The Challenges of Rapidly Developing & Distributing COVID-19 Vaccines

Thursday, January 28, 10:00-11:00
Who We Are

The Wisconsin Cancer Collaborative is a statewide coalition of 140 organizations working together to reduce the burden of cancer for everyone in Wisconsin.

Join Us!

www.wicancer.org/join/

Wisconsin Cancer Plan 2020-2030

www.wicancer.org
Agenda

- Welcome
- Presentation by Dr. James Conway
- Questions

www.wicancer.org
Dr. James Conway
Medical Director for UW Health Immunization Programs
The Challenges of Rapidly Developing & Distributing COVID-19 Vaccines

James H. Conway, MD FAAP
Professor of Pediatrics – Division of Infectious Diseases
Medical Director – UW Health Immunization Programs
Director, Office of Global Health
Associate Director, Global Health Institute
12/31/2019: cluster of atypical pneumonia cases reported in Wuhan
1/4/2020: first WHO confirmation

12/1/2019 estimate of first case
(November? September?)
1/12/2020 China first released the virus sequence
1/24/2020 initial publication of clinical description, virus isolation, sequence analysis
WHO statement on novel coronavirus in Thailand

13 January 2020 | News release

1/30/2020: WHO declares COVID-19 a Public Health Emergency of International Concern

WHO Director-General's opening remarks at the media briefing on COVID-19 - 11 March 2020

11 March 2020

Good afternoon.

In the past two weeks, the number of cases of COVID-19 outside China has increased 13-fold, and the number of affected countries has tripled.

There are now more than 118,000 cases in 114 countries, and 4,291 people have lost their lives.

Thousands more are fighting for their lives in hospitals.

3/11/2020: WHO declares COVID-19 a Pandemic
Clinical Presentation

• Over the course of the disease, most people with COVID-19 experience one or more of the following:
  • Fever or chills
  • Cough
  • Shortness of breath or difficulty breathing
  • Fatigue
  • Muscle or body aches
  • Headache
  • New loss of taste or smell
  • Congestion or runny nose
  • Nausea or vomiting
  • Diarrhea
# COVID-19 Disease Course

**SARS-CoV-2 Viremia**

<table>
<thead>
<tr>
<th>Incubation Period</th>
<th>Acute Mild Phase</th>
<th>ARDS/Pro-inflammatory Phase</th>
<th>Recovery</th>
</tr>
</thead>
<tbody>
<tr>
<td>5.1 days (median)</td>
<td>5-10 days</td>
<td>Days - weeks</td>
<td></td>
</tr>
</tbody>
</table>

**Symptom onset**

**Hallmarks:** dyspnea, tachypnea, hypoxemia

*Acute Mild Phase: nonspecific symptoms. Most commonly fevers, cough, myalgias, fatigue. Nausea, diarrhea reported <50% of the time*

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*MIS-C, "Long Haulers"

**Cytokine Storm**
A. SARS-CoV-2 viral infection of host airway cells

- SARS-CoV-2 virion
- Viral RNA
- S protein
- ACE2 receptor
- TMPRSS2

TMPPSS2 activates viral S protein and cleaves ACE2 receptor to facilitate viral binding to host cell membrane.

Virus enters host cell via endocytosis, releases its RNA, and uses cell machinery to replicate itself and assemble more virions.

One infected host cell can create hundreds of new virions, rapidly progressing infection.

B. Early-stage COVID-19

Bronchial epithelial cells, type I and type II alveolar pneumocytes, and capillary endothelial cells are infected, and an inflammatory response ensues.

- Infected type II pneumocyte
- SARS-CoV-2 virus release

T lymphocyte, monocyte, and neutrophil recruitment

Cytokine release enhances inflammatory response

- Monocyte
- Neutrophil
- Macrophage
- Type I pneumocyte
- TNF-α
- IL-1
- IL-6
Late-stage COVID-19

Continued inflammatory response results in alveolar interstitial thickening, increased vascular permeability, and edema.

Thickened interstitium

Hyaline membrane formation

Pulmonary edema

Influx of monocytes and neutrophils

Increased T lymphocyte apoptosis

Activation of coagulation leads to microthrombus formation

Increased vascular permeability

Activation of the kinin-kallikrein system can further contribute to local vascular leakage leading to angioedema.
SARS-CoV2 severity

81% Mild
minimal or no pneumonia

14% Severe
dyspnea, hypoxemia,
>50% lung involvement on CXR

5% Critical
respiratory failure, shock,
multi-organ system failure
The Importance of Co-Morbidities

- AGE >65 years
- Conditions that impact heart/lungs, small blood vessels or immune system
- People of any age with the following conditions are at increased risk of severe illness from COVID-19:
  - Cancer
  - Chronic kidney disease
  - COPD (chronic obstructive pulmonary disease)
  - Immunocompromised state (weakened immune system) from solid organ transplant
  - Obesity (body mass index [BMI] of 30 or higher)
  - Serious heart conditions, such as heart failure, coronary artery disease, or cardiomyopathies
  - Sickle cell disease
  - Type 2 diabetes mellitus
Coronavirus Treatment Acceleration Program (CTAP)

560+
Drug development programs in planning stages

370+
Trials reviewed by FDA

5
COVID-19 treatments currently authorized for Emergency Use

1
Treatments currently approved by FDA for use in COVID-19
Coronavirus Treatment Acceleration Program (CTAP)

Type of COVID-19 Treatment Being Studied

- Single agent treatments
  - Antivirals: 30+
  - Cell & Gene Therapies: 30+
- Immunomodulators: 100+
- Neutralizing Antibodies: 40+
- Other: 70+
- Combinations: 20+
Public Health = PREVENTION!

Do the best you can until you know better. Then, when you know better, do better.

Maya Angelou
Initially....

• Mainly droplet transmission – person to person
  • Hence – *initially* limited mask recommendations
  • Hand hygiene, surface cleaning
  • Stay home when sick
  • Social distancing

• **Later.....** role of aerosols recognized as more significant
  • Routine masking & enhanced PPE
  • Limiting indoor contact
  • Limiting group sizes
  • Attention to air circulation
Developing a Vaccine for COVID-19 & Eventual ‘Herd Immunity’
What do we know about Coronaviruses & immunity following infection?

• Found worldwide, winter/spring URIs
• Approximately 60% of children and 90% of adults >50 yo are seropositive
• SARS & MERS IgG persist longer – up to 1 year
• However mucosal immunity declines quickly
  • Only 8-31% have detectable secretory antibody
  • Reinfection is common
Ideal Vaccine Candidates

- **EFFICACY**: Produce immune protection that prevents infection
  - Long lasting & easily boosted
  - Prevents shedding & transmission to others
  - Activates both T-cells and B-cells
  - *Superiority over wild-type infection?*

- **SAFETY**:  
  - Does not cause enhanced immune response during infection
  - Minimal side effects after injection
  - No long term side effects
**functional targets**
- RNA-dependent RNA polymerase (RdRp)
- heterogeneous nuclear ribonucleoprotein A1 (hnRNP A1)
- glycogen synthase kinase 3 (GSK3)
- cysteine proteases

**structural targets**
- M protein
- Spike protein
- Envelope proteins

Figure 1. Different types of vaccines. Vaccines can be produced using different processes. Vaccines may contain live attenuated pathogens (usually viruses), inactivated whole pathogens, toxoids (an inactivated form of the toxin produced by bacteria that causes the disease), or parts of the pathogens (e.g. natural or recombinant proteins, polysaccharides, conjugated polysaccharide or conjugated protein)
CHALLENGES to a COVID-19 vaccine

• Natural immunity to coronaviruses appears to be short-lived
  • serum neutralizing antibodies detection ≠ mucosal immunity

• Unclear surrogate marker of immunity
  • How do we assess vaccine efficacy?
  • Ethics of challenge trials?

• Best target antigen(s)?

• Anticipating progressive mutations?

• Optimal route of delivery?
CHALLENGES to a COVID-19 vaccine

• Enhanced disease after vaccine?
  • Multisystem Inflammatory Syndrome-Coronavirus = MIS-C
• Durability of immunity? Need for boosters?
• Testing population vs. target population?
• Bypassing the usual progressive process for product development
• Mass manufacture & delivery
• Targeted & equitable distribution challenges
Reasons for (modest) optimism

• An unprecedented GLOBAL effort to develop a vaccine!
  • Collaboration between companies
  • Widespread sharing of information including pre-prints
• MANY potential candidate vaccines & novel technologies
• $$$ being put into R & D
• National competition?
• Novel approaches to R & D – and production
• Prior efforts to develop MERS & SARS-CoV1 vaccines
• Novel approaches to clinical studies & enrollment
  • Inclusion of >65yo, comorbidities, women of childbearing age
How a new vaccine is developed, approved and manufactured

The Food and Drug Administration (FDA) sets rules for the three phases of clinical trials to ensure the safety of the volunteers. Researchers test vaccines with adults first.

**PHASE 1**
- 20-100 healthy volunteers
  - Is this vaccine safe?
  - Does this vaccine seem to work?
  - Are there any serious side effects?
  - How is the size of the dose related to side effects?

**PHASE 2**
- Several hundred volunteers
  - What are the most common short-term side effects?
  - How are the volunteers' immune systems responding to the vaccine?

**PHASE 3**
- Hundreds or thousands of volunteers
  - How do people who get the vaccine and people who do not get the vaccine compare?
  - Is the vaccine safe?
  - Is the vaccine effective?
  - What are the most common side effects?

FDA licenses the vaccine only if:
- It's safe and effective
- Benefits outweigh risks
Developing Covid-19 Vaccines at Pandemic Speed

Nicole Lurie, M.D., M.S.P.H., Melanie Saville, M.D., Richard Hatchett, M.D., and Jane Halton, A.O., P.S.M.
Emergency Use Authorization

Type of authority by FDA to allow use of medical products to prevent serious or life-threatening diseases when certain safety criteria are met and there are no alternatives.

## COVID-19 - Landscape of novel coronavirus candidate vaccine development worldwide

### Summary Information on Vaccine Products in Clinical Development

1. Number of vaccines in clinical development: 63
2. Number of vaccines in pre-clinical development: 173

### Candidates in clinical phase

<table>
<thead>
<tr>
<th>Platform</th>
<th>Candidate vaccines (no. and %)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Protein subunit</td>
<td>20 32%</td>
</tr>
<tr>
<td>Viral Vector (non-replicating)</td>
<td>10 16%</td>
</tr>
<tr>
<td>DNA</td>
<td>8 13%</td>
</tr>
<tr>
<td>Inactivated Virus</td>
<td>9 14%</td>
</tr>
<tr>
<td>RNA</td>
<td>7 11%</td>
</tr>
<tr>
<td>Viral Vector (replicating)</td>
<td>3 5%</td>
</tr>
<tr>
<td>Virus Like Particle</td>
<td>2 3%</td>
</tr>
<tr>
<td>VVr + APC</td>
<td>2 3%</td>
</tr>
<tr>
<td>Live Attenuated Virus</td>
<td>1 2%</td>
</tr>
<tr>
<td>VVnr + APC</td>
<td>1 2%</td>
</tr>
</tbody>
</table>

Total candidates in clinical phase: 63
Coronavirus Vaccine Tracker

By Carl Zimmer, Jonathan Corum and Sui-Lee Wee  Updated Jan. 26, 2021

- **Phase 1**: 38 Vaccines testing safety and dosage
- **Phase 2**: 24 Vaccines in expanded safety trials
- **Phase 3**: 20 Vaccines in large-scale efficacy tests
- **Limited**: 8 Vaccines in early or limited use
- **Approved**: 2 Vaccines approved for full use
- **Abandoned**: 3 Vaccines abandoned after trials
## SARS-CoV2 Vaccines in US trials

<table>
<thead>
<tr>
<th>Candidate</th>
<th>Manufacturer</th>
<th>Type</th>
<th>Phase</th>
<th>Schedule</th>
<th>Age</th>
<th>Size</th>
<th>Recruiting</th>
</tr>
</thead>
<tbody>
<tr>
<td>mRNA-1273</td>
<td>Moderna</td>
<td>mRNA</td>
<td>III</td>
<td>2 doses (0, 28d)</td>
<td>≥18 years</td>
<td>30,000 participants</td>
<td>Enrollment complete</td>
</tr>
<tr>
<td>mRNA-BNT162</td>
<td>Pfizer, Inc./BioNTech</td>
<td>mRNA</td>
<td>III</td>
<td>2 doses (0, 21d)</td>
<td>12-85 years</td>
<td>44,000 participants</td>
<td>✓</td>
</tr>
<tr>
<td>AZD1222</td>
<td>Oxford/AstraZeneca</td>
<td>Viral vector (non-replicating)</td>
<td>III</td>
<td>2 doses (0, 28d)</td>
<td>≥18 years</td>
<td>40,000 participants</td>
<td>✓</td>
</tr>
<tr>
<td>Ad26COV51</td>
<td>Janssen/Johnson &amp; Johnson</td>
<td>Viral vector (non-replicating)</td>
<td>III</td>
<td>1 dose</td>
<td>≥18 years</td>
<td>30,000 participants</td>
<td>✓</td>
</tr>
<tr>
<td>NVX-CoV2373</td>
<td>Novavax</td>
<td>Protein subunit</td>
<td>I/II</td>
<td>2 doses (0, 21d)</td>
<td>18-84 years</td>
<td>1,400 participants</td>
<td>Enrollment complete</td>
</tr>
<tr>
<td></td>
<td>Sanofi/GSK</td>
<td>Protein subunit</td>
<td>I/II</td>
<td>1 dose or 2 doses (0, 21d)</td>
<td>≥18 years</td>
<td>440 participants</td>
<td>✓</td>
</tr>
<tr>
<td>V591</td>
<td>Merck</td>
<td>Viral vector (replicating)</td>
<td>I/II</td>
<td>2 doses (1, 57d)</td>
<td>≥18 years</td>
<td>260 participants</td>
<td>✓</td>
</tr>
<tr>
<td>VXA-CoV2-1</td>
<td>Vaxart</td>
<td>Viral vector (non-replicating)</td>
<td>I</td>
<td>2 doses (1, 29d) *Oral</td>
<td>18-54 years</td>
<td>48 participants</td>
<td>✓</td>
</tr>
<tr>
<td>INO-4800</td>
<td>Inovio</td>
<td>DNA plasmid</td>
<td>I</td>
<td>2 doses (0, 4w) *Electroporation</td>
<td>≥18 years</td>
<td>120 participants</td>
<td>Active, not recruiting</td>
</tr>
<tr>
<td>AV-COVID-19</td>
<td>Aivita</td>
<td>AuDendritic cell</td>
<td>I/II</td>
<td>1 dose</td>
<td>≥18 years</td>
<td>180 participants</td>
<td>Not yet recruiting</td>
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<tr>
<td>Developer</td>
<td>How It Works</td>
<td>Phase</td>
<td>Status</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Pfizer-BioNTech</td>
<td>mRNA</td>
<td>2 3</td>
<td>Approved in Saudi Arabia, Bahrain, Switzerland. Emergency use in U.S., E.U., other countries.</td>
<td></td>
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<td></td>
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</tr>
<tr>
<td>Gamaleya</td>
<td>Ad26, Ad5</td>
<td>3</td>
<td>Early use in Russia. Emergency use in other countries.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Oxford-AstraZeneca</td>
<td>ChAdOx1</td>
<td>2 3</td>
<td>Emergency use in Britain, India, other countries.</td>
<td></td>
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<tr>
<td>CanSino</td>
<td>Ad5</td>
<td>3</td>
<td>Limited use in China.</td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Johnson &amp; Johnson</td>
<td>Ad26</td>
<td>3</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Vector Institute</td>
<td>Protein</td>
<td>3</td>
<td>Early use in Russia.</td>
<td></td>
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<tr>
<td>Novavax</td>
<td>Protein</td>
<td>3</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sinovac</td>
<td>Inactivated</td>
<td>3</td>
<td>Emergency use in China, Brazil, other countries.</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Sinopharm-Wuhan</td>
<td>Inactivated</td>
<td>3</td>
<td>Limited use in China, U.A.E.</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Bharat Biotech</td>
<td>Inactivated</td>
<td>3</td>
<td>Emergency use in India.</td>
<td></td>
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</tr>
</tbody>
</table>
If a house is on fire, no one wastes time putting water on nearby houses just in case the fire spreads. They rush to pour water where it will do the most good – on the burning house.

William H. Foege
Phase 1a “Jumpstart Phase”
- High-risk health workers
- First responders
- People of all ages with comorbid and underlying conditions that put them at significantly higher risk
- Older adults living in congregate or overcrowded settings

Phase 1b
- K-12 teachers and school staff and child care workers
- Critical workers in high-risk settings—workers who are in industries essential to the functioning of society and at substantially higher risk of exposure
- People of all ages with comorbid and underlying conditions that put them at moderately higher risk
- People in homeless shelters or group homes for individuals with disabilities, including serious mental illness, developmental and intellectual disabilities, and physical disabilities or in recovery, and staff who work in such settings
- People in prisons, jails, detention centers, and similar facilities, and staff who work in such settings
- All older adults not included in Phase 1

Phase 2
- Young adults
- Children
- Workers in industries and occupations important to the functioning of society and at increased risk of exposure not included in Phase 1 or 2

Phase 3
- Everyone residing in the United States who did not have access to the vaccine in previous phases

Equity is a crosscutting consideration:
In each population group, vaccine access should be prioritized for geographic areas identified through CDC’s Social Vulnerability Index or another more specific index.
Who should be given a high priority for getting the coronavirus vaccine?

Percent of Americans who say a high priority

- Health care workers: 90%
- Nursing home workers and residents: 86%
- People who are high risk because of medical problems: 83%
- First responders like police officers, firefighters and...: 82%
- People over 65: 73%
- Teachers: 59%
- Essential workers like grocery store employees, bus...: 58%
- People like you: 20%
- Elected officials: 15%
- Athletes: 6%
Evolving US Vaccine Allocation Framework

Phase 1A
Healthcare Personnel on the Front Lines of COVID-19 and Residents of LTCF

Phase 1B
Essential Workers

Phase 1C
Adults ≥65 and Adults with High-Risk Medical Conditions

ACIP, October 2020
Preliminary Recommendations of the NCCN COVID-19 Vaccination Advisory Committee

• Patients with cancer should be prioritized for vaccination (CDC priority group 1b/c) and should be immunized when vaccination is available to them.

• Immunization is recommended for all patients receiving active therapy, with the understanding that there are limited safety and efficacy data in these patients.

• Reasons for delay of vaccination:
  • recent exposure to COVID-19 (quarantine period)
  • Documented recent SARS-CoV2 infection (30-90 days)
  • Recent administration of COVID monoclonal Abs or plasma (90 days)
  • 14 days within administration of other vaccines (unless cannot be avoided)

• Vaccination should be delayed for at least 3 months following HCT or engineered cellular therapy (e.g. CAR-T cells) to maximize vaccine efficacy.

• Caregivers and household/close contacts should be immunized when possible.

A note to the wise...

• Don’t assume that acceptance will be automatic and widespread

THE SACRAMENTO BEE

Capitol Alert

‘No masks. No vaccines.’ Battle is brewing over coronavirus immunizations in California

BY HANNAH WILEY
JUNE 26, 2020 05:00 AM
U.S. Public Now Divided Over Whether To Get COVID-19 Vaccine

Concerns about the safety and effectiveness of possible vaccine, pace of approval process

Anti-vaccination leaders fuel black mistrust of medical establishment as covid-19 kills people of color

The memory of the horrific Tuskegee syphilis study makes some African Americans suspicious of a coronavirus vaccine

Even before a coronavirus vaccine becomes available, some activists are ready to attack it; this woman attended a "Reopen Virginia" protest in Richmond in April.  MATTHEW ROSS/USA TODAY IMAGES

Just 50% of Americans plan to get a COVID-19 vaccine. Here's how to win over the rest

By Warren Cornwall | Jun. 30, 2020, 4:23 PM

Science's COVID-19 reporting is supported by the Pulitzer Center.

Within days of the first confirmed novel coronavirus case in the United States on 20 January, antivaccine activists were already hinting on Twitter that the virus was a scam—part of a plot to profit from an eventual vaccine.
How much do you trust each of the following sources of information about coronavirus vaccines?

<table>
<thead>
<tr>
<th>Source</th>
<th>Percent of Americans</th>
</tr>
</thead>
<tbody>
<tr>
<td>Health professionals</td>
<td>A great deal/quite a bit</td>
</tr>
<tr>
<td>Dr. Anthony Fauci</td>
<td>58</td>
</tr>
<tr>
<td>The CDC</td>
<td>46</td>
</tr>
<tr>
<td>The FDA</td>
<td>41</td>
</tr>
<tr>
<td>The HHS</td>
<td>38</td>
</tr>
<tr>
<td>The WHO</td>
<td>36</td>
</tr>
<tr>
<td>Joe Biden</td>
<td>33</td>
</tr>
<tr>
<td>Pharmaceutical companies</td>
<td>20</td>
</tr>
<tr>
<td>News media</td>
<td>16</td>
</tr>
<tr>
<td>Donald Trump</td>
<td>16</td>
</tr>
</tbody>
</table>

Question: How much do you trust each of the following sources for information about coronavirus vaccines?  
Source: AP-NORC poll conducted December 3-7, 2020, with 1,117 adults  
APNORC.org
Which of the following are reasons you would not get a coronavirus vaccine?

Percent of Americans who say they will not get vaccine or are unsure

- **I would be concerned about side effects from the vaccine**: 70% (May), 71% (December)
- **I'm concerned about the development and approval process**: 42% (May), 57% (December)
- **I would be concerned with getting infected from the vaccine**: 37% (May)
- **I'm not concerned about getting seriously ill from the coronavirus**: 31% (May), 24% (December)
- **The coronavirus outbreak is not as serious as some people say it is**: 24% (May), 16% (December)
- **I don't think vaccines work very well**: 30% (May), 15% (December)
- **I don't like needles**: 10% (May), 10% (December)
- **I am allergic to vaccines**: 5% (May), 5% (December)
- **I won't have time to get vaccinated**: 2% (May), 2% (December)
- **Other**: 22% (May), 13% (December)
Do you plan to get vaccinated against the coronavirus?
Percent of Americans

Race and ethnicity

<table>
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<tr>
<th>Race</th>
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<th>No</th>
<th>Not sure</th>
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<tbody>
<tr>
<td>White</td>
<td>53</td>
<td>25</td>
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<td>Black</td>
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<tr>
<td>Hispanic</td>
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Age

<table>
<thead>
<tr>
<th>Age</th>
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</tr>
</thead>
<tbody>
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<td>18-29</td>
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<td>30-44</td>
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<td>31</td>
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<td>45-59</td>
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<tr>
<td>60+</td>
<td>62</td>
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Partisanship

<table>
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<tr>
<th>Partisanship</th>
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<th>No</th>
<th>Not sure</th>
</tr>
</thead>
<tbody>
<tr>
<td>Democrat</td>
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<td>15</td>
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</tr>
<tr>
<td>Independent</td>
<td>28</td>
<td>40</td>
<td>32</td>
</tr>
<tr>
<td>Republican</td>
<td>40</td>
<td>32</td>
<td>27</td>
</tr>
</tbody>
</table>

Question: When a vaccine against the coronavirus becomes available to you, do you plan to get vaccinated, or not?
Source: AP-NORC poll conducted December 3-7, 2020, with 1,117 adults

APNORC.org
Compared To December, Larger Share Now Want COVID-19 Vaccine “As Soon As Possible,” Fewer Want To “Wait And See”

Percent who say they will get a COVID-19 vaccine:

- Already vaccinated
- Get it as soon as you can
- Wait and see how it’s working
- Get it only if required
- Definitely not get it

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<tr>
<th></th>
<th>Dec-20</th>
<th>Jan-21</th>
</tr>
</thead>
<tbody>
<tr>
<td>Already vaccinated</td>
<td>39%</td>
<td>41%</td>
</tr>
<tr>
<td>Get it as soon as you can</td>
<td>34%</td>
<td>6%</td>
</tr>
<tr>
<td>Wait and see how it’s working</td>
<td>15%</td>
<td>13%</td>
</tr>
<tr>
<td>Get it only if required</td>
<td>9%</td>
<td>7%</td>
</tr>
<tr>
<td>Definitely not get it</td>
<td>7%</td>
<td>6%</td>
</tr>
</tbody>
</table>

In the meantime...

• **Cancer Talking Points**
  
  • Healthcare workers play a key role in building vaccine confidence, ensuring the safety of their patients, and increasing patient comfort level with medical appointments and necessary treatment during the pandemic.
  
  • Cancer patients should ask their healthcare provider before receiving the vaccine to better understand when they should receive the vaccine, especially if their treatment compromises their immune system.
In the meantime... recommendations:

• Stay home if you’re sick
• Hand hygiene!
• Maintain physical distance from others
• Wear a mask – especially when in confined public places, both for the protection of others & yourself
• GET IMMUNIZED AGAINST INFLUENZA!
• Activate MyChart & be sure contact information in EMR is accurate
  • Encourage creation/maintenance of email
Questions? Comments?

Please take our poll! Will pop up on your screens shortly.
Check out our COVID-19 & Cancer Resource Page

- Social media toolkits
- Links to research articles
- Past COVID-19 webinars
- Tips for local governments & businesses

https://wicancer.org/resources/covid19/
Preliminary Recommendations of the NCCN COVID-19 Vaccination Advisory Committee

The National Comprehensive Cancer Network (NCCN) released guidance on the COVID-19 vaccinations in people with cancer, recommending that this patient group be prioritized for immunization.

This document goes over recommendations.

New Resource!

“Cancer Tests & Screenings: How to Safely Get Tested for Cancer during COVID-19”

• Developed in partnership with the Wisconsin Well Woman Program and Covering Wisconsin
“Cancer in the LGBTQ+ Community”

The executive director of the National LGBT Cancer Network will join us to share tools and strategies for improving outcomes for LGBTQ+ populations across the cancer continuum. *(Note: This webinar is 90 minutes long.)*

Register here: https://wicancer.org/events/webinars/
Thank you for joining!
Stay well!