Emergency Vaccine Response and Transport

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Oakland County Immunization Action Plan

OAKLAND COUNTY MICHIGAN

HEALTH DIVISION

DAVID COULTER

OAKLAND COUNTY EXECUTIVE

Objectives

- Review basic Vaccine Storage and Handling
- Emergency vs Planned Transport
- How to Pack a Cooler for Emergency Transport
- Proper Documentation of Transport
- Excursion Protocol Overview

Required Vaccine Temperature Ranges

All temperatures must be assessed for whether they are within these required ranges.

- Refrigerator:
  - **36°- 46°F (2°C- 8°C)**
  - Aim for 41°F (5°C)
- Freezer
  - **-58F°- +5°F (-50°C- -15°C)**
  - Aim for 0°F (-18°C)

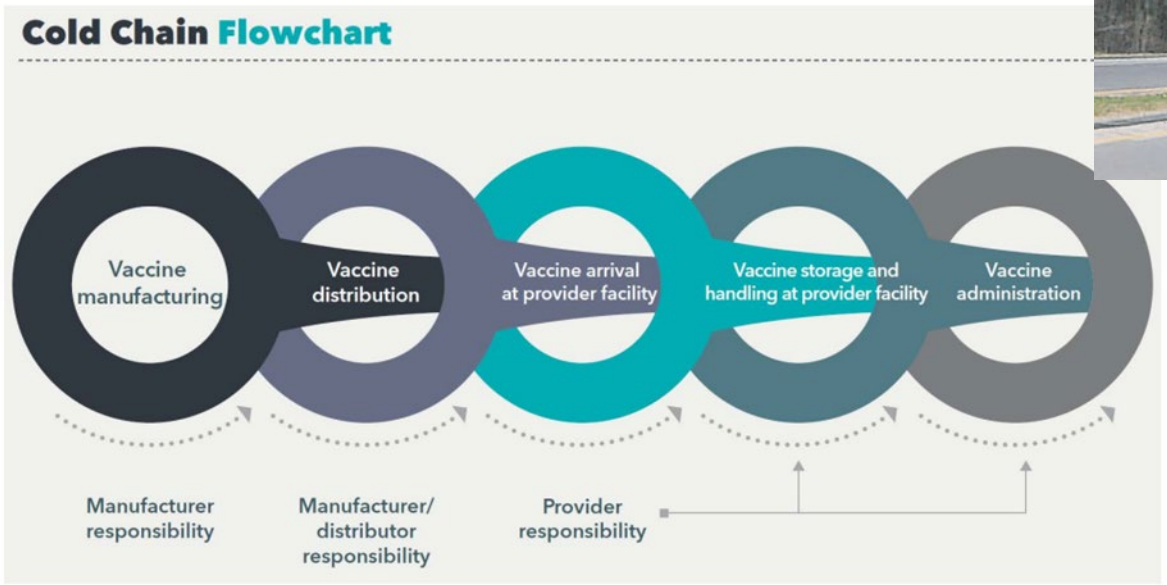
- **Check your alarm settings to match these ranges**

- ****Follow COVID vaccine specific storage and handling guidelines**

<u>Rounding temperatures is not acceptable**</u>**

Maintain Vaccine Cold Chain

CDC and MDHHS do not recommend vaccine transport unless there is an *emergency,* or you have the proper protocols in place



Planned vs Emergency Transport

Packing Method According to Reason for Transport: Planned Versus Emergency

- **Planned transport** requires use of either portable refrigerator/freezers or qualified containers and pack-outs (e.g., Cool Cubes, TempArmour, etc.). Conditioned water bottle method **cannot be used for planned transport situations.**
- **Emergency transport** requires use of either portable refrigerator/freezers, qualified containers and pack-outs, or the conditioned water bottle transport system.

Digital data logger must be used for all transport

1. Portable Vaccine Storage Unit (PREFERRED)

Planned or Emergency

2. Qualified Container & Pack-Out

Planned or Emergency

3. Conditioned Water Bottle Transport

Emergency ONLY

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.

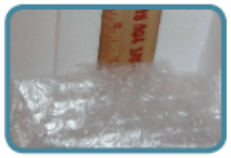
1 Gather the Supplies

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

Distributed by

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

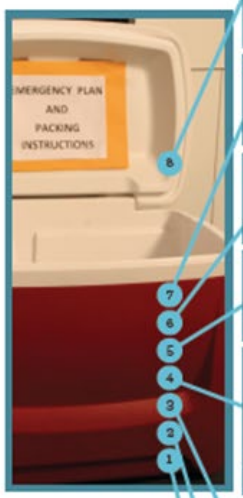
https://www.cdc.gov/vaccines/hcp/admin/storage/downloads/emergency-transport.pdf

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

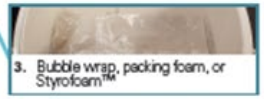
Insulating material – Another sheet of cardboard may be needed to support top layer of water bottles.


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.

https://www.cdc.gov/vaccines/hcp/admin/storage/downloads/emergency-transport.pdf

Transport Documentation

MDHHS VACCINE TRANSPORT TEMPERATURE LOG

Clinic Name/VFC PIN: _____

Instructions: Vaccine transport is not recommended and should only occur in emergencies. However, this log can be utilized for temperature documentation in case of emergency or planned transport. Review all transport requirements located in **MDHHS Guidance on Vaccine Transport**. Remember – the conditioned water bottle method can ONLY be used in emergency transport. If planned transport takes place (off-site clinic, relocation of stock, etc.), use a portable refrigerator/freezer OR a qualified container built for vaccine storage. Total time for transport or transport plus off-site clinic cannot exceed 8 hours.

Documentation: Document temperatures using a digital data logger (DDL) at least every hour, starting with the time of pack-out. Ensure a temperature log and DDL are used for EACH cooler. If ANY temperature is out of range, circle that temperature and stop vaccination – follow steps on the back of this page.

Temperature Monitoring Coordinator: _____ **Date:** _____

Off-Site Location: _____ **Cooler ID:** _____

Required Temperature Ranges: REFRIGERATOR: 36.0° F - 46.0° F (2.0° C – 8.0° C) Aim for 41.0° F (5.0° C) **FREEZER:** -58.0° F to +5.0° F (-50.0° C to -15.0° C)

Time (at least hourly)	Temperatures			Initials	In Range?		Comments
	Current	Min	Max		Yes	No	
Example: 8:10am	41.1˚F	39.8˚F	42.6˚F	M.M.	✓		Cooler packed, leaving for off-site clinic

https://www.michigan.gov/mdhhs/-/media/Project/Websites/mdhhs/Folder1/Folder2/Vaccine-Transport-Temperature-Log.pdf

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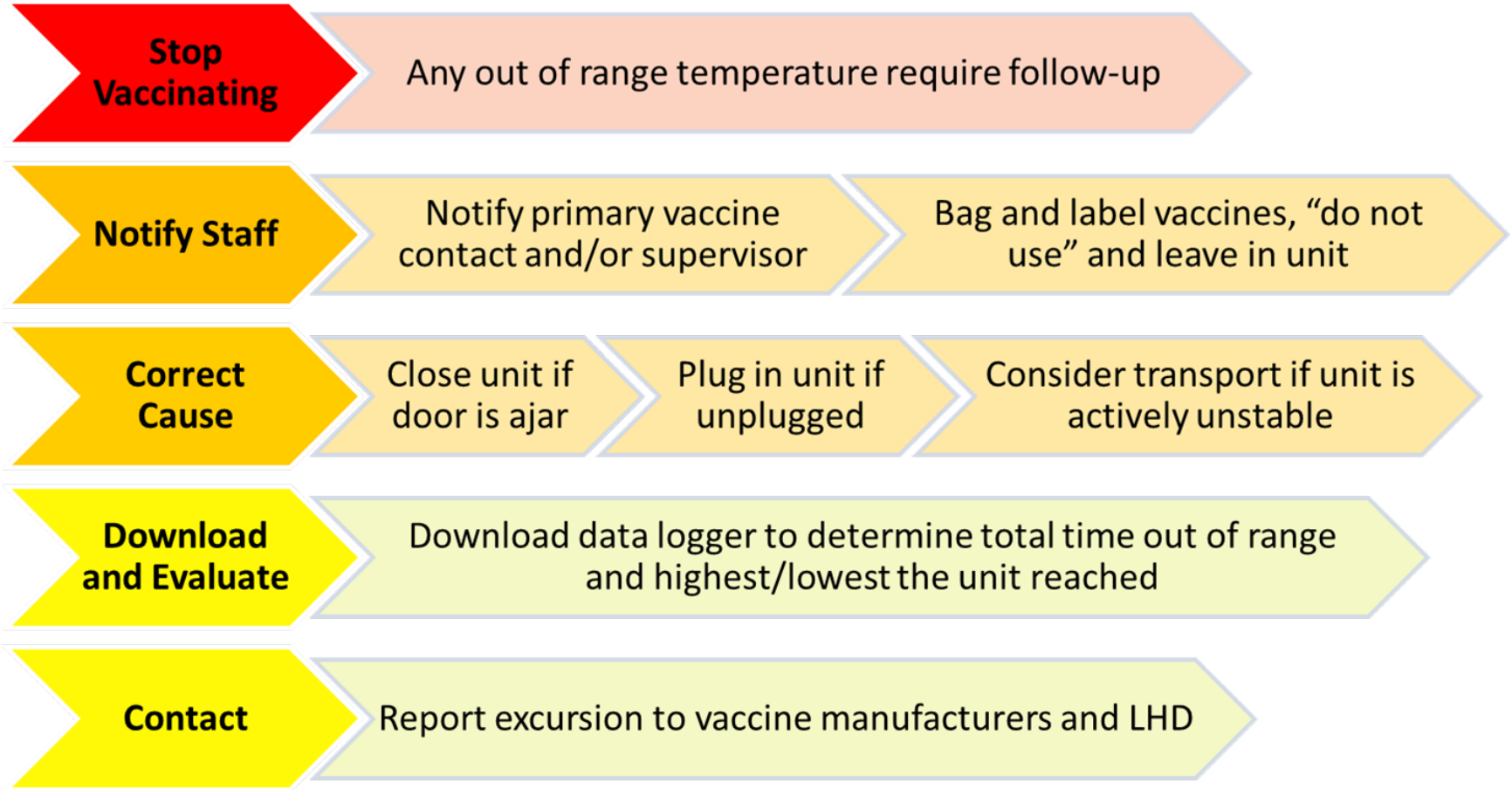
Excursion Protocol



Excursion Protocol (Cont'd)

Response steps outlined on Emergency Response Plan. Review with all office staff.

Section 2: Excursion Protocol-Responding to Out-of-Range Temperatures

Any out-of-range temperature is considered a temperature excursion and requires immediate action. If you are not confident in identifying an excursion or any part of this process, contact you LHD for assistance. Providers are responsible to follow through on excursion and **notify their LHD immediately**. Do not administer vaccine exposed to excursions unless/until the LHD advises.

Each event is unique and manufacturer recommendations based on existing stability data cannot be applied to future events that may appear to be similar. Therefore, **all excursions** require appropriate notification and follow-up to ensure vaccine viability determinations are made. If any temperate is out of range, follow these steps:

IDENTIFY AND NOTIFY

1. Stop vaccination from the unit in question or with the vaccine in question.
2. Implement immediate correctional action if able (shut door if left open, resupply power, etc.).
3. Please exposed vaccine in a separate container within the unit and label "DO NOT USE" Do not discard these vaccines.
4. Notify your clinic's Primary/Backup Coordinator and/or supervisor.

DOWNLOAD AND EVALUATE DETAILS OF EVENT

5. Download data logger and review all data. If multiple excursions have occurred, manufacturers will utilize the cumulative exposure time/temperatures.
6. Document all details of the event and ensure the LHD is notified and provided the data.
7. If unit is not stabilizing, implement Emergency Plan for transport to backup location/unit. Utilize CDC's guidance when packing for emergency transport, and always transport with data logger.
   - Ensure appropriate transport; see MDHHS Guidance on Vaccine Transport.
   - For packing refrigerated vaccine in an emergency, see CDC Guidance on Packing Vaccine for Transport During Emergencies.
   - Print and utilize Transport Temperature Logs.

CONTACT MANUFACTURERS AND LOCAL HEALTH DEPARTMENT

8. Contact vaccine manufacturers for viability decisions. They will request excursion temperatures, time, vaccines, etc. Contact information is in the Emergency Response Worksheet.
9. Contact the LHD and provide all documentation, including manufacturer reports. Details for vaccine losses can be reviewed in the MDHHS VFC Loss Policy at www.michigan.gov/vfc.

Vaccine Troubleshooting Record

Vaccine Storage Troubleshooting Record (check one) ◯ Refrigerator ◯ Freezer ◯ Ultra-Cold Freezer

Use this form to document any unacceptable vaccine storage event, such as exposure of vaccines to temperatures that are outside the manufacturers' recommended storage ranges.

Date & Time of Event If multiple, related events occurred, see Description of Event below.	**Storage Unit Temperature** at the time the problem was discovered		**Room Temperature** at the time the problem was discovered	**Person Completing Report**	
Date:	Temp when discovered:		Temp when discovered:	Name:	
Time:	Minimum temp:	Maximum temp:	Comment (optional):	Title:	Date:

Description of Event *(If multiple, related events occurred, list each date, time, and length of time out of storage.)*

- General description (i.e., what happened?)
- Estimated length of time between event and last documented reading of storage temperature in acceptable range (2° to 8°C [36° to 46°F] for refrigerator; -50° to -15°C [-58° to 5°F] for freezer; (-90°C to -60°C [-130°F to -76°F]) for ultra-cold freezer.
- Inventory of affected vaccines, including (1) lot numbers and (2) whether purchased with public (for example, VFC) or private funds. Document this information on the *Vaccine Storage Emergency Response Worksheet* (see www.immunize.org/catg.d/p3051) or a separate sheet, and maintain the inventory with this troubleshooting record.
- At the time of the event, what else was in the storage unit? For example, were there water bottles in the refrigerator and/or frozen coolant packs in the freezer?
- Prior to this event, have there been any storage problems with this unit and/or with the affected vaccine?
- Include any other information you feel might be relevant to understanding the event.

Action Taken *(Document thoroughly. This information is critical to determining whether the vaccine might still be viable!)*

- When were the affected vaccines placed in proper storage conditions? (Note: Do not discard the vaccine. Store exposed vaccine in proper conditions and label it "do not use" until after you can discuss with your state/local health department and/or the manufacturer[s].)
- Who was contacted regarding the incident? (For example, supervisor, state/local health department, manufacturer—list all.)
- IMPORTANT: What did you do to prevent a similar problem from occurring in the future?

Results

- What happened to the vaccine? Was it able to be used? If not, was it returned to the distributor? (Note: For public-purchase vaccine, follow your state/local health department instructions for vaccine disposition.)

Immunize.org

FOR PROFESSIONALS www.immunize.org / FOR THE PUBLIC www.vaccineinformation.org

www.immunize.org/catg.d/p3041.pdf
Item #P3041 (3/18/2024)

Scan for PDF

https://www.immunize.org/catg.d/p3041.pdf

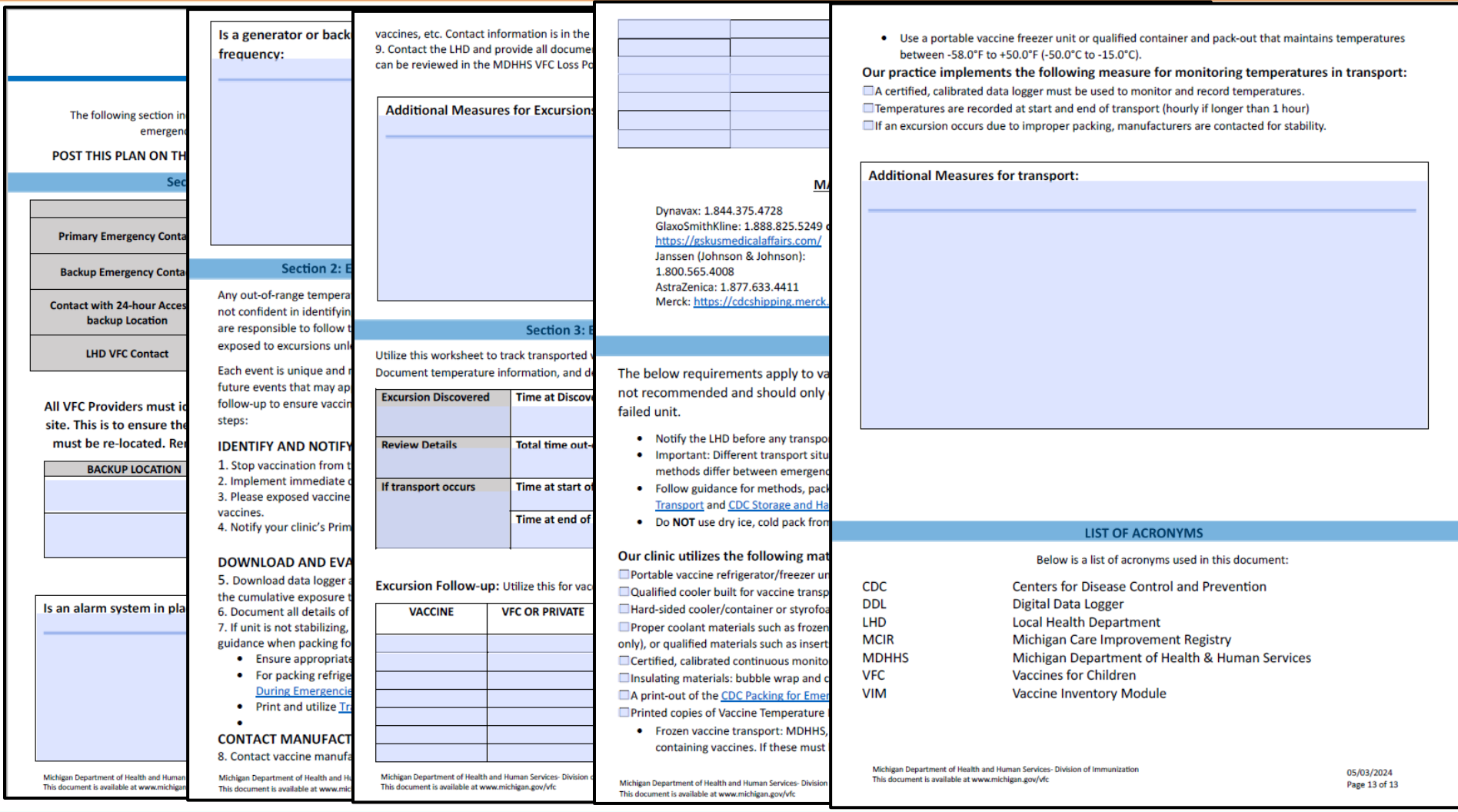
OAKLAND COUNTY MICHIGAN

Emergency Response Plan

Quick Reference Guide for staff that details:

- Primary/secondary vaccine contact for the office for an emergency
- Back-up location to transport vaccine
  - Do not use personal residence
  - Establish working agreement with another office/hospital/pharmacy
- Fillable excursion worksheet
- Vaccine manufacturer contact information

Emergency Response Plan



The following section in
emergenc

POST THIS PLAN ON TH

Sec

Primary Emergency Conta
Backup Emergency Conta
Contact with 24-hour Acces backup Location
LHD VFC Contact

All VFC Providers must id
site. This is to ensure the
must be re-located. Re

BACKUP LOCATION

Is an alarm system in pla

Michigan Department of Health and Human
This document is available at www.michigan

Is a generator or back
frequency:

Section 2: E

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CONTACT MANUFACT

8. Contact vaccine manufa

Michigan Department of Health and Hu
This document is available at www.mic

vaccines, etc. Contact information is in the
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can be reviewed in the MDHHS VFC Loss Po

Additional Measures for Excursions

Section 3: E

Utilize this worksheet to track transported v
Document temperature information, and d

Excursion Discovered	Time at Discov
Review Details	Total time out-
If transport occurs	Time at start of
	Time at end of

Excursion Follow-up: Utilize this for vac

VACCINE	VFC OR PRIVATE

Michigan Department of Health and Human Services- Division o
This document is available at www.michigan.gov/vfc

MA

Dynavax: 1.844.375.4728
GlaxoSmithKline: 1.888.825.5249 o
https://gskusmedicalaffairs.com/
Janssen (Johnson & Johnson):
1.800.565.4008
AstraZenica: 1.877.633.4411
Merck: https://cdcshipping.merck.

The below requirements apply to va
not recommended and should only
failed unit.

- Notify the LHD before any transpo
- Important: Different transport situ
methods differ between emergenc
- Follow guidance for methods, pack
Transport and CDC Storage and Ha
- Do **NOT** use dry ice, cold pack fron

Our clinic utilizes the following mat

- ☐ Portable vaccine refrigerator/freezer ur
- ☐ Qualified cooler built for vaccine transp
- ☐ Hard-sided cooler/container or styrofoa
- ☐ Proper coolant materials such as frozen
only), or qualified materials such as insert
- ☐ Certified, calibrated continuous monito
- ☐ Insulating materials: bubble wrap and c
- ☐ A print-out of the CDC Packing for Emer
- ☐ Printed copies of Vaccine Temperature

- Frozen vaccine transport: MDHHS,
containing vaccines. If these must

Michigan Department of Health and Human Services- Division
This document is available at www.michigan.gov/vfc

- Use a portable vaccine freezer unit or qualified container and pack-out that maintains temperatures between -58.0°F to +50.0°F (-50.0°C to -15.0°C).

Our practice implements the following measure for monitoring temperatures in transport:

- ☐ A certified, calibrated data logger must be used to monitor and record temperatures.
- ☐ Temperatures are recorded at start and end of transport (hourly if longer than 1 hour)
- ☐ If an excursion occurs due to improper packing, manufacturers are contacted for stability.

Additional Measures for transport:

LIST OF ACRONYMS

Below is a list of acronyms used in this document:

CDC	Centers for Disease Control and Prevention
DDL	Digital Data Logger
LHD	Local Health Department
MCIR	Michigan Care Improvement Registry
MDHHS	Michigan Department of Health & Human Services
VFC	Vaccines for Children
VIM	Vaccine Inventory Module

Michigan Department of Health and Human Services- Division of Immunization
This document is available at www.michigan.gov/vfc

05/03/2024
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Additional Resources

- CDC Handling Excursion document: https://www.cdc.gov/vaccines/hcp/admin/storage/downloads/temperature-excursion-508.pdf
- CDC Emergency Transport Handout: https://www.cdc.gov/vaccines/hcp/admin/storage/downloads/emergency-transport.pdf
- MDHHS Storage and Handling: www.michigan.gov/vaccinequicklooks
- CDC Storage and Handling Toolkit: www.cdc.gov/vaccines; https://www.cdc.gov/vaccines/hcp/storage-handling/resources.html; https://www.cdc.gov/vaccines/hcp/storage-handling/
- CDC "You Call the Shots" https://www.cdc.gov/immunization-training/hcp/you-call-the-shots/
- Pink Book Vaccine Storage and Handling Module: https://www2.cdc.gov/vaccines/ed/pinkbook/2024/pb5/
- AIM Website: www.aimtoolkit.org
- Immunization Action Coalition: www.immunize.org/handouts/vaccine-storage-handling.asp
- AAP Red Book: www.aap.org/

Thank you! Questions?

OAKLAND COUNTY MICHIGAN

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Oakland Health Center
1200 N. Telegraph Rd
Pontiac, MI 48341
Phone: 248.858.1280

South
Oakland Health Center
27725 Greenfield Rd
Southfield, MI 48076
Phone: 248.424.7000

NURSE ON CALL PUBLIC HEALTH INFORMATION
800.848.5533 NOC@OAKGOV.COM
OAKGOV.COM/HEALTH @PUBLICHEALTHOC

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The Oakland County Health Division will not deny participation in its programs based on race, sex, religion, national origin,age or disability. State and federal eligibility requirements apply for certain programs.