PHYSICAL REGATHERING, THE COVID-19 VACCINE, AND PROTECTING THE HEALTH OF YOUR CONGREGATION IN 2021

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Current Status of the COVID-19 Pandemic.
Outbreak Status – Global and U.S.

- As of 01/13/2020 (6:43 am)
- 91,691,962 confirmed cases
- 1,964,764 deaths
- Countries affected: 191
- US: 22,848,707 confirmed cases
- US: 380,821 deaths

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New Cases United States

- [https://gisanddata.maps.arcgis.com/apps/opsdashboard/index.html#bda7594740fd40299423467b48e9ecf6](https://gisanddata.maps.arcgis.com/apps/opsdashboard/index.html#bda7594740fd40299423467b48e9ecf6)
Average Daily Cases per 100,000 People in Past Week

https://www.nytimes.com/
Outbreak Status – North Carolina

As of 01/12/2021, 12:00 pm: Hospitalized: 3,940; Deaths: 7,638

https://covid19.ncdhhs.gov/dashboard/cases
Outbreak Status – North Carolina

Average daily cases per 100,000 people in past week

- 10
- 30
- 50
- 70
- 100
- 250
- Few or no cases

- https://www.nytimes.com/
Hospitalizations in NC

COVID-19, Influenza, and other Respiratory Viruses

• Co-infections reported\(^1\)
• Differential diagnosis difficult
• Reliance on test combos

Coronavirus Mutations

• All viruses mutate over time
• Two new variants recently detected (B.1.1.7 [Britain] and 501.V2 [South Africa])
• Changes to the spike protein
• Current vaccines create a polyclonal response, generating numerous antibodies that hone in on different parts of the virus
• Both variants appear to have mutations that do not change the vaccine efficacy or cause more severe illness
• Concern: variants may be more easily spread
Treatments and Vaccines
Treatment Options

- Remdesivir
- Chloroquine
- Lopinavir / ritonavir
- Hydroxy chloroquine
- Lopinavir / ritonavir with interferon beta-1a

Drug treatment by WHO

Monoclonal antibody
- CR3022 binds to spike protein of the virus
- Leronlimab binds to CCR5 protein of white blood cells
- Gimsilumab binds to granulocyte-macrophage colony-stimulating factor

Plasma therapy

Mechanical ventilation
- Lower tidal volumes (4 to 6 ml/kg predicted body weight; PBW) and
- Lower inspiratory pressures, reaching a plateau pressure (Pplat) < 28 to 30 cm H₂O

Bhavana et al. Life Sciences, 2020, 261, 118336
Coronavirus Drug and Treatment Tracker - 01/08

- FDA approved: Remdesivir (antiviral)
- Widely used:
  - Prone position of patient
  - Ventilators and other respiratory support devices

- Pseudoscience and Fraud:
  - Drinking or injecting bleach and disinfectants
  - UV light
  - Silver

Phases of Vaccine Development

**Pre-clinical**
Vaccine tested on animals to assess safety and see if it triggers an immune response.

**Phase 1**
It's given to a small group of people, usually between 10-50.

**Phase 2**
It's tested on several hundred people to further check safety, side effects, immune response and dosage.

**Phase 3**
In this stage, it's given to thousands to determine whether it's effective and to monitor safety.

**Implementation**
Regulators review the results to decide whether to approve the vaccine for use, licensing and manufacturing.

Source: US Centers for Disease Control and Prevention, CNN reporting
Graphic: Eliza Mackintosh and Henrik Pettersson, CNN
Coronavirus Vaccine Tracker – 01/11

- 64 vaccines in clinical trial on humans
- At least 85 preclinical vaccines under investigation in animals

[Diagram showing phases of vaccine development]

COVID-19 Vaccine Key Points

- High efficacy - 90%+
- No serious adverse events reported
- Two doses required
- 2nd dose > 21 days after initial dose
- Ultra-cold storage: -80oC
- Viability
- Frozen (ultra-cold): 6 months
- Shippers + dry ice: 15 days
- Refrigerated: 5 days
- Initial production: 2020
- 50M by EOY (25M capable of being vaccinated)
- 2021: 1.3B (650M capable of being vaccinated

- High efficacy - 90%+
- No serious adverse events reported
- Two doses required
- 2nd dose > 28 days after initial dose
- Cold (non-ultra-cold) storage: -20oC
- Viability
- Frozen: 6 months
- Refrigerated: 30 days
- Initial production: 2020
- 20M by EOY (10M capable of being vaccinated)
- 2021: 500M-1B (250M-500M capable of being vaccinated
How Does a mRNA Vaccine Work?

1. Entering a Cell
2. Spotting the Intruder
3. Making Antibodies
4. Stopping the Virus

How Effective is the Pfizer Vaccine

Cumulative incidence of Covid-19 among clinical trial participants

- First dose
- Second dose
- People taking a placebo
- People taking the Pfizer-BioNTech vaccine

Weeks after the first dose

- 0.5 - 1.0 - 1.5 - 2.0 - 2.5%
COVID-19 Vaccine – Side Effects

Vaccines are safe and save lives

Common Side Effects (within three days):
• Injection side: pain, redness, swelling
• General: headache, tiredness, chills, fever, achiness

Very Rare Side Effects:
• Allergic reactions (within minutes of receiving the vaccine) – Tell the staff that you have allergies or had an allergic reaction in the past!
• Facial nerve paralysis (link to vaccination under investigation)

Precautions: 15 minute observation time after receiving the vaccine (30 minutes for individuals with a history of allergies)
Vaccine Safety

• All Vaccine Development Phases successfully completed
• >44,000 participants each in individual vaccine trials
• CDC Vaccine safety assessment for essential workers (V-SAFE) – 20+ million people receiving the vaccine
• Additional tracking program in long-term care facilities (35k+ participants)
• Transparency: publication of all adverse events reports (Vaccine Adverse Event Reporting System [VAERS]): https://www.cdc.gov/vaccinesafety/ensuringsafety/monitoring/vaers/index.html
Distribution Plan – NC DHHS – Vaccination Plan

Phase 1a

Health care workers fighting COVID-19 & Long-Term Care staff and residents

Phase 1b

Adults 75 years or older and frontline essential workers

Phase 2

Adults at high risk for exposure and at increased risk of severe illness

Phase 3

Students

Phase 4

Everyone who wants a safe and effective COVID-19 vaccination

Group 2: includes teachers and support staff members as well as child care workers

Group 1: Anyone 65-74 years old, regardless of health status or living situation

Group 2: Anyone 16-64 years old with high-risk medical conditions

https://covid19.ncdhhs.gov/vaccines
Vaccine Distribution

Source: Centers for Disease Control and Prevention

<table>
<thead>
<tr>
<th>Name</th>
<th>Pct. of people given a shot</th>
<th>Doses distributed</th>
<th>Shots given</th>
<th>Doses used</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>2.0%</td>
<td>25,480,725</td>
<td>8,987,322</td>
<td>35%</td>
</tr>
<tr>
<td>North Carolina</td>
<td>2.0%</td>
<td>820,825</td>
<td>211,572</td>
<td>26%</td>
</tr>
</tbody>
</table>
Practical Interventions to Stop the Spread
Transmission Characteristics

- Droplet (<6 feet) and direct contact are predominant modes of transmission
- Airborne (long distances) – no strong evidence
- Indirect (via the contaminated environment) likely (unknown impact)
- Pre-symptomatic – transmission well documented
- Asymptomatic - infection demonstrated
- Aerosolization of stool (viable virus occasionally demonstrated in stool) – no evidence for transmission
- Transplacental/vertical – possible rare cases
- Companion animals – may develop mild-severe symptoms (cats, dogs, tigers, minks) – probable mink-to-human transmission
- Travel – Ship, Bus, Aircraft – documented
- Blood, urine – no evidence for transmission

Adopted from David Weber, MD, UNC-CH
VALUE OF MASK WEARING, PHYSICAL DISTANCING, AND HAND HYGIENE

Doung-Ngern P, et al. EID 2020 Nov:

• Goal: To assess effectiveness of PPE to prevent acquisition of SARS-CoV-2 infection

• Methods: Case control study, 211 cases and 839 controls, Thailand

• Results:
  
  • Wearing a mask at all times during contact was independently associated with lower risk for SARS-CoV-2 (RR, 0.23)
  
  • Gender, age group (<15, 16-40, 41-65, >65), contact place (night club, boxing stadium, workplace, household, others), sharing dishes or cups – NOT significant
  
  • Shortest distance of contact (physical contact, <1m, >1 m), duration of contact within 1m (>60min, 16-60min, <15min), sharing cigarettes (N, Y), handwashing (none, sometimes, often), type of mask (none, nonmedical only, nonmedical and medical, medical only), and compliance with mask wearing (never, sometimes, always) – SIGNIFICANT REDUCTION IN RISK OF ACQUIRING COVID-19

  • Maintaining >1m distance from a person with COVID-19 (RR, 0.14), having close contact for <15 minutes (RR, 0.24), and frequent handwashing (RR, 0.19) were independently associated with lower risk for infection.

Adopted from David Weber, MD, UNC-CH
Personal Preventive Practices

• Handwashing
• Maintaining 6 ft distance
• Wearing face masks
• Frequent cleaning of high touch areas
When can we gather again?
NC Executive Orders

• Executive Order 181 - effective Dec. 11 – Jan. 29:
  • Implements a modified stay at home order from 10 p.m. and 5 a.m.
  • Requires nighttime closure from 10 p.m. to 5 a.m. for certain businesses and activities
  • Prohibits the sale and service of alcohol for onsite consumption from 9 p.m. to 7 a.m.

• Executive Order 180:
  • Requires face coverings in all public indoor settings

Open

- Retail
- Food and drink
- Personal care
- Houses of worship
- Entertainment
- Outdoor and recreation

Retail stores
Restaurant dining; bars for outdoor service
Salons, barbershops, tattoo parlors
Pools; playgrounds; gyms
CDC - Considerations for Communities of Faith

• Safety Actions:
  • Promote healthy hygiene practices
  • Masks
  • Intensify cleaning, disinfection, and ventilation – most disinfectants are active (EPA N list: [https://www.epa.gov/pesticide-registration/list-n-disinfectants-coronavirus-covid-19](https://www.epa.gov/pesticide-registration/list-n-disinfectants-coronavirus-covid-19))
  • Promote social distancing
  • Minimize community sharing of worship materials and other items
  • Train/educate all clergy and staff in above safety actions

• Monitoring and Preparing
  • Raise awareness of signs and symptoms and encourage to stay home.
  • Establish a response plan if one or more members become sick or test positive

• Closing
  • Monitor state and local health department notices daily about transmission in the community and adjust operations

A few Notes

• Singing – linked to spread of the virus. Keeping distance (10ft) and wearing a special singing mask
• Wind instruments (bell covers, 8x8 square, empty moisture in diaper pad)
• Exposure key factors:
  • Distance (>6ft),
  • Masking,
  • Duration (<15 minutes within 6ft)
• Shared items/food:
  • Individually wrapped
  • Disposable utensils/ware only
  • Take home
  • NO buffet
• Precautions after receiving the vaccine:
  • Continue following all precautions (mask, social distancing etc.) due to risk of being a silent spreaders – Sorry!
• Timing between services:
  • Safe are two hours between services but can be reduce if well ventilated and cleaned.
CDC – Combined Forecast Models, US

CDC – Combined Forecast Models, NC

New Weekly Deaths

Total Deaths

Resources

• WFBH COVID-19 FAQ: http://intranet.wakehealth.edu/departments/infection-control/coronavirus/faqs/vaccine.htm
• NC DHHS COVID-19: https://covid19.ncdhhs.gov/
• CDC COVID-19 Vaccination: https://www.cdc.gov/vaccines/covid-19/index.html
• CDC Communities of Faith: https://www.cdc.gov/coronavirus/2019-ncov/community/faith-based.html
Questions?