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Vaccine Hesitancy in the Era of COVID

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COLLEGE OF POPULATION HEALTH

PopTalk Webinar Series

Vaccine Hesitancy in the Era of COVID

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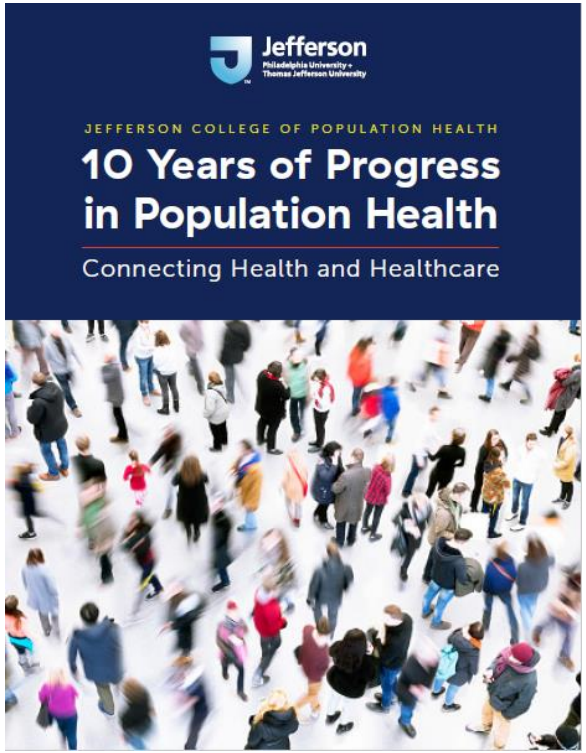

Today's Presenters

Understanding Vaccine Hesitancy and How to Address It

Nikki Parkerson, MD, FAAP
Regional Medical Director, Mid-Atlantic
Merck Vaccines

Messaging to the Public about Vaccines: The Evidence Base and Lessons Learned

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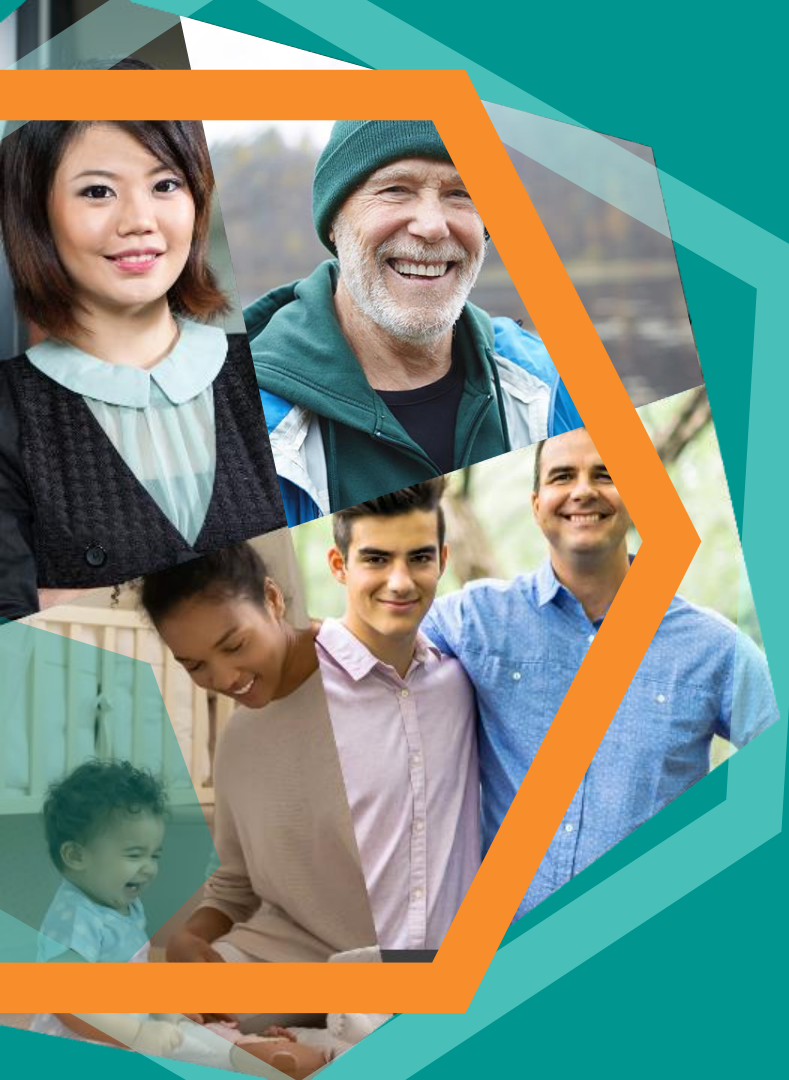
Associate Professor
Thomas Jefferson University
Associate Director, Community Integration
Sidney Kimmel Cancer Center



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What Is Vaccine Confidence?

What Is Vaccine Confidence?

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Vaccine Confidence Spectrum

Vaccine Confidence[1]

- Refers to the trust that parents, patients, or HCPs have in:
  - Recommended vaccinations
  - Providers who administer vaccines
  - Processes that lead to vaccine licensure and the recommended vaccination schedule

Vaccine Hesitancy[2]

- Refers to delay in the acceptance or refusal of vaccination despite availability of vaccination services
- Varies across time, place, and vaccines
- Influenced by factors such as **complacency, convenience, and confidence**

HCP=health care provider.

1. National Vaccine Advisory Committee (NVAC). *Public Health Rep*. 2015;130(6):573–595. **2.** Smith MJ. *Infect Dis Clin North Am*. 2015;29(4):759–769. **3.** Allen A et al. The challenge of vaccination hesitancy and acceptance: an overview. In: Meeting the challenge of vaccine hesitancy. Aspen, CO: Sabin-Aspen Vaccine Science & Policy Group; 2020:1–175.

Determinants of Vaccine Confidence[1]

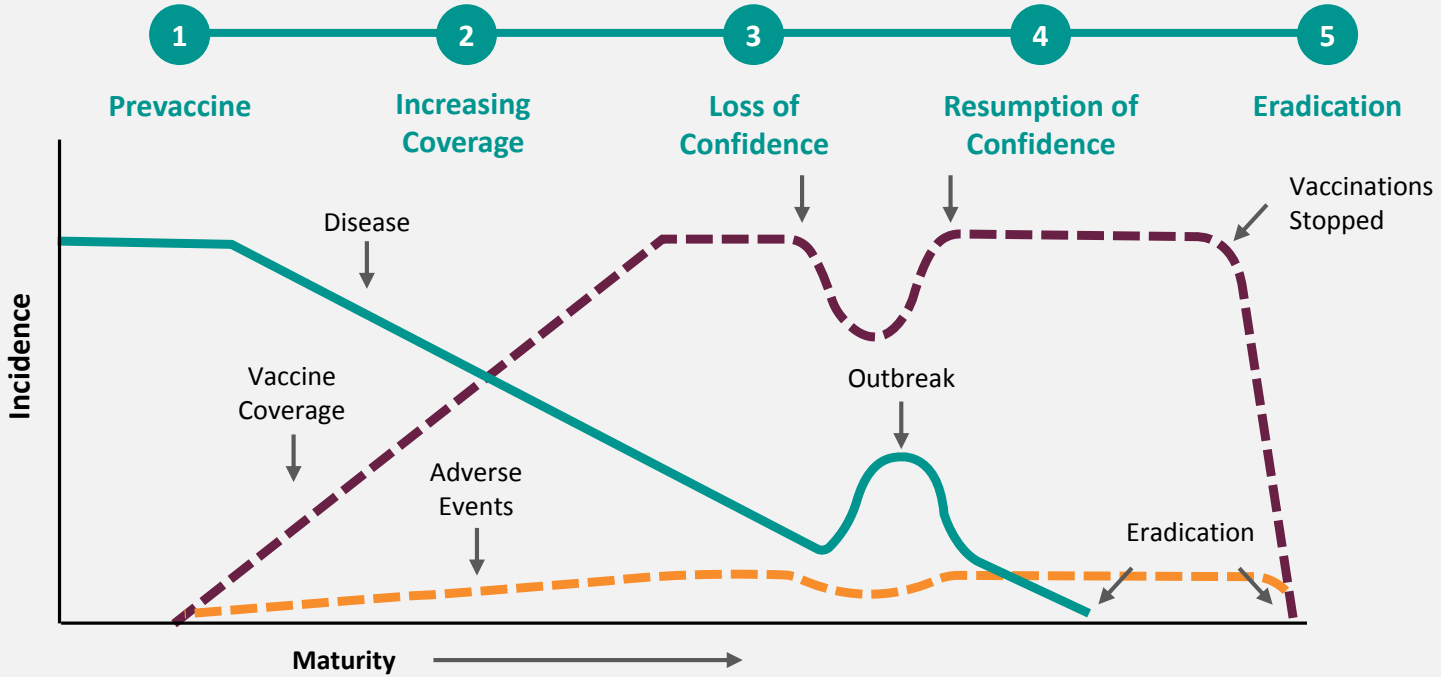
Notable factors influencing parental confidence in, and acceptance of, childhood vaccines:

Trust	Willingness to rely on someone else's expertise and advice (eg, their vaccine recommendation)
Attitudes & Beliefs	Thoughts that parents have regarding vaccine-preventable diseases, vaccine safety, vaccine effectiveness, and vaccination benefits
HCP Confidence	A provider's confidence both in vaccines and in their ability to communicate effectively to parents about vaccines
Information Environment	The significant role that news and entertainment media and parents' social network can play in influencing knowledge, beliefs, and behaviors associated with vaccines

HCP=health care provider.

1. National Vaccine Advisory Committee (NVAC). *Public Health Rep*. 2015;130(6):573–595.

Evolution of Vaccine Confidence in a Vaccine Program[1]



1. Edwards KM et al. *Pediatrics.* 2016;139(3):e20162146. Figure adapted from Chen RT, Orenstein WA. Epidemiologic methods in immunization programs. *Epidemiol Rev*. 1996;18(2):102., by permission of Oxford University Press.

Who Is Lacking Vaccine Confidence?

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Vaccine Hesitancy and Undervaccination Are Observed in All Age Groups

Children born during 2015–2016[1]

1.3% unvaccinated

(NIS-Child, N=25,059)

Kindergarteners[2]

2.5% with an exemption from ≥1 vaccine

(2018–2019 school year, N=3,643,598)

Adults, ≥18 years[3]

54.7% unvaccinated against influenza

(BRFSS 2018–2019 flu season, N=302,148)

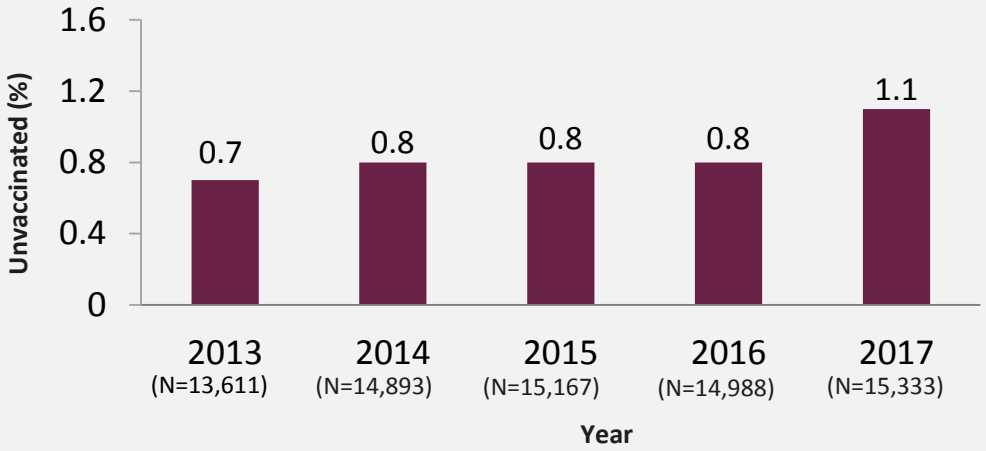
BRFSS=Behavioral Risk Factor Surveillance System; NIS=National Immunization Survey.

1. Hill H et al. *MMWR Morb Mortal Wkly Rep.* 2019;68(41):913–918. **2.** Seither R et al. *MMWR Morb Mortal Wkly Rep*. 2019; 68(41);905–912. **3.** Centers for Disease Control and Prevention (CDC). Flu vaccination coverage, United States, 2018–19 influenza season. cdc.gov/flu/fluvaxview/coverage-1819estimates.htm. Accessed August 14, 2020.

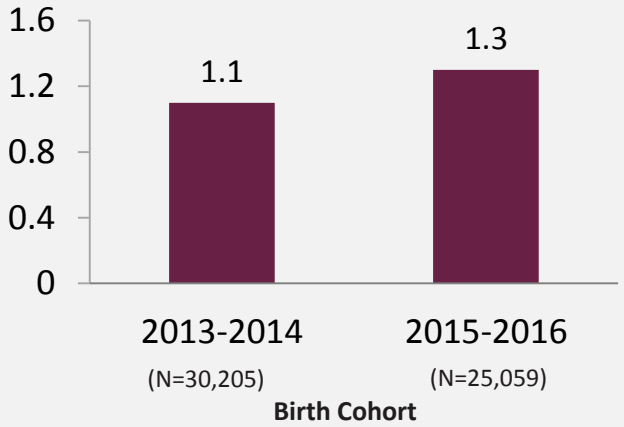
Vaccine Hesitancy and Undervaccination Are Observed in All Age Groups

Estimated Percentage of Unvaccinated Children

Estimated percentage of unvaccinated children aged 19–35 months, NIS-Child, United States, 2013–2017[1–5]



Estimated percentage of unvaccinated children by age 24 months born during 2013-2016, NIS-Child, United States[6,7,a]



NIS=National Immunization Survey.

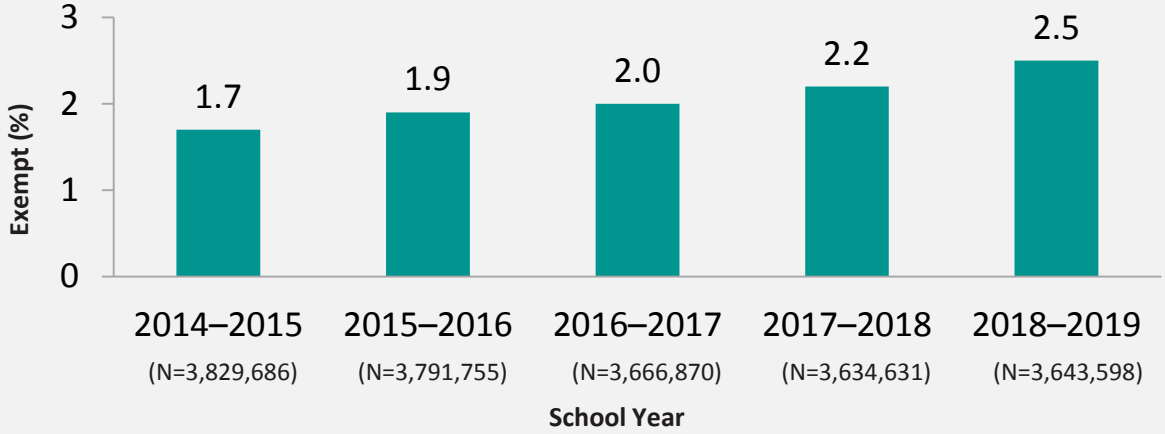
[a]Note that CDC has transitioned to reporting NIS-Child data aby birth year rather than survey year.

1. Elam-Evans LD et al. *MMWR Morb Mortal Wkly Rep.* 2014;63(34):741–748. **2.** Hill H et al. *MMWR Morb Mortal Wkly Rep.* 2015;64(33):889–896. **3.** Hill H et al. *MMWR Morb Mortal Wkly Rep.* 2016;65(39):1065–1071. **4.** Hill H et al. *MMWR Morb Mortal Wkly Rep.* 2017;66(43):1171–1177. **5.** Hill H et al. *MMWR Morb Mortal Wkly Rep.* 2018;67(40):1123–1128. **6.** Hill H et al. *MMWR Morb Mortal Wkly Rep.* 2019;68(41):913–918. **7.** Centers for Disease Control and Prevention (CDC). ChildVaxView. cdc.gov/vaccines/imz-managers/coverage/childvaxview/interactive-reports/dashboards/2013-2014.html. Accessed September 3, 2020. **8.** *Healthy People 2030.* health.gov/healthypeople/objectives-and-data/browse-objectives/vaccination/reduce-proportion-children-who-get-no-recommended-vaccines-age-2-years-iid-02. Accessed September 4, 2020.

Vaccine Hesitancy and Undervaccination Are Observed in All Age Groups

Kindergarteners

Estimated median percentage of children enrolled in kindergarten with an exemption from one or more vaccines, United States, school years 2014–15 through 2018–2019[1–5]

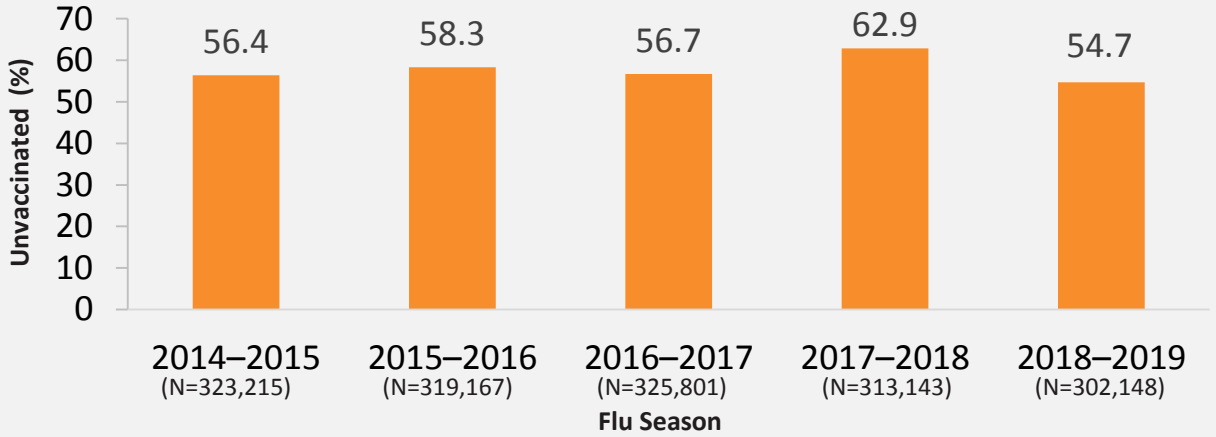


1. Seither R et al. *MMWR Morb Mortal Wkly Rep*. 2015;64(33):897–904. **2.** Seither R et al. *MMWR Morb Mortal Wkly Rep*. 2016;65(39):1057–1064. **3.** Seither R et al. *MMWR Morb Mortal Wkly Rep*. 2017;60(40):1073–1080. **4.** Mellerson JL et al. *MMWR Morb Mortal Wkly Rep*. 2018;67(40):1115–1122. **5.** Seither R et al. *MMWR Morb Mortal Wkly Rep*. 2019; 68(41):905–912.

Vaccine Hesitancy and Undervaccination Are Observed in All Age Groups

Adults, ≥18 years

Estimated percentage of adults aged ≥18 years unvaccinated against influenza, BRFSS, United States, flu seasons 2014–2015 through 2018–2019[1–5]



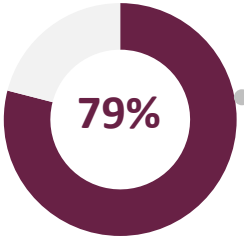
BRFSS=Behavioral Risk Factor Surveillance System.

1. Centers for Disease Control and Prevention (CDC). Flu vaccination coverage. United States, 2014-15 influenza season. cdc.gov/flu/pdf/fluvaxview/NFID-coverage-2014-15-final.pdf. Accessed August 14, 2020. **2.** CDC. Flu vaccination coverage. United States, 2015-16 influenza season. cdc.gov/flu/pdf/fluvaxview/2015-16/nfid-coverage-2015-16-final.pdf. Accessed August 14, 2020. **3.** CDC. Flu vaccination coverage, United States, 2016–17 influenza season. cdc.gov/flu/fluvaxview/coverage-1617estimates.htm. Accessed August 14,2020. **4.** CDC. Estimates of influenza vaccination coverage among adults—United States, 2017–18 flu season. cdc.gov/flu/fluvaxview/coverage-1718estimates.htm, Accessed August 14,2020. **5.** CDC. Flu vaccination coverage, United States, 2018–19 influenza season. cdc.gov/flu/fluvaxview/coverage-1819estimates.htm. Accessed August 14, 2020.

Most Parents Have Positive Attitudes Toward Vaccines[1]

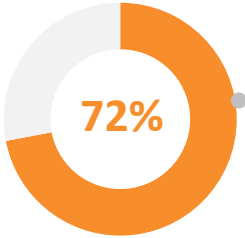
In an online survey, 4,369 parents of 7,984 children ages 0 to 18 years in the United States were asked about their general attitude towards vaccines

Babies, young children



responded "My attitude is positive—I believe that vaccines play an important role in healthcare" regarding vaccines **for babies and young children**

Teens



responded "My attitude is positive—I believe that vaccines play an important role in healthcare" regarding vaccines **for teens**

1. Data available on request from Merck, Professional Services-DAP, WP1-27, PO Box 4, West Point, PA 19486-0004. Please specify information package US-NON-05819.

However, Many Individuals May Be Misinformed About Vaccines[1,a]

18% mistakenly state that it is very or somewhat accurate to say that **vaccines cause autism**

15% mistakenly agree that it is very or somewhat accurate to say that **vaccines are full of toxins**

20% inaccurately report that it is very or somewhat accurate to say **it makes no difference whether parents choose to delay or spread out vaccines** instead of relying on the official CDC vaccine schedule

19% incorrectly hold that it is very or somewhat accurate to say that **it is better to develop immunity by getting the disease** than by vaccination

Many who reported low trust in medical authorities also believed vaccine misinformation

This belief in vaccine misinformation was true across different demographic groups and political beliefs

[a]Survey of Americans conducted from February 28–March 25, 2019 and September 13–October 2, 2019 designed to study how anti-vaccination claims are widely held, persist, and relate to an individual's media consumption and levels of trust in medical experts.

1. Stecula DA et al. How trust in experts and media use affect acceptance of common anti-vaccination claims. *The Harvard Kennedy School (HKS) Misinformation Review*. misinforeview.hks.harvard.edu/wp-content/uploads/2020/01/v2_vaccinessocialmedia_jan29-1.pdf. Accessed August 14, 2020.

Vaccine Confidence May Vary Among Racial or Ethnic Groups

There are disparities in vaccination uptake among ethnic and racial groups in the United States[1,2]

A **study** exploring **racial differences** in **African Americans' and Whites' vaccine acceptance** showed that[1]:

- African American adults have **lower confidence** in vaccines than White adults: the clearest racial divide is the **level of trust in the government's role in vaccination**.
- **Cost** is a greater **barrier to vaccination uptake** in African American adults than in White adults.

African American participants have a higher level of trust in HCPs who share similar racial, ethnic, or cultural backgrounds than in HCPs who do not[3]

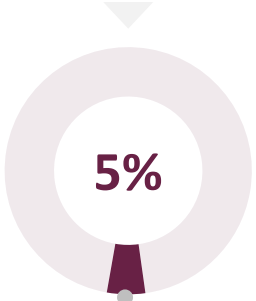
HCP=health care provider.

1. Quinn S et al. *PLoS Curr*. 2016;8:ecurrents.outbreaks.3e4a5ea39d8620494e2a2c874a3c4201. **2.** Centers for Disease Control and Prevention (CDC). Flu vaccination coverage, United States, 2018–19 influenza Season. cdc.gov/flu/fluvaxview/coverage-1819estimates.htm. Accessed August 14, 2020. **3.** Fu LY et al. *Hum Vaccin Immunother*. 2019;15(7–8):1715–1722.

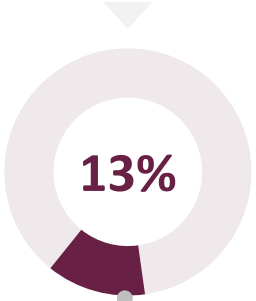
Vaccine Hesitancy Also Exists With Health Care Providers

While HCPs are the most trusted influencers of vaccination decisions, their own hesitancy impacts their recommendations[1]

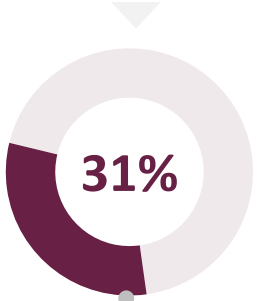
Questionnaires completed **anonymously** by 680 HCPs regarding their **views on vaccination** showed that[2]:



5% **did not** routinely recommend common vaccines



13% expressed **concerns with vaccine safety**



31% expressed **concerns with vaccine efficacy**

Factors that can increase HCPs' confidence in vaccines[1]**:**

- **Vaccine knowledge**
- **Professional society endorsement**
- **Support from colleagues**

HCP=health care provider.

1. Paterson P et al. *Vaccine.* 2016;34(52):6700–6706. **2.** Suryadevara M et al. *Vaccine.* 2015;33(48):6629–6634.

The Types of Mistrust May Be Rooted in Human Psychology[1]

The **Moral Foundation Theory** proposes that a **set of innate intuitions lead humans to certain emotional responses** to particular interpersonal events. **Six foundations** have been shown to be involved in vaccine hesitancy:

Foundation	Relation to vaccine hesitancy
Care/harm	May underlie concerns about the harm that might result from vaccines, particularly if it affects vulnerable children
Authority/subversion	May be associated with distrust of scientists and government officials who promote vaccinations
Liberty/oppression	May be associated with the belief that mandatory vaccination policies violate parental civil liberties
Purity/degradation	May underlie concerns that vaccines are unnatural and that exposing children to diseases “naturally” is preferable
Fairness/cheating	May fuel outrage in response to the perception that pharmaceutical companies motivated by profit have an unfair voice in vaccine policy
Loyalty/betrayal	May be associated with virtues of in-group loyalty, patriotism, and sacrificing oneself for the group. Least likely to be associated with vaccine hesitancy.

Purity and liberty assumptions predict hesitancy

- **Medium-hesitancy** parents were **twice as likely** as low-hesitancy parents to **highly emphasize purity**
- **High-hesitancy** parents were **twice as likely** as low-hesitancy parents to **strongly emphasize purity and liberty**

1. Amin AB et al. *Nat Hum Behav*. 2017;1(12):873–880.

Vaccination Uptake Is Influenced by 3 Psychological Realms[1]

- Include risk beliefs and anticipated regret
- Correlate to getting vaccinated
- Can motivate but the impact on actual vaccination behavior is not known

- Are influenced by:
  - Patient/provider and parent/child relationships
  - Social networks and social norms
- Can motivate through desire to protect others or defer vaccination by taking advantage of the protection provided by others

- Bypassing any attempt to change what people think and feel
- Direct interventions on behavior without trying to change thoughts and feelings or social context are effective
- Incentives, sanctions, and requirements can change behavior

1. Brewer NT et al. *Psychol Sci Public Interest*. 2017;18(3):149–207.

Challenges and Factors of Vaccine Hesitancy

Key challenges to hesitancy[1]

Diminished prioritization of vaccination[1]

Lack of confidence in vaccine safety and efficacy[1]

Lack of uniform state policies on vaccination[1,2]

Apprehension over following vaccine schedules[1,3]

Factors influencing vaccination uptake[4]: Access, affordability, awareness, acceptance, and activation

1. Nabet B et al. Addressing vaccine hesitancy to protect children and communities against preventable diseases. PolicyLab at Children's Hospital of Philadelphia;2017. policylab.chop.edu/sites/default/files/pdf/publications/Addressing_Vaccine_Hesitancy.pdf. Accessed August 14, 2020. **2.** Smith MJ. *Infect Dis Clin North Am*. 2015;29(4):759–769. **3.** Hough-Telford C et al. *Pediatrics*. 2016;138(3):e20162127. **4.** Thomson A et al. *Vaccine.* 2016;34(8):1018–1024.

What Are Some Possible Solutions?

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Remind Patients About the Power to Help Protect

- Viruses and bacteria that cause vaccine-preventable diseases still exist and can be transmitted by unprotected persons[1]
- Outbreaks of vaccine-preventable diseases still occur[2]
- Infection may lead to illness and complications, which can be serious and life-threatening[2,3]

Vaccinations protect the individual vaccinated and those around them[4,5]

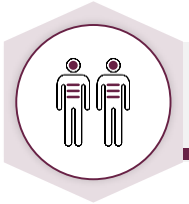
Community protection[5]:

When **high levels of immunity in a community** are induced by vaccination, a person with a transmissible, vaccine-preventable disease is **unlikely to find a susceptible host** to continue the transmission[5]

Vaccine coverage within the community must be high to **achieve** and **sustain protection** of those vulnerable to the disease, including children and those with underlying medical conditions[4,5]

1. Centers for Disease Control and Prevention (CDC). Immunization strategies for healthcare practices and providers. In: Hamborsky J, Kroger A, Wolfe S, eds. *Epidemiology and prevention of vaccine-preventable diseases.* 13th ed. Washington, DC: Public Health Foundation; 2015:33–46. **2.** Reich JA. *Soc Sci Med.* 2016;157:103–110. **3.** Offit PA et al. *Pediatrics.* 2002;109(1):124–129. **4.** Brewer NT et al. *Psychol Sci Public Interest*. 2017;18(3):149–207. **5.** National Vaccine Advisory Committee (NVAC). *Public Health Rep*. 2015;130(6):573–595.

Educate Patients About the Risks and Benefits of Vaccines[1]



The FDA sets rules for 3 phases of clinical trials which test for the safety and efficacy of a new vaccine prior to licensure. The traditional phases include:

Phase 1
Includes 20–100 healthy volunteers

Phase 2
Includes several hundred volunteers

Phase 3
Includes hundreds or thousands of volunteers

FDA only licenses a vaccine if it is safe and effective and its benefits outweigh its risks

If licensed, CDC carefully reviews all data about the vaccine from clinical trials and other studies to develop recommendations for the vaccine's routine use

Considerations for vaccine recommendation:

- How safe and effective is the vaccine at specific ages?
- How serious is the disease it prevents?
- How many people would get the disease if there was no vaccine?

After licensure and recommendation, FDA and CDC continue to monitor vaccine safety

- Vaccine Adverse Event Reporting System (VAERS)
- Vaccine Safety Datalink (VSD)
- Clinical Immunization Safety Assessment Project (CISA)

CDC=Centers for Disease Control and Prevention; FDA=Food and Drug Administration.

1. CDC. The journey of your child's Vaccine. cdc.gov/vaccines/parents/infographics/journey-of-child-vaccine.html. Accessed August 14, 2020.

Words Matter in Vaccine Advocacy and Communication

- Vaccine decision-making may be an emotional experience that is informed by **thoughts** and **feelings**[1]
- Using **words** that are **easily misinterpreted** or that put people into **categories** may **counter the goal** of achieving **high vaccine coverage** and **community support for vaccination**[2]
- Engaging in **positive talk** and **addressing concerns about vaccines** is helpful[1,3]

Widely used vaccination terms may elicit strong reactions and consequences[2]

"vaccine hesitancy" "anti-vaccine"

"anti-vaxxer"

"herd immunity" "mandatory vaccination"

"vaccine demand"

Words matter when trying to achieve a common goal of healthy communities through optimal vaccination uptake[2]

1. Brewer NT et al. *Psychol Sci Public Interest*. 2017;18(3):149–207. **2.** Dudley MZ et al. *Vaccine* 2020;38(4):709–711. **3.** Schoeppe J et al. *Health Promot Pract*. 2017;18(5):654–661.

What and How to Communicate About Vaccines

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The Information-Deficit Model

The information-deficit model suggests that vaccine hesitancy and/or refusal may be due to a lack of understanding that can be overcome with educational intervention[1–3]:

For example, ***"if only the public would understand the dangers of this disease, they would vaccinate against it"***[1]

Communication of scientific facts alone is unlikely to improve vaccine confidence[1]

- **There is a lack of evidence** supporting the presumption that hesitancy and/or opposition are primarily driven by insufficient understanding of the facts[3]
- **Providing more information may unintentionally cause** those presented with the facts to hold more tightly to their opposing beliefs[1]

1. Killikelly A. *J Microbiol Biol Educ.* 2018;19(1):19.1.31. **2.** Pluviano S et al. *PLoS One.* 2017;12(7):e0181640. **3.** Kitta A & Goldberg DS. *Crit Public Health.* 2017;27(4):506–514.

Correcting Vaccine Misinformation

Vaccine misinformation may lead to poor decision-making, with potentially serious implications[1,2]

Meta-analyses have shown that vaccine misinformation may persist and be difficult to correct[1,2]

Countering false vaccine information in ways that repeat it (eg, myths vs facts) may paradoxically amplify and perpetuate misinformation, increasing its influence[2]

Corrective strategies may have unintended opposite effects, reinforcing misconceptions and reducing intentions to vaccinate[2]

If well handled (using terms that accurately represent their intended meaning), conversation addressing patient concerns about vaccination can lead to greater understanding of the benefits and risks and the importance of vaccination. This conversation may correspond with positive influences on vaccine acceptance and coverage.[3]

1. Chan MS et al. *Psychol Sci.* 2017;28(11):1531–1546. **2.** Pluviano S et al. *PLoS One.* 2017;12(7):e0181640. **3.** Dudley MZ et al. *Vaccine* 2020;38(4):709–711.

Deliver a Strong Recommendation

The use of presumptive language has been shown to be an effective way to increase vaccination uptake[1]

Presumptive formats presuppose that parents will vaccinate

"We have some shots to do today."

VS

Participatory formats provide parents with more decision-making latitude

"Are we doing shots today?"

A strong provider recommendation is a key predictor of a patient receiving a vaccine and can significantly increase vaccination rates[2,3]

Two-thirds of patients who received a **provider recommendation** for influenza vaccine received the vaccine within 12 months; 84% of those without a recommendation remained unvaccinated[4,a]

[a]Based on a nationally representative survey of 1005 US adults ≥19 years old and older.

1. Opel DJ et al. *Pediatrics.* 2013;132(6):1037–1046. **2.** Nabet B et al. Addressing Vaccine Hesitancy to Protect Children and Communities Against Preventable Diseases. PolicyLab at Children's Hospital of Philadelphia;2017. policylab.chop.edu/sites/default/files/pdf/publications/Addressing_Vaccine_Hesitancy.pdf. Accessed August 14, 2020. **3.** CDC. Immunization Strategies for Healthcare Practices and Providers. In: Hamborsky J, Kroger A, Wolfe S, eds. *Epidemiology and Prevention of Vaccine-Preventable Diseases*. 13th ed. Washington, DC: Public Health Foundation; 2015:33–46. **4.** Nowak GJ et al. *Int J Environ Res Public Health.* 2018;15(4):711.

Suggested Flow of Vaccine Communication[1,2]

Make a strong recommendation

Patient responds in 1 of 3 ways:

Yes
No resistance

Not sure
Ambivalence

No
Resistance

Vaccinate

Use motivational interviewing

1. Explore thoughts
2. Reflect back change talk
3. Engage in collaborative (2-way) conversation
4. Support autonomy and decision-making
5. Summarize

1. Dempsey AF & O'Leary ST. *Acad Pediatr.* 2018;18(2S):S23–S27. **2.** Miller WR et al. The method of motivational interviewing. In: Miller WR, Rollnick S, eds. *Motivational Interviewing: Helping People Change*. 3rd ed. New York, NY: The Guilford Press; 2013:25–36.

Spirit and Core Skills of Motivational Interviewing

Motivational interviewing is a **guiding** style of communication, built around **3 components**[1,a]

Collaboration:
Using a comfortable, non-confrontational tone and language

Evocation:
Leading patients (or parents) to draw their own conclusions

Honoring patient's autonomy:
Supporting patients in making their own decisions

O-A-R-S
are the core communication skills for motivational interviewing[2,3]

O — **O**pen-ended questions
"What concerns do you have about vaccines?"

A — **A**ffirmations
"You have thought a lot about this."

R — Reflective listening
"I hear you saying that..."

S — **S**ummarization
"Let me summarize…"

[a]Motivational interviewing requires specialized training to be effective.

1. Rollnick S et al. Motivational interviewing principles and evidence. In: Rollnick S et al, eds. *Motivational Interviewing in Health Care: Helping Patients Change Behavior*. New York, NY: The Guilford Press. 2008;3–10. **2.** Miller WR et al. The method of motivational interviewing. In: Miller WR, Rollnick S, eds. *Motivational Interviewing: Helping People Change*. 3rd ed. New York, NY: The Guilford Press; 2013:25–36. **3.** Reno JE et al. *J Health Commun.* 2018;23(4):313–320.

Using Motivational Interviewing to Foster Change

Ambivalence

- Normal part of human nature and a step toward change[1–3]
- Has 2 incompatible sides[1–3]:
  - Reasons for change (change talk)
  - Reasons against change (sustain or non-change talk)
- Must be resolved **before** moving to change[1,2]
- Can be a form of resistance[3]
- Could develop into resistance if HCP pushes too hard before patient is ready for change[3]

MI solution: evoking (eliciting patient's own motivations for change), by strategically reflecting change talk over non-change talk[2,3]

Patient: "I think prevention is important, but I am worried about experiencing side effects."

HCP: "You're more than just a little worried about the side-effects of the vaccine, AND prevention is important to you. Tell me more about why prevention is a priority for you."

Resistance

- Reflects opposition to a treatment[3,4]
- Common cues[4]:
  - Arguing
  - Interrupting
  - Ignoring, not paying attention
  - Crossing arms
  - Being dismissive ("whatever")

MI solution: rolling with resistance and coming alongside, by reflecting on what you hear, trying to understand, and supporting autonomy[3,4]

Parent: "I think my child is too young for this vaccine. Someday, she may consider it, but not now."

HCP: "It is hard for you to believe the vaccine is right for your child when she's so young."

"I can certainly understand why you feel that way. May I share the reasoning behind vaccinating early, and then you can tell me what you think?"

HCP=health care provider; MI=motivational interviewing.

1. Miller WR et al. Conversations about change. In: Miller WR, Rollnick S, eds. *Motivational interviewing: helping people change*. 3rd ed. New York, NY: The Guilford Press; 2013:3–13. **2.** Miller WR et al. Ambivalence. Change talk and sustain talk. In: Miller WR, Rollnick S, eds. *Motivational interviewing: helping people change*. 3rd ed. New York, NY: The Guilford Press; 2013:157–166. **3.** Westra HA &Aviram A. *Psychotherapy (Chic).* 2013;50(3):273–278. **4.** Miller WR et al. Responding to sustain talk and discord. In: Miller WR, Rollnick S, eds. *Motivational interviewing: helping people change*. 3rd ed. New York, NY: The Guilford Press; 2013:196–211.

Motivational Interviewing Framework:
Use the Elicit–Provide–Elicit Script To Exchange Information[1,2]

Elicit	Provide	Elicit
Ask patients what they already know or would like to know more about	Give information in a neutral, non-judgmental way (avoid "I" and "you")	Gather understanding from the patient of the information provided
Ask them permission to offer information	Be clear, avoid jargon (eg, herd immunity[3]), and offer information in small amounts with time to reflect	Ask open questions and reflect on the patient's reactions
"What do you know about…?	**Research suggests…**	**So what do you make of that?**
What would you like to know about…?	**Studies have shown…**	**What else would you like to know?**
May I give you information on…?	**We know that…**	**What do you think is the next step for you?"**

1. Miller WR, Rollnick S. Exchanging Information. In: Miller WR, Rollnick S, eds. *Motivational Interviewing: Helping People Change*. 3rd ed. New York, NY: The Guilford Press; 2013:131–154. **2.** Reno JE et al. *J Health Commun.* 2018;23(4):313–320.

Readiness Ruler Gives an Opportunity for Evocative Questions[1]

"On a scale from 0 to 10, where 0 means 'not at all important' and 10 means 'the most important thing for me right now,' how important would you say it is for you to vaccinate your child?"

"And why are you at a __ and not 0 [or a lower number]?"

1. Miller WR, Rollnick S. Evoking the person's own motivation. In: Miller WR, Rollnick S, eds. *Motivational Interviewing: Helping People Change*. 3rd ed. New York, NY: The Guilford Press; 2013:167–182.

Summary

Vaccine confidence is an important factor for achieving and maintaining the high vaccination rates needed to sustain community-level protection against vaccine-preventable disease[1]

Vaccine hesitancy is present in all age groups[2–4] and involves many factors and challenges, such as:

- Complacency, convenience, and confidence[5]
- Access, affordability, awareness, acceptance, activation[6]

Providers and stakeholders must act to boost vaccine confidence and help reduce vaccine hesitancy, increasing vaccination rates to levels that will protect entire populations[7]

- Providers can focus on the benefits of vaccines, as well as vaccine safety and efficacy[7,8]

It is important to understand the causes of vaccine hesitancy when trying to increase vaccination uptake[9,10]

When communicating with patients and parents, it is important to be mindful of how you discuss vaccines[11]

Motivational interviewing tools may assist with conversations with vaccine hesitant patients or parents[12–14]

1. National Vaccine Advisory Committee (NVAC). *Public Health Rep*. 2015;130(6):573–595. **2.** Hill H et al. *MMWR Morb Mortal Wkly Rep.* 2018;67(40):1123–1128. **3.** Seither R et al. *MMWR Morb Mortal Wkly Rep*. 2019; 68(41):905–912. **4.** Centers for Disease Control and Prevention (CDC).). Flu Vaccination Coverage, United States, 2018–19 Influenza Season. cdc.gov/flu/fluvaxview/coverage-1819estimates.htm. Accessed August 14, 2020. **5.** Smith MJ. *Infect Dis Clin North Am*. 2015;29(4):759–769. **6.** Thomson A et al. *Vaccine.* 2016;34(8):1018–1024. **7.** Nabet B et al. Addressing Vaccine Hesitancy to Protect Children and Communities Against Preventable Diseases. PolicyLab at Children's Hospital of Philadelphia;2017. policylab.chop.edu/sites/default/files/pdf/publications/Addressing_Vaccine_Hesitancy.pdf. Accessed August 14, 2020. **8.** CDC. The Journey of Your Child's Vaccine. cdc.gov/vaccines/parents/infographics/journey-of-child-vaccine.html. Accessed August 14, 2020. **9.** Amin AB et al. *Nat Hum Behav*. 2017;1(12):873–880. **10.** Brewer NT et al. *Psychol Sci Public Interest*. 2017;18(3):149–207. **11.** Dudley MZ et al. *Vaccine* 2020;38(4):709–711. **12.** Rollnick S et al. Motivational interviewing principles and evidence. In: Rollnick S et al, eds. *Motivational Interviewing in Health Care: Helping Patients Change Behavior*. New York, NY: The Guilford Press. 2008;3–10. **13.** Edwards KM et al. *Pediatrics.* 2016;139(3):e20162146. **14.** Reno JE et al. *J Health Commun.* 2018;23(4):313–320.

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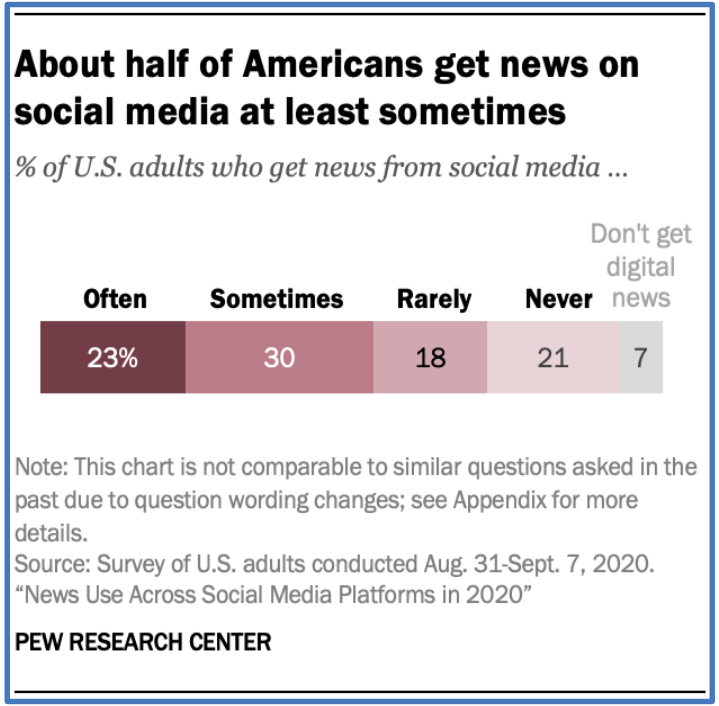
Until every cancer is cured

Messaging to the Public about Vaccines: The Evidence Base and Lessons Learned in a Pandemic

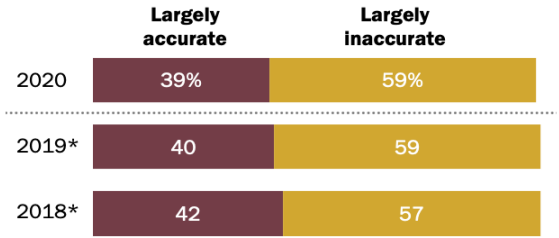
Amy Leader, DrPH, MPH
Associate Professor, Population Science, Medical Oncology
Associate Director, Community Integration, Sidney Kimmel Cancer Center
Teaching Faculty, Public Health Program, College of Population Health
Thomas Jefferson University

The COVID-19 pandemic may be the biggest news story of our lifetime



As in past years, most social media news consumers expect news there to be inaccurate

% of social media news consumers who say they expect the news they see on social media to be ...



*July 2019 and August 2018 questions were filtered on a different measurement of social media news use. See the topline for details.
Note: Respondents who did not give an answer not shown.
Source: Survey of U.S. adults conducted Aug. 31-Sept. 7, 2020.
"News Use Across Social Media Platforms in 2020"

PEW RESEARCH CENTER

OBGYN Says COVID-19 Vaccine Does Not Cause Infertility, Despite Social Media Claims

Friday, February 5th 2021, 5:08 PM EST

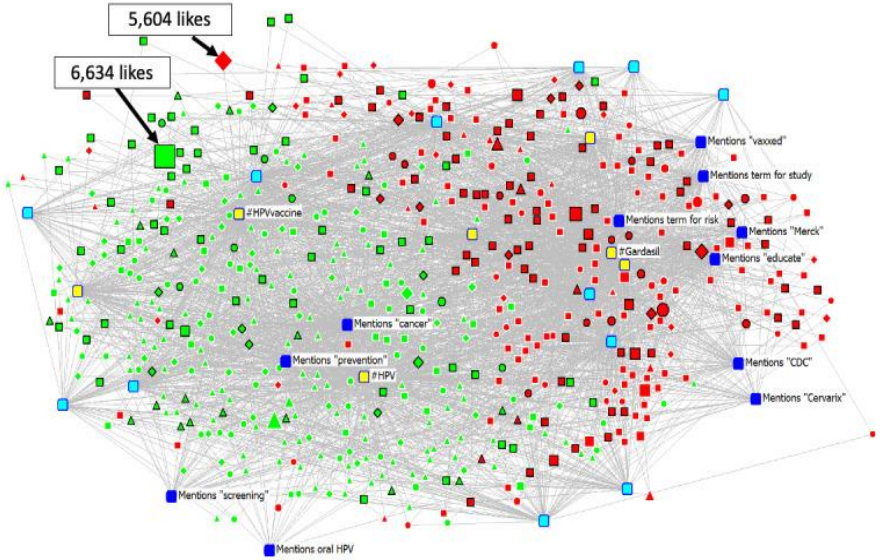
By **Lexie Cutmore**

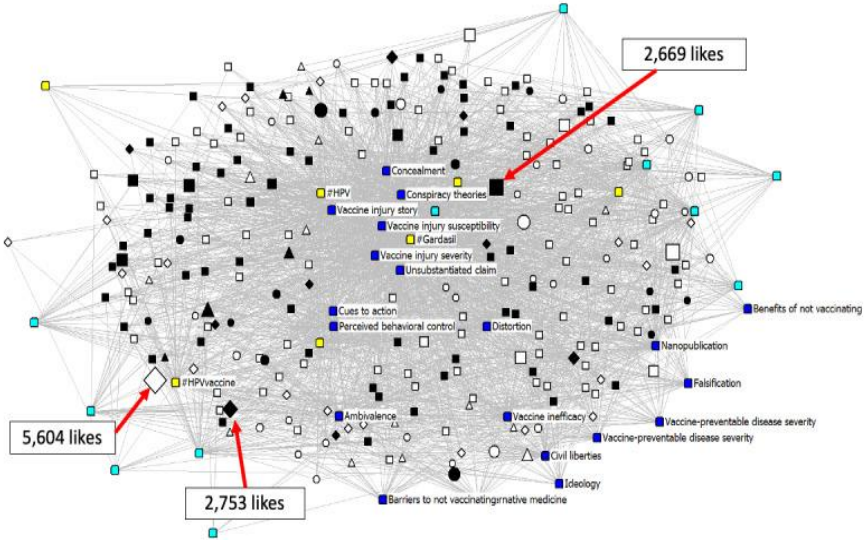
Why has the anti vaccine movement been so successful?

- They are smaller numerically, but occupy a more central position in social media networks
- They message heavily and appeal to social media users who haven't made up their mind about vaccines
- They speak through "stories" rather than data

Harnessing the power of the anti vaccine movement

- Occupying a central position in social media networks





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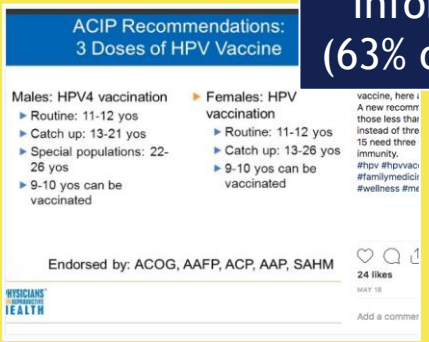
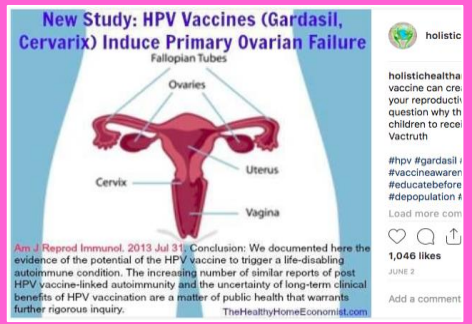
Massey PM, et al. Dimensions of Misinformation About the HPV Vaccine on Instagram: Content and Network Analysis of Social Media Characteristics. *J Med Internet Res*. 2020.

Until every cancer is cured

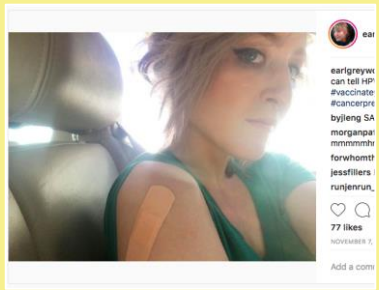
Instagram content and sentiment

Information (63% of sample)

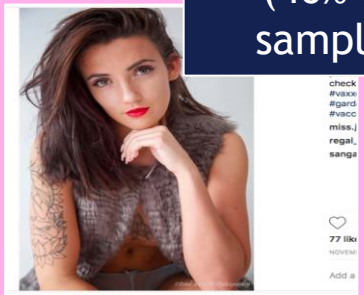




Positive (54% of sample)

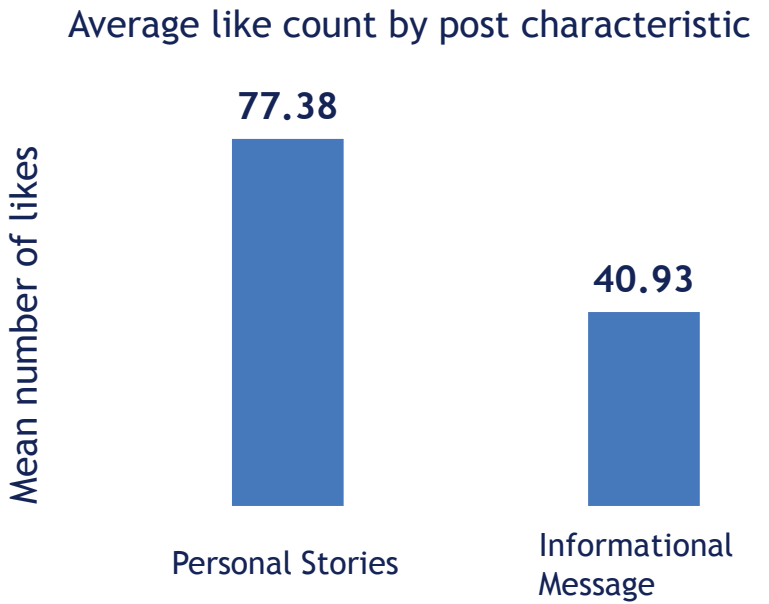


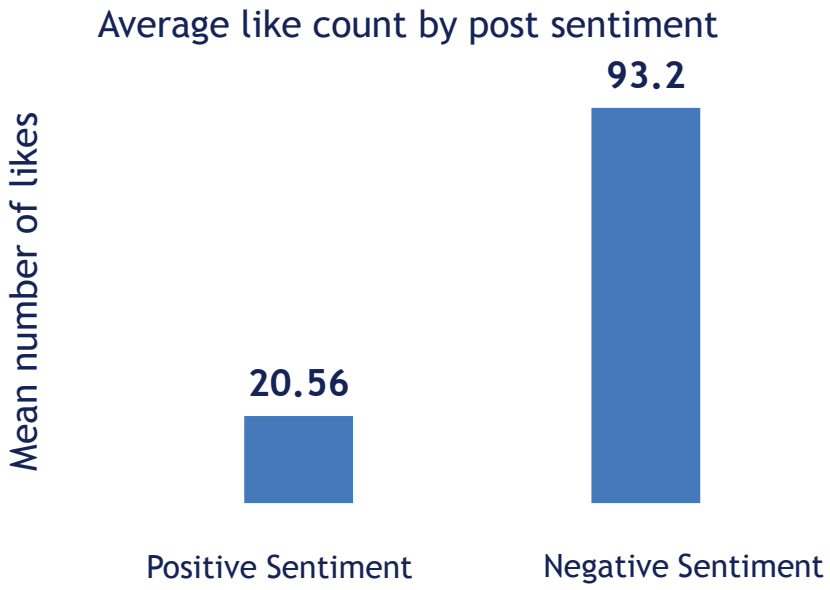
Negative (46% of sample)



Narrative/personal (37% of sample)

Do *likes* matter?





Kearney MD, et al. Characterizing HPV Vaccine Sentiments and Content on Instagram. Health Educ Behav. 2019

An opportunity for narrative engagement

- Narrative communication leverages the power of storytelling
- Narratives strengthen knowledge, promote engagement, and provide mental and behavioral models
- It does not present and defend arguments about how and why to achieve or avoid consequences related to health decisions or health care
- Rather, it amplifies feelings of empathy, transportation, and perceived similarity to strengthen the effects of narrative health messaging.
- This is in contrast to non-narrative communication that utilizes expository and didactic styles, often presenting propositions in the form of reasons and evidence supporting a claim.

HPV Roundtable Sample Tweets	Narrative-focused Sample Tweets
Parent of an 11- or 12-year-old? It's #Time2Vax! Make sure your child gets the three vaccines that protect against infections that cause whooping cough, HPV cancers and meningitis.	Meet David. He's a dad. 2 great kids – Gavin 12 and Grace 10. He does dad stuff. Helps get his kids ready for school, listens to Kidz Bop, makes pancakes on Saturdays. Next week is the yearly doctor visit. Whooping cough, meningitis, and HPV vaccines are on the to-do list.
Summer's winding down, but cancer prevention is revving up! Make sure the 11- and 12-year old youth in your life get the HPV vaccine. The HPV vaccine is given as a series of two shots and doctors recommend that girls and boys get vaccinated against HPV at age 11 or 12. The series should be completed by age 13.	At the last soccer game, while cheering Gavin from the sidelines, it hits David – wait, the HPV vaccine is for boys? What exactly does the vaccine protect against in boys? Does it protect more or hurt more? He needs to find out more. http://bit.ly/ACSParentFlyer1
Don't wait to vaccinate! Doctors say it's #Time2Vax girls and boys with the HPV vaccine at age 11 or 12. Cancer protection decreases as age at vaccination increases. http://bit.ly/ACSParentFlyer1	David is close with Andre, a fellow soccer dad. They chatted about HPV vaccine. Andre's son already got the 2 doses of HPV vaccine earlier this year. He didn't know much about it either, but after learning more he is happy his son is now protected against certain cancers. David will be sure to ask about it.
#Back2School = #Time2Vax! Ask for the HPV vaccine at your child's back-to-school doctor visit. The HPV vaccines are proven to be safe, effective, and provide lasting protection.	During his son's visit to the doctor, David felt prepared to ask questions about HPV vaccine. He learned a lot – it protects against certain cancers, needs 2 doses, & has minimal to no side effects. David felt good about this, and good about protecting his son. An easy choice!

Vaccinate with Confidence

CDC's Strategy to Reinforce Confidence in COVID-19 Vaccines

Build Trust

Objective: Share clear, complete, and accurate messages about COVID-19 vaccines and take visible actions to build trust in the vaccine, the vaccinator, and the system in coordination with federal, state, and local agencies and partners.

- ✓ Communicate transparently about the process for authorizing, approving, making recommendations for, monitoring the safety of, distributing, and administering COVID-19 vaccines, including data handling.
- ✓ Provide regular updates on benefits, safety, side effects and effectiveness; clearly communicate what is not known.
- ✓ Proactively address and mitigate the spread and harm of misinformation via social media platforms, partners, and trusted messengers.

Empower Healthcare Personnel

Objective: Promote confidence among healthcare personnel* in their decision to get vaccinated and to recommend vaccination to their patients.

- ✓ Engage national professional associations, health systems, and healthcare personnel often and early to ensure a clear understanding of the vaccine development and approval process, new vaccine technologies, and the benefits of vaccination.
- ✓ Ensure healthcare systems and medical practices are equipped to create a culture that builds confidence in COVID-19 vaccination.
- ✓ Strengthen the capacity of healthcare professionals to have empathetic vaccine conversations, address myths and common questions, provide tailored vaccine information to patients, and use motivational interviewing techniques when needed.

Engage Communities & Individuals

Objective: Engage communities in a sustainable, equitable and inclusive way—using two-way communication to listen, build trust, and increase collaboration.

- ✓ Empower vaccine recipients to share their personal stories and reasons for vaccination within their circles of influence.
- ✓ Work with health departments and national partners to engage communities around vaccine confidence and service delivery strategies, including adaptation of vaccination sites to meet community needs.
- ✓ Collaborate with trusted messengers—such as faith-based and community leaders—to tailor and share culturally relevant messages and materials with diverse communities.

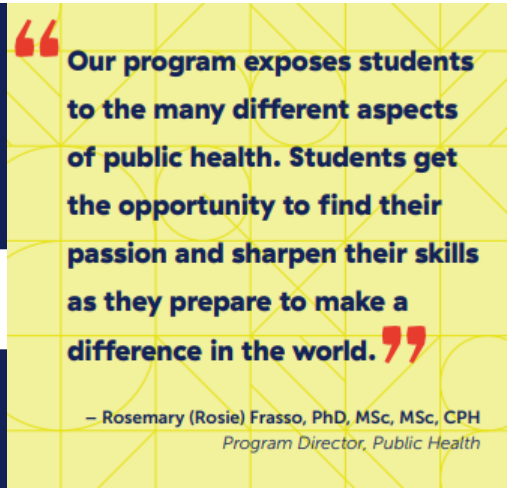
From the CDC Social Media Toolkit:

Less of these!

More of these!

Q & A

Classes Start
September, January, or April



JCPH Virtual Open House
February 10 | 5:30-7:30 pm
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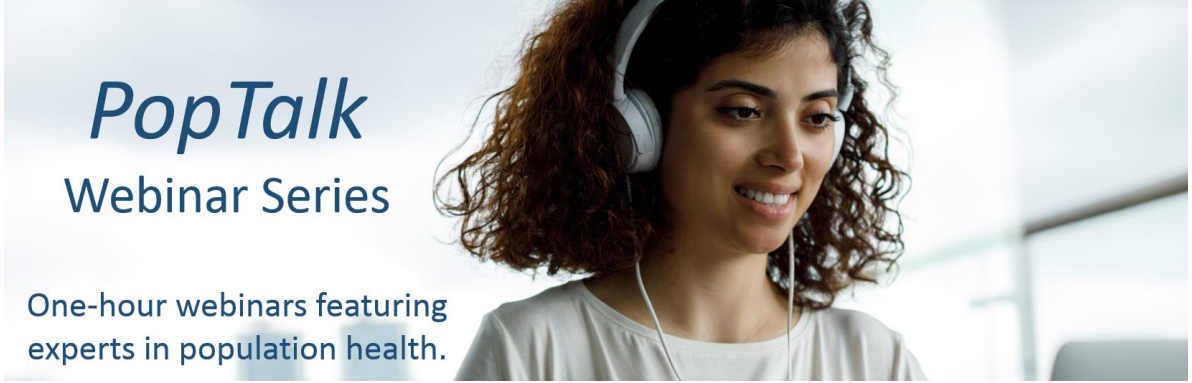
Learn more at: Jefferson.edu/MPH | **Questions:** JCPH.Admissions@jefferson.edu



Economic Evaluation of Vaccines: Challenges & Opportunities
February 17, 2021 | 12:00-1:00 pm ET
Register Now

The Five Myths About Poverty:
What you may think, and what we know…
March 3, 2021 | 12:00-1:00 pm ET
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Controlling High Blood Pressure:
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Thank You!