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NYS Vaccines for Children (VFC) Program
Training Series
12: Managing Vaccine Inventory

New York State Department of Health
Bureau of Immunization

Hello and welcome.

The objective of this training is to provide guidance to NYS Vaccines for Children (VFC) providers on best practices for managing vaccine inventory and steps on conducting a physical inventory. Several additional trainings are available which cover a variety of inventory-related topics.

This training does not include information on how to use the New York State Immunization Information System (or NYSIIS) to conduct inventory related activities. NYSIIS offers user trainings separately. Those trainings can be found by visiting the resources section at the end of this training module.

NYS VFC Program Requirements: Vaccine Inventory

- Primary and backup vaccine coordinators are responsible for all vaccine inventory activities:
  - Using NYSIIS to manage publicly-funded inventory including placing orders and submitting returns/wastage transactions
  - Accepting vaccine deliveries (confirm viability of vaccine and unpack shipment)
  - Rotating vaccine stock weekly and removing expired or spoiled vaccine right away
  - Conducting a physical inventory of vaccine monthly

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The primary and backup vaccine coordinators are responsible for managing vaccine inventory. The primary coordinator can take responsibility for all tasks with the backup providing support in their absence or the primary and backup coordinator can split the tasks between them.

Some tasks related to managing inventory are:

- Using the New York State Immunization Information System (NYSIIS) to manage inventory including placing orders for publicly-funded vaccine and submitting returns and wastage transactions;
- Accepting vaccine deliveries, which involves being present to accept physical shipments including confirming the viability of the shipped vaccine and storing the vaccine appropriately;
- Rotating vaccine stock weekly and removing expired and spoiled vaccine from storage units immediately and
- conducting a physical inventory and comparing it with NYSIIS inventory on at least a monthly basis.

Use NYSIIS for VFC Inventory Activities

NYSIIS includes functionality for the following activities:
- Documenting doses administered (automatically decrements from inventory)
- Placing orders and accepting inventory transfers (or shipments)
- Submitting and tracking transactions for non-viable vaccine
  - vaccine that can no longer be used for any reason including: expiration, spoilage due to temperature excursion, vaccine that has been opened/damaged (e.g., broken syringe, vaccine that was drawn up but not administered, etc.).

Inventory
manage inventory
manage orders
manage transfers
shipping documents
record temp log
manage returns and wastage

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All VFC providers are required to use NYSIIS to order and track publicly-funded vaccine inventory. NYSIIS includes functionality for the following inventory-related activities:

Each dose that is administered must be documented in NYSIIS. NYSIIS has the ability to interface with a provider's electronic medical record system (or EMR) in order for a patient's vaccine administration information to be transferred into NYSIIS. Users can also enter immunization information manually into NYSIIS. All doses administered must be in NYSIIS within 14 days of administering a vaccine. For each vaccine that is administered, the patient's VFC eligibility must also be documented. Each dose administered will automatically decrement from your inventory in NYSIIS.

NYSIIS must be used to place orders for vaccine and accept inventory transfers (or shipments) of publicly-funded vaccine.

NYSIIS must also be used to submit and track returns and wastage transactions for non-viable vaccine. "Nonviable" refers to vaccine that is no longer useable. This includes vaccine that is expired, spoiled or wasted.

Accepting a Vaccine Delivery

- Coordinator or backup **must** be present to:
  - accept shipment
  - confirm viability
  - ensure proper storage of vaccine
- Never leave a vaccine delivery unattended
- Unpack shipment as soon as possible
  - After confirming that contents are okay and storing vaccine, *Accept Transfer* in NYSIIS

Image obtained from the CDC's You Call the Shots, Vaccine Storage and Handling Module

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As mentioned previously, vaccine coordinators and their backups are responsible for accepting vaccine deliveries. This means they need to be physically present to accept shipments, confirm the viability of the shipped vaccine, and ensure its proper storage.

Vaccines should only be delivered when the primary or backup coordinator is on duty. They should never be left unattended, and should be unpacked as soon as possible.

After the vaccine coordinator (or backup) confirms the delivered vaccine is viable and has stored the vaccine appropriately he or she should complete the **accept transfer** procedure in NYSIIS.

Training #14 in this series outlines the process for accepting a vaccine delivery.

Vaccine Stock Rotation, Removal and Returns

- Rotate vaccine stock weekly so that soonest expiring is always in front
- Identity any nonviable (expired, unusable, or wasted) vaccine
  - Label expired vaccine "Do Not Use" and remove from storage unit
  - Label vaccine exposed to a temperature excursion "Do Not Use" but leave in storage unit until manufacturer deems nonviable or "spoiled"
- Return unopened expired and spoiled vaccine vials and syringes to McKesson
- Discard wasted vaccine
- Document all nonviable vaccine in NYSIIS

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Vaccine stock should be rotated weekly, with the vaccine that is to expire soonest, moved to the front.

During vaccine rotation, identify any nonviable vaccine. Non-viable vaccine is vaccine that can no longer be used for any reason including: expiration, exposure to temperature excursion, or damaged or opened vials and syringes (e.g., broken syringe, vaccine that was drawn up but not administered, etc.).

Any expired vaccine should be removed from the storage unit(s) and clearly labeled "Do Not Use".

Unusable vaccine is vaccine that is not usable (due to a temperature excursion). If you suspect vaccine is spoiled, label it "do not use" and contact the vaccine manufacturer for an official determination of viability. Do not remove spoiled vaccine from the storage unit until the manufacturer has deemed it nonviable (or spoiled).

Spoiled and expired vaccine vials and syringes that are unopened should be returned to McKesson, which is the Center for Disease Control and Prevention or CDC's centralized distributor for publicly-funded vaccine.

Wasted vaccine is vaccine that has been opened or damaged in some way. Wasted vaccine is not eligible to be returned and should be discarded.

All expired, unusable, and wasted vaccine should be documented and reported in NYSIIS. Trainings on using NYSIIS to conduct returns and wastage transactions can be found in the resources section at the end of this training.

Document Wasted Vaccine

- Any time vaccine is wasted (dropped, broken, opened and not used etc.), it should be appropriately discarded and documented
  - Document in NYSIIS at time of occurrence
  - Record on a tally sheet on or near the storage units where vaccine is stored
    - CDC Storage and Handling Toolkit on page 35

When vaccine is wasted (whether it is dropped, broken, opened and not used), it should be appropriately discarded and documented. Follow your facility's policies for medical waste disposal when discarding vaccine. All wasted vaccine should be documented in NYSIIS.

Consider maintaining a tally sheet on or near the vaccine storage units for internal accounting for doses of wasted vaccine when you cannot access NYSIIS right away.

The CDC provides tally sheets in the Storage and Handling Toolkit beginning on page 35. A link to the toolkit can be found in the resources slide at the end of this training.

Training #15 in this series includes more information on returning and discarding vaccine.

Conducting a Physical Inventory of Vaccine

- Confirm physical inventory against inventory in NYSIIS
    - Should be done weekly with stock rotation and prior to submitting a vaccine order
    - Submit returns/wastage transactions regularly to account for expired/spoiled or wasted vaccine
    - Can submit returns transactions in NYSIIS every 48 hours, if needed
    - Can submit wastage transactions on an unlimited basis
    - Always conduct inventory check prior to placing order
    - # of doses in NYSIIS and # of doses in storage units should match
    - Vaccine orders can be reduced or denied if inventory is inaccurate

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A physical inventory of vaccine should be conducted on a weekly basis as a part of rotating vaccine stock.

You should submit returns and wastage transactions regularly to account for any expired/spoiled or wasted vaccine. Returns transactions can be submitted in NYSIIS every 48 hours, if necessary. Wastage transactions can be submitted on an unlimited basis.

Always conduct an inventory check prior to placing an order. The number of vaccine doses in your storage units and number of vaccine doses in NYSIIS should match. Vaccine orders can be reduced or denied if your vaccine inventory in NYSIIS is not up to date.

Conducting a physical inventory

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The next few slides will go through the process of how to properly conduct a physical inventory of vaccine.

Step 1: Prior Preparation: Storage Unit Temperature Maintenance

- Ensure storage units are properly set up
  - Organize and label vaccine as instructed in separate training
- To reduce the chance of temperature excursion:
  - Break inventory check into smaller sessions
    » i.e. One vaccine at a time, or one shelf per hour, closing door in between
  » If excursion occurs:
    - Keep door closed
    - Monitor temperature closely
    - Call NYS VFC program at 1-800-543-7468

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Prior to conducting a physical inventory, ensure that your refrigerator and freezer units are set up and organized appropriately. This will help expedite the inventory process. A separate training is available which includes best practices for setting up your vaccine storage units.

It is normal for temperatures to rise inside of storage units during an inventory check. To reduce the chance of a temperature excursion occurring during an inventory check, consider breaking the inventory into smaller brief sessions to lessen the time that the door stays open. For example, inventory one shelf per hour, closing the door in between.

If an excursion occurs, keep the storage unit door closed, continue to monitor the temperature and contact the NYS VFC program for guidance.

Step 2: Print Inventory

Print a copy of your current inventory in NYSIIS
1) Manage Inventory*
2) Radio button "non-expired"
3) File, print
4) Public lots are indicated with Y in public column

*Must have administrative user role in NYSIIS to access

Manage Inventory

Add Inventory for Site (Julie's Organization)....   [Add Inventory]
Modify Quantity On Hand for Selected Sites....   [Modify Quantity]
Show Transactions for Sites....   [Show Transactions]
Return to the Previous Screen....   [Cancel]
Add/Edit Inventory with 2D Barcode scan...   Barcode: [   ]

Site: [Julie's Organization ▾]   Show ○ Active ○ Inactive ● Non-Expired ○ Expired

Select	Trade Name	Lot Number	Inv On Hand	Active	Public	Exp Date
☐	DECAVAC	rety123	100	Y	Y	09/15/2016
☐	Gardasil 9	tytyt	200	Y	Y	05/01/2018
☐	IPOL	8789845	99	Y	Y	08/01/2018
☐	Infanrix	TRAINWA1	1	Y	Y	11/01/2017
☐	Pediarix	JLSJKDFA	50	Y	N	03/31/2018
☐	Pentacel	kkkjjk	50	Y	Y	03/15/2018
☐	Prevnar 13	56764	40	Y	Y	06/01/2017

Image obtained from the New York State Immunization Information System (NYSIIS) Manage Inventory Screen

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To conduct a physical inventory, begin by printing a copy of your current inventory in NYSIIS. To do this, click on Manage Inventory, then select the radio button for "non-expired" on the main Manage Inventory page. You should then print this page.   Public lots are indicated with a Y in the Public column.

You must have an administrative user role in NYSIIS to access the Manage Inventory feature. Bring the printed inventory list with you to the storage unit and compare physical inventory with the inventory information listed on your NYSIIS inventory print out.

Step 3: Select & Sort Vaccine*

1. Identify publicly-funded vaccine.
2. Remove all doses of the first type of vaccine you will be checking and close storage unit door.
   – The NYSIIS print out displays inventory alphabetically by Trade Name. The Trade Name is located directly below the Vaccine Name on the box of vaccine.
3. Group vaccine by lot #.
   • The Lot # in NYSIIS is the Lot # that is printed on the **OUTER package or the box of vaccine**

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*Adapted from the California Department of Public Health's EZIZ "How to Conduct a Physical Inventory"

Before removing vaccine from the storage unit, confirm that the vaccine is publicly-funded vaccine. Ideally, it should be stored on a different shelf than privately purchased vaccine.

Begin by removing all doses of the first type of vaccine and close the storage unit door. The NYSIIS Inventory sheet displays inventory alphabetically by trade name. The Trade Name for each vaccine product is located on the box.

Group the vaccines by Lot #s. The lot #s for each vaccine are located on the box of vaccine. This is the lot # that is used in NYSIIS.

Step 4: Inventory Matching*

1. Count the number of individual doses in each box of vaccine and confirm that they match the information listed on the printed NYSIIS inventory sheet for each trade name and lot #.
    - If vaccine vial caps are all same color, then each one is one dose.
    - If vaccine vial caps are different colors, then it takes one of each color to make one dose.
    - If the box contains vials and syringes, then it takes one of each to make one dose.
    - If the vaccine comes in a multi-dose vial (10 doses), and marks have been made on the vial. You can subtract the marks from the total # of doses that the vial started with. This is the # of doses that are left.
2. Confirm that the vaccine quantities and lot #s match information listed on printed NYSIIS inventory sheet. Note any discrepancies on the sheet.
3. **Remove any expired vaccine**

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*Adapted from the California Department of Public Health's EZIZ "How to Conduct a Physical Inventory"

Count the number of individual doses in each box of vaccine and confirm that they match the information listed on the printed NYSIIS inventory sheet for each trade name and lot #.

If vial caps are all same color, then each one is one dose.
If vial caps are different colors, then it takes one of each color to make one dose.
If the box contains vials and syringes, then it takes one of each to make one dose.
If the vaccine comes in a multi-dose vial (10 doses), and marks have been made on the vial, you can subtract the marks from the total # of doses that the vial started with. This is the # of doses that are left.

Confirm that the vaccine quantities and Lot #s match the information listed on the printed NYSIIS inventory sheet. Note any discrepancies on the sheet.

Be sure to remove any expired vaccine that you find in the unit.

Step 5: Reconcile Inventory in NYSIIS

1. Arrange for the return of expired or spoiled vaccine by submitting a returns/wastage request in NYSIIS
   - Once request is approved, NYSIIS inventory is decremented automatically
- **Decrements from inventory for doses administered data may be in progress**
  - If there are errors with your inventory due to doses administered data not transferring over correctly, contact NYSIIS
    - (518) 473-2839

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Reconciling inventory in NYSIIS involves accounting for expired, spoiled or wasted vaccine. You should arrange for the return of any expired or spoiled vaccine by submitting a returns/wastage request in NYSIIS. Once the NYSIIS returns/wastage request is approved by the VFC Program, your NYSIIS inventory will be decremented automatically.

Keep in mind that other factors besides returns and wastage can impact inventory quantities. If your practice interfaces with NYSIIS via an EMR or through data exchange, and there are issues with the file transfer process for doses administered or there are exchanges in process, inventories may not decrement right away or may not decrement at all. Contact the NYSIIS program at the number listed on this slide if you have issues with your inventory not decrementing due to data exchange errors.

Vaccine Borrowing

- If you lack private-stock vaccine due to unexpected circumstances such as:
  - A delayed vaccine shipment,
  - Vaccine that became unusable in-transit
  - A new staff that calculated ordering time incorrectly.

  This should be a rare event and requires prior approval from the NYS VFC Program (call 1-800-543-7468).

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In certain cases, the NYS VFC Program will allow you to borrow public stock if you lack private stock due to unexpected circumstances. Examples of those circumstances include:
- A delayed vaccine shipment
- Vaccine that became unusable and was spoiled in transit OR
- A new staff that calculated ordering time incorrectly.

This should be a rare event and requires prior approval from the NYS VFC Program.

Vaccine Restitution

- Wastage allowance set at 2% for 2017

  Wastage for a 12-month period =

  number of vaccine doses wasted, expired or lost

  the number of vaccine doses ordered

- Vaccine lost due to uncontrollable circumstances (power outage) will **not** be counted against the wastage allowance

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The NYS VFC program has implemented a vaccine restitution policy.

Each NYS VFC provider is given a vaccine wastage allowance of 2% for 2017. Vaccine wastage is calculated for a 12-month period as: the number of vaccine doses wasted, expired or spoiled, divided by the number of vaccine doses ordered.

Providers who lose vaccine due to uncontrollable circumstances such as power outage or unforeseen equipment failure, will not have those losses counted against their wastage allowance.

Restitution Scenarios

Scenarios considered for restitution	Scenarios that will not be considered for restitution
• Frequently over ordering or having excessive amounts of non-flu vaccine • Vaccine loss due to inappropriate storage and handling • Vaccine loss due to staff negligence (e.g., incorrect thermostat adjustment or not monitoring temperatures)	• Frequently over ordering or having too much expired flu vaccine • Vaccine loss due to a power outage when the office is closed

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Examples of restitution scenarios are included in the table on this slide.

Possible scenarios for restitution may include:
• Having an excess of expired non-flu vaccine/over ordering of non-flu vaccine,
• Vaccine loss due to inappropriate storage and handling equipment, OR
• Vaccine loss due to staff negligence (e.g., adjustment of thermostat incorrectly or failure to monitor temperatures).

Scenarios that are not considered for restitution include having too much expired flu vaccine or frequently over ordering flu vaccine OR vaccine loss due to power outage that occurred when the office was closed or equipment failure with no previous signs of a problem.

Best Practices: Increasing Vaccine Utilization & Reducing Wastage

1) **Use NYSIIS Reminder Recall tool**
   - Helps increase vaccine utilization
   - Can search by date range, birth date range or by vaccine group
   - Generate a reminder for patients who have not completed a vaccine series

2) **If > 10 doses are about to expire, transfer vaccine between facilities**
   - Decreases need for financial restitution
   - Locate an office that can use the vaccine.
   - Obtain prior approval with NYS VFC program (1-800-543-7468)

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This slide gives information on best practices for reducing vaccine wastage.

First, try to use as much of the vaccine as you can before it expires. One way to do this is to run a reminder/ recall report in NYSIIS to identify and contact patients who are due or past due for immunizations. The tool can be used to identify patients who have not completed vaccination series through searches based on date range, birth date range, or specific vaccine group. Patient lists, letters and labels can be generated through this tool.

Visit the NYSIIS training page for tutorials on using the reminder recall tool. A link can be found in the resources slide at the end of this training.

If more than 10 doses of vaccine are about to expire, transfer vaccine to another facility that will be able to use it. This may be beneficial to avoid financial restitution.

Do some investigation to locate a VFC office that may be able to use the vaccine:
- If your office is part of a larger "Parent" organization, contact the parent organization to see if other sites within the organization can use the vaccine.
- If there is another VFC provider nearby, check with this provider to see if this provider can use the vaccine.
- Ask the County Health Department if they can use the vaccine or can assist you in finding a provider that can use it.

To transfer vaccine, providers must obtain prior approval from the NYS VFC program. All transfers must adhere to transport protocols and transport tracking sheets must be completed. Training #17 in this series includes information and instructions on transporting vaccine.

Advance Reporting of
Vaccine Expiration

If < 10 doses of excess vaccine are going to expire or no other provider needs excess vaccine:

» Report vaccine that is expected to expire in the next 60-90 days that will not be used https://www.surveymonkey.com/s/FBTH26G

» Do not report flu vaccine

» **Doses that are reported via this link won't count against your allowance for restitution**

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If you have less than 10 doses of vaccine that are about to expire, and/or you are unable to locate another provider who can use excess vaccine, but you know that your facility will be unable to use it, you should report the vaccine that is expected to expire via the link located on this slide.

Do not use this link to report flu vaccine that is going to expire. Flu is not considered in your wastage allowance for restitution therefore you are not required to report flu vaccine via this link.

Providers who have an excess of vaccine and who notify NYS VFC program between 90 and 60 days in advance of expiration dates with a reasonable explanation of why they have vaccine that will go unused, will not have those doses counted against their wastage allowance.

Key Messages: Managing Vaccine Inventory

The vaccine coordinator and backup are responsible for the following vaccine inventory activities:

- Using NYSIIS to manage inventory including placing orders for publicly-funded vaccine, accepting vaccine transfers and submitting returns/wastage transactions
- Accepting vaccine deliveries (this includes confirming viability of vaccine and unpacking each shipment)
- Rotating vaccine stock weekly and removing expired or unusable vaccine
- Conducting a physical inventory check of vaccine weekly and prior to placing a vaccine order
- Using recommended best practices to increase vaccine utilization, and decrease vaccine wastage
- Reporting excess vaccine expected to expire within 60 – 90 days in advance of expiration date

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The following are the key messages for this training module.

The vaccine coordinator and backup are responsible for the following vaccine inventory activities:
Using NYSIIS to manage inventory including placing orders for publicly-funded vaccine, accepting vaccine transfers and submitting returns/wastage transactions

Accepting vaccine deliveries (this includes confirming viability of vaccine and unpacking each shipment)

Rotating vaccine stock weekly and removing expired or unusable vaccine

Conducting a physical inventory check of vaccine weekly and prior to placing a vaccine order

Using recommended best practices to increase vaccine utilization, and decrease vaccine wastage AND

Reporting excess vaccine expected to expire within 60 – 90 days in advance of expiration date.

Resources

New York State Immunization Information System (NYSIIS)
http://www.health.ny.gov/prevention/immunization/information_system/status.htm

Centers for Disease Control and Prevention (CDC)
Vaccine Storage and Handling Toolkit
https://www.cdc.gov/vaccines/hcp/admin/storage/toolkit/storage-handling-toolkit.pdf

Immunization Action Coalition (IAC)
Vaccines with Diluents, How to Use them
http://www.immunize.org/catg.d/p3040.pdf

California Department of Public Health, EZIZ Website
How to Do a Physical Inventory
http://eziz.org/assets/docs/IMM-1090.pdf
VFC Vaccine Fact Sheets
http://eziz.org/resources/vaccinefactsheets/

American Academy of Pediatrics (AAP)
Vaccine Storage Chart
https://www.aap.org/en-us/advocacy-and-policy/aap-health-initiatives/immunization/Pages/vaccine-storage-chart.aspx

Here is a listing of available resources.

Additional Training for
NYS VFC Providers

Next: NYS VFC Program Training Series #13: Vaccine Orders

Related trainings: NYS VFC Program Training Series #13-16

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There are a number of additional trainings available.

The next training in this series is #13, Vaccine Orders.

Additional related trainings are: 13, 14, 15 and #16 in this series.