Vaccination Hesitancy

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Financial Disclosure

- I have no financial disclosures.

Objectives

- Understand the state of vaccines today.
- Define Vaccine Hesitancy.
- Understand why parents would be hesitant about vaccinations.
- Understand how the provider can work with the vaccination hesitant parent.

Disclaimer

- I am not an immunologist.
- I am not an infectious disease specialist.
- I am not an expert on vaccinations.

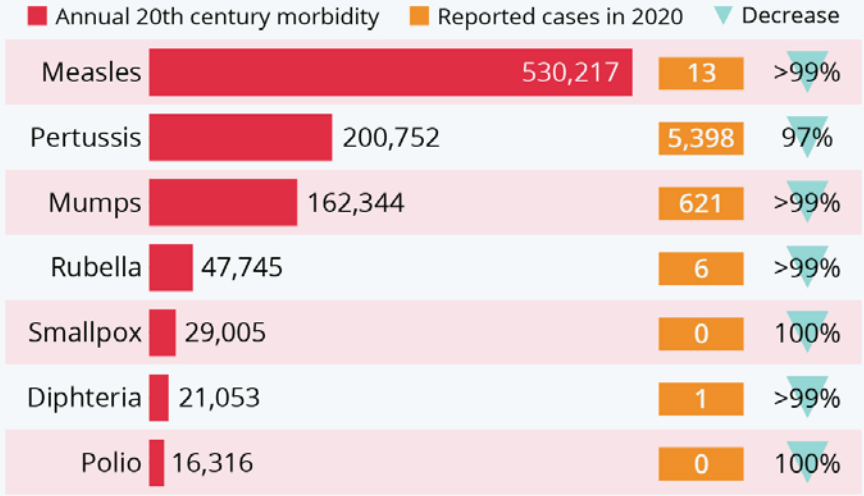
- But I am a primary care pediatrician.

Why Get Vaccinated?

- Protects ourselves.
- Protects our family.
- Protects our neighbors.
- Protects our society (roughly 85-95% of population vaccinated for herd immunity).
- Preventative medicine is the best form of medicine.
- Very cost effective.

How Vaccines Helped All But Eradicate Diseases

Annual 20th century morbidity and 2020 morbidity for vaccine-preventable diseases in the U.S.

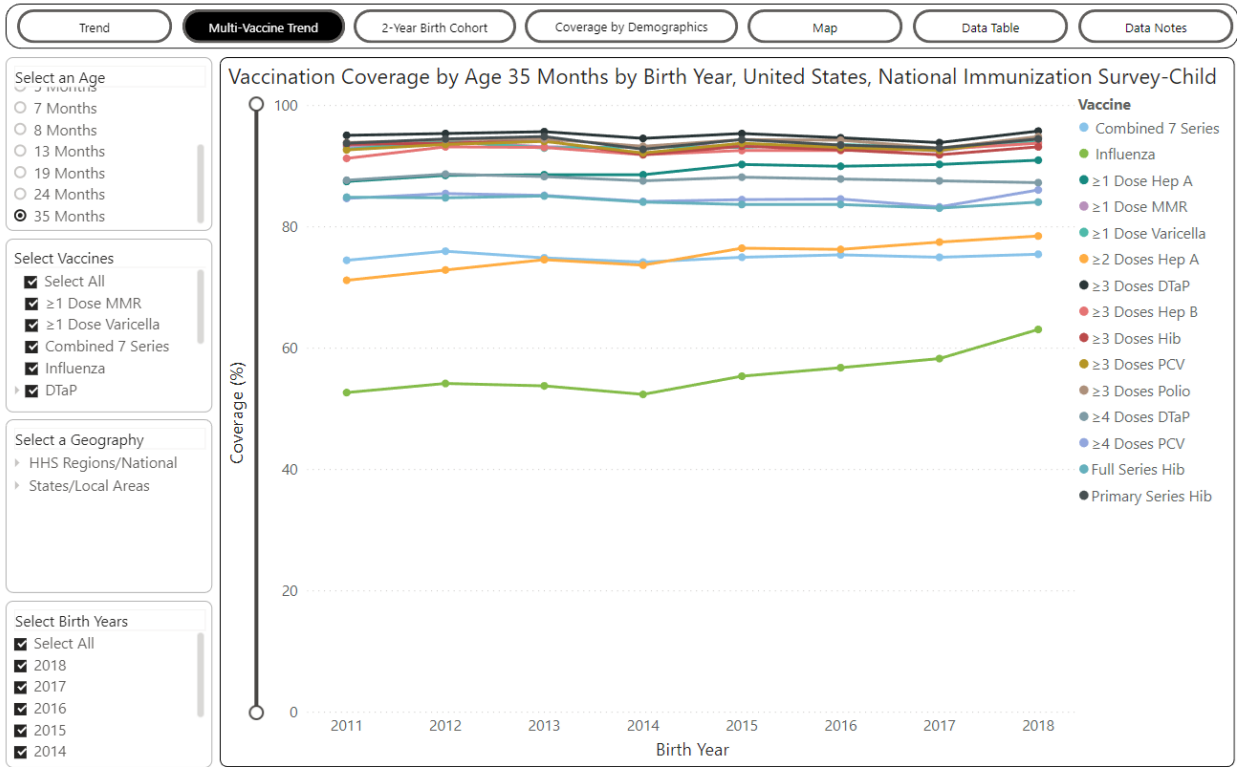


Source: Centers for Disease Control and Prevention

Vaccination Coverage 2011-2018: <35 mo

USA[4]
MMR: 92%
V: 92%
C7: 75%

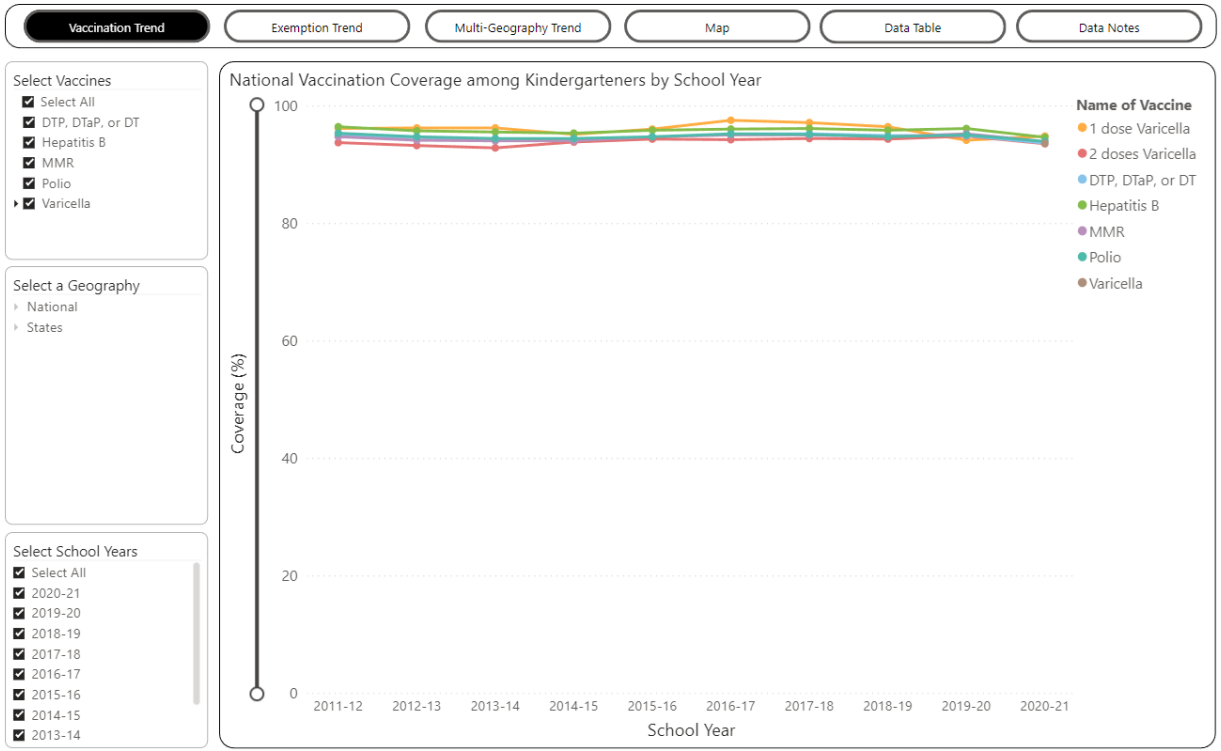
OK[4]
MMR: 90%
V: 90%
C7: 70%



Vaccination Coverage 2011-2021: Kinder Age

USA[5]
MMRV: 92%
DTaP: 91%

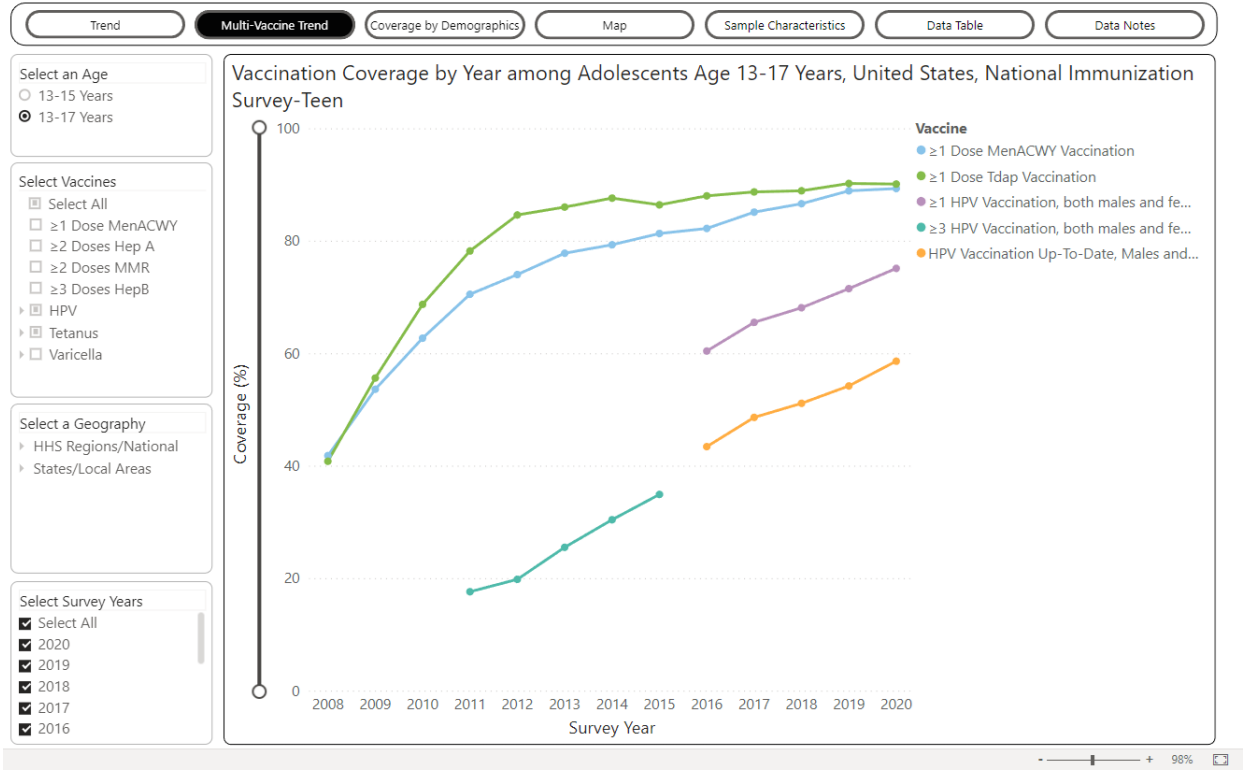
OK[5]
MMRV: 90%
DTaP: 90%



Vaccination Coverage 2011-2018: 13-17 yo

USA[3]
MCV: 89%
Tdap: 90%
HPV: 59%

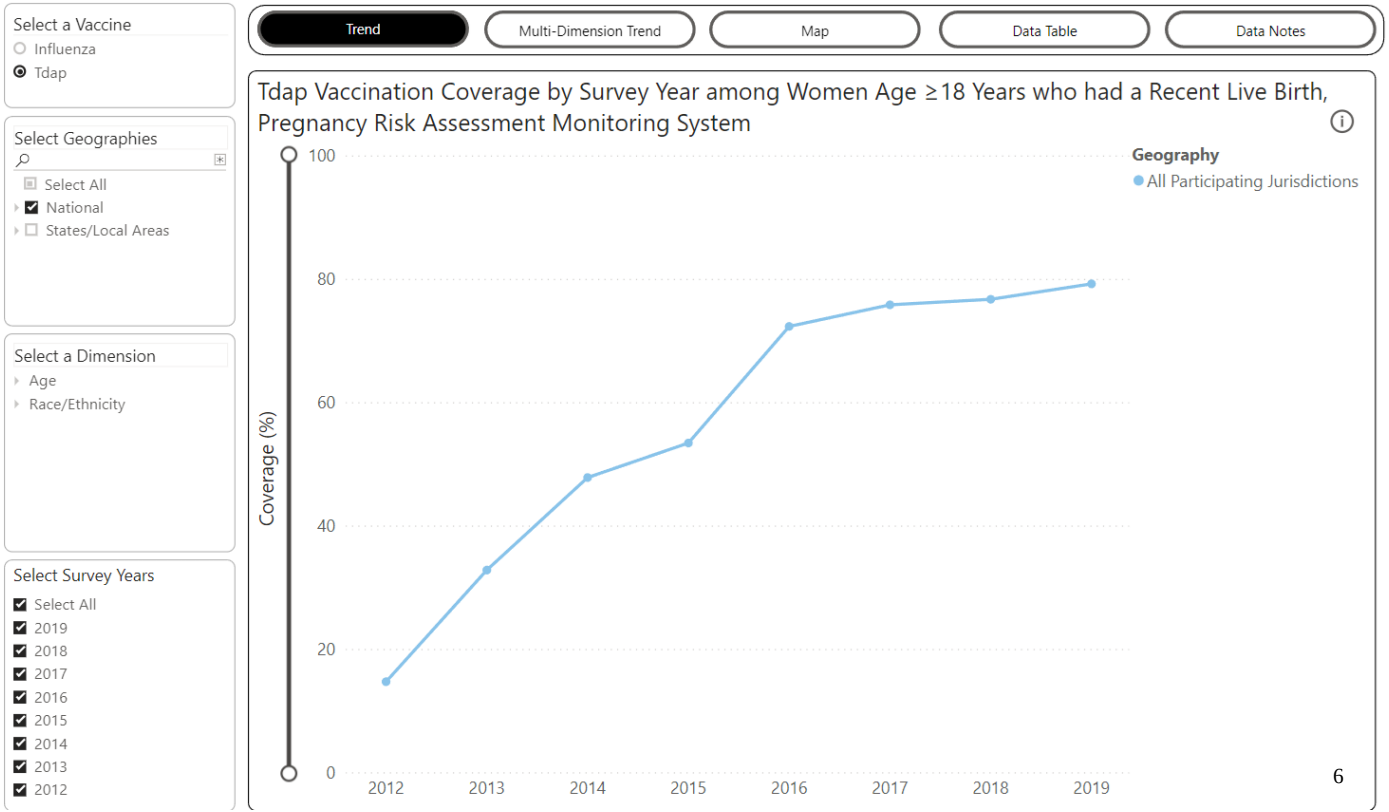
Oklahoma[3]
MCV: 80%
Tdap: 87%
HPV: 45%



Vaccination Coverage 2012-2019: Pregnant

USA[6]
TDaP: 79%

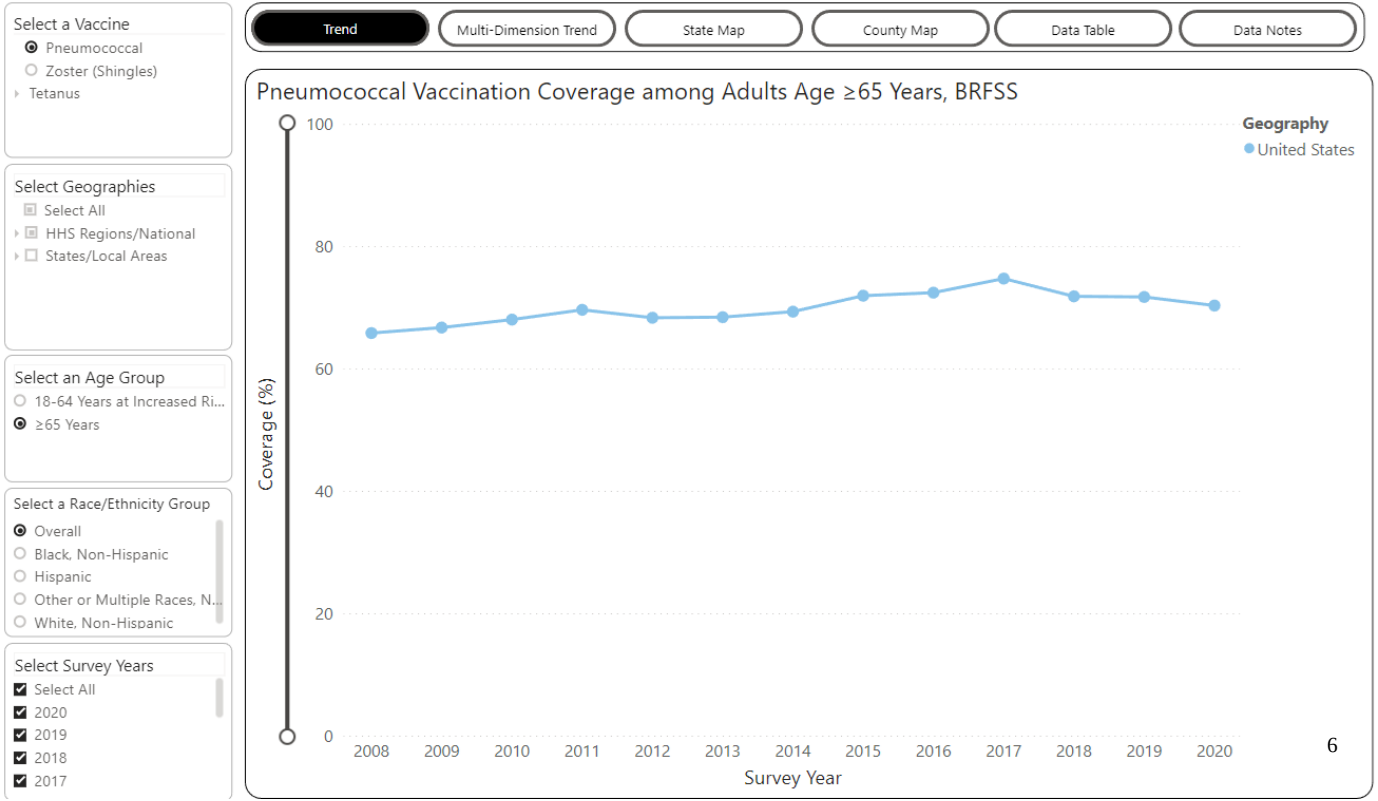
OK[6]
TDaP: 73%



Vaccination Coverage 2011-2018: 65+ yo

USA[6]
PCV: 70%

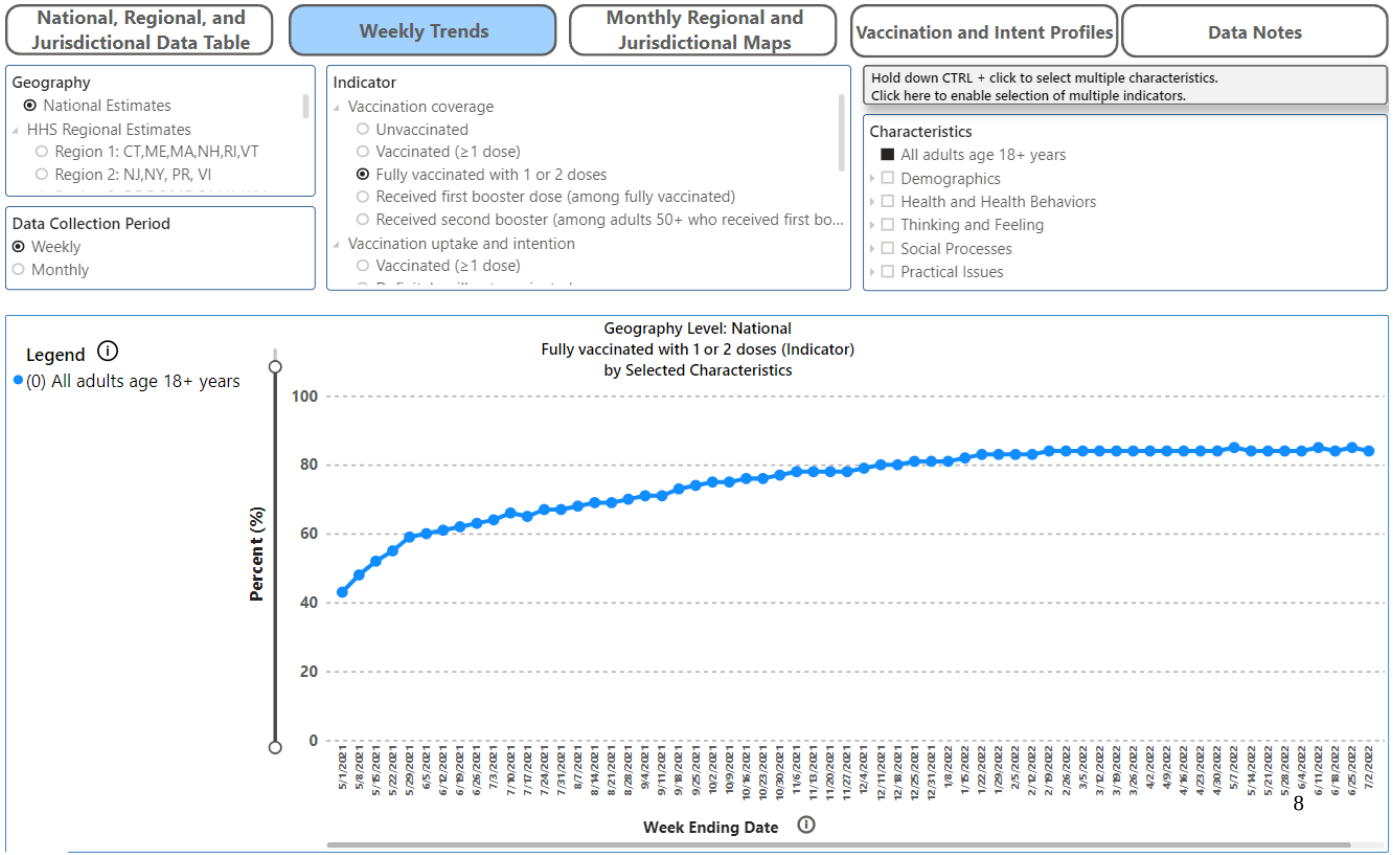
OK[6]
PCV: 75%



COVID-19 Vaccination Coverage

USA[8]
COVID-19:
86%

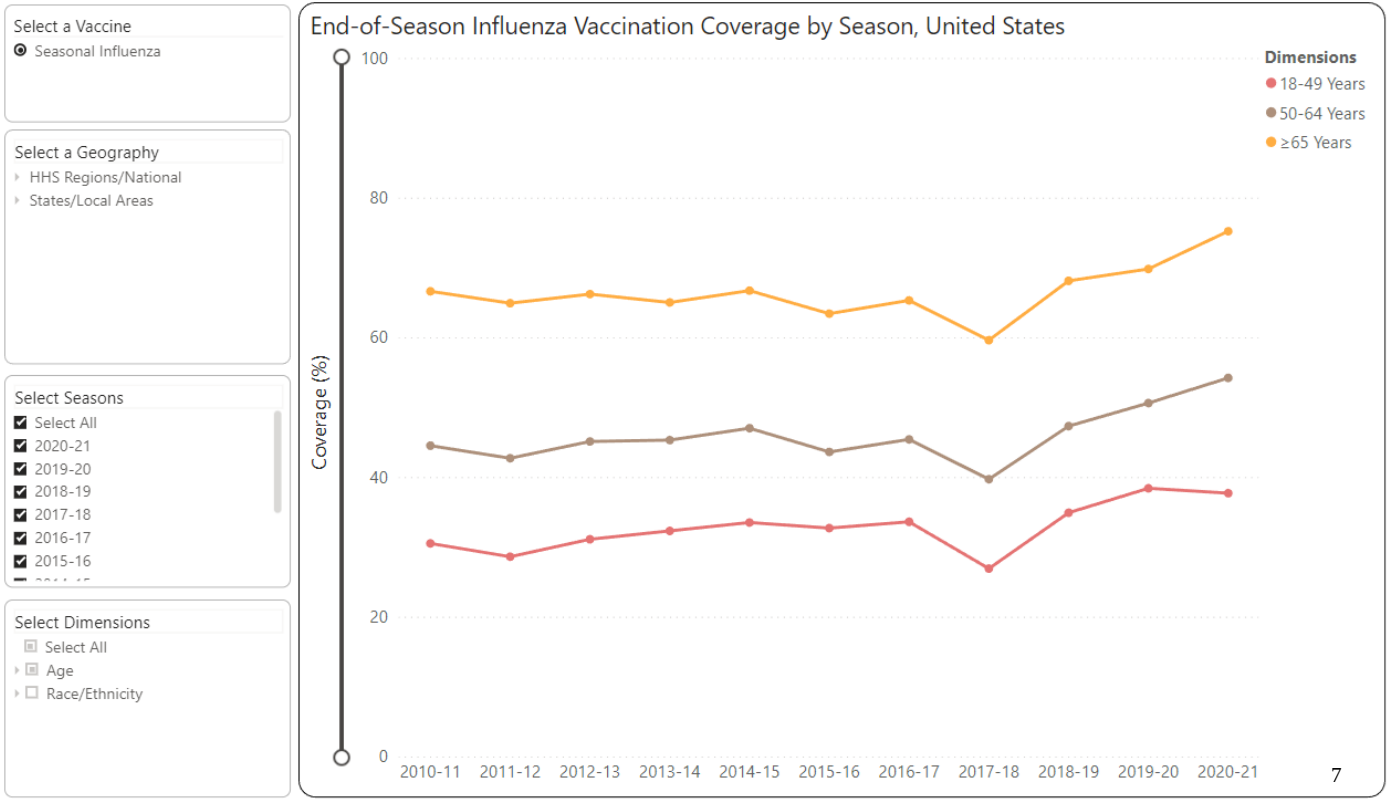
OK[8]
COVID-19:
75%



Influenza Coverage

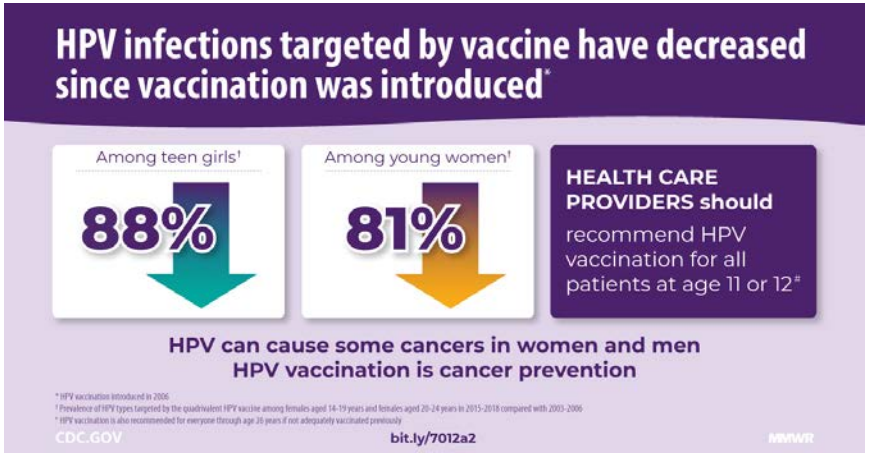
USA[7]
>65: 75%
50-64: 54%
18-49: 37%

OK[7]
>65: 76%
50-64: 53%
18-49: 27%



Recent Vaccination trends

- HPV vaccine has reduced cervical cancer incidence by 90%.[14]
- Globally, COVID-19 vaccinations have prevented 19.8 million deaths. [20]
- In 2017-2018, influenza vaccination prevented 6.9 million illnesses, 3.6 million medical visits, 94,486 hospitalizations, and 5,965 deaths. [9]



Vaccine Hesitancy

Vaccines are pretty cool, yeah!?

Well, not to everyone. Some may be…
Hesitant.

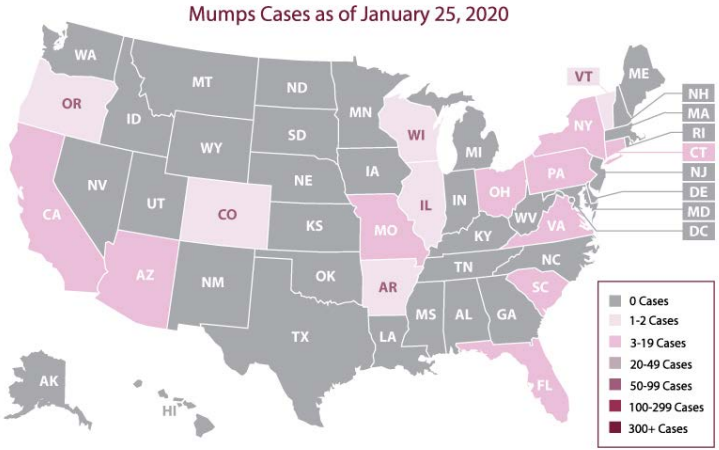
What is Vaccine Hesitancy?

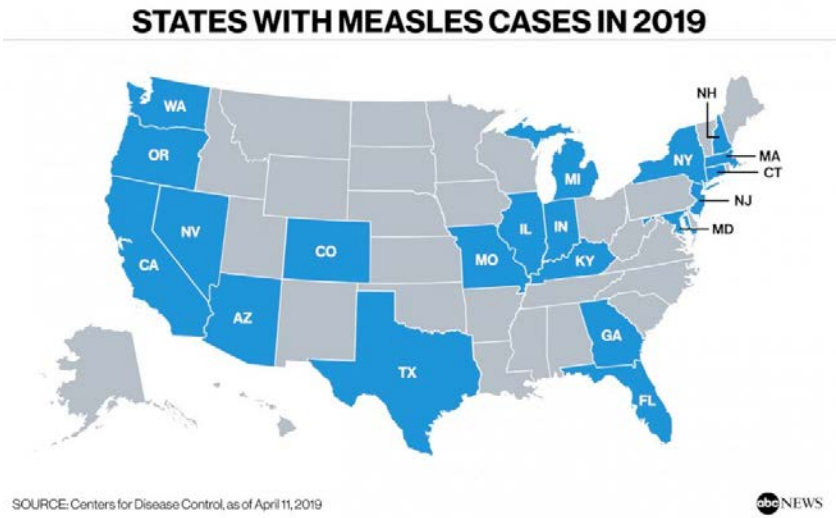
- World Health Organization: “the reluctance or refusal to vaccinate despite the availability of vaccines”.[17]
- WHO considers vaccine hesitancy a top 10 threat to global health. [17]
- The term has emerged to depolarize “pro” versus “anti” vaccination and to represent the entire spectrum of vaccination opinions.

Recent Vaccination Trends

- In the years leading up to the COVID-19 pandemic, “anti-vaxx” movement continues to be a concerning trend.
- Since COVID-19, vaccination rates have decreased, possibly for two reasons
  - Decreased well child visits and decreased in-person school.
  - Less trust in the scientific community.

Measles and Mumps, oh my!

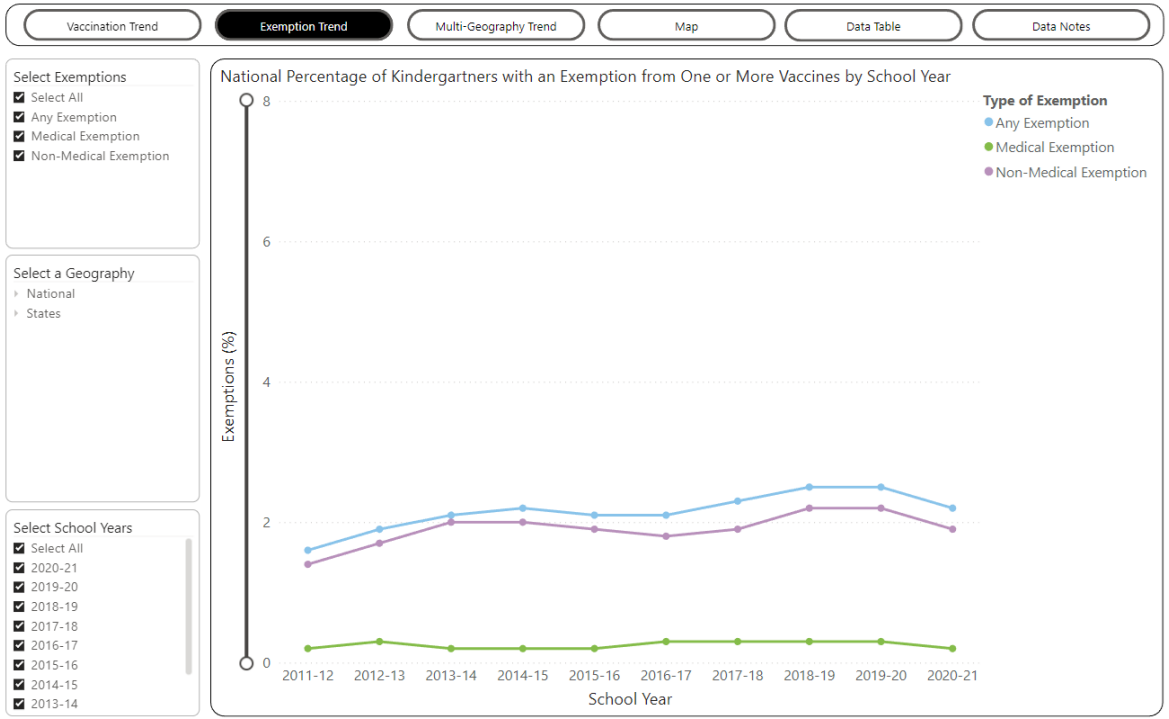




Kindergartners with Vaccine Exemptions

USA[5]
Exempt: 2.2%
Med: 0.2%
NonMed: 19%

OK[5]
Exempt: 2.4%
Med: 0.2%
NonMed: 2.3%



Vaccination Rate Post-COVID-19

- In 2020, Louisiana medicaid patients saw a lower uptake of routine vaccinations compared to 2017-2019 vaccination rates. [26]
  - 30% reduction in MMR
  - 35% reduction in HPV
  - 30% reduction in Tdap
- Across 8 health care systems, analyzing over 1.4 million children, it was found that there was a substantially lower vaccination in the early months of the pandemic, however it was followed by an increase back near to pre-pandemic levels later in the year. [15]
  - Despite this, there was still a larger delay in getting children up to date on vaccines, most worrisome, MMR.

Reasons I have heard for not vaccinating

- “I don’t trust what is in the vaccines” (formaldehyde, aluminum, etc)
- “Those diseases are gone, so why vaccinate?”
- “It is just Big Pharma and doctors wanting money”
- Someone on facebook told me it was “bad”
- “Against my religion”
- “There are too many at so young”
- “I just don’t want them” <- my most common one.

Reasons for not vaccinating

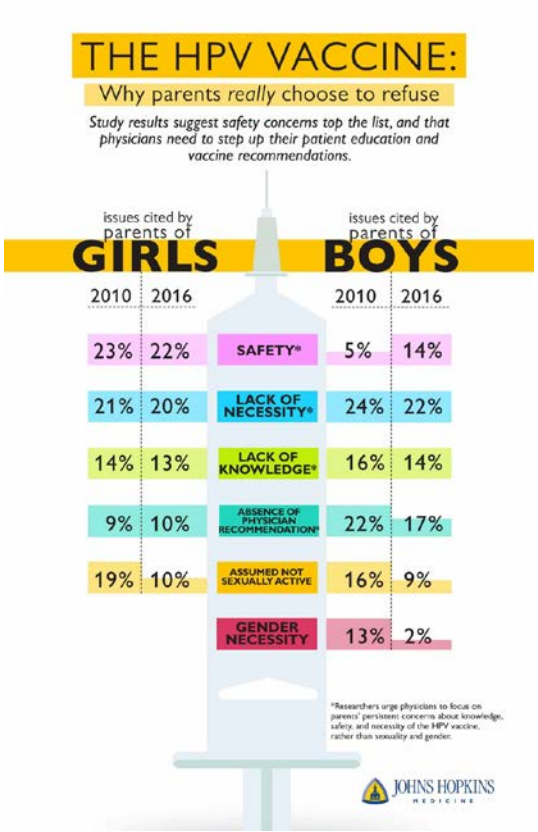
- In 2018 and 2019, 23.6% of surveyed parents were hesitant about vaccinating their children 19-25 months of age. [18]
  - 24.3% were concerned about the number of vaccines at one time
  - 23.2% were concerned about long term side effects
  - 10.6% reported knowing someone who had a serious side effect from a vaccine.
  - Hesitancy may account for 15-25% of the undervaccination of children.

Reasons for not vaccinating

- In a 2009 HealthStyles survey…[16]
  - 44% of parents reported concern of pain associated with multiple shots
  - 34% expressed unease about receiving too many shots
  - 26% worried about development of autism or other learning difficulties
  - 13.5% were concerned that vaccines could lead to chronic illnesses
  - 13.2% states vaccines were not tested enough for safety

HPV Vaccine: New Kid on the Block

- Today, HPV Teens with 1dose of HPV vaccine: ~75%
- Up to date teens: ~60%
- MCV and TDaP: above 90%[3]



What providers might say about the vaccine hesitant parent?

- "I don't have enough time in the visit."
  - 53% of physicians spend 10-19 minutes discussing vaccines with concerned parents. [11]
- "I won't change their mind anyway."
- "I don't want them to lose confidence in me."
- "I'm not good with confrontation."
- "I'm worried I don't know enough about the vaccine."
- "I'm emotionally exhausted already"

It's a hard conversation.

It is hard for us to talk to parents who don’t want to vaccinate about this. Why?

- Parents and patients may get offended.
- We may lose their trust or the relationship we have been building.
- For some, we are asking a person to agree with us rather than their friends, their family, or their religion.

What doesn't seem to work?

- Listing Statistics
- Presenting medical information
- Social media campaigns
- Bullying them
- Treating all vaccine hesitant people as the same
    - They are a heterogenous group with different backgrounds, religions, thoughts, politics, and feelings. Thus vaccination concerns should be individualized to the patient's family. [11]

What does seem to work?

- The number one way to help fight against vaccine hesitancy is with a **trusted health care provider**
- Presumptive delivery strategy
- Motivational Interviewing
- Removal of nonmedical exemptions for vaccination.
  - Nonmedical exemptions were 2.5x higher in states that allowed for philosophical exemptions.
  - Removal of nonmedical exemptions for vaccinations is supported by the AAP, AMA, and IDSA.[11]

A trusted health care provider

- Nearly 80% of parents states that their decision to vaccinate was positively influenced by their primary care provider. [11]
- Personalizing your message has a great impact on parents.
  - Tell personal choices and experiences.
  - Tell about how you chose to vaccinate your children or grandchildren.
- The main message that I say with every patient is “Vaccines are safe and effective, and serious disease can occur if you and your family aren’t vaccinated. I vaccinate my own children and I recommend it for all of my patients.”[11]

Presumptive Delivery Strategy

- Presumptive delivery strategy where vaccines are presented as a part of the visit, rather than given as options. [11, 21]
  - “Ok, at this wellness visit, we are going to be doing some vaccines today.” is more effective than, “Would you like to vaccinate today?”
  - It has been shown to increase vaccine acceptance and higher patient visit satisfaction

Motivational Interviewing (MI)

- Patient centered method of enhancing motivation to change health behavior.
- MI was developed in 1991 by William Miller and Stephen Rollnick in as a therapy for alcohol addiction.
- Classically, it is made up of four steps that do not necessarily need to happen in a specific order: Engaging, Focusing, Evoking, Planning. [13]
- MI emphasizes empathy, reflective listening, and trust.
- It also encourages a conversation, rather than an argument.

Motivational Interviewing (MI)

- One of the few strategies that has resulted in increased vaccine coverage and decrease in parents' vaccine hesitancy. [12]
- Research has shown that MI intervention [12]
  - 15% increase in mother's intention to vaccinate
  - 9% greater chance to complete immunization by 24 months
  - Vaccine hesitancy scores reduced by 40%
  - 9.5% increase in HPV vaccination
- Often is combined with presumptive delivery to make a model called "Presumptive Initiating Vaccines and Optimizing Talk with Motivational Interviewing" (PIVOT with MI)[10]

Motivational Interviewing (MI)

1) Ask the parent to share their concerns.

   "I know you are worried about the MMR vaccine. I want to make sure we talk about all of your concerns today, so let's talk about it."[19]

1) Ask permission to share information.

   "I hear that you're worried that MMR vaccine may cause autism. I also have heard some stories about the vaccine and I follow vaccine safety very closely. Is it okay if we talk about what I know?"[19]

Motivational Interviewing (MI)

3) Provide information to change a parent's perspective.

> "Autism is a hard and scary for many families, especially for myself who help take care of autistic children. But, I have also seen well conducted studies that show that MMR vaccine does not increase the risk of autism in children."[19]

4) Make a personalized recommendation to vaccinate today.

> "I strongly believe that this vaccine is important. I have kept both of my children up to date on their vaccines and I recommend it to all of my patients."[19]

Parents will still decline sometimes...

- Make sure they know that the door is always open to talk about it in the future.
- Offer a handout.
- Don’t dwell on the issue.
- Relax; you have done your best for the patient. [19]

Specific Situations

Vaccine research

- Vaccines are scrutinized through the rigors of extensive research involving large numbers of people. Often times, they are more studied than common drugs and therapies that we use every day.
- They are also continuously and carefully evaluated after licensure through comprehensive safety surveillance systems (VAERS and VSD).

Autism

- Concern grew after a paper published in 1998 that may have shown a possible link between MMR vaccine and autism.
  - The sample size in the study was 12 children.
  - It has since been redacted by the Lancet in 2010 and the author's license to practice medicine was revoked. [24]
- Many, large well designed studies have found no link between vaccines and autism.
  - 5 cohort studies involving 1.2 million children and 5 case controlled studies involving 9,920 children revealed no relationship between vaccines and autism, nor MMR and autism, nor thimerosal and autism, nor mercury and autism. [24]

Additives and Preservatives

- Mercury: The form of mercury found in thimerosal is ethylmercury, which is not the kind of mercury that was found to be neurotoxic. And although no evidence of harm has been proven, thimerosal was taken out of vaccines in the US as a precaution (Except some flu vaccines).[2]
- Aluminum: It is used in some vaccines to improve the immune response. It is the most common metal found in nature and is in food, drink, the air, baby formula, and even breast milk. The amount of aluminum in the vaccine is a very small amount. [2]

Vaccines while sick

- It is safe to vaccinate while a child is sick.
  - However, you may need to take into consideration the severity of the illness.
  - I will usually offer it up to the parents and have them schedule a shot only visit in the future when the child is feeling better. [2]

Vaccines derived from elective abortions

- Varicella, Rubella, Hepatitis A vaccines are all made by growing the viruses in fibroblast cells derived from fetal tissue. [25]
  - The fibroblast cells were derived from a two elective abortions in the 1960s and have continued to grow in a laboratory to continue to make vaccines today.
  - No further sources of fetal cells are used. The vaccines do not contain fetal tissue.
  - Current fetal cell lines are thousands of generations from the original fetal tissue.
- In 2005, the vatican issued a statement concerning the rubella vaccine.
  - The vatican did not support the way in which the vaccine was created, however deemed it unethical to not get the vaccine to protect children, pregnant women, and our society in light of no acceptable alternative vaccines. [25]
- J&J COVID-19 vaccine is made using a fetal retinal cells from an elective abortion in 1985.[23]

Delayed vaccination schedules

- The current vaccine schedule is the only recommended schedule.
- There is no benefit to splitting up vaccines
- Often times, families don't show up to the catch up visit
- More visits where the child is fearful of coming to the doctor and more likely for them to get sick with something in the waiting room
- Delaying vaccines greatly increases the time period that a child remains susceptible to disease and spreading that disease.[19]

Concern about multiple shots in one visit

- The amount of antigens that a child fights every day is 2,000-6,000. The amount of the entire vaccine schedule is 181.

Children Receive More Vaccines Than in the Past, but Today They Contain Fewer Antigens

Vaccine	1960	1980	2000	2014
Smallpox	200			
Diphtheria	1	1	1	1
Tetanus	1	1	1	1
Pertussis	3000	3000	5	5
Polio	15	15	15	15
MMR		24	24	24
Hib			2	2
Varicella			69	69
PCV7/PCV13			8	14
HepB			1	1
HepA				4
HPV4				4
Rotavirus				20
MCV4				5
Influenza				16
Total	3217	3041	126	181

Sources: Gary Marshall. U of Louisville

Immunization Action Coalition. Quick Answers to Tough Questions. 2018. Item #58030

“I just don’t want to”

- I let them know my stance on vaccines very clearly.
  - That they are “safe, effective, and I recommend them for all of my patients including my own children”
- I make sure that if they have any questions, that they allow me to be their resource.
- Sometimes, I will challenge the families to research them more, because I do think the vaccines are important for their child to have.
- We will talk about it again at the next visit.

Take home points

- Nationwide, herd immunity is still present, but vaccine hesitancy continues to be a great concern for the health of our patients and society.
- The most effective method is with a trusted provider.
- “Vaccines are safe and effective, and serious disease can occur if your child and family are not immunized.”
- Conversations with vaccine hesitant parents should be respectful, calm, and honest.

Resources

- YourLocalEpidemiologist.substack.com
- Healthychildren.org
- Immunize.org
- Pediatric Advisor

RSV Vaccine

- Paper just released in June 2022
- In a phase 2a study, randomized, double blind study on a potential new RSV vaccine showed 86.7 efficacy against symptomatic RSV infection and viral shedding based on an intranasal RSV challenge.[22]
- No evident safety concerns.
- RSV vaccine on the horizon????

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Thank you for listening