ARKANSAS DEPARTMENT OF HEALTH

Vaccine Management

AIAC Immunization Summit
August 17, 2018
Rachel Odom, VFC/AFIX Coordinator

Pre Test Question # 1

1. A dorm-style refrigerator may be used to store vaccines under certain circumstances.

    1. True

    2. False

Pre Test Question # 2

1. If you receive a vaccine shipment and you think the vaccine is too warm, you should throw the vaccine away immediately.

   1. True

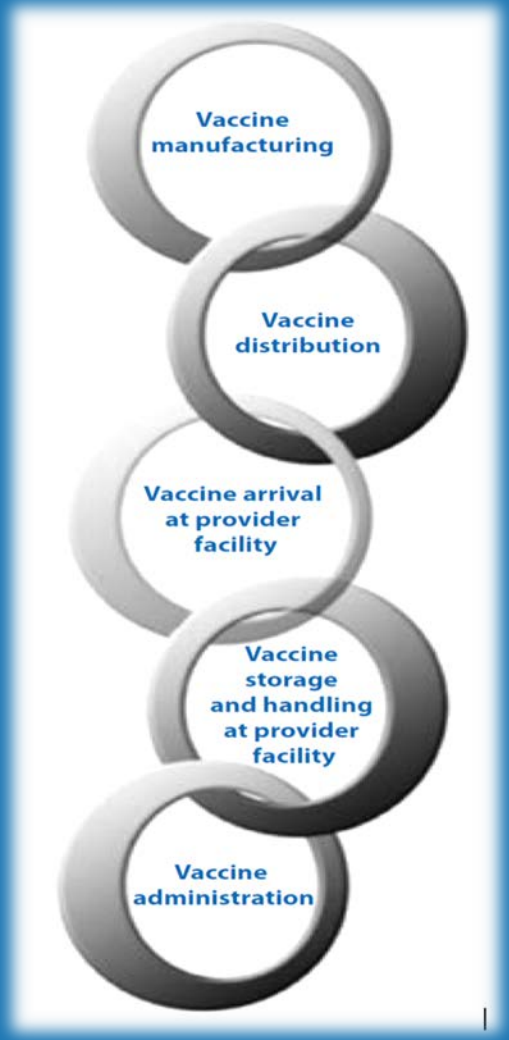
   2. False

Importance of the Vaccine Cold Chain

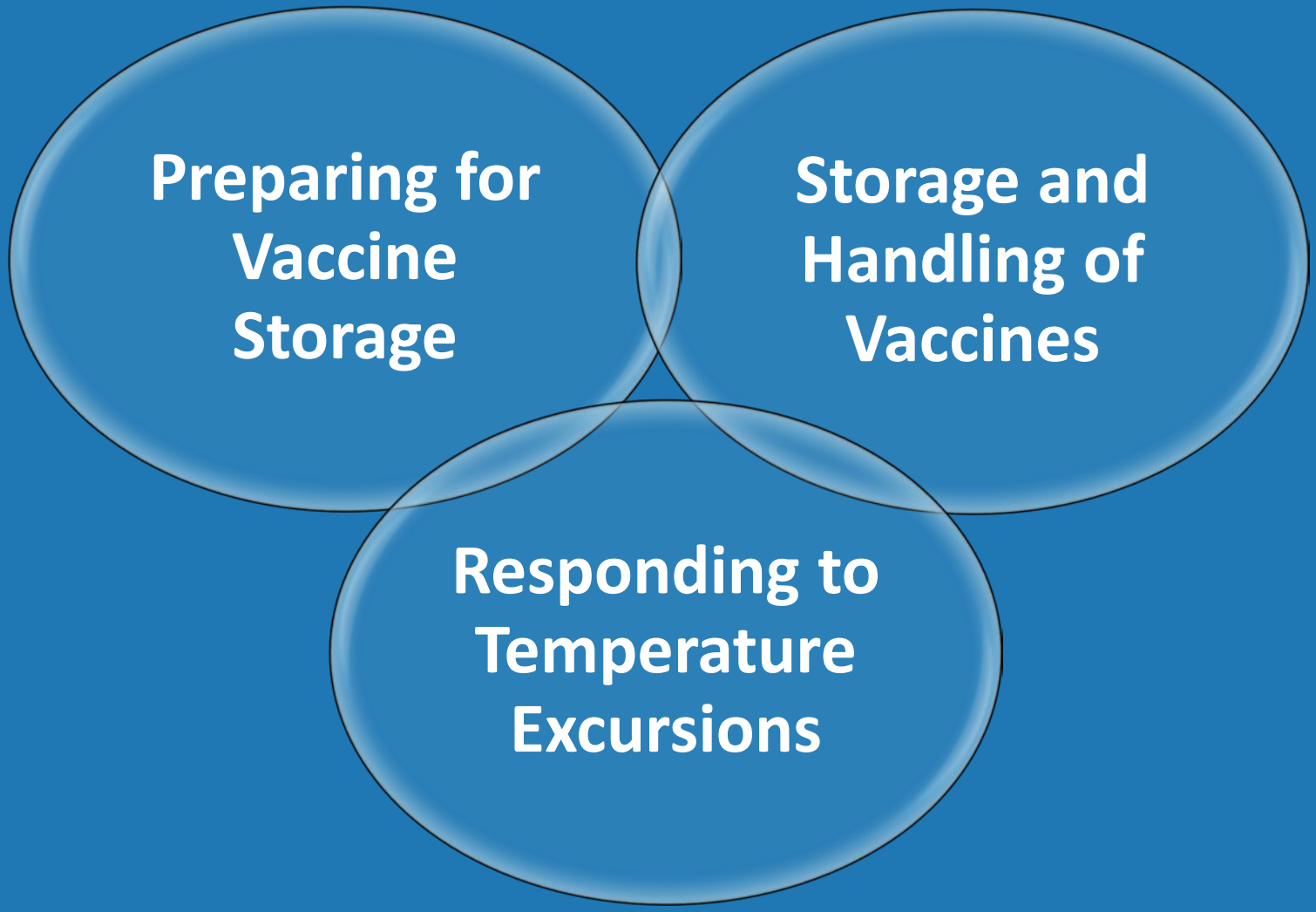
Storage and handling errors can result in the need for revaccination

Too much exposure to heat, cold, or light can reduce vaccine potency

Vaccine loss can be expensive!



Objectives


Preparing for Vaccine Storage
Storage and Handling of Vaccines
Responding to Temperature Excursions

Vaccine Coordinators

- Designate one Primary Vaccine Coordinator and one Backup Vaccine Coordinator
- Vaccine Coordinators and any other staff who handle vaccines should receive vaccine management training annually
- CDC “You Call the Shots: Storage and Handling”

YOU CALL THE SHOTS

Vaccine Coordinator Duties

- Reconcile and order vaccines
- Receive and store vaccines
- Monitor and record storage unit temperatures
- Rotate vaccines
- Remove expired vaccines

Vaccine Coordinator Duties

- Respond to temperature excursions
- Oversee vaccine transport
- Maintain vaccine documentation
- Update clinic staff
- Train new staff

Storage and Temperature Monitoring Equipment

Storage Unit Recommendations

- Recommended storage units
  - Purpose-built
  - Pharmaceutical
  - Standalone
- May use refrigerator section of a combination unit only
- NEVER use a dorm-style storage unit

Storage Unit Recommendations

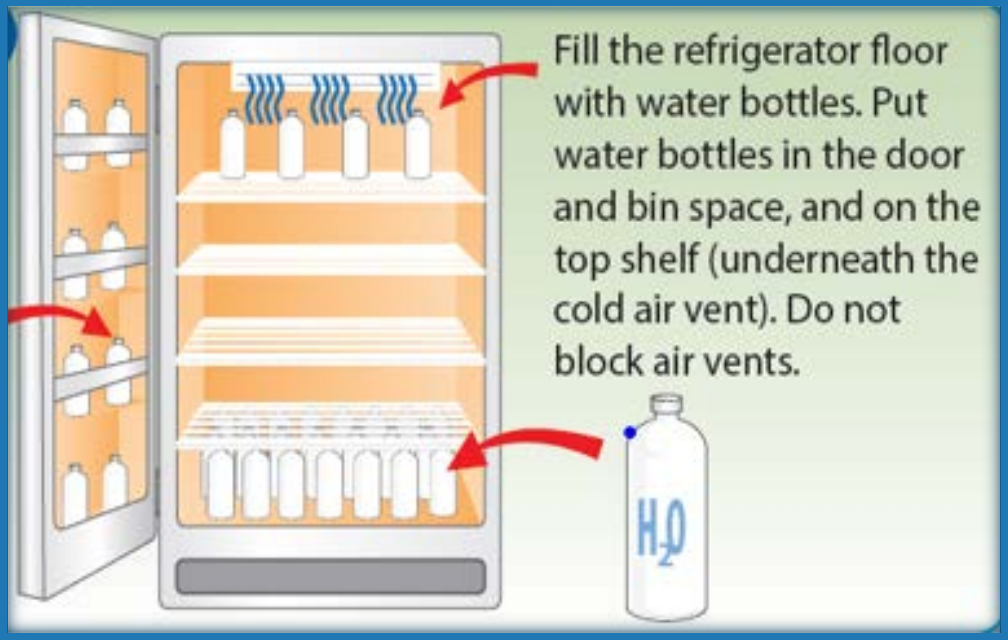
- Should hold largest amount of inventory
- Should have self-closing doors, hinges, door alarms, or door locks to ensure the door remains closed

Storage Unit Setup

- Well-ventilated room
- Plenty of space around unit
- No food or drink in the unit
- Room temperature 68° F and 77° F
- Remove fruit and vegetable drawers

Storage Unit Setup

- Add water bottles to help maintain stable temperatures



- Store other medications and biologicals below vaccines

Storage Unit Setup

- Safety plug or outlet cover
- Mark storage unit outlet and circuit breaker
- Avoid using power outlets that can be tripped or switched off

Storage Unit Maintenance

- Check seals and door hinges
- Clean coils, motor and inside of unit
- Defrost manual-defrost units regularly
- Test generators quarterly and service annually

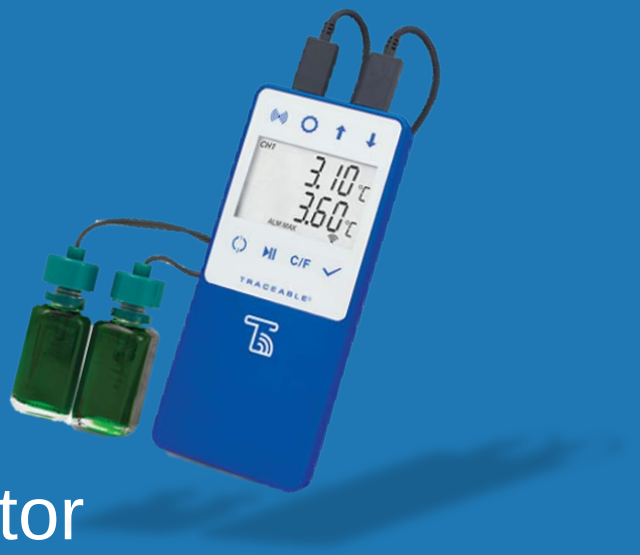
Digital Data Logger

- Continuous temperature monitoring
- USB and Wi-Fi

- Probe in buffered material

DO NOT USE!

Digital Data Logger Characteristics



- Detachable, buffered probe
- Audible alarm

- Low-battery indicator
- Current, minimum, and maximum temperature display

MIN/MAX

Digital Data Logger Characteristics

- Accuracy of +/- 0.5° C (+/- 1° F)
- Records no less frequently than every 30 minutes

Current and valid Certificate of Calibration Testing (Report of Calibration)

Stabilizing Storage Unit Temperatures

Refrigerator
36° F and 46° F (2° C and 8° C)

Freezer
-58° F and +5° F (-50° C and -15° C)

- It may take 2 to 7 days to stabilize a newly installed or repaired storage unit

Vaccine Ordering

- Keep 60-day supply on hand
- Order monthly or less
- Orders usually arrive in 1 to 2 weeks
- Check for expiring vaccines before ordering

Receiving Vaccines

- Train all staff who receive vaccines
- Never leave a shipment unpacked or unattended
- Make sure contents match packing slip
- Check expiration dates

Receiving Vaccines

- Check the cold chain monitor

- If there is a question of vaccine viability, contact the Manufacturer or McKesson shipping center.

Receiving Vaccines

- If there is discrepancy in vaccine received and vaccine listed on packing slip:
  - Notify the manufacturer - Private vaccine
  - Notify the VFC Program - VFC/SCHIP vaccine
- Immediately place vaccines in the storage unit

Vaccine Placement

- Place vaccines in the center of the storage unit
- Keep vaccines in their original packages
- Store vaccines with similar names or packaging separately
- Separate vaccines by funding source

Private

SCHIP

VFC

Vaccine Placement

- Attach labels to vaccine shelves and containers for easy identification

DTaP-IPV (Quadracel)

Ages: 4 years through 6 years
Use for: DTaP dose #5
IPV dose #4 or #5
Do NOT use for DTaP doses 1 through 4 OR IPV doses 1 through 3
Route: Intramuscular (IM) injection

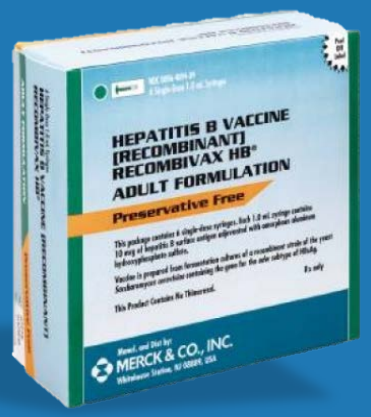
DTaP-IPV (Kinrix)

Ages: 4 years through 6 years
Use for: DTaP dose #5
IPV dose #4
Do NOT use for DTaP doses 1 through 4 OR IPV doses 1 through 3
Route: Intramuscular (IM) injection
Syringe tip cap of prefilled syringe contains latex

- Place vaccines with the earliest expiration dates in front

Vaccine Placement

- Avoid storing vaccines under the cooling vent
  Exception: MMR
- Do not store vaccine in the door
- Separate adult and pediatric vaccines



- May store vaccines in well-ventilated containers

Monitoring Storage Unit Temperatures

- Record the minimum and maximum temperatures at the start of each work day
- Record the current temperature at the beginning and end of each workday
- Reset the minimum and maximum temperatures each day

REFRIGERATOR/FREEZER TEMPERATURE RECORDING FORM DAY

Clinic Name/Pin #_____ PROPERTY NUMBER:_____ MONTH/YEAR_____

Check the temperatures in both the freezer and the refrigerator compartments of your vaccine storage units at least twice each working day. Place an X in the box that corresponds with the temperature. Record minimum and maximum temperatures in the freezer and refrigerator once a day, preferably in the morning.

CALL 1-501-661-2170 IMMEDIATELY

ACTUAL TEMPERATURE FOR REFRIGERATOR ≥48°F/8.8°C OR ≤32°F/0°C AND IF THE FREEZER IS ≤ 3°F/-16°C OR

REFRIGERATOR

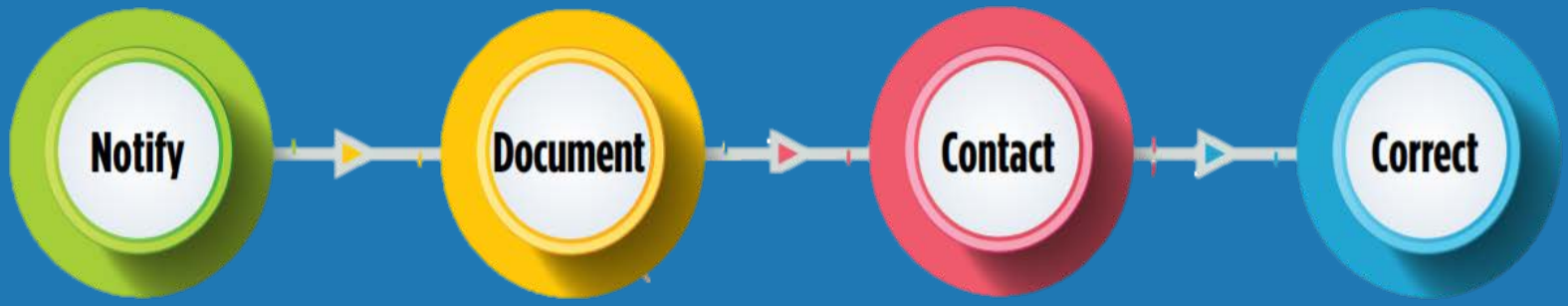
Staff Initials																													
Time																													
Day of Month		1		2		3		4		5		6		7		8		9		10		11		12		13		14		15	
F° Temp	C° Temp	am	pm	am	pm	am	pm	am	pm	am	pm	am	pm	am	pm	am	pm	am	pm	am	pm	am	pm	am	pm	am	pm	am	pm	am	pm
≥ 48	≥ 8.8	CALL 501-661-2170 AND TAKE IMMEDIATE ACTION IF TEMPERATURE IS IN SHADED SECTION!																													
47	8.3																														
46	7.7																														
45	7																														
44	6.6																														
43	6.1																														
42	6																														
41	5																														
40	4.4																														
39	4																														
38	3																														
37	2.7																														
36	2.2																														
35	2																														
34	1.1	CALL 501-661-2170 AND TAKE IMMEDIATE ACTION IF TEMPERATURE IS IN SHADED SECTION!																													
33	1																														
≤ 32	≤ 0																														
MINIMUM TEMP																															
MAXIMUM TEMP																															

FREEZER

≥ 7	≥ -14																														
6	-14.4	CALL 501-661-2170 AND TAKE IMMEDIATE ACTION IF TEMPERATURE IS IN SHADED SECTION!																													
5	-15																														
4	-15.5																														
≤ 3	≤-16																														
MINIMUM TEMP																															
MAXIMUM TEMP																															

Responding to Temperature Excursions

- Temperature excursions require immediate attention
- Never discard vaccine without contacting the manufacturer or Immunization Program
- Temperature excursion times are cumulative



Notify the Vaccine Coordinator

- Notify the Vaccine Coordinator IMMEDIATELY
- Mark the vaccine(s) “Do Not Use” and separate the vaccine
- Do not discard vaccines until instructed to do so

Document Excursion Information

- Temperature of vaccine and room
- Description of the event
- Storage unit inventory

Contact the Manufacturer or Immunization Program

- Manufacturer - Private vaccine
- Immunization Program - VFC and SCHIP
- Provide excursion information

Correct Storage Unit Issues

- Identify cause of excursion
- Contact service company
- Purchase new storage unit, if needed

Troubleshooting Storage Unit Issues

- Post warning sign

- Before adjusting temp:
  - Plugged In?
  - Door shut?
  - Cooling vent blocked?

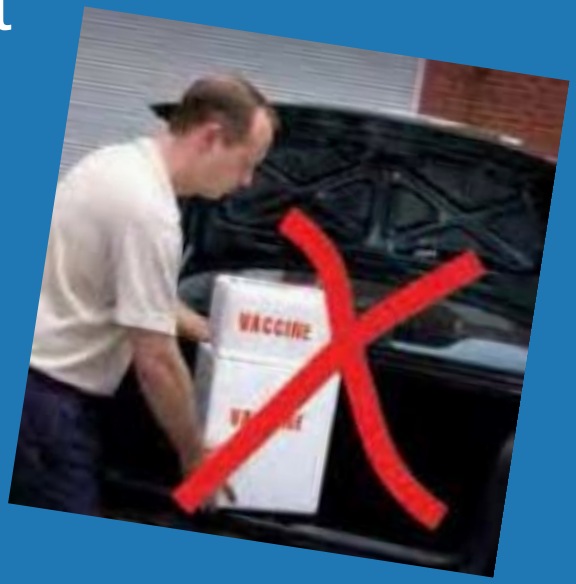
- Do not adjust temps during the workday

Adjusting Temps

- Make small adjustments
- Allow temperature 30 minutes to stabilize
- Recheck temperature
- Repeat until stable

Vaccine Transport

- If VFC, contact VFC Program first
- Only transport if necessary
- Do not transport frozen vaccines



- Use qualified container and data logger

Expiration Dates

- Vaccines and diluents have expiration dates
- If only month and year, good through midnight of the last day of that month
- Beyond use dates
  - Reconstituted vaccines
  - Manufacturer-shortened expiration dates

Vaccine Disposal and Returns

- Return expired vaccines immediately
- Do not return viable vaccine

- Dispose of partially-used multidose vials and open syringes/vials with your biological waste

Preparing Vaccines for Administration

- Remove vaccines immediately before administration
- Do not prefill vaccines at the beginning of the workday
- Discard any unused pre-drawn vaccines at the end of the workday

Vaccine Borrowing

- Should be rare and unplanned
  - New staff
  - Delayed shipment

- Document on VFC Borrowing Form
- Replace borrowed doses within 90 days

Vaccine Management Plan (VMP)

- A VMP should include a Storage and Handling Plan and Standard Operating Procedures
- Post on or near the storage unit
- Update annually
- Update when there are changes in staff, contact numbers, or procedures

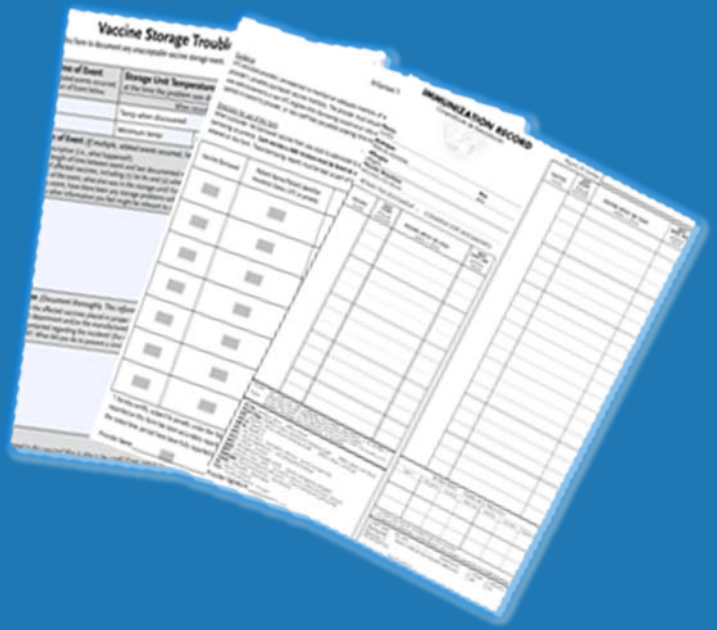
Vaccine Management Plan

A VMP should include 3 sections:

- General Information
- Routine Storage and Handling of Vaccines
- Emergency Storage, Handling and Transport Plan

General Information

- Contact Information
- Vaccine Coordinator duties
- Storage unit information
- Staff education and training
- Immunization forms



Routine Storage and Handling Procedures

- Receiving and documenting shipments
- Daily monitoring of temperatures
- Vaccine handling and preparation

Routine Storage and Handling Procedures

- Handling temperature excursions
- Managing expired, spoiled and wasted vaccines
- Emergency situations

Emergency Storage, Handling and Transport Plan

- Emergency contacts
- Alternative storage facility information
- Protocols for:
  - Building access
  - Packing vaccines
  - Transporting vaccines

Post Test Question # 1

1. What temperature is NOT within the recommended temperature range for refrigerated vaccines?

A. 48ºF (8.8ºC)

B. 37ºF (2.8ºC)

C. 45ºF (7.2ºC)

D. 40ºF (4.4ºC)

Post Test Question # 2

1. What temperature is NOT within the recommended range for storing frozen vaccines?

   A. 3°F (-16°C)

   B. -20°F (-28.8°C)

   C. 6°F (-14.4°C)

   D. -50°F (-45.5°C)

RESOURCES

- **Arkansas IAC** www.immunizear.org
- **CDC website** www.cdc.gov
- **Vaccine Storage and Handling Toolkit** https://www.cdc.gov/vaccines/hcp/admin/storage/toolkit/index.html
- **You Call the Shots** https://www.cdc.gov/vaccines/ed/youcalltheshots.html
- **Immunization Action Coalition** www.immunize.org
- **ADH website** www.healthy.arkansas.org

Contact Information

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501-661-2170

Arkansas Immunization Program

800-547-4040

Questions?