THE BEST GIFT YOU CAN GIVE YOUR PATIENTS: HOW TO ADDRESS PEDIATRIC VACCINE HESITANCY

Jab Gab: Childhood and Adolescent Vaccination Updates for Health Professionals

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DISCLOSURES

None

OBJECTIVES

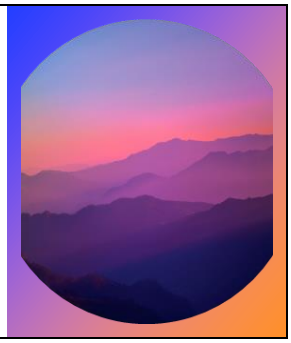
1.) Summarize recent trends of pediatric vaccine hesitancy.

2.) Describe the common reasons for vaccine hesitancy that parents report.

3.) Develop strategies to overcome pediatric vaccine hesitancy in clinic.

DISCLAIMER

- Acknowledging the politically charged state currently in the United States, we have intentionally chosen to exclude politics from this presentation, as much as possible.
- We will operate with the assumption that any health care professionals watching this presentation are in favor of administering vaccines to children and adults.
- If you are not in favor of this, we very much want to talk to you and hear your perspective, but that is not the purpose of this current presentation.



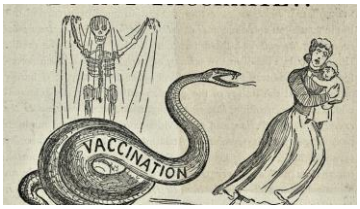
FOCUS ON COMMON GOALS

- Vaccine hesitant parents are not the enemy
- They just have questions or different beliefs about what is in the best interest of their child
- Common goal: Health and safety of the child and adolescent

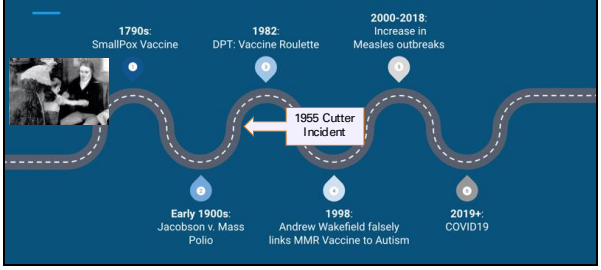
VACCINE HESITANCY (VH)

- World Health Organization (WHO) estimates that vaccinations since 1974 have prevented about 154 million premature deaths
- Vaccines prevent an estimated 2-3 million deaths a year, an additional 1.5 million deaths could be avoided globally if vaccination rates increased
- VH is a major global health challenge:
  - In 2019 the WHO name VH in the top 10 threats to global health
  - VH is causing geographical clustering of epidemics
    - US eliminated measles in 2000, cases have begun to rise again in densely populated neighborhood communities that refused the MMR vaccine
    - 2022 New York City varicella outbreak
  - Global VH rates (0-6 YO vaccines): 21%
    - Americas: 13%
    - Eastern Mediterranean region: 28%

VACCINE HESITANCY HAS BEEN AROUND SINCE VACCINES THEMSELVES



Brief Timeline of US Vaccine Hesitancy



COMMON REASONS REPORTED FOR VACCINE HESITANCY

1.) Question the need for vaccine

2.) Question vaccine safety

3.) Religious Objections

4.) Desire for Additional Education

QUESTION THE NEED FOR VACCINES

- many parents haven't witnessed the severity of vaccine-preventable disease
  - due to widespread effectiveness of vaccines
  - some parents believe that if their child were to contract a vaccine preventable disease, it would be easy to treat and not have lasting consequences
- belief that "natural immunity" is superior to immunity achieved through vaccines
- belief the rate of vaccine-preventable diseases are low
  - this is true because vaccines are effective
  - rates of these diseases increase when vaccination decreases

QUESTION VACCINE SAFETY

- concerns about safety and long-term side effects of vaccines
  - often spotlight a rare incident in which a child suffered from an unforeseen side effect of a vaccine
  - concern about live virus in MMR, varicella
- concern with thimerosal causing autism, brain damage, behavioral problems
  - no evidence
- concern that simultaneously administering multiple vaccines may overload their child's immune system (delayed vaccinators)

RELIGIOUS OBJECTIONS

- Components of vaccines may violate religious tenets
  - animal-derived gelatin
  - human fetal cell lines:
    - used in production of rubella, varicella, Hep A, and rabies vaccines
    - final vaccine products do not contain fetal cells
  - Local religious leaders can help clarify which vaccines are acceptable
- Only 4 states don't offer religious exemptions for vaccine mandates at school
  - Religious Objections have been increasing in Missouri

REQUEST FOR ADDITIONAL EDUCATION

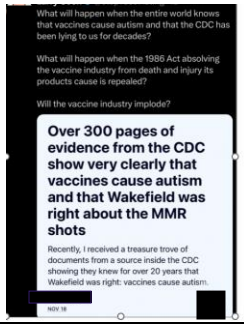
- this is not true hesitancy; parents are just seeking more information. Do not misinterpret questions for resistance
- 1/3 parents didn't feel they had enough information about vaccines to make an informed decision
  - majority did not think that child's provider was easy to talk to about vaccines
- parents want detailed information of benefits and side effects of vaccines
- most parents still trust providers
  - 81.7% of parents say HCP are one of the most importance sources of information about vaccines

SOCIAL MEDIA DISINFORMATION/MISINFORMATION

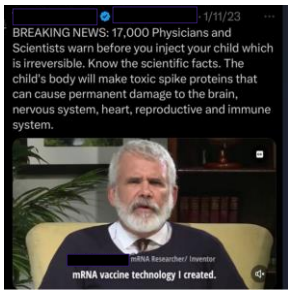
- Misinformation: inaccurate information without deceitful intent
- Disinformation: inaccurate information with malintent
- Malinformation: accurate information that is shared out of context with an intent to cause harm.

- Covid-19 fueled a social media epicenter of misinformation
- Undermines trust in reliable information (CDC)
- Damaged perceived credibility of institutions (doctors)
- Magnified polarization

Misinformation: low rates of disease



Misinformation: side effect of vaccine



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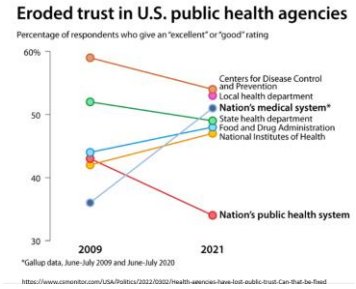


PSYCHOLOGY OF VACCINE HESITANCY

- Personal Values: Personal Choice vs. Public Good
- Vaccination as a social contract or social norm
- Health Belief Model
- Family decisional process
  - Who is making medical decisions in the family
  - Increasing medical decision making in adolescents and young adults

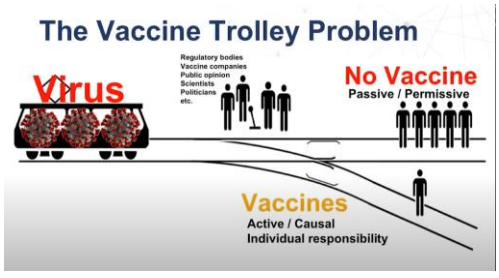
Cognitive Biases in Vaccine Hesitancy

Cognitive Bias	Effect on vaccine acceptance	How to address the bias
Framing Effect	We tend to accept/decline based on perception that something is gained vs lost. We are wired to choose what we perceive as a gain.	Frame positive aspects of vaccination rather than potential negatives. "Over time, use of HPV vaccines will allow us to do fewer pap smears and prevent cancers in both men and women"
Availability Bias	We make decisions based on the most recently available information, rather than considering all possible information	Increase media coverage of positive events related to vaccination rather than amplify interesting, but rare, negative examples. Posters and ads can be effective examples.
Authority Bias	Unreasonably high confidence in information from an authority figure (e.g., a physician spreading anti-vaccine rhetoric)	Provide counter-authority figures with pro-vaccine message via social media and in-person relationships

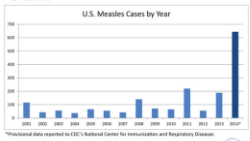
Cognitive Biases in Vaccine Hesitancy

Cognitive Bias	Effect on vaccine acceptance	How to address the bias
False-Consensus Effect	We tend to overestimate the extent to which the general population shares a particular belief. Perpetuated by social media echo chambers.	Create dialogue rather than conflict. Statements such as "most people" or "many of my patients" can create dissonance with the all/nothing idea
Confirmation Bias	We tend to find and remember information that confirms what we want to believe	Provide factual counter-information. "I used to think that was true too, but then I learned that ___" can be a less confrontational opening statement.
Anchoring Effect	We tend to rely on the first presentation of information to make all future decisions.	Acknowledge the anchored fact, and add to their perspective. "I also had an unpleasantly strong reaction to my booster last year, but when I got the next shot it was actually a lot less."

RECOMMENDATIONS TO REDUCE VACCINE HESITANCY



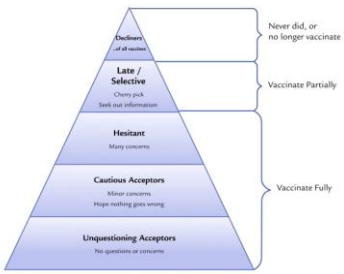
2014-2015 DISNEYLAND MEASLES OUTBREAK



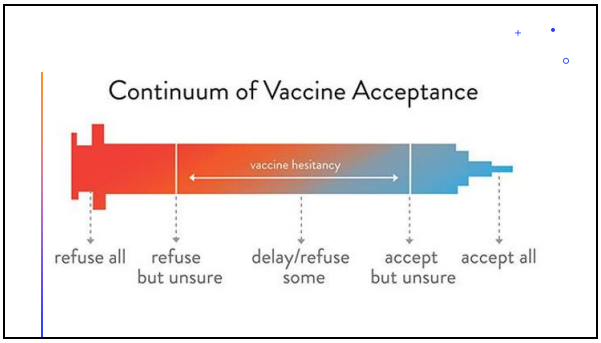
- 2014 had highest number of measles cases (667) in 2 decades and trends in non-medical vaccine exemptions in California and other states
- December 2014 measles outbreak at Disneyland in California spread to 7 other US states (125 cases), Canada (150 cases), and Mexico
  - Outbreak continued until April 2015
  - Among CA cases with vaccination status known 79% were unvaccinated in US and 100% were unvaccinated in Canada
- Measles outbreak received a high level of media coverage focus on vaccine hesitancy
  - Increase in "pro-vaccine" posts on social media
  - Increase in "measles" Google search
  - 53-80% of US public were aware of the outbreak

DISNEYLAND EFFECT?

- This outbreak differed from previous measles outbreaks because the general public was angry and motivated to defend vaccinations
- California Senate Bill (SB) 277 passed (Feb 2015): legislation that repealed the California personal belief vaccine exemption
- 20% of pediatricians reported stricter office policies and more patient education after outbreak
- Two groups:
  - Subset of population were activated by Disneyland outbreak and media coverage to increase vaccination rates
  - Subset were not influenced; backlash of vaccine-hesitant posts on social media after SB 277
- **Likely reflects diverse, vaccine hesitant populations**
  - **No one-size-fits-all solution**



Vaccine acceptance spectrum from Leask et al. 2015

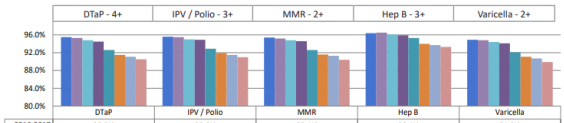


POLICY-LEVEL INTERVENTIONS

- **Strengthening school vaccine mandates**
  - Vaccination mandates increase vaccination coverage, but it is not possible to attribute causality to the mandate in most studies
    - Some parents felt that mandates limiting access to schooling of unvaccinated children gave them "peace of mind."
  - Concern that mandates can backfire on the appearance of being coercive
- **Increases in state exemption rates**
  - From 2019–20 to 2021–22 school year, national coverage with state-required vaccines among kindergartners declined from 95% to approximately 93%
    - Exemptions >5% limit the level of achievable vaccination coverage, which increases the risk for outbreaks of vaccine-preventable diseases.
    - Exemptions increased in 41 states, exceeding 5% in 10 states.

MISSOURI SCHOOL IMMUNIZATION RATES
KINDERGARTEN

IMMUNIZATION RATES BY VACCINE TYPE



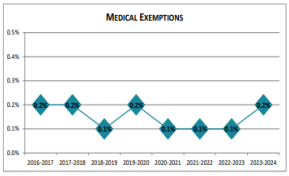
	DTaP	IPV / Polio	MMR	Hep B	Varicella
2016-2017	95.5%	95.6%	95.4%	96.4%	94.9%
2017-2018	95.3%	95.5%	95.2%	96.5%	94.8%
2018-2019	94.8%	95.0%	94.8%	96.1%	94.4%
2019-2020	94.5%	94.9%	94.6%	95.9%	94.1%
2020-2021	92.6%	92.9%	92.6%	95.3%	92.1%
2021-2022	91.5%	91.9%	91.6%	94.0%	91.1%
2022-2023	91.1%	91.5%	91.3%	93.7%	90.7%
2023-2024	90.5%	91.0%	90.4%	93.3%	89.9%

Note: Data is based on self-reported school summary report data in compliance with 19 CSR 20.28.010.

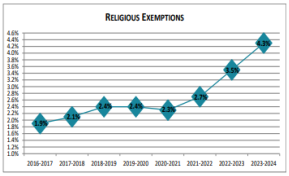
As stated in 19 CSR 20.28.010, it is unlawful for any student to attend school unless the student has been immunized according to this rule or unless a signed statement of medical or religious exemption is on file with the school administrator.

Missouri Kindergarten Requirements

- DTaP: 4 or more doses of diphtheria, tetanus and pertussis vaccine
- IPV / Polio: 3 or more doses of poliovirus vaccine
- MMR: 2 doses of measles, mumps and rubella vaccine
- Hep B: 3 or more doses of hepatitis B vaccine
- Varicella (chickenpox): 2 doses of varicella vaccine



Medical exemption: certification by a licensed doctor of medicine, doctor of osteopathy or his or her designee indicating that either the immunization would seriously endanger the child's health or life, or the child has documentation of disease or laboratory evidence of immunity to the disease.

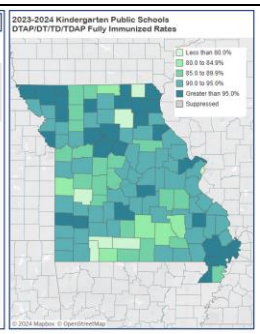


Religious exemption: a parent or guardian objects in writing to the school administrator that immunization of that student violates his / her religious beliefs.

Missing counties have no schools that have reported for the selected year.
***** indicates the data has been surpressed for schools with 20 or fewer students

2023-2024 Kindergarten Public Schools Fully Immunized Rates

County	DTaP	Hep B	IPV/Polio	MMR	Var
Adair	95.5%	95.9%	95.5%	95.5%	95.5%
Andrew	93.9%	96.7%	96.2%	96.2%	96.2%
Atchison	96.3%	96.3%	96.3%	96.3%	96.3%
Audrain	85.0%	92.5%	86.4%	84.6%	84.2%
Barry	90.8%	94.8%	92.3%	91.4%	92.1%
Barton	98.3%	98.3%	97.5%	98.3%	97.5%
Bates	83.1%	86.0%	84.3%	84.3%	86.0%
Benton	85.8%	93.1%	86.3%	85.3%	85.3%
Bollinger	93.7%	95.3%	93.7%	91.4%	92.1%
Boone	94.2%	96.4%	94.6%	95.0%	94.3%
Buchanan	94.6%	96.6%	95.0%	96.1%	93.7%
Butler	90.6%	94.3%	92.1%	89.7%	90.2%
Caldwell	86.3%	94.7%	86.3%	86.3%	86.3%
Callaway	90.8%	92.2%	91.0%	90.8%	90.2%
Camden	93.5%	95.2%	93.2%	92.8%	92.8%
Cape Girardeau	91.7%	94.3%	92.0%	92.0%	91.9%
Carroll	98.8%	100.0%	98.8%	97.6%	97.6%
Carter	87.9%	90.1%	90.1%	89.0%	89.0%
Cass	91.0%	92.5%	91.4%	90.1%	89.4%
Cedar	92.2%	95.3%	90.6%	92.2%	91.4%
Chariton	95.2%	96.8%	95.2%	96.8%	95.2%
Christian	79.0%	85.4%	79.1%	78.8%	78.3%
Clark	97.3%	97.3%	97.3%	98.6%	98.6%
Clay	91.9%	95.0%	92.9%	92.5%	92.3%
Clinton	91.8%	94.0%	92.7%	90.0%	90.0%
Cole	94.0%	95.4%	94.5%	94.4%	93.8%



COMMUNITY-LEVEL INTERVENTIONS

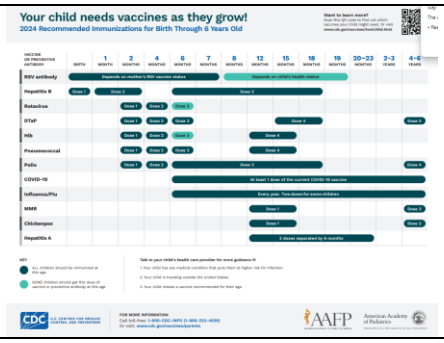
- Social media and digital applications (apps)
  - Use of gamification (role play and reward system)
- Pre-debunking: fact checking claims the reach social media users, users are taught how to identify fake news prior to exposure
  - Try to increase trust in government and health institutions
  - Improve awareness of immunization as a social norm, dispel myths
- Public Health Marketing
  - "My name is Andrew, I use cloth nappies, I eat at wholefoods, and I immunize"
- Community-engaged partnerships
  - vaccine champion training, empowering parents to be immunization advocates
  - vaccination in community settings (health departments, schools, pharmacies, fairs)

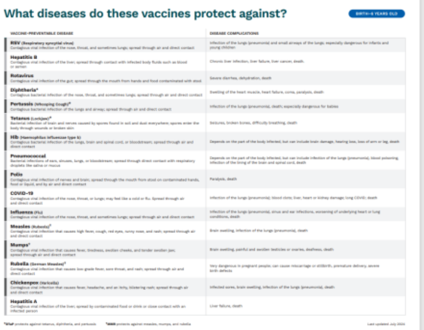
CLINIC-LEVEL INTERVENTIONS

- Reminders: postcards, letters, phone calls, texts or a combination to improve early childhood immunization uptake
- Use immunization delivery strategies:
  - standing orders
  - nursing appointments
  - reminder/recall programs
- EHR tools to remind providers
- Know your providers, nurses, and staff position on vaccination
  - 1/3 of pediatric nurses reported some vaccine hesitancy (mainly to HPV and varicella vaccines)

CLINIC-LEVEL INTERVENTIONS

- Financial incentives
  - Can increase vaccination rates
  - Works better for non-hesitant populations
  - Guaranteed payments works best
  - Concern about negative unintended consequences are unsupported
- Develop Vaccine Education Materials
  - Plain-language Science-based Messaging
  - Provide balance information about benefits and risks (side-effects)





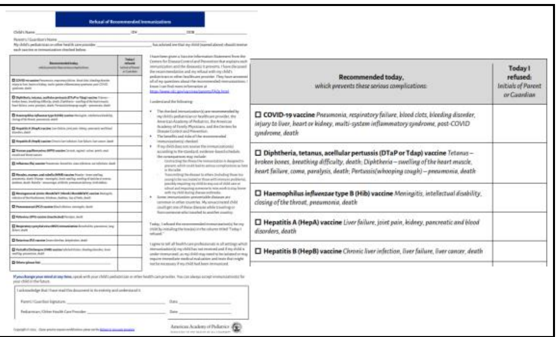
What diseases do these vaccines protect against?

BIRTH–6 YEARS OLD

VACCINE-PREVENTABLE DISEASE	DISEASE COMPLICATIONS
RSV (Respiratory syncytial virus) Contagious viral infection of the nose, throat, and sometimes lungs; spread through air and direct contact	Infection of the lungs (pneumonia) and small airways of the lungs; especially dangerous for infants and young children
Hepatitis B Contagious viral infection of the liver; spread through contact with infected body fluids such as blood or semen	Chronic liver infection, liver failure, liver cancer, death
Rotavirus Contagious viral infection of the gut; spread through the mouth from hands and food contaminated with stool	Severe diarrhea, dehydration, death
Diphtheria* Contagious bacterial infection of the nose, throat, and sometimes lungs; spread through air and direct contact	Swelling of the heart muscle, heart failure, coma, paralysis, death
Pertussis (Whooping Cough)* Contagious bacterial infection of the lungs and airway; spread through air and direct contact	Infection of the lungs (pneumonia), death; especially dangerous for babies
Tetanus (Lockjaw)* Bacterial infection of brain and nerves caused by spores found in soil and dust everywhere; spores enter the body through wounds or broken skin	Seizures, broken bones, difficulty breathing, death
Hib (Haemophilus influenzae type b) Contagious bacterial infection of the lungs, brain and spinal cord, or bloodstream; spread through air and direct contact	Depends on the part of the body infected, but can include brain damage, hearing loss, loss of arm or leg, death
Pneumococcal Bacterial infections of ears, sinuses, lungs, or bloodstream; spread through direct contact with respiratory droplets like saliva or mucus	Depends on the part of the body infected, but can include infection of the lungs (pneumonia), blood poisoning, infection of the lining of the brain and spinal cord, death
Polio Contagious viral infection of nerves and brain; spread through the mouth from stool on contaminated hands, food or liquid, and by air and direct contact	Paralysis, death
COVID-19 Contagious viral infection of the nose, throat, or lungs; may feel like a cold or flu. Spread through air and direct contact	Infection of the lungs (pneumonia); blood clots; liver, heart or kidney damage; long COVID; death
Influenza (Flu) Contagious viral infection of the nose, throat, and sometimes lungs; spread through air and direct contact	Infection of the lungs (pneumonia), sinus and ear infections, worsening of underlying heart or lung conditions, death
Measles (Rubeola)† Contagious viral infection that causes high fever, cough, red eyes, runny nose, and rash; spread through air and direct contact	Brain swelling, infection of the lungs (pneumonia), death
Mumps† Contagious viral infection that causes fever, tiredness, swollen cheeks, and tender swollen jaw; spread through air and direct contact	Brain swelling, painful and swollen testicles or ovaries, deafness, death
Rubella (German Measles)† Contagious viral infection that causes low grade fever, sore throat, and rash; spread through air and direct contact	Very dangerous in pregnant people; can cause miscarriage or stillbirth, premature delivery, severe birth defects
Chickenpox (Varicella) Contagious viral infection that causes fever, headache, and an itchy, blistering rash; spread through air and direct contact	Infected sores, brain swelling, infection of the lungs (pneumonia), death
Hepatitis A Contagious viral infection of the liver; spread by contaminated food or drink or close contact with an infected person	Liver failure, death

*DTaP protects against tetanus, diphtheria, and pertussis. †MMR protects against measles, mumps, and rubella

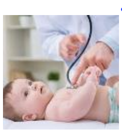
Last updated July 2024



Refusal of Recommended Immunizations

Recommended today, *which prevents these serious complications:*	Today I refused: *Initials of Parent or Guardian*
☐ **COVID-19 vaccine** *Pneumonia, respiratory failure, blood clots, bleeding disorder, injury to liver, heart or kidney, multi-system inflammatory syndrome, post-COVID syndrome, death*	
☐ **Diphtheria, tetanus, acellular pertussis (DTaP or Tdap) vaccine** *Tetanus – broken bones, breathing difficulty, death; Diphtheria – swelling of the heart muscle, heart failure, coma, paralysis, death; Pertussis(whooping cough) – pneumonia, death*	
☐ **Haemophilus *influenzae* type B (Hib) vaccine** *Meningitis, intellectual disability, closing of the throat, pneumonia, death*	
☐ **Hepatitis A (HepA) vaccine** *Liver failure, joint pain, kidney, pancreatic and blood disorders, death*	
☐ **Hepatitis B (HepB) vaccine** *Chronic liver infection, liver failure, liver cancer, death*	

HEALTH CARE PROVIDERS



1.) Start early and Build Trust with Parents
- Focus on first-time mothers/parents:
  - pre-natal, maternity ward, or newborn visits
  - *"The most important thing you can do to help protect your child in the first years of life is to immunize them. This starts with the Hep B vaccine before they leave the hospital."*
- **Increase trust in the "messenger"**
  - **HCP are the preferred channels for vaccine information for parents**

2.) Tailor the information to the target audience and level of hesitancy
- Ask what their specific concerns are
  "I understand from my nurse that you have some questions or concerns about Johnny's shots today, can we talk about those?"
- **Consider blocking out extra time to address vaccine hesitancy**

3.) Present vaccines as the default approach
- Opt-out approach
- *"Welcome to your child's 11-year well-child visit, we usually immunize children for tetanus, meningitis, and HPV at this visit, do you have any questions about this?"*

HEALTH CARE PROVIDERS

Motivational interviewing

- Determine the parent's reasons for/against vaccine
- If highly resistant, plant the seeds and revisit later
- *"Thank you for sharing your reasons for not vaccinating. Even though we disagree about this, I know that you are doing this because you want to do what you believe is best for your child. If you change your mind or have questions later, please let me know."*

Communication strategies:

- Generally effective:
  - Nonconfrontational, open discussions
  - Personal Storytelling/Emotive anecdotes
  - *"When I became a mother, I felt overwhelmed by all of the decisions I had to make for my daughter, especially with all of the scary stories out there on social media, but I decided it was in my daughter's best interest to vaccinate her."*
- Generally not effective:
  - Fear-based messaging
  - Anti-conspiracy arguments (can backfire)

Communicating to Patients—Language Matters!

Emphasize This	*Not That*
Benefit of taking the vaccine	Consequences of not taking the vaccine
Your family/our community	State or national groups, authority figures
Healthcare workers, local leaders	Pharmaceutical companies
"Skeptical" or "Concerned"	"Confused" or "Misled"
"Vaccine development" or "Our experience"	"Vaccine discovery" or "Experiments"
Transparency of studies about safety	Cost of research, government affiliations

TAKE HOME MESSAGES ABOUT VACCINE HESITANCY

1.) Relationships matter, you have more influence on parent's decision to vaccinate than you may think.

2.) Messaging matters

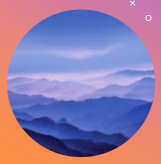
3.) Always ask, even if you think they will say no. They may surprise you someday.

LAST EXAMPLES OF LANGUAGE TO USE

- "There is no chance that mercury in vaccines can cause autism, since it is not in vaccines"
- "If you do not vaccinate your child, there is a real chance that they could get sick"
- Other phrases or approaches you have found useful when addressing vaccine hesitancy in clinic?

THANK YOU

Questions?
Comments?



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