

Pa. Immunization Education Program



Annual Provider Training 2016

Vaccine Successes

- Eradicated – Smallpox
- Close to eradication – Polio
- Dramatic decrease in incidence or severity: mumps, rubella, varicella, diphtheria, meningococcus, pneumococcus, tetanus, pertussis, rotavirus, influenza, human papillomavirus (HPV), hepatitis A, hepatitis B, haemophilus influenzae type b (Hib)

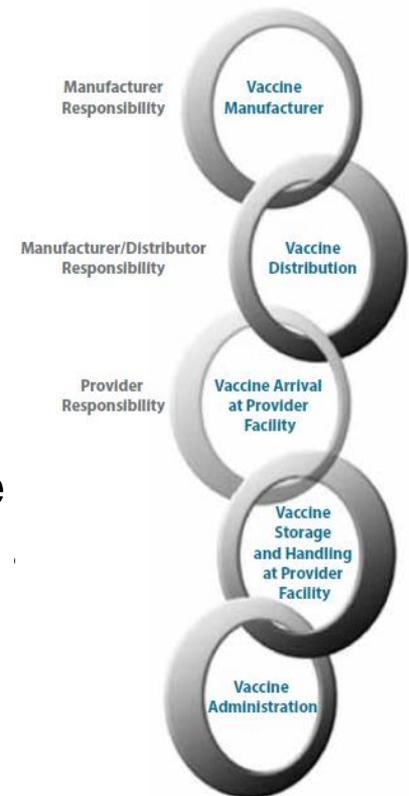
Maintaining the Cold Chain

The cold chain is a temperature-controlled environment used to maintain and distribute vaccine in optimal condition.

Provider responsibilities:

- Monitoring and documenting temperature;
- Maintaining stand-alone storage units;
- Taking immediate action when a storage unit temperature is out of range; and
- Completing an incident report if an interruption in the cold chain of more than 30 minutes occurs. Incident report can be found in section 6F of the VFC Provider Handbook.

Cold Chain Flow Chart



Vaccine Storage and Handling

Vaccines must be stored and handled correctly to work!

- Once lost, vaccine potency cannot be restored.
- Loss of vaccine potency may not be visible.
- It is better to **not** vaccinate than to administer vaccine that is expired, was mishandled, is the wrong vaccine or was reconstituted with the wrong diluent.
- Revaccinations are costly, labor intensive and time-consuming.

Vaccine Storage and Handling

- Keep vaccines in original packaging.
- Store similarly packaged vaccines in different parts of the refrigerator.
- Label PA VFC and 317 vaccine to keep separate from private stock.
- Review vaccine expiration dates and rotate vaccine stock each week.
- Never transport or store diluent at freezer temperatures:
 - Vials could crack; and
 - For some vaccines, the “diluent” contains antigen that should not be frozen (Pentacel®, Menveo®).

Vaccine Storage Units

CDC strongly recommends stand-alone refrigerator and freezer units. Pharmaceutical grade units are preferred.

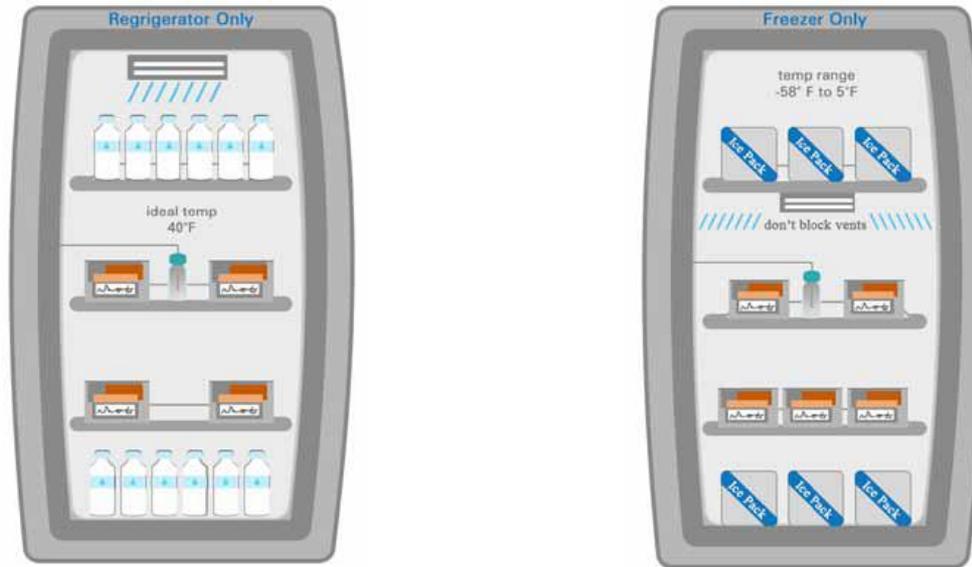
Why not use a combination household freezer/refrigerator?

- Freezer air circulates into refrigerator, causing cold spots.
- Freeze-damage to vaccines can occur.
- Freezer does not maintain vaccine-safe temperatures.

Storage units must have:

- Enough room for largest yearly inventory without crowding; and
- Room for water bottles in refrigerator in place of crisper bins, as well as frozen coolant packs or frozen water bottles in the freezer.

Vaccine Storage Units



- Place vaccine in breathable plastic mesh baskets.
- Separate and label VFC, 317, and privately purchased vaccine.
- Rotate stock weekly keeping vaccine with shorter expiration dates in front.
- Must keep vaccines and diluents in original boxes to protect from light and to aid in identification and reconciliation of inventory.
- Provide space between bins for air circulation while keeping vaccine away from air vents.
- Must keep temperature probe in center of storage unit.
- Vaccine must be centrally located in the storage unit with no vaccine on floor.
- Remove crisper bins in refrigerator and put water bottles in place of crisper bins, as water bottles stabilize temperature.
- Use frozen water bottles or frozen coolant packs to stabilize temperature in the freezer.
- Notify the VFC Program if you have vaccine that will expire in three months or less that you will not be able to use.

Suitable Storage Units

Household Types

Freezerless



Combination



Pharmaceutical Grade

Under counter



Full size



Combination household units may be used for refrigerated vaccine – do not use freezer compartment

NO Dorm or Bar-style Units

- DO NOT USE, even for temporary storage.
- Replace with suitable storage unit.
- Vaccine ordering will be suspended.
- All vaccines stored in a dorm unit will be declared non-viable.



Temperature Monitoring

- Effective Jan. 1, 2018, CDC will **require** all VFC providers to use digital data loggers/continuous temperature monitoring devices. Please refer to section 6J of VFC Provider Handbook. (The PA VFC program does not recommend or endorse any certain products or manufacturers.)
- PA VFC Providers are **required** to use a working thermometer with a valid and current National Institute of Standards and Technology (NIST) certificate of traceability and calibration.
- A digital data logger/continuous temperature monitoring device or a digital min/max thermometer must have an active digital display with a detachable probe encased in a biosafe buffered material such as glycol (section 4 of the VFC Provider Handbook).
- VFC providers are **required** to have at least one backup thermometer, at the provider site, with a valid and current certificate of calibration readily available to ensure twice-a-day temperature assessment and recordings.
- CDC **recommends** using a digital data logger with continuous monitoring, recording, active temperature display and routine downloading.



Certificate of Calibration

CHECKLIST FOR CERTIFICATE OF CALIBRATION/VALIDATION/TESTING REPORTS

A If Certificate Identifies an Accredited Laboratory:

-  ILAC/MRA Signatory body accredited Laboratory

The Following Table lists the accredited laboratories

A2LA	L-A-B	ACLASS	IAS	PJLA	NVLAP
					

AND

- Name of Device (Optional)
- Model Number
- Serial Number
- Date of Calibration (Report or Issue Date)
- Measurement results indicate unit passed test and the documented uncertainty is within suitable limits (recommended uncertainty = $\pm 1F$ (0.5C))

B If Certificate Does Not Identify an Accredited Laboratory:

- Name of Device (Optional)
- Model Number
- Serial Number
- Date of calibration testing (Report or Issue Date)
- Measurement results indicate unit passed test and the documented uncertainty is within suitable limits (recommended uncertainty = $\pm 1F$ (0.5C))
- Statement that calibration testing conforms to ISO 17025



Calibration complies with ISO/IEC 17025, ANSI/NCSL Z540-1, and 9001


Calibration Certificate No. 170011
Traceable® Certificate of Calibration for Refrigerator/Freezer Thermometer
 Cert. No.: 4127-6374748

Manufactured for and distributed by: VWR International, LLC, Radnor Corporate Center, Bldg 1, Ste 200, 100 Matsonford Road, Radnor, PA 19087

Instrument Identification:
 Model: 61161-364 S/N: 140771012 Manufacturer: Control Company

Standards/Equipment:	Description	Serial Number	Due Date	NIST Traceable Reference
Temperature Calibration Bath TC-179	A4524G			
	Thermistor Module	A17118	2/24/15	1000351744
Temperature Calibration Bath TC-231	Temperature Probe	126	3/12/15	15-CJ73J-4-1
	Thermistor Module	A79341	2/24/15	1000351744
Temperature Calibration Bath TC-231	Temperature Probe	3039	3/12/15	15-CJ73J-1-1

Certificate Information:
 Technician: SB Procedure: CAL-G3 Cal Date: 11/25/14 Due Date: 11/25/16
 Test Conditions: 23.5°C 35.0 %RH 1026 mBar

Calibration Data: (New Instrument)										
Units)	Normal	As Found	In Tol	Nominal	As Left	In Tol	Min	Max	±U	TUR
°C		N.A.		0.00	0	Y	-1	1	0.60	1.7:1
°C		N.A.		50.00	50	Y	49	51	0.60	1.7:1

This instrument was calibrated using instruments traceable to National Institute of Standards and Technology. A Test Uncertainty Ratio of at least 4:1 is maintained unless otherwise stated and is calculated using the expanded measurement uncertainty. Uncertainty evaluation includes the instrument under test and is calculated in accordance with the ISO Guide to the Expression of Uncertainty in Measurement (GUM). The uncertainty represents an expanded uncertainty using a coverage factor k=2 to approximate a 95% confidence level. In tolerance conditions are based on test results falling within specified limits with no reduction by the uncertainty of the measurement. The results contained herein relate only to the item calibrated. This certificate shall not be reproduced except in full, without written approval of Control Company.
Normal-Standard Reading; As Found-As Found Reading; In-Tolerance- Min/Max/Acceptable Range; ±U-Expanded Measurement Uncertainty; TUR-Test Uncertainty Ratio; Accuracy-±(Min-Max)/2; Min = As Left Normal/Rounded; Tolerance; Max = As Left Normal/Rounded; Tolerance; Date-MMDDYY


 Neil Rodriguez, Quality Manager


 Aaron Judon, Technical Manager

Maintaining Accuracy:
In our opinion once calibrated your Refrigerator/Freezer Thermometer should maintain its accuracy. There is no exact way to determine how long calibration will be maintained. Refrigerator/Freezer Thermometers change little, if any at all, but can be affected by aging, temperature, shock, and contamination.

Recalibration:
For factory calibration and re-certification traceable to National Institute of Standards and Technology contact Control Company.

CONTROL COMPANY 4455 Rex Road Friendswood, TX 77546 USA
 Phone 281 482-1714 Fax 281 482-9448 service@control3.com www.control3.com
Control Company is an ISO 17025:2005 Calibration Laboratory Accredited by (IA) American Association for Laboratory Accreditation, Certificate No. 1750-01.
 Control Company is ISO 9001:2008 Quality Certified by (DNV) Det Norske Veritas, Certificate No. CERT 01625-2008-AC-100-RW.
 International Laboratory Accreditation Cooperation (ILAC) - Multilateral Recognition Arrangement (MRA).

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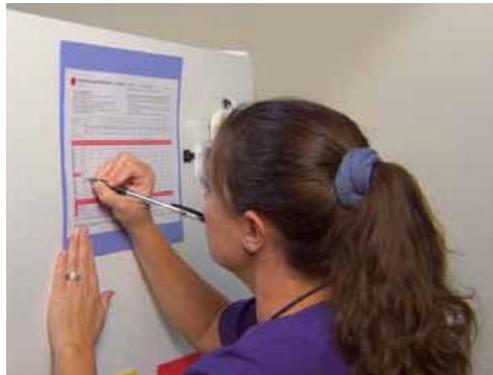
The calibration certificate must come from an accredited laboratory or conform to ISO 17025.



The immunization nurse will look for a calibration certificate for each thermometer at every visit.

Monitor Temperatures

- Read and document current, minimum and maximum temperatures **twice** each workday.
- Make sure that no more than **72 hours** passes between each temperature monitoring and documentation.
- Out-of-range temperatures for less than 30 minutes require documentation of corrective action on temperature log.
- Download and review data logger data weekly.



Monitor Temperatures

Vaccine Incident Report and Worksheet
 Pennsylvania Department of Health
 Vaccines for Children Program

Date _____ Pin # _____

Demographics

Practice Name _____

Address _____ Phone # _____
 County _____ District _____

Incident Criteria

Date /Time of Incident _____

Type of Incident _____
 (Power failure, refrigerator/freezer failure, improperly stored, thermometer malfunction, shipping/transporting error etc.)

Reported by _____ Reported to _____

Temperature Data

Refrigerator- circle appropriately below Freezer-circle appropriately below

Pharmaceutical Commercial Standalone Combo Pharmaceutical Commercial Standalone Combo

Make/Model _____ Make/Model _____

Date/Time	Temperature	Date/Time	Temperature
Min	Max	Min	Max

Temperatures are reviewed and documented twice daily during operating hours? YES NO

Water bottles are stored in both refrigerator and freezer? YES NO

Description of Incident (Write a narrative giving details of incident; attach additional sheet of paper if needed.)

Incident Resolution (Circle all appropriate responses and/or write a narrative giving details of actions taken after a problem was detected; attach additional sheet of paper if needed.)

Fridge, Freezer, Thermometer repaired replaced Date _____

Notified your VFC Immunization nurse of storage repairs/replacements Date _____

Manufacturers contacted immediately and completed incident report faxed within 5 days YES NO

Other/Additional information:

Must complete all four pages of worksheet and fax within 5 days to 717-214-7223

- Vaccines outside appropriate temperature range for more than 30 minutes should be marked “Do not use,” and manufacturers must be contacted to determine viability of vaccine.
- An incident report (section 6F of the VFC Provider Handbook) must be completed.
- The incident report, temperature logs and vaccine accountability forms must be faxed for review to 717-214-7223 within five days.

Vaccine Management Planning

- PA VFC Management Plan templates can be found in Section 6-E of the VFC Provider Handbook.
- Annual review with a signature is necessary.
- It is important the plans are reviewed with all staff who handle VFC vaccine.
- Education can save money and vaccine.



Disaster/Emergency Planning

- Disaster recovery/emergency planning templates can be found in section 6E of the VFC Provider Handbook.
 - Do you have a generator?
 - Do you have a back-up vaccine storage site?
 - Do you check back-up arrangements yearly?
 - Are documents reviewed, signed and dated every year? This is required.



Transporting Frozen Vaccine

TRANSPORTING FROZEN VACCINES BY NECESSITY

CDC and Merck do NOT recommend transporting varicella-containing vaccines

Varicella containing vaccine to be transported in a portable freezer (preferred by CDC and Merck) or in a cooler with frozen packs for *less than one hour.*

Documentation of time and temperatures in the transport unit need to be monitored and documented at the beginning and end of transport.

Varicella containing vaccine to be transported in a portable freezer (preferred by CDC and Merck) or in a cooler with frozen packs for *more than one hour.*

Documentation of time and temperatures in the transport unit need to be monitored and documented at the beginning, end, and hourly during transport.

If temperatures are maintained at the recommended range

-58°F to +5°F (-50°C to -15°C), it is recommended Merck be contacted with details.

If the temperature is outside of the recommended range of -58°F to +5°F (-50°C to -15°C) at any time or if temperature in the transport unit is not documented, additional action is required.

1. Place vaccine in permanent freezer unit between -58°F to +5°F (-50°C to -15°C).
2. Label "DO NOT USE", keep it separate by placing in a clearly labeled paper bag.
3. Call Merck to report; include description of incident, time and temperature at beginning, during and end of transport, report vaccine type, expiration date and lot number. Inform Merck if this vaccine lot has been previously exposed to temperatures outside of recommended range -58°F to +5°F (-50°C to -15°C).
4. Merck National Service Center phone number is 1-800-672-6372. This number is open 7:00 AM to 8:00 PM. If call is placed after hours, leave a message and Merck will call back in the morning.
5. Merck will give guidance on the use of this vaccine. Document what Merck reports.
6. Contact your local health department regarding any compromised Vaccines for Children (VFC) vaccines.

PAVFC March 2015

- CDC does **not** recommend transporting frozen vaccine.
- If transport is **necessary**, use a portable freezer.
- Do **NOT** use dry ice to transport frozen vaccine; use frozen coolant packs or frozen water bottles.
- Monitor and document time and temperature of transport unit hourly.
- Do **NOT** use frozen vaccine after transport until guidance is received from Merck at 1-800-637-2590.

Transporting Refrigerated Vaccine

TRANSPORTING REFRIGERATED VACCINES

The number of times vaccines are handled and transported should be minimized.

The provider should contact District/County nurses when vaccine is within 90 days of expiration for assistance with transfer.

Check three months of temperature logs before transferring vaccine between provider offices to assure vaccine is usable.

Vaccine is transported in the original box and it is critical that vaccine potency is protected by maintaining the cold chain at all times. If vaccine is transported to an off-site clinic temperatures must be recorded hourly during transport and throughout the duration of the clinic. Diluent should travel with its corresponding vaccine and never be frozen.

Materials for transport must be readily available at all times.

Cooler: The CDC recommends hard sided coolers or the reuse of original vaccine shipping containers. Enough coolers should be available to transport your typical supply of refrigerated vaccine. A label attached to outside of cooler should state "keep refrigerated", vaccine type, quantity, date, time, and originating facility.

Temperature monitoring: The CDC recommends digital data loggers for all temperature monitoring. The buffered probe of the available monitoring device should be kept refrigerated. The date, time, and temperature must be recorded at beginning and end of transport when using a digital data logger. When using a thermometer, hourly documentation is necessary.

Coolant: The CDC recommends use of conditioned frozen water bottles. Frozen water bottles and cold packs should be prepped in freezer at all times in case of immediate need. Frozen water bottles are conditioned by placing in a sink of lukewarm water until the ice inside the bottle spins freely when rotated in your hand. Frozen cold packs must be conditioned at room temperature for two hours.

Insulating Materials: Premeasure: (2) pieces of corrugated cardboard and (2) one inch layers of bubble wrap or packing foam for each cooler. When using cold packs two inch layers of insulating materials are necessary.



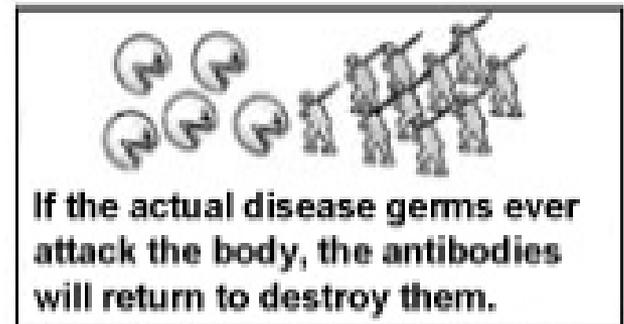
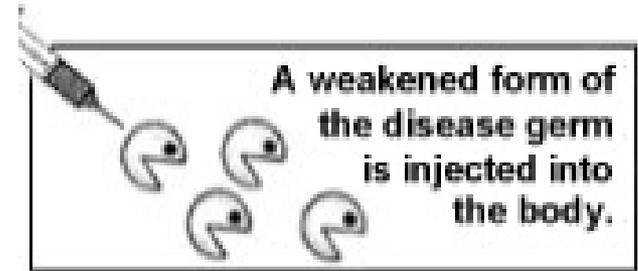
HOW TO PACK VACCINE

1. Conditioned frozen water bottles or cold packs should be spread over the bottom of the cooler.
2. Completely cover conditioned frozen water bottles or cold packs with one sheet of corrugated cardboard.
3. Completely cover cardboard with at least one inch of bubble wrap or packing foam when using conditioned frozen water bottles and two inches of insulating material if using cold packs.
4. Vaccine is placed on top of insulating materials with the refrigerated buffered probe of the monitoring device nestled between the layers of vaccine and the temperature display outside the cooler.
5. Completely cover cardboard with at least one inch of bubble wrap or packing foam.
6. Completely cover conditioned frozen water bottles or cold packs with one sheet of corrugated cardboard.
7. An additional layer of conditioned frozen water bottles or cold packs are added to the cooler.
8. If there is excess space fill the cooler to the top with packing materials to prevent shift.
9. Close lid and secure the temperature display to the lid of the container.
10. Temperatures between 35° F and 46° F will be maintained up to eight hours using this method if container is not opened or closed repeatedly.
11. At end of transfer, assure appropriate storage in a refrigerator that has maintained a temperature between 35° F and 46° F for at least 5 days.

- CDC recommends transport in a portable refrigerator unit.
- A hard-sided or 2-inch styrofoam cooler may be used.
- Conditioned frozen coolant packs or frozen water bottles may be used.
- An insulating barrier **MUST** separate the vaccine from the frozen coolant packs or frozen water bottles.
- Document temperature of vaccine at least every hour.

Diseases and Vaccines

- In days past, a child had to get sick before becoming immune to disease.
- Today, vaccines can prevent this from happening.



Diphtheria

Diphtheria causes a thick covering in the back of the throat. It can lead to breathing problems, paralysis, heart failure and even death.

- There are several combination vaccines used to prevent diphtheria: DTaP, Tdap, DT and Td.
- Children should get five doses of **DTaP**, one dose at each of the following ages: 2, 4, 6, and 15-18 months and 4-6 years.
- **DT** does not contain pertussis and is used as a substitute for DTaP for children who cannot tolerate pertussis vaccine.

Tetanus

Tetanus is an acute, often fatal, disease. It is characterized by rigidity and convulsive spasms of skeletal muscles. The muscle stiffness usually involves the jaw (lockjaw) and neck and then becomes generalized.

- **Td** is a tetanus-diphtheria vaccine given to adolescents and adults as a booster shot every 10 years or after an exposure to tetanus under some circumstances.
- **Tdap** is similar to **Td** but also contains protection against pertussis.
- Adolescents 11-18 years of age (preferably at age 11-12 years) and adults 19 and older should receive a single dose of **Tdap**.
- Women should receive **Tdap** during each of their pregnancies (preferably in the third trimester between the 27th and 36th week).
- **Tdap** should also be given to 7 to 10-year-olds who are not fully immunized against pertussis.
- **Tdap** can be given no matter when **Td** was last received.

Pertussis

Whooping cough – known medically as pertussis – is a highly contagious respiratory tract infection. Although it initially resembles an ordinary cold, whooping cough may eventually turn more serious, particularly in infants. The best way to prevent it is through vaccinations.

- The childhood vaccine is called DTaP. The whooping cough booster vaccine for adolescents and adults is called Tdap.
- Children should get five doses of DTaP, one dose at each of the following ages: 2, 4, 6, and 15-18 months and 4-6 years.
- Both DTaP and Tdap protect against whooping cough, tetanus and diphtheria.

Hepatitis A

Hepatitis A is a liver disease caused by the hepatitis A virus (HAV). Hepatitis A can affect anyone. Good personal hygiene and proper sanitation can help prevent the spread of hepatitis A.

- Hepatitis A vaccine is recommended at 1 year of age or older
- Risk factors include:
 - Living in a community with a high rate of hepatitis A;
 - Men having sex with other men;
 - Using street drugs;
 - Working or traveling to countries with high rates of hepatitis A;
 - Having long-term liver disease;
 - Receiving blood products to help the blood clot; and
 - Working with HAV-infected animals or with HAV in a research setting.

Hepatitis B

Hepatitis B is a serious disease caused by a virus that attacks the liver. The virus, which is called hepatitis B virus (HBV), can cause lifelong infection, cirrhosis (scarring) of the liver, liver cancer, liver failure and death.

- All children should get their first dose of hepatitis B vaccine at birth and should have completed the vaccine series by 6 through 18 months of age.
- The vaccination schedule most often used for adults and children has been three intramuscular injections, the second and third administered at one and six months after the first. Recombivax HB® has been approved as a two-dose schedule for those aged 11-15 years. Twinrix® has also been approved as a four-dose accelerated schedule.
- Children and adolescents through 18 years of age who did not get the vaccine when they were younger should also be vaccinated.

Rotavirus

Rotavirus is a virus that causes severe diarrhea and vomiting. It affects mostly babies and young children. Diarrhea and vomiting can lead to serious dehydration that, if untreated, can be deadly. Rotavirus is the leading cause of severe acute gastroenteritis among children worldwide.

- Two different rotavirus vaccines are currently licensed for infants in the United States. The oral vaccines are RotaTeq® (RV5) and Rotarix® (RV1). RV5 is a 3-dose series administered at 2, 4, and 6 months. RV1 is a 2-dose series administered at 2 and 4 months.
- Before being licensed, both vaccines were tested in clinical trials and shown to be safe and effective. In these studies, during approximately the first year of an infant's life, rotavirus vaccine was found to prevent almost all (85 to 98 percent) rotavirus illness episodes that were severe and to prevent 74 to 87 percent of all rotavirus illness episodes.

Hib (Haemophilus influenzae type b)

Hib vaccine prevents meningitis (an infection of the covering of the brain and spinal cord), pneumonia (lung infection), epiglottitis (a severe throat infection) and other serious infections caused by a type of bacteria called Haemophilus influenzae type b.

- It is recommended for all children younger than 5 years old in the US, and it is usually given to infants starting at 2 months old.
- In certain situations, patients at increased risk for invasive Hib disease who are fully vaccinated need additional doses of Hib vaccine; unimmunized older children, adolescents and adults with certain specified medical conditions should receive Hib vaccine.

Pneumonia

Pneumococcal disease is an infection caused by *Streptococcus pneumoniae* bacteria, sometimes referred to as pneumococcus. Pneumococcus can cause many types of illnesses, including respiratory difficulty, ear infections and meningitis. There are vaccines to prevent pneumococcal disease in children and adults.

- Pneumococcal conjugate vaccine (PCV13) is recommended for all children younger than 5 years old, all adults 65 years or older, and people 6 years or older with certain risk factors.
- Pneumococcal polysaccharide vaccine (PPSV23) is recommended for all adults 65 years or older. People 2 years through 64 years of age who are at high risk of pneumococcal disease should also receive PPSV23.

Polio

Polio, or poliomyelitis, is a crippling and potentially deadly infectious disease. It is caused by the poliovirus. The virus spreads from person to person and can invade an infected person's brain and spinal cord, causing paralysis.

- Two types of vaccine protect against polio:
 - Oral poliovirus vaccine (OPV); and
 - Inactivated poliovirus vaccine (IPV) [given as an injection in the leg or arm, depending on the patient's age].
 - Children should get four doses of poliovirus vaccine, one dose at each of the following ages: 2, 4, 6 through 18 months and 4 through 6 years. The final dose in the series should be administered on or after the fourth birthday and at least 6 months after the previous dose.

Measles

Measles is an acute viral respiratory illness. It is characterized by a fever (as high as 105°F), malaise and the three “C”s: cough, coryza and conjunctivitis. A pathognomonic enanthema (Koplik spots) is followed by a maculopapular rash.

- Measles can be prevented with the MMR (measles, mumps and rubella) vaccine. One dose of MMR vaccine is about 93 percent effective at preventing measles if exposed to the virus; two doses are about 97 percent effective.
- CDC recommends all children get two doses of MMR vaccine, starting with the first dose at 12 through 15 months of age and the second dose at 4 through 6 years of age. Children can receive the second dose earlier as long as it is at least 28 days after the first dose.
- In the United States, widespread use of measles vaccine has led to a greater than 99 percent reduction in measles cases compared with the pre-vaccine era.

Mumps

Mumps is a contagious disease that is caused by the mumps virus. Mumps typically starts with a few days of fever, headache, muscle aches, tiredness and loss of appetite; it is followed by swelling of salivary glands. Anyone who is not immune from either previous mumps infection or from vaccination, can get mumps.

- Children should receive the first dose of mumps-containing vaccine at 12-15 months and the second dose at 4-6 years.
- All adults born during or after 1957 should have documentation of one dose.
- Adults at higher risk, such as university students, health care personnel, international travelers and persons with potential mumps outbreak exposure should have documentation of two doses of mumps vaccine or other proof of immunity to mumps.

Rubella

Rubella, sometimes called German measles or “Three-day measles,” is a contagious disease caused by a virus. The infection is usually mild with fever and rash. Older children and adults may have cold-like symptoms, achy joints and swollen glands.

- The rubella vaccine is a live attenuated (weakened) virus which is usually given as part of the MMR vaccine (protecting against measles, mumps and rubella).
- MMR is recommended at 12-15 months (not earlier) with a second dose when the child is 4-6 years old (before kindergarten or first grade).

Varicella

Varicella, also called chickenpox, causes rash, itching, fever and tiredness. Complications can include severe skin infection, scars, pneumonia, brain damage or death.

- For the best protection against measles, mumps, rubella and varicella, children need to be vaccinated twice: once when they are 12-15 months old and again when they are 4-6 years old.
- There are two options for protecting children who are 12 months to 12 years old against these diseases:
 - Getting two shots - the measles, mumps and rubella (MMR) vaccine **and** the varicella vaccine; and
 - Getting one shot - the measles, mumps, rubella and varicella (MMRV) vaccine.

(HPV) Human Papillomavirus

HPV is the most common sexually transmitted infection, and nearly all sexually active men and women get it at some point in their lives. There are many different types of HPV that cause health problems, which include genital warts and cancers.

- There are three HPV vaccines (Cervarix, Gardasil and Gardasil 9). Girls and young women should get any of these HPV vaccines to prevent cervical cancer. Two of the HPV vaccines (Gardasil and Gardasil 9) also protect against genital warts and anal cancer in both females and males. Boys should get one of these HPV vaccines to prevent anal cancer and genital warts.
- Children should get three doses of HPV starting at age 11 or 12 years. The second dose should be administered 1-2 months after the first dose and the third dose 6 months after the first dose.

Meningitis

Meningitis is an inflammation of the tissue covering the brain and spinal cord. Viral meningitis is the most common type of meningitis. It is often less severe than bacterial meningitis, and most people usually get better on their own (without treatment). However, infants younger than 1 month old and people with weakened immune systems are more likely to have severe illness.

- There are two kinds of vaccines against *Neisseria meningitidis* bacteria available in the United States: meningococcal polysaccharide vaccine (Menomune®) and meningococcal conjugate vaccine (Menactra®, Menveo® and MenHibrix®). These provide protection against meningococcal sero groups A,C W and Y.
- Two doses of MCV4 are recommended for adolescents 11 through 18 years of age: the first dose at 11 or 12 years of age, with a booster dose at age 16.

(MenB) Meningococcal B Vaccines

On June 24, 2015, the Federal Advisory Committee on Immunization Practices (ACIP) voted to approve a Category B (permissive) recommendation for use of meningococcal B vaccines among certain age groups.

- **Recommendations for Use of MenB Vaccines**

- MenB may be administered to children 10 – 23 years of age at increased risk of meningococcal disease with persistent complement component deficiencies, anatomic or functional asplenia; or because of a Serogroup B meningococcal outbreak.
- The ACIP advises that licensed meningococcal B vaccines may be administered to persons 16 through 23 years of age who wish to have short-term protection against *Neisseria meningitidis* Serogroup B (MenB).
- The preferred age for administration of the series is 16-18 years.

- **Administration of MenB Vaccines**

- Bexsero vaccine is licensed as a two-dose schedule, given at least 28 days apart, i.e., at 0 and 1 month. Trumenba vaccine is licensed as a three-dose schedule, given at 0, 1 - 2 months, and 6 months. Both Bexsero and Trumenba are supplied in 0.5 mL prefilled syringes, to be administered via intramuscular injection into the deltoid muscle of the upper arm. If vaccine is administered at intervals longer than recommended, there is no need to restart the series.
 - They are NOT interchangeable; the same brand should be used for each dose in a complete series for a given patient.
- For more information, and to review the newly released Serogroup B meningococcal “Vaccine Information Statement,” please click on the hyperlink: http://www.immunize.org/vis/meningococcal_b.pdf

Vaccine Resistant Families

Documentation of parent/patient refusal to administer vaccines is important.

Sample forms can be found at:

American Academy of Pediatrics

<http://www2.aap.org/immunization/pediatricians/pdf/refusaltovaccinate.pdf>

IAC

<http://www.immunize.org/catg.d/p4059.pdf>

Test Your Knowledge

True or False Questions:

1. Cold chain disruption of any duration has no effect on vaccine viability.
2. Protection from five sero groups of meningococcal disease can be obtained from a single dose of Menactra.
3. Whooping cough, known medically as pertussis, is a non-contagious respiratory tract infection affecting all ages.
4. Diluent may be stored and transported at freezer temperatures.
5. Manufacturers of vaccine do NOT determine viability.

Answers

All the answers are
FALSE.

If you answered incorrectly, please review the presentation to discover the correct answers.

CDC Resources

- Immunization schedules
 - <http://www.cdc.gov/vaccines/schedules/hcp/child-adolescent.html>
- Vaccine education
 - <http://www.cdc.gov/vaccines/ed/default.htm>
- Vaccine information statements
 - <http://www.cdc.gov/vaccines/hcp/vis/index.html>
- Storage and handling toolkit
 - <http://www.cdc.gov/vaccines/recs/storage/toolkit/storage-handling-toolkit.pdf>
- Provider resources for vaccine conversations with parents
 - <http://www.cdc.gov/vaccines/hcp/patient-ed/conversations/index.html>
- Booklets and posters
 - <http://www.cdc.gov/vaccines/>

Training Documentation

- Please click the following link to document your required annual provider education:

https://www.surveymonkey.com/r/Pennsylvania_VFC_Provider_Training

How to Contact Us

Pennsylvania Department of Health (PADOH)
Division of Immunizations
625 Forster St., Room 1026
Harrisburg, PA 17120

Toll Free: 1-888-646-6864

Phone: 717-787-5681

Fax: 717-214-7223

Fax: 717-441-3800 or 717-441-3777

Email: paimmunizations@pa.gov

Website link : <http://www.health.state.pa.us/vfc>