IV. Storage & Handling

North Carolina Immunization Program (NCIP)
Minimum Required Vaccine Ordering, Handling, and Storage Procedures*
***Storage procedures apply to both private and state vaccine stocks**

Vaccine Personnel

- Designate one staff member as the primary vaccine coordinator and at least one back-up vaccine coordinator. Staff must participate in yearly, documented training/education on proper storage and handling practices and VFC program requirements. All changes to key staff must be communicated to the NCIP

Storage and Handling Plans

- Maintain and update (with signature) annually or as needed written Routine Vaccine Management and Emergency Management Plans. Ensure all staff read and understand the plans, especially what to do in the event of a unit malfunction, power failure, natural disaster, or other emergencies. The routine plan must include guidance on: a) proper vaccine storage and handling practices, b) vaccine shipping and receiving, c) vaccine ordering, d) inventory control, e) vaccine expiration, spoilage, and waste prevention. The Emergency Plan must include: a) name, contact information, and how to notify staff responsible for preparing and transporting vaccine, b) alternative vaccine storage facility information, c) how to pack vaccine for transport, and d) how to document steps taken

Vaccine Storage Equipment (NCIP strongly recommends contacting the branch prior to the purchase of new equipment (data loggers/storage units) to ensure equipment meets program requirements)

- DO NOT store vaccine in a dormitory or dorm-style refrigerator/freezer at any time
- Dedicate refrigerators and freezers to the storage of vaccines only. Units must be able to maintain required vaccine storage temperatures year-round and be large enough to hold the year's largest inventory, along with sufficient room to store water bottles in the refrigerator and frozen coolant packs/frozen water bottles in the freezer
- Place the storage unit in a well vented room with space around the sides and at least 4 inches between the back of the unit and the wall
- Do not plug storage units in power strips, ground fault interrupters outlets, or outlets that are activated by a wall switch. These can be tripped or switched off, resulting in loss of electricity to the storage unit
- Post a "DO NOT UNPLUG" sign on the refrigerator, freezer, and circuit breakers
- Replace storage units that do not meet the minimum requirements or that have malfunctioned (new purchases must be stand-alone units)
- Maintain one back up data logger thermometer with a current certificate of calibration on hand (not stored in unit)

Vaccine Storage Practices

- Rotate vaccine stock weekly and use shorter-dated vaccines first. Remove expired immediately and contact the NCIP for wastage instructions. Notify NCIP at least four months before the expiration date to avoid restitution for improper inventory management. Keep vaccines in their original packages and store similar looking vaccines on different shelves to avoid confusion and medication errors
- Place vaccine in the central area of the storage unit to allow for proper air circulation around the vaccine. Do not store vaccines in the door, vegetable bins, on the floor of the unit or near the cooling vents at the top of the unit
- Store water bottles against the inside walls, on the top shelves, and in the doors of the refrigerator
- Keep frozen coolant packs (as well as frozen water bottles) in the freezer along the walls and floor and inside the freezer door
- Store MMR in the freezer
- Do not store food and beverages in the unit; Store other medications and biologic products in a separate storage unit

Temperature Monitoring (As of January 1, 2018 All Thermometers Must be Digital Data Loggers)

- Read and manually record the current temperature twice each day, once when the clinic opens and once when the clinic closes (including half days), from a data logger with a probe inside the unit. Record and clear the min/max reading once a day (when the clinic opens). Recorded temperatures must include time of reading, name and/or initials of the person assessing temperature
- Download and review data logger readings weekly
- Data logger probes should be placed centrally, near vaccine and have a current certificate of calibration issued by an ILAC-accredited laboratory
- Post the temperature log on the vaccine storage unit and maintain copies of all temperature logs for 3 years
- Refrigerator temperature must be maintained between 2°C and 8°C (36° and 46° F) with an optimum of 5°C (40°F)
- Freezer temperature must be maintained between -50°C and -15°C (-58°F and +5°F) with an optimum of -20° C (-4°F)
- Take immediate action when temperatures are out-of-range. Call the NCIP at 877-873-6247 for assistance and document on the temperature log any actions taken. Isolate the affected vaccine vials or packages, mark "DO NOT USE," and store the vaccines under appropriate conditions in a properly functioning vaccine storage unit

Vaccine Shipments and Transfers

- Immediately unpack vaccine deliveries, examine quantity, lot number, and expiration dates of the vaccine order against the invoice, and store appropriately. Call NCIP if cold chain monitor was activated; Never refuse delivery of a vaccine shipment
- Arrange for deliveries only when the vaccine coordinator or back-up will be available. Consider holidays, vacations, staff schedules, and changes in hours of operation when designating vaccine delivery date and time
- Do not transfer or borrow vaccine from other providers without prior approval from the NCIP

Vaccine Ordering and Inventory Management

- Order and administer all ACIP-recommended vaccines based on actual population served
- Draw up vaccine only at the time of administration
- Physically distinguish between public and private vaccine stock and maintain complete, accurate, and separate stock records
- Store vaccine in their original containers. Use only the specific diluent provided by the manufacturer
- Multi-dose products may be used until the expiration date stamped on the vial unless otherwise indicated in the manufacturer's package insert. Vaccine with expiration dates on the vial with only the month and year may be used through the last day of that month. As doses are used, mark multi-dose vials to keep an accurate inventory

NORTH CAROLINA IMMUNIZATION PROGRAM (NCIP)
ROUTINE VACCINE MANAGEMENT PLAN (update February 2, 2018)

Key Staff

- Designate one staff member to be the primary vaccine coordinator and at least one back-up coordinator. The primary vaccine coordinator is responsible for provider oversight for all vaccine management within the office and ensuring all vaccines are stored and handled correctly. The back-up coordinator can assume oversight responsibilities in the absence of the primary coordinator.
- All changes in key staff must be communicated to the NCIP as they occur.
- All staff must complete annual training on the VFC program requirements (You Call the Shots: Modules 10 and 16 at http://www.cdc.gov/vaccines/ed/youcalltheshots.htm). All training must be documented on the NCIP Employee Immunization Education Roster.
- Staff training should include (but is not limited to) the following topics: screening for VFC eligibility, procedure for receipt of vaccine delivery, daily storage and handling procedures, administering vaccine, and transportation of vaccine in an emergency.

Clinic Name	
Address	

Role	Name	Job Title	Home Phone	Cell Phone
Primary				
Secondary				
Lead physician				
Office staff				

Duties of key staff members

Lead Physician

- Complies with all federal vaccine management requirements
- Designates one employee as the practice's Primary Vaccine Coordinator
- Designates one employee as the practice's Back-up Vaccine Coordinator
- Reports changes in key staff to NCIP
- Conducts and documents required orientation and annual training for vaccine management personnel at least annually and as necessary
- Ensures practice's vaccine storage units meet NCIP requirements
- Ensures practice's vaccine inventory is consistent with NCIP requirements
- Updates and revises vaccine management plans at least annually and as necessary

Primary Vaccine Coordinator

- Completes required NCIP and VFC trainings
- Oversees the practice's vaccine management for routine and emergency situations
- Monitors vaccine storage units
- Maintains NCIP-related documentation in an accessible location

Back-up Vaccine Coordinator

- Completes required NCIP and VFC trainings
- Meets all responsibilities described in the Primary Vaccine Coordinator duties when s/he is not available

Person Completing Plan:_____Signature: _____

Date:_____County: _____

Vaccine Storage Units: Locations and Maintenance

- Refrigerator vaccines must be maintained between 2°C and 8°C (36°F and 46°F) with an optimum of 5°C (40°F) at all times.
- Freezer temperatures must be maintained between -50°C and -15°C (-58°F and +5°F) with an optimum of -20°C (-4°F) at all times.
- Vaccines should be stored in separate, stand-alone refrigerator or freezer units. However, if a combination (household) unit is being used, it should have separate controls for the refrigerator and freezer sections.
- Providers may no longer purchase combination units for vaccine storage. All new purchases must be stand-alone units.
- Provider must notify the NCIP immediately upon discovering vaccine (state or private) has been involved in a cold chain failure. If a cold chain failure is suspected, providers must:
    - Store vaccine under correct storage conditions in a properly functioning and monitored vaccine storage unit
    - Quarantine vaccine. Label vaccine "DO NOT USE" so the vaccine is not administered
    - Notify the NCIP immediately after discovery of the incident at 877-873-6347 for assistance
    - Document any actions taken on the temperature logs regarding out of range temperatures
    - Do NOT discard any vaccine unless directed to do so by the NCIP
- Post a "DO NOT UNPLUG" sign on the vaccine storage units and circuit breakers. Do not plug unit into ground fault interrupter (GFI) outlets, power strips, or outlets that are activated by switches.

Maintenance/Repair Company	Contact Name	Phone Number

Unit Type	Location	Brand	Model	Serial Number	Date Received
Refrigerator					
Refrigerator					
Freezer					
Freezer					

Maintenance Log

Unit Type	Location	Make/Model	Type of Service	Date
Refrigerator				
Refrigerator				
Refrigerator				
Freezer				
Freezer				

Person Completing Plan:_____Signature: _____

Date:_____County: _____

Thermometer Maintenance and Temperature Monitoring

- Providers must have a calibrated digital data logger with a probe in glycol with a current certificate issued by an ILAC- accredited laboratory. All certificates must contain: model number, serial number, date of calibration, measurement results indicating unit passed testing, and the documented recommended uncertainty within ±1°F (0.5°C).
- All new purchases are required to digital data logger thermometers with ILAC-accredited laboratory certification.
- The digital data logger must be placed in a central area of the unit directly with the vaccine in order to properly measure vaccine temperature. Thermometers should not be placed in the doors, near or against the walls, close to air vents, or on the floor of the unit.
- Data logger temperatures must be downloaded and reviewed weekly.

Location	Brand	Model	Serial Number	Issue Date	Calibration Due Date	Replace Battery Date
Refrigerator						
Freezer						

Calibration Company/Laboratory	Contact Name	Phone Number

Location of certificate of calibration:_____

Location of back-up thermometer(s):_____

Temperature Logs

- Provider must manually record temperatures on paper temperature logs, regardless of continuing monitoring systems that may be used. The following requirements apply:
  - Appropriately trained staff must record finding on a paper temperature log twice a day on all days the clinic is open
  - The log must include the time, date, temperature, and initials of the staff member
  - The log must be posted on each vaccine storage unit door or nearby in a readily accessible and visible location
  - Providers must maintain an ongoing file of paper temperature logs for 3 years

Location of completed temperature logs:_____

Person Completing Plan:_____Signature: _____

Date:_____County: _____

Routine Vaccine Maintenance

- Vaccines should be stored in their original packaging, placed in the middle of the unit with space between vaccine and the sides/back of the unit. Providers may use plastic organizational boxes for inventory control, provided there are holes to allow for circulation.
- Open only one vial or box of a particular vaccine at a time to control vaccine use and allow easier inventory control. On each opened vaccine vial, indicate on the label the date and time it was reconstituted or first opened. Use tick marks on multi-dose vials to keep track of doses.
- Order, stock, and administer all ACIP-recommended vaccines for the population served.
- Draw up vaccine only at the time of administration.
- Practices that serve both VFC and non-VFC children must maintain separate public and private vaccine inventories.
- All instances of borrowing between VFC vaccine and private vaccine must be recorded, documented, and paid back within 30 days.
- Expired vaccine must be removed immediately from the storage unit with viable vaccine.
- Weekly tasks:
    - Rotate stock so that newer vaccines are stored towards the back of the unit, while those soonest-to-expire are stored in the front. Providers must notify the NCIP of any vaccine doses that will expire before they can be administered at least 4 months before the expiration date to avoid restitution for improper inventory management. Providers must coordinate with the NCIP to transfer and document the transfer of vaccine between providers. Vaccine transfers between providers can occur only after receiving NCIP approval.
- Monthly tasks:
    - Check the North Carolina Immunization Program website for updates.
    - Conduct an inventory count to reconcile any differences between physical count and NCIR.
    - Check door seals of refrigerator and freezer.
    - Check borrowing and replacement reports to ensure all borrowed vaccine has been replaced within 30 days of the borrowed date.

Receiving and Unpacking Shipments

- Arrange for shipments only when the Primary Vaccine Coordinator or Back-up Coordinator is available.
- Keep reception staff current regarding vaccine delivery and train staff to respond to a vaccine delivery appropriately.
- Upon receipt of vaccine shipment, providers must:
    - Open vaccine package immediately
    - Check the temperature monitor readings
    - Inspect the vaccine and packaging for damage
    - Determine length of time the vaccine was in transit by looking at the packing list
    - Immediately store at appropriate temperatures
- If there is an issue with the vaccine shipment or there is a problem with the temperature monitors, providers must contact the NCIP at 877-873-6247.

Person Completing Plan:_____Signature: _____

Date:_____County: _____

NORTH CAROLINA IMMUNIZATION PROGRAM (NCIP)
EMERGENCY VACCINE MANAGEMENT PLAN/DISATER RECOVERY PLAN (update September 4, 2019)

Clinic Name	
Address	

Role	Name	Job Title	Home Phone/ Cell Phone	Email Address
Primary				
Secondary				
Lead physician				
Office staff				

In an emergency, contact the following people in the order listed:

Role	Name	Job Title	Home Phone/ Cell Phone	Email Address
1.				
2.				
3.				
4.				

Useful Emergency Numbers

Service	Contact	Work Phone	Emergency Phone	Email Address
Regional Immunization Nurse				
Regional Immunization Consultant				
Electrical Power Company				
Building Maintenance				
Building Alarm Company				
Refrigerator/Freezer Repair				
Refrigerator/Freezer Alarm Company				
Generator Repair and Maintenance				

Back-up location

Alternate facility	Address	Contact	Work Phone	Emergency Phone

Person Completing Plan:_____Signature: _____

Date:_____County: _____

Emergency Supplies

Item	Location	Item	Location
Doors		Keys	
Flash lights/batteries		Locks	
Circuit breakers		Alarms	
Light Switches		Packing Materials	

Instructions for entering the building and floor plans:_____

Before an emergency

- Identify an alternative storage facility with a generator where vaccine can be stored (i.e. hospital, health department, fire department, etc.). Obtain verbal or written consent to use the facility as a backup location and ensure the facility has appropriate storage capabilities per NCIP requirements.
- Ensure the availability of staff to pack and move vaccine, and the availability at back up location
- Ensure a means of transport for the vaccine to the back-up facility and review transportation guidelines
- Fill the empty space in your refrigerator with water bottles and line the sides and bottom of the freezer with frozen coolant packs
- Whenever possible, suspend vaccination activities BEFORE the onset of emergency conditions to allow sufficient time to pack and transport vaccine

During an emergency

- Assess the situation. Keep all refrigerators and freezers closed and if possible, continue to monitor temperatures. If not, record the temperature as soon as possible after the power is restored and the duration of the outage and report this information to the NCIP
- Determine the cause of the power failure and estimate the time it will take to restore power. If a timeframe for the restoration of power cannot be determined, **do not leave vaccine in a non-working unit**
- Notify key staff as listed on this Emergency Plan
- If the outage is expected to be long term (greater than 2 hours), transport the vaccine to back-up facility

Emergency transportation

- Conduct an inventory before beginning transport and keep all vaccine in original packaging
- Package refrigerated vaccine in a well-insulated container in the following order: 1) conditioned frozen water bottles at the bottom of the cooler, 2) 1 sheet of corrugated cardboard 3) insulating material (2-3 inches of bubble wrap, packing foam, or Styrofoam™) 3) vaccine with digital data logger, 4) insulating material, 5) another sheet of cardboard for support 6) layer of conditioned frozen water bottles 7) closed lid with DDL display and temperature log on top of lid
- Package freezer vaccine in a well-insulated, hard-plastic cooler in the following order: 1) frozen coolant packs at the bottom of the cooler, 2) vaccine layer directly on top of coolant pack, 3) Digital Data Logger probe with top layer of vaccine 4) layer of frozen coolant packs to cover vaccine 5) fill cooler to top with insulation material (bubble wrap) 6) close lid and place digital data logger display on top cooler lid with temperature log. Diluent should be transported with the vaccine at the appropriate storage temperatures
- Upon arrival to back-up facility, document transportation time, temperatures in cooler, and temperatures at the facility
- Do not transfer vaccines in the NCIR for temporary storage at back-up locations

After an emergency

- Do not discard or administer any affected vaccine. Mark vaccine with "DO NOT USE" sign and call the NCIP for further instruction about the viability of the vaccine
- Record the temperature in the unit as soon as possible after power is restored. Continue monitoring until units are in range
- Record the duration of the outage and maximum temperature observed on temperature logs

Person Completing Plan:_____Signature: _____

Date:_____County: _____

PIN _____

North Carolina Department of Health and Human Services

Division of Public Health - Immunization Branch

VACCINE REQUISITION/INVENTORY FORM

Call **1-877-873-6247** if you have questions about ordering,

Fax completed form to **1-800-544-3058**

VACCINE ORDER FORM

***Before giving any state supplied vaccines, see the most recently updated NCIP Coverage Criteria for proper administration. The criteria can be found on our website at www.immunizenc.com/providers.

***By Federal law, a current Vaccine Information Statement must be given **prior** to administration of the vaccine, and it must be given **each time** vaccine is given.

FACILITY NAME _____ DATE _____

CONTACT _____ FED ID # _____

SHIPPING ADDRESS _____ CITY _____ ZIP CODE _____

PHONE # _____ EXT _____ FAX # _____

Fridge Temp this am? _____ **Freezer?** _____

Will you be closed in the next 30 days? If yes, when?

Dates: _____

Business Hours: _____ **Lunch:** _____

VACCINES STORED IN THE REFRIGERATOR

CURRENT VFC INVENTORY				NEW VACCINE ORDER					
VACCINE	DOSES ON HAND	LOT NUMBER	EXP. DATE	BRAND/ MFG	NDC NUMBER	Unit Shipping Size	Doses Used	Doses X3	# Doses Requested
DT-Peds				Generic -Sanofi	49281-0225-01	2 pack - 1 dose vials			
DTaP				Daptacel®-Sanofi	49281-0286-10	10 pack - 1 dose vials			
				Infanrix®-GSK	58160-0810-11	10 pack - 1 dose vials			
					58160-0810-52	10 pack - 1 dose syringes			
DTaP/IPV				Kinrix®-GSK	58160-0812-11	10 pack - 1 dose vials			
					58160-0812-52	10 pack - 1 dose syringes			
				Quadracel®-Sanofi	49281-0562-10	10 pack - 1 dose vials			
DTaP/Hep B/IPV				Pediarix®-GSK	58160-0811-52	10 pack - 1 dose syringes			
DTaP/IPV/ HIB				Pentacel®-Sanofi	49281-0510-05	5 pack - 1 dose vials			

CURRENT VFC INVENTORY				NEW VACCINE ORDER					
VACCINE	DOSES ON HAND	LOT NUMBER	EXP. DATE	BRAND/ MFG	NDC NUMBER	Unit Shipping Size	Doses Used	Doses X3	# Doses Requested
Hep A-Peds				Vaqta®-Merck	00006-4831-41	10 pack - 1 dose vials			
					00006-4095-02	10 pack - 1 dose syringe			
Hep A-Peds				Havrix®-GSK	58160-0825-11	10 pack - 1 dose vials			
					58160-0825-52	10 pack - 1 dose syringes			
Hep B Peds				Engerix B®-GSK	58160-0820-11	10 pack - 1 dose vials			
					58160-0820-52	10 pack - 1 dose syringes			
				Recombivax HB®-Merck	00006-4981-00	10 pack - 1 dose vials			
					00006-4093-02	10 pack - 1 dose syringe			
Hib				ActHIB®-Sanofi	49281-0545-05	5 pack - 1 dose vials			
				PedvaxHIB®-Merck	00006-4897-00	10 pack - 1 dose vials			
				HIBERIX®-GSK	58160-0818-11	10 pack - 1 dose vials			
HPV				Gardasil®9-Merck	00006-4119-03	10 pack - 1 dose vials			
IPV				IPOL®-Sanofi	49281-0860-10	10 dose vial			
MCV				Menactra®-Sanofi	49281-0589-05	5 pack - 1 dose vials			
				Menveo®-GSK	46028-0208-01	5 pack - 1 dose vials			

Updated 5/4/18 by TC

CURRENT VFC INVENTORY				NEW VACCINE ORDER					
VACCINE	DOSES ON HAND	LOT NUMBER	EXP. DATE	BRAND/ MFG	NDC NUMBER	Unit Shipping Size	Doses Used	Doses X3	# Doses Requested
MENB				Bexsero®-Novartis	46028-0114-01	10 pack - 1 dose syringes			
				Bexsero®-Novartis	46028-0114-02	single dose syringe			
MENB				Trumenba®-Pfizer	00005-0100-10	10 pack - 1 dose syringes			
PCV				Prevnar 13® TM-Pfizer	00005-1971-02	10 pack - 1 dose syringes			
				Pneumovax® 23 - Merck	00006-4943-00	single dose vial			
Rota				RotaTeq®-Merck	00006-4047-41	10 pack - 1 dose tubes			
					00006-4047-20	25 pack - 1 dose tubes			
				Rotarix®-GSK	58160-0854-52	10 pack - 1 dose vials			
Td				Tenivac®-Sanofi	49281-0215-10	single dose vial			
					49281-0215-15	single dose syringe			
				Td Pres-Free - Mass Bio Labs	13533-0131-01	single dose vial			
TDAP				Boostrix®-GSK	58160-0842-11	10 pack - 1 dose vials			
					58160-0842-52	10 pack - 1 dose syringes			
				Adacel®-Sanofi	49281-0400-10	10 pack - 1 dose vials			
					49281-0400-15	5 pack - 1 dose syringes			

Updated 5/4/18 by TC

VACCINES STORED IN THE FREEZER

MMR				M-M-R®II-Merck	00006-4681-00	10 pack - 1 dose vials			
MMR-V				ProQuad®-Merck	00006-4999-00	10 pack - 1 dose vials			
Varicella				Varivax®-Merck	00006-4827-00	10 pack - 1 dose vials			

Purpose: To request vaccine from the North Carolina Immunization Program

Preparation: Complete original and retain one copy for your records

Distribution: Vaccine orders may be faxed or mailed to:

Fax: 1-800-544-3058

Immunization Branch
1917 Mail Service Center
Raleigh, NC 27699-1917

If an order is faxed, <u>do not mail the order!</u>
Additional forms may be ordered from the above office, as well as printed online.

How to use this form:

1. Review your doses administered data by taking the following steps:
   a. Total all doses administered from the previous month for each vaccine type. Enter the number in **Previous Month Doses Used** column.
   b. Multiply **Previous Month Doses Used** column by three and enter this number in the **Doses X 3** column.

2. Inventory current stock.
   a. Rotate stock to ensure vaccines with the shortest expiration dates are used first.
   b. Enter inventory amounts in the **Doses on Hand** column, by type, lot number and expiration date.
   c. If you have more than three lot numbers to record for a vaccine please use the supplemental inventory form provided.

* Orders missing **Doses on Hand** information may result in processing delays.

3. Complete your vaccine order:
   a. Subtract **Doses on Hand** column from the **Doses X 3** column.
   b. Enter the difference in the **# Doses Requested** column. Round up to the unit shipping size.
   c. Fax or mail your order to the Customer Service staff.

Disposition: Retain a copy of the completed form for three years or destroy when agency need ends.

Remember: Your Vaccines Administered Logs (VALS) are due to the Immunization Branch by the 10th of every month. Failure to send those in could delay the processing of your vaccine order.

Supplemental Inventory Form

CURRENT VFC INVENTORY				CURRENT VFC INVENTORY			
VACCINE	DOSES ON HAND	LOT NUMBER	EXP. DATE	VACCINE	DOSES ON HAND	LOT NUMBER	EXP. DATE

North Carolina Department of Health and Human Services

Division of Public Health

NC IMMUNIZATION PROGRAM (NCIP) VACCINE TRANSFER FORM

IF YOU ARE A NCIR USER DO NOT USE THIS FORM

YOU NEED TO COMPLETE ALL TRANSFERS IN NCIR

Date of Transfer: _____

Person Completing Form: _____

Provider Transferring Vaccine: _____

Street Address: _____ City: _____

Phone Number: (_____)_____ Pin #: _____
(For Immunization Branch Use Only)

Provider Receiving Vaccine: _____

Street Address: _____ City: _____

Phone Number: (_____)_____ Pin #: _____
(For Immunization Branch Use Only)

Vaccine(s) being transferred:

Vaccine Type *EIPV*

Manufacturer/Lot # *Aventis T0697-2*

Expiration Date *7/3/2003*

# of doses transferred *20 doses*

Example

Vaccine Type _____

Manufacturer/Lot # _____

Expiration Date _____

# of doses transferred _____

Vaccine Type _____

Manufacturer/Lot # _____

Expiration Date _____

# of doses transferred _____

Vaccine Type _____

Manufacturer/Lot # _____

Expiration Date _____

# of doses transferred _____

Vaccine Type _____

Manufacturer/Lot # _____

Expiration Date _____

# of doses transferred _____

Vaccine Type _____

Manufacturer/Lot # _____

Expiration Date _____

# of doses transferred _____

Vaccine Type _____

Manufacturer/Lot # _____

Expiration Date _____

# of doses transferred _____

Vaccine Type _____

Manufacturer/Lot # _____

Expiration Date _____

# of doses transferred _____

Please call 1-877-873-6247 if you have any questions.

Purpose:

To provide a generic method for immunization providers to report vaccine transfers between NCIP participants to the North Carolina Immunization Branch.

Preparation:

1. Complete the demographic data including provider name and street address for both the transferring and receiving facilities.
2. Report all doses transferred, including multi-dose vials, single-dose vials, and manufacturers pre-filled syringes. Include vaccine type, manufacturer, lot number, expiration date and number of doses transferred.
3. Make a copy for your records.

Distribution:

Mail form to:	Immunization Branch 1917 Mail Service Center Raleigh, NC 27699-1917
Fax form to:	1-800-544-3058
Email form to:	ncirhelp@dhhs.nc.gov

Disposition:

Retain a copy of the completed form for three years or destroy when agency need ends.

Reordering:

User may copy form as needed or call 1-877-873-6247 or fax 1-800-544-3058 for more copies.

***Only use this form if you do not use the NCIR!**
(NCIR-North Carolina Immunization Registry)

North Carolina Department Health and Human Services
Division of Public Health – Immunization Program

WASTED/EXPIRED VACCINE REPORT

VTrcks ID _____

Vaccine Return ID # _____

(For Immunization Branch Use)

Provider Name _____

Person Completing Form _____

Mailing Address _____

Phone Number _____

Date Reporting _____

Is your facility on a standard UPS Route? ☐ Yes ☐No

Fax Number_____

Please return all unopened wasted/expired vaccines to McKesson. *Do not return drawn vaccine or open multi-dose vials.* See reverse for further instructions.

VACCINE TYPE	DOSES TO BE RETURNED	DOSES DISPOSED OF AT FACILITY	TOTAL DOSES WASTED	REASON WASTED	DATE WASTAGE OCCURRED	MANUFACTURER NAME	LOT #	EXPIRATION DATE
EXAMPLE EIPV	1 vial x 10 doses = 10	3 doses	13 doses	Tray fell on the floor and vials broke. Vaccine disposed of at facility.	2/23/14	Aventis	T0697-2	7/3/14

Document below what precautions your agency is taking to ensure that vaccine will not be wasted in this manner in the future.

_____

_____

Purpose: To provide a generic method for immunization providers to report wasted/expired vaccine to the North Carolina Immunization Branch.

Preparation: The following steps need to be followed in order to return wasted/expired vaccine:

1. **Complete all information requested on this form:**
   -indicate in DOSES TO BE RETURNED column the # of doses being returned;
   -indicate in DOSES DISPOSED OF AT FACILITY column the # of doses disposed of at facility.

2. **Send report to NC Immunization Program at 1-800-544-3058 or you may email to ncirhelp@dhhs.nc.gov.**

3. **Wait for faxed or emailed wasted/expired vaccine report with VTrckS ID and Vaccine Return ID from Immunization Program, this will take 1-2 business days.**

Distribution: After you have completed steps 1-3 you will then complete the following steps:

4. **Once you have received the faxed or emailed wasted/expired report from the Immunization Program with your VTrckS and Vaccine Return ID's, you will place the form with the vaccine to be returned (cold packs not needed) inside any box that you may have received vaccines in.**

   You can reuse vaccine boxes that are from McKesson Specialty Distribution.
   The vaccines are to be returned to McKesson Specialty Distribution.
   Return only spoiled or expired vaccine in its original vial or prefilled syringe.
   NEVER ship USED syringes or a syringe not pre-filled by the manufacturer.

5. **Wait for shipping labels from McKesson – which the Immunization Program will have sent to your facility, this will take 7-10 business days.**

7. **If on standard UPS route give vaccine to driver once label has arrived.**

8. **If not on UPS route – McKesson will schedule a pick-up for the vaccine with UPS automatically.**

Disposition: Retain a copy of the completed form for three years or destroy when agency need ends.

Reordering: User may copy form as needed.

If you have vaccine you can not use before its expiration date, call us at least four (4) months prior to the expiration date. **Do not return viable vaccine.**
Call 1-877-873-6247 if you have any questions.

North Carolina Immunization Program
Refrigerator Vaccines Temperature Storage Log

Required to be maintained for 3 years

Post on or near the vaccine storage unit and use to record required readings of AM and PM temperatures for vaccines

Requirements:

- Read and manually record temperatures twice each day; once at the beginning and again at the end of the day
- Record from an interior digital data logger thermometer with a current certificate of calibration
- Refrigerator temperature must be maintained between 2°C and 8°C (36ºF and 46° F) with an optimum of 5°C (40°F)
- Normal readings are 2°, 3°, 4°, 5°, 6°, 7°, 8° C (36°, 37°, 38°, 39°, 40°, 41°, 42°, 43°, 44°, 45°, 46°F)
- Each temperature reading must be accompanied by the time of the reading and name (or initials) of the person who assessed and recorded the reading
- CDC requires that providers record the minimum and maximum temperatures once each workday (preferably in the morning)
- Take immediate action when temperatures are out-of-range. Isolate the affected vaccine vials or packages, mark "DO NOT USE," and store the vaccines under appropriate conditions in a properly functioning vaccine storage unit. Call the NCIP at 877-873-6247 for assistance and document on the temperature log any actions taken regarding the out of range temperatures.

Facility Name _____ Location of Refrigerator_____

Day	Date	AM Temperature			PM Temperature			Minimum/Maximum Temperature		Comments
	Mo/Day/Yr	Reading	Time	Initials	Reading	Time	Initials	Minimum	Maximum	
Sunday										
Monday										
Tuesday										
Wednesday										
Thursday										
Friday										
Saturday										
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Monday										
Tuesday										
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Saturday										

NCIP Temperature Log : Store vaccine on hand according to the most recent *NCIP Minimum Required Vaccine Ordering, Handling and Storage Procedures*, which requires maintaining proper temperatures, using approved storage units, and immediately removing expired vaccine from stock. Ensure an Emergency Vaccine Management Plan is completed, posted on the vaccine unit, updated annually, read by current and new staff, and updated as staff change. (Update 02/20/2018)

North Carolina Immunization Program (NCIP)
Freezer Vaccines Temperature Storage Log

Required to be maintained for 3 years

Post on or near the vaccine storage unit and use to record required readings of AM and PM temperatures for vaccines

Requirements:

- Read and manually record temperatures twice each day; once at the beginning and again at the end of the day
- Record from an interior digital logger thermometer with a current certificate of calibration
- Freezer temperature must be maintained between -50°C and -15°C (-58°F and +5°F) with an optimum of -20° C (-4°F). Ex. Temperature readings must be -15°, -16°, -17°, -18°, -19°, -20°, -21°, -22° C (5°, 4°, 3°, 2°, 1°, 0°, -1°, -2° F) but not colder than -50°C (-58°F).
- Protect MMR, MMR-V, and Varicella from light AT ALL TIMES
- Each temperature reading must be accompanied by the time of the reading and name (or initials) of the person who assessed and recorded the reading
- CDC requires that providers record the minimum and maximum temperatures once each workday (preferably in the morning)
- Take immediate action when temperatures are out-of-range. Isolate the affected vaccine vials or packages, mark "DO NOT USE," and store the vaccines under appropriate conditions in a properly functioning vaccine storage unit. Call the NCIP at 877-873-6247 for assistance and document on the temperature log any actions taken regarding the out of range temperatures.

Facility Name _____ **Location of Freezer**_____

Day	Date	AM Temperature			PM Temperature			Minimum/Maximum Temperature		Comments
	Mo/Day/Yr	Reading	Time	Initials	Reading	Time	Initials	Minimum	Maximum	
Sunday										
Monday										
Tuesday										
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NCIP Temperature Log : Store vaccine on hand according to the most recent *NCIP Minimum Required Vaccine Ordering, Handling and Storage Procedures*, which requires maintaining proper temperatures, using approved storage units, and immediately removing expired vaccine from stock. Ensure an Emergency Vaccine Management Plan is completed, posted on the vaccine unit, updated annually, read by current and new staff, and updated as staff change. (Update 02/20/2018)

Vaccine Label Examples

Staff can easily become confused about vaccines within the storage unit because there are so many brands and formulations available. Labeling the area where vaccines are stored can help staff quickly locate and choose the correct vaccine—perhaps preventing a vaccine administration error. Depending on how vaccines are organized within the storage unit, labels can be placed on containers or bins or directly attached to shelves where vaccines are placed. Other helpful strategies to prevent vaccine administration errors include color-coding labels (e.g., one color for pediatric and another for adult vaccines) and providing additional information such as age indications or other information unique to the vaccine.

In addition, some vaccines must be reconstituted before administration. These vaccines have two components—a lyophilized vaccine and a diluent that must be mixed together. **The lyophilized vaccine should only be reconstituted or mixed using the diluent supplied by the manufacturer**. Consider posting reminders or labeling vaccines to remind staff to reconstitute certain vaccines prior to administration.

The following labels are examples that may be used to help organize vaccines. Labels are based on recommendations from the Advisory Committee on Immunization Practices (ACIP) and may include indications different from those of the Food and Drug Administration. The Centers for Disease Control and Prevention (CDC) also recommends vaccines be stored in the original packaging to protect the contents from light, to help maintain the recommended temperature range, and to help prevent administration errors.

Note: Some vaccine preparations are being transitioned from vials and prefilled syringes that contain latex (natural rubber) to vials and prefilled syringes that are not made with natural rubber latex. Read the package insert that accompanies the product to check for the presence of natural rubber or latex.

Diphtheria- and Tetanus-Toxoid- and acellular Pertussis-Containing Vaccines

DTaP (Daptacel)

Ages: 6 weeks through 6 years

Use for: Any dose in the series

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

DTaP (Infanrix)

Ages: 6 weeks through 6 years

Use for: Any dose in the series

Route: Intramuscular (IM) injection

DTaP-IPV-HepB (Pediarix)

Ages: 6 weeks through 6 years

Use for: DTaP and IPV: Doses #1, #2, and/or #3

HepB: Any dose in the series

Do NOT use for HepB birth dose

Route: Intramuscular (IM) injection

Diphtheria- and Tetanus-Toxoid- and acellular Pertussis-Containing Vaccines

DTaP-IPV-Hib (Pentacel)

Ages: 6 weeks through 4 years
Use for: DTaP and IPV: Doses #1, #2, #3, and/or #4
Hib: Any dose in the series
Route: Intramuscular (IM) injection

Reconstitute Hib powder ONLY with manufacturer-supplied DTaP-IPV liquid diluent

Use immediately after reconstitution
Do NOT administer DTaP-IPV w/o Hib

DTaP-IPV-HepB-Hib (Vaxelis)

Ages: 6 weeks through 4 years
Use for: DTaP and IPV: Doses #1, #2, and/or #3
Hep B: Any dose in the series
(Do NOT use for HepB birth dose)
Hib: Any dose in the series
Route: Intramuscular (IM) injection

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

Haemophilus influenzae type b-Containing Vaccines

Hib (ActHIB)

Ages: 6 weeks through 4 years

Use for: Any dose in the series

Route: Intramuscular (IM) injection

Reconstitute Hib powder ONLY with manufacturer-supplied 0.4% sodium chloride diluent

Beyond Use Time: If not used immediately after reconstitution, store at 2°C to 8°C (36°F to 46°F) and discard if not used within 24 hours. Shake well prior to administration.

Hib (PedvaxHIB)

Ages: 6 weeks through 4 years

Use for: Any dose in the series

Route: Intramuscular (IM) injection

Hib (Hiberix)

Ages: 6 weeks through 4 years

Use for: Any dose in the series

Route: Intramuscular (IM) injection

Reconstitute Hib powder ONLY with manufacturer-supplied 0.9% sodium chloride diluent

Beyond Use Time: If not used immediately after reconstitution, store at 2°C to 8°C (36°F to 46°F) and discard if not used within 24 hours. Shake well prior to administration.

Hepatitis Vaccines

HepA (Havrix)-Pediatric Formulation

Ages: 12 months through 18 years
Use for: Any dose in the series
Route: Intramuscular (IM) injection

HepB (Engerix-B)-Pediatric Formulation

Ages: Birth through 19 years
Use for: Any dose in the series
Route: Intramuscular (IM) injection

HepA (Vaqta)-Pediatric Formulation

Ages: 12 months through 18 years
Use for: Any dose in the series
Route: Intramuscular (IM) injection

HepB (Recombivax HB)-Pediatric Formulation

Ages: Birth through 19 years
Use for: Any dose in the series
Route: Intramuscular (IM) injection

Hepatitis Vaccines

HepA (Havrix)-Adult Formulation

Ages: 19 years and older
Use for: Any dose in the series
Route: Intramuscular (IM) injection

HepB (Engerix-B)-Adult Formulation

Ages: 20 years and older
Use for: Any dose in the series
Route: Intramuscular (IM) injection

HepA (Vaqta)-Adult Formulation

Ages: 19 years and older
Use for: Any dose in the series
Route: Intramuscular (IM) injection

HepB (Recombivax HB)-Adult Formulation

Ages: 20 years and older
Use for: Any dose in the series
Alternate Adolescent Schedule for 11- through 15 -year olds:
Two 1 mL doses 4 to 6 months apart
Route: Intramuscular (IM) injection

Hepatitis Vaccines

HepB (Heplisav-B)

Ages: 18 years and older

Use for: Any dose in the series (two 0.5 mL doses 1 month apart)

Route: Intramuscular (IM) injection

HepA-HepB (Twinrix)

Ages: 18 years and older

Contains: HepA = Pediatric dosage
HepB = Adult dosage

Schedule: 0, 1, and 6 months

Alternate Schedule: 0, 7, and 21 to 30 days, followed by booster at 12 months

Route: Intramuscular (IM) injection

Human Papillomavirus Vaccines

9vHPV (Gardasil 9)

Ages: 9 years through 45 years

Recommended ages: 11 years or 12 years

Catch-up ages: 13 years through 26 years

Shared clinical decision-making ages: 27 through 45 years

Route: Intramuscular (IM) injection

Measles, Mumps, Rubella Vaccine

MMR (M-M-R II)

Ages: 12 months and older

Use for: Any dose in the series

Route: Subcutaneous (subcut) injection

Reconstitute MMR powder ONLY with manufacturer-supplied sterile water diluent

Beyond Use Time: If not used immediately after reconstitution, store in vaccine vial in dark place at 2°C to 8°C (36°F to 46°F) and discard if not used within 8 hours.

Meningococcal Vaccines

MenACWY-D (Menactra)

Ages: 9 months and older

Use for: Any dose in the series (and certain high-risk groups)

Route: Intramuscular (IM) injection

MenACWY-TT (MenQuadfi)

Ages: 2 years and older

Use for: Any dose in the series (and certain high-risk groups)

Route: Intramuscular (IM) injection

MenACWY-CRM (Menveo)

Ages: 2 months and older

Use for: Any dose in the series (and certain high-risk groups)

Route: Intramuscular (IM) injection

Reconstitute the MenA lyophilized conjugate component ONLY with manufacturer-supplied MenCWY liquid conjugate component

Do NOT administer MenCWY w/o MenA

Beyond Use Time: Should be used immediately after reconstitution, but may be stored between 2° and 25°C (36° and 77°F) for up to 8 hours.
Do not freeze.

Meningococcal Vaccines

MenB-4C (Bexsero)

Ages: 10 years and older

Use for: Any dose in the series

Route: Intramuscular (IM) injection

Bexsero and Trumenba are NOT interchangeable
Complete series with same vaccine product

MenB-FHbp (Trumenba)

Ages: 10 years and older

Use for: Any dose in the series

Route: Intramuscular (IM) injection

Bexsero and Trumenba are NOT interchangeable
Complete series with same vaccine product

Pneumococcal Vaccines

PCV13 (Prevnar 13)

Ages: All children 6 weeks through 5 years

Certain high-risk groups 6 years and older who have never received PCV13

All adults 65 years and older who have never received PCV13 may receive a dose per shared clinical decision-making

Route: Intramuscular (IM) injection

PPSV23 (Pneumovax 23)

Ages: Healthy adults 65 years and older

Certain high-risk groups 2 years through 64 years

Route: Intramuscular (IM) injection OR Subcutaneous (subcut) injection

No more than two doses of PPSV23 recommended before 65th birthday and one dose at 65 years or older

Poliovirus Vaccine

IPV

Ages: 6 weeks and older

Use for: Any dose in the series

Route: Intramuscular (IM) injection OR Subcutaneous (subcut) injection

Rotavirus Vaccines

RV1 (Rotarix)

Ages: 6 weeks through 8 months, 0 days
Maximum age for 1st dose is 14 weeks, 6 days
Maximum age for last dose is 8 months, 0 days

Route: Oral (PO)

Reconstitute RV1 powder ONLY with manufacturer-supplied sterile water/calcium chloride/xanthan diluent

Beyond Use Time: If not used immediately after reconstitution, store at 2°C to 8°C (36°F to 46°F) or at controlled room temperature up to 25°C (77°F) and discard if not used within 24 hours.

Do NOT inject

RV5 (RotaTeq)

Ages: 6 weeks through 8 months, 0 days
Maximum age for 1st dose is 14 weeks, 6 days
Maximum age for last dose is 8 months, 0 days

Route: Oral (PO)

Do NOT inject

Tetanus- and Diphtheria-Toxoid-Containing Vaccines

DT (generic)

Ages: 6 weeks through 6 years

Use for: Primary series and booster doses **ONLY** for children with a contraindication or precaution to pertussis vaccine

Route: Intramuscular (IM) injection

Td (generic)

Ages: 7 years and older

Use for: Primary series and booster doses for persons previously vaccinated with Tdap

Route: Intramuscular (IM) injection

Td (Tenivac)

Ages: 7 years and older

Use for: Primary series and booster doses for persons previously vaccinated with Tdap

Route: Intramuscular (IM) injection

Tetanus- and Diphtheria-Toxoid- and acellular Pertussis-Containing Vaccines

Tdap (Adacel)

Ages: 7 years and older

Use for: Routine adolescent dose at 11 to 12 years of age

Each pregnancy

Patients not fully vaccinated for pertussis

Route: Intramuscular (IM) injection

Tdap (Boostrix)

Ages: 7 years and older

Use for: Routine adolescent dose at 11 to 12 years of age

Each pregnancy

Patients not fully vaccinated for pertussis

Route: Intramuscular (IM) injection

Frozen Varicella-Containing Vaccines

VAR (Varivax)

Ages: 12 months and older

Use for: Any dose in the series

Route: Subcutaneous (subcut) injection

Reconstitute VAR powder ONLY with manufacturer-supplied sterile water diluent

Beyond Use Time: Discard reconstituted vaccine if not used within 30 minutes.

MMRV (ProQuad)

Ages: 12 months through 12 years

Use for: Any dose in the series

Route: Subcutaneous (subcut) injection

Reconstitute MMRV powder ONLY with manufacturer-supplied sterile water diluent

Beyond Use Time: Discard reconstituted vaccine if not used within 30 minutes.

Refrigerated Varicella-Containing Vaccine

RZV (Shingrix)

Ages: 50 years and older

Use for: Immunocompetent adults age 50 years and older

Immunocompetent adults who previously received Zostavax (ZVL)

Route: Intramuscular (IM) injection

Refrigerate both components; do NOT freeze

Reconstitute lyophilized varicella zoster component with manufacturer-supplied adjuvant suspension

Beyond Use Time: Discard reconstituted vaccine if not used within 6 hours.

Reconstituted Vaccines

DTaP-IPV/HIB (Pentacel)

+

=

Lyophilized Hib component | Manufacturer's DTaP-IPV liquid component | Pentacel vaccine

Should be used immediately after reconstitution

Hib (ActHIB)

+

=

Lyophilized Hib component | Manufacturer's 0.4% sodium chloride diluent | ActHIB vaccine

Beyond Use Time: If not used immediately after reconstitution, store at 2°C to 8°C (36°F to 46°F) and discard if not used within 24 hours. Should be shaken vigorously before injection.

MMR (M-M-R II)

+

=

Lyophilized MMR component | Manufacturer's sterile water diluent | M-M-R II vaccine

Beyond Use Time: If not used immediately after reconstitution, store in vaccine vial in dark place at 2°C to 8°C (36°F to 46°F) and discard if not used within 8 hours.

Hib (Hiberix)

+

=

Lyophilized Hib component | Manufacturer's 0.9% sodium chloride diluent | Hiberix vaccine

Beyond Use Time: If not used immediately after reconstitution, store at 2°C to 8°C (36°F to 46°F) and discard if not used within 24 hours. Should be shaken vigorously before injection.

Reconstituted Vaccines

MenACWY-CRM (Menveo)

+

=

Lyophilized MenA component | **MenCWY liquid component** | **Menveo vaccine**

Beyond Use Time: Should be used immediately after reconstitution, but may be stored at or below 25°C (77°F) and discarded if not used within 8 hours.

RV1 (Rotarix)

+

=

Lyophilized RV1 component | **Manufacturer's sterile water-calcium carbonate-xanthan diluent** | **Rotarix vaccine**
Do NOT inject

Beyond Use Time: If not used immediately after reconstitution, store at 2°C to 8°C (36°F to 46°F) or at controlled room temperature up to 25°C (77°F) and discard if not used within 24 hours.

Reconstituted Vaccines

VAR (Varivax)

+

=

Lyophilized VAR component | Manufacturer's sterile water diluent | Varivax vaccine

Beyond Use Time: Discard reconstituted vaccine if not used within 30 minutes.

MMRV (ProQuad)

+

=

Lyophilized MMRV component | Manufacturer's sterile water diluent | ProQuad vaccine

Beyond Use Time: Discard reconstituted vaccine if not used within 30 minutes.

RZV (Shingrix)

+

=

Lyophilized varicella zoster component | Manufacturer's adjuvant suspension | Shingrix vaccine

Refrigerate both components; do NOT freeze

Beyond Use Time: Discard reconstituted vaccine if not used within 6 hours.

North Carolina Immunization Program Transportation Guidance for Vaccines

Transportation of vaccines should be a rare occurrence and expected length of transport should be less than 30 minutes. If *transport* must occur, provider must use a thermometer with a current and valid certificate of calibration. It is strongly recommended that a digital data logger be used to transport vaccine.

Short-dated vaccine may be transferred to another NCIP provider with the approval of the NCIP and if the cold chain can be maintained. Providers must notify the NCIP of any vaccine doses that will expire before they can be administered at least four months before the expiration date to avoid restitution for improper inventory management. Providers must coordinate with the NCIP to transfer and document the transfer of vaccine between providers. Vaccine transfers between providers can occur only after receiving approval from the NCIP.

Transporting Frozen Vaccines

Guidelines for vaccine transport in emergency situations

- Routine transport of varicella– containing vaccine (MMRV and varicella vaccine) is not allowed. These vaccines should only be moved and transported when absolutely necessary.
- Make sure you have a vaccine emergency plan that includes the name and address of the destination site where you can take your frozen vaccine in an emergency.
- If vaccines must be transported, contact your VFC Program Representative or VFC Program.
- Varicella– containing vaccine should preferably be transported under frozen conditions (below 5F or - 15C).
- Vaccines must be placed in a freezer maintaining temperatures below 5F (-15C) immediately upon arrival at the backup storage facility.

Assemble packing supplies and documents

Most emergencies happen suddenly. Be sure you are prepared for emergency transport of frozen vaccine by always having the following supplies ready.

1. **Cooler.** Use hard plastic, Igloo-type coolers.
2. **Frozen cold packs.** Keep enough frozen cold packs in your vaccine freezer to make **2** layers in the transport cooler. You will need **6-8** frozen packs per cooler. NEVER USE DRY ICE
3. **Thermometer.** Keep a **Digital Data Logger** thermometer in your vaccine freezer.

Packing materials. Use any material like bubble wrap to place on top of frozen cold packs and vaccines to prevent contents from shifting, Make sure you DO NOT place bubble wrap between the vaccine and fro-

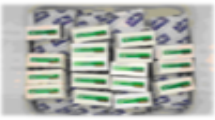
Pack vaccines and prepare for transport

Prepare for Transport

- Verify that the destination site has enough room for your vaccine and that someone will be there when the vaccine arrives.
- Verify that you have all the packing supplies on the above list.

Pack Vaccines

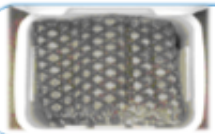
Spread a layer of frozen ice packs to cover the bottom of the cooler.



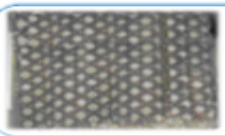
Stack layers of vaccine boxes directly on top of the frozen ice packs.

Place the digital data logger probe with the top layer of the vaccine.

Spread another layer of frozen ice packs to cover the vaccine.



Fill the cooler to the top with insulation material (bubble wrap).



Close the cooler lid and place the digital data logger's display on top of the lid with a temperature log. Transport the vaccine.

Updated 02/02/2018

Packing Vaccines for Transport during Emergencies

Be ready BEFORE the emergency

Equipment failures, power outages, natural disasters—these and other emergency situations can compromise vaccine storage conditions and damage your vaccine supply. **It's critical to have an up-to-date emergency plan with steps you should take to protect your vaccine.** In any emergency event, activate your emergency plan immediately, and if you can do so safely, follow the emergency packing procedures for refrigerated vaccines.

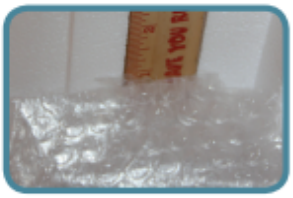
1 Gather the Supplies

Hard-sided coolers or Styrofoam™ vaccine shipping containers

- Coolers should be large enough for your location's typical supply of refrigerated vaccines.
- Can use original shipping boxes from manufacturers if available.
- Do NOT use soft-sided collapsible coolers.

Conditioned frozen water bottles

- Use 16.9 oz. bottles for medium/large coolers or 8 oz. bottles for small coolers (enough for 2 layers inside cooler).
- Do NOT reuse coolant packs from original vaccine shipping container, as they increase risk of freezing vaccines.
- Freeze water bottles (can help regulate the temperature in your freezer).
- Before use, you must condition the frozen water bottles. Put them in a sink filled with several inches of cool or lukewarm water until you see a layer of water forming near the surface of bottle. The bottle is properly conditioned if ice block inside spins freely when rotated in your hand.



Insulating material — You will need two of each layer

- **Insulating cushioning material** – Bubble wrap, packing foam, or Styrofoam™ for a layer above and below the vaccines, at least 1 in thick. Make sure it covers the cardboard completely. Do NOT use packing peanuts or other loose material that might shift during transport.
- **Corrugated cardboard** – Two pieces cut to fit interior dimensions of cooler(s) to be placed between insulating cushioning material and conditioned frozen water bottles.

Temperature monitoring device – Digital data logger (DDL) with buffered probe. Accuracy of +/-1°F (+/-0.5°C) with a current and valid certificate of calibration testing. Pre-chill buffered probe for at least 5 hours in refrigerator. Temperature monitoring device currently stored in refrigerator can be used, as long as there is a device to measure temperatures for any remaining vaccines.

Why do you need cardboard, bubble wrap, and conditioned frozen water bottles?

Conditioned frozen water bottles and corrugated cardboard used along with one inch of insulating material such as bubble wrap keeps refrigerated vaccines at the right temperature and prevents them from freezing. **Reusing vaccine coolant packs from original vaccine shipping containers can freeze and damage refrigerated vaccines.**

U.S. Department of Health and Human Services
Centers for Disease Control and Prevention

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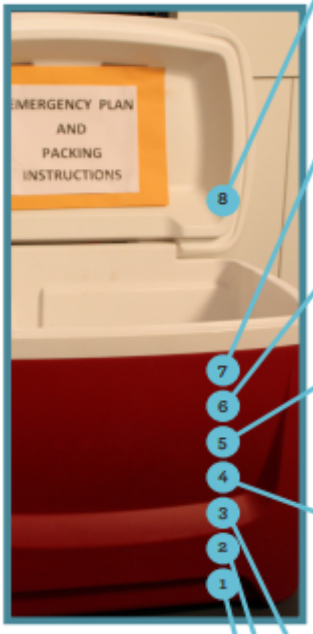
Visit www.cdc.gov/vaccines/SandH for more information, or your state health department.

Packing Vaccines for Transport during Emergencies

2 Pack for Transport

Conditioning frozen water bottles

- Put frozen water bottles in sink filled with several inches of cool or lukewarm water or under running tap water until you see a layer of water forming near surface of bottle.
- The bottle is properly conditioned if ice block inside spins freely when rotated in your hand.
- If ice "sticks," put bottle back in water for another minute.
- Dry each bottle.
- Line the bottom and top of cooler with a single layer of conditioned water bottles.
- Do NOT reuse coolant packs from original vaccine shipping container.



8. Temperature Monitoring Device Display (on lid)

Close lid – Close the lid and attach DDL display and temperature log to the top of the lid.

7. Conditioned Water Bottles

Conditioned frozen water bottles – Fill the remaining space in the cooler with an additional layer of conditioned frozen water bottles.

6. Cardboard Sheet

Insulating material – Another sheet of cardboard may be needed to support top layer of water bottles.

5. Bubble wrap, packing foam, or Styrofoam™

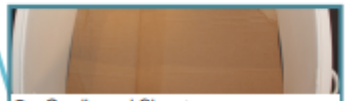
Insulating material – Cover vaccines with another 1 in. layer of bubble wrap, packing foam, or Styrofoam™

4. Vaccines, Diluents, and Temperature Monitoring Device Probe

Vaccines – Add remaining vaccines and diluents to cooler, covering DDL probe.
Temperature monitoring device – When cooler is halfway full, place DDL buffered probe in center of vaccines, but keep DDL display outside cooler until finished loading.
Vaccines – Stack boxes of vaccines and diluents on top of insulating material.

3. Bubble wrap, packing foam, or Styrofoam™

Insulating material – Place a layer of bubble wrap, packing foam, or Styrofoam™ on top (layer must be at least 1 in. thick and must cover cardboard completely).



2. Cardboard Sheet

Insulating material – Place 1 sheet of corrugated cardboard over water bottles to cover them completely.

1. Conditioned Water Bottles

Conditioned frozen water bottles – Line bottom of the cooler with a single layer of conditioned water bottles.

NOTE:
This packout can maintain appropriate temperatures for up to 8 hours, but the container should not be opened or closed repeatedly.

3 Arrive at Destination

Before opening cooler – Record date, time, temperature, and your initials on vaccine temperature log.
Storage – Transfer boxes of vaccines quickly to storage refrigerator.
Troubleshooting – If there has been a temperature excursion, contact vaccine manufacturer(s) and/or your immunization program before using vaccines. Label vaccines "Do Not Use" and store at appropriate temperatures until a determination can be made.