Increasing Timely Vaccination of Children: Provider Vaccine Communication & Other Evidence-Based Strategies

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Disclosure

The webinar planning group, the CME application reviewers, the content reviewers, and I have no relevant financial relationships to disclose.

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Objectives

1. Describe current pediatric vaccination rates
2. List common barriers to vaccination
3. Demonstrate effective vaccine communication techniques
4. Discuss other strategies to improve timely vaccination

Outline

- Background
- Vaccination Coverage
- Barriers to Vaccination
- Provider Vaccine Communication
- Other Vaccination Strategies
- Conclusions

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

Roush et al 2007; IOM, 2011; Zhou et al 2014; MMWR, 1999; MMWR, 2011

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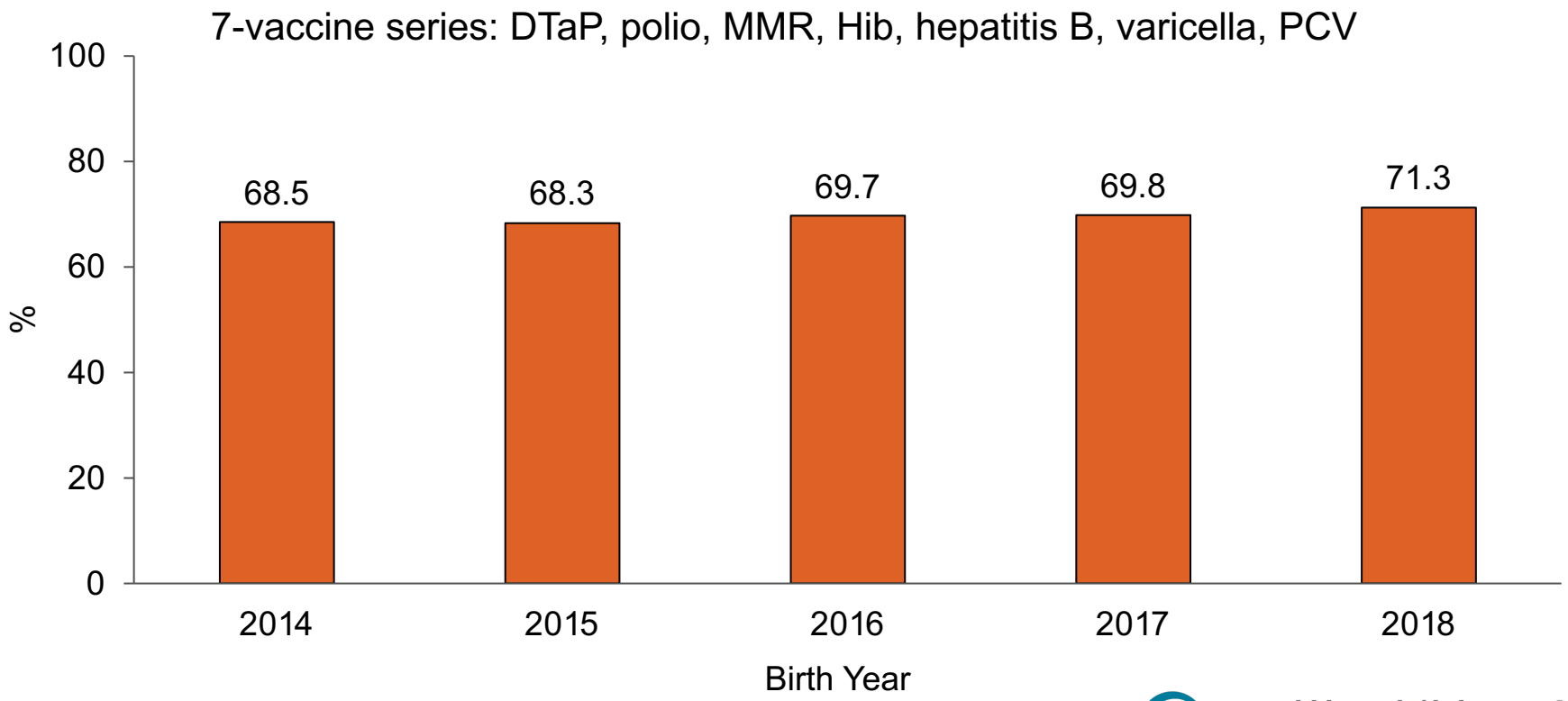
Childhood Vaccination Coverage (24 Months)



National Immunization Survey (NIS-CHILD), CDC

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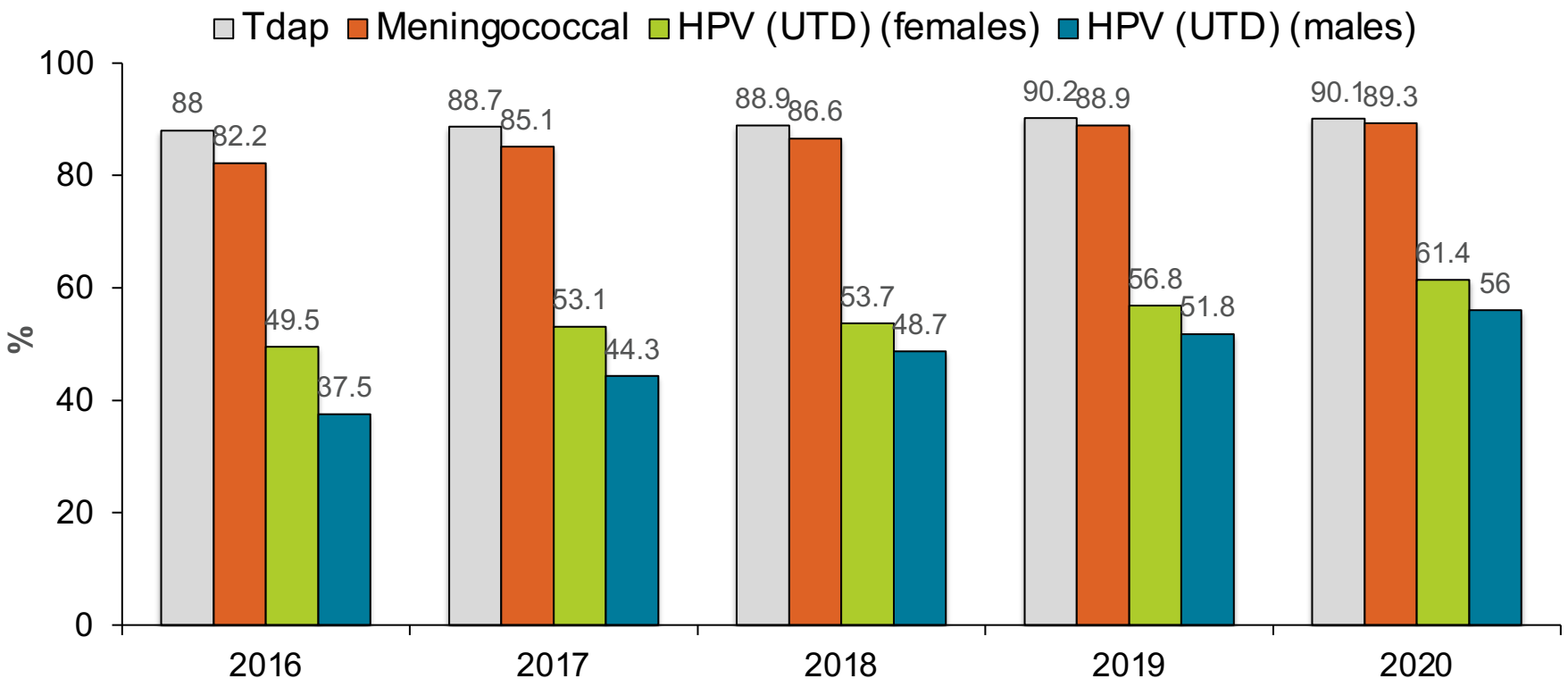
Adolescent Vaccination Coverage (13-17 years)



National Immunization Survey (NIS-Teen), CDC

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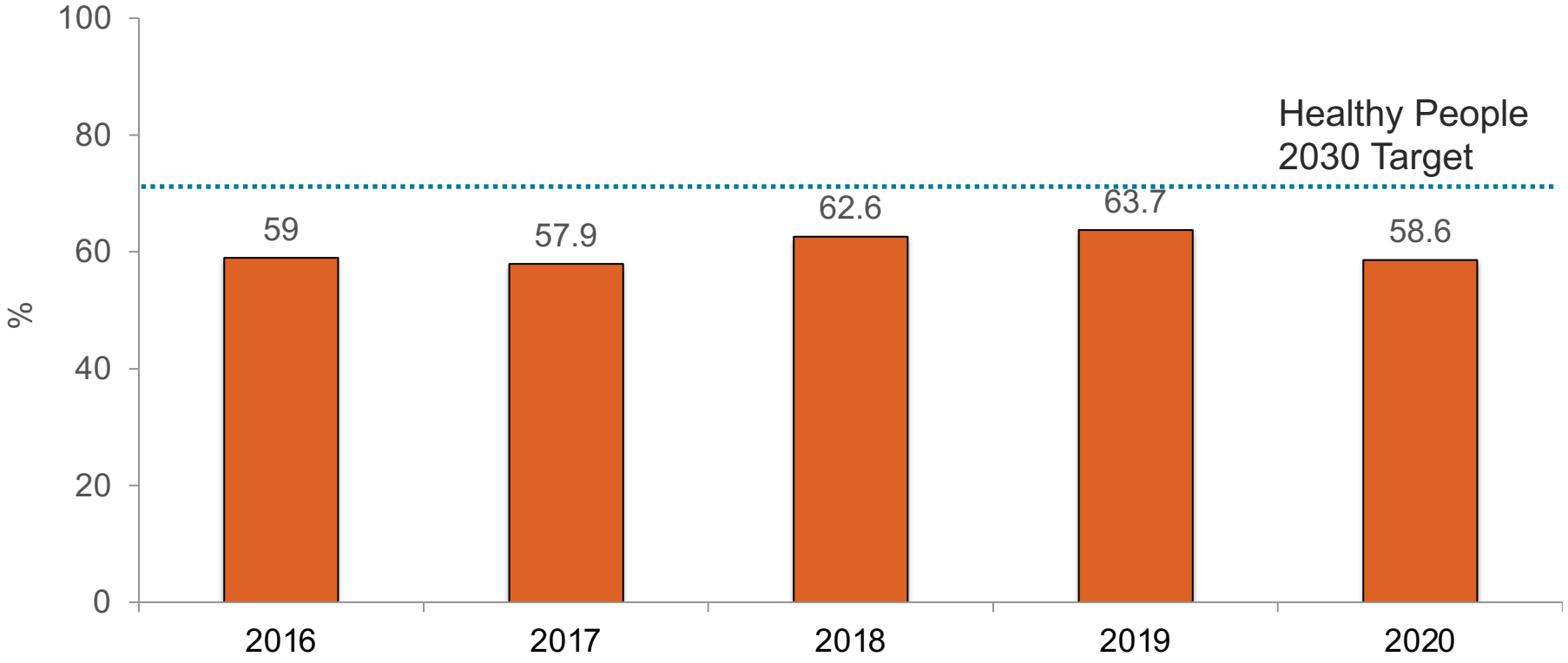
Influenza Vaccination Coverage (6 months-17 years)



National Immunization Survey (NIS-Flu), CDC

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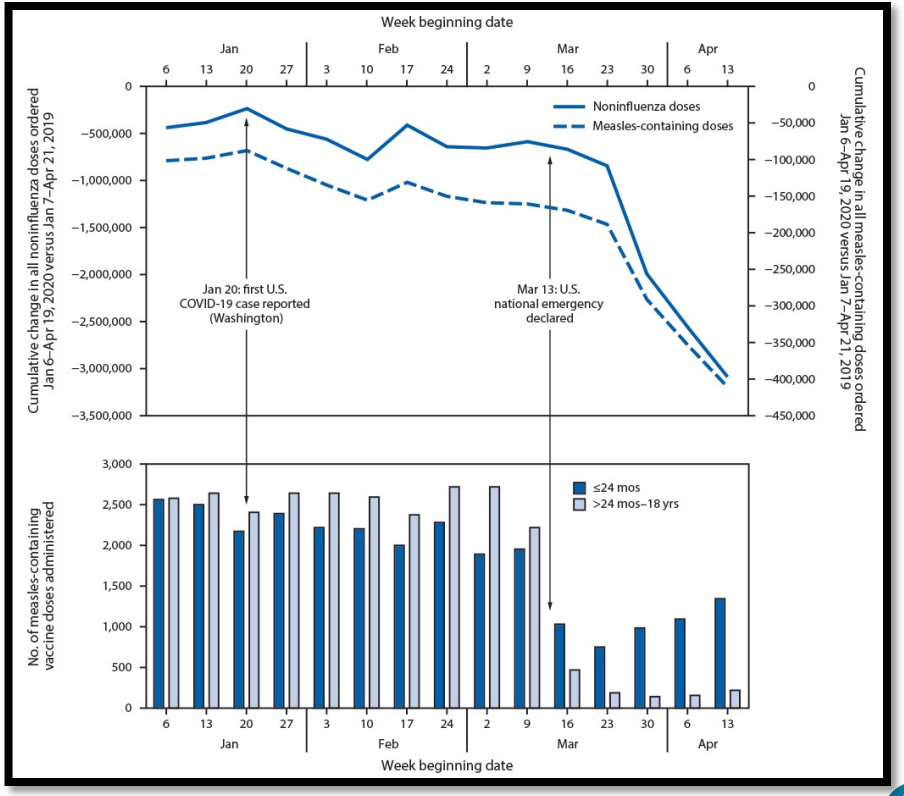
COVID-19 Impact: Reduced Vaccine Administrations



Santoli et al 2020

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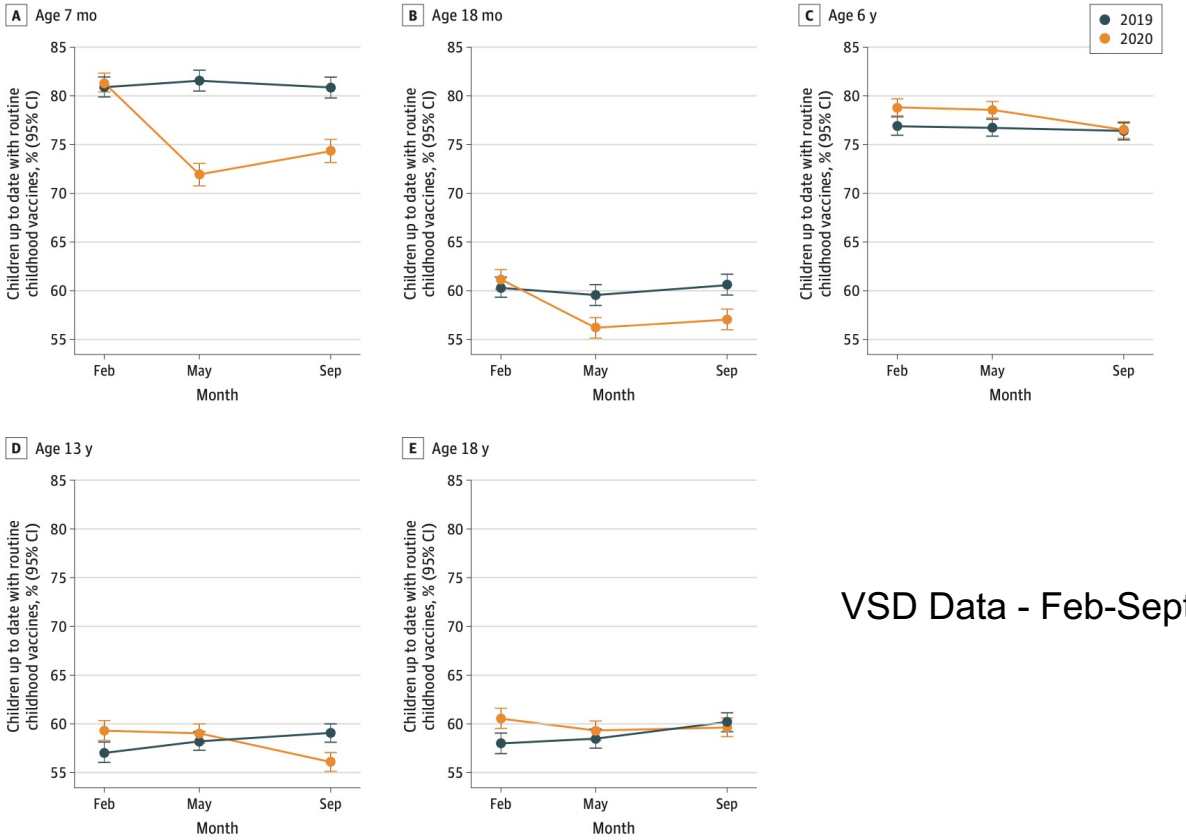
COVID-19 Impact: Reduced Vaccine Administrations



VSD Data - Feb-Sept 2020 vs. 2021

DeSilva et al 2021

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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."

SAGE Working Group (WHO) 2015

How Common is Vaccine Hesitancy?

- 1.2% have received no vaccinations by 24 months
- 2.2% non-medical exemption rate (kindergarten, 2019-20)
- 6-26% of parents identified as vaccine hesitant
  - Exists along a continuum
  - Dynamic measure over time
  - Varies by vaccine type
- Data suggest rising vaccine hesitancy
  - Top 10 threat to global health in 2019

World Health Organization

NIS-CHILD; CDC; Opel et al 2013; Henrikson et al 2017; Kempe et al 2020; Santibanez et al 2020; Szilagyi et al 2020; Cataldi et al 2021

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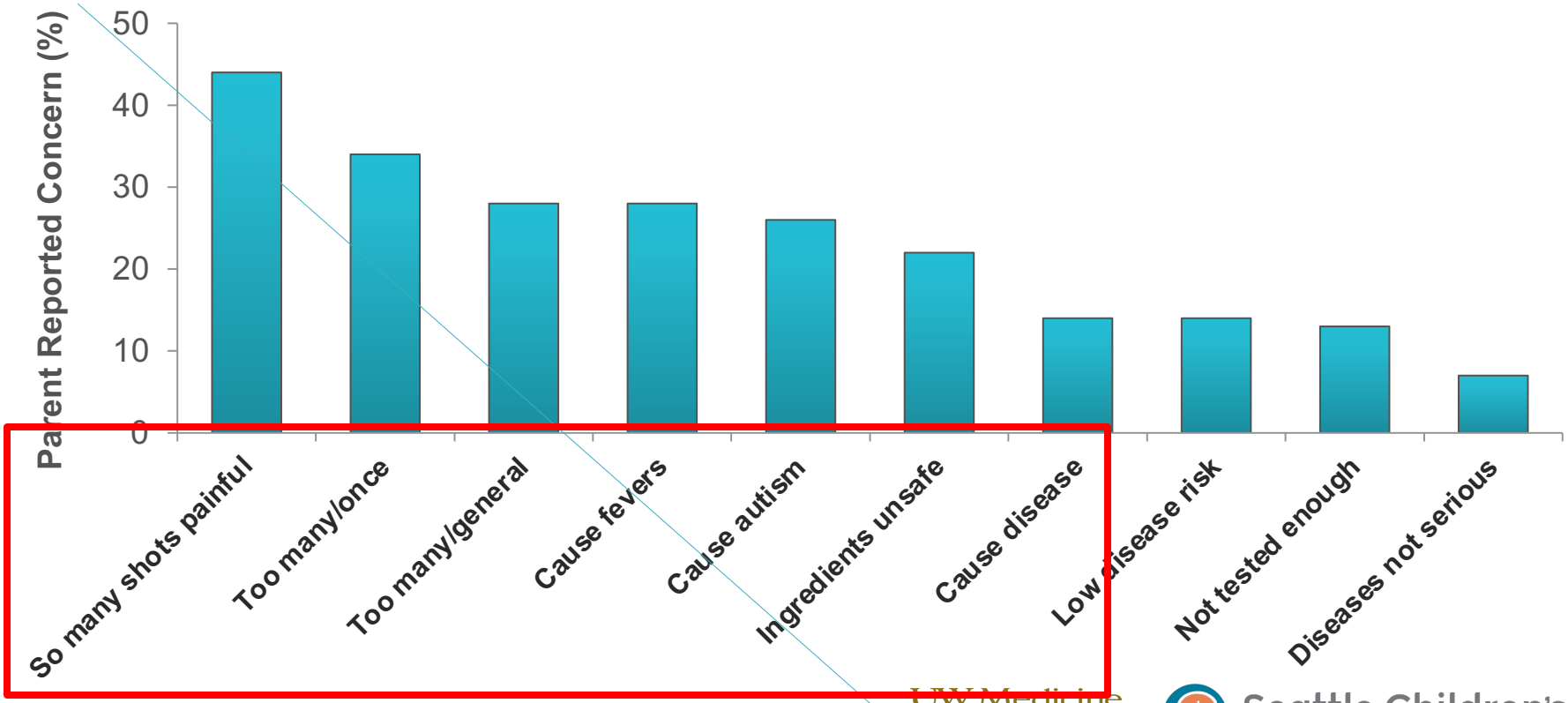
COVID-19 Impact: Parental Vaccine Hesitancy

- Survey suggests increased parental hesitancy for routine childhood vaccines (increased risk perception)
- Survey of parents whose children did not receive flu vaccine in 2019-20 season:
  - 34% felt pandemic made them less likely,
  - 21% more likely to get flu vaccine in 2020-21 season

Sokol et al 2020; He et al 2021

Parental Vaccine Concerns



Adapted from Kennedy et al, 2011

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Other Barriers to Vaccination

- Information sources
- Lack of trust
- Unaware of needed vaccines
- Competing priorities for family
- Transportation challenges
- Limited appointment availability
- Fragmented care

Ugale et al 2021; Kaufman et al 2021

Missed Vaccination Opportunities

- Unaware of needed vaccines
- Forget to administer vaccine
- Competing priorities during visits
- Perceived vaccine contraindication
- Staffing challenges

Kaufman et al 2021

What Can We Do…?

https://sciencebasedmedicine.org/dealing-with-vaccine-hesitancy-and-refusal/

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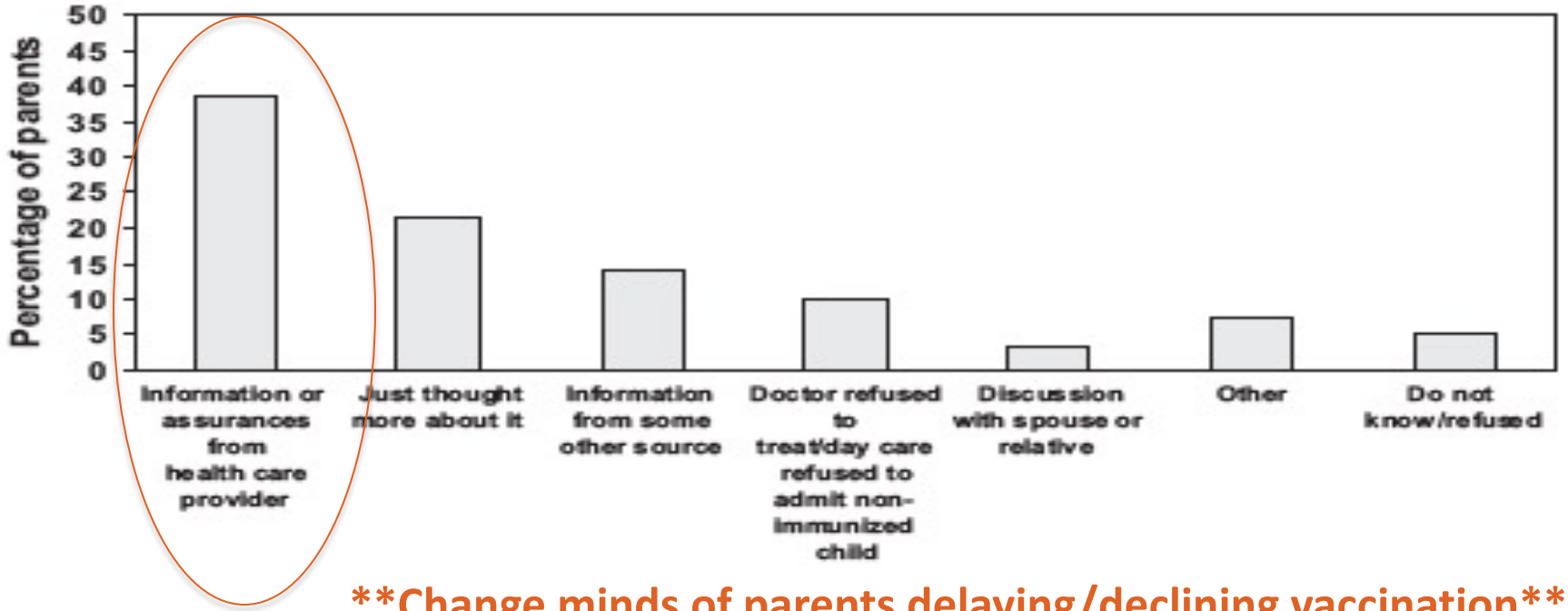
Providers Play a Key Role

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

Gust et al, 2008; Freed et al, 2011; Kennedy et al, 2011; Rosenthal et al, 2011

Providers Play a Key Role



Change minds of parents delaying/declining vaccination

Gust et al, 2008

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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

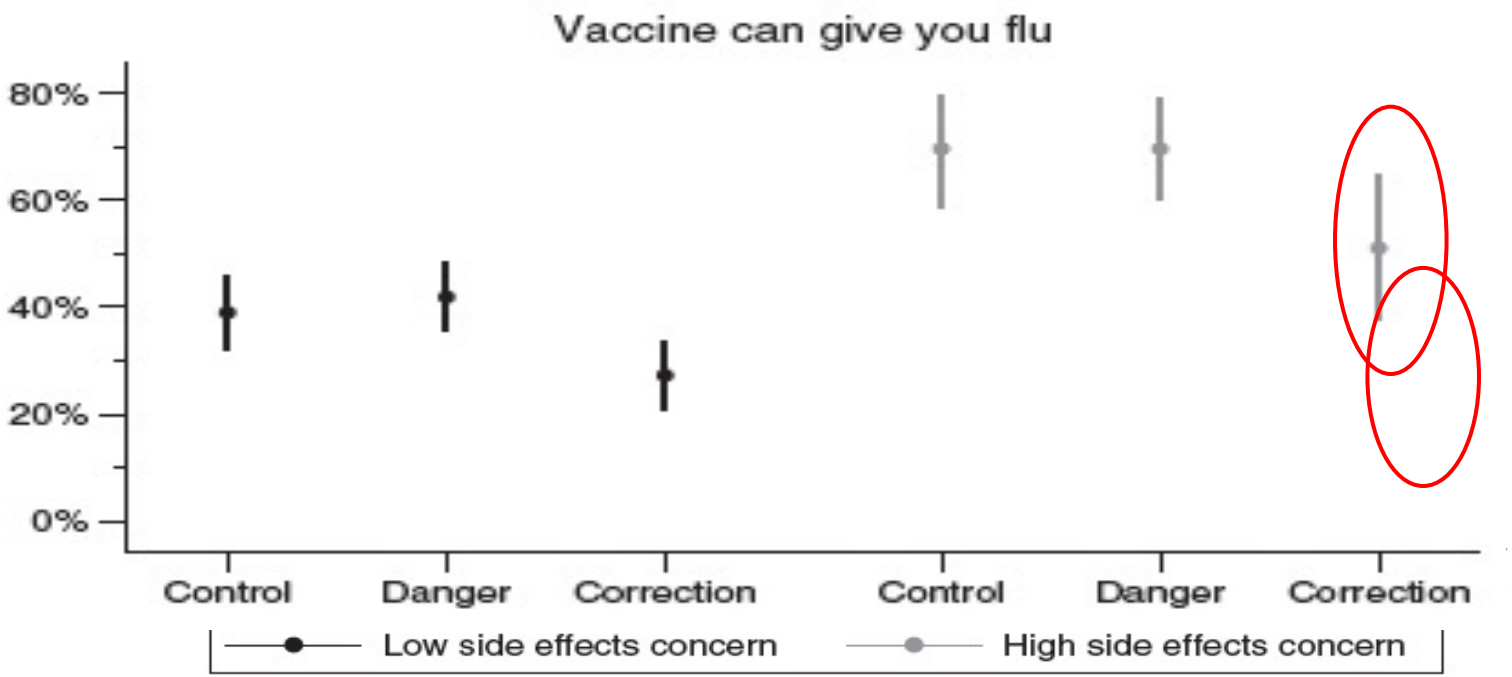
Healy and Pickering, 2011; Bernstein et al 2017

Vaccine Communication: Content

- Tailor communication to each patient and family
  - Ex: science vs. anecdote
- Beware when debunking myths
  - Identify myth as myth, state that it is false
  - State corrective information clearly, succinctly

Rosenthal et al, 2011; Opel et al, 2013, 2015; Shay et al, 2016; Brewer et al, 2107; Hofstetter et al, 2017; Gowda et al 2013; Nyhan et al 2014, 2015; Steffens et al 2021

Vaccine Communication: Content



Nyhan et al 2014, 2015

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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!**

Opel et al, 2013, 2015, 2018; Sturm et al 2017; Hofstetter et al, 2017; Brewer et al, 2017; Malo et al 2018; Shay et al 2018; Kempe et al, 2019

Other Effective Recommendation Strategies

- Offer strong, universal, timely, urgent recommendation

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

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

Rosenthal et al, 2011; Shay et al, 2016; Farmar et al, 2016; Sturm et al 2017; Hofstetter et al, 2017

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%)

Rosenthal et al, 2011; Shay et al, 2016; Farmar et al, 2016; Sturm et al 2017; Hofstetter et al, 2017

Step 2: Pursue Initial Vaccine Recommendation

- Pursue initial recommendation if parent resists

Ex: "She really needs these shots"; "I definitely recommend going ahead with the shots today."

- 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

Motivational Interviewing

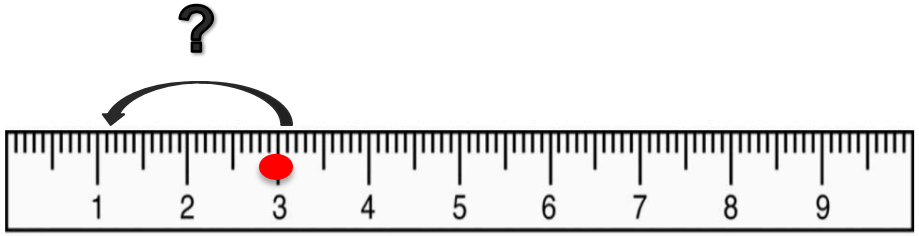
- Transition to supportive discussion with open-ended questions, reflective responses
- Tailor conversation to address specific concerns
- Acknowledge legitimacy of concerns
- Affirm autonomy
- Summarize key issues discussed

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

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Motivational Interviewing: Brief Strategies

Elicit, provide, elicit (EPE)

1. Elicit what parent knows or understands

   Ex: "It sounds like you may have some questions or concerns about Mia getting her vaccines today. Would you mind sharing those with me?"

2. Seek permission to provide new information or advice

   Ex: "I've looked into this a great deal. Can I share information that I've found and why I think these vaccines are so important?"

3. Elicit parent response to that information or advice

   Ex: "I'd love to know what you think about this information. Has it helped to alleviate some of your concerns…?" What else would you like to know?"

Motivational Interviewing: The Evidence

- CRT: provider communication intervention *vs*. usual care
- 10% greater HPV vaccine initiation, 4% greater completion
- Providers: 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

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’s “Refusal to Vaccinate” forms

Trusted Information Sources

- American Academy of Pediatrics
  - https://www.aap.org/en/patient-care/immunizations/
- American Academy of Family Physicians
  - www.aafp.org/family-physician/patient-care/prevention-wellness/immunizations-vaccines.html
- Vaccine Education Center, Children's Hospital of PA
  - www.chop.edu/centers-programs/vaccine-education-center
- Centers for Disease Control and Prevention
  - www.cdc.gov/vaccines/parents
- Immunization Action Coalition
  - www.immunize.org

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Team Approach Is Crucial

- Engage all care team members
- Identify, train, and support vaccine champion(s)
- Develop policies and scripting to promote effective vaccine communication across entire team

- 2.34 greater odds of HPV vaccine acceptance if discussed with multiple team members; 0.56 lower odds if mixed messaging

Fontenot et al 2018

Vaccine Reminder-Recall

- Identifies patients due or overdue for vaccines
- Addresses common reasons for missing doses
- Serves as a cue to action for patients, families

Outcome	No. of studies	No. of participants	Risk Ratio, 95% CI
Childhood vaccinations	23	31,099	1.22 (1.15-1.29)
Adolescent vaccinations	10	30,868	1.29 (1.17-1.42)
Childhood influenza vaccination	5	9,265	1.51 (1.14-1.99)

Jacobson Vann et al. 2018

Vaccine Reminder-Recall Steps

1. Identify patients to target with reminder-recall
2. Select reminder-recall type to use in your practice
3. Develop reminder-recall message content
4. Send reminder-recall messages
5. Track process and outcome measures

Other Vaccination Strategies

- Strategies to reduce missed opportunities
  - Review vaccination status at all visits in diverse settings
  - Administer all doses that are due
  - Standing vaccine orders
  - Vaccine prompts (paper, EHR-based)
  - Schedule vaccine appointments before leaving practice

Hofstetter et al 2015; Bernstein et al 2017; Mohanty et al 2018; Stockwell et al 2015; Fiks et al 2013

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Conclusions

- 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

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