

The presentation will begin shortly. There will be no audio until then.



A slide with a text message and a clock icon. The text says "The presentation will begin shortly. There will be no audio until then." Below the text is a circular analog clock showing the time 12:00. The clock has numbers 1 through 12 and a quartz movement label.

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# North Dakota Immunization Information System (NDIIS)

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## Help Menu

- **Help Menu**
  - The NDIIS Help manual can be accessed from any page in the registry.
  - To open the help manual, click on the **NDIIS Help** link from the menu bar.
    - All documents will open as a PDF.



A screenshot of the North Dakota Immunization Information System (NDIIS) interface. The title bar shows "North Dakota Immunization Information System" and "Prev: 0001 User: Mary Wozniak (ndisb-92)". The main content area has a "Help" link circled in red. A tooltip menu is open over the "Help" link, listing: "VTricks help manual", "Vaccine Coverage Table", "NDIIS Help", "NDIIS Confidentiality Policy", "File Vaccine Abbreviations", and "Abbreviations - Trade Names". Other menu items visible include "Search", "Vaccine Management", "List Management", "Vaccine Login", "Reminder/Recall", "VTC Vaccine", and "Disruptions".

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### Help Menu Documents

- **VTrckS help manual**
  - Walks through all functionality in the Vaccine Ordering, Returns and Wastages module
    - This document is also accessible within the ordering module.
- **Vaccine Coverage Table**
  - Provides guidance on which public vaccines can be given to which kids and adults
- **NDIIS Help**
  - Provides details and guidance on all NDIIS functionality
- **NDIIS Confidentiality Policy**
  - Outlines:
    - patient participation based on ND Century Code
    - use of NDIIS data
    - classification of NDIIS users
    - NDIIS data access and security
  - All NDIIS users electronically acknowledge this policy the first time they log in and annually after that.

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### Documents continued...

- **Flu Vaccine Abbreviations**
  - Maps all of the available influenza vaccines with their NDIIS name/abbreviation, brand name and vaccine description
    - Reference this document when:
      - needing to know which vaccine name/abbreviation to select in the NDIIS when entering new lots into your provider inventory and
      - when documenting individual doses in NDIIS client records.
- **Abbreviations – Trade Names**
  - Maps all non-influenza vaccines available with their NDIIS name/abbreviation, brand name and vaccine description
    - Reference this document when:
      - needing to know which vaccine name/abbreviation to select in the NDIIS when entering new lots into your provider inventory and.
      - when documenting individual doses in NDIIS client records.

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### Parental Consent for Immunizations

- Adolescents 14-17 years of age may receive HPV and Hepatitis B vaccines without parental consent.
- Check Box Defaults to Select One and an answer must be chosen before dose can be saved
- If Parental Consent is set to NO the doses do not print on Certificate of Immunization, but will still show in NDIIS.

**Dose Management**

\*Provider: 1 - ND DEPT OF HEALTH

\*Dose Date: 05/22/2012

\*Lot #:  Exclude Expired Lots  
0990Y

Vaccine: HEPB (Preservative Free)

Reaction: NONE

\*VFC: SELECT ONE

Invalid Dose

SELECT ONE Parental consent has been given to allow the display of Hep B and HPV vaccination information on the Certificate of Immunization for children 14 through 17 years of age.

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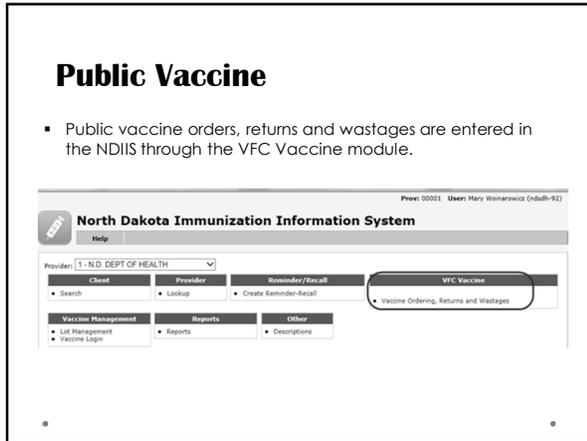






## Public Vaccine

- Public vaccine orders, returns and wastages are entered in the NDIIS through the VFC Vaccine module.




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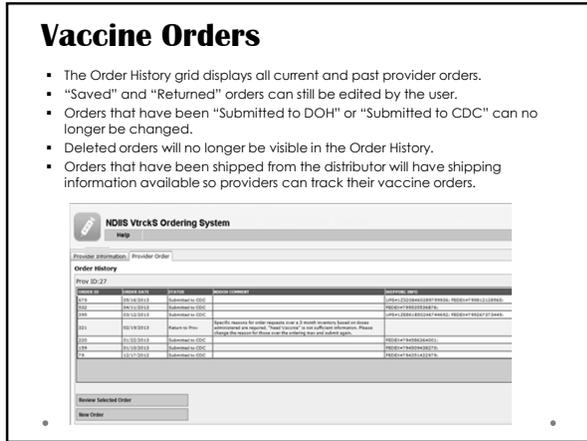
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## Vaccine Orders

- The Order History grid displays all current and past provider orders.
- "Saved" and "Returned" orders can still be edited by the user.
- Orders that have been "Submitted to DOH" or "Submitted to CDC" can no longer be changed.
- Deleted orders will no longer be visible in the Order History.
- Orders that have been shipped from the distributor will have shipping information available so providers can track their vaccine orders.




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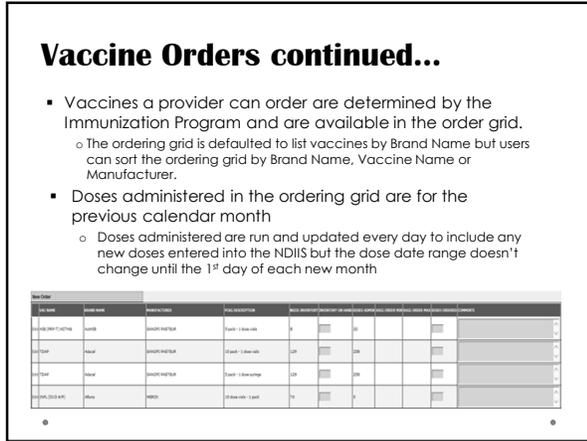
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## Vaccine Orders continued...

- Vaccines a provider can order are determined by the Immunization Program and are available in the order grid.
  - The ordering grid is defaulted to list vaccines by Brand Name but users can sort the ordering grid by Brand Name, Vaccine Name or Manufacturer.
- Doses administered in the ordering grid are for the previous calendar month
  - Doses administered are run and updated every day to include any new doses entered into the NDIIS but the dose date range doesn't change until the 1<sup>st</sup> day of each new month




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# Reminder Recall

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## Reminder Recall

- System that can be used to identify patients who are either coming due or are past due for vaccines.
  - A Reminder is a communication to an individual that he/she is due now or on a future date for immunization(s).
  - A Recall is a communication to an individual that he/she is past due for immunization(s).

Note: For complete instructions on NDIIS Reminder/Recall, visit the immunization program web page at <http://www.ndhealth.gov/immunize/NDIIS/Training.htm>

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## Reminder Recall continued...

The NDDoH recommends :

- Gender: ALL
- Race: ALL
- Include Air Force Base clients: NO
- Exclude Influenza from Last Provider Visited: YES

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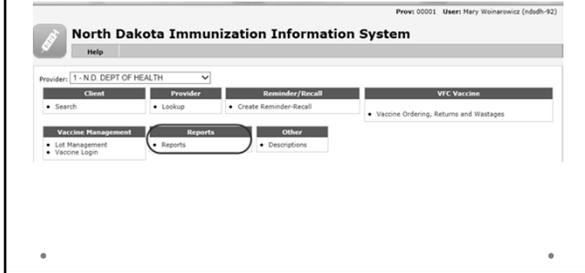
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## Reports

- The NDIIIS has 15 standard reports available to all users with read/write access.




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## Reports continued...

- To run a new report from the New Request tab of the NDIIIS reports module:
  - Select your report from the drop-down box and fill in your desired criteria
    - Any required report fields will be marked with an \*
  - click **Run Now** to run the report immediately or click **Run Later** to run the report during the nightly maintenance
    - Reports run later will not be accessed until the following day




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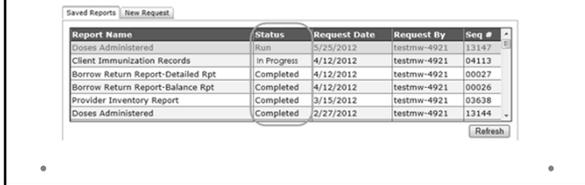
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## Reports continued...

- All run reports will be on the Saved Reports grid.
  - If your newly run report is not on the report grid, click the **Refresh** button to refresh the list of reports
- Reports can have one of three statuses listed:
  - Run** – the report is being run by the system
  - In Progress** – the system is processing and compiling the report information
  - Complete** – the report is complete and can now be viewed




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## Non-Compliance Survey Report

- Creates a report of all clients not up-to-date with the selected vaccines/vaccine series

- Required fields:
  - Min and Max Age** – required if not using birthdate range
  - Starting and Ending Birthdate** – required if not using Min/Max Age
  - Evaluation Date** – will include doses given on or before the date entered
  - Report By** – displays rates by county or provider
  - Last Provider Visited** – limits search by the last provider to enter a non-influenza vaccine in the client's record
  - County** – limits search by client county of residence (based on NDIS demographics)
  - Provider Type** – limits search by type of provider that entered vaccine doses
    - Can run for multiple provider types at once
  - Vaccine Series** – which vaccine(s) and/or series the report will pull
    - Number of doses will need to be entered when selecting individual vaccines
    - Number of doses are auto-filled when vaccine series is selected

- Can run for combination of providers, counties and provider types
- Recommend to run for only one of these criteria at a time. The more criteria that are selected, the fewer NDIS clients the report will find that actually meet the selection criteria resulting in lower rates

## Non-Compliance Survey Report

### Non-Compliance Survey Report

Printed on 10/22/2012 3:36:47 PM

**Report Criteria**

Evaluation Date: 03/23/2012  
 Exclude Influenza from Last Provider: Yes  
 Exclude Air Force Base Clients: No  
 Exclude Exemptions in Calculation: Yes VFC TYPES  
 VFC: All  
 Report By: County  
 Starting Birthdate: 01/01/2009  
 Ending Birthdate: 01/01/2011  
 County of Residence: All  
 Evaluation Date: 03/23/2012  
 County: All

**Number of Doses - Vaccine Series:**  
 4 - DTaP  
 1 - Hib  
 1 - Polio

**Report**

TOTAL NUMBER OF CLIENTS IN REPORT : 104

Client Name	Birth Date	Home	Work
NAME: CODY JAMES FROST	01/06/2000	(201) 836-8929	
Address: 37101 ADDRESS, BETHSVICK, MO 63003			

Exempted Vaccines	Recommended Date
Hib	01/06/2010
DTaP	01/06/2010
Polio	01/06/2010
Hep A	07/06/2010
Influenza	09/01/2010

Exemptions Based on History of Disease: None

## Provider Inventory Report

- Creates a report listing all inventory for a selected provider

- Required fields:
  - Provider** – report can only be run for one provider at a time
    - Users can only run the report for providers included in their access
  - Include Expired Vaccines** – indicates whether the user wants expired vaccine lots included in the inventory list

### Provider Inventory

Printed on 10/22/2012 5:24:30 PM

Provider: 401 - MVA TRAINING PROVIDER  
 Include Expired: NO

Lot Number	Expiration Date	Doses On Hand
05702 - Private	04/16/2013	10
	Total	10

Lot Number	Expiration Date	Doses On Hand
AHEV845CSB - Private	03/23/2013	25
	Total	25

## Lot Inventory Expiring Report

- Creates a report of a provider's lots that expire within a specified time frame.
- Required fields:

- Expiration From Date** – will include lots expiring **on** this date
- Expiration To Date** – will include lots expiring **on** this date
- Provider** – report can only be run for one provider at a time
  - Users can only run the report for providers included in their access

Report: Lot Inventory Expiring

Enter Selection Criteria & Values | Fields Appearing with an Asterisk (\*) Are Required.

\* Expiration From Date: \_\_\_\_\_

\* Expiration To Date: \_\_\_\_\_

Provider: \_\_\_\_\_

Lot Inventory Expiring					
Printed on 10/22/2012 5:16:25 PM					
Expiration from: 01/01/2012					
Expiration to date: 06/30/2012					
Provider: 401-100-TESTING PROVIDER					
Lot Number	Qty	Vaccine Name	Expiration Date	Manufacturer	Manufacturer's Control Number
0310Z	-78	CHICKENPOX	02/26/26	MERCK	
0330Z	3	MMR	03/06/06	MERCK	
0345Z	73	CHICKENPOX	03/05/05	MERCK	
0502Z	-93	ROTAVIRUS (3)	05/12/12	MERCK	

## Borrow Return Reports

- A "borrowed" dose of vaccine is a dose of state-supplied vaccine that was administered to a VFC "not-eligible" client or a dose of privately supplied vaccine administered to a VFC eligible client.
- The registry will keep a running tally of how many doses were borrowed from a provider's state-supplied vaccine and privately purchased vaccine inventory that is in the registry.
  - This is all done automatically by the registry, there is not an option to manually borrow and return doses of vaccine
- There are two reports for providers to run that will show how many doses have been borrowed and how many need to be returned.
  - Borrow and Return Lots - Balance
  - Borrow and Return Lots - Detailed

Reports

Print: 0000 User: User Name

Save Reports | New Request

Include Emergency Preparedness Reports

Report: **Borrow and Return Lots - Balance**

Borrow and Return Lots - Detailed

Enter Selection Criteria & Values | Fields Appearing with an Asterisk (\*) Are Required.

\* Compliance Survey

\* Provide Doses Administered

Lot Inventory Expiring

Non-Compliance Survey

Provider Inventory

VFCFS Status

## Borrow Return Reports continued...

- The Borrow Return Lots – Balance Report shows:
  - doses that were owed to state supply or private supply at the time of the system upgrade in May 2013,
  - doses that have been given since the May 2013 upgrade and
  - the number of doses of each vaccine that need to be returned to the state supply and privately purchased supply.

Borrow Return Report - Balance Report						
Printed on 8/18/2015 4:49:45 PM						
Provider: 0000 - PROVIDER NAME						
Vaccine	Starting Balance		(After 05/11/2013) Doses Given		Current Balance	
	Doses Owed to State Supply	Doses Owed to Private Supply	Doses of state supplied vaccine given to VFC not-eligible	Doses of private vaccine given to VFC or other state eligible	Doses Owed to State Supply	Doses Owed to Private Supply
IPV	0	0	4	2	2	0
DTAP	0	0	1	1	0	0
MMR	0	0	2	1	1	0
INFL (VFC WP)	0	0	1	1	0	0
CHICKENPOX	0	0	8	8	0	0
HAV (2 doses)	0	0	44	43	1	0
HB (PPV-1) AC THB	0	0	8	9	0	1
DTAP-HEP(A)IPV (Shedex)	0	0	1	2	0	1
MCVA Menactra	0	6	14	8	0	0
TDAP	0	1	2	1	0	0
MMRV	0	0	2	2	0	0

### Borrow Return Reports continued...

- The Borrow Return Lots – Detailed Report shows:
  - patient and dose details about state supply vaccine give to VFC not-eligible and
  - patient and dose details about privately purchased vaccine given to VFC or other state eligible

#### Borrow Return Report - Detailed Report

Begin Date: 05/01/2009  
 End Date: 06/01/2009  
 Provider: 03990 - PROVIDER NAME

State Supply Vaccine Give to VFC non-eligible (After 03/01/2009)

Name	BirthDate	Vaccine	Lot Number	Dose Date	VFC Eligibility
Test Patient 1	01/12/1932	ZOSTER (SHINGLES)	0367Y	06/01/2009	NOT ELIGIBLE
Test Patient 2	03/03/1938	ZOSTER (SHINGLES)	0367Y	06/01/2009	NOT ELIGIBLE
Test Patient 3	02/11/1959	MM2 (MM)	MC1282070A	03/11/2009	NOT ELIGIBLE

Private Supply Vaccine Give to VFC or Other State Eligible (After 03/01/2009)

Name	BirthDate	Vaccine	Lot Number	Dose Date	VFC Eligibility
Test Patient 1	03/20/1969	H1N1A	44019977A	03/04/2009	NO INSURANCE
Test Patient 2	12/05/1961	PPV23 (Pneumococcal)	1265F	06/23/2009	NEEDS CO
Test Patient 3	01/05/1959	HPV (GARDASIL)	860F	03/11/2009	NEEDS CO

For a complete Borrow/Return tutorial go to the immunization program website at:  
<http://www.ndhealth.gov/immunize/NDIIS/training.htm>

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## Interoperability Effects on NDIIS Data Quality

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### NDIIS Interoperability

- The NDIIS is currently electronically connected to 206 individual provider practices that represent more than 60% of all doses entered into the NDIIS.
- Data that is entered into the provider's electronic health record (EHR) system is electronically sent to the NDIIS.
- The NDIIS sends client immunization history and forecast to the EHR.
  - How the information from the NDIIS is displayed in the EHR system is up to the EHR vendor and/or the provider facility.

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### Data Quality - forecaster

- If your EHR has it's own forecast, it may be slightly different than the NDIIS forecast.
  - Doses that are given according to your EHR's forecast may cause the dose to be invalid according to the NDIIS if the two forecasters are out of sync.
  - The immunization program sends reminder/recall notices based on the NDIIS forecaster. Patients may get recalled who are not up-to-date according to the NDIIS but will be told they are up-to-date when they contact their provider.
- When a new dose is added to a patient's EHR record and sent to the NDIIS, the record goes into a queue for the forecaster that runs every 3 hours.
  - This means that if you send a new query to the NDIIS, you will not get an immediately updated forecast. You will have to look up the record directly in the NDIIS to see the updated forecast.

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### forecaster continued...

- What can we do?
  - The NDIIS team is making enhancements to the forecaster so that it can handle the increased load from real-time forecasting of records entered via interoperability.
  - The NDIIS team is also working on making changes to the NDIIS forecaster so that it is in sync with CDC's clinical decision support for immunizations guidance and test cases.
  - Check with your internal IT to see how the NDIIS forecast information is displayed in your EHR system and how you can manually trigger a query to the NDIIS to get the patient's immunization history and forecast.
  - Use the NDIIS forecast when deciding what immunizations a patient needs and when.

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### Data Quality – duplicate clients

- When the EHR system is electronically looking for an NDIIS client record (query), the system searches based on exact match for first name, last name and birthdate.
  - If the client's name in the NDIIS is in a different format or spelled different than in the EHR system, any new doses sent to the NDIIS will result in a duplicate client record being created.
    - This is very common when an individual has a hyphenated last name, if the persons last name has changed (i.e. maiden vs. married name) or when someone is in one system with their full first name and in the other system under a nickname (i.e. Mike and Michael).
  - If the NDIIS already has an existing duplicate for a client.
    - the EHR query will not be able to display a match in the EHR and
    - any new doses sent to the NDIIS will result in another duplicate client record being created.

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**duplicate clients continued...**

- What can we do?
  - The NDIIS team is working on changes to the electronic interface to improve our client matching.
    - Will use additional data fields, such as middle name/middle initial and gender, when searching
    - Removing spaces and special characters from the first and last name to try and reduce duplicates due to inconsistent handling of hyphenated last names
    - Are improving our functionality to work with those EHR systems that are able to handle a response from the NDIIS with more than one potential match
  - When client records are created in the NDIIS and in your EHR, make sure to use their full first name and make sure last names are spelled correctly.

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**Data Quality – duplicate doses**

- Most of the interoperable EHR systems can only display NDIIS immunization histories, which requires users to manually enter any historical doses into their EHR.
  - This will send the historical doses back to the NDIIS and create duplicate dose records.
- Some EHR systems are also set up to continue submitting immunization doses to the NDIIS if they don't get an immediate response from the NDIIS acknowledging that the dose record was received.
  - This means that the same dose entered once into an EHR could be sent to the NDIIS multiple times, resulting in duplicate dose records.

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**duplicate doses continued...**

- What can we do?
  - In April 2014, the NDIIS implemented a vaccine-level deduplication system that evaluates all incoming dose records for potential duplicates.
    - Approximately 80-85% of all incoming doses are automatically de-duplicated and are never added to the client's record.
    - The other 15-20% fall into a queue for manual review by immunization program staff.
      - Duplicate doses are evaluated on a daily basis.
      - Make sure to work through all duplicate dose records from the previous day by the end of the current day (i.e. all duplicates sent to the NDIIS on Monday will be reviewed and de-duplicated by end of day Tuesday).
  - The NDIIS team is planning to evaluate all NDIIS immunization records for potential duplicates added prior to April 2014.
    - Estimate this process will be completed by the end of the year.

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### Data Quality – inventory

- All interoperable EHR systems should require users to enter a lot number and select a distinct vaccine funding source (i.e. public or private) for every dose of vaccine administered.
  - If either of these fields is missing when the electronic message is sent to the NDIIS, the dose may still be added to the NDIIS but will have a dummy dose (vaccine abbreviation) in place of the actual lot number.
- When a dose is added to an EHR system and sent to the NDIIS, the lot number must find an exact match on both the lot number AND funding source.
  - A matching lot number will not be found and will result in a dummy dose being added if:
    - the lot number or funding source are entered incorrectly in the EHR,
    - the user enters a lot from the vaccine vial/syringe that is different than the lot number on the outer packaging and/or
    - the lot number does not exist in the provider’s NDIIS inventory.

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### Data Quality – inventory continued...

- When a dummy dose is added in place of the actual lot number, the dose cannot be appropriately decremented from the provider’s NDIIS inventory and the dose cannot be counted as a public or private dose administered.
  - This could affect your ability to order public vaccine as your inventory doses on hand will be higher and your doses administered will be lower.
- The immunization program will follow-up each month with those providers who have dummy doses in place of a lot number and a VFC eligible status.
  - It is expected that the dose records are updated in the NDIIS since public doses administered data is used to anticipate future vaccine funding needs.

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### Inventory continued...

- What can we do?
  - The NDIIS team is planning to make changes to the electronic interface to improve our lot number matching.
  - The public lot numbers automatically entered into your NDIIS inventory is from the outer packaging and this is the lot number that will need to be documented in your EHR in order to find a correct matching lot number when the dose record is sent to the NDIIS.
    - MedImmune, Pfizer, Merck and Bio CSL all use the same lot number on both the unit of sale (outer packaging) and unit of use (vial/syringe) for all of their vaccines.
    - Certain vaccines from Sanofi Pasteur, Novartis and GSK have different lot number variations between the unit of sale and unit of use.
  - Enter your private inventory into the NDIIS.
  - Make sure the lot number documented in your EHR is correct and contains no typing errors.
  - Make sure the correct funding source was selected in your EHR.

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### Data Quality – patient portal

- A lot of the EHRs being used by North Dakota providers have a patient portal that allows patients to view their medical information, including immunizations.
- Almost all of the EHR patient portals are set to only show those vaccines that were actually administered by that provider or within that health system.
  - If a patient's complete immunization history has been entered into the EHR, not all of those immunizations will show in the patient portal.
  - Patients may receive notices through their patient portal telling them that they need vaccines they have already gotten
    - This is very common with adults and flu vaccine since a lot of adults get their flu vaccine somewhere other than their primary healthcare provider.

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### patient portal continued...

- What can we do?
  - Contact your local IT to find out what can be displayed in your EHRs patient portal.
    - Ask if there is any way to get a patient's complete history to show in the patient portal.
  - When a patient calls wondering about the notice they got from their patient portal, check the NDIS to see if they have gotten that vaccine somewhere outside of your facility.

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## Using the NDIS to Increase Immunization Rates

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### Increasing Rates

- Use all opportunities to get your patient's caught up on all required and recommended immunizations when they are in the office, regardless of the original nature of the visit.
  - Check the NDIS forecast to see what immunizations the patient is due/past due for.
- Offer all ACIP recommended immunizations, not just those required for schools.
  - Physician recommendation has a great impact on parental acceptance of immunizations, especially HPV vaccine.
  - Consistency amongst all staff in a provider office is also important so that parents are not receiving mixed messages.
- Schedule appointments for patients to get the next vaccine in a series before they leave their current visit.
- Provide patients and parents with educational materials about the vaccine(s).

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### Increasing Rates continued...

- Flag duplicate client records that are found in the NDIS.
  - Type the word "DUPLICATE" in the second address line in the client's demographics.
  - The immunization program runs a report every Thursday that looks for flagged duplicate records.
  - Duplicate client records are combined every Friday.
- Enter all historical immunizations that are not already in the NDIS record so the record is complete.
- Enter all vaccine exemptions in to the NDIS.
- Run NDIS reminder/recall for your provider, county and/or district.

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### Increasing Rates continued...

- ND Immunization Program sends quarterly rate reports to all VFC enrolled providers that shows the current and previous quarter's infant and adolescent immunization rates.
  - Reports should be used to identify areas of need to increase immunization rates and decrease missed opportunities.
- Use NDIS canned reports to assess rates and identify clients that should no longer be associated with your provider.

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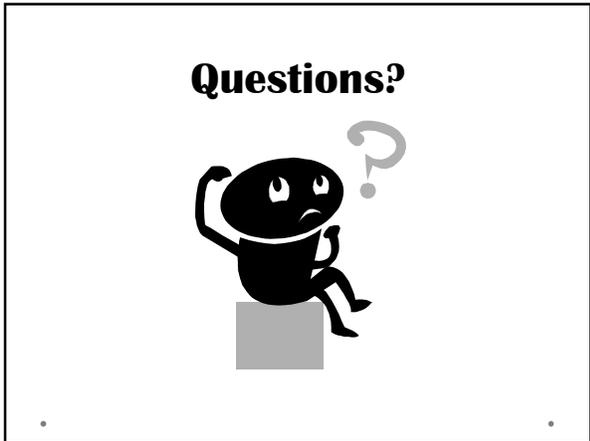
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