



# Influenza Immunizations in the COVID-19 Era

Barbara DeBaun, MSN, RN, CIC

West Virginia MBQIP Fall Virtual Session

October 28, 2020

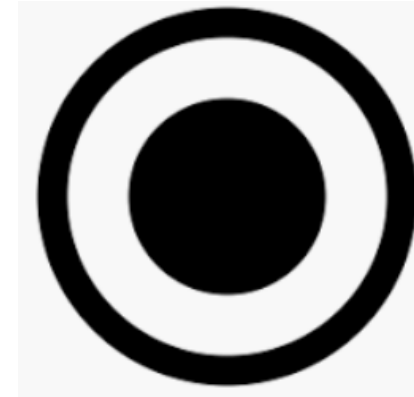
# Using Zoom



All lines are UNMUTED upon entry, you can MUTE yourself as needed

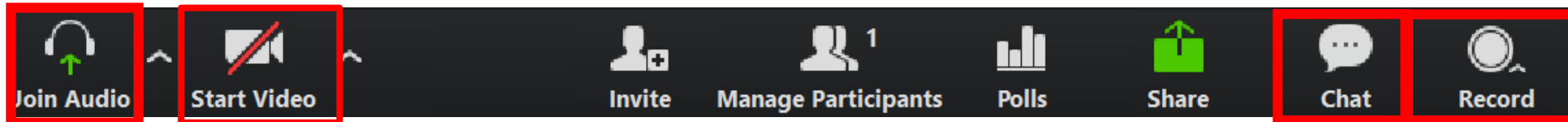


Click “chat” to open the chat box



Session is being recorded

Would love to see you on video - please turn on your camera!






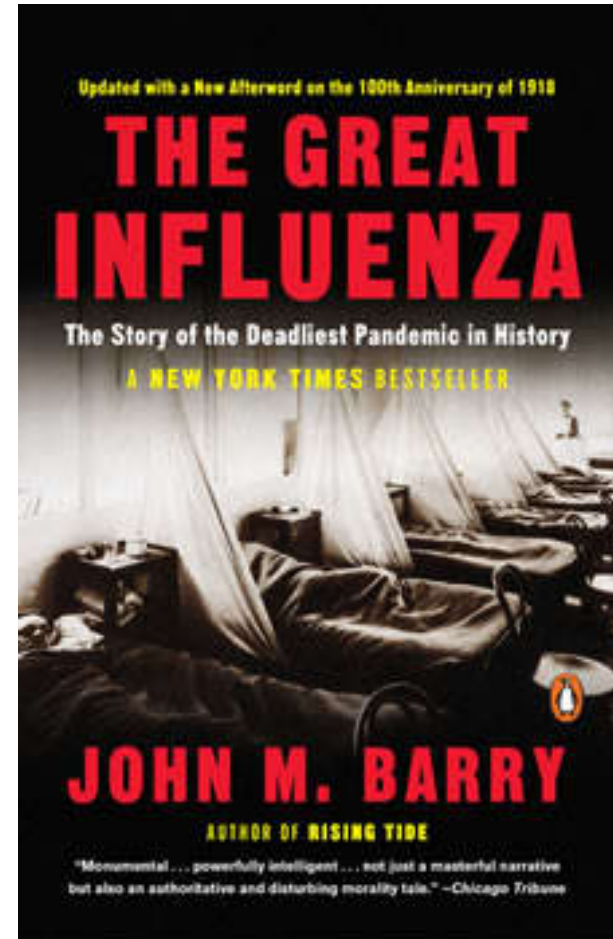
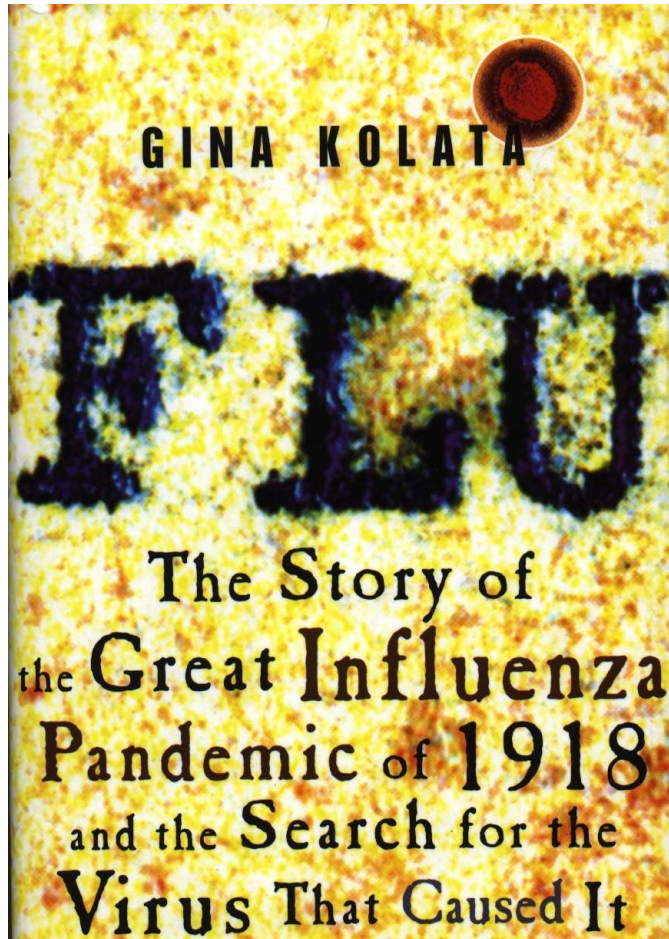
Welcome  
from Dianna



# Learning Objectives

- Describe 2020-21 ACIP recommendations for seasonal influenza vaccine
  - Discuss barriers and excuses for vaccination refusal and strategies for achieving sustainably high rates of immunization in healthcare providers
- 

Today's session will focus on flu vaccination

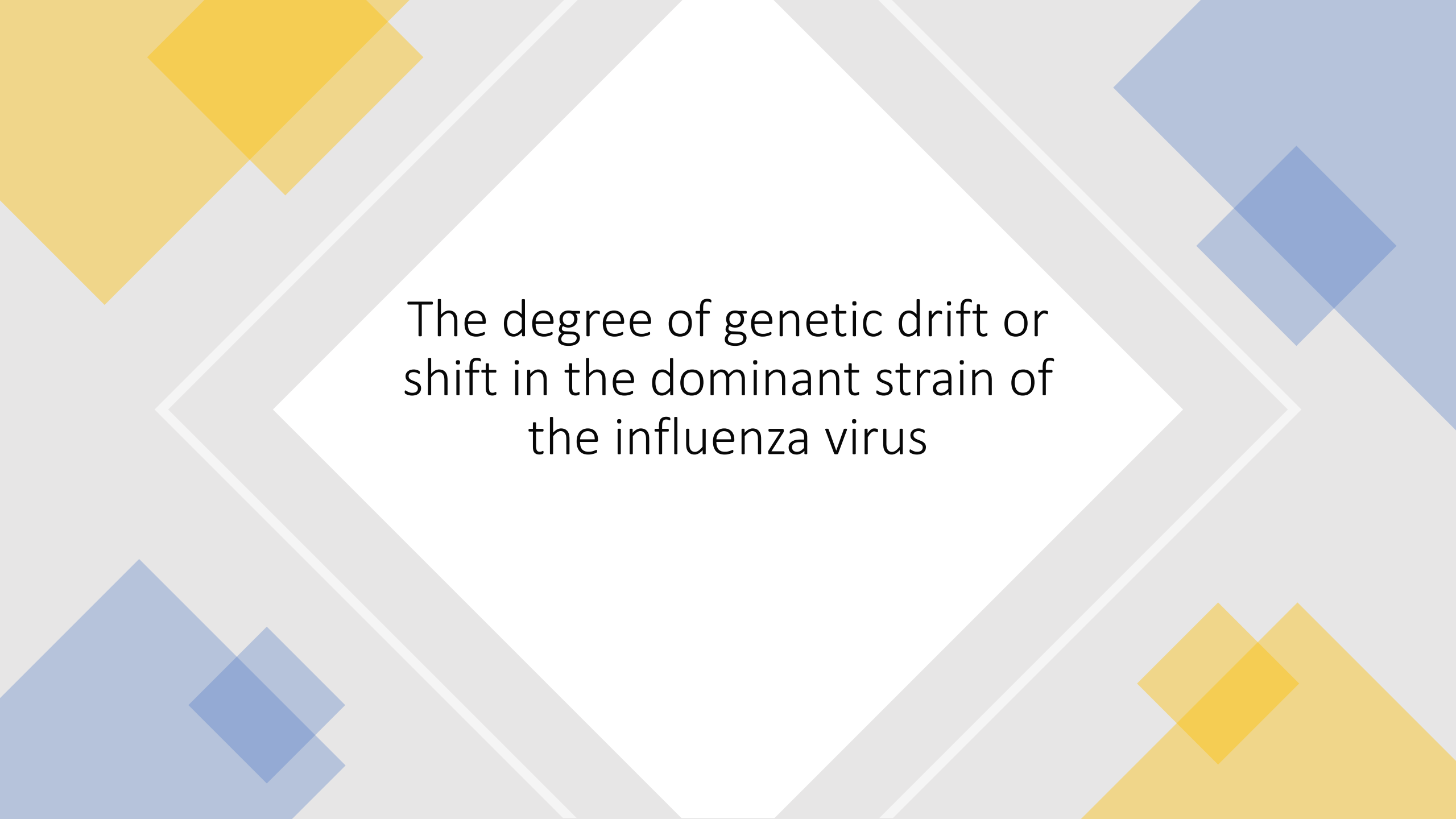


# Seasonal Influenza Stats for the US

- Estimated 9.3 million and 45 million illnesses
- Estimated 12,000 to 61,000 deaths



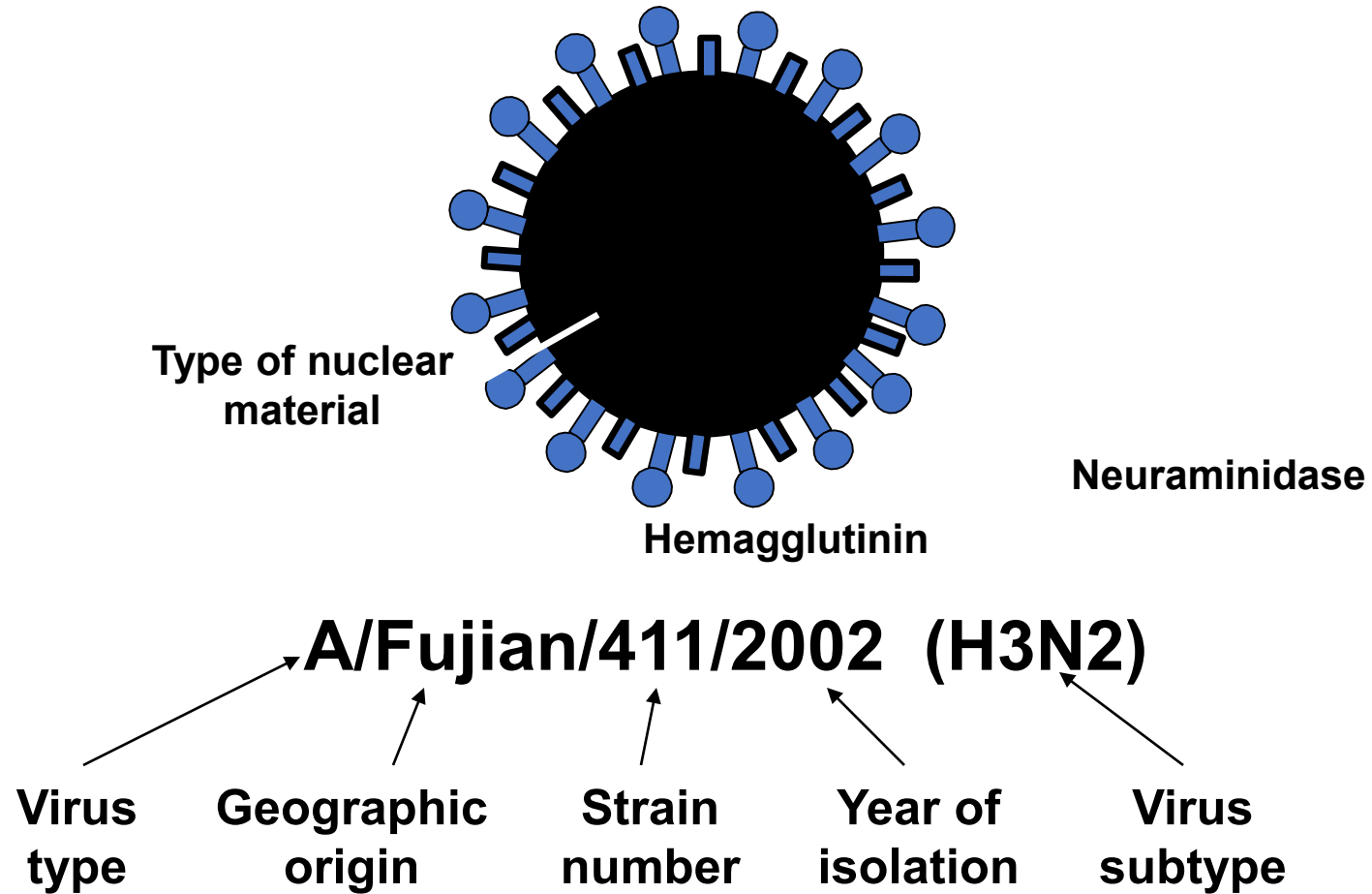
What impacts morbidity and mortality from influenza?



The degree of genetic drift or  
shift in the dominant strain of  
the influenza virus



# Influenza Virus



# 2020–21 Influenza Vaccine Composition

- ***Egg-based IIVs and LAIV4:***
  - An A/Guangdong-Maonan/SWL1536/2019 (H1N1)pdm09-**like** virus;
  - An A/Hong Kong/2671/2019 (H3N2)-**like** virus;
  - A B/Washington/02/2019 (Victoria lineage)-**like** virus; and
  - (IIV4s and LAIV4) a B/Phuket/3073/2013 (Yamagata lineage)-**like** virus.
- ***Cell-culture-based IIV4 and RIV4:***
  - An A/Hawaii/70/2019 (H1N1)pdm09-**like** virus;
  - An A/Hong Kong/45/2019 (H3N2)-**like** virus;
  - A B/Washington/02/2019 (Victoria lineage)-**like** virus; and
  - A B/Phuket/3073/2013 (Yamagata lineage)-**like** virus.

# What's the difference between drift and shift?

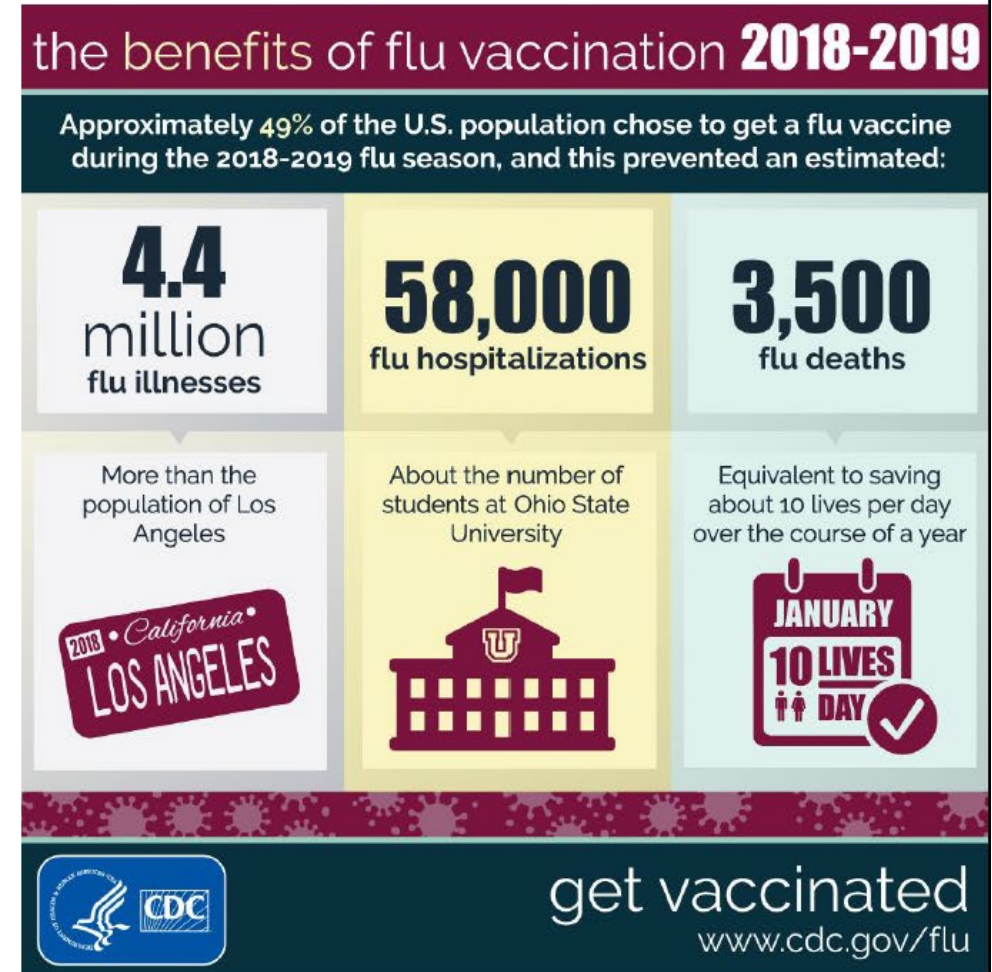
- Antigenic drift (think about a gentle movement into the next lane)
  - Small changes (mutations) in the genes of viruses that can lead to changes in the surface proteins of the virus
  - Changes produce viruses that are closely related
  - Main reason why a person can get the flu more than one time and why the flu vaccine composition must be updated every year
- Antigenic shift (think about teaching your kid how to drive a stick shift)
  - Abrupt, major change in an influenza virus
  - Can happen when a virus 'jumps species' (e.g. H1N1)
  - Results in a novel virus and can cause pandemics

# Efficacy and coverage of vaccination

- How good is the vaccine?
- How many people choose to be vaccinated?

# Estimated Benefits of Influenza Vaccination, 2018–19

- Estimated vaccine effectiveness for 2018-19:
  - 29% overall
- Estimated vaccination coverage:
  - 49% overall
- Estimated burden averted through vaccination
  - 4.4 million illnesses
  - 58,000 hospitalizations
  - 3,500 deaths



<https://www.cdc.gov/flu/resource-center/freeresources/graphics/flu-vaccine-protected-infographic.htm>

# Advisory Committee on Immunization Practices (ACIP) 2020

# ACIP Adult Immunization US, 2020

**Table 1** Recommended Adult Immunization Schedule by Age Group, United States, 2020

Vaccine	19–26 years	27–49 years	50–64 years	≥65 years
Influenza inactivated (IV) or Influenza recombinant (IRV) <i>or</i> Influenza live, attenuated (LAIV)	1 dose annually			
Tetanus, diphtheria, pertussis (Tdap or Td)	1 dose Tdap, then Td or Tdap booster every 10 years			
Measles, mumps, rubella (MMR)	1 or 2 doses depending on indication (if born in 1957 or later)			
Varicella (VAR)	2 doses (if born in 1980 or later)		2 doses	
Zoster recombinant (RZV) (performed) <i>or</i> Zoster live (ZVL)			2 doses <i>or</i> 1 dose	
Human papillomavirus (HPV)	2 or 3 doses depending on age at initial vaccination or condition	27 through 45 years		
Pneumococcal conjugate (PCV13)	1 dose			65 years and older
Pneumococcal polysaccharide (PPSV23)	1 or 2 doses depending on indication			1 dose
Hepatitis A (HepA)	2 or 3 doses depending on vaccine			
Hepatitis B (HepB)	2 or 3 doses depending on vaccine			
Meningococcal A, C, W, Y (MenACWY)	1 or 2 doses depending on indication, see notes for booster recommendations			
Meningococcal B (MenB)	2 or 3 doses depending on vaccine and indication, see notes for booster recommendations			
Haemophilus influenzae type b (Hib)	1 or 3 doses depending on indication			

■ Recommended vaccination for adults who meet age requirement, lack documentation of vaccination, or lack evidence of past infection
 ■ Recommended vaccination for adults with an additional risk factor or another indication
 ■ Recommended vaccination based on shared clinical decision-making
 ■ No recommendation/Not applicable

# 2020–21 ACIP Influenza Statement

- Primary updates:
  - U.S. influenza vaccine viral composition
  - Addition of two recently licensed vaccines
    - Fluzone High-Dose Quadrivalent
    - Fluvad Quadrivalent
- Updates in:
  - Live, attenuated influenza vaccine and influenza antivirals
  - Discussion and Table of contraindications/precautions
  - Recommendations for persons with severe egg allergy

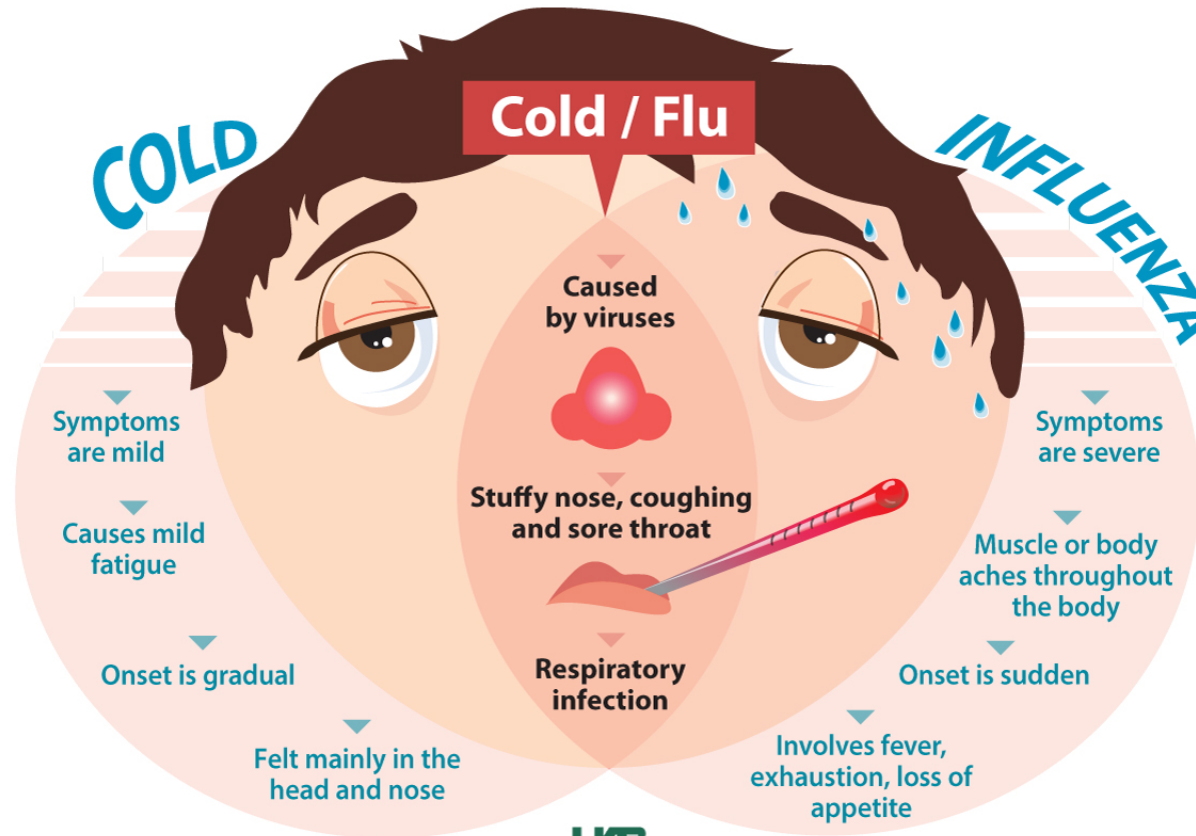


# Upcoming 2020–21 U.S. Influenza Season

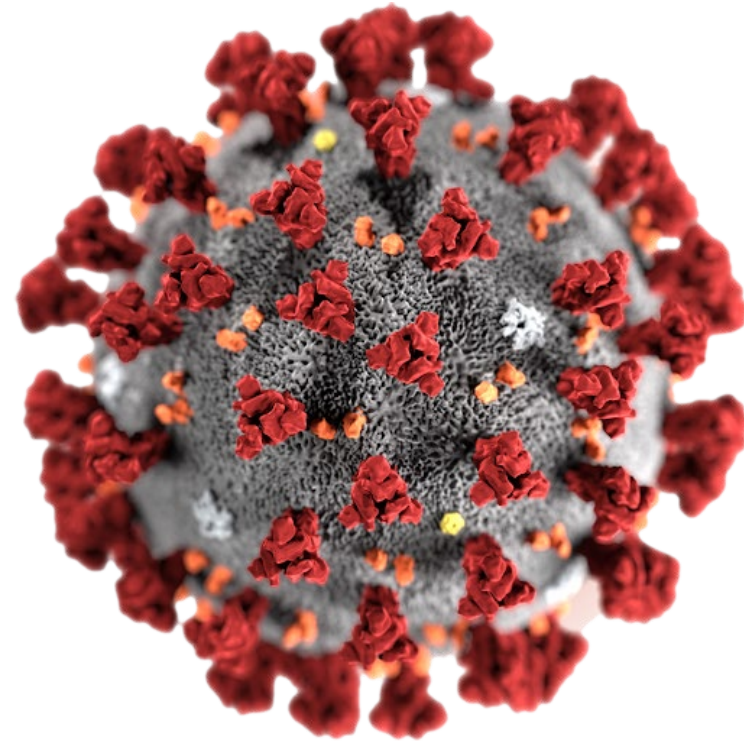
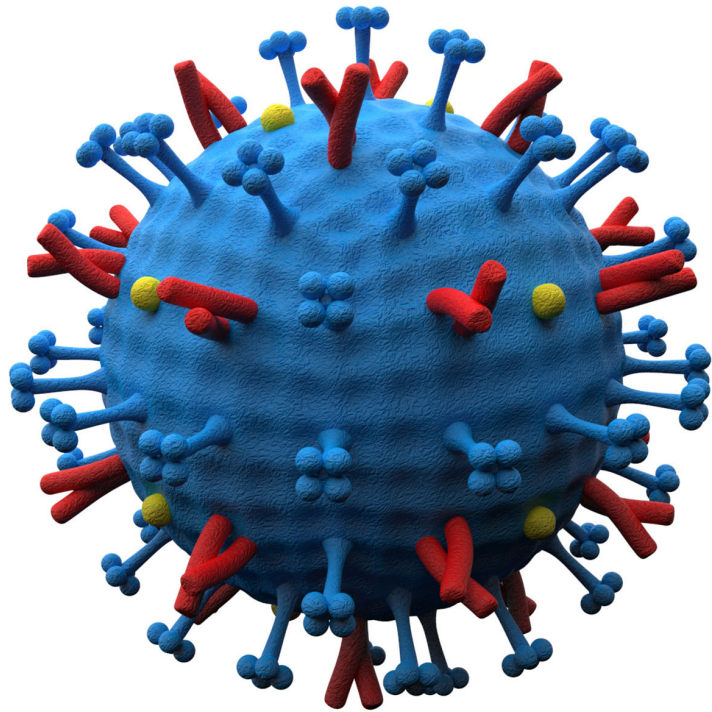
- It is unclear what impact the ongoing COVID-19 pandemic will have on the upcoming influenza season in the U.S.
  - There may be less influenza than usual because of social distancing and other measures to reduce COVID-19.
  - Influenza viruses and SARS-CoV-2 may co-circulate.
  - People may be co-infected with influenza and SARS-CoV-2.
- Presence of SARS-CoV-2 and influenza at the same time could place tremendous burden on the health care system and result in many illnesses, hospitalizations, and deaths.

# Do you have the Flu?

According to the CDC, flu vaccines reduce the risk of flu illness between 40% and 60% among the overall population during seasons when most circulating flu viruses are well-matched to the flu vaccine.

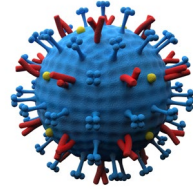


# Comparison between seasonal influenza and SARS-CoV-2



# Seasonal flu compared to SARS-CoV-2

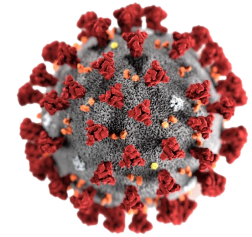
- Transmitted mainly via droplets



- Less contagious
- Most infectious after symptom onset
- 1-4 day (median 2 d) incubation
- Case fatality rate =0.1%

- Droplet

- Airborne, fecal-oral



- More contagious
- Most infectious 48 hours prior to symptom onset
- 2-14 day (median 5 d) incubation
- Case fatality rate =0.25%-3.0%

# Most common clinical manifestations

## **Seasonal influenza**

- Fever, chills, headache, myalgias, cough, fatigue
- Nasal congestion
- Sore throat

## **SARS-CoV-2**

- Fever, chills, headache, myalgias, cough, fatigue
- Shortness of breath
- Anosmia

# Influenza Vaccines 2020/2021

Standard-dose inactivated influenza vaccine	Approved for anyone >6 months Most widely used vaccine
Live-attenuated influenza vaccine (nasal spray)	Approved for ages 2-49 years Good for those with fear of needles Not good for immunocompromised
High-dose inactivated influenza vaccine AND Adjuvanted inactivated influenza vaccine	Approved for >65 years Stimulate a more robust immune response Slightly increased side effects such as pain at the injection site and muscle aches Slightly increased protection from influenza
Recombinant influenza vaccine AND Cell culture influenza vaccine	Created without egg products Safe for anyone with egg allergy

## U.S. INFLUENZA VACCINES FOR THE 2020-21 SEASON

### INACTIVATED INFLUENZA VACCINES (IIVs) and RECOMBINANT INFLUENZA VACCINE (RIV4)

Trade name Manufacturer	Presentation	Age indication	HA, µg/dose (each virus)	Thimerosal Yes/No (If yes, Mercury, µg/0.5mL)
<b>Quadrivalent IIVs (IIV4s)—Standard-dose—Egg-based</b>				
Afluria Quadrivalent Seqirus	0.25 mL prefilled syringe*	6 through 35 mos	7.5/0.25 mL	No
	0.5 mL prefilled syringe	≥3 yrs	15/0.5 mL	No
	5.0 mL multidose vial*	≥6 mos (needle/syringe) 18 through 64 yrs (jet injector)	See note for dosing*	Yes (24.5)
Fluarix Quadrivalent GlaxoSmithKline	0.5 mL prefilled syringe	≥6 mos	15/0.5mL	No
FluLaval Quadrivalent GlaxoSmithKline	0.5 mL prefilled syringe	≥6 mos	15/0.5mL	No
Fluzone Quadrivalent Sanofi Pasteur	0.5 mL prefilled syringe†	≥6 mos	15/0.5 mL	No
	0.5 mL single-dose vial	≥6 mos	See note	No
	5.0 mL multidose vial	≥6 mos	for dosing†	Yes (25)
<b>Quadrivalent IIV (IIV4)—Standard-dose—Cell culture-based (ccIIV4)</b>				
Flucelvax Quadrivalent Seqirus	0.5 mL prefilled syringe	≥4 yrs	15/0.5mL	No
	5.0 mL multidose vial	≥4 yrs		Yes (25)
<b>Quadrivalent IIV (IIV4)—High-dose—Egg-based (HD-IIV4)</b>				
Fluzone High-Dose Quadrivalent Sanofi Pasteur	0.7 mL prefilled syringe	≥65 yrs	60/0.7mL	No
<b>Quadrivalent IIV (IIV4)—Standard-dose—Adjuvanted—Egg-based (aIIV4)</b>				
Fluad Quadrivalent Seqirus	0.5 mL prefilled syringe	≥65 yrs	15/0.5mL	No
<b>Trivalent IIV (IIV3)—Standard-dose—Adjuvanted—Egg-based (aIIV3)</b>				
Fluad Seqirus	0.5 mL prefilled syringe	≥65 yrs	15/0.5mL	No
<b>Quadrivalent RIV (RIV4)—Recombinant HA</b>				
Flublok Quadrivalent Sanofi Pasteur	0.5 mL prefilled syringe	≥18 yrs	45/0.5mL	No

## LIVE ATTENUATED INFLUENZA VACCINE (LAIV4)

Trade name <i>Manufacturer</i>	Presentation	Age indication	Virus count per dose (each virus)	Thimerosal Yes/No (If yes, Mercury, µg/0.2mL)
<b>Quadrivalent LAIV (LAIV4)--Egg-based</b>				
FluMist Quadrivalent <i>AstraZeneca</i>	0.2mL prefilled intranasal sprayer	2 through 49 yrs	$10^{6.5-7.5}$ fluorescent focus units/0.2mL	No



# Challenges



If vaccines are so good, why do we only hear about the bad stuff?

- Preventative medicine is not glamorous
- We are victims of our own success
- Diseases are not seen as threats
- Adverse reactions are rare but real



# Vaccination Challenges

- Parents today have never seen most vaccine-preventable diseases
- Allegations of rare vaccine safety issues are hard to disprove
- Anti-vaccine organizations are well organized
- Controversy





# Common Barriers and Excuses

“I hear they are  
not safe”

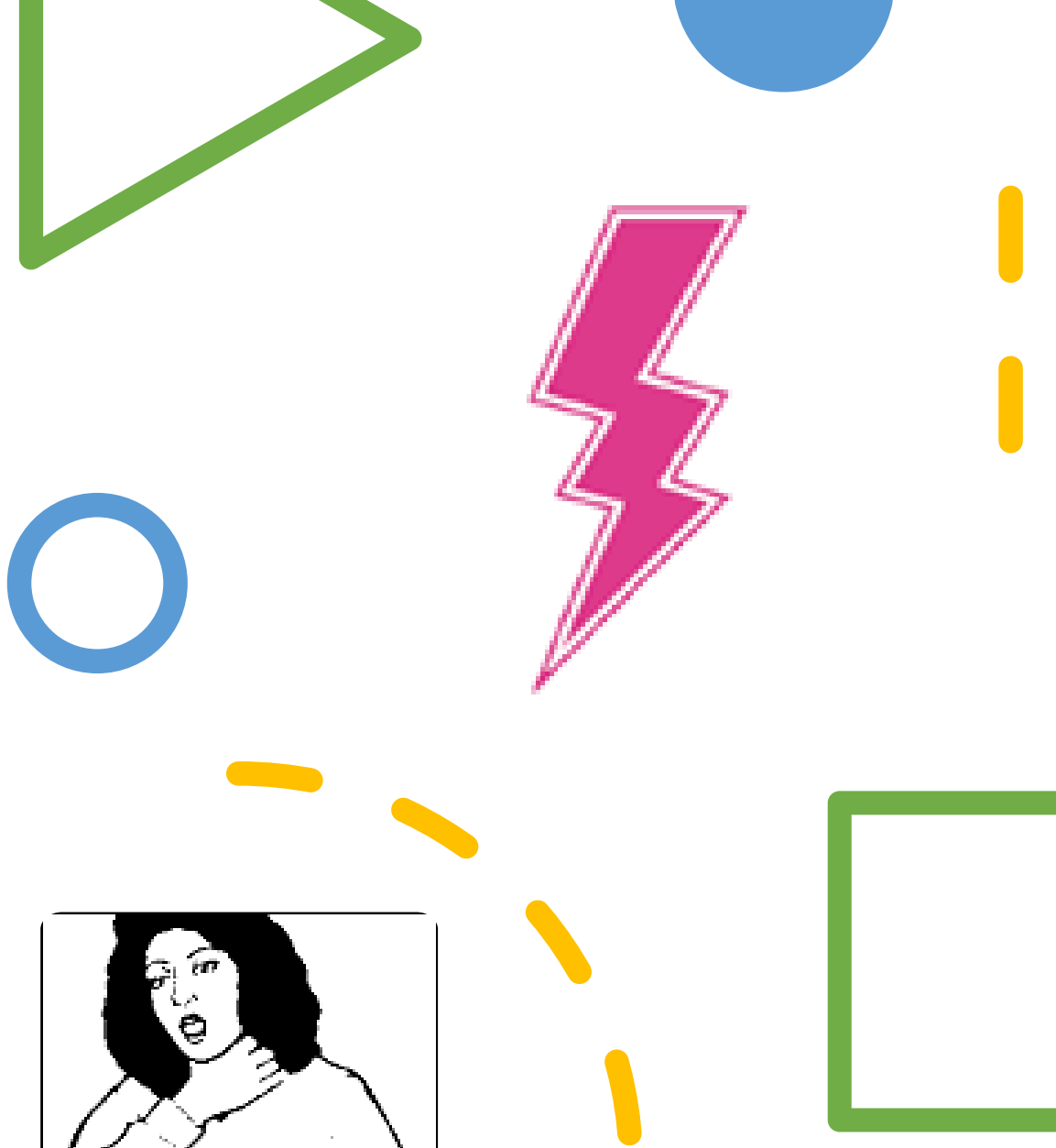
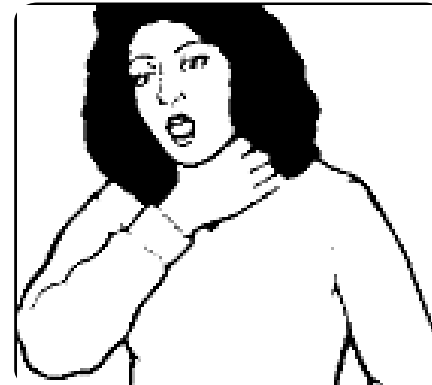


What scares you more?

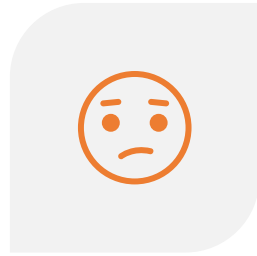


# How Safe are Vaccines?

- How do you define “safe”?
- Do benefits outweigh risks?
  - What are chances of catching infection?
  - What are risks of vaccine?
  - How effective is vaccine?



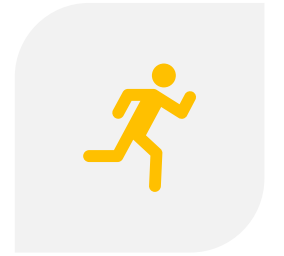
# Perceptions of Risk



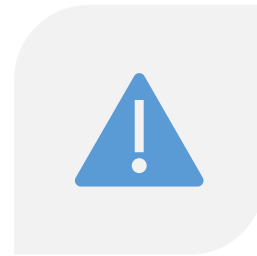
WE DO NOT TEND TO BE  
AFRAID OF THINGS THAT ARE  
MOST LIKELY TO HARM US



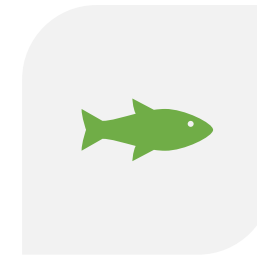
PLANES, TRAINS,  
AUTOMOBILES



SEDENTARY LIFESTYLE



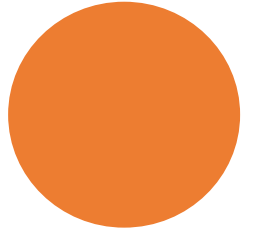
WE ARE AFRAID OF THINGS  
THAT POSE LITTLE DANGER



WE FEAR SHARKS WHILE  
MOSQUITOS ARE A MUCH  
BIGGER DANGER



# The two longest living myths about vaccines



They contain mercury which causes major harm

They cause autism



| Thimerisol

# Autism

## Lancet retracts 12-year-old article linking autism to MMR vaccines

Published at [www.cmaj.ca](http://www.cmaj.ca) on Feb. 4

**T**welve years after publishing a landmark study that turned tens of thousands of parents around the world against the measles, mumps and rubella (MMR) vaccine because of an implied link between vaccinations and autism, *The Lancet* has retracted the paper.

In a statement published on Feb. 2, the British medical journal said that it is now clear that “several elements” of a 1998 paper it published by Dr. Andrew Wakefield and his colleagues (*Lancet* 1998;351[9103]:637-41) “are incorrect, contrary to the findings of an earlier investigation.”

Dr. Richard Horton, editor of *The Lancet*, declined through a spokesperson to speak to *CMAJ* about this issue.

In the original paper, Wakefield and 12 coauthors claimed to have investigated “a consecutive series” of 12 children referred to the Royal Free Hospital



Dr. Andrew Wakefield speaks to media in London, England on Jan. 28 after the General Medical Council ruled that he acted unethically in doing his research into a link between Measles Mumps Rubella vaccinations and autism.

The image features a white background with several abstract geometric elements. In the top left, there are two vertical yellow dashed lines. To their right is a solid blue circle. Further right is a green L-shaped line. In the top right corner, a yellow circle is partially visible. On the left side, there is a green square outline. In the bottom left, a series of yellow dashed lines forms a curved path. A large orange semi-circle occupies the right half of the image, containing the text "They make me sick" in white. 

“They make me sick”



# Impact of vaccine on immune system

# Influenza Vaccine Side Effects

Symptom	Vaccine%	Placebo %	p
Fever	5.7	4.2	.68
Cough	6.6	5.1	.62
Coryza	13.2	10.2	.27
Fatigue	8.0	7.7	.82
Malaise	7.2	6.3	.83
Myalgia	4.8	4.2	.84
Headache	6.9	7.6	.99
Any symptom	27.7	22.9	.21
<b>Sore arm</b>	<b>20.1</b>	<b>4.9</b>	<b>&lt;.001</b>

# Supply and Demand



SWING STATE WARS • JOHNNY DEPP'S 'NEVERLAND'

# Newsweek

November 1, 2004

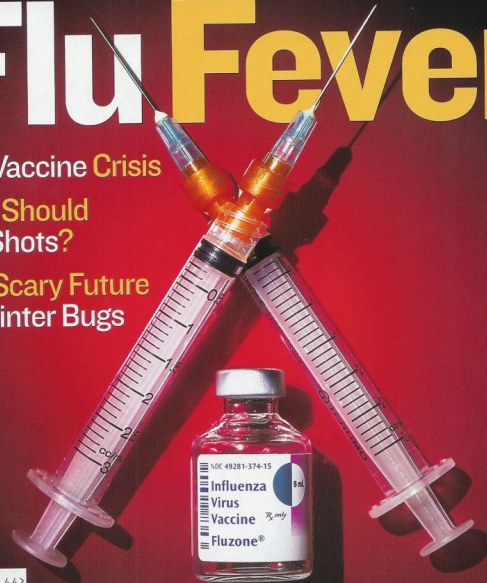
newsweek.com

## Flu Fever

The Vaccine Crisis

Who Should  
Get Shots?

The Scary Future  
Of Winter Bugs





“I got the shot but I  
still got sick”



# Discussion points

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TIMING



RISK FACTORS




MODIFICATION OF  
ILLNESS

“They don’t work  
100% of the time”



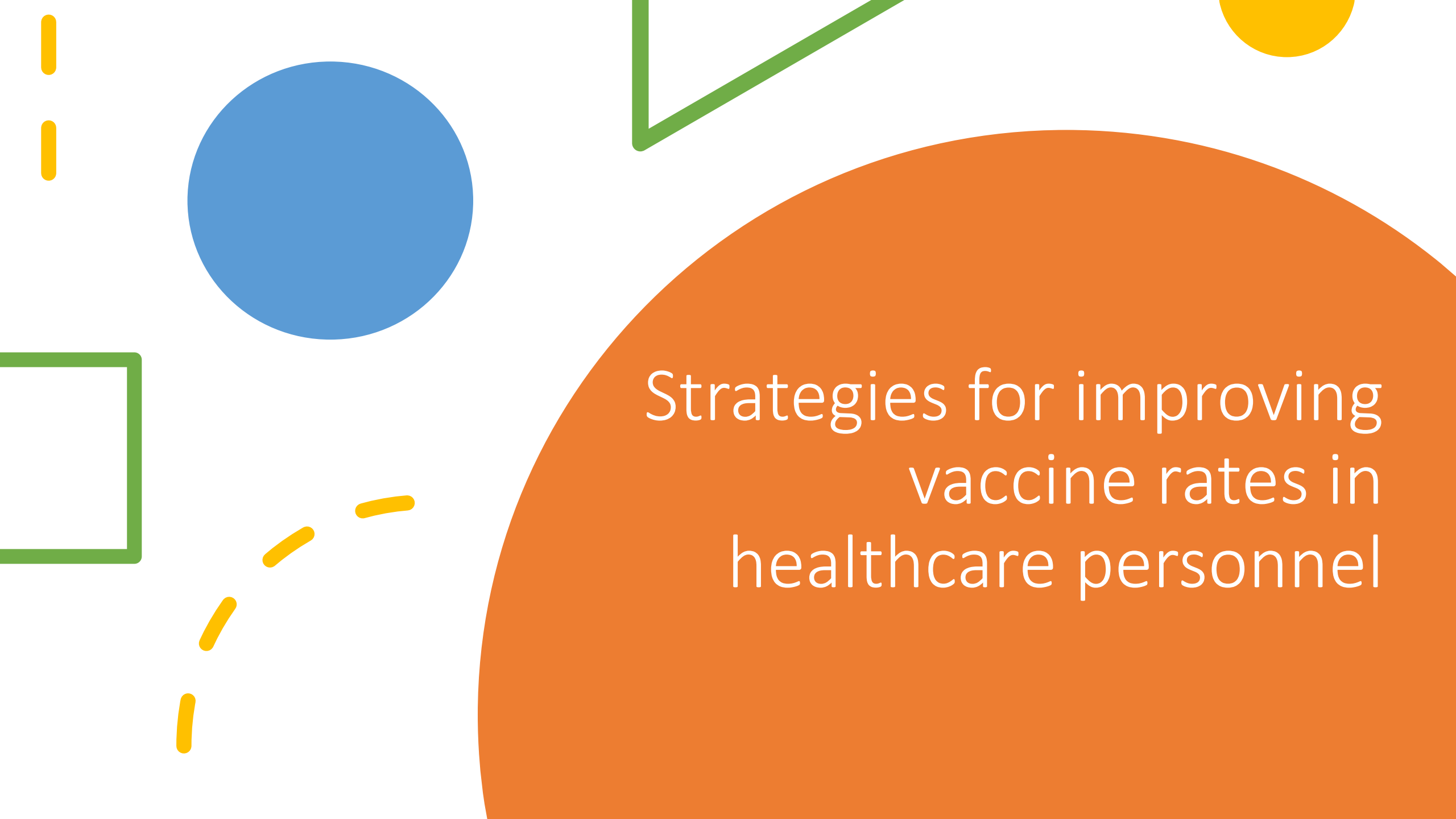


Efficacy and  
coverage of  
vaccination

- How good is the vaccine?
  - How many people choose to be vaccinated?
- 



Herd Immunity |



Strategies for improving  
vaccine rates in  
healthcare personnel

Carrot or stick?



Condition of  
Employment?







## **SHEA Document**

# Policy statement from the Society for Healthcare Epidemiology of America (SHEA): Only medical contraindications should be accepted as a reason for not receiving all routine immunizations as recommended by the Centers for Disease Control and Prevention

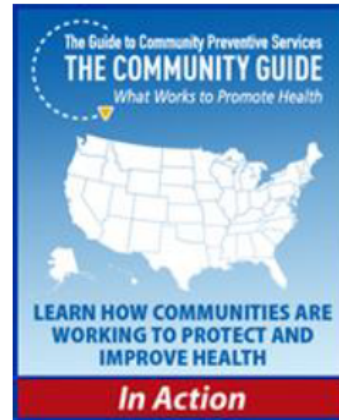
David J. Weber MD, MPH<sup>1</sup>, Thomas R. Talbot MD, MPH<sup>2</sup>, Allison Weinmann MBBS<sup>3</sup>, Trini Mathew MD, MPH<sup>4</sup>, Emily Heil PharmD<sup>5</sup>, Edward Stenehjem MD, MSC<sup>6</sup>, Robert Duncan MD, MPH<sup>7</sup>, Alan Gross PharmD<sup>8</sup>, Patricia Stinchfield APRN CNP<sup>9</sup>, Christopher Baliga MD<sup>10</sup>, Jamie Wagner PharmD<sup>11</sup>, William Schaffner MD<sup>12</sup>, Kelly Echevarria PharmD, BCPS, AQ-ID, BCIDP<sup>13</sup> and Marci Drees MD, MS, DTMH<sup>14</sup> on behalf of the Society for Healthcare Epidemiology of America (SHEA)

# Strategies to Promote Adult Immunization



- Administrative

- Immunization Champion
- Management support
- Effective policy
- Provider assessment and feedback



- Programmatic

- On site vaccination
- Reduction in out-of-pocket costs
- Standing orders
- Reminder-recall
- Immunization information system

- Communication

- Patient values and needs
- Provider recommendations

[www.thecommunityguide.org/vaccines/index.html](http://www.thecommunityguide.org/vaccines/index.html)

# Make the right thing easy

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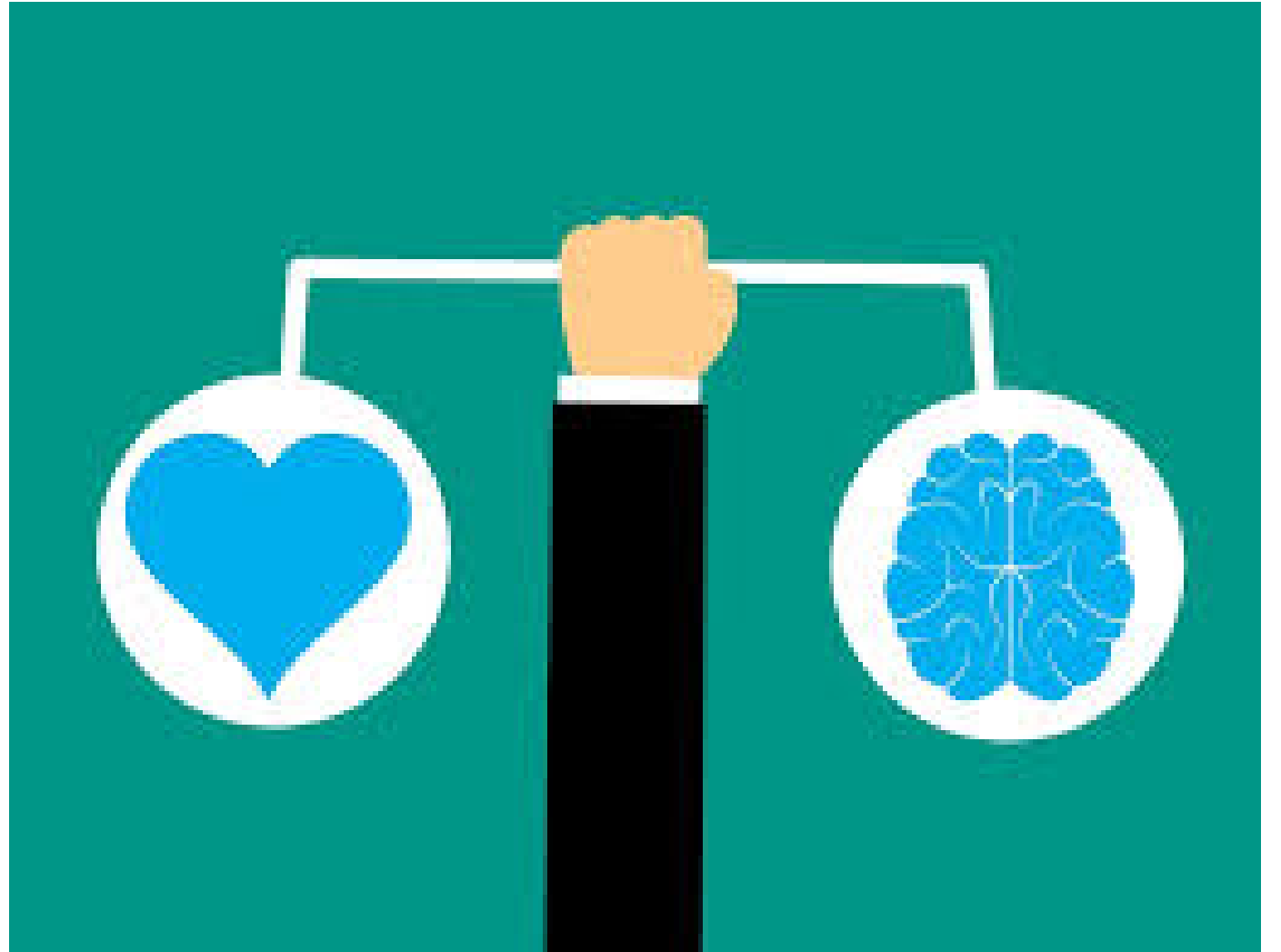


## Barriers to Flu Vaccination during the Pandemic

- There might be fewer worksite vaccination clinics (~16% of adults receive flu vaccination at the workplace).
- People might not feel safe going into clinics or pharmacy settings.
- In-person clinic visits might be cancelled or moved to telehealth.
- Concerns about safety of COVID-19 vaccine could translate to (more) questions about safety of flu vaccine.
- COVID-19-related unemployment might impact ability to afford flu vaccination.
- Working parents have limited free time to focus on staying up to date on vaccinations because of work/home school/child care responsibilities.
- People might not think they need a flu vaccination this year because they are physically distancing.

# Solutions to 'excuses'

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1:1  
Conversations  
and Stories



I have never had the flu so why bother?



It's only 47%  
effective

First Draw: 28/01/2012  
**VALID RECEIPT FOR 1 DRAW(S)**  
**FROM DRAW 1158 TO 1158**  
LOTTO PLUS: YES  
Check name and draw date  
-----  
A06: **20 22 31 33 40 48** QP  
B06: **05 13 17 23 39 45** QP  
-----  
Lotto: R7.00  
Lotto Plus: R3.00  
**Total: R10.00** Incl 14% VAT  
AGENT:0900002-90000201 01 TRNS:0000734992  
COUPON 001824134 COLUMNS:000000004  
28/01/12, 16:01:06 5D8582F3  
See conditions on reverse  
**06071 25504 28888 27102 26859 37837 57847**



If your best friend was in the hospital, who would you want assigned to care for him/her?

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What's your plan?



# Ensure Physical Distancing during Vaccination Visits

## Separate sick from well patients



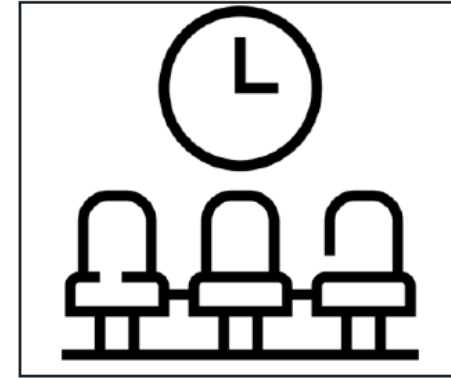
- Schedule well and sick visits at different times of the day.
- Place sick visits in different areas of the facility or different locations.

## Ensure physical distancing measures



- At least 6 feet during all aspects of visit: check-in, checkout, screening procedures, postvaccination monitoring
- Use strategies such as physical barriers, signs, ropes, floor markings.

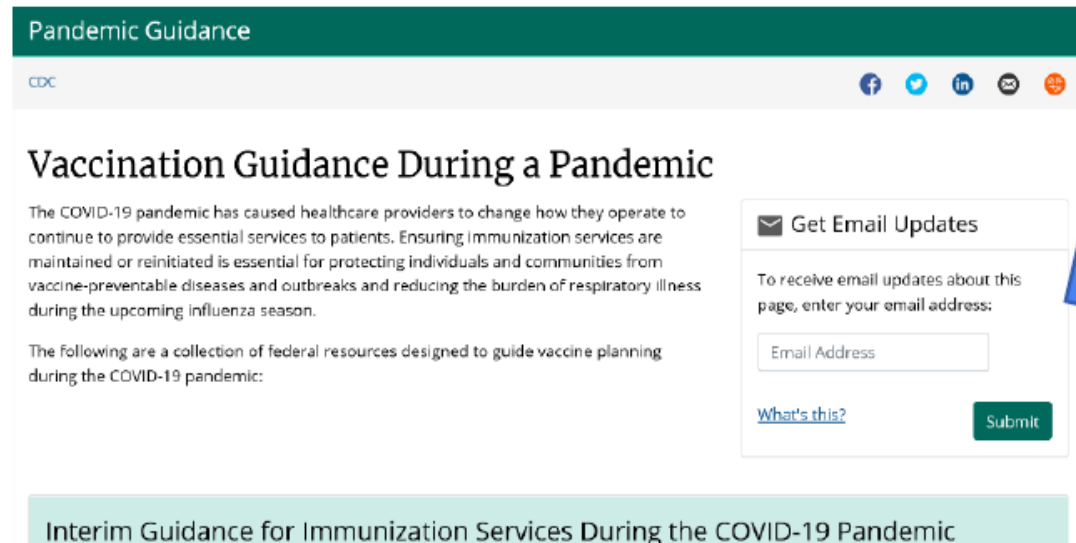
## Reduce crowding in waiting room



- Ask patients to wait outside (e.g., in their vehicles) until called in.

# Vaccination Guidance Is Continuously Being Reviewed and Updated

- Visit <https://www.cdc.gov/vaccines/pandemic-guidance/index.html> for the most recent guidance.
- Sign up to be notified when information on the web page changes.



The screenshot shows a web browser window with the title "Pandemic Guidance" and the CDC logo. The main heading is "Vaccination Guidance During a Pandemic". Below the heading, there is a paragraph of text explaining the importance of immunization services during a pandemic. To the right of the text is a sign-up form titled "Get Email Updates". The form includes a text input field for "Email Address" and a "Submit" button. A blue arrow points to the "Submit" button. At the bottom of the page, there is a light green banner with the text "Interim Guidance for Immunization Services During the COVID-19 Pandemic".

Pandemic Guidance

CDC

## Vaccination Guidance During a Pandemic

The COVID-19 pandemic has caused healthcare providers to change how they operate to continue to provide essential services to patients. Ensuring immunization services are maintained or reinitiated is essential for protecting individuals and communities from vaccine-preventable diseases and outbreaks and reducing the burden of respiratory illness during the upcoming influenza season.

The following are a collection of federal resources designed to guide vaccine planning during the COVID-19 pandemic:

Get Email Updates

To receive email updates about this page, enter your email address:

Email Address

[What's this?](#)

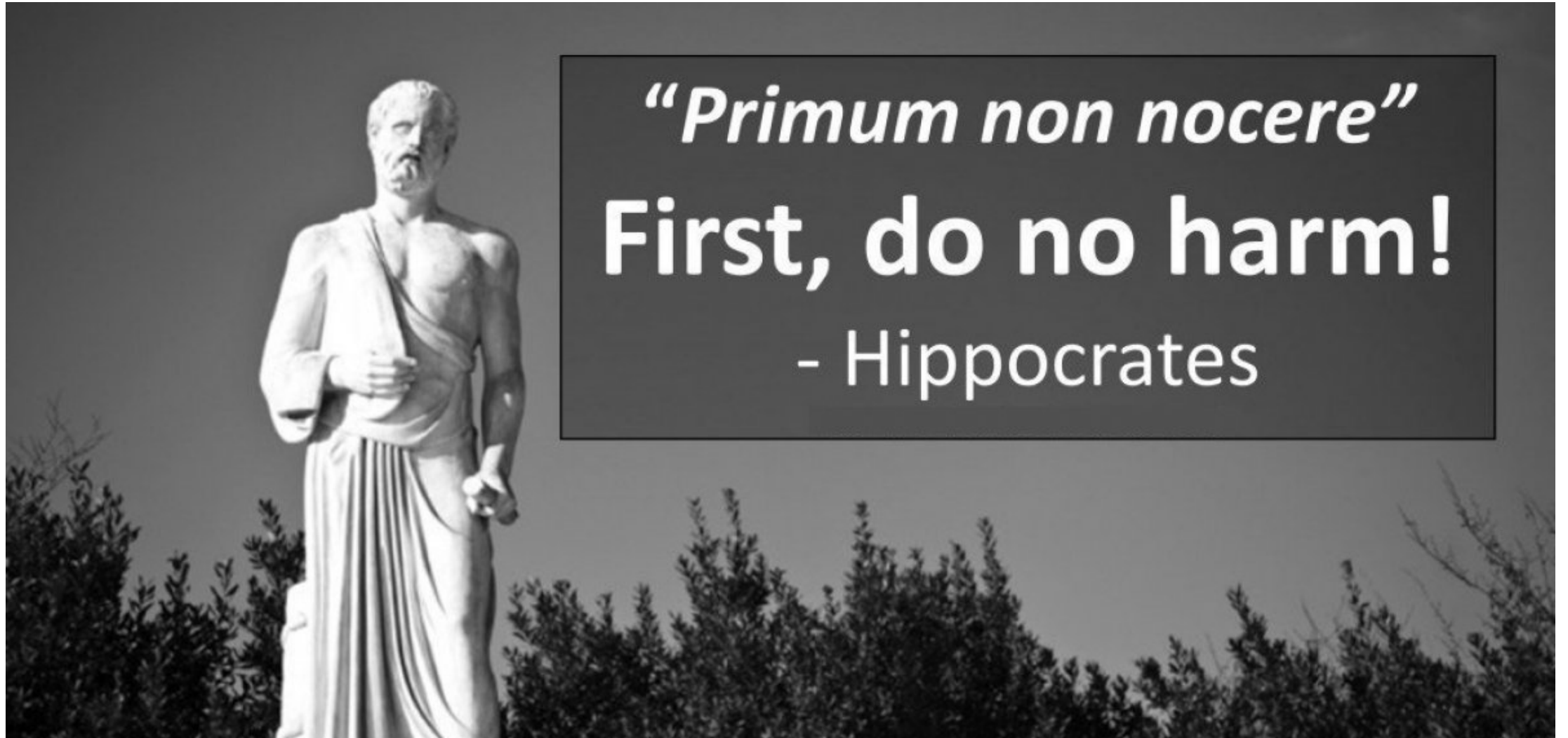
Interim Guidance for Immunization Services During the COVID-19 Pandemic

## Persons with Suspected or Confirmed COVID-19

- Routine vaccination should be deferred for persons with suspected or confirmed COVID-19, regardless of symptoms.



<https://www.cdc.gov/vaccines/pandemic-guidance/index.html>



*“Primum non nocere”*  
**First, do no harm!**  
- Hippocrates

# BRN Contact Hours

- **To earn 1.0 BRN contact hours for attending today's webinar:**
  - Complete and submit the post webinar Survey Monkey. A link to the survey will be sent via email after the webinar concludes.
  - You must participate on the webinar for at least 50 minutes.
  - Certificates will be issued via email within one week after submitting the survey.

