Addressing Vaccine Hesitancy: Latest Evidence & Future Directions

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Disclosures

- I do not have any conflicts of interest, nor will I be discussing any off-label product use.
Objectives

- Describe vaccine hesitancy in the U.S.
- List common parental vaccine concerns
- Demonstrate effective vaccine communication techniques
- Discuss other strategies to improve timely vaccination
Outline

• Background
• Parental Vaccine Hesitancy
• Vaccine Communication Strategies
• COVID-19 Impact
• Future Directions
Vaccines: Reach, Scope, and Impact

- **Vaccines work**: ≥95% reduction in mortality from most vaccine-preventable diseases
- **Vaccines are safe**: IOM concluded that few health problems are caused by or associated with vaccines
- **Vaccines are cost-effective**: ~$10 saved for every $1 invested in childhood vaccination
- **One of 10 greatest public health achievements of 20th century and again between 2000-2010**

Childhood Vaccination Coverage

7-vaccine series: DTaP, polio, MMR, Hib, hepatitis B, varicella, PCV

National Immunization Survey (NIS-CHILD), CDC
Adolescent Vaccination Coverage

Healthy People 2020 Target

- Tdap
- Meningococcal
- HPV (UTD) (females)
- HPV (UTD) (males)

National Immunization Survey (NIS-Teen), CDC
Influenza Vaccination Coverage

Healthy People 2020 Target

National Immunization Survey (NIS-Flu), CDC
Pockets of Under-Vaccination: WA State

Required Vaccines:
- Hepatitis B
- DTaP/DT/Td/Tdap
- Polio
- MMR
- Varicella
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What is Vaccine Hesitancy?

• “Delay in acceptance or refusal of vaccination despite availability of vaccination services. Vaccine hesitancy is complex and context specific, varying across time, place and vaccines. It is influenced by factors such as complacency, convenience and confidence.”

MacDonald SAGE Working Group 2015; WHO
Rise in Vaccine Hesitancy

**Top 10 threat to global health in 2019 (WHO)**

Chen et al 1994 (reprint from Edwards et al 2016); WHO
How Common is Parental Vaccine Hesitancy?

- 1% of 19-35 month-olds in U.S. have no vaccinations
- 4.1% non-medical exemptions in WA State (K-12)
- 6-26% of parents identified as vaccine hesitant
  - Exists along a continuum
  - Varies by vaccine type
  - Dynamic measure over time

Parental Vaccine Concerns

Adapted from Kennedy et al, 2011
What Can We Do...?

https://sciencebasedmedicine.org/dealing-with-vaccine-hesitancy-and-refusal/
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Healthcare Professionals Play a Key Role

- Preferred source of vaccine information
- Most trusted source of vaccine information
- Positively impact vaccine intentions
- Positively impact vaccine uptake

Healthcare Professionals Play a Key Role

**Change minds of parents delaying/declining vaccination**

Gust et al, 2008
Vaccine Communication: The Basics

- Take time to listen
- Solicit and welcome questions
- Establish honest, balanced dialogue
- Determine readiness to change
- Respect parental authority
- Ensure ongoing communication

Healy and Pickering, 2011; Bernstein et al 2017
Vaccine Communication: Content

- Tailor communication to each patient/family
- Beware when debunking myths
  - Too much time talking about myth can strengthen myth
  - Identify myth as myth, state that it is false
  - Focus on facts, state them simply

Vaccine Communication: Content

Vaccine can give you flu

- Control
- Danger
- Correction

- Low side effects concern
- High side effects concern

Nyhan et al 2014, 2015
Vaccine Communication: Delivery

• **Step 1**: Offer an effective recommendation
• **Step 2**: Pursue initial recommendation if resistance
• **Step 3**: Address vaccine concerns
• **Step 4**: Ensure ongoing conversation
Step 1: Offer An Effective Recommendation

- Use a presumptive rather than participatory approach to initiating your vaccine recommendation

**Presumptive Ex:** “Today, Emma gets her 6-month shots.”

**Participatory Ex:** “What do you want to do about shots?”

Presumptive Recommendation: The Evidence

- Observational studies: 72-74% vs. 4-22% acceptance using presumptive vs. participatory approach
- Longitudinal cohort (VHPs): More visits using presumptive format -> less under-vaccination at 8 months
- Clinical trial: 5% greater acceptance of HPV vaccine at clinics with training in presumptive approach vs. control
- **Time-saving, easy to use, and effective!**

Other Effective Recommendation Strategies

• Offer strong, universal, timely, urgent recommendation

  **Ex:** “I strongly recommend the HPV vaccine for all my patients when they turn 11, like Liam today.”

• Odds of HPV vaccination increased by 41% with every 1-point increase on 5-point scale of recommendation strength

Other Effective Recommendation Strategies

- Bundle vaccine recommendations

**Ex:** “Jose is due today for Tdap, HPV, Flu, and meningococcal vaccines.”

- Higher influenza vaccine acceptance with bundled vs. separate recommendation (83% vs. 33%)

Step 2: Pursue Initial Vaccine Recommendation

- Pursue initial recommendation if parent resists
  
  **Ex:** “She really needs these shots”; “If she were my child, I would definitely go ahead.”

- 25-50% of providers pursued recommendation
- 63-94% of initially resistant parents accepted vaccines
- 27-94% VHPs accepted following provider pursuit

Opel et al, 2013, 2015; Hofstetter et al, 2017; Shay et al 2018
Step 3: Address Vaccine Concerns

- Motivational Interviewing (MI):
  - Evokes and reinforces parent’s own motivations for vaccine acceptance and their self-efficacy to do
  - Empathy, collaboration, evocation, support autonomy

Dempsey et al 2018; McClure et al 2017; Reno et al 2018; Dempsey and O’Leary 2018
Motivational Interviewing: The Evidence

- CRT: provider communication intervention vs. usual care
- 10% greater HPV vaccine initiation, 4% greater completion
- HCPs: MI is most effective technique for VHPs
- Parents: MI techniques convinced them to vaccinate

Dempsey et al 2018; McClure et al 2017; Reno et al 2018; Dempsey and O’Leary 2018
Motivational Interviewing: Brief Strategies

• Importance and confidence ruler

**Ex:** “On a scale of 1-10, how important is it for you to vaccinate your child?”

“Why this # and not a lower #?”

Dempsey et al 2018; Reno et al 2018;
Dempsey and O’Leary 2018
Motivational Interviewing: Brief Strategies

- Elicit, provide, elicit (EPE)
  1. Elicit what parent knows or understands
  2. Seek permission to provide new information or advice
     • Give information in neutral and nonjudgmental way
  3. Elicit parent response to that information or advice

McClure et al, 2017; Reno et al 2018;
Step 3: Address Vaccine Concerns

- C.A.S.E. Approach
  - Corroborate: Acknowledge parent concern
  - About Me: How have you developed your vaccine expertise?
  - Science: What does the evidence show?
  - Explain/Advise: What is your advice based on science?
- >90% medical students found it a useful approach

Jacobson et al 2013; Finney Rutton et al 2018; Schnaith et al 2018
Step 4: What If Parents Still Refuse?

- Remember you are “planting the seed” for future visits
  - Share information/resources with family
  - Schedule next visit
  - Promise to continue conversation

- Consider using CDC’s “If You Choose Not to Vaccinate…” or AAP “Refusal to Vaccinate” forms
HCP: “Today, Charlie gets his recommended 2-month vaccines, including 3 shots and one by mouth.” [Presumptive recommendation]

Parent: “I don’t think we want to do that.”

HCP: “I strongly recommend these vaccines for all patients, including Charlie, to protect against diseases like whooping cough, meningitis, and severe diarrhea.” [Pursuit of initial recommendation]

Parent: “I think we’d like to hold off for now.”
HCP: “Would you mind telling me a little more about your concern?”

Parent: “Well, I think it’s too many vaccines at once…he’s so little. It seems like they would overwhelm his system.”

HCP: “It sounds like you are worried because there are several vaccines recommended at the same time, and Charlie is only 2 months-old. I can certainly understand that concern.”

HCP: “I have looked into this a great deal. Can I share with you what I’ve learned and why I think it’s important for Charlie to get these shots today? Ultimately, the final decision is yours.”
Parent: “I guess so.”

HCP: “Even though there are more vaccines today than when you were young, they have many fewer antigens than they used to - only 150 vs. ~3000! Charlie faces much greater immune challenges every day. Even as a young infant, he can respond to thousands of antigens at a time and is constantly making new immune cells. Also, the response to vaccines is the same whether given at once or separately. So, it is very safe to give multiple vaccines at once to Charlie.” [Provide]

HCP: “I’d love to hear your thoughts about this information. [Elicit]
1. **Parent**: “That makes sense.”
   - Parent agrees to vaccinate Charlie -> vaccinate today!

2. **Parent**: “I appreciate this information, but I still don’t think we want to do vaccines.”
   - Reinforce autonomy, document declination, and tell parent that you will discuss at future visit because this is so important.

3. **Parent**: “I appreciate this information, but … [I’d like to do it another time; I’d like to think more about it; I still have questions.]”
   - Provide resources and schedule follow-up visit
   - Elicit and respond to additional concerns
Trusted Information Sources

- American Academy of Pediatrics
  - [www.aap.org/immunization](http://www.aap.org/immunization)
- Vaccine Education Center, Children’s Hospital of PA
  - [www.chop.edu/centers-programs/vaccine-education-center](http://www.chop.edu/centers-programs/vaccine-education-center)
- Centers for Disease Control and Prevention
  - [www.cdc.gov/vaccines/parents](http://www.cdc.gov/vaccines/parents)
- Immunization Action Coalition
  - [www.immunize.org](http://www.immunize.org)
- Washington Chapter of AAP
  - [https://wcaap.org/vaccines/vaccine-resources](https://wcaap.org/vaccines/vaccine-resources)
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COVID-19 Impact: Reduced Vaccine Administrations

Santoli et al 2020
COVID-19 Impact: Parental Vaccine Hesitancy

- Survey study in 17 EDs in 6 countries (Mar-June 2020):
  - 28.6% of parents who didn’t vaccinate child against influenza in prior season intended to vaccinate child this season
  - Overall, 15.9% increase in parents intending to vaccinate child vs. influenza vaccination of child in prior season
- Much remains unknown regarding how COVID-19 pandemic affects parental vaccine decision-making

Goldman et al, 2020
COVID-19 Vaccine

• FDA Emergency Use Authorization of 2 mRNA vaccines
  • Pfizer/BioNTech vaccine (≥16 years)
  • Moderna vaccine (≥18 years)
• Administered as 2-dose schedule
• 95% efficacy, no significant safety concerns to date
• 56-74% of surveyed adults in U.S. intend to get vaccine
• 34% surveyed nurses would voluntarily get vaccine

CDC; Fisher et al 2020; Szilagyi et al 2020; American Nurses Foundation
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Future Directions: Vaccine Hesitancy

• Continue to explore the complex factors underlying vaccine hesitancy, including distinct moral values & belief systems
• Examine how COVID-19 pandemic has affected vaccine decision-making

McAteer et al 2020
Future Directions: Vaccine Communication

• Identify new evidence-based communication strategies
  • Disseminate broadly within medical community

• Team approach
  • Ensure all care team members (clinical, non-clinical) onboard
  • Identify, train, and support vaccine champion(s)
  • Promote consistent messaging across entire team
Future Directions: Vaccine Communication

- Address COVID-19 vaccine hesitancy
  - Clear, complete, accurate messaging
  - Build trust in vaccine, vaccinator, system
  - Promote confidence among HCPs
  - Engage communities

https://www.cdc.gov/vaccines/covid-19/vaccination-resources.html
Future Directions: Other Strategies

• Vaccine reminder-recall initiatives
  • Identify strategies for reaching most vulnerable families
• Strategies to reduce missed opportunities
  • Review vaccination status at all visits in diverse settings
  • Recommend all doses that are due
  • Vaccine prompts (either paper or EHR-based)

Hofstetter et al 2015; Bernstein et al 2017; Mohanty et al 2018; Stockwell et al 2015; Fiks et al 2013;
Jacobson Vann et al 2018
Electronic Health Record Prompts

- Seattle Children’s Hospital
- Influenza vaccine alert
- Positively associated with influenza vaccination during hospitalization

Pollack et al JPIDS 2014
Conclusion

• Timely vaccination coverage is suboptimal
• Parental vaccine hesitancy is common
• Healthcare professionals play key role in vaccination
• Effective vaccine communication is paramount
• Other strategies are needed to augment these efforts, particularly during and in wake of COVID-19 pandemic
Thanks!