for-profit company in the past 12 months which would be considered a conflict of interest.
- The views expressed in this presentation are those of the faculty and may not reflect official policy of Community Health Center, Inc. and its Weitzman Institute.
- We are obligated to disclose any products which are off-label, unlabeled, experimental, and/or under investigation (not FDA approved) and any limitations on the information that are presented, such as data that are preliminary or that represent ongoing research, interim analyses, and/or unsupported opinion.



Vaccine Hesitancy: Definition

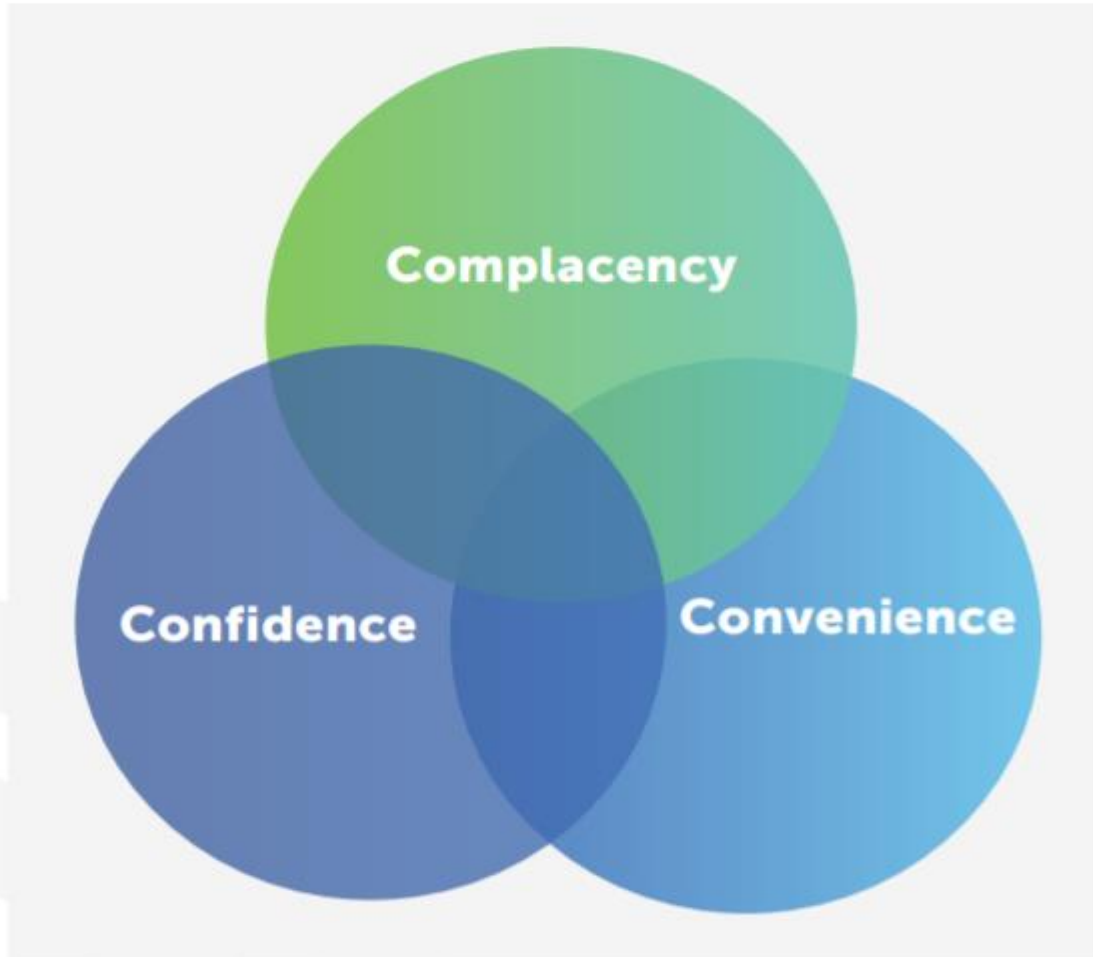
- A term used to describe the range of feelings that patients have about vaccines and the concerns they experience around accepting them.
- WHO Expert Panel Definition¹:
“Delay in acceptance or refusal of vaccines despite availability of vaccination services” in which “complacency, convenience and confidence” play a role.



¹ MacDonald & the SAGE Working Group on Vaccine Hesitancy, 2015



The 3 C's of Vaccine Hesitancy: Confidence, Complacency, and Convenience



- Confidence
Trust in vaccine or provider
- Complacency
Lack of perception of need for the vaccine or its value.
- Convenience
Access to the vaccine (affordability, availability, health literacy)

Vaccine, 2015

Source: World Health Organization, 2014; Report of SAGE.



Covid Vaccine Efficacy

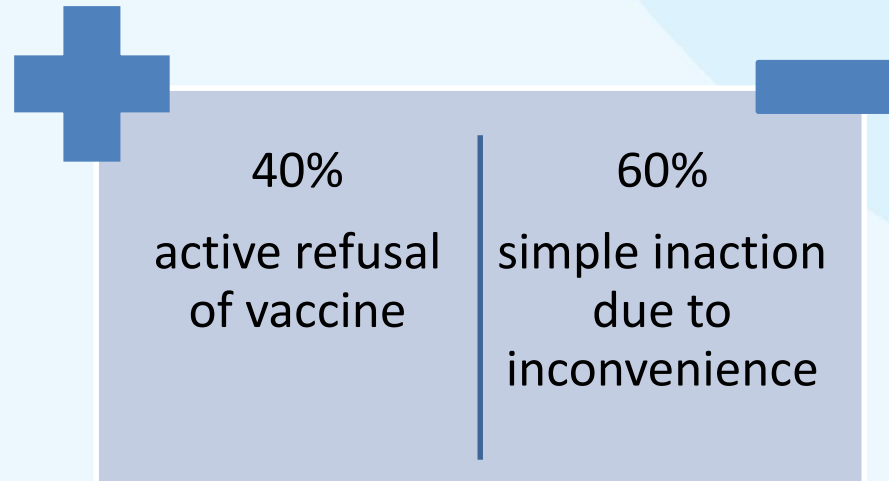
How coronavirus vaccines compare to vaccines for other viruses

VACCINE	VACCINE EFFECTIVENESS	RECOMMENDED DOSES
Flu (Influenza)	44.0%	1
AstraZeneca novel coronavirus	70.0%	2
Chickenpox (Varicella)	92.0%	2
Moderna novel coronavirus	94.1%	2
Pfizer novel coronavirus	95.0%	2



Complacency: VACCINATION REFUSAL

Active vs. Passive



Beard, Hull, Leask, Dey, & McIntyre, 2016

Research on risk assessment has shown that vaccination anxiety far exceeds the actual risks because it keys into uncertainty, dread, and the tendency to favor inaction over action in an ambiguous situation.

Wroe, Bhan, Salkovskis, & Bedford, 2005



Mistrust of the Medical Establishment among Communities of Color

Slavery in 19th Century

- Slaves were used as subjects of abusive, involuntary medical experimentation.

Tuskegee Syphilis Study

- A forty year study (1932-1972) which recruited African American men in Alabama, offering free healthcare for treatment of “bad blood”.
- No informed consent was obtained for any participant.
- 600 men participated: 399 with syphilis and 201 without syphilis
- Penicillin became available and as established treatment for syphilis in 1947.
- No one in the study was offered the treatment.
- About 130 men died from syphilis or its complications; many more suffered.
- At least 40 spouses became infected; 19 children born with congenital syphilis.

Persistent Health Disparities

- Structural racism continues to date and fuels the glaring health disparities brought even more to light by the COVID pandemic.



COVID-19 Cases, Hospitalizations, and Deaths, by Race/Ethnicity

Rate ratios compared to White, Non-Hispanic persons	American Indian or Alaska Native, Non-Hispanic persons	Asian, Non-Hispanic persons	Black or African American, Non-Hispanic persons	Hispanic or Latino persons
Cases ¹	1.8x	0.6x	1.4x	1.7x
Hospitalization ²	4.0x	1.2x	3.7x	4.1x
Death ³	2.6x	1.1x	2.8x	2.8x

Race and ethnicity are risk markers for other underlying conditions that affect health, including socioeconomic status, access to health care, and exposure to the virus related to occupation, e.g., among frontline, essential, and critical infrastructure workers.

How to Slow the Spread of COVID-19



Wear a mask



Stay 6 feet apart



Wash your hands



References on back

cdc.gov/coronavirus

CS319360-A 11/30/2020

Black/African American, Hispanic/Latinx, American Indian/Alaska Native are all disproportionately affected by COVID.



Vaccine Hesitancy in Communities of Color

- Influenza Vaccination
 - The Role of Risk Perception and Race in Flu Vaccination Behavior (Freirnuth et al, 2015)
 - Blacks were most likely compared to Hispanics and Whites (and Hispanics were more likely than Whites) to perceive higher risk of disease, higher risk of vaccine side effects, and have more mistrust of medical establishment.
 - Kaiser Permanente study of members in DC, Virginia, and Maryland (Vupputuri et al, 2014-2015)
 - Blacks had 42% lower odds of being vaccinated than Whites.
- Vaccination Rates from the National Health Interview Survey, 2011-2016
 - Blacks 24% lower rates than Whites
 - Hispanics 19% lower rates than Whites
 - Lower rates in males, younger, uninsured (regardless of race/ethnicity)



Convenience: Socioeconomic and Racial/Ethnic Differences in H1N1 Vaccinations

- Online survey of 1569 respondents age 18, and older in U.S.
- High representation from minority ethnic/racial groups and those living under the federal poverty level.
- Results: H1N1 vaccine uptake associated with sociodemographic factors, H1N1-related beliefs, and seasonal vaccination.
- H1N1 vaccination is strongly associated with age, urbanicity, perceiving the vaccine as safe, and seasonal flu vaccine uptake.
 - Perceptions of safety and season flu vaccination strongest associations.
- Black participants were the most likely ethnic/racial group to report having tried to get the vaccine but found it unavailable.



Common Reasons for Vaccine Hesitancy

- Safety
 - Too many vaccines; pain with injections; severe adverse reactions
- Necessity
 - Disease is "natural"; disease is rare, gone, or not that severe
- Distrust
 - Vaccines aren't well tested; research inadequate; medical mistrust in health system/provider
- Lack of Information
- Societal Influence
 - Other children/people unvaccinated; social norm
- Religious / Personal Choice
 - Right to choose; parent knows what is best; disallowed by religion; previous experience with vaccines;



Successful Strategies to Build Confidence

1

Surveys of patients have found 80% say that their primary care provider positively influenced their decision to get vaccines.

2

Studies have found 30-47% of vaccine hesitant patients agreed to vaccinate if they were provided with clear education from nurse or providers.

3

Policy and Advocacy are important in enforcing appropriate vaccine levels especially among vulnerable populations like homeless and people with HIV.

4

Information on the number of peers who agree to vaccination can positively effect confidence if it is high enough.

5

Trusted community partner promotion of vaccinations can be essential to encouraging acceptance in vulnerable populations



How To Present Information

Just providing scientific data is probably not enough.

More effective if you have a trusting relationship with the family.

Stories and personal examples are usually more effective than quoting statistics.

Sharing with families your decision to immunize family members can convey your comfort with the vaccine.

Use visual aids that portray impact and positive messaging

Motivational interviewing may be effective but has not been studied. Use principle of the 3 As: Ask, Acknowledge and Advise.



Vaccine Hesitancy Tips

- Acknowledge concerns
 - Remain nonjudgmental
- Be knowledgeable
 - Many medical providers have limited knowledge of vaccine efficacy, incidence of adverse effects, herd immunity
 - Provide science / evidence-based information
 - Discuss risk / benefit
- Educate on extensive testing done on vaccines

Highlight the extensive testing of vaccines before and after licensure

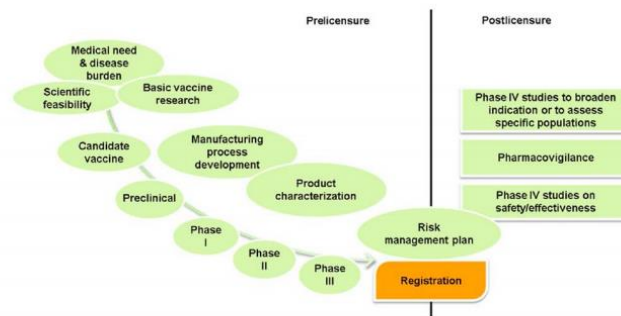


FIGURE 1

Vaccine pipeline: prelicensure and postlicensure vaccine development activities. From Hardt K, Schmid-Ott R, Glismann S, Adegbola RA, Meurice F. Sustaining vaccine confidence in the 21st century. *Vaccines*. 2013;1(5):204–224. Copyright © 2013 by the authors; licensee MDPI, Basel, Switzerland. Reproduced under the terms and conditions of the Creative Commons Attribution license (<http://creativecommons.org/licenses/by/3.0/>).

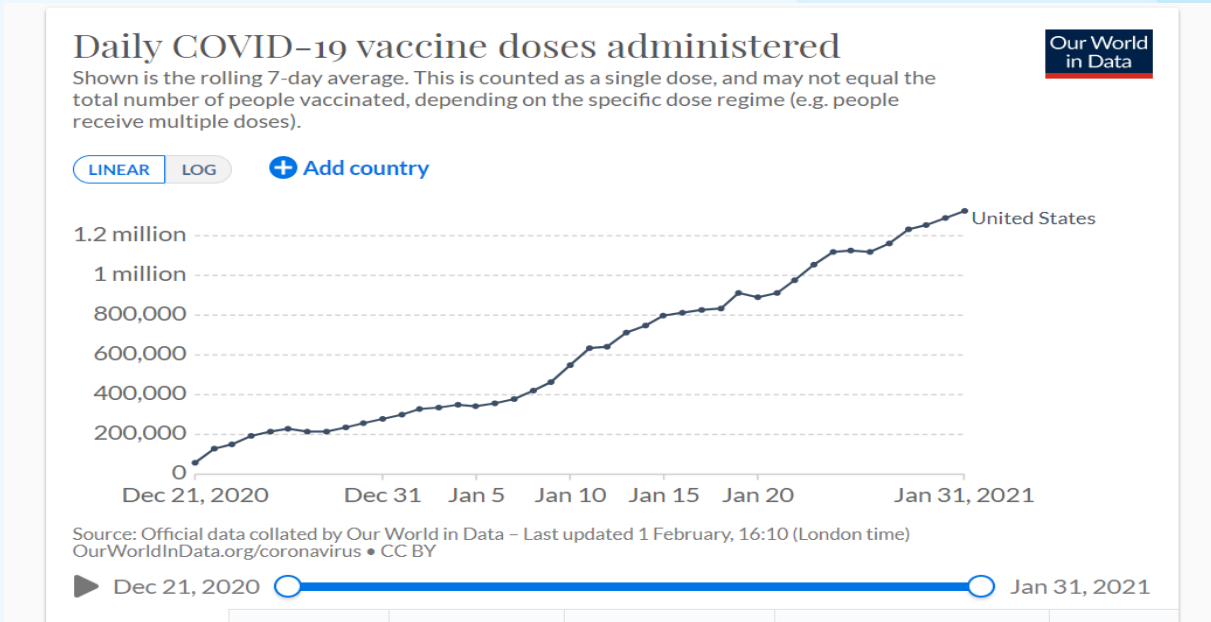


Provider Recommendation Matters

- Be proactive
- Know the disease
- Know the vaccine
 - Acknowledge known side effects
 - Emphasize evidence supporting safety and benefit
- Find common ground
- Use numbers to communicate risk and provide perspective
 - Talk about risk associated with other daily activities to provide context
- Use personal stories
- Know about resources including access, coverage
- Make vaccine recommendation strong



Covid Vaccine Data United States



***1.36 million vaccinations
as of January 31, 2021***



Covid Vaccine to date

About **7.8%** of people in the US have received at least one COVID-19 shot.

About **1.8%** of people have received both doses of the vaccine.

About **35.5%** of the shots distributed haven't been used yet.

Challenges

Lack of supply

Lack of access

Vaccine hesitancy



Connecticut Vaccine Administration Schedule 1A

Connecticut Phase 1A

Healthcare Personnel
with potential for
exposure

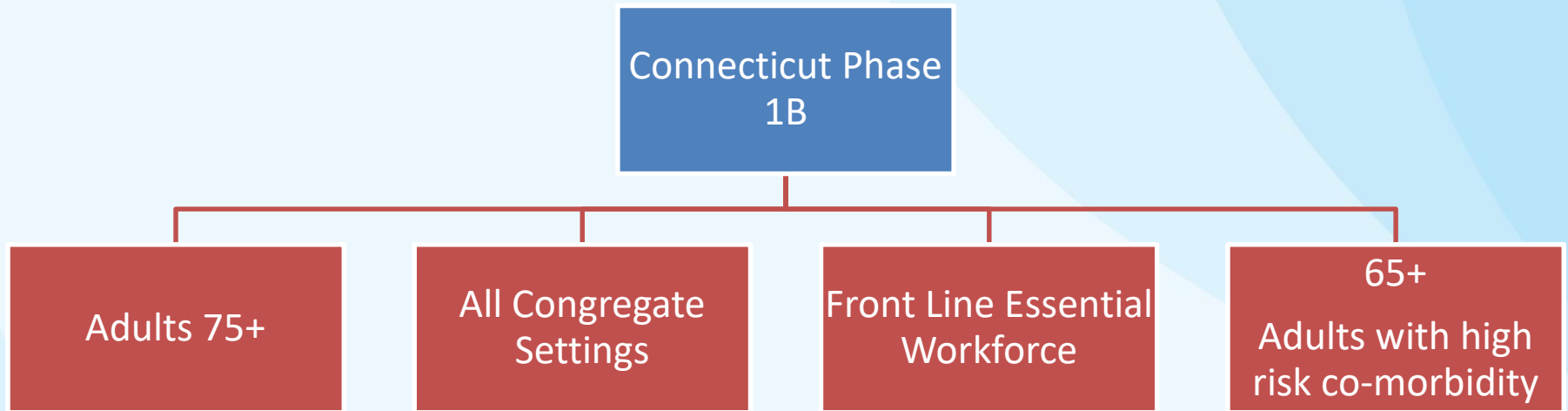
Long Term Care
Facility residents

First Responders with
potential for
exposure

This phase includes all of the following;
Doctors, nurses, allied health professionals, pharmacists,
pharmacy techs, custodians, dietary, administrative and support
staff in patient care settings, police, fire, ems, school nurses, home
health providers, homemaker companions, dentists, hygienists,
laboratory staff, clinical students, death care workers entering
healthcare facilities, homes or with exposure to descendants.



Connecticut Vaccine Administration Schedule 1B



This phase is still being determined but will likely include the following:

Frontline staff such as teachers and school staff, childcare providers, correctional staff, public transit staff, postal workers, grocery workers, food and agricultural workers, manufacturing workers.



COVID Vaccines Authorized for Emergency Use by FDA

Moderna – mRNA vaccine: 2 doses 28 days apart

- Over 30,000 participants
- 47% women, 25% age 65 and older, 10% Black or African American, 5% Asian, 0.8% American Indian or Alaska Native, and 20% Hispanic or Latinx;
- 25% healthcare worker; 22% had one high risk condition and 4% had 2 or more high risk conditions.
 - High risk conditions included about 5% chronic lung disease, 5% cardiac disease, 6.5% severe obesity, 9.4% diabetes, 0.6% liver disease, and 0.6% with HIV.

Pfizer– mRNA vaccine- 2 doses 21 days apart

- Over 40,000 participants
- 49.4% women, 81.9% white, 9.8% Black or African American, 4.4% Asian; 26.2% Hispanic/Latinx; 0.6% American Indian or Alaska Native; 21.4% 65 and older.
- High risk conditions: 46% had co morbidities
 - Obesity 35%, diabetes 8.4%, pulmonary disease 7.8%.



COVID Vaccines Authorized for Emergency Use by FDA Efficacy, Safety, & Side Effects :

Moderna

- 95.6% effective in preventing COVID-19 in people aged 18-64 years.
- 86.4% effective in preventing COVID-19 in people aged 65 years and older.
- Side Effects- injection site pain (91.6%), headache (63.0%), fatigue (68.5%), muscle (59.6%) and joint (44.8%) aches; and chills (43.4%).
Lymphadenopathy in the axillary area of the vaccination arm can also occur.
- Allergic reactions including anaphylaxis in first 20 days of administration of first dose (n=4,041,396): 43 cases of non-anaphylactic allergic reactions and 10 cases of anaphylaxis or 2.5 cases per million; 90% occurred within 15 minutes.¹



¹Allergic Reactions Including Anaphylaxis After Receipt of the First Dose of Moderna COVID-19 Vaccine — United States, December 21, 2020–January 10, 2021. MMWR Morb Mortal Wkly Rep 2021;70:125–129.



COVID Vaccines Authorized for Emergency Use by FDA Efficacy, Safety, & Side Effects :

Pfizer

- 95% effective in preventing COVID-19 in people aged 16 years and older
- Side Effects: injection site pain 84%; fatigue 63%, headache 55%, muscle pain 38%, chills 32%, joint pain 24%, fever 14%.
- Allergic reactions including anaphylaxis in first 10 days of administration of first dose (n=1,893,360): 86 cases of non-anaphylactic allergic reactions and 21 cases of anaphylaxis or 11.1 cases per million; 71% occurred within 15 minutes and 86% within 30 minutes of vaccination.¹



¹Allergic Reactions Including Anaphylaxis After Receipt of the First Dose of Pfizer-BioNTech COVID-19 Vaccine — United States, December 14–23, 2020. MMWR Morb Mortal Wkly Rep 2021;70:46–51.



COVID Variants

- Multiple variants:
 - U.K. (B.1.1.7)
 - South Africa (B.1.351)
 - Brazil (B.1.1.28.1 or P.1)
- More infectious; spreads more easily and faster leading to more people sick.
- To date, not seem to be more severe or deadly.
- Concern would be if some of the mutations that develop, not affected or less affected by antibodies produced from previous COVID infection or current vaccines.



COVID Variants

- Moderna and Pfizer tested neutralizing effect of antibodies from small number of people who received their vaccines against UK and South Africa mutations.
 - Found fully effective against UK variant.
 - Some decrease in neutralization against South Africa variant.
 - Still above threshold needed to protect.
 - Considerations may be to give booster 6-12 months after second shot; adjust vaccine to target variants.



Other COVID Vaccines on the Horizon

- Johnson & Johnson (FDA EUA still to be filed)
 - Single dose vaccine, viral vectored (adenovirus carrying spike protein)
 - 44,000-person trial; 18+; multiple countries
 - Overall 66% protective against moderate to severe COVID 14-28 days after shot, regardless of age, race, ethnicity, co morbidities.
 - Tested when new variants had emerged
 - 85% effective in protecting against severe disease
 - 72% effective in US, 66% in South America, 57% in South Africa
 - No hospitalizations or deaths among those in vaccine arm
 - Storage—regular refrigeration up to 3 months



Other COVID Vaccines on the Horizon

- AstraZeneca
 - Trial still ongoing in U.S.; approved in U.K. and other countries
 - Two-dose one month apart, viral vectored (adenovirus carrying DNA for spike protein)
 - Overall, 70% effective against COVID
 - 90% effective with first shot at half dose
 - 62% effective with two full doses
 - Longer interval between shots (3 months) may increase efficacy
 - One shot may be 76% effective for 3 months
 - Early reports showing that transmission is decreased by 67% after first dose.
 - Storage– regular refrigeration up to 6 months



Role of Public Health and Healthcare Workers in COVID-19 Vaccination

- Acknowledge and address concerns
 - Made too fast/corners were cut
 - Coronaviruses well studied; knew what to target (spike protein).
 - COVID genome available since Jan 2020.
 - Huge amounts of funding upfront.
 - Operation Warp Speed meant study phases ran simultaneously; production before efficacy known.
 - Medical/government mistrust
 - Call out structural racism
 - Emphasize the health disparities



Role of Public Health and Healthcare Workers in COVID-19 Vaccination

- Inform and educate on COVID vaccine
 - ~95% effective: Pfizer/Moderna vaccines prevent people from becoming sick from COVID.
 - Not yet know how long effective, if prevents asymptomatic infection or transmission.
 - Still need to wear masks/socially distance
 - Side effects (usual vaccine reactions within days)
 - Short term (injection site reactions, headache, fatigue, myalgias, fever/chills, allergic reaction); more likely after second dose, if younger
 - Long term unknown but rare usually to develop beyond 2 months post administration



Role of Public Health and Healthcare Workers in COVID-19 Vaccination

- Inform and educate on COVID vaccine
 - mRNA: not enter cell nucleus; disintegrates quickly; not change our DNA.
 - Fertility concerns: not seen or anticipated.
 - Pregnancy/breastfeeding: not studied; weigh risk/benefit.
 - Immunocompromised/living with HIV: may not mount same response.
 - Children: Pfizer authorized for 16 and older; Moderna for adults only
 - Already had COVID: still get the vaccine, when?
 - Vaccine won't give you COVID; won't turn PCR/Ag tests positive
 - Missed second dose: take it as soon as you can; same vaccine as first.
 - CDC states if circumstances dictate can give up to 6 weeks after first dose; give booster with same type of vaccine e.g. mRNA vaccines



Role of Public Health and Healthcare Workers in COVID-19 Vaccination

- Ensure reliability of vaccine supply and accessibility
 - Will there be enough vaccine?
 - Vaccinating in phases based on risk; how determined?
 - Guaranteeing second dose availability
 - How do I get the vaccine?
 - Good communication; easy process
 - Where can I get it?
 - Easily accessible
 - Do I have to pay, have insurance, be a resident/citizen?
 - No cost to patients



THANK YOU!

Marwan Haddad MD, MPH, AAHIVS
haddadm@chcl.com

Kasey Harding MPH
hardink@chcl.com

