



# Colorado Immunization Information System (CIIS) Data Quality Review and Training Strategies for Reminder/Recall



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# Session Objectives



- Attendees will understand the purpose of and the process for administering a data quality review in preparation for conducting a reminder/recall at the provider level.
- Attendees will be introduced to the Reminder/Recall training strategies used by the Colorado Immunization Information System (CIIS)

# CIIS Background Information

- Web-based since 2001
- Life-long immunization information system since 2007
- June 2011- New CIIS Web Application went live.
- Participation in CIIS is voluntary for both providers and individuals.
- Current provider participation in CIIS as of August 2013
  - 1563 provider sites actively participating
  - 68% are manual users
  - 32% are electronic reporters

# New Functionality in CIIS



- Inventory module decrements doses and includes reconciliation feature.
- School CIIS Web Application
- More reports added to help providers maintain clean and accurate data.

# CIIS Reminder/Recall



- CIIS offers a Provider-Based Reminder/Recall functionality and a Geographic-Based Reminder/Recall functionality.
  - Provider-based recalls all clients whose default clinic corresponds to the clinic running the recall.
  - Geographic recalls will create a cohort of all children who have an address in either the specific county selected, or the specific zip codes selected.

PROVIDER: IZ R US PROVIDER TYPE 3, CLINIC: IZ R US CLINIC

**CIIS**  
COLORADO IMMUNIZATION INFORMATION SYSTEM

- Home
- Patients
- Immunizations
- Treatments
- Education
- IZ Quick Add
- CRA Quick Add
- Inventory
- Campaigns
- NBS
- Reports/Forms
- Settings
- VTrckS Interface
- Administration

Version 13.5-1  
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**Create** **Cancel**

**Run Name**

**Provider**  
 IZ R US PROVIDER TYPE 3

**Clinic**  
 IZ R US CLINIC

**Run Schedule Date** **Run Completed Date**

**Reminder/Recall Date Range**  
**From:**  **Through:**

**Age Range**  
**From:**  **Through:**  **UOM:** MONTHS

**Options To Target Patients Included For Reminder/Recall**

**Gender**

☐ Ignore Setting For "Do Not Include Patient in Reminder/Recall"?  
☐ Only Include Patients With Address (i.e., Street Address, City, State, Zip)?  
☐ Increment Patient Reminders/Recall Count?  
☐ Exclude Patients After Number of Reminders/Recalls Without Subsequent Vaccination  
☐ Generate Reminder/Recall Event?  
☐ Include Patients Due For Vaccinations (Reminders)?  
☐ Include Patients Overdue For Vaccinations (Recalls)?  
☐ Minimum Number Of Days Past Due To Include  Maximum Number Of Days Past Due To Include   
☒ Exclude Patients with Less than 2 non- Influenza/H1N1 Vaccinations?  
☐ Exclude patients with one or more vaccine refusals?

**Vaccine Series and Optional Dose (Note: Leave Dose blank to include all doses in series)**

<input type="checkbox"/>	Vaccine Series	Dose Number	
<input checked="" type="checkbox"/>	HEPA	<input type="text"/>	
<input checked="" type="checkbox"/>	HEPB	<input type="text"/>	
<input checked="" type="checkbox"/>	Hib	<input type="text"/>	
<input checked="" type="checkbox"/>	HPV	<input type="text"/>	
<input checked="" type="checkbox"/>	Influenza	<input type="text"/>	
<input checked="" type="checkbox"/>	Meningococcal	<input type="text"/>	
<input checked="" type="checkbox"/>	MMR/Measles	<input type="text"/>	
<input checked="" type="checkbox"/>	Pneumo	<input type="text"/>	
<input checked="" type="checkbox"/>	Polio	<input type="text"/>	
<input checked="" type="checkbox"/>	ROTA	<input type="text"/>	
<input checked="" type="checkbox"/>	Tetanus containing	<input type="text"/>	
<input checked="" type="checkbox"/>	Varicella(CPOX)	<input type="text"/>	
<input checked="" type="checkbox"/>	Zoster	<input type="text"/>	

Example of Reminder Recall criteria screen shot from CIIS

# CIIS Reminder Report



## Reminder

August 16, 2013

### Reminder Criteria

<b>Reminder Run Name:</b> 1 TO 2 YEAR OLDS TEST LS	<b>Run Schedule Date:</b> 08/13/2013	<b>Run Completed Date:</b> 08/14/2013
<b>Provider:</b> IZ R US PROVIDER TYPE 3	<b>Reminder Date From:</b> 08/13/2013	<b>Reminder Date Through:</b> 08/13/2013
<b>Clinic:</b> IZ R US CLINIC	<b>Age Range From (years):</b> 1	<b>Age Range Through (years):</b> 2
<b>Vaccine Series:</b> Tetanus containing - All, Polio - All, MMR/Measles - All, Hib - All, HEPB - All, HEPA - All, Pneumo - All, ROTA - All, Varicella(CPOX) - All, Influenza - All, Meningococcal - All, HPV - All, Zoster - All		
<b>Other Criteria:</b> Generate Reminder/Recall Event? Y Include Patients Due For Vaccinations (Reminders)? Y Include Patients Overdue For Vaccinations (Recalls)? Y Gender: Both		

Name	Contact Info	Immunizations
269 N COLORADO RD LAS ANIMAS, CO 81054 County: BENT	Home Phone: -469-9283 Work Phone: Cell Phone: Email: Primary Contact: Most Recent Refusal:	DTAP (2), HEP A, PED/ADOL (1), HEP B, PED/ADOL (2), PCV-13 (PREVNAR) (1), POLIO-IPV (1), VAR (VARIVAX) (1) VFC Eligibility: VFC--Medicaid
Gender: Male Reminder Date: 07/01/2011 Most Recent Immunization Date: 04/08/2013 Immunization History: TETANUS CONTAINING(04/08/2013) MMR/MEASLES(04/08/2013) HEPB(06/06/2011)	- DOB: 05/01/2011 Age At Date: 0Y 2M 0D Most Recent Immunization Clinic: IZRUS IZ	Relationship: MOTHER

## Sample Reminder Report

Lists the patients and the vaccinations they are coming due for.

# Data Quality Review



- **Why CIIS Requires a Data Quality Review:**
  - Ensures the accuracy and completeness of client and immunization service data contained in CIIS.
- **Benefits of doing a Data Quality Review:**
  - Prevents providers from recalling patients who may not actually be due for immunizations.
  - Saves the provider time and money.
  - Saves the patient from the hassle of receiving duplicate or unnecessary notices.

# Data Quality Review



- The Data Quality Review Process:

- Step 1:

The CIIS Recall Coordinator will request a list containing the names and birth dates of ALL patients who have had a date of service at the site within the last 6 months.

# Data Quality Review



## ○ Step 2:

From the list, the CIIS Recall Coordinator randomly selects 30-40 pediatric **AND** adult clients to include in the data quality review.

The clinic representative is asked to fax a printed copy of the vaccine administration sheet and the demographic information for each client either from their paper charts or their electronic health record.

# Data Quality Review



## ○ Step 3:

- ✦ For each client, the CIIS Recall Coordinator reviews and compares the following data elements from the clinic vaccine administration sheets and demographic information to those included in CIIS:

- Last Name
- First Name
- Date of Birth
- Mother's Name
- Address
- Immunization Dates and Antigens
- Phone/Cell Phone

A spreadsheet is used to capture specific issues and recurring data errors.  
Notes are also made on the vaccine administration sheets.

# Data Quality Review



	A	B
1		Data Quality Review for Reminder/Recall
2		Provider/Clinic: IZ R US Date: Feb. 25, 2013
3	<b>Patient Record Number</b>	<b>Data Quality Review Comments/Concerns</b>
4		<i>Remember</i>
5		DTP was discontinued in 1997
6		OPV was discontinued in 2000
7		
8	xxxxxxx	Historical entries:
9		Dtap entered for 1997 doses
10		IPV entered for 1997 doses
11		HepA #2 10/12/2012 marked as invalid, should this be deleted?
12		
13	xxxxxxx	Historical entries:
14		Dtap entered for 1995 and 1996 doses
15		IPV entered for 1995 doses
16		
17	xxxxxxx	Dtap #5 administered too early, invalid dose
18		
19	xxxxxxx	IPV #4 administered too early, invalid dose
20		
21	xxxxxxx	Historical entries:
22		IPV entered for 1995 and 1996 doses
23		
24	xxxxxxx	Patient has the following immunizations administered on
25		DOB - Dtap, IPV, Hib
26		Not entered at your site, can you clarify?
27		
28	xxxxxxx	Dtap #4 administered too early, invalid dose
29		
30	xxxxxxx	Adult Td entered for patient at the age of 10 months-6/25/1998
31		IPV entered for 1997 and 1999 doses
32		Varivax entered for patient at the age of 10 months, invalid
33		Dtap entered for 1997 and 1998 doses
34		

Sample: Data Quality  
Review Spreadsheet

# Data Quality Review



## ○ Step 4:

The data quality review is scored. The CIIS Recall Coordinator counts the number of errors based on the notes recorded on the spreadsheet and on the vaccine administration sheet and enters this information on the *CIIS Data Quality Review Form*.

# CIIS Data Quality Review Form Part 1



## CIIS Data Quality Review Form

Site Reviewed	
Site Contact	
CIIS Reviewer	
Date of Review	

Type of Review: ☐ Electronic Data File ☐ Manual Population ☐ Reports/Recall ☐ Ongoing CIIS Use  
 Source of Client Names: ☐ EMR ☐ Billing ☐ Visit Log ☐ CIIS Client Detail with Services Report

## RESULTS

<b>COMPLETENESS</b>	
1. Number of Clients Reviewed ( <i>Minimum of 30</i> )	
2. Number of Clients with Record in CIIS	
<b>Completeness: (<i>Line 2 ÷ Line 1, multiply by 100 for percentage</i>)</b>	
Number of Clients with Incorrect Address ( <i>Share findings with site</i> )	

# Data Quality Review Form Parts 2 and 3



ACCURACY	
1. Number of Clients Reviewed ( <i>Minimum of 30</i> )	
2. Number of Services Found in CIIS but Not Found in Chart (Vaccine Services Sheet)	
3. Number of Services Not Found in CIIS	
4. Number of Services with Incorrect Date and/or Antigen <i>*If a service has an incorrect date AND an incorrect antigen, it counts as TWO errors.</i>	
5. Total Number of Services in Charts <i>*Combination vaccines are counted as one service.</i>	
6. Add <b>Line 3</b> (# of services not in CIIS/Staged File) and <b>Line 4</b> (# services with incorrect date and/or antigen)	
7. <b>Line 6 ÷ Line 5</b> (Total number of services in charts). <b>Answer should be a decimal.</b>	
<b>Data Accuracy Rate:</b> ( <i>Subtract Line 7 from 1.00, multiply by 100 for percentage</i> )	

## FEEDBACK

Spreadsheet containing a description of the data discrepancies found during the Data Quality Review.

Date results shared with office: \_\_\_\_\_

Is re-training required? ☐ No ☐ Yes Date: \_\_\_\_\_

Date of Repeat Review (if necessary): \_\_\_\_\_

Comments:

# Data Quality Review



## ○ Step 5:

CIIS contacts the clinic with the results usually within two weeks.

- ✦ Sites need to score an accuracy rate of 95% or better to conduct a Reminder/Recall for their clinic. Next they are instructed to take the online training and are given access to the Reminder/Recall report.
- ✦ Sites with less than a 95% accuracy rate are not given access. They are provided with training based on the nature of the errors that were found during the Data Quality Review.
  - CIIS will conduct another Data Quality Review within three to six months following the site retraining.

# Data Quality Review

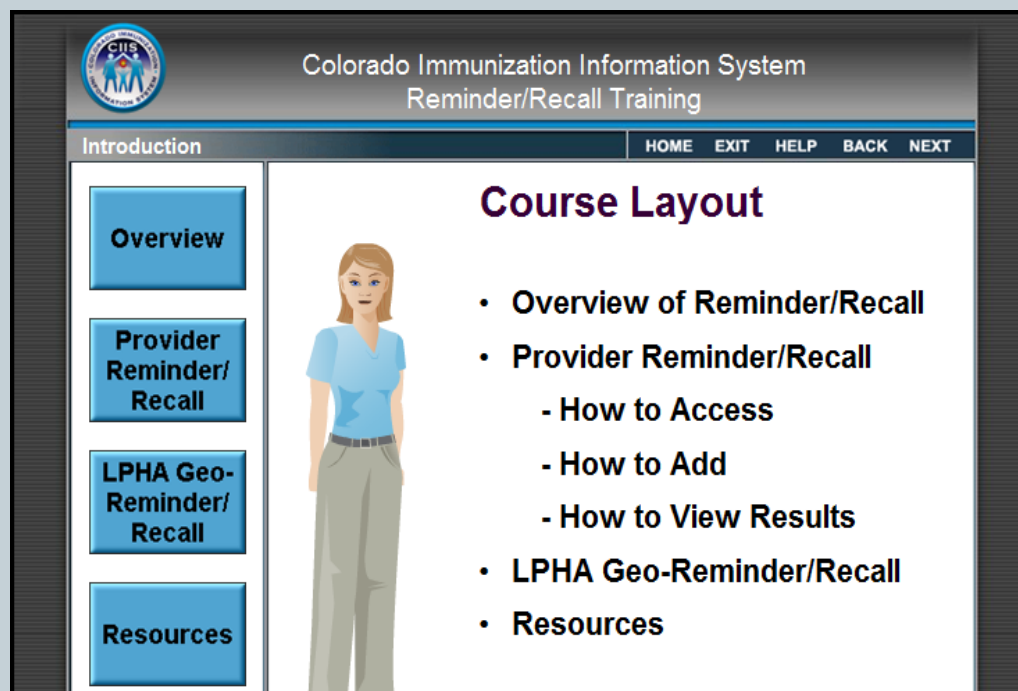


- CIIS Reports that are recommended to help with cleaning up data prior to conducting a Reminder/Recall:
  - Possible Patient Duplicates
    - ✦ Generates a list of the clinic's possible patient duplicates (This information will be reviewed and reconciled by the CIIS Recall Coordinator.)
  - Vaccines Added But Not Administered
    - ✦ Generates a list of patients with vaccinations that have been added but not administered within the system.
  - Patient Roster
    - ✦ Generates a list of patients grouped by their default provider/clinic. Allows sites to designate clients who have moved or gone elsewhere (MOGE) and are no longer seen by the provider.

# Reminder/Recall Training

- Training Delivery Methods

- Reminder/Recall Online Training Course hosted on [CO.TRAIN](https://co.train.gov)



# Reminder/Recall Training

- Webinars using Cisco WebEx
- Tutorials and Cheat Sheets



# Future Ideas for Reminder Recall Training

- Add to the CIIS Training Website:
  - Webinars on-demand
  - Short instructional videos that feature specific topics.



The screenshot shows the Colorado Department of Public Health and Environment website. The header includes the state logo, the department name, and a navigation bar with links like Home, Topics A-Z, Divisions/Programs, Boards/Commissions, Permits, Regulations, and Data. The main content area is titled "Training and Technical Assistance" and lists several resources: CIIS Online Training Modules, CIIS Training Resources and "How To" Cheat Sheets, CIIS Live Training Webinars, and Technical Assistance. A sidebar on the left contains links to Communicable Diseases, STI/HIV Surveillance Program Reports, Immunization, Colorado Immunization Information System, About CIIS, and Participate in CIIS.

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- Communicable Diseases
- STI/HIV Surveillance Program Reports
- Immunization
- Colorado Immunization Information System
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- Participate in CIIS

- CIIS Online Training Modules**
- CIIS Training Resources and "How To" Cheat Sheets**
- CIIS Live Training Webinars**
- Technical Assistance**

# Observations



- In comparing 2012 and 2013, CIIS has not seen much difference in the number of providers using the Reminder Recall functionality.
  - In 2012 there were 14 clinics and 26 Local Public Health Departments.
  - As of August 2013, there were 15 clinics and 22 Local Public Health Departments.
- Often times the CIIS Geo Recall Coordinator will perform Step 1 of the Data Quality Review for a provider in order to get the process moving more quickly.
- CIIS has found that most providers do meet the 95% accuracy rate.

# Future Plans for CIIS Reminder Recall

- CIIS is considering a pilot project where we will select one or two counties in Colorado and run a geographic recall.
- CIIS is currently working in collaboration with the University of Colorado Children's Outcome Research Program to conduct a comparative effectiveness trial of two reminder/recall methods: provider-based and population-based.
- We are in the process of applying for a CDC Grant to increase HPV coverage for adolescents ages 11-18.

# Questions



For more information:

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