T.I.P.S. Training on Immunization Practice Strategies
Summer 2023
Pre-Test

This is a test for US
NOT for You

WiF – EBC
no password needed
Icebreaker
2 minutes
What do you LIKE about your job?
2 minutes

Continue on previous discussions

What was common between you and your old partner?

What did you like about your jobs?
2 minutes

Continue on previous discussions

What was common between you and your other partners?

What did you like about your jobs?
DEBRIEF

What patterns did you find?
What do we ALL like about our jobs?
What are things you do not like about your job?
Continue on previous discussions
What was common between you and your old partner? What did you not like about your jobs?
2 minutes

Continue on previous discussions

What was common between you and your other partners? What did you not like about your jobs?
DEBRIEF

What patterns did you find?
What do we ALL not like about our jobs?
THANK YOU
YOU keep communities safe!

**Our goal** today is for you to leave with
**3 new ideas** for things that you can do (or others in your practice can do)
to help improve vaccination rates.

Idea #1

Idea #2

Idea #3
Guiding Principals

- Light, fun conversational
- Interact - Support colleagues
- We’re all human
- All question are good
Housekeeping – Own Your Role

- Q&A
- Agenda & breaks
- Food & drink
- Create at your table
- Other resources
- Restrooms
Who’s in the room?
TAPI’s Mission

We foster community wellness and advocate for good public policy and best immunization practices.

• Partners like you!
• Over 400 Coalition members
• Working together can improve outcomes
Every year, over 85,000 children are born in Arizona, and all must be vaccinated against childhood diseases, to protect their health and future. Our 2020 Healthy People goal is to have 80% of all children receiving the recommended doses of DTap, polo, MMR, Hib, Haem and PCV vaccines. As of September 2016, the U.S. National Data Immunization Coverage is 74.1%; Arizona 66.7%.

Data Source: National Immunization Survey (NIS); Centers for Disease Control and Prevention, National Center for Immunization and Respiratory Diseases and National Center for Health Statistics (COS/CIRD and COS/CHS).
Thank You, Exhibitors!
So, how are we doing?
**Morbidity**
Diseased condition or state; The incidence of disease

**Mortality**
The number of deaths in a given time or place; The rate of death
Morbidity

Diseased condition or state; The incidence of disease

Mortality

The number of deaths in a given time or place; The rate of death

Immunity

“Protection from an infectious disease. If you are immune to a disease, you can be exposed to it without becoming infected.” - CDC
**Morbidity**
Diseased condition or state; The incidence of disease

**Mortality**
The number of deaths in a given time or place; The rate of death

**Immunity**
“Protection from an infectious disease. If you are immune to a disease, you can be exposed to it without becoming infected.” - CDC

**Immunization Coverage or Coverage Rates**
“Estimated percentage of people who have received specific vaccines.”
- CDC
Review

Herd Immunity or Community Immunity

A situation in which a sufficient proportion of a population is immune to an infectious disease (through vaccination and/or prior illness) to make its spread from person to person unlikely. Even individuals not vaccinated (such as newborns and those with chronic illnesses) are offered some protection because the disease has little opportunity to spread within the community.

- CDC Vaccine Glossary
bozeman
Questions
# Herd Immunity Thresholds of vaccine-preventable diseases

<table>
<thead>
<tr>
<th>Disease</th>
<th>Transmission</th>
<th>Basic reproduction number</th>
<th>Herd Immunity Threshold</th>
</tr>
</thead>
<tbody>
<tr>
<td>Measles</td>
<td>Airborne</td>
<td>12–18</td>
<td>92–95%</td>
</tr>
<tr>
<td>Pertussis</td>
<td>Airborne droplet</td>
<td>12–17</td>
<td>92–94%</td>
</tr>
<tr>
<td>Diphtheria</td>
<td>Saliva</td>
<td>6–7</td>
<td>83–86%</td>
</tr>
<tr>
<td>Rubella</td>
<td>Airborne droplet</td>
<td>6–7</td>
<td>83–86%</td>
</tr>
<tr>
<td>Smallpox</td>
<td>Airborne droplet</td>
<td>5–7</td>
<td>80–86%</td>
</tr>
<tr>
<td>Polio</td>
<td>Fecal-oral route</td>
<td>5–7</td>
<td>80–86%</td>
</tr>
<tr>
<td>Mumps</td>
<td>Airborne droplet</td>
<td>4–7</td>
<td>75–86%</td>
</tr>
<tr>
<td>SARS</td>
<td>Airborne droplet</td>
<td>2–5</td>
<td>50–80%</td>
</tr>
<tr>
<td>Ebola</td>
<td>Bodily fluids</td>
<td>1.5–2.5</td>
<td>33–60%</td>
</tr>
<tr>
<td>Influenza</td>
<td>Airborne droplet</td>
<td>1.5–1.8</td>
<td>33–44%</td>
</tr>
</tbody>
</table>
2020 National Immunization Survey
Arizona Coverage Level Estimates* for 19 to 35 months

*Confidence intervals for coverage level estimates for Arizona ranged from 2.8% to 7.1% in 2020. The 2020 NIS results were released in March 2021. Source: National Immunization Survey (NIS) results posted at https://www.cdc.gov/vaccines/imz-managers/coverage/childvaxview/index.html.
CDC National Immunization Survey
Combined 7 Series at 35 Months

https://www.cdc.gov/vaccines/imz-managers/coverage/childvaxview/interactive-reports/index.html
Kindergarten
<table>
<thead>
<tr>
<th>AZ Kindergarten Exemptions 2005–2022</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
</tr>
<tr>
<td>-------------------------------------</td>
</tr>
<tr>
<td>Personal Beliefs Exemptions</td>
</tr>
<tr>
<td>2.1%</td>
</tr>
<tr>
<td>Medical Exemptions</td>
</tr>
<tr>
<td>0.2%</td>
</tr>
<tr>
<td>Total Exemptions</td>
</tr>
<tr>
<td>2.3%</td>
</tr>
</tbody>
</table>

Total exemptions increased from 2.3% in 2005 to 7.1% in 2022.

Source: Arizona Department of Health Services, Immunization Program Office. Data posted at AZDHS.gov
# Arizona Sixth/Seventh Grade Exemptions

## 2005–2022

<table>
<thead>
<tr>
<th>Year</th>
<th>Personal Beliefs Exemptions</th>
<th>Medical Exemptions</th>
<th>Total Exemptions</th>
</tr>
</thead>
<tbody>
<tr>
<td>2005</td>
<td>1.6%</td>
<td>0.1%</td>
<td>1.7%</td>
</tr>
<tr>
<td>2010</td>
<td>3.2%</td>
<td>0.5%</td>
<td>3.7%</td>
</tr>
<tr>
<td>2015</td>
<td>4.7%</td>
<td>0.4%</td>
<td>5.1%</td>
</tr>
<tr>
<td>2018</td>
<td>5.4%</td>
<td>0.6%</td>
<td>6.0%</td>
</tr>
<tr>
<td>2020</td>
<td>6.1%</td>
<td>.8%</td>
<td>6.9%</td>
</tr>
<tr>
<td>2022</td>
<td>6.2%</td>
<td>.3%</td>
<td>6.5%</td>
</tr>
</tbody>
</table>

Total exemptions increased from 1.7% in 2005 to 6.9% in 2019 and down in 2022.

Reported Measles Cases in the United States by Year
1954-2008
True or False?

All ACIP–recommended vaccines are required for school.
True or False?

All ACIP-recommended vaccines are required for school.
Questions
FIGURE. Estimated proportion of adults aged ≥19 years who received selected vaccines, by age group and risk status — National Health Interview Survey, United States, 2010–2020
YOU are the protector of Community Immunity
action
REQUEST
Stand if you were alive in 1980.

It’s okay – don’t be embarrassed!
Break Time!

Give index card questions to staff
Visit exhibitors
It takes a Team!
Sit with new friends!

1. "I need to get out of my comfort zone!"
2. "Hey, this ain't so-
3. never again."
1. Think about all the steps that need to be taken in order to administer a vaccine

2. Write ONE step per post-it note
Group Activity

1. Review the steps everyone wrote
2. Add new steps that you forgot
3. Put the steps in order
Full Group Activity
Vaccine Process without standing orders

Front Ops:
- Appointment reminder and ask patient/parent to bring vaccine records
  - Print ASIIS before appointment
    - Compare records to ASIIS
      - Does ASIIS need to be updated?
        - Yes: Update ASIIS
        - No: Are Vaccines due?
          - Yes: Discuss all vaccines due and get consent
          - No: Discuss vaccines that may be due at next visit and set appointment for next visit
    - Are Vaccines due?
      - Yes: Pull vaccines and verify with a second MA or RN using 8 rights
      - No: Deliver vaccines

Provider:
- Order all appropriate vaccines
- Document
<table>
<thead>
<tr>
<th>Step</th>
<th>Who's involved in this step?</th>
<th>New ideas?</th>
<th>Things to remember</th>
<th>By when?</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Ordering</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Store/Handle</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Shipment</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Screen</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. Patients</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. Counsel Vacci</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7. Prepare</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8. Administer</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9. Document</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Workspace & Notes**

T.I.P.S.
Training on Immunization Practice Strategies
(T.I.P.S.)
Break Time!

Give index card questions to staff
Visit exhibitors
Thank You, Exhibitors!
Vaccine Preventable Diseases

- Measles (Rubeola)
- Mumps
- German Measles (Rubella)
- Polio
- Whooping cough (Pertussis)
- Diphtheria
- Tetanus
- Hepatitis A
- Hepatitis B
- Haemophilus influenza type B (Hib)
- Pneumoccocal
- Rotavirus
- Chickenpox (Varicella)
- Influenza (Flu)
- Shingles (Zoster)
- Human papillomavirus (HPV)
- COVID-19
How do vaccines work?

How vaccines for children and teens work

American Academy of Pediatrics

healthychildren.org

DEDICATED TO THE HEALTH OF ALL CHILDREN®

Powered by pediatricians. Trusted by parents.
From the American Academy of Pediatrics
Vaccine Basics

Machrina Leach, R.N., B.S.N.
Nurse Program Manager
Maricopa County Department of Public Health
Disease Control Division
Vaccine Types

- Inactivated vaccines
- Live-attenuated vaccines
- Messenger RNA (mRNA) vaccines
- Subunit, recombinant, polysaccharide and conjugate vaccines
- Toxoid vaccines
- Viral vector vaccines
Live Attenuated

- Attenuated (weakened) form of the "wild" virus or bacterium
- Must replicate to be effective
- Immune response similar to natural infection
- Usually produce immunity with one dose*

*except those administered orally
**Live Attenuated**

- Attenuated (weakened) form of the "wild" virus or bacterium
- Must replicate to be effective
- Immune response similar to natural infection
- Usually produce immunity with one dose*

*except those administered orally
**Inactivated**

- Cannot replicate
- Different immune response (humoral)
- Unaffected by antibody in the blood
- Generally require 3-5 doses
- Antibody titer diminishes with time
- Adverse events mostly local with or without fever
Inactivated

- Cannot replicate
- Different immune response (humoral)
- Unaffected by antibody in the blood
- Generally require 3-5 doses
- Antibody titer diminishes with time
- Adverse events mostly local with or without fever
Messenger RNA

COVID-19

- Moderna
- Pfizer
Subunit, recombinant, polysaccharide and conjugate

- Whooping cough
- HPV
- Shingles
- Hib
- Meningococcal disease
- Pneumococcal disease
- Hepatitis B
Toxoid

Diphtheria

Tetanus
Passive Immunity

Temporary protection against a disease
Active immunity
General Rules
General Rule 1

The more similar a vaccine is to the disease-causing form of the organism, the better the immune response to the vaccine.
How many vaccines can be given at one time?
General Rule 2

All vaccines can be administered at the same visit as all other vaccines.
General Rule 3

**Increasing** the interval between doses of a multidose vaccine **does not diminish the effectiveness** of the vaccine.

**Decreasing** the interval between doses of a multidose vaccine **may interfere with antibody response** and protection.
Minimum Ages/ Intervals

Spacing between vaccine doses

- Minimum age for receiving initial doses
- Minimum intervals between doses
- Grace period of **4 days** for all vaccines
  includes initial doses and intervals between doses *COVID-19 is different
- If dose of vaccine is given at a **shorter** interval (allowing grace period)
  even one day shorter - **it doesn’t count as a valid dose**
- **Doses too close can reduce vaccine effectiveness**
Contraindications & Precautions

Three permanent contraindications to vaccines:
- Severe allergic reaction to a vaccine component or following a prior dose
- Encephalopathy (brain swelling) without known cause within seven days of administration of a previous dose of DTP, DTaP or Tdap vaccine
- Severe combined immunodeficiency (rotavirus vaccine)

Two temporary contraindications to *live* vaccines
- Pregnancy
- Immunosuppression
ACIP – Advisory Committee on Immunization Practices

- Panel of 15 experts
- Develops written recommendations
- Establishes schedule
- Meets 4 times/ year *(well, not in “COVID times”)*
- Does *not* recommend alternate schedules
ACIP Schedules

Child and Adolescent Schedule

**Recommended Child and Adolescent Immunization Schedule**

**For ages 18 years or younger, United States 2023**

- Diphtheria and tetanus toxoids and acellular pertussis vaccine (Boostrix-AD or Daptacel)
- Inactivated poliovirus vaccine (IPV)
- Pneumococcal conjugate vaccine (PCV)
- Haemophilus influenzae type b (Hib) conjugate vaccine
- Rotavirus vaccine
- Varicella vaccine
- Human papillomavirus (HPV) vaccine
- Meningococcal conjugate vaccine (MCV)
- Meningococcal polysaccharide vaccine (MenACWY)
- Inactivated influenza vaccine

**How to use the child and adolescent immunization schedule**

1. Check the child’s age and place the child in the appropriate age group (1 through 16 years).
2. For each age group, use the “When to give” column to determine the recommended vaccination schedule.
3. Use the “What to give” column to determine the recommended vaccine products.
4. Use the “How many doses” column to determine the number of doses recommended for each vaccine.
5. Use the “When to give” column to determine the recommended vaccination schedule.
6. Use the “What to give” column to determine the recommended vaccine products.
7. Use the “How many doses” column to determine the number of doses recommended for each vaccine.
8. Use the “Additional information” column to determine any additional information needed for each vaccine.

**Questions or comments**

- Please contact your local health department for more information.

**Table 1**

<table>
<thead>
<tr>
<th>Vaccine</th>
<th>Age Group 0-2 months</th>
<th>Age Group 3-5 months</th>
<th>Age Group 6-11 months</th>
<th>Age Group 12-17 months</th>
</tr>
</thead>
<tbody>
<tr>
<td>Diphtheria and tetanus toxoids and acellular pertussis vaccine (Boostrix-AD or Daptacel)</td>
<td>1 dose</td>
<td>1 dose</td>
<td>1 dose</td>
<td>1 dose</td>
</tr>
<tr>
<td>Inactivated poliovirus vaccine (IPV)</td>
<td>3 doses</td>
<td>3 doses</td>
<td>3 doses</td>
<td>3 doses</td>
</tr>
<tr>
<td>Pneumococcal conjugate vaccine (PCV)</td>
<td>2 doses</td>
<td>2 doses</td>
<td>2 doses</td>
<td>2 doses</td>
</tr>
<tr>
<td>Haemophilus influenzae type b (Hib) conjugate vaccine</td>
<td>3 doses</td>
<td>3 doses</td>
<td>3 doses</td>
<td>3 doses</td>
</tr>
<tr>
<td>Rotavirus vaccine</td>
<td>2 doses</td>
<td>2 doses</td>
<td>2 doses</td>
<td>2 doses</td>
</tr>
<tr>
<td>Varicella vaccine</td>
<td>1 dose</td>
<td>1 dose</td>
<td>1 dose</td>
<td>1 dose</td>
</tr>
<tr>
<td>Human papillomavirus (HPV) vaccine</td>
<td>2 doses</td>
<td>2 doses</td>
<td>2 doses</td>
<td>2 doses</td>
</tr>
<tr>
<td>Meningococcal conjugate vaccine (MCV)</td>
<td>1 dose</td>
<td>1 dose</td>
<td>1 dose</td>
<td>1 dose</td>
</tr>
<tr>
<td>Meningococcal polysaccharide vaccine (MenACWY)</td>
<td>1 dose</td>
<td>1 dose</td>
<td>1 dose</td>
<td>1 dose</td>
</tr>
<tr>
<td>Inactivated influenza vaccine</td>
<td>Annual</td>
<td>Annual</td>
<td>Annual</td>
<td>Annual</td>
</tr>
</tbody>
</table>

**Adult Schedule**

**Recommended Adult Immunization Schedule**

**For ages 19 years or older, United States 2023**

- Diphtheria and tetanus toxoids and acellular pertussis vaccine (Tdap) or DPT
- Inactivated poliovirus vaccine (IPV)
- Pneumococcal conjugate vaccine (PCV)
- Haemophilus influenzae type b (Hib) conjugate vaccine
- Rotavirus vaccine
- Varicella vaccine
- Human papillomavirus (HPV) vaccine
- Meningococcal conjugate vaccine (MCV)
- Meningococcal polysaccharide vaccine (MenACWY)
- Inactivated influenza vaccine

**How to use the adult immunization schedule**

1. Check the adult’s age and place the adult in the appropriate age group. (19 years or older).
2. Use the “When to give” column to determine the recommended vaccination schedule.
3. Use the “What to give” column to determine the recommended vaccine products.
4. Use the “Additional information” column to determine any additional information needed for each vaccine.

**Table 1**

<table>
<thead>
<tr>
<th>Vaccine</th>
<th>Age Group 19-26 years</th>
<th>Age Group 27-49 years</th>
<th>Age Group 50-64 years</th>
<th>Age Group 65 years or older</th>
</tr>
</thead>
<tbody>
<tr>
<td>Diphtheria and tetanus toxoids and acellular pertussis vaccine (Tdap) or DPT</td>
<td>1 dose</td>
<td>1 dose</td>
<td>1 dose</td>
<td>1 dose</td>
</tr>
<tr>
<td>Inactivated poliovirus vaccine (IPV)</td>
<td>1 dose</td>
<td>1 dose</td>
<td>1 dose</td>
<td>1 dose</td>
</tr>
<tr>
<td>Pneumococcal conjugate vaccine (PCV)</td>
<td>1 dose</td>
<td>1 dose</td>
<td>1 dose</td>
<td>1 dose</td>
</tr>
<tr>
<td>Haemophilus influenzae type b (Hib) conjugate vaccine</td>
<td>1 dose</td>
<td>1 dose</td>
<td>1 dose</td>
<td>1 dose</td>
</tr>
<tr>
<td>Rotavirus vaccine</td>
<td>1 dose</td>
<td>1 dose</td>
<td>1 dose</td>
<td>1 dose</td>
</tr>
<tr>
<td>Varicella vaccine</td>
<td>1 dose</td>
<td>1 dose</td>
<td>1 dose</td>
<td>1 dose</td>
</tr>
<tr>
<td>Human papillomavirus (HPV) vaccine</td>
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<td>2 doses</td>
</tr>
<tr>
<td>Meningococcal conjugate vaccine (MCV)</td>
<td>1 dose</td>
<td>1 dose</td>
<td>1 dose</td>
<td>1 dose</td>
</tr>
<tr>
<td>Meningococcal polysaccharide vaccine (MenACWY)</td>
<td>1 dose</td>
<td>1 dose</td>
<td>1 dose</td>
<td>1 dose</td>
</tr>
<tr>
<td>Inactivated influenza vaccine</td>
<td>Annual</td>
<td>Annual</td>
<td>Annual</td>
<td>Annual</td>
</tr>
</tbody>
</table>
What questions do you have about the CHILDHOOD schedules?
What questions do you have about the ADULT schedules?
Question

How often are you asked about alternate schedules?
Table 1.—Recommended Schedule for Active Immunization and Tuberculin Testing of Normal Infants and Children

<table>
<thead>
<tr>
<th>Age</th>
<th>Immunization or Test</th>
</tr>
</thead>
<tbody>
<tr>
<td>14-18 mos</td>
<td>D.T.P.*</td>
</tr>
<tr>
<td>3 mos</td>
<td>Poliomyelitis vaccine</td>
</tr>
<tr>
<td>4 mos</td>
<td>Poliomyelitis vaccine</td>
</tr>
<tr>
<td>10-11 mos</td>
<td>Smallpox vaccine</td>
</tr>
<tr>
<td>12 mos</td>
<td>Smallpox vaccine</td>
</tr>
<tr>
<td>12 mos</td>
<td>Tuberculin test</td>
</tr>
<tr>
<td>12 mos</td>
<td>Measles vaccine</td>
</tr>
<tr>
<td>15-18 mos</td>
<td>D.T.P., type 1 OPV or trivalent OPV</td>
</tr>
<tr>
<td>2 years</td>
<td>Tuberculin test</td>
</tr>
<tr>
<td>3 years</td>
<td>D.T.P., tuberculin test</td>
</tr>
<tr>
<td>4 years</td>
<td>Tuberculin test</td>
</tr>
<tr>
<td>6 years</td>
<td>TD-smallpox vaccine, tuberculin test</td>
</tr>
<tr>
<td>8 years</td>
<td>Tuberculin</td>
</tr>
<tr>
<td>10 years</td>
<td>Tuberculin</td>
</tr>
<tr>
<td>12 years</td>
<td>Tuberculin</td>
</tr>
<tr>
<td>14 years</td>
<td>Tuberculin</td>
</tr>
<tr>
<td>16 years</td>
<td>Tuberculin</td>
</tr>
</tbody>
</table>

* D.T.P. = Diphtheria, pertussis, tetanus.
† Poliomyelitis vaccine for primary immunization of infants may be given as a separate injection or in a commercially prepared quadruple vaccine with D.T.P.
‡ D.T. = Diphtheria, tetanus.

The recommended immunization schedule by the AAP in the 1966 Red Book. The first measles vaccine was approved in 1963.
1. Have a calendar available in each exam room
   *See our TAPI handout!*
2. Count weeks between shots
3. Check the age of the child to assure accurate time for shots
Thank You, Exhibitors!
Lunch
Team Maureen
Looking for HPV Champions

Visit the TAPI booth to sign up!
Disease Quiz
Mumps
Haemophilus Influenza Type B (Hib)
Meningococcemia
Diphtheria
Congenital Rubella Syndrome
Measles
Tetanus
Hepatitis A
Varicella
Pertussis

For reproduction of this figure, acknowledgment of the editors and their clinical departments is appreciated.
Human Papillomavirus (HPV)
Thank You, Exhibitors!

- GSK
- CARE1st
- CSL Seqirus
- MERCK
- Pfizer
- novavax
Cold Chain Flowchart

- Vaccine manufacturing
- Vaccine distribution
- Vaccine arrival at provider facility
- Vaccine storage and handling at provider facility
- Vaccine administration

- Manufacturer responsibility
- Manufacturer/distributor responsibility
- Provider responsibility
Vaccines are temperature and light sensitive

- Any temperature deviation should be evaluated
- It is better NOT to Vaccinate than to administer a dose of vaccine that is not viable
Vaccine storage & temperature monitoring equipment

Refrigerator

Freezer

temp range
-58° F to 5° F

don't block vents
COVID-19 Vaccine

STORAGE

**Freezer**
- Unpunctured vials may be stored in the freezer between -50°C and -15°C (-58°F and 5°F)
- Store in the original carton
- Protect from light
- Do NOT store with dry ice or below -50°C (-58°F)

**Refrigerator**
- Unpunctured vials may be stored in the refrigerator between 2°C to 8°C (36°F to 46°F) for up to 30 days*
- Do NOT refreeze thawed vaccine
- Thawed vaccine can be handled in room light
- Monitor how long the vaccine has been in the refrigerator using CDC’s beyond-use date labels
- Remove the box from frozen storage
- Complete the information on the storage label
- Attach it to the box holding the vaccine vials
- Once labeled, place vaccine in the refrigerator
- Punctured vials may be stored between 2°C and 25°C (36°F and 77°F) for up to 12 hours
COVID-19 Vaccine

Pfizer-BioNTech

• Beyond Use Date/Time: Freezer: Between -25°C and -15°C (-13°F to 5°F) for up to 2 weeks
• Refrigerator: Between 2°C and 8°C (36°F and 46°F) for up to 10 weeks
COVID-19 Vaccine

NovaVax

- **Refrigerator:** Between 2°C and 8°C (36°F and 46°F)
- USE within 6 hours of puncture
- Discard unused portion, document wastage
Emergency Vaccine Storage, Handling & Transport Preparation

HOPE for the BEST...

PLAN for the WORST.
In case of Emergency

Know what to do!

- VFC vaccine
- Non-VFC vaccine
- COVID-19 vaccine

Keep the door shut!
Temp Log Do’s & Don’ts

1. Check twice a day
2. Use the same measurement (C or F)
3. Label front of units
4. Label next to temp logs
## Temperature Logs

### Daily Temperatures
- Before using any medication
- Towards the end of the day

### High / Low Temperatures
- Before using any medication
- Reset the hi/lo recording

---

**Temperature Log for Refrigerator – Celsius**

**Month/Year:**

<table>
<thead>
<tr>
<th>Day</th>
<th>Time</th>
<th>Temperature</th>
</tr>
</thead>
<tbody>
<tr>
<td>1-15</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**VFC Pin #:**

**Units:**

<table>
<thead>
<tr>
<th>Date</th>
<th>Time</th>
<th>Temperature</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Refrigerated vaccine safety zone is between 36° to 46°F (2° to 8°C) 40°F is ideal. Frozen vaccine safety zone is 5°F (-15°C) or lower.**

---

https://www.immunize.org/catg.d/p3037c.pdf
### Exact Time, Temperature to the Tenths Place

<table>
<thead>
<tr>
<th>DATE</th>
<th>TIME</th>
<th>REFRIG</th>
<th>MIN</th>
<th>MAX</th>
</tr>
</thead>
<tbody>
<tr>
<td>1st</td>
<td>am</td>
<td>CLOSED</td>
<td>°F</td>
<td>°F</td>
</tr>
<tr>
<td></td>
<td>pm</td>
<td></td>
<td>°C</td>
<td>°C</td>
</tr>
<tr>
<td>2nd</td>
<td>am</td>
<td>8:00</td>
<td>3.9</td>
<td>8.2</td>
</tr>
<tr>
<td></td>
<td>pm</td>
<td>6:00</td>
<td>4.0</td>
<td>8.2</td>
</tr>
<tr>
<td>3rd</td>
<td>am</td>
<td>2:30</td>
<td>3.9</td>
<td>8.2</td>
</tr>
<tr>
<td></td>
<td>pm</td>
<td>5:30</td>
<td>3.9</td>
<td>8.2</td>
</tr>
<tr>
<td>4th</td>
<td>am</td>
<td>9:00</td>
<td>3.9</td>
<td>8.2</td>
</tr>
<tr>
<td></td>
<td>pm</td>
<td>5:00</td>
<td>3.9</td>
<td>8.2</td>
</tr>
<tr>
<td>5th</td>
<td>am</td>
<td>9:00</td>
<td>2.9</td>
<td>8.2</td>
</tr>
<tr>
<td></td>
<td>pm</td>
<td>3:00</td>
<td>2.9</td>
<td>8.2</td>
</tr>
<tr>
<td>6th</td>
<td>am</td>
<td>7:00</td>
<td>3.9</td>
<td>8.2</td>
</tr>
<tr>
<td></td>
<td>pm</td>
<td>5:00</td>
<td>4.0</td>
<td>8.2</td>
</tr>
<tr>
<td>7th</td>
<td>am</td>
<td>7:50</td>
<td>3.9</td>
<td>8.2</td>
</tr>
<tr>
<td></td>
<td>pm</td>
<td>12:30</td>
<td>3.9</td>
<td>8.2</td>
</tr>
</tbody>
</table>

**Examples - What do you see?**
**Steps of Excursion**

1. Mark all affected medications “DO NOT USE”
   - Lock the unit
   - Notify your vaccine coordinator
   - Report the issue to a leader

2. Date/Time of excursion
   - Affected Unit
   - Room temperature if available
   - Name of person completing report
   - Inventory (with lot numbers)
   - Correct known issues

3. Contact Manufacturers and/or Immunization program (if VFC)
   - Have DDL data available

4. Cure and educate staff as appropriate
   - Replace the unit if necessary
   - Follow the Vaccine Storage & Handling

---

**Inventory (with lot numbers)**

**Correct known issues**

**Notify your vaccine coordinator**

**Report the issue to a leader**

**Cure and educate staff as appropriate**

**Replace the unit if necessary**

**Follow the Vaccine Storage & Handling**
Let’s Talk!

What are the storage and handling errors you have seen in your practice?
Vaccine Storage & Handling Plans & Standard Operating Procedures
Arizona Vaccines for Children (VFC) Program

Operations Guide

Arizona Vaccines for Children
Protecting children against vaccine-preventable diseases since 1994

VFC Vaccine Accountability and Management Plan

Office Name: ____________________________
Address: ______________________________
Facility Phone: _________________________

By signing this form, I certify on behalf of myself and all personnel working in this facility as listed on the VFC Northerner Agreement below that I have read and agree to the Vaccine Accountability & Management Plan items listed and understand I am responsible for compliance with these requirements. All persons listed below are individually accountable for compliance with these requirements.

Signature: _____________________________
Date: _________________________________

VFC Northerner Agreement

Signature: _____________________________
Date: _________________________________

VFC Vaccine Accountability and Management Plan

Submit a revised vaccine accountability and management plan to the VFC Program Office every two months or when changes occur (including changes in staff).

Vaccines must be maintained within the manufacturer's recommended temperature requirements to remain stable and prevent contamination. Store the emergency vaccine storage solution in the event of a storage unit malfunction, extended power failure, natural disaster, or other emergency that might compromise the appropriate vaccine storage.

Emergency storage facility

Name: _____________________________
Address: ___________________________
Phone number: ______________________
Contact name: _______________________
Contact phone number: _________________

Useful contacts

<table>
<thead>
<tr>
<th>Contact Type</th>
<th>Name</th>
<th>Phone Number</th>
</tr>
</thead>
</table>

Arizona Department of Health Services
You Call the Shots
CDC Vaccine Storage and Handling Toolkit

www.cdc.gov
Key Take-Aways

- Staff Training
- SOPs
- Clearly define roles & duties
  - Primary/secondary
  - Job action sheet
- Follow SOP to reduce errors & waste:
  - Check temps twice a day
  - Always use same measurement (Celsius or Fahrenheit)
  - When vaccine arrives, unpack immediately
  - Rotate your vaccines
- Emergency Plan
Cold Chain Flowchart

- Vaccine manufacturing
- Vaccine distribution
- Vaccine arrival at provider facility
- Vaccine storage and handling at provider facility
- Vaccine administration

Manufacturer responsibility
Manufacturer/distributor responsibility
Provider responsibility
# Is the patient due?

<table>
<thead>
<tr>
<th>Scheduling</th>
<th>Chart Prep</th>
<th>Check-In</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reminder recall</td>
<td>What's due?</td>
<td>Today you will receive these vaccines...</td>
</tr>
<tr>
<td>When patient schedules</td>
<td>Check ASIIS/compare (and update!)</td>
<td></td>
</tr>
<tr>
<td>Appointment reminders</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Why do we have missed opportunities?

- Failure to screen
  (busy, forget, not trained, not in the habit)
- False contraindications
  (misconception about vaccinating when sick)
- Concern/confusion around catch-up
  schedules and eligibility
- Limited clinic hours
- Vaccine shortage or not having in stock
- Inaccurate record-keeping
- Accessibility of parent consent
Solutions! How to Reduce Missed Opportunities

- Provider reminders (flags, prompt cards)
- Implement a screening process – every patient, every visit.
- Process to screen records in EMR and ASIIS
- Job aids for true and false contraindications
- Job aids for catch up schedule
- Regular decrementing!
- EMR alerts

When in doubt, vaccinate.
Screening Basics
When assessing a child who is scheduled to receive a live virus vaccine (immunizations), what are the general contraindications associated with receiving a live virus vaccine? Select all that apply.

1. The child has symptoms of a cold.
2. The child had a previous anaphylactic reaction to the vaccine.
3. The parent reports that the child is having intermittent episodes of diarrhea.
4. The parent reports that the child has not had an appetite and has been fussy.
5. The child has a disorder that caused a severely deficient immune system.
6. The parent reports that the child has recently been exposed to an infectious disease.
Screening Checklist for Contraindications to Vaccines for Adults

For patients: The following questions will help us determine which vaccines you may be given today. If you answer "yes" to any question, it does not necessarily mean you should not be vaccinated. It just means we need to ask you more questions. If a question is not clear, please ask your healthcare provider to explain it.

1. Are you sick today? ☐ ☐ ☐
2. Do you have allergies to medications, food, a vaccine ingredient, or latex? ☐ ☐ ☐
3. Have you ever had a serious reaction after receiving a vaccine? ☐ ☐ ☐
4. Do you have a long-term health problem with heart, lung, kidney, or metabolic disease (e.g., diabetes, asthma, a blood clotting disorder, no spleen, complement component deficiencies, a cold in the head, or an allergic reaction)? Are you on long-term aspirin therapy? ☐ ☐ ☐
5. Do you have cancer, leukemia, HIV/AIDS, or any other immune system problem? ☐ ☐ ☐
6. Do you have a parent, brother, or sister with an immune system problem? ☐ ☐ ☐
7. In the past 3 months, have you taken medications that affect your immune system, such as prednisone, other steroids, or antibiotics? Drugs for the treatment of rheumatoid arthritis, Crohn’s disease, or psoriasis, or have you had radiotherapy treatments? ☐ ☐ ☐
8. Have you had a seizure or a brain or other nervous system problem? ☐ ☐ ☐
9. During the past year, have you received a transfusion of blood or blood products, or been given immune (gamma) globulin or an antiviral drug? ☐ ☐ ☐
10. Are you pregnant or is there a chance you could become pregnant during the next month? ☐ ☐ ☐
11. Have you received any vaccinations in the past 4 weeks? ☐ ☐ ☐

FORM COMPLETED BY __________________________ DATE __________________________
FORM REVIEWED BY __________________________ DATE __________________________

Did you bring your Immunization record card with you? ☐ ☐

It is important for you to have a personal record of your vaccinations. If you don’t have a personal record, ask your healthcare provider to give you one. Keep this record in a safe place and bring it with you every time you visit medical care. Make sure your healthcare provider records all your vaccinations on it.

Immunize.org
**Contraindications** increases risk of serious adverse reaction

**Precautions** may increase risk for a serious adverse reaction, cause diagnostic confusion or compromise the ability of vaccine to produce immunity

**DO NOT ADMINISTER** when contraindication is present
Before Prepping Vaccine...

VIS Form or EUA ("Fact Sheet...")

Consent

www.whyimmunize.org
During Provider Visit

- Propose order or check standing order
- Get the vaccine
- Double-check the vaccine
- Wash your hands!
- Prep the vaccine and label it
Hand Hygiene

Wash hands or use alcohol-based hand sanitizer

- Before vaccine preparation
- Between clients

*Gloves are not required to be worn when administering vaccines, per OSHA guidelines*
Familiarize yourself with immunization devices prior to use with clients

Never recap used needles
Avoid Vaccine Administration Errors

- Patient
- Vaccine
- Response
- Time
- Dosage
- Route
- Site
- Documentation
Wrong Vaccine Scenarios

- Provider orders MMR and Varicella for 12 mos old
  - Administrator gives MMRV

- Order is for DTaP
  - Administrator gives Tdap

- Provider orders DTaP/IPV combo for 12-year-old
Expired Vaccine
Reconstituting
Thank You, Exhibitors!
Break Time!

Give index card questions to staff
Visit exhibitors
Name a School

2023 link: https://apps.azdhs.gov/IDRREportStats
Administering Vaccines
Comfort Holds

Comfort Positioning for Preschooler Vaccination Video
Comfort Holds

Newborn/Infant Swaddle

Older Infant Back-to-chest Position
Comfort Holds

Toddler Chest-to-chest Position

Preschooler Back-to-chest Position
Comfort Holds

Preschooler Side-sitting Position

Preschooler Comfort Positioning
Ask!

The families are your partners.

- What’s worked in the past?
- Is there a comfort hold you have used in the past?

We want to try to avoid restraining patients.
How can we help patients during vaccine administration?

Especially **families** with sensory processing challenges

- Clearly explain what you’ll be doing **prior to physical contact**
- Avoid unnecessary physical touch
- Start slowly, using only fingers at first to touch arm. If successful, begin using swab/ pinching up muscle
- Get parent consent for immobilization techniques
- Reward cooperative behavior (for kids... and parents too!)
Vaccinating Patients with Sensory Disorders:

- Avoid interruptions.
- Communicate with the child at a level that he/she can understand. Use a “tell, show, do” approach when explaining procedures. Be clear and concise.
- If possible have them use an electronic device.
- Ask the child to put their hands on their stomach (tummy, belly). Ask the parent to “hold hands” with their child to help prevent flinching. Or ask if the child can be placed on the parent’s lap for a “bear hug”:
  2. Child faces away from parent - sits on parent’s lap facing out. Parent secures arms with each hand and wraps legs around child’s legs.
- Start slowly, using only fingers at first to touch the arm. If this is successful, begin using swab/pinching-up of muscle.
- Keep the needle out of sight but let them know a “little pinch” as you insert the needle. Needle should be plunged rapidly through the skin without aspiration.
  - Consider non-pharmaceutical interventions: Ethyl Chloride Spray, Buzzy, Cold compress
- Observe unusual body movements and anticipate future movements. Keep area around the child clear.
- Immobilization techniques may be used only with parental consent to keep the child from potential injury.
- Reward cooperative behavior with reinforcements that are motivating to the child - music, stickers, verbal reinforcement, etc.)
Subcutaneous (SC)

Separate injection sites by 1-2 inches
Administer in fatty tissue just below skin
Intramuscular (IM)

Administer into muscle just below the fatty tissue

Do not aspirate

Separate injection sites by 1-2 inches
Infants and Toddlers < 36 months
Identify the injection site

» Locate the deltoid muscle of the upper arm
» Use anatomical landmarks to determine the injection site
» In adults, the midpoint of the deltoid is about 2 inches (or 2 to 3 fingers’ breadth) below the acromion process (bony prominence) and above the armpit in the middle of the upper arm
Subcutaneous
- MMR
- Varicella
- Polio

Intramuscular
- DTaP/Tdap/Td
- Hepatitis A
- Hepatitis B
- Hib
- Shingrix
- Pneumococcal
- Meningococcal
- Influenza
- Human papillomavirus

COVID-19!
**IMMUNIZATIONS/SITE: <12 months (INFANT)**

<table>
<thead>
<tr>
<th>VACCINE: LEFT</th>
<th>ROUTE</th>
<th>VACCINE: RIGHT</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>DTaP/DT</strong></td>
<td>IM</td>
<td><strong>Inactivated Influenza (0.25mL)</strong></td>
</tr>
<tr>
<td><strong>Pediarix (DTaP+IPV+HepB)</strong></td>
<td>IM/SUBQ</td>
<td><strong>COVID</strong></td>
</tr>
<tr>
<td><strong>Pentacel (DTaP+IPV+Hib)</strong></td>
<td>IM</td>
<td><strong>Hib</strong></td>
</tr>
<tr>
<td><strong>Vaxells (DTaP+IPV+HepB+Hib)</strong></td>
<td>IM</td>
<td><strong>HEPATITIS B</strong></td>
</tr>
<tr>
<td>IPV (Polio)</td>
<td>IM</td>
<td><em><em>PCV</em> (Pneumococcal Conjugate)</em>*</td>
</tr>
</tbody>
</table>

*Oral vaccine (Rotavirus) is given first *

Note: Separate injections by at least 1 inch or more per site when giving multiple vaccines.

**Tetanus-containing vaccines and **PCV** are most irritating to tissues and should be in separate limbs.

- Sub Q injections can be given in the back of the arm if necessary, though the thigh is preferred for this age.
- Instruct parents not to pre medicate for fever prior to vaccination.

Reassure the parent. Encourage them to stay calm.

SUBQ Site: Vastus Lateralis

IM Site: Vastus Lateralis (thigh)

Revised 2023
Oral Administration

Rotavirus Vaccine
(Rotateq, Rotarix)
Intranasal

Live attenuated Influenza Vaccine (FluMist)
### Managing Reactions

<table>
<thead>
<tr>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Localized</td>
<td>- Soreness, redness, itching or swelling at the injection site&lt;br&gt;- Slight/continuous bleeding</td>
</tr>
<tr>
<td>Psychological fright and syncope</td>
<td>- Extreme paleness, sweating, nausea, dizziness&lt;br&gt;- Fall, without loss of consciousness&lt;br&gt;- Loss of consciousness</td>
</tr>
<tr>
<td>Systemic</td>
<td>- Fever, malaise, muscle pain, headache, loss of appetite</td>
</tr>
</tbody>
</table>
VAERS – vaccine adverse event reporting system

- Monitors vaccine safety
- Analyzes adverse events
- Identifies possible risk associated with a vaccine

Anyone can submit a report

- Parents
- Patients
- Healthcare professionals
Have you ever seen an adverse reaction from a vaccine?
What is the documentation process in your office?

If your patient refuses vaccinations... document in the medical record:
- vaccine information was provided
- the patient chose to refuse vaccination
Thank You, Exhibitors!
Thank You, Exhibitors!

GSK

CARE1st HEALTH PLAN ARIZONA

CSL Seqirus

MERCK

Pfizer

novavax
How can we improve vaccine confidence?
Willingness to accept a vaccine falls on a continuum.

Increasing confidence in vaccine, vaccinator, and health system.

- **Refusal**: May have questions, take “wait and see” approach, want more information.
- **Passive Acceptance**:
- **Demand**:
Group Activity

1. Identify a person to write on the giant paper

2. DISCUSSION: What are common questions or objections you hear?

3. DOCUMENT: Write the common questions/objections you hear on the giant paper (and decorate it too!)
Match the responses on the worksheet to the objection on your giant paper

*multiple responses will probably work for each objection*
Analysis

What do the responses have in common?

Look at the responses that could be used for multiple objections. What makes them so effective?

What stands out to you as an effective response?
Do not assume you know what is on someone else’s mind. Do not answer questions people haven’t asked.

“What specifically about that concerns you?”

“Tell me more about that.”
I've heard that before. I've even felt like that before.

I can see why that would be scary to hear.
I believe in this so strongly that I vaccinated my own children on schedule.

I strongly recommend you get this vaccine today.
Be honest when relying on personal experiences and science

"Yes. Adverse reactions do sometimes happen, but they are extremely rare."

"I haven’t heard that before. I’ll make sure to tell the doctor to talk with you about it."

"Someone I love was seriously injured from getting the disease."
Closing

What are we taking away?
Are there any Cloud Award winners here today?
Focus on data

- Maintain records in ASIIS
  - Enter historical
- Run regular reports (ASIIS/ EMR)
- Look at reports – monitor!
Create a reliable system

- Everyone does the same thing every time
- Documented workflow
- Make it easy to follow procedures
- Use of EMR and technology
- Small tests of change
3. Implement evidence-based interventions

- Reminder Recall
- Standing Orders
- Strong Provider Recommendation

Reduce Missed Opportunities by:

- Screening at EVERY visit
- Reviewing EHR & ASIIS when doing chart prep
How does your clinic’s immunization process look to your patients?
YOU keep communities safe

What are you going to do differently?

Our goal today is for you to leave with 3 new ideas for things that you can do (or others in your practice can do) to help improve rates.
Goal
You leave with 3 new ideas for things you can do (or others in your practice can do) to help improve rates.

Interventions
1. Connect to passion
2. Talk to one another
3. Hear up-to-date information
4. Focus on YOUR system
Remember, TAPI as your Go-To Resource

WhyImmunize.org - Community & Provider Pages
This is a test for US
NOT for You
Contact TAPI

602-288-7568
TapiAdmin@tapi.org
WhyImmunize.org