

North Carolina Immunization Coalition Quarterly Meeting

November 17, 2020 • 9:30 am – 11:30 am

NCIC Quarterly Meeting Agenda

9:30am: Welcome/Introduction

Dawn Wilson and Lindsay Capozziello

Steering Committee Delegates & Meeting Coordinators

9:35am NCIC Update

Presenter: Debra Kosko, DNP, FNP, FAANP, Chair; East Carolina University

- Letter to Governor Cooper
- Vaccine Ambassadors 5k
- Member survey the week of 11/16/20 to update 2021 strategic planning
- NCIC is applying for grant opportunities; awaiting results
- Call for Steering Committee Delegates: NCImmunizationCoalition@gmail.com or call Debra at 919-368-7090

9:39am HPV Task Force Update

Presenter: Susan Corbett, PharmD, Harris Teeter Pharmacy

- Task force membership has grown; subgroups have been established to expand access to HPV vaccination in 2021, including a focus on social media outreach, catch-up vaccination, and

Viewing NOV-17-2020 ...

HPV Task Force

Chair
Susan Corbett, PharmD



Members

- ▶ Doranna Anderson
- ▶ Tierra Anthony
- ▶ Sarah Arthur
- ▶ Leanne Bailey
- ▶ Scott Coleman
- ▶ Alexis Hoyt
- ▶ Amy Petersen
- ▶ Kiffany Seaforth
- ▶ Marti Wolf

Mission
To educate on the importance of HPV cancer and disease prevention through increased vaccination among identified priority populations for the state of North Carolina.

Progress
Currently, we are gathering statewide data in order to assess our 'target' areas so that we may begin developing programs aimed at increasing vaccination rates.

Call for Members
We are always looking for new members!! Please email Susan Corbett at susanx06@gmail.com if you are interested in joining the HPV Task Force.

9:41am Immunization Branch Update

Presenter: Scott Coleman, Communications Specialist (scott.coleman@dhhs.nc.gov)

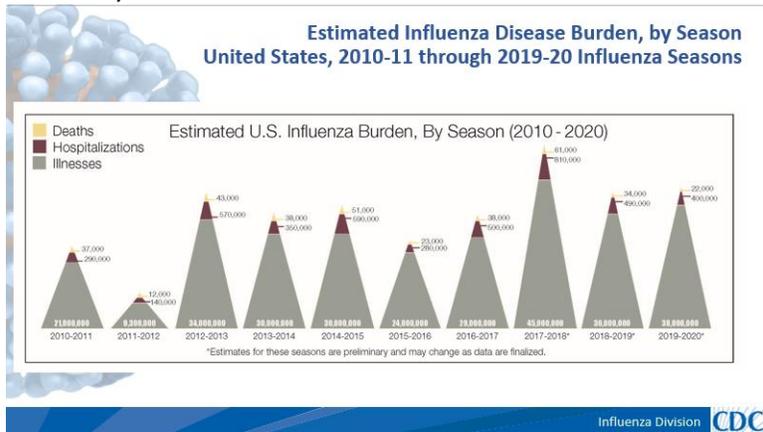
- New statewide flu vaccination campaign for 2020-2021 season:
 - “The flu vaccine. Get it. Got it. Good.”
- All-digital flu campaign beginning now and running through the next 6 months; all resources are available in English and Spanish to maximize reach of messaging. Materials are available at flu.ncdhhs.gov/materials.
- Updated fact sheets for back-to-school immunization messaging also available in English and Spanish on NCDHHS.gov
- COVID-19 immunization campaign- messages focused on importance of immunization at all times; campaign has been running on all social media channels since the beginning of May and is ongoing

9:50am Benefits of influenza vaccination- Some thoughts and a few questions

Presenter: Thomas Koinis, MD, FAAFP; Practice Medical Director, Duke Primary Care Oxford

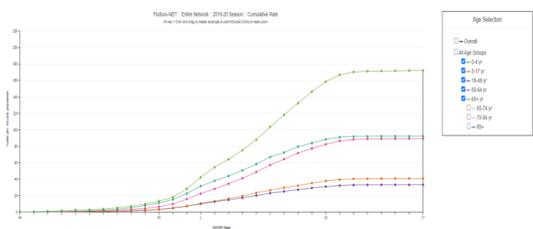
- Objectives:
 - Influenza impact and burden in US
 - Influenza vaccination- what benefits lie beyond vaccine efficacy?
 - Influenza vaccination in the world of COVID-19- impact on flu season and healthcare resources, plus questions to ponder
- Flu vaccination coverage by age group and by racial/ethnic group

- Influenza burden of disease by season:

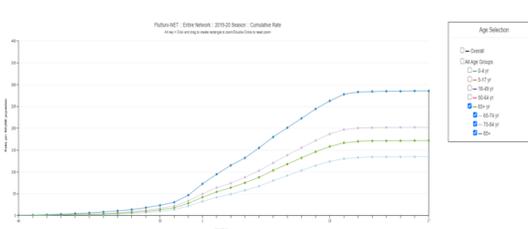


- Laboratory-confirmed influenza hospitalizations by age group:

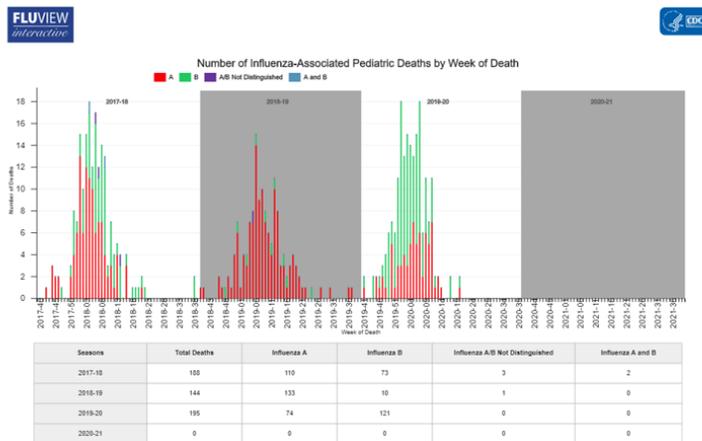
Laboratory-Confirmed Influenza Hospitalizations By Age Group, 2019-20



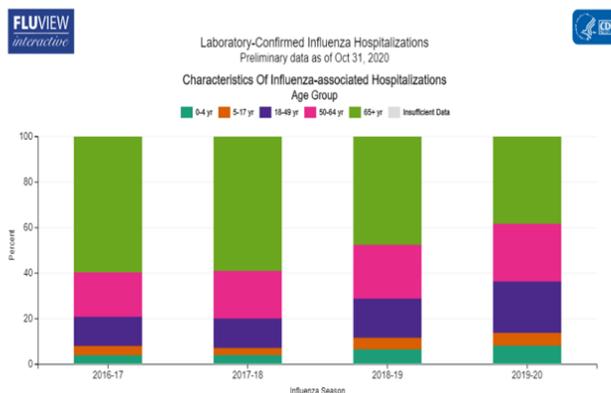
Laboratory-Confirmed Influenza Hospitalizations By Age Groups, 65+, 2019-2020



- Influenza-associated pediatric deaths:

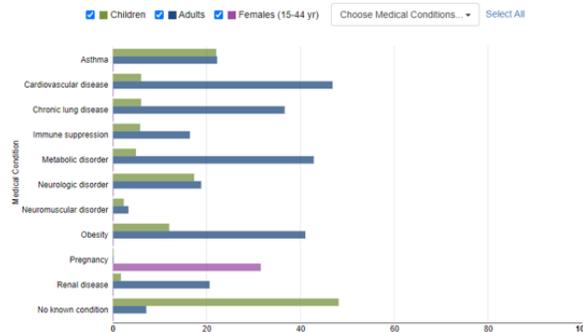


- Hospitalizations impact all age groups, not just those over 65 years:



- 50% of children hospitalized due to laboratory-confirmed influenza had no underlying conditions; that number decreased to 5% in adults:

Laboratory Confirmed Influenza Hospitalizations 2019-2020 Selected Underlying Medical Conditions



- Influenza association with cardiovascular disease:

Influenza and Cardiovascular Disease

- Association between cardiovascular mortality and influenza seasons first noticed in the 1930s.
- In the presence of chronic atherosclerotic disease, infectious illness can lead to
 - Acute inflammation
 - Endothelial dysfunction and Platelet activation
 - Increased metabolic demands and vascular stress
 - Occlusive thrombus
 - Acute coronary syndrome
- Kwong showed there was a 6 x increase in Acute Myocardial Infarction in first 7 days after severe respiratory illness; for stroke, it was 2x increase – and 7x for those over 65
 - Kwong, JC et al. NEJM 2018;378(4):345-53.

- Efficacy of influenza vaccination on acute myocardial infarction and benefits in patients with comorbidities:

Influenza Immunization as Secondary Cardiovascular Prevention

MacIntyre. CR et al. Heart 2016; 102(24):1953-1956

Table 1

Efficacy of accepted coronary interventions and influenza vaccine in the prevention of myocardial infarction

Coronary intervention	Prevention	Intervention efficacy/effectiveness against acute myocardial infarction (%)
Smoking cessation ⁴ 23-25	Secondary	32-43
Statins ³⁸	Secondary	19-30
Antihypertensive drugs ²⁶⁻²⁹ 32	Secondary	17-25
Influenza vaccine ^{5, 9, 18}	Secondary	15-45

Impact of Influenza Vaccine on All-Cause Mortality and Hospitalization in Adults with Diabetes

- Meta-analysis of 6 observational studies – out of 2261 studies
- Influenza in people with diabetes is associated with higher mortality and complications such as pneumonia, deep venous thrombosis, and pulmonary embolism
- Felt to be in part from impaired immune response from [glucotoxicity](#)
- Influenza vaccination in patients with diabetes resulted in 46% less all-cause mortality
- Influenza vaccination in patients with diabetes resulted in 11% less hospitalizations for pneumonia
 - [Bechini, A. Vaccines 2020, 8, 263; doi:10.3390/vaccines8020263](#)

Benefit of Influenza Vaccine in COPD

- Retrospective population cohort study of 899 patients in Spain, 2011-12
- Looked for COPD exacerbations, admissions, and all-cause mortality in year 2012
 - Moderate exacerbations – Rx for antibiotic and/or steroids
 - Severe exacerbations - Hospitalization
- Vaccine coverage 62.7% (only 52% in very severe COPD – 13/25)
- Vaccination decreased risk of severe exacerbations/admissions by 46%
- Admissions decreased by 77% in those with severe/very severe COPD
- All-cause mortality reduced by 24-40% but not significant confidence intervals
 - [Garrastazu, R. Arch Bronconeumol 2016;52: 88-95](#)

When Influenza and Covid-19 Collide (Coming soon to a Community Near You)

Symptom Comparison

Influenza

- Fever
- Cough
- Sore throat
- Congestion/coryza
- Aching
- Headaches
- Fatigue
- Vomiting/diarrhea

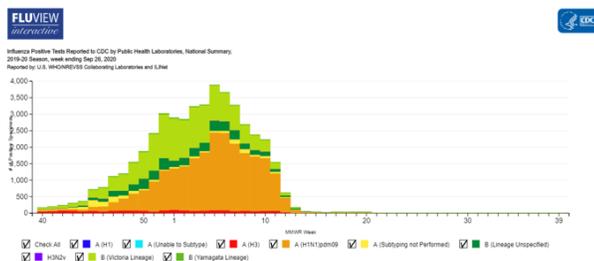
Covid-19

- Fever
- Cough
- Sore throat
- Congestion/coryza
- Fatigue
- Aching
- Headache
- Nausea and/or vomiting
- Diarrhea
- Loss of smell and/or taste
- Shortness of breath

Impact of Covid-19 on Influenza

- CDC – September 29, 2019 - February 29, 2020
 - Median number of specimens submitted weekly - 49,696
 - Median positivity rate – 19.34%
- CDC – March 1, 2020 – May 16, 2020
 - Median number of specimens submitted weekly – 19,537
 - Median positivity rate – 0.33%
- CDC – Interseasonal, May 17, 2020 – August 8, 2020
 - Positivity rate – 0.2% (historic low)
 - In past 3 years, varied between 1.0-2.4%
- Southern Hemisphere – South Africa, Chile, Australia
 - April-July 2020 – combined 51 positive tests of 83,307 specimens (0.06%)
 - Combined April-July for 2017-19 – 24,512 positive of 178,690 (13.7%)
 - MMWR Weekly. Sept 18, 2020. 69(37); 1305-1309

Influenza Positive Tests reported to CDC 2019-2020



Factors Affecting the Severity of 2020-21 Flu Season

Singer, B. [Sci Adv. 2020. Jul 29;6\(31\):eadb0086.](#)

- **Transmission**
 - Both are respiratory viruses spread via droplets and aerosols, close contact
 - How will mitigation efforts impact on flu season?
- **Vaccination**
 - How close does the vaccine match the circulating influenza strains?
 - What degree of vaccination coverage will be achieved?
- **Co-infection**
 - Early study in China showed 20% of Covid-19 co-infected with flu BUT an early study in USA showed of 1217 samples, 116 with Covid-19; 1 with influenza
 - Kim, D et al. JAMA 2020;323(20):2085-86 (Research letter)
 - Another US study (3/1-4/4-20) showed in 1996 pts with Covid-19 who had respiratory panel done – only 1 pt had influenza
 - Richardson, S. JAMA 2020; 323(20):2052-2059.

Factors Affecting the Severity of 2020-21 Flu Season

- **Co-infections (cont)**
 - Need Covid-19 testing more readily available with quicker results to distinguish between influenza and Covid-19
 - Aids in treatment decisions as treatments for the two infections differ
 - Allows one to make appropriate decisions re mitigation and self-isolation
 - Important to know what is in the community for surveillance
- **Disparities –**
 - Covid-19 cases and deaths worse in African-Americans, [Latinx](#), and Native Americans.
 - Complex and longstanding, requiring major societal changes.
 - How well can these communities be immunized against influenza?
 - Will healthcare resources be adequate to serve these communities?

Questions to consider moving forward:

Intersection of Covid-19 Pandemic and the Influenza Season

- Will Covid-19 mitigation efforts – masking, distancing, gathering limitations – decrease influenza season, like it did in March and in the Southern Hemisphere?
- What effect will adding the influenza season have on already strained healthcare resources, particularly hospitalizations?
- How will hospitals and outpatient offices handle the increasing Covid-19 caseload, even if the influenza impact is lessened by mitigation efforts?
- What will the impact of emotional and physical burnout among healthcare workers be?
- Will influenza immunizations rate increase due to Covid – 19 concerns among patients?

10:40am DHHS Influenza Update

Erica Wilson, MD, MPH- Medical Epidemiologist

- You cannot differentiate influenza from COVID-19 from enterovirus without testing
- CDC algorithm for testing patients requiring hospitalization when influenza and COVID-19 are co-circulating:

Viewing Erica Wilson's s...
When influenza and COVID-19 are co-circulating

Patients Requiring Hospitalization

- Order multiplex nucleic acid detection assay for influenza A/B/SARS-CoV-2. **OR**
- If multiplex nucleic acid detection assay is not available, order SARS-CoV-2 nucleic acid detection assay **and** influenza nucleic acid detection assay. (If SARS-CoV-2 nucleic acid detection assay is not available on-site and SARS-CoV-2 antigen detection assay is used, confirm negative SARS-CoV-2 antigen detection results by SARS-CoV-2 nucleic acid detection assay at an outside laboratory). (Note: Rapid influenza antigen detection assays are not recommended for hospitalized patients due to low sensitivities)
- Because SARS-CoV-2 and influenza virus co-infection can occur, a positive influenza test result without SARS-CoV-2 testing does not exclude COVID-19, and a positive SARS-CoV-2 test result without influenza testing does not exclude influenza.)
- Start empiric oseltamivir treatment for suspected influenza as soon as possible regardless of illness duration, without waiting for influenza testing results, and administer supportive care.

Patients Not Requiring Hospitalization

- Test for SARS-CoV-2 by nucleic acid detection; **OR** if not available, by SARS-CoV-2 antigen detection assay.
- Test for influenza if results will change clinical management or for infection control decisions (e.g. long-term care facility resident returning to a facility, or a person of any age returning to a congregate setting); order rapid influenza nucleic acid detection assay; if rapid influenza nucleic acid detection assay is not available on-site, order rapid influenza antigen assay; prescribe antiviral treatment if positive. **OR**
- Prescribe empiric antiviral treatment as soon as possible without influenza testing based on a clinical diagnosis of influenza for patients of any age with progressive disease of any duration, and for children and adults at high risk for influenza complications.
- For otherwise healthy non-high-risk persons with influenza-like illness (fever and either cough or sore throat) with illness ≤ 2 days, empiric antiviral treatment can be prescribed based upon clinical judgement.
- For otherwise healthy non-high-risk persons without influenza-like illness or with illness duration > 2 days, antiviral treatment of influenza is unlikely to provide significant clinical benefit.

<https://www.cdc.gov/flu/professionals/diagnosis/testing-guidance-for-clinicians.htm>

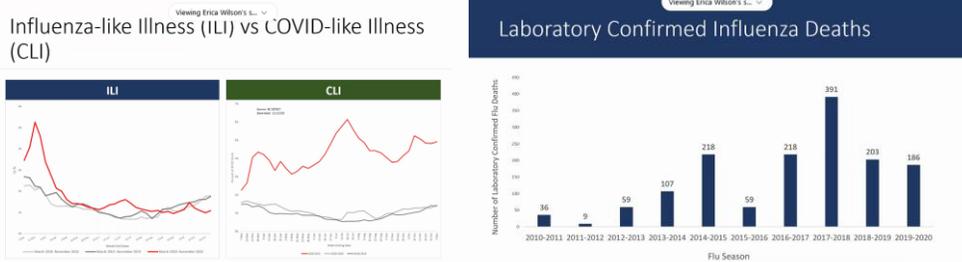
- Syndromic surveillance: data from other ED visit in the state; key words from chief complaint and triage notes; discharge diagnosis codes; NC uses this surveillance for monitoring large gatherings:

There are multiple modes of respiratory disease surveillance

- Syndromic Surveillance
- Virologic Surveillance
- Public Health Epidemiologists
- Case-based Surveillance

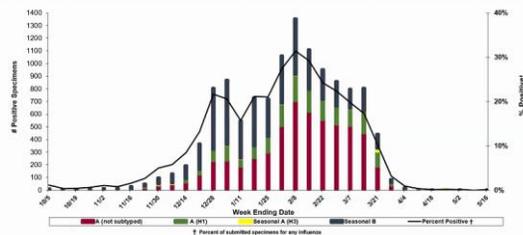
	Influenza-like illness (ILI)	COVID-19-like illness (CLI)
Chief complaint only	N/A	COVID or corona or coronavirus
Chief complaint or triage notes	(fever OR fibrile OR FUO OR temperature OR Documented initial ED Temp > 38C) AND (cough or sore throat)	loss of sense of smell / taste or no taste / smell or unable to smell / taste or loss sense of smell / taste or lost taste / smell OR (Chief complaint or triage notes: (cough or shortness of breath or SOB or SHOB or respiratory distress or cannot breathe or cyanosis or difficulty breathing or dyspnea or hypoxia or pleural effusion or pneumonia or stentor) AND (Fibrile or fev* or fur or temp or chills or rigor or shivers or initial ED temp > 38) OR Specific ICD-10-CM codes
ICD-10-CM Codes	N/A	B97.2* OR B34.2 OR J12.81 OR U07.1 OR U07.2

- Erica stated that the peak in March and the smaller peak in July in the left graph was not influenza; testing was low in March, and ICD-10 codes for COVID-19 were lacking:



- In the current year, fewer patients are being swabbed

Viewing Erica Wilson's s...
In past years SLPH sub-typed submitted flu samples

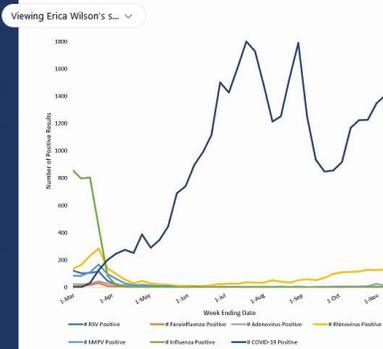


- Request for providers to send flu positive swabs to the state lab; important for vaccine selection, etc.

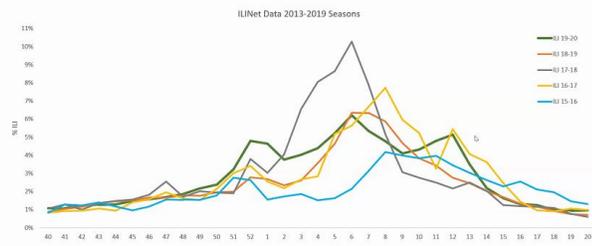


- Samples tested for SARS-CoV-2 and influenza
 - All specimens collected from symptomatic individuals submitted for SARS-CoV-2 testing
 - Specimens submitted by ILINet providers
 - Five samples per week from 6 clinical laboratories across the state

- Very few influenza cases so far this year; have had first influenza case in the state:



North Carolina Flu Trends



H1N1pdm09 and B Yamagata were the most common virus types in the 2019-2020 season

Virus Type	Number	% Total
Influenza A	1,504	55
H3N2	29	1
H1N1pdm09	1,405	51
A, Not subtyped	70	3
Influenza B	1,229	45
B Yamagata	6	<1
B Victoria	1,210	44
Lineage not determined	13	<1

10:59am- COVID-19 (SARS-CoV-2) Update

Presenter: Len Friedland, MD

Vice President, Director of Scientific Affairs and Public Health, GSK Vaccines

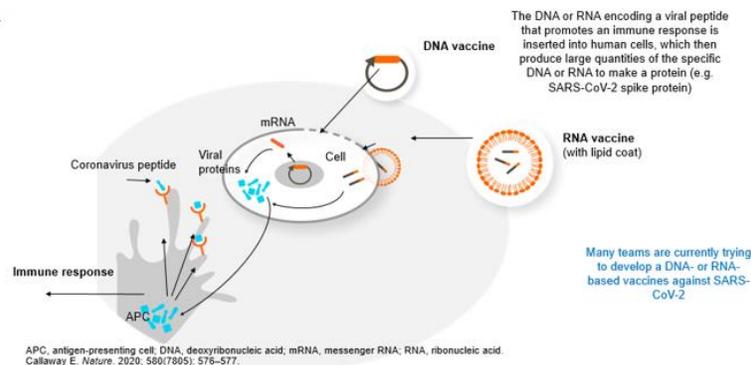
- Agenda:
 - Virology and immune response
 - Clinical description
 - Candidate vaccines
 - Recommendations and guidelines- Vaccines
- All COVID-19 vaccine candidates target the spike (S) glycoprotein
- Immune response to COVID-19 is important to understand in order to determine a potential correlate of protection and to aid vaccine development
- Main Findings
 - Seroconversions for SARS-CoV-2 occur during the 2nd week of symptoms
 - Seroconversion coincides with a slow but steady decline of sputum viral load

- Neutralization testing is necessary to rule out cross-reactive antibodies directed against endemic human coronaviruses
- A proportion of patients infected with SARS-CoV-2 recover without developing high titers of virus-specific neutralizing antibodies
 - About 30% of recovered patients generated a very low level of neutralizing antibody titers, included ~6% who have titers below the threshold of detection
- Median Time from Onset to Clinical Recovery/Outcome
 - Mild Disease: ~2 weeks
 - Severe or critical disease: 3-6 weeks
 - Fatal disease: 2-8 weeks
- COVID-19 disease in children is generally mild, although rare cases of pediatric multi-system inflammatory syndrome have been reported in children with COVID-19
- Children (including asymptomatic children) transmit the virus; will be important piece of vaccination strategy to control pandemic
- Very concerning, disproportionate impact of COVID-19 on minority groups:

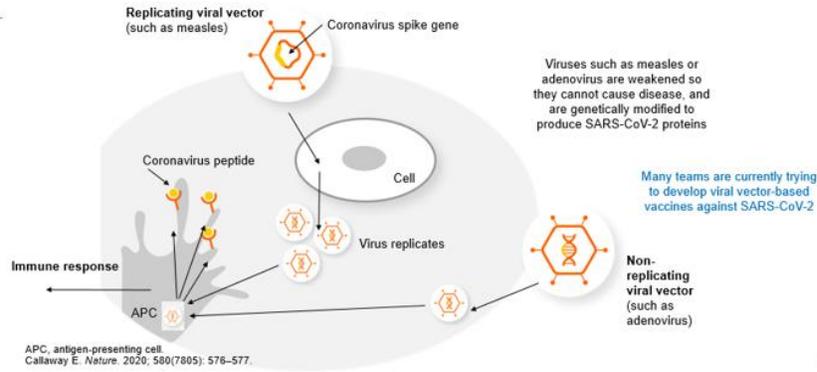
COVID-19 Deaths by Age Group – U.S.



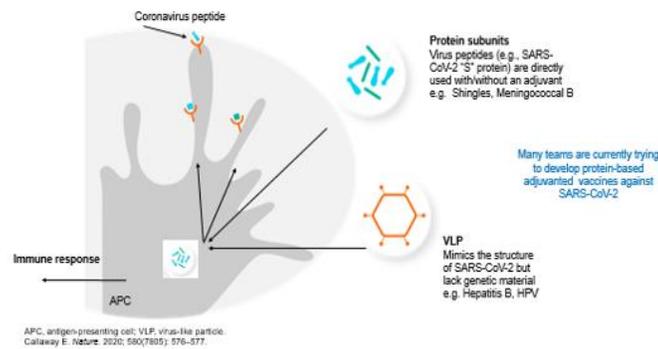
- Multiple COVID-19 vaccines in development and associated vaccine technology
 - Virus Vaccines
 - Weakened virus: Viruses are weakened by being passed through animal or human cells until they gain mutations that limit their ability to cause disease
 - (e.g. Measles, Mumps, Rubella, Varicella, Rotavirus)
 - Inactivated Virus: Virus is inactivated using chemicals or heat
 - (e.g. IPV, Hep A, Rabies)
 - Nucleic Acid Vaccines



- Viral Vector Vaccines



- Protein-Based Vaccines



- CDC Interim Guidance: 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.

- Deliver vaccines safely during the COVID-19 pandemic**
- Administration of vaccines is an essential medical service.
 - Assess the vaccination status of all patients across the life span at every health care visit.
 - Administer routinely recommended vaccines to children, adolescents, and adults (including pregnant women).
 - Delay vaccination for persons with suspected or confirmed COVID-19.
 - Follow guidance to prevent the spread of COVID-19 in health care settings.
 - Encourage vaccination at the patient's medical home.
 - Implement effective strategies for catch-up vaccination.
 - Communicate with patients/families about how they can be safely vaccinated during the pandemic.

Source: www.cdc.gov/vaccines/pandemic-guidance

11:45am- Meeting conclusion

Closing
Lindsay Capozziello, PharmD & Dawn Wilson, PharmD
Meeting Coordinators

Viewing NOV-17-2020 ...

Join us in 2021 at our new time 12-2pm:

- ▶ February 9, 2021
- ▶ May 11, 2021
- ▶ August 10, 2021
- ▶ November 9, 2021

▶ Find updates on the North Carolina Immunization Coalition webpage at <https://letsimmunizenc.org>