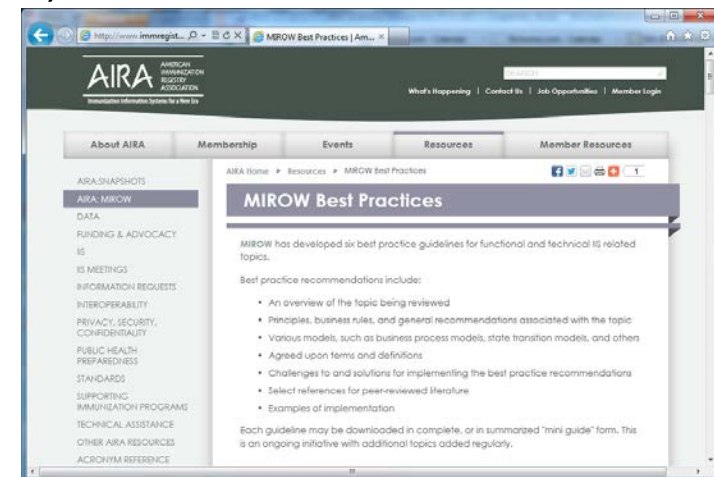# Inventory Management Overview

- MIROW Goals and Process

- Inventory Management Background

- Key Recommendations

  - NDC and Lot Number
  - Reconciliation
  - Inventory Data Quality
  - Dose Level Accountability
  - Borrowing
  - IIS Reports

- Conclusions

- Questions

# About MIROW

- The Modeling of Immunization Registry Operations Work Group (MIROW) was formed in 2005 by the American Immunization Registry Association (AIRA) in partnership with the National Center for Immunization and Respiratory Diseases (NCIRD) at the Centers for Disease Control and Prevention (CDC) to develop a best practices guidebook for immunization information systems (IIS).

- MIROW Goals
    - Promote operational consistency
    - Foster communication and collaboration
    - Increase credibility of IIS

# MIROW Workgroup Method

- 14 subject matter experts with diverse backgrounds

- Preliminary work, including collection and analysis of existing IIS materials

- Three and a half days facilitated meeting (September 2011, Atlanta, GA) to analyze existing practices and formulate consensus-based recommendations

- Post-meeting teleconferences to finalize recommended best practices

# Why is Inventory Management important?

- Policy, regulation and technology changes over the past few years has led to requirements for better supply visibility and accountability.

- Grantee immunization programs need to adapt to VFC program requirements to use National Drug Codes (NDC), lot numbers and dose level reporting

- The roll-out of the new VTrckS public ordering system is already underway and complete in many states.

VTrckS
**Vaccine Tracking System (VTrckS)**

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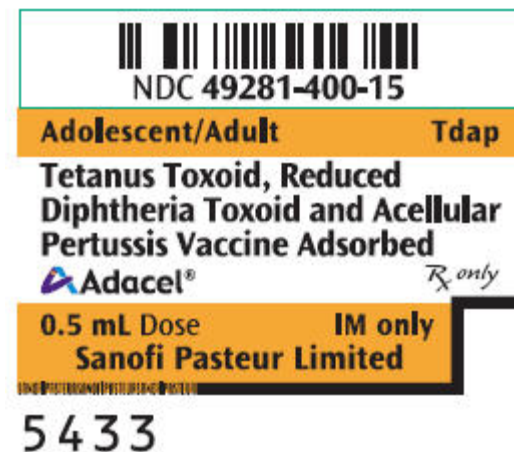Immunization Information Systems for a New Era

# Benefits of Inventory Management in the IIS

- Encourage use of the IIS

- Reduce the reporting burden on provider organizations

- Improve inventory data quality and accountability

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# Recommendation Highlights: NDC and Lot Number

- NDC supremacy principle: Vaccine inventory management should be based on the National Drug Code (NDC) (P701).

- The NDC received from VTrckS (in the shipment file) should be used for receiving, reporting, and tracking inventory (BR701).

- IIS should make NDC known to Provider Organization prior to arrival of a direct vaccine shipment (BR703).

- Lot number for every vaccine dose utilized by a Provider Organization must be matched/mapped to NDC for a specific inventory entry and the appropriate transaction should be created to adjust the inventory appropriately (BR702).

NDC 49281-400-15

Adolescent/Adult     Tdap
Tetanus Toxoid, Reduced
Diphtheria Toxoid and Acellular
Pertussis Vaccine Adsorbed
Adacel®                  Rx only
0.5 mL Dose          IM only
Sanofi Pasteur Limited

5433

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# Implementation Details: NDC and Lot Number

- IIS setup defines valid NDC Numbers
- NDC is uniquely identified to a lot
- NDC auto-populates for all VFC orders
- User may also select the NDC from a dropdown when defining new lots
- Challenges:
  - Maintaining the list of valid NDC Numbers
  - Ensuring that private inventory also has NDC defined

# Lot Definition with NDC Number



**Lot Number Maintenance [Update]**

| | |
|---|---|
| **Manufacturer:** | GLAXOSMITHKLINE-SKB ▼ |
| Lot Number Code: | 264 |
| **Lot Number:** | 22222 |
| **Vaccine:** | DTaP/Hep B/IPV ▼ |
| Facility: | --select-- ▼ |
| Doses Used: | 0 |
| Doses Wasted and Returned: | 0 |
| Doses Wasted and Disposed: | 0 |
| Doses Available: | 50 |
| Doses Total: | 50    Use the buttons below to adjust the total doses. |
| **Expiration Date:** | 05/03/2013 |
| Publicly Supplied: | Yes |
| NDC Number: | PEDIARIX (58160-0811-52) ▼ |
| Inactive: | ☐ |
| Inactive Reason: | --select-- ▼ |

Cancel   Reset   Save

Add Doses(+)   Subtract Doses(-)

# Recommendation Highlights: Reconciliation

- Provider Organizations should reconcile their physical inventories to the IIS at a frequency appropriate to the size and complexity of their practice or clinical setup (P706).

- Reconciliation frequency: Provider organizations should reconcile their entire physical inventory to the IIS at least once a month; large, complex provider organizations may consider reconciling more frequently (e.g., weekly) to minimize the risk of inventory errors (BR723).

- Provider Organizations must reconcile their entire physical inventory to the IIS inventory immediately prior to ordering (BR722).

- Physical inventory count for reconciliation purposes should always be done on a day boundary ( i.e., at the end of a business day or prior to the next business day) (BR721).

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# Implementation Details: Reconciliation

- Providers reconcile when they place an order (based on EOQ frequency)

- Future:  Add logic to remind/require sites that order less frequently than 1 month to reconcile

- Challenges:
  - Determining the correct point in time to reconcile
  - Electronic feeds may or may not be fully processed
  - Helping the provider determine the right thing to do when the IIS does not match their physical count.

# Reconciliation Page

Public lots display with dark gray shading. Private lots display with light gray shading.

| Vaccine | Lot Number | Exp Date | Quantity on Hand | Physical Inventory | Adjustment (+/-) | Reason | Public | Inactive |
|---|---|---|---|---|---|---|---|---|
| DT (Pediatric) | 08181988 | 05/03/2013 | 70 | | 0.0 | --No Reason Required-- ▾ | Y | ☐ |
| DTaP | 03051988 | 05/03/2013 | 10 | | 0.0 | --No Reason Required-- ▾ | Y | ☐ |
| DTaP | 06171988 | 05/03/2013 | 100 | | 0.0 | --No Reason Required-- ▾ | Y | ☐ |
| DTaP/Hep B/IPV | 22222 | 05/03/2013 | 50 | | 0.0 | --No Reason Required-- ▾ | Y | ☐ |
| DTaP/Hib/IPV | 33333 | 05/03/2013 | 50 | | 0.0 | --No Reason Required-- ▾ | Y | ☐ |
| DTaP/IPV | 44444 | 05/03/2013 | 50 | | 0.0 | --No Reason Required-- ▾ | Y | ☐ |
| HPV, quadrivalent | 99999 | 05/03/2013 | 100 | | 0.0 | --No Reason Required-- ▾ | Y | ☐ |
| HPV, quadrivalent | U3522322 | 12/31/2012 | 100 | | 0.0 | --No Reason Required-- ▾ | N | ☐ |
| Hep A 2 dose - Ped/Adol | 55555 | 05/03/2013 | 50 | | 0.0 | --No Reason Required-- ▾ | Y | ☐ |
| Hep B Ped/Adol - Preserv Free | 66666 | 05/03/2013 | 100 | | 0.0 | --No Reason Required-- ▾ | Y | ☐ |
| Hep B/Hib | 77777 | 05/03/2013 | 50 | | 0.0 | --No Reason Required-- ▾ | Y | ☐ |
| Hib--PRP-T | 88888 | 05/03/2013 | 100 | | 0.0 | --No Reason Required-- ▾ | Y | ☐ |
| IPV | 101010 | 05/03/2013 | 100 | | 0.0 | --No Reason Required-- ▾ | Y | ☐ |
| IPV | A1004356 | 04/20/2013 | 100 | | 0.0 | --No Reason Required-- ▾ | N | ☐ |
| Influenza Nasal Spray | U7844322 | 12/31/2012 | 20 | | 0.0 | --No Reason Required-- ▾ | Y | ☐ |
| MMR | 04191976 | 05/03/2013 | 40 | | 0.0 | --No Reason Required-- ▾ | Y | ☐ |
| Mening. (MCV4P) | 1111111 | 05/03/2013 | 50 | | 0.0 | --No Reason Required-- ▾ | Y | ☐ |
| Pneumococcal(PPSV) | 4444444 | 05/03/2013 | 50 | | 0.0 | --No Reason Required-- ▾ | Y | ☐ |
| Pneumococcal, PCV-13 | 3333333 | 05/03/2013 | 50 | | 0.0 | --No Reason Required-- ▾ | Y | ☐ |
| Rotavirus, pentavalent RV5 | 5555555 | 05/03/2013 | 50 | | 0.0 | --No Reason Required-- ▾ | Y | ☐ |
| Td Adult, Preserv Free | 6666666 | 05/03/2013 | 50 | | 0.0 | --No Reason Required-- ▾ | Y | ☐ |
| Tdap | 7777777 | 05/03/2013 | 50 | | 0.0 | --No Reason Required-- ▾ | Y | ☐ |

Reset | Save

Public lots display with dark gray shading. Private lots display with light gray shading.

# Recommendation Highlights: Inventory Data Quality

- Manual data entry should be minimized and manual entry of inventory data that is already known should be avoided (GR710).

- Data quality assurance metrics (as determined by CDC and grantee immunization programs) should be utilized to measure and track data quality from any shipping entity, including a centralized distributor (currently McKesson) ─ e.g., entering lot numbers and other data items. These metrics should be used to improve data quality from any shipping entity (GR717).

- QA process should be in place to assure that information that has been provided as compiled by non-IIS systems is accurate (GR714)

- IIS should follow MIROW Data Quality Assurance in Immunization Information Systems: Incoming Data guidelines (GR709).

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# Implementation Details: Inventory Data Quality

- Direct Data Entry users have dropdowns and select boxes for lot number, manufacturer, etc.

  - Valid vaccine/manufacturer combinations are defined

- Inventory information (lot, manufacturer, etc.) auto-populates on the provider's order from the VTrckS or McKesson shipping files

- Data from electronic feeds is matched to registry inventory

- Challenges:

  - EHR systems may be sending both public and private lots and it is possible for the lot numbers to overlap

  - What should happen when a match is not found