HCGC March Monthly Webinar: Addressing Vaccine Hesitancy using Research

Friday, March 19, 2021

Pursuing the best health for all people in the Columbus region
About HCGC

**OUR MISSION**
To improve the quality, delivery, and value of healthcare and the overall health for all people in the Columbus region.

**OUR VISION**
Optimal health for all people in the Columbus region.

**WHAT WE DO**
Using a collaborative process, we are:
- Fostering shared learning and communication,
- Collecting and sharing aggregate health data, and
- Scaling knowledge and innovation.

Pursuing the best health for all people in the Columbus Region
HCGC Overview

**Health Disparities:**
HCGC's mission is designed to serve "all people." However, we are acutely aware that total population measures can hide wide-ranging disparities among different portions of our community. HCGC is committed to seeking opportunities to close health disparity gaps.

**Employers as Key Healthcare Stakeholders:**
Employers play a special role in funding our current healthcare system. HCGC has experienced that the wide variety in the Central Ohio's self-insured and fully insured employer market makes singular employer strategies impractical. HCGC seeks opportunities to address cost issues whenever possible.

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Celebrating 2 Years of the Central Ohio Pathways HUB

There are 11 CCA's that employ 45 CHWs who serve clients in the Central Ohio Pathways HUB

CELEBRATING TWO YEARS OF THE HUB!
TODAY WE RECOGNIZE

CARE COORDINATION AGENCIES

Central Ohio Pathways HUB

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Celebrating 2 Years of the Central Ohio Pathways HUB

The HUB's 45 CHWs are the foundation of the Central Ohio Pathways HUB

HUB CHWs have served:
- An average of 600 HUB clients per month
- 2,401 Total Clients Since March 2019

HUB CHWs have provided:
- Over 860 Educations Related to COVID-19 including health, personal hygiene, assistance finding a testing site, and vaccine education

HUB CHWs have completed:
- 10,564 Total Pathways/Connections to Care for HUB clients
- Resulting in Over $400,000 Reimbursed to HUB Care Coordination Agencies in 2020

Celebrating Two Years of the HUB! Today we recognize Community Health Workers

Pursuing the best health for all people in the Columbus Region
Celebrating 2 Years of the Central Ohio Pathways HUB

New mothers and their babies
92% of babies born to Black and African American mothers who were a part of funding from the Ohio Commission on Minority Health in the HUB were born at a healthy birth weight.

Individuals in the Justice System
95% of participants in the theft diversion program with Columbus City Attorney Zach Klein have successfully completed the program, receiving connections to care and services rather than jail time.

Individuals and Families Experiencing Housing Insecurity
The HUB has partnered with the Columbus Metropolitan Housing Authority in the midst of the COVID-19 pandemic to offer CHW led care coordination services to CMHA’s 35,000 residents.

Individuals Experiencing Addiction
As a partner organization on the Franklin County Public Health CDC Opioid Data to Action Grant, the HUB as connected individuals experiencing addiction with CHWs who have helped them find recovery services, as well as other connections to care and services to get them on a healthy, supported path to well-being.

CELEBRATING TWO YEARS OF THE HUB!
HUB CHWS PROVIDE CARE COORDINATION FOR
UNIQUE, AT-RISK POPULATIONS

Central Ohio Pathways HUB

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Central Ohio Pathways HUB
Community Health Worker Certification Program

Gender:
14 Females
3 Males

Citizenship:
14 US Citizenship
3 Permanent Legal Immigrants

Ages:
23-64

Local Care Coordination Agencies Represented:
Columbus Urban League, Ethiopian Tewahedo Social Services, Physicians CareConnection, Heart of Ohio Family Health, PrimaryOne Health, The Breathing Association, Urban Strategies, & Wellness First

Race:
- African American: 47.1%
- White: 23.5%
- Hispanic: 11.8%
- Moorish American: 11.8%
- Biracial: 5.9%

17 Total Participants
Implementation of Vaccine Access Mapping in Central Ohio

Prioritizing data to make applicable recommendations
Implementation of Vaccine Access Mapping in Central Ohio

Community Health Workers are Trusted Messengers
Utilizing mapping data to target education canvassing/registration assistance to most under-resourced neighborhoods
Implementation of Vaccine Access Mapping in Central Ohio

Question posed to CHWs:
“What are you hearing in the communities that you serve about the COVID-19 Vaccine?”

February 11th:
“They don’t trust how quickly it came out.”
“Minorities don’t want to get it.”
“Mixed feelings”
“That it causes cancer”
“It can kill you”

March 11th:
“Most of my clients who are older adults have received the vaccine and seem happy and relieved they have received it”
“People want J&J”
“People who were hesitant are now considering”
“Not sure about which vaccine they should get and which one they getting”
“That it is so hard to book an appointment!”

Follow through is vital to building trust in public health going forward
Welcome!

**Featuring:**

**Jack Stevens, PhD**  
Psychologist, Nationwide Children's Hospital  
Associate Professor of Pediatrics, The Ohio State University

**Bram Wispelwey, MD, MS, MPH**  
Project Lead, US Public Health Accompaniment Unit, Partners In Health

**FRIDAY, MARCH 19**  
10:00 AM - 11:30 AM
Vaccines: one necessary component in the complete public health response to COVID-19
The role of vaccination alongside other proven public health measures

- Safe, effective COVID-19 vaccines are an important tool for immunizing individuals and ending the pandemic.
- Communities and public health leaders must **maintain support for community mitigation efforts, testing, contact tracing, and care coordination capacity**. Neglect of these components will fuel the COVID-19 pandemic, leave us unprepared for the next pandemic, and deepen the economic crisis.
- We do not yet know how many people must be vaccinated to reach herd immunity, how long it will take to achieve adequate coverage by vaccination, or how long vaccine protection will last.
A COVID vaccine is critical to achieving herd immunity...

- **Direct protection**: Depending on the efficacy of the vaccine and extent of immunity, a vaccine protects an individual who is vaccinated. The current trials have given us a measure of the direct effect.

- **Indirect protection (herd immunity)**: If enough people in a community are vaccinated, this protects everyone (even the unvaccinated individuals).
  - For SARS-CoV-2, it is estimated that ~70-85% of people will need to be vaccinated to achieve herd immunity, or more depending on the efficacy of the vaccine.
  - More data is needed to understand the current vaccines effectiveness at preventing infection and transmission.

...but not a magic bullet

“The potential benefits of even the most optimistically effective vaccine are diminished if it is introduced into a more severe epidemic... a 75% effective vaccine implemented in a population where $R_t = 2.1$ averted a smaller proportion of infections and deaths than a 25% effective vaccine implemented under less severe pandemic conditions ($R_t=1.5$)”


Vaccine rollout efforts are increasingly being scaled up, currently averaging ~2.5 million doses per day in the US
New reported doses administered by day

Source: Centers for Disease Control and Prevention | Note: Line shows a seven-day average. Data not updated on some weekends and holidays. Includes the Johnson & Johnson vaccine as of March 5.
State-by-state comparison
Current Vaccination Pace

7-day average: 1.6 million newly vaccinated people
100% of U.S. population

At current pace

75%

50%

25%

22% March 17

50% May 14

70% June 25

90% Aug. 5


Source: Centers for Disease Control and Prevention | Note: Data from Dec. 20 to Jan. 12 are for all doses administered. Data for Jan. 13 is unavailable. Projections could change if additional vaccines are authorized.
Development and current COVID-19 vaccines
Vaccine development

In the US, the Pfizer-BioNTech, Moderna, and Johnson & Johnson vaccines have now been approved under Emergency Use Authorizations.

Coronavirus Vaccine Tracker

By Carl Zimmer, Jonathan Corum and Sui-Lee Wee  Updated March 5, 2021

<table>
<thead>
<tr>
<th>PHASE 1</th>
<th>PHASE 2</th>
<th>PHASE 3</th>
<th>AUTHORIZED</th>
<th>APPROVED</th>
<th>ABANDONED</th>
</tr>
</thead>
<tbody>
<tr>
<td>43</td>
<td>27</td>
<td>21</td>
<td>6</td>
<td>6</td>
<td>4</td>
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Vaccines testing safety and dosage  Vaccines in expanded safety trials  Vaccines in large-scale efficacy tests  Vaccines in early or limited use  Vaccines approved for full use  Vaccines abandoned after trials

- Primary endpoint: efficacy against symptomatic disease
- Other endpoints: efficacy against asymptomatic disease, transmission, severe disease

Phase 1 & 2
Small trials that assess initial safety and immune response

Phase 3
Large scale trials (tens of thousands) to assess population level efficacy

Phase 4
Continued follow-up post approval
Vaccine development: focus on five we will see in 2021

<table>
<thead>
<tr>
<th>Company</th>
<th>Type</th>
<th>Doses</th>
<th>Storage Requirements</th>
<th>Efficacy against hospitalization or death</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pfizer</td>
<td>mRNA</td>
<td>2</td>
<td>Ultracold (&lt;-70°C)</td>
<td>100%</td>
</tr>
<tr>
<td>Moderna</td>
<td>mRNA</td>
<td>2</td>
<td>Frozen (&lt;-20°C)</td>
<td>100%</td>
</tr>
<tr>
<td>Johnson &amp; Johnson</td>
<td>Viral Vector</td>
<td>1</td>
<td>Refrigerated (2°C–8°C)</td>
<td>100%</td>
</tr>
<tr>
<td>AstraZeneca</td>
<td>Viral Vector</td>
<td>2</td>
<td>Refrigerated (2°C–8°C)</td>
<td>100%</td>
</tr>
<tr>
<td>Novavax</td>
<td>Protein</td>
<td>2</td>
<td>Refrigerated (2°C–8°C)</td>
<td>100%</td>
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Equity concerns are elevated given the task of prioritizing distribution of multiple vaccines with tradeoffs between logistical ease and efficacy, cost and accessibility in both rural and urban areas.

There are other vaccines currently in use from China and Russia but unlikely to see use in the US in near future.

Open questions:
- How effective are the vaccines at preventing transmission and infection, not just symptomatic disease?
- What is the duration of immunity?
- How quickly can they be manufactured at scale?
What is an mRNA vaccine?

- Messenger RNA code for the Coronavirus Spike protein
- Human cells then produce the Spike protein
- Induces the immune response including both B cells (antibodies) and T cells (kill infected cells)
- Stay in immune memory
- Duration of immunity unknown

How mRNA Vaccines Work
The vaccine spurs healthy cells to produce viral proteins that stimulate a potent immune response

1. Scientists generated an mRNA sequence that codes for the virus spike protein
2. The RNA sequence, a blueprint for making the spike, is swathed in a lipid coating for delivery
3. Once it arrives, cells read the information in the mRNA sequence to produce millions of copies of the spike protein
4. The protein fragments spur the immune system to produce antibodies that can protect when a real virus enters the body

Three types of coronavirus vaccines in development

1. Protein-based
   - Spike protein is purified and injected
   - Spike protein gene is purified
   - mRNA that codes for spike protein is purified and injected

2. Viral vector
   - Adenoviral vector is injected
   - Body produces spike protein
   - Body produces spike protein

3. mRNA
   - Immune system produces antibody
   - mRNA that codes for spike protein is purified and injected

Source: National Institutes of Health presentation at Senate hearing on September 9, 2020
## Vaccine Comparison

<table>
<thead>
<tr>
<th></th>
<th>Moderna</th>
<th>Pfizer</th>
<th>J&amp;J</th>
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<tbody>
<tr>
<td><strong>Symptomatic disease</strong></td>
<td>94.1% (primary endpoint)</td>
<td>95% (primary endpoint)</td>
<td></td>
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<tr>
<td><strong>Moderate-Severe disease</strong></td>
<td></td>
<td></td>
<td>72% in US, 66% overall (primary endpoint)</td>
</tr>
<tr>
<td><strong>Severe disease</strong></td>
<td>100%</td>
<td>1 out of 10 cases in vaccine group</td>
<td>85% at 28 days (increases with time)</td>
</tr>
<tr>
<td><strong>Asymptomatic infection (~transmission)</strong></td>
<td>66% after 1 dose</td>
<td>Observational studies indicate high effectiveness</td>
<td>74% after day 29 (PCR+ and serology)</td>
</tr>
<tr>
<td><strong>Hospitalizations and deaths</strong></td>
<td>No hospitalizations or deaths in vaccinated group after immunity took effect</td>
<td></td>
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Promising Messages for Encouraging Patients, Employees, and Community Members to Receive COVID-19 Vaccinations: Lessons Learned from Past Research Over the Last Two Decades

Jack Stevens, Ph.D.
Psychologist, Nationwide Children’s Hospital
Associate Professor of Pediatrics, OSU
Jack.Stevens@nationwidechildrens.org
Patel, Volpp & Asch (January 2018 Perspective; New England Journal of Medicine) “Nudge Units”

“The final common pathway for the application of nearly every advance in medicine is human behavior. No matter how effective a drug, how protective a vaccine, or how targeted a therapy may be, a clinician usually has to prescribe it, and a patient accept and use it as directed, for it to improve health” (pg. 214).

--Leaders of the nation’s first health care system “Nudge Unit” (established 2016)
Concerns About COVID-19 Vaccinations

- **Current focus:** Inadequate supply and distribution problems
- **Future focus:** Inadequate uptake to achieve herd immunity

- Booster shots may be necessary
- Mandates and payments have drawbacks
- Need messages grounded in behavioral science and informed by relevant past research
The PANDEMIC Framework
(Stevens, 2021, American Journal of Managed Care)

- Presumptive communication
- Asking for advice
- Norms on an anonymous level
- Description of favorable attributes
- Emphasizing clinician’s own experiences
- Mandated choice
- Images
- Communication of risk
Presumptive Communications (Brewer et al., 2017, *Pediatrics* )

**Justification**: The benefits of vaccination greatly outweigh any harms.

**Opt-in**: “What do you want to do about shots today?”

**Opt-out**: “We have some shots we need to do today.”

“There is a COVID-19 vaccine we should do today.”
Asking for Advice (Liu & Gal, 2011, *Journal of Consumer Research*)

- “We are interested in what advice you have for our organization.”
- Opinions and expectations not as impactful
- Results consistent with community coalition-driven interventions and motivational interviewing

“What advice would you have to help encourage uncertain individuals to receive the vaccine?”
Norms on an anonymous level (Goldstein et al., 2008, *Journal of Consumer Research*)

- Social influences, not just biological facts, can encourage people to behave more optimally.
- The Hotel Towel Study
- “Local, Local, Local”
Norms: Highlighting Those Exhibiting the Target Behavior

Over 200,000 copies sold
Not Highlighting Those Exhibiting the Opposite Behavior

Tens of millions of book buyers did not purchase this selection.
The Mass Media’s Attention to Norms During the Pandemic

• Too much attention to those who do not wear masks

• “Thousands of individuals from racial/ethnic minority populations volunteered for recent vaccine studies.”

• “Hundreds of people in your community have already been vaccinated. Please be one of the next people to get the shot!”
Description of favorable attributes (Kreps et al., 2020, *JAMA Network Open*)

- Nationally representative survey
- 90% efficacy (versus 50% efficacy)
- Products developed by US Companies
- “Two different vaccines reduced cases by 95%. They were developed by American companies.”
Emphasizing Clinician’s Own Experiences (Frank et al., 2000, Archives of Family Medicine)

• Messengers matter

• “I have received the COVID-19 vaccine myself.”

• May be more powerful than a prominent political figure or a content expert
Mandated Choice ("Active Choice")

- Requiring notification of one's decision, but not requiring vaccination

- Hypothetical Example Based Upon Enhanced Active Choice (Keller et al., 2011, *Journal of Consumer Psychology*)

**YES! I agree to a COVID-19 vaccination to reduce my chances of getting this disease.**

**I decline to get the vaccination. I realize that my decision may increase my chances of getting COVID-19.**
Images (Gibson et al, 2015; Nicotine Tobacco Research)
Communication of Risk (Peters et al., 2011, Medical Decision Making)

- Positive framing (versus negative framing)
  “Ninety-nine percent did not experience an extremely high fever.”
Priorities for Evaluating These Untested Strategies

1. Verify that people actually encountered the messages
2. Ensure an adequate sample is utilized
3. Appreciate the timing of these messages
4. Investigate potential disparities regarding acceptability and impact
Take Home Message: Why Should Nudging Be Part of a Portfolio of Behavioral Change Approaches?

• 1. Presentation of options influences outcomes

• 2. Nudging often has a favorable benefit-cost tradeoff
   ---Should Governments Invest More in Nudging? (Benartzi et al., 2017; Psychological Science)

• 3. If/when is it ethical to nudge? “Nudge for Good”
April 2015 Change

Medical College Admission Test (MCAT) adds the following section:

Psychological, Social, and Biological Foundations of Behavior

60% Psychology, 30% Sociology, 10% Biology
Future Collaborations?

Jack.Stevens@nationwidechildrens.org

614-722-2000

Jack Stevens, PhD
Community Conversation
Join Us Next Month:

Health Equity and Research in Practice
Virtual Convening #2

FRIDAY, APRIL 16
10 AM - 12 PM

Implications of equity research in practice regarding:

► Mental Health Considerations in Vulnerable Populations
► Addressing Maternal Mortality
► Chronic Disease in Vulnerable Populations
► Considerations for At-Risk Populations Amidst the COVID-19 Pandemic

Register:
http://www.hcgc.org/events.html

Continue to Engage:

Thank You!

Pursuing the best health for all people in the Columbus Region