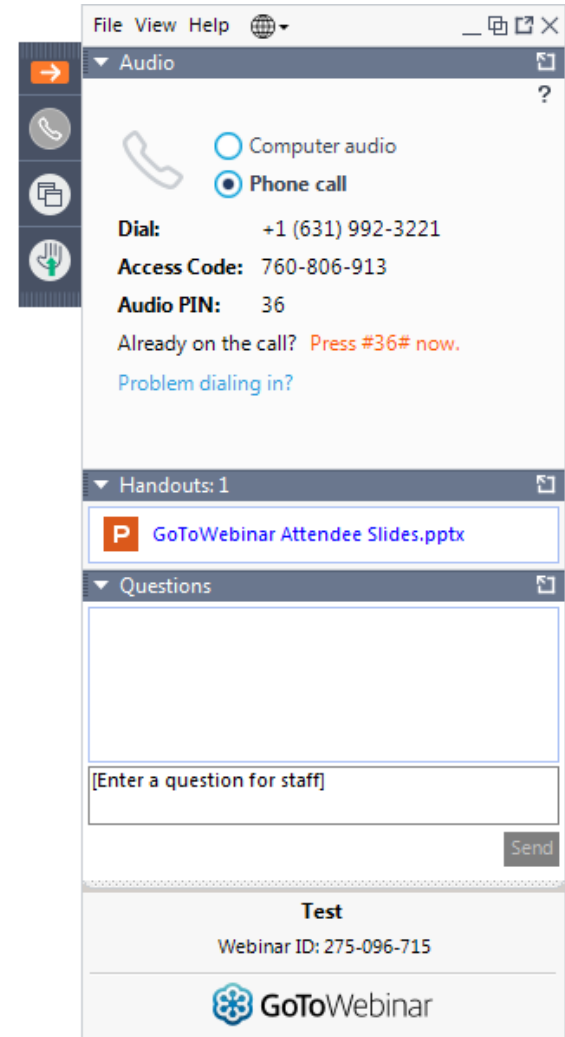


# Strategies for Addressing Vaccine Misinformation in the Practice

August 28, 2019

# Housekeeping Items

- All attendees are muted. If you are using your computer speakers, please choose the “Computer audio” option. If you are using your phone, please choose the “Phone call” option and enter your Audio PIN (found in the “Audio” panel).
- The slides are available for download in the “Handouts” section of your control panel.
- Please use the “Questions” panel to ask questions and submit comments throughout the webinar.
- This webinar is being recorded and will be archived. The archive will be made available following the webinar.



# Today's Presenters



Dr. Nancy Messonnier  
Director, National Center for Immunization and Respiratory Diseases  
Centers for Disease Control and Prevention



Chanie Sternberg  
President & CEO  
RefuahHealth



Dr. Corinna Manini  
Chief Medical Officer  
RefuahHealth



Dr. Todd Wolynn  
CEO  
Kids Plus Pediatrics

# Poll: Tell us a little about yourself!



# Dr. Nancy Messonnier



Director, National Center for Immunization and Respiratory Diseases  
Centers for Disease Control and Prevention  
Twitter: [@DrNancyM\\_CDC](https://twitter.com/DrNancyM_CDC)

# VACCINE HESITANCY BEFORE, DURING AND FOLLOWING AN OUTBREAK

Chanie Sternberg  
President/CEO, RefuahHealth

Corinna Manini, MD  
Chief Medical Officer, RefuahHealth

RefuahHealth 

# Disclosures

No conflicts of interest to declare

RefuahHealth 

# At the Epicenter of the Measles Outbreak

Index “Case 0”  
Rockland County, NY  
October 1, 2018

1. Immediate demand for community and staff education
2. Urgent infection control processes
3. Administered 3,000 MMRs in first 6 weeks of the outbreak under new guidelines and increased demand



RefuahHealth 



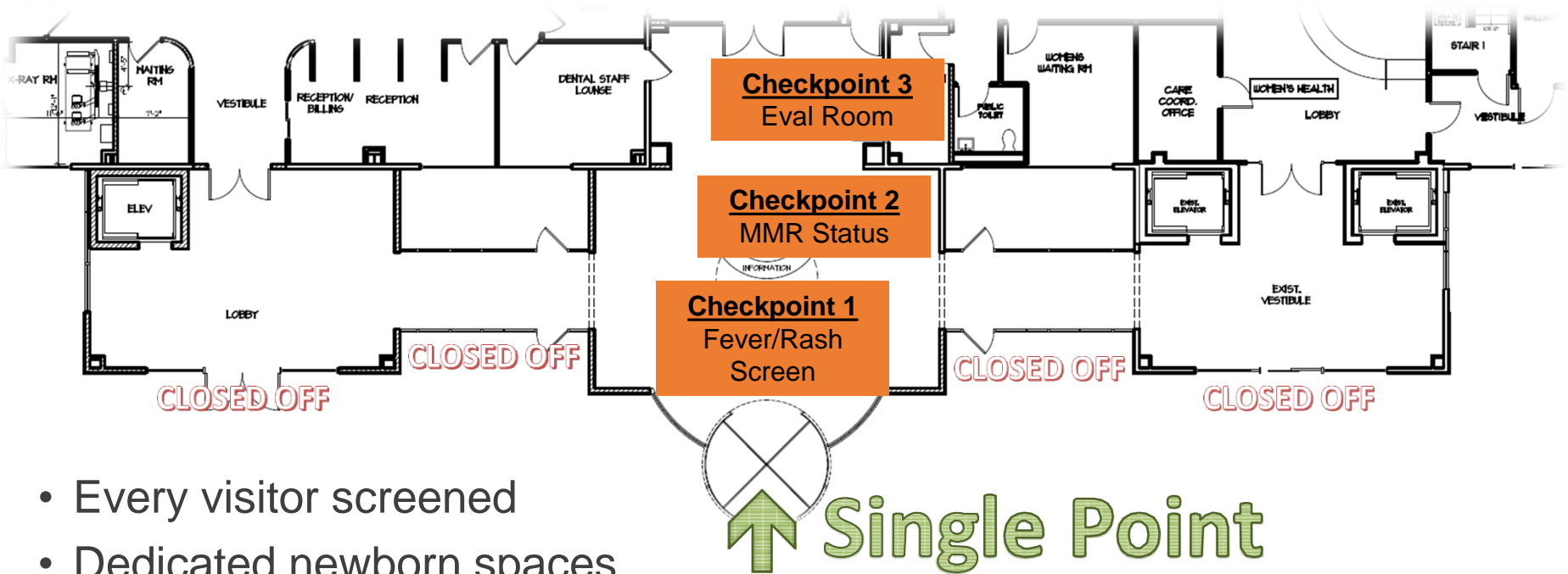
# Removing Barriers to Vaccination

- Automated phone system to verify MMR vaccine status available 24H a day
- Outreach robocalls to inform undervaccinated patients
- Mobile units deployed into the community



RefuahHealth 

# Great Efforts to Minimize Exposures



- Every visitor screened
- Dedicated newborn spaces
- Home visits extended to suspect cases

↑ Single Point  
of Entry

RefuahHealth 

# And After A Year of Measles...

- Nearly 300 cases
- Significant Morbidity
- School exclusion
- PICU and ICU stays
- Preterm labor



RefuahHealth 

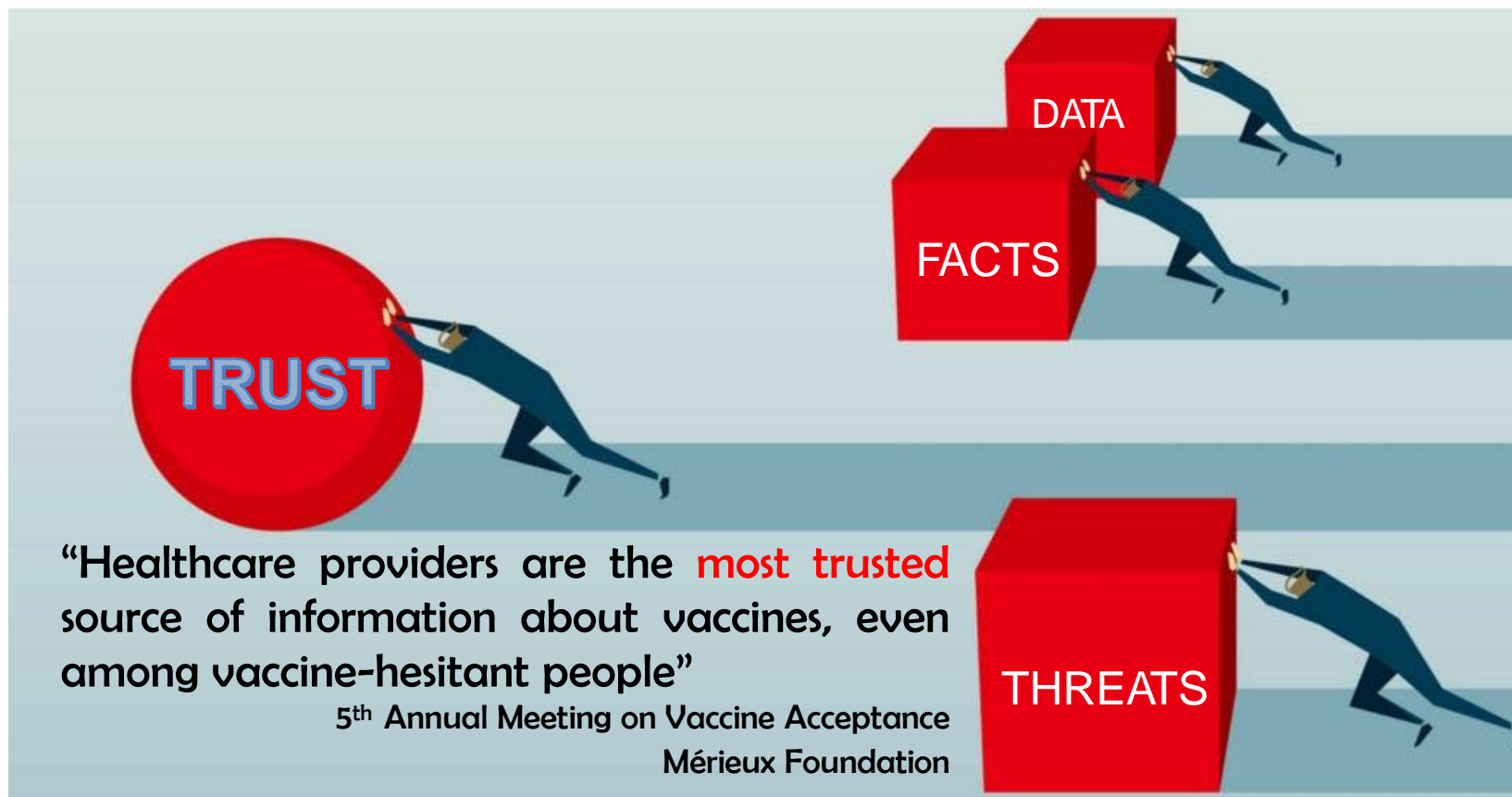
# ...Vaccine Resistance is Louder than Ever



Rally at New York State Capitol May 14, 2019

RefuahHealth 

# Fight Fear With Trust, Not With Facts or Menace



# Changing Course for the Future

“Every system is perfectly designed to get the results it gets”

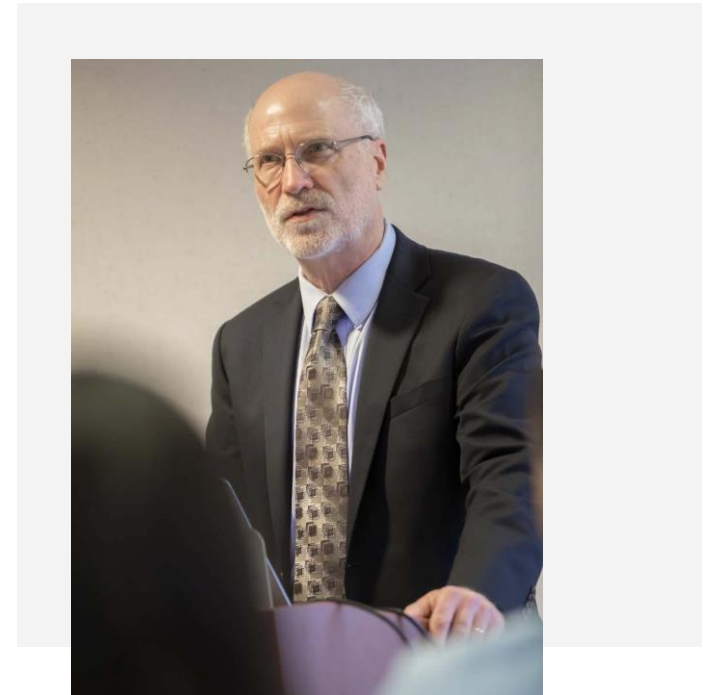
-Don Berwick, MD and/or W. Edwards Deming

- How should we change what we currently do?
- How quickly can we do it?

RefuahHealth 

# What does the evidence show?

- National expert on vaccine hesitancy, Mayo Clinic's Dr. Robert Jacobson, brought in to train staff and inform strategy



RefuahHealth 

# 1. Education Alone Doesn't Work

## PEDIATRICS®

OFFICIAL JOURNAL OF THE AMERICAN ACADEMY OF PEDIATRICS

### Effective Messages in Vaccine Promotion: A Randomized Trial

Brendan Nyhan, Jason Reifler, Sean Richey and Gary L. Freed

*Pediatrics* 2014;133:e835

DOI: 10.1542/peds.2013-2365 originally published online March 3, 2014;

Nyhan surveyed 1760 patients on their vaccine attitudes and practices before and after they were randomized to one of 4 interventions or control

1. Scientific evidence

2. Adverse events of diseases

3. Graphic Images

4. Dramatic narrative

5. Control

Conclusions:

**1. NO intervention increased intent to vaccinate**


2. Among parents with the least favorable attitudes toward vaccines, corrective information *decreased* intent to vaccinate



## 2. Clinician's Recommendations Matter


Vaccine 29 (2011) 890–895

Contents lists available at ScienceDirect

 **ELSEVIER**

**Vaccine**

journal homepage: [www.elsevier.com/locate/vaccine](http://www.elsevier.com/locate/vaccine)



Predictors of HPV vaccine uptake among women aged 19–26: Importance of a physician's recommendation

S.L. Rosenthal<sup>a,\*</sup>, T.W. Weiss<sup>b</sup>, G.D. Zimet<sup>c</sup>, L. Ma<sup>b</sup>, M.B. Good<sup>d</sup>, M.D. Vichnin<sup>b</sup>

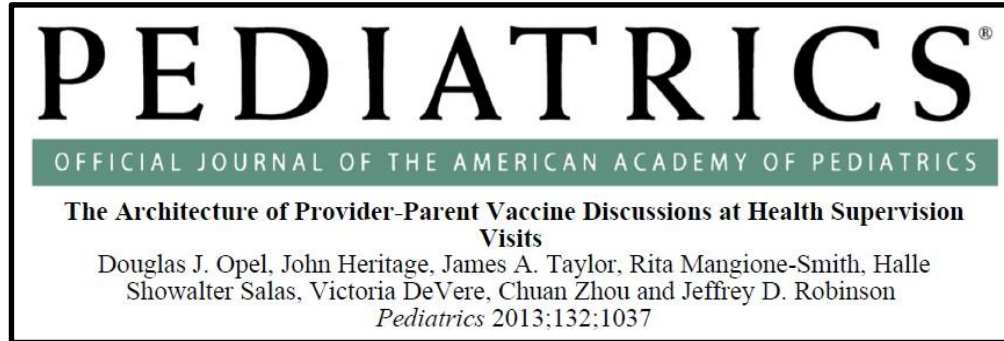
<sup>a</sup> Department of Pediatrics, Columbia University Medical Center, Morgan Stanley Children's Hospital, 3959 Broadway, CHC Central/South 1124, New York, NY 10032, United States

Rosenthal surveyed 2750 young women on whether their physician recommended the HPV vaccine and, if yes, “how strongly”

Conclusions:

1. **Those who received a recommendation were overwhelmingly more likely to be vaccinated**
2. A strong recommendation led to a 4-fold greater likelihood of vaccination than a weak one

# 3. Presumptive Language is Key



Opel recorded 110 infant well visits and coded language used by provider when initiating vaccine discussion into 2 categories:

**Presumptive**  
presupposes parent would vaccinate

- “Well, we have to give some shots.”
- “So, we’ll do 3 shots and the test. Is this ok?”

**Participatory**  
parent presented with a decision to make

- “What do you want to do about shots?”
- “Are we going to do shots today?”

Conclusions:

1. **Odds of vaccination were 17.5 fold higher with presumptive language**
2. Nearly half of initially resistant parents accepted original vaccine recommendation when provider persisted

# Takeaways From the Literature

1. Education and scare tactics alone don't work; they can even backfire.
2. Clinicians' recommendations matter. A stronger recommendation has a greater impact.
3. Presumptive language is much more effective than participatory language. Persistence pays off.

RefuahHealth 

# From Theory to Action

1. Set a goal to measurably increase childhood vaccination rates within 6 months
2. Utilized a formal “Rapid Cycle Improvement” (RCI) structure
3. Identified key drivers of low vaccine rates in our system
4. Implemented 9 high impact action plans each with their own 30-60 day PDSA (Plan-Do-Study-Act) quality improvement cycle



RefuahHealth 

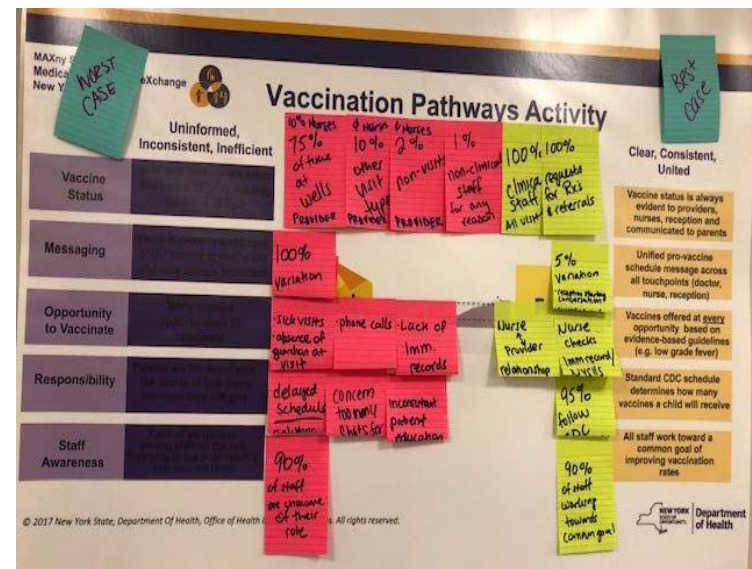
# Rapid Cycle Improvement (RCI)

“Rapid-cycle improvement is a quality improvement (QI) method that identifies, implements, and measures changes...over periods of 3 months or less”

-HealthIT.gov

## Key elements\*:

- Team includes frontline to executive
- Uses change management techniques
  - Clear goal
  - Sense of urgency
  - Start with quick win
- Leverages multiple QI tools
  - Flow chart
  - Driver diagram
  - Process map
- Continuous measurement

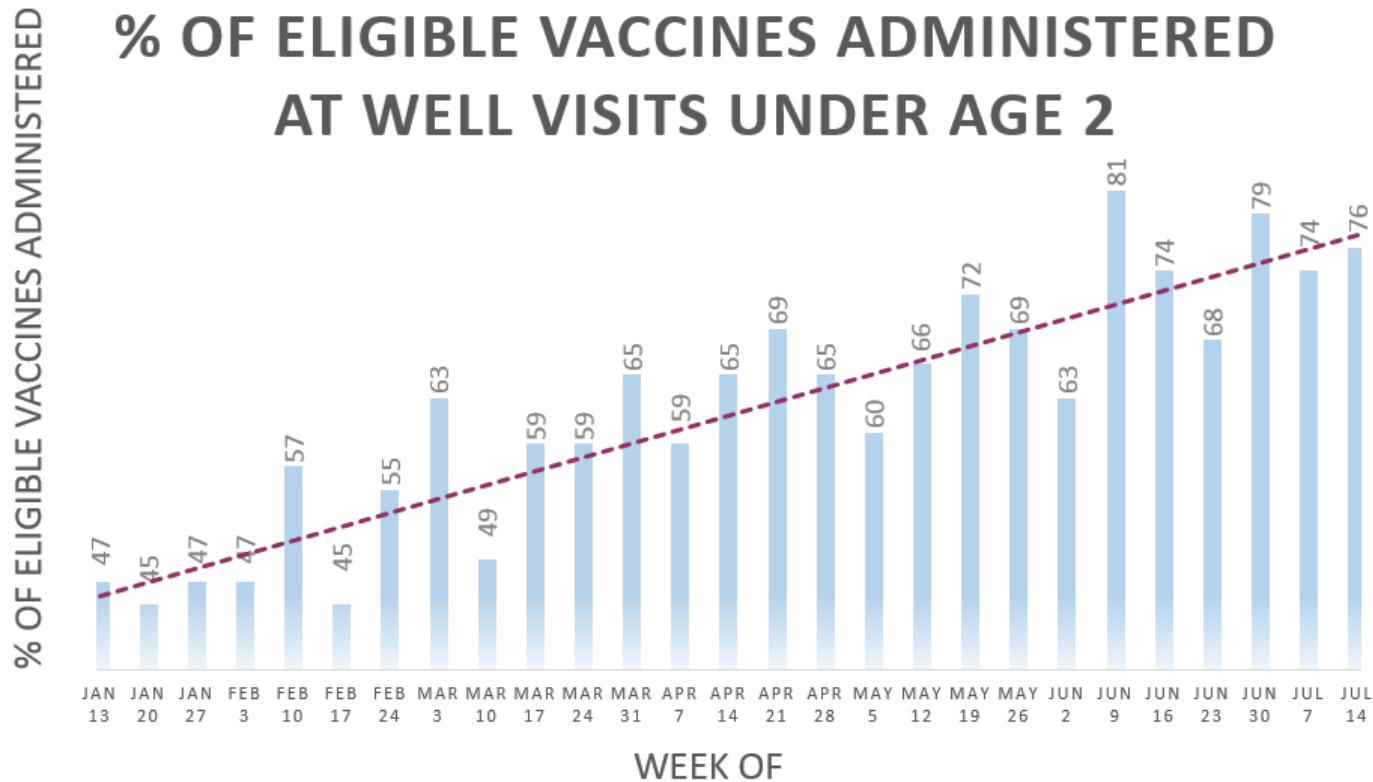


\*Adapted from the NYS DOH “MAX” program

[https://www.health.ny.gov/health\\_care/medicaid/redesign/dsrip/pps\\_workshops/max.htm](https://www.health.ny.gov/health_care/medicaid/redesign/dsrip/pps_workshops/max.htm)

RefuahHealth

# Initial Results: Well Visit Vaccination Rates



RefuahHealth 

# Action Plans: Provider Skills and Support

1. Train providers in the most effective evidence-based vaccination strategies e.g. presumptive language
2. Share provider vaccination rates; Support those struggling
3. Establish one clear, consistent vaccine schedule; No more splitting/delay
4. Implement ancillary processes to reduce loss to follow up

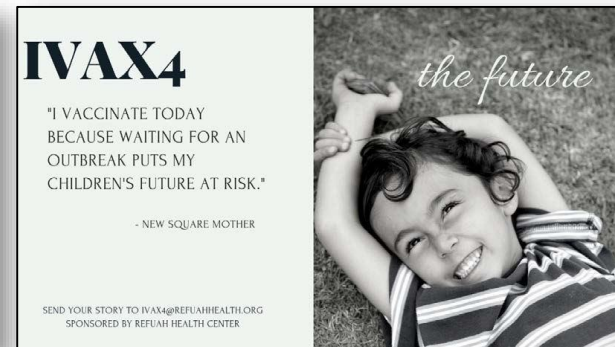
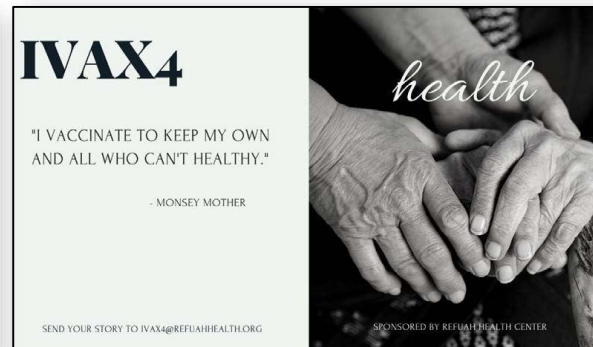
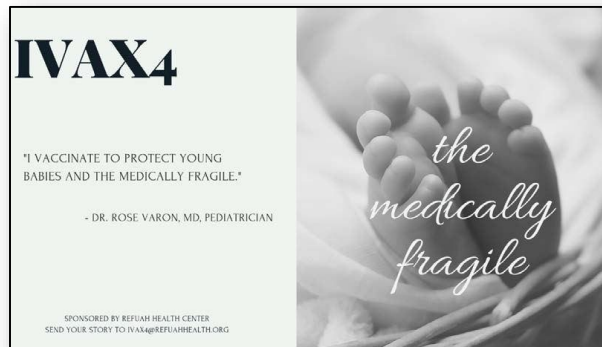


RefuahHealth 

# Action Plans: Engaging Every Touchpoint

5. Make organization's mission to vaccinate clear
6. Use EMR vaccine alert at every opportunity
7. Involve front line staff
8. Adjust vaccine delivery workflows to empower nurses
9. Engage specialty providers

**“YOU TRUST ME WITH  
YOUR CHILD’S HEART ...  
TRUST MY ADVICE TO  
VACCINATE FULLY AND  
ON TIME”**





# Final Takeaways

1. Vaccine hesitancy is rooted in fear. Fight it with trust.
2. Healthcare providers hold the power to combat vaccine hesitancy through strong, consistent vaccine recommendations.
3. Every touchpoint is an opportunity to challenge vaccine hesitancy and disseminate a clear pro-vaccine message.

RefuahHealth 

Thank You

RefuahHealth 



Centers for Disease  
Control and Prevention  
National Center for Immunization  
and Respiratory Diseases

# Strategies for Addressing Vaccine Misinformation in the Practice



Todd Wolynn MD, MMM, IBCLC



@DrToddWo



Dr. Todd Wolynn

Breastfeeding

Center of Pittsburgh

# Rapidly Independent Entrepreneurial & Innovative Community Engaged

## Locations/Staff

3 Offices in:  
Pittsburgh, PA  
~20 Providers  
~100 Employees

Measured/Tiered  
Highest Quality  
Lowest Cost

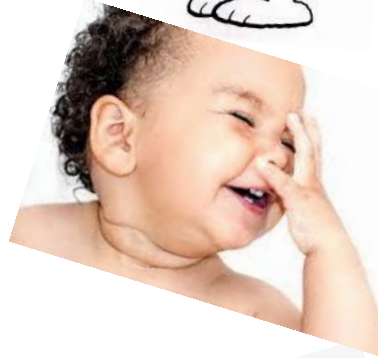
k i d s +  
pediatrics

Evidence-based  
'Best Practices'

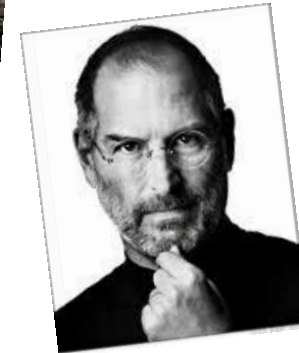
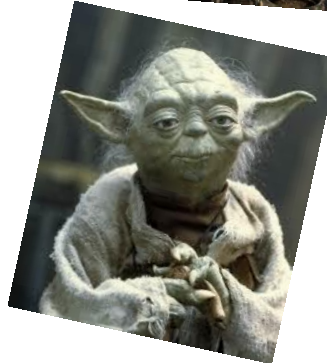


Centers for Disease  
Control and Prevention  
National Center for Immunization  
and Respiratory Diseases

# How people view Pediatrics

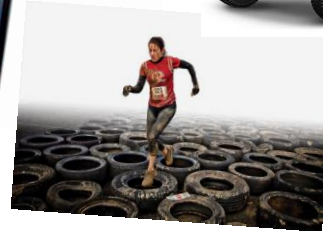


# How we do (Kids Plus) Pediatrics



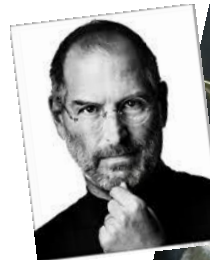
**Built**

Independent & Tenacious  
Adaptable  
**Connecting & Impactful**



**Think**

Medicine & Business Focused  
Patient-Family-Community  
**Innovative & Collaborative**

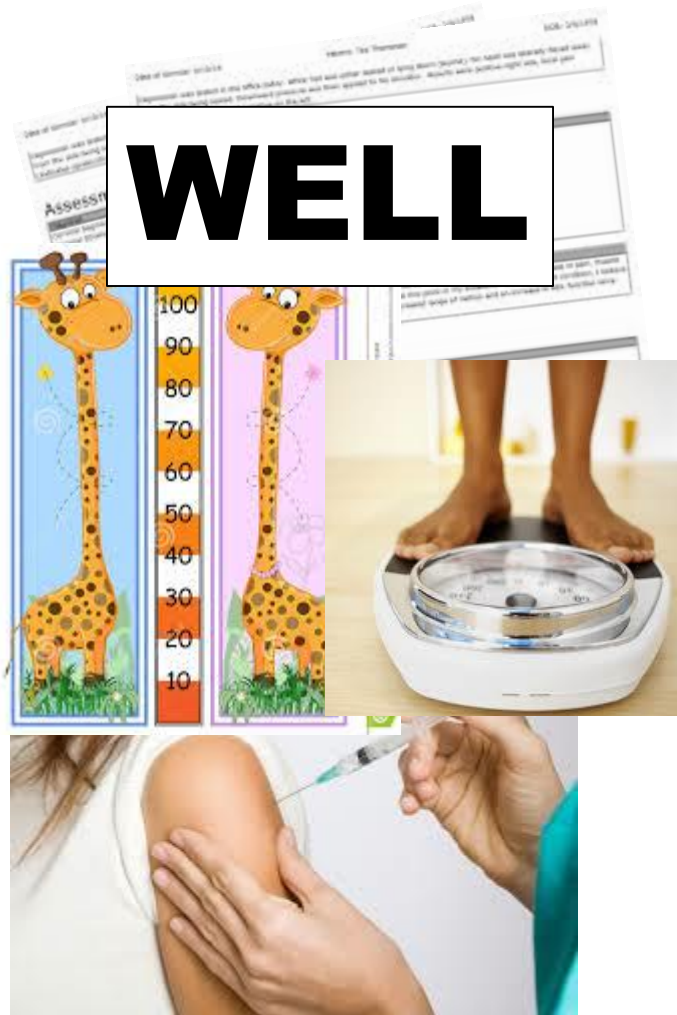


**Perform**

Nimble yet Powerful  
“Living Lab”  
**Successful**



**WELL**

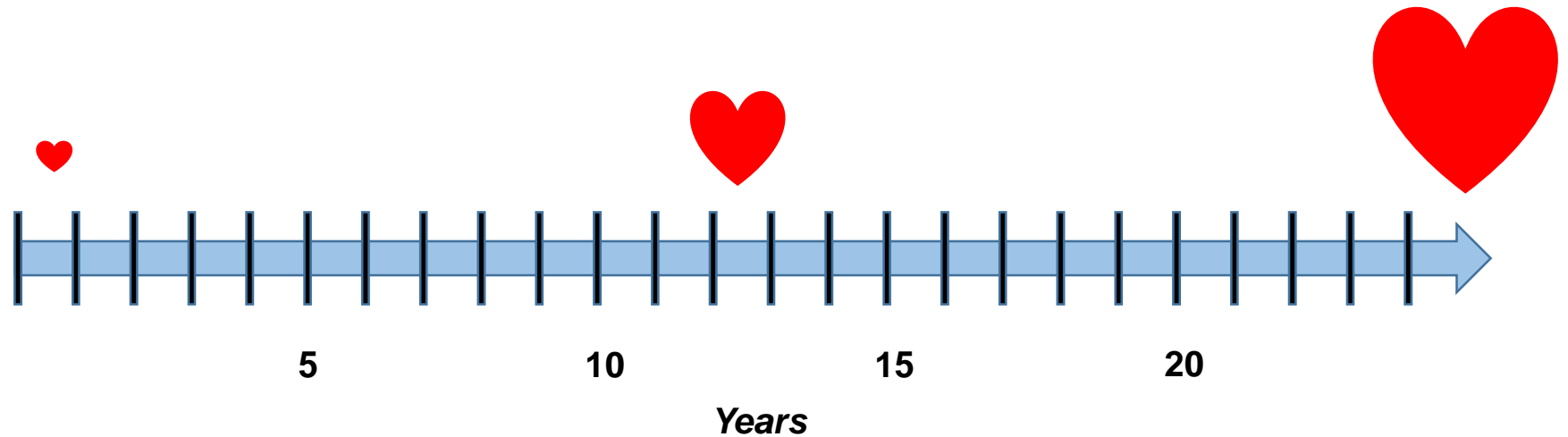


**SICK**



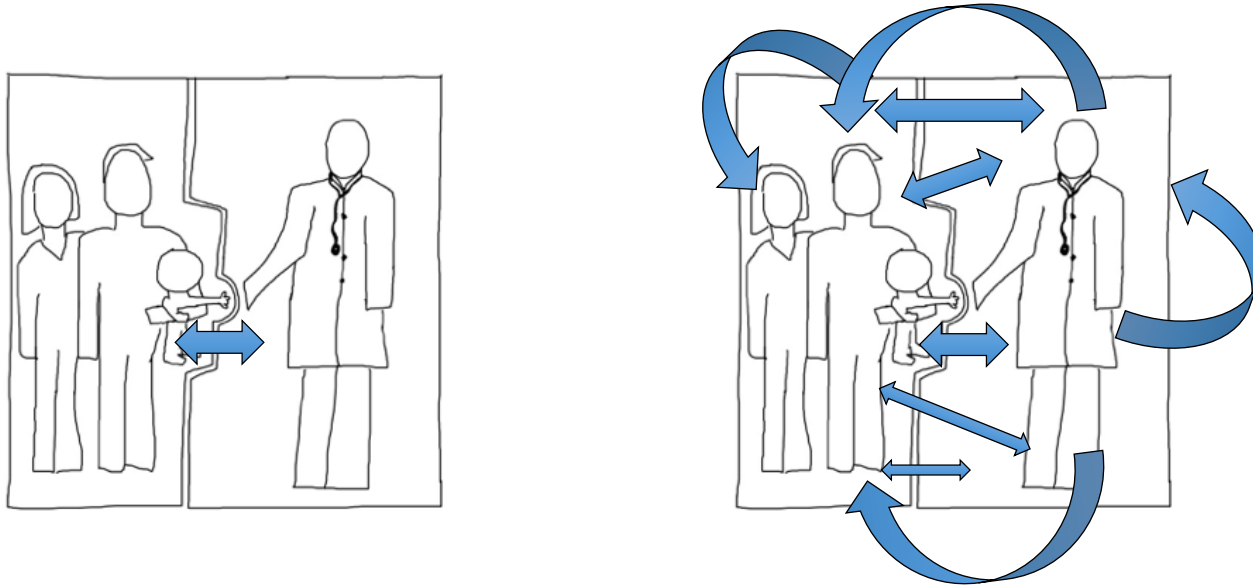


# Longitudinal Relationship



## Trust

# *Multimodal*



# *Communication*

# ***We Know Our Audience***



***and How to Reach Them***



Social Media



Instagram

>100,000

# Kids Plus Pediatrics PRODUCTIONS



# Wednesday, August 23rd, 2017

8:45am



“At Kids Plus, we’re thrilled to provide the HPV vaccine.  
In this video, our providers tell you why.”

# Friday, September 15th, 2017

1:15pm



“Is this some kind of joke? This vaccine kills people.”

# Sunday, September 23rd, 2017

11:00pm

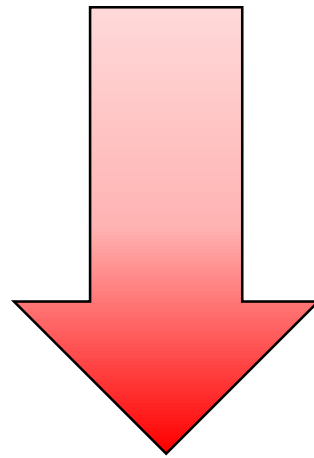


**Banned:** 808 attackers

**Deleted:** > 10,000 comments



# Harassment, Bullying and Threats



Reputation Smear and Harm



# Eight 16-Hour Days

**344**  
**DAYS**  
**LATER**

# Advocacy Goals 2018-19

1. Peer-Reviewed Research  
w the University of Pittsburgh, School of Public Health
2. Social Media Toolkit  
prepare, defend and clean-up after an attack
3. Shots Heard Round the World  
a rapid-response social media cavalry
4. Social Media Platform Awareness/Responsibility  
Strategies and responses for untrue (medical) news





Contents lists available at ScienceDirect

## Vaccine

journal homepage: [www.elsevier.com/locate/vaccine](http://www.elsevier.com/locate/vaccine)

## It's not all about autism: The emerging landscape of anti-vaccination sentiment on Facebook

Beth L. Hoffman<sup>a,b,c</sup>, Elizabeth M. Felter<sup>c</sup>, Kar-Hai Chu<sup>a,b,d</sup>, Ariel Shensa<sup>a,b</sup>, Chad Hermann<sup>d</sup>, Todd Wolynn<sup>d</sup>, Daria Williams<sup>b</sup>, Brian A. Primack<sup>a,b,e,f,g</sup><sup>a</sup> Division of General Internal Medicine, Department of Medicine, University of Pittsburgh School of Medicine, 1218 Scaife Hall, 35505 Terrace Street, Pittsburgh, PA 15261, United States<sup>b</sup> Center for Research on Media, Technology, and Health, University of Pittsburgh School of Medicine, 230 McKee Place, Suite 600, Pittsburgh, PA 15213, United States<sup>c</sup> Department of Behavioral and Community Health Sciences, Graduate School of Public Health, University of Pittsburgh, 130 De Soto Street, Pittsburgh, PA 15261, United States<sup>d</sup> Kids Plus Pediatrics, 4070 Beechwood Blvd., Pittsburgh, PA 15217, United States<sup>e</sup> Health Policy Institute, University of Pittsburgh, 311 Scaife Hall, 3550 Terrace Street, Pittsburgh, PA 15261, United States<sup>f</sup> Division of Adolescent Medicine, Department of Pediatrics, University of Pittsburgh School of Medicine, 1218 Scaife Hall, 35505 Terrace Street, Pittsburgh, PA 15261, United States

## ARTICLE INFO

## Article history:

Received 20 December 2018

Received in revised form 5 March 2019

Accepted 6 March 2019

Available online 21 March 2019

## Keywords:

Facebook

Social media

Anti-vaccination

Health communication

## ABSTRACT

**Background:** Due in part to declining vaccination rates, in 2018 over 20 states reported at least one case of measles, and over 40,000 cases were confirmed in Europe. Anti-vaccine posts on social media may be facilitating anti-vaccination behaviour. This study aimed to systematically characterize (1) individuals known to publicly post anti-vaccination content on Facebook, (2) the information they convey, and (3) the spread of this content.**Methods:** Our data set consisted of 197 individuals who posted anti-vaccination comments in response to a message promoting vaccination. We systematically analysed publicly-available content using quantitative coding, descriptive analysis, social network analysis, and an in-depth qualitative assessment. The final codebook consisted of 26 codes; Cohen's  $\kappa$  ranged 0.71–1.0 after double-coding.**Results:** The majority (89%) of individuals identified as female. Among 136 individuals who divulged their location, 36 states and 8 other countries were represented. In a 2-mode network of individuals and topics, modularity analysis revealed 4 distinct sub-groups labelled as “trust,” “alternatives,” “safety,” and “conspiracy.” For example, a comment representative of “conspiracy” is that poliovirus does not exist and that pesticides caused clinical symptoms of polio. An example from the “alternatives” sub-group is that eating yogurt cures human papillomavirus. Deeper qualitative analysis of all 197 individuals' profiles found that these individuals also tended to post material against other health-related practices such as water fluoridation and circumcision.**Conclusions:** Social media outlets may facilitate anti-vaccination connections and organization by facilitating the diffusion of centuries old arguments and techniques. Arguments against vaccination are diverse but remain consistent within sub-groups of individuals. It would be valuable for health professionals to leverage social networks to deliver more effective, targeted messages to different constituencies.

© 2019 Elsevier Ltd. All rights reserved.

**Abbreviations:** AIDS, Acquired immunodeficiency syndrome; CDC, Centers for Disease Control and Prevention; DAV, distinctly anti-vaccination; DDT, Dichlorodiphenyltrichloroethane; FDA, Food and Drug Administration; GMO, Genetically modified organism; HPV, human papillomavirus; MMR, measles, mumps, rubella; NASA, National Aeronautics and Space Administration; VAERS, Vaccine Adverse Event Reporting System; WHO, World Health Organization.<sup>\*</sup> Corresponding author at: Center for Research on Media, Technology, and Health, University of Pittsburgh School of Medicine, 230 McKee Place, Suite 600, Pittsburgh, PA 15213, United States.E-mail addresses: [bhl72@pitt.edu](mailto:bhl72@pitt.edu) (B.L. Hoffman), [emfelte@pitt.edu](mailto:emfelte@pitt.edu) (E.M. Felter), [chuks@pitt.edu](mailto:chuks@pitt.edu) (K.-H. Chu), [ariel.shensa@pitt.edu](mailto:ariel.shensa@pitt.edu) (A. Shensa), [chad@kidspluspgh.com](mailto:chad@kidspluspgh.com) (C. Hermann), [todd@kidspluspgh.com](mailto:todd@kidspluspgh.com) (T. Wolynn), [dew36@pitt.edu](mailto:dew36@pitt.edu) (D. Williams), [bprimack@pitt.edu](mailto:bprimack@pitt.edu) (B.A. Primack).<https://doi.org/10.1016/j.vaccine.2019.03.003>  
0264-410X/© 2019 Elsevier Ltd. All rights reserved.

## 1. Introduction

Vaccines are often hailed as one of the greatest public health achievements of modern medicine, and high levels of vaccination have substantially curbed the rate of vaccine-preventable diseases and early deaths [1,2]. Community protection refers to the concept that if a sufficiently high number of individuals in the population are vaccinated, even those who cannot be vaccinated due to age or existing medical conditions will be protected [3]. However, in the United States (U.S.) only 70% of children 19–35 months receive all recommended immunizations, and over the past decade there

# Advocacy Goals 2018-19

- + Peer-Reviewed Research  
w the University of Pittsburgh, School of Public Health





k i d s +

Social Media Strategy Guide  
&  
Anti-Vaccine Combat Toolkit

*How to Prepare For, Defend Against, and  
Clean Up After a Facebook Anti-Vax Attack*



# Advocacy Goals 2018-19

## + Peer-Reviewed Research

w the University of Pittsburgh, School of Public Health

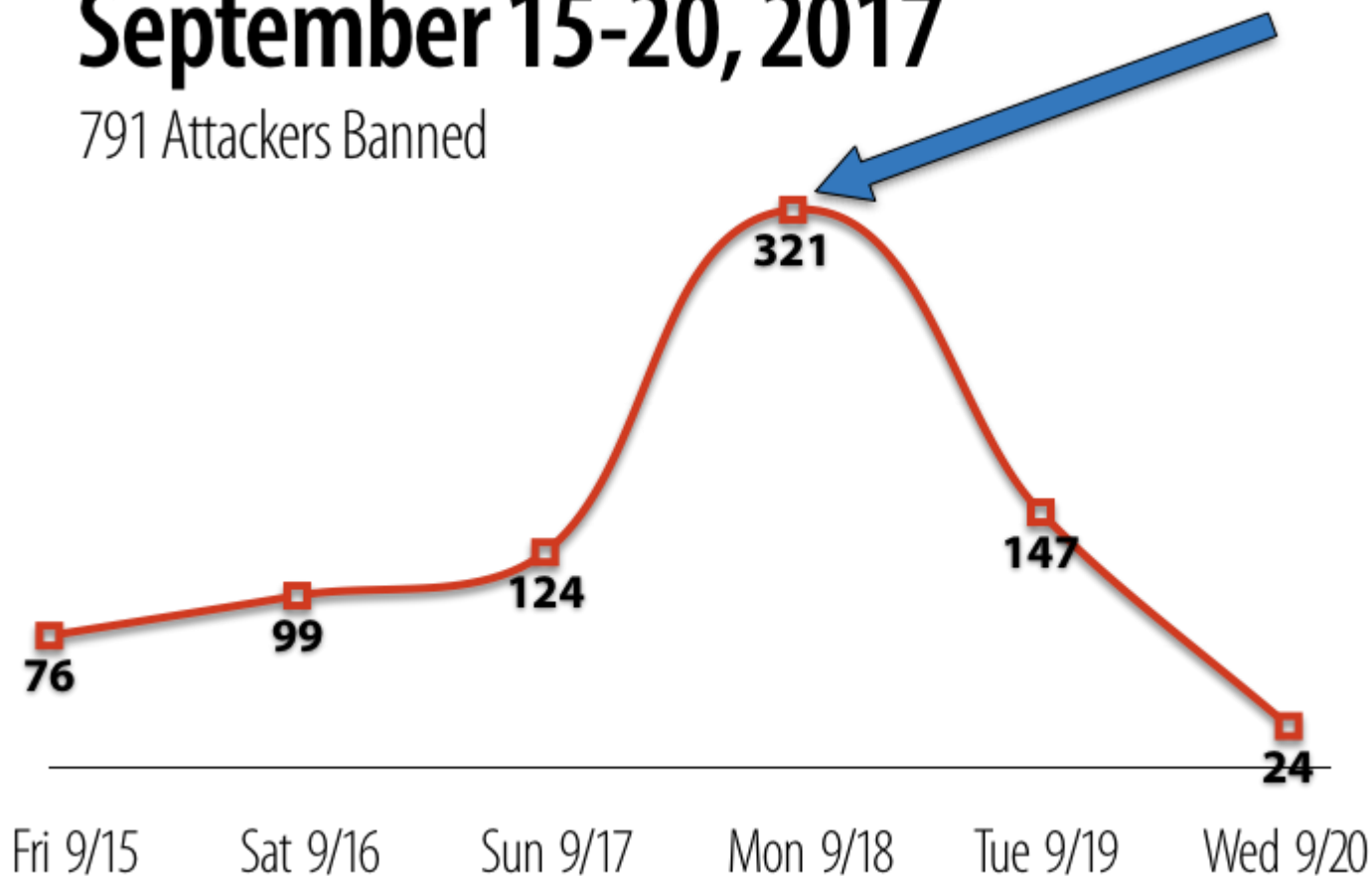
## + Social Media Toolkit

prepare, defend and clean-up after an attack



# September 15-20, 2017

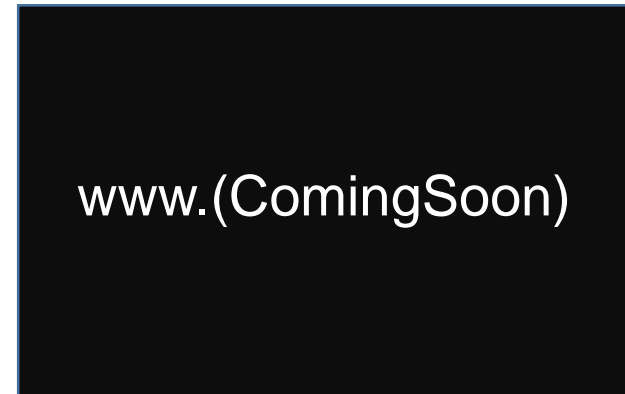
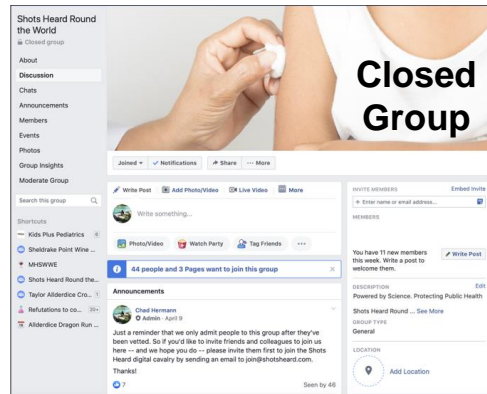
791 Attackers Banned



Join@ShotsHeard.com



Alert@ShotsHeard.com



@ShotsHeard

Shots Heard  
Round the World

ShotsHeard.com

# Advocacy Goals 2018-19

## + Peer-Reviewed Research

w the University of Pittsburgh, School of Public Health

## + Social Media Toolkit

prepare, defend and clean-up after an attack

## + Shots Heard Round the World

a rapid-response social media cavalry



# Presented: on Anti-Vaccine Disinformation Campaigns and Improving Vaccine Communication

>2500 Attendees  
in 18 months



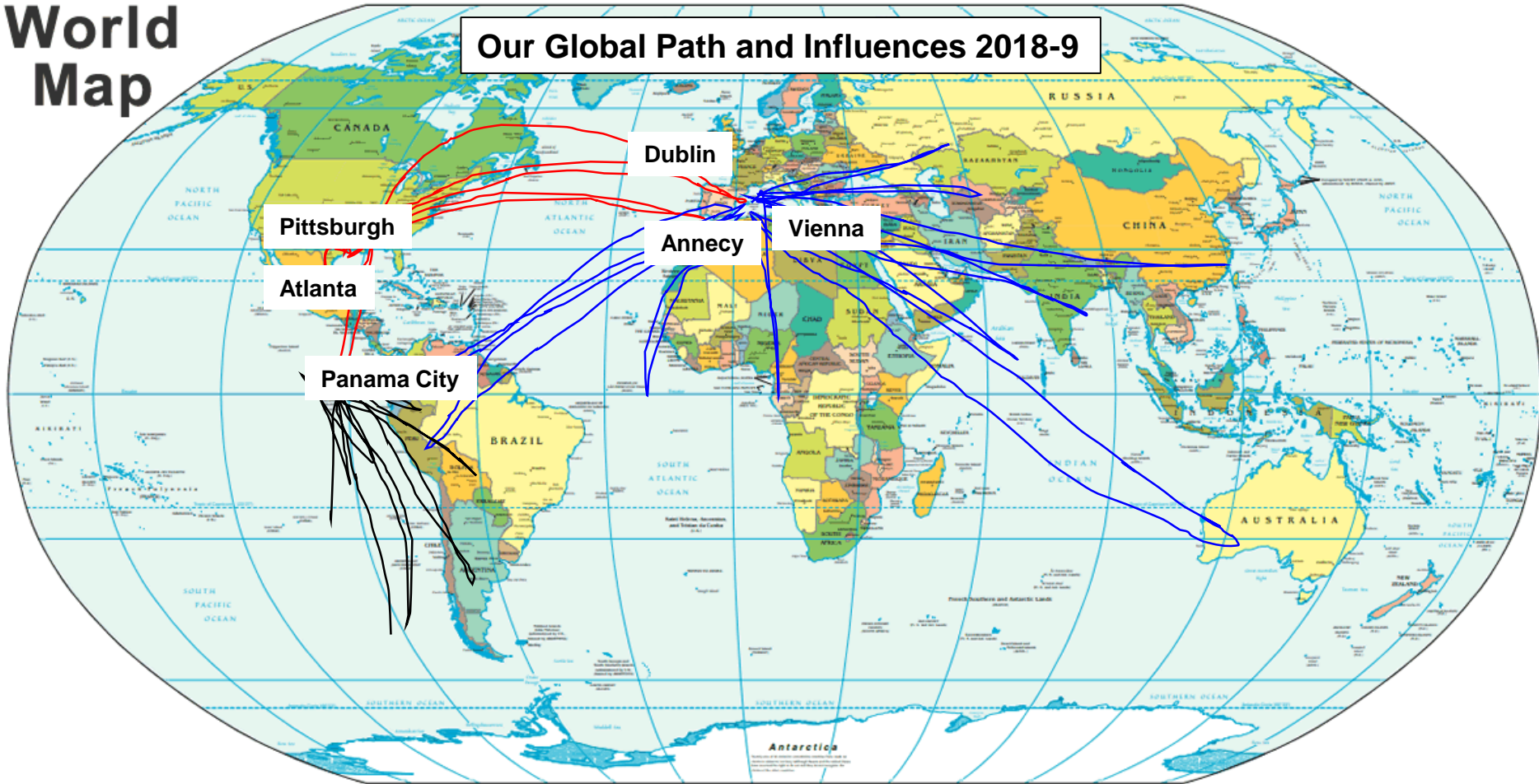
PEDIATRIC  
MANAGEMENT  
INSTITUTE  
HELPING PEDIATRICIANS SUCCEED



Centers for Disease  
Control and Prevention  
National Center for Immunization  
and Respiratory Diseases

# World Map

## Our Global Path and Influences 2018-9



**Los Angeles Times**

## Anti-vaccine activists have doctors 'terrorized into silence' with online harassment

By SOUMYA KARLAMANGLA | MAR 18, 2019 | 5:00 AM



Dr. Todd Wolynn, left, and Chad Hermann, the communications director for Wolynn's pediatrics practice in Pittsburgh, have been speaking at conferences trying to encourage doctors to fight back on the subject of immunizations. (Jeff Swensen / For The Times)

**Mashable**

## Why anti-vaxxer mobs go after pro-vaccine doctors online — and what to do about it

**The Washington Post**  
*Democracy Dies in Darkness*

## Anti-vaxxers trolled a doctor's office. Here's what scientists learned from the attack.



A Pittsburgh pediatric practice posted this promotional video on social media in August 2017 about importance of getting HPV vaccine. (The Washington Post)

By Lena H. Sun  
March 21

**CNN** Health • Anti-vaxers and Facebook: The four subgroups that fuel online attacks.

### Decoding anti-vax content on Facebook

The study was inspired by Kids Plus Pediatrics, an independent pediatric care in Pittsburgh, which posted a video on Facebook in August 2017 about how it of papillomavirus vaccine. About a month after the video was posted, anti-vaccin appeared in response to the video.

The comments were so inflammatory that, in the new study, researchers decid closer look and analyze the accounts behind the comments.



...d in the summer of 2017, Kids Plus Pediatrics of Pittsburgh posted a video on its ...parents to vaccinate their children against human papillomavirus, or HPV, which can ...s. Three weeks later, communications director Chad Hermann noticed "something ...e claim that "the vaccine kills." Within minutes, more anti-vaccine comments came ... someone inside a closed Facebook group started sending private messages with ...d see them coordinating the attacks," Hermann recalled.

...discover that a woman in Australia was particularly active, directing people to give the ... on various social media platforms. "She would say, 'Let's move on to Yelp reviews,' ... say, 'Let's go after the Facebook reviews,'" Hermann recalled.



# Advocacy Goals 2018-19

## + Peer-Reviewed Research

w the University of Pittsburgh, School of Public Health

## + Social Media Toolkit

prepare, defend and clean-up after an attack

## + Shots Heard Round the World

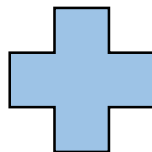
a rapid-response social media cavalry

## + Social Media Platform Awareness/Responsibility

Strategies and responses for untrue (medical) news



System-Level Targeted Change



Leverage Digital Platform Motivation to Change

Google facebook

  
healthgrades.

  
vitals



You Tube

The New York Times

  
ZDOGG<sup>MD</sup>  
*Slightly Funnier Than Placebo*

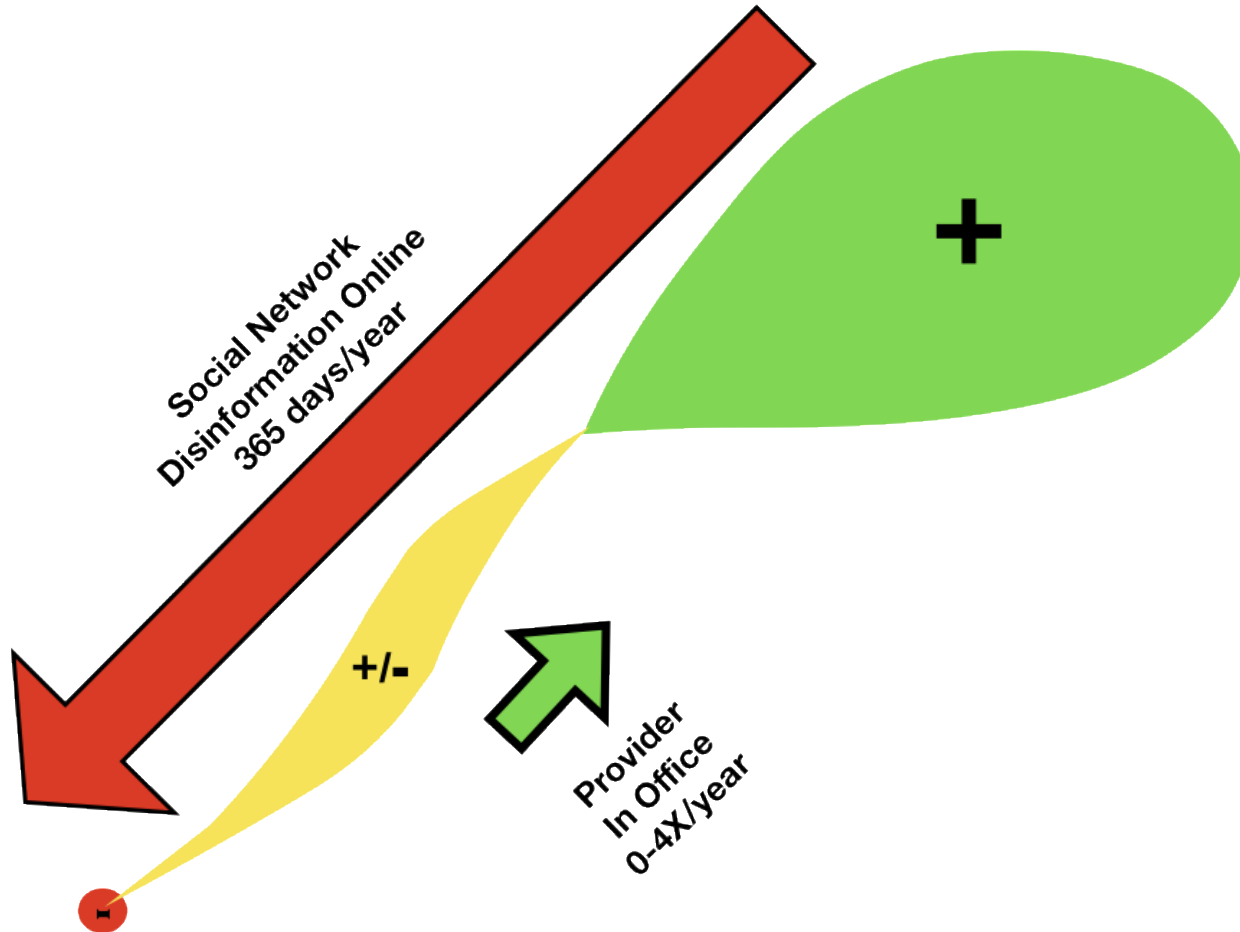
Mashable

Los Angeles Times

The Washington Post

npr

# Forces Upon Vaccine Hesitancy



# When they are not face-to-face with a trusted health professional

~1 Hour in the Exam Room



8,759 Hours Outside the Door

One Year of Influence



# Face-to-Face Vaccine Communication



The AIMS method for talking about protection

Announce  
Inquire  
Mirror  
Secure



Angus Thomson  
Adjunct Assistant Professor, Emory University  
Head, Vaccine Confidence & Coverage Global Public Affairs, Sanofi Pasteur



John Parrish-Sprowl  
Director, Global Health Communication Center (GHCC) Indiana University School of Liberal Arts

Vaccine communication is often ineffective and can sometimes backfire



Photos like this

made hesitant parents aware of the dangers of measles, but decreased the intention to vaccinate and increased misconceptions about the MMR vaccine<sup>1,2</sup>

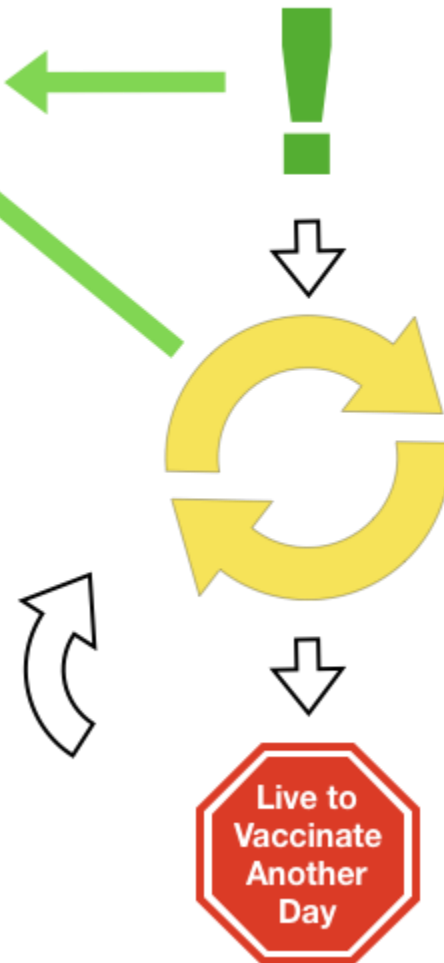


Facts on flu vaccines

decreased the belief that flu vaccines cause flu, but also decreased the intention to vaccinate

***AIMS***

**Vaccinate**



**Announce**

**Inquire**

**Mirror**

**Secure**



“  
How do you make  
the HPV vaccine  
recommendation,  
and **why do you  
say it that way?**  
”



**HPV VACCINE**  
IS CANCER PREVENTION

#HowIRecommend

# Pediatric Communication: Inside the Exam Room and Outside the Doors







# Pediatric Avengers



**Regardless of which superhero you must channel, we must:**

Become BETTER Communicators

Develop & Grow our Social Media Voices

Engage, (Entertain) and Educate

Lead and Take Science Back

Support Each Other to Promote Better Health



# Thank You

Dr. Todd Wolynn



Kids Plus Pediatrics

@DrToddWo



@KidsPlusPgh

# Questions?



**Chanie Sternberg**



**Dr. Corinna Manini**



**Dr. Todd Wolynn**

# Thank You!

Webinar archive will be available at:

[www.pfh.org/immunization](http://www.pfh.org/immunization)

Questions or comments?

[immunization@pfh.org](mailto:immunization@pfh.org)