

# Interoperability Efforts: Leading to Great Unintended Benefits and Improved Data Quality



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**AIRA 2012 IIS MEETING**  
**SEPTEMBER 19, 2012**



# Outline



- Background
- Formalizing the Onboarding Process
- Informing and Engaging Stakeholders
- Creating Guidance Documents
- Identifying “Problem” HL7 Segments
- Enhancing Clinical Data Quality Standards



# Background



Number of Immunization Services: 37,796,228

Number of Patients: 3,500,965

- 0 through 18 years of age: 1,578,196
- 19 years of age and older: 1,922,769

Active Online Users: 3,043

Opted-Out Patients: 1,131 (.03% opt-out rate)

Number of Provider Groups on Interface Waiting List: 317



# Formalizing the Onboarding Process



Process Prior to Registry Replacement	Process After Registry Replacement
Contact regional CIIS coordinator to express interest	<b>Email us</b> to be placed on waiting list
Schedule and hold onsite demo	Complete and return <b>implementation documents</b> (fillable online PDF)
Complete and return implementation documents (Coordinator-driven)	Review <b>CIIS HL7</b> Local Implementation Guide
Schedule and hold planning meeting	Take online <b>CIIS training</b>
Schedule and hold onsite training	<b>Wait to be contacted</b> for interface implementation
Enlist EHR vendor for interface development	
Interface request rolled into existing CIIS project load	



# Regional Extension Centers as Partners



- Direct and frequent contact with providers across state
- Already talking about MU public health objectives
- Clear, consistent messaging about CIIS onboarding and MU attestation process



Colorado Community  
Managed Care Network



ClinicNET  
Strengthening Colorado's Health Care Safety Net

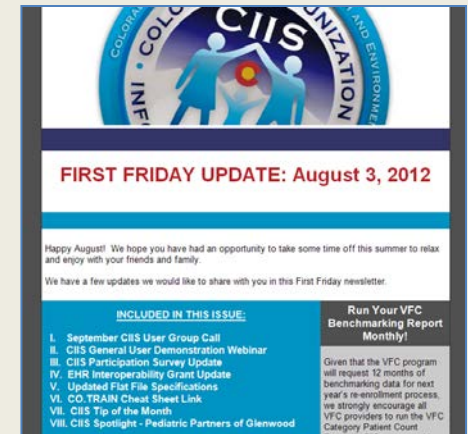


# Informing and Engaging Stakeholders



Interoperability successes and challenges are communicated to stakeholders through:

- First Friday Updates (monthly e-newsletter)
- CIIS User Group Conference Calls
- Presentations at local coalitions
- VFC site visits
- Updates at recurring HIE meetings
- Ongoing responses to email and phone inquiries as well as requests for proofs of attestation (exclusion if still on waiting list)



# First Friday Newsletter – High-Level Interoperability Updates



You forwarded this message on 6/4/2012 9:40 AM.

**From:** Colorado Immunization Information System [donotreply@coloradoimmunizationsection.ccsend.com] on behalf of Colorado Immunization Information System [cdphe.dcdciis@state.co.us]  
**To:** Shull, Heather  
**Cc:**  
**Subject:** CIIS First Friday Update - June 2012

[Order Form.](#)

## **VIII. Electronic Health Record (EHR) Interoperability Grant Update**

While the work remains challenging, we are making progress in bringing more practices live with electronic Health Level 7 (HL7) interfaces to CIIS. Here are some high-level figures on our EHR Interoperability Grant work:

- We have completed 14 interfaces including data from 166 individual clinics. The newest provider groups to go live with their HL7 interface are Platte River Medical Clinic (athenaHealth), Salud Family Health Centers (first eClinicalWorks site completed as part of the grant!), and Denver Pediatrics (integrated into existing Children's Hospital Colorado real-time, bidirectional interface).
- There are currently 17 interfaces in progress. 11 of the 17 are in various stages of testing, and 2 of the 17 are in various stages of the data validation procedure.
- There are currently 7 interfaces on hold; 5 of the 7 are providers using various AllScripts EHRs.

In working with multiple provider offices and EHR vendors on interfaces to CIIS, we have noticed some common "problem" segments within the HL7 messages utilized to communicate information to the immunization registry. Many EHR vendors have exhibited difficulty in capturing and/or transmitting VFC Eligibility Status, Next of Kin, Body Site, and Administration Route. Some EHR vendors have also had trouble sending the common Immunization Information Source values that specify whether an immunization was administered by the clinic or entered historically into the EHR for the patient.

Unfortunately, there is no "easy" button that makes it possible to implement interfaces for all of the clinics on our waiting list at the same time. Each clinic goes through the same interface implementation process regardless of what EHR they use. If you're waiting to work with CIIS on your interface, please check out our [Interface Guidance document](#). This document describes

# Importance of Internal Tracking



The Million Dollar Question:

When can I expect an interface for my clinic?

Need to know:

- Which EHR the clinic has implemented
- How many other offices using the same EHR are ahead of the clinic in the queue
- The average time that previous interface implementations have taken for that particular EHR

Goal: Provide the clinic with an accurate, realistic timeline for their interface implementation project.





# Original Waiting List



CIIS\_Sites\_EHRs\_In\_Queue.xlsx - Microsoft Excel

Home Insert Page Layout Formulas Data Review View Add-Ins Acrobat

Clipboard Font Alignment Number Styles Cells Editing

A389 Heritage Internal Medicine

Sites in Queue for CIIS Implementation Prior to Go Live

ALL PROVIDERS IDENTIFIED AS OF DECEMBER 20, 2010.

Site:	Date Added to List	Coordinator	Interested	LOA Signed	Manual	Electronic	Status	Pre Go Live?	Post Go Live?	Comments
55 Guardian Angels Health Center	3/30/2011	Karen	X	X	X		Have been using manually; would like to establish electronic data exchange. Are interested in testing files. Use Practice Partner.		X	
56 Northwest Colorado Community Health Center	4/4/2011	Cinda	X	X		X	Currently send flat files; will want to attest to MU with eCW HL7 interface when available.		X	
57 Brighton Peds	4/6/2011	Karen		X		X	Have been entering data manually, going to EMR (eCW) this month. Would like to send electronic files. Discussed waiting list with her (Andrea) and forwarded message to Heather.		X	
58 HealthONE (hospitals)	4/8/2011	Heather	X				Would like for hospitals to attest to MU		X	
59 Family Medicine Clinic - Jefferson	4/11/2011	Rosemary	X	X		X	No use yet, will want to send via AllScripts		X	
60 Hampden Medical Group	4/19/2011	Karen	X	X			Site does not use; would like to send HL7 flat files. Use NextGen.		X	
61 Boulder Community Hospital Physician Clinics (all)	5/3/2011	Linda	X	X		X	EHR is Greenway-would like to interface electronically			
62 Rocky Mountain Pediatrics	5/4/2011	Rosemary	X	X	X		Would like to set up weekly extracts from their GE Centricity EHR		X	
63 Doctors for Children	5/9/2011	Linda	X	X		X	Practice Fusion EHR. Satellite to Evergreen and Conifer Pediatrics			
64 Kids First Pediatrics	5/10/2011	Linda	X	X		X	Currently completing manual data entry, would like to move to electronic. Centricity			
65 Daniel Jinich, MD, PC	5/11/2011	Melanie	X	X		X	Allscripts - site not currently participating			
66 Rocky Mountain Family Practice Longmont (303-772-6244)	5/16/2011	Rosemary					Martinez RN MS, District School Nurse Consultant, 303-772-7700 ext 7869, St Vrain Valley School District. Site has Practice Partners 9.5.2 and looking for interface.			
67 Flatiron Pediatrics	5/17/2011	Linda	X			X	Would like to join CIIS and send data as part of existing IPN data file to CIIS.			
68 Broomfield Pediatrics	5/19/2011	Rosemary	X	X		X	eCW			
							Currently completing manual data entry, would like			

Providers EHRs Sheet3

Ready 90%

# New and Improved Interface Waiting List



Interface Waiting List.xlsx - Microsoft Excel										
N172 X										
	A	B	C	D	E	F	J	K	L	M
1	Site Name	Office Type	County	CIIS Clinic Code (if applicable)	Date Added to List	Coordinator	Part of EHR Target List	EHR	EHR Product/Versio	Status
2	Health Matters	Family Practice	Adams	HTM	1/5/2011		X	GE Centricity		CAFP-funded extract through San EHR - GE Centricity
3	Family Care SW	Family Practice	Jefferson	FCW	1/5/2011	Linda	X	GE Centricity	GE Logician 7.1.510	CAFP-funded extract through San EHR - GE Centricity LOA and accompanying documents receive indicate site has eCW
4	Lone Tree Family Practice	Family Practice	Douglas	LTP	1/5/2011	Karen	X	AllScripts	Professional	CAFP-funded extract through San EHR - Allscripts
5	Mindy Miller	Family Practice	Montrose	MMM	1/5/2011		X	eClinicalWorks		CAFP-funded extract through San EHR - eClinicalWorks or QHN 9/2 direct interface, don't want to w QHN
6	Delta Family Physicians	Family Practice	Delta	DFP	1/19/2011	Cinda		Lytec	9.5.2 SP1	They are moving to Lytec as their
7	Exempla - hospitals, clinics later in 2011	Multiple	Multiple	EPN	1/24/2011	Heather	X	Epic		Creating EPIC HL7 interface; will in hospitals, Bruner FM, St. Mary's Hospital St. Mary's Hospital
8	Partners in Health Family Medicine	Family Practice	Adams	PHF	1/26/2011	Heather	X	NextGen		Part of iPN; should be able to be into existing iPN data file to CIIS need DV and training.

# Creating Guidance Documents



- Describe interface implementation phases
- Helps providers and EHR vendors know what to expect
- Standardizes interface process
- Outlines expectations for pre- and post-Go Live



# Interface Guidance Documents



## Immunization Registry Interface Implementation Process For Healthcare Providers

The Colorado Immunization Information System (CIIS) has the ability to accept immunization data directly from provider office Electronic Health Record (EHR) systems through one-way, HL7 (Health Level 7) batch file transfers. CIIS currently only accepts HL7 files formatted in version 2.3.1. This document outlines the various high-level phases of interface implementation. While the timeline of interface implementation may vary from one provider office to another, all providers will go through the phases described below in order to establish HL7 batch interfaces between their EHR and CIIS. \*NOTE: Not all of the steps below are "owned" by the provider; some steps will be completed by the EHR vendor and CIIS staff.

### Preparation Phase

The Preparation Phase can begin at any time.

1. [Contact CIIS](#) with interest in immunization registry interface and get on CIIS provider waitlist.
  - a. Supply EHR product name and version.
  - b. Indicate whether or not your provider office participates in the Centers for Medicare and Medicaid EHR Incentive Programs (Meaningful Use of certified EHR technology).
  - c. Complete CIIS legal paperwork (Letter of Agreement, Clinic Information Form, and Clinic Administrator Form), if not already completed.
2. Contact your EHR vendor to express your interest in an interface from their EHR product to CIIS and determine if any vendor fees apply.
3. Await contact from CIIS for implementation to begin.

### Implementation Phase

The Implementation Phase begins after the EHR vendor has tested its interface with CIIS and has successfully met CIIS file formatting requirements using test data. All provider offices will follow the steps described below.

1. Participate in project kick-off call.
  - a. Coordinate timing of interface installation with EHR vendor prior to production testing.
  - b. Designate a staff member within clinic to be main contact for CIIS data validation process.
  - c. Discuss project timeline, including ongoing meetings, communications, milestones and file frequency.
2. Test interface using fake patient data from provider's test environment.
  - a. EHR vendor successfully installs interface in provider's local environment(s) (*may not be applicable for all implementations*).
  - b. EHR vendor or provider generates HL7 test message and sends to CIIS for formatting review until deemed successful.
3. Establish secure FTP account for file transfers to CIIS.
  - a. Work with CIIS staff to establish secure FTP account (*CIIS provides FTP license free-of-charge; FTP account may be vendor-based or provider-based depending on who will actually send ongoing data files to CIIS*).
  - b. Test the FTP connection with CIIS staff (*testing may be performed by vendor or provider depending on FTP account*).
4. Test interface using real patient data from provider's production environment.
  - a. EHR vendor or provider generates HL7 test message using real patient data and sends to CIIS via secure FTP for CIIS review until deemed successful.
5. EHR vendor or provider generates file for data validation based on CIIS-specified parameters.
  - a. Provider pulls requested hardcopy patient records and submits them to CIIS for data validation.
  - b. CIIS staff performs review of submitted data and communicates any issues back to provider.
  - c. Provider works with CIIS staff to resolve issues.
  - d. Requirement is to achieve ≥95% accuracy rate.
6. Support interface Go Live.
  - a. Work with EHR vendor in selecting Go Live date and communicate scheduled date to CIIS staff.
  - b. CIIS verifies receipt of enhanced data file submitted to registry on Go Live date.
  - c. Provider staff participates in CIIS training, if not already completed.
  - d. Send ongoing data files to CIIS on mutually-agreed-upon frequency.



## Immunization Registry Interface Implementation Process For Electronic Health Record Vendors

The Colorado Immunization Information System (CIIS) has the ability to accept immunization data directly from provider office Electronic Health Record (EHR) systems through one-way, HL7 (Health Level 7) batch file transfers. CIIS currently only accepts HL7 files formatted in version 2.3.1. This document outlines the various high-level phases of interface implementation. While the timeline of interface implementation may vary from one provider office to another, all EHR vendors will go through the phases described below in order to establish HL7 batch interfaces between their Colorado clients and CIIS. \*NOTE: Not all of the steps below are "owned" by the EHR vendor; some steps will be completed by the provider office and CIIS staff.

### Preparation Phase

The Preparation Phase can begin at any time.

1. [Contact CIIS](#) with interest in testing interface and get on CIIS EHR vendor waitlist.
  - a. Supply EHR product name(s) and version(s) to be tested.
  - b. Supply list of Colorado clients.
  - c. Provide contact information for testing lead.
2. Review [CIIS HL7 Messaging Specifications Guide](#) and create test message.
3. Await contact from CIIS for implementation to begin.

### Testing Phase

The Testing Phase begins after CIIS contacts the EHR vendor testing lead. CIIS will not review test messages from EHR vendors prior to initiating this contact.

1. If not already completed during the Preparation Phase, generate HL7 test message(s) and send to CIIS for formatting review until deemed successful.
2. Work with CIIS staff to identify provider office(s) for interface implementation.

### Implementation Phase

The Implementation Phase begins after the EHR interface has successfully met CIIS file formatting requirements using test data. The EHR vendor will follow the steps described below for every provider interface.

1. Participate in project kick-off call.
  - a. Coordinate timing of interface installation with provider office prior to production testing.
  - b. Discuss project timeline, including ongoing meetings, communications, milestones and file frequency.
2. Test interface using fake patient data from provider's test environment.
  - a. Successfully install interface in provider's local environment(s) (*may not be applicable for all EHR vendors*).
  - b. EHR vendor or provider generates HL7 test message and sends to CIIS for formatting review until deemed successful.
3. Establish secure FTP account for file transfers to CIIS.
  - a. Work with CIIS staff to establish secure FTP account (*CIIS provides FTP license free-of-charge; FTP account may be vendor-based or provider-based depending on who will actually send ongoing data files to CIIS*).
  - b. Test the FTP connection with CIIS staff (*testing may be performed by vendor or provider depending on FTP account*).
4. Test interface using real patient data from provider's production environment.
  - a. EHR vendor or provider generates HL7 test message using real patient data and sends to CIIS via FTP for CIIS review until deemed successful.
5. EHR vendor or provider generates file for data validation based on CIIS-specified parameters.
  - a. CIIS staff performs review of submitted data and communicates any issues back to provider.
  - b. Provider works with CIIS staff to resolve issues.
  - c. Requirement is to achieve ≥95% accuracy rate.
6. Support interface Go Live.
  - a. Assist provider in selecting Go Live date and communicate scheduled Go Live date to CIIS staff.
  - b. CIIS verifies receipt of enhanced data file submitted to registry on Go Live date.
  - c. Provider staff participates in CIIS training, if not already completed.
  - d. If sending on behalf of provider, continue to send data files to CIIS on mutually-agreed-upon frequency.

# Identify “Problem” HL7 Segments





- PV1.20 – Financial Class
  - Used for communicating patient’s VFC eligibility
  - Required for individuals 0 through 18 years of age
- NK1 – Next of Kin
  - Used heavily in CIIS de-duplication processes
  - Required for individuals 0 through 18 years of age
- RXR – Body Site and Administration Route
  - Not strictly required, but nice to have
- RXA.9 – Administration Notes
  - Used to designate the Immunization Information Source (administered vs. historical dose)
  - Required for all services



# Cause and Effect



Interface Configuration Issue	Clinic Workflow Issue
 EHR template update EHR interface engine upgrade EHR version upgrade	 Additional EHR training for clinic Changes to existing workflow

All of the above can add months and sometimes additional costs onto an interface implementation project.

EARLY NOTIFICATION CAN HELP MITIGATE EFFECTS!



# Enhancing Clinical Data Quality Standards



## Old Process

Compare hardcopy patient records with staged electronic data file to evaluate completeness and accuracy

- CPT Validation Checklist

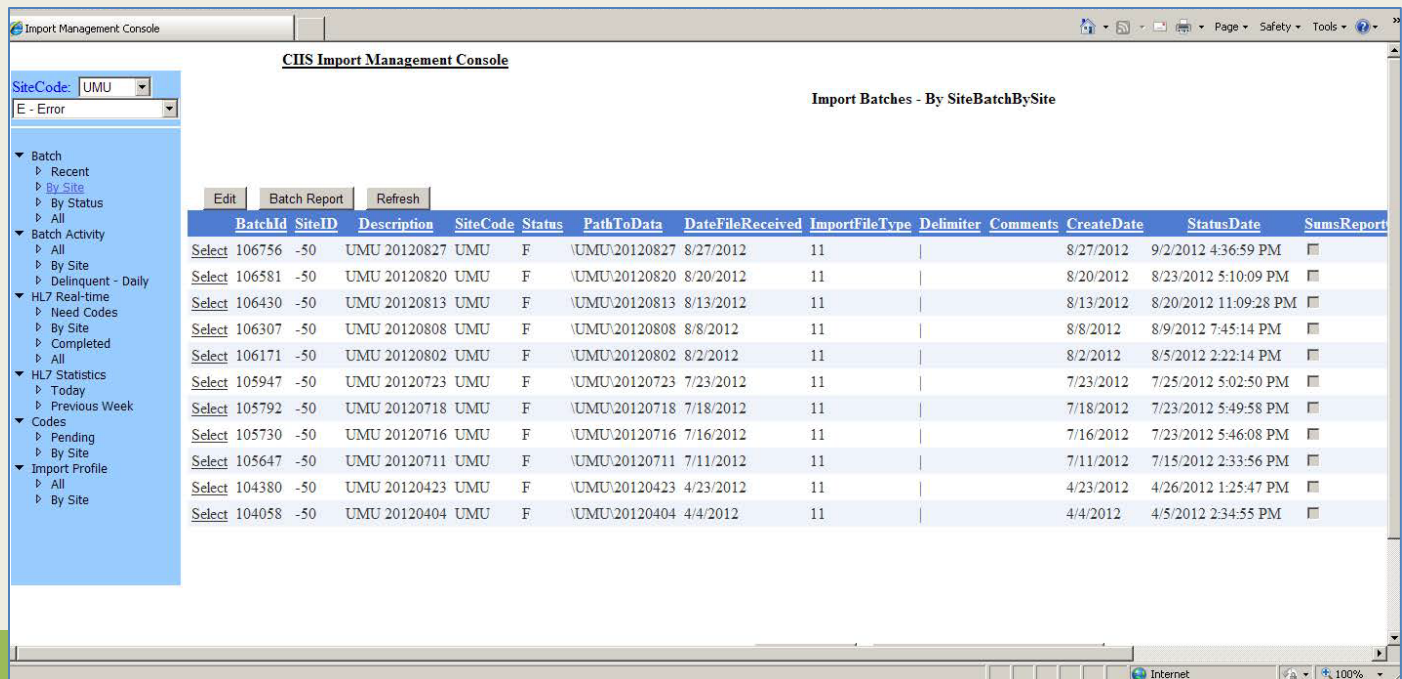
- ✦ Appropriately coded by age? (e.g., influenza, hepatitis A, etc.)
- ✦ Including deleted CPT codes for administered services in data file? (e.g., 90745 Hepatitis B adolescent/high risk infant deleted in 2000)



# Enhancing Clinical Data Quality Standards

## New Process

Enhanced data quality review to incorporate **12 additional data checks** as outlined in the 2008 AIRA MIROW Data Quality Assurance Best Practices Guide



The screenshot displays the 'CIIS Import Management Console' interface. On the left, a navigation pane lists various options including 'Batch', 'Batch Activity', 'HL7 Real-time', 'HL7 Statistics', 'Codes', and 'Import Profile'. The main area shows a table titled 'Import Batches - By SiteBatchBySite'. The table has columns for BatchId, SiteID, Description, SiteCode, Status, PathToData, DateFileReceived, ImportFileType, Delimiter, Comments, CreateDate, StatusDate, and SumsReport. The table contains 12 rows of data, each representing an import batch. Each row has a 'Select' link in the first column.

	BatchId	SiteID	Description	SiteCode	Status	PathToData	DateFileReceived	ImportFileType	Delimiter	Comments	CreateDate	StatusDate	SumsReport
Select	106756	-50	UMU 20120827	UMU	F	\\UMU\20120827	8/27/2012	11			8/27/2012	9/2/2012 4:36:59 PM	<input type="checkbox"/>
Select	106581	-50	UMU 20120820	UMU	F	\\UMU\20120820	8/20/2012	11			8/20/2012	8/23/2012 5:10:09 PM	<input type="checkbox"/>
Select	106430	-50	UMU 20120813	UMU	F	\\UMU\20120813	8/13/2012	11			8/13/2012	8/20/2012 11:09:28 PM	<input type="checkbox"/>
Select	106307	-50	UMU 20120808	UMU	F	\\UMU\20120808	8/8/2012	11			8/8/2012	8/9/2012 7:45:14 PM	<input type="checkbox"/>
Select	106171	-50	UMU 20120802	UMU	F	\\UMU\20120802	8/2/2012	11			8/2/2012	8/5/2012 2:22:14 PM	<input type="checkbox"/>
Select	105947	-50	UMU 20120723	UMU	F	\\UMU\20120723	7/23/2012	11			7/23/2012	7/25/2012 5:02:50 PM	<input type="checkbox"/>
Select	105792	-50	UMU 20120718	UMU	F	\\UMU\20120718	7/18/2012	11			7/18/2012	7/23/2012 5:49:58 PM	<input type="checkbox"/>
Select	105730	-50	UMU 20120716	UMU	F	\\UMU\20120716	7/16/2012	11			7/16/2012	7/23/2012 5:46:08 PM	<input type="checkbox"/>
Select	105647	-50	UMU 20120711	UMU	F	\\UMU\20120711	7/11/2012	11			7/11/2012	7/15/2012 2:33:56 PM	<input type="checkbox"/>
Select	104380	-50	UMU 20120423	UMU	F	\\UMU\20120423	4/23/2012	11			4/23/2012	4/26/2012 1:25:47 PM	<input type="checkbox"/>
Select	104058	-50	UMU 20120404	UMU	F	\\UMU\20120404	4/4/2012	11			4/4/2012	4/5/2012 2:34:55 PM	<input type="checkbox"/>





# 12 Additional Data Checks



AIRA MIROW Data Check	AIRA Criteria
Date of birth	After Shot Given Date
Measles, Mumps and Rubella (MMR)	Given before 361 days of age
Varicella	Given before 361 days of age
Pneumococcal conjugate (PCV7/13)	Given before 6 weeks of age
Haemophilus influenzae type B (Hib)	Given before 6 weeks of age
Td (adult)	Given prior to 7 years of age
DT, DTaP	Given after or at 7 years of age
Hib-containing vaccines	Given after or at 5 years of age
Pneumococcal polysaccharide (PPV23)	Given before 2 years of age
Pneumococcal conjugate (PC7/13)	Given after or at 5 years of age
All vaccines except Hepatitis B	Given before 6 weeks of age
Hib, PCV7/13 and DT/DTaP	More than 3 doses at 6 months of age

# Documentation of Data Quality Process



## Colorado Immunization Information System (CIIS) Data Validation Procedure for Electronic Data Files

### Document for Providers and Electronic Health Record Vendors – Precertification of Data

August 2012

**PURPOSE:** The purpose of this document is to provide a written procedure for CIIS staff, providers of adult and child immunization information and electronic health record (EHR) vendors. This process is implemented prior to accepting data from providers for inclusion into the CIIS registry. The data validation procedure addresses data reliability and validity by reviewing immunization information submitted electronically compared to the patient medical record information generated from the provider's EHR system. This procedure addresses reviewing the data for CPT coding and clinical accuracy and includes determining if immunizations were administered according to the Advisory Committee on Immunization Practices (ACIP) adult and pediatric immunization schedules.

#### PROCEDURES:

1. Provider or Electronic Health Record (EHR) vendors will submit test data files to CIIS's secure File Transfer Protocol (FTP) site;
2. CIIS Import Specialist will review the test file to determine if the format and required data fields are submitted correctly (this may require several iterations of the provider/EHR vendor submitting test files until accurate);
3. Once the test data file is accurate per CIIS specifications, provider/EHR vendor will submit a production data file to CIIS's FTP site (typically last six months of immunizations entered in the EHR system);
4. CIIS staff will conduct a comparison of at least 30 hard-copy clinic patient records with the production data file to verify accuracy;
5. If the production file has at least a 95% accuracy rate, the production file will be accepted and ongoing electronic imports can begin.

Details for the patient record and data import validation are:

#### PART I:

1. CIIS Staff will randomly select at least 30 patients from the import data file and securely send a list to the clinic contact designated by the provider. The list will include the patient's last name, first name, middle name and date of birth.
2. Patient records can be submitted to CIIS in a variety of formats including:
  - a. Faxed to 303-758-3640;
  - b. Encrypted e-mail to CIIS staff;
  - c. CIIS's secure FTP site;
  - d. Burned to a DVD and mailed; or
  - e. Printed hard copy and mailed via USPS.
3. At minimum, CIIS requires the following data fields be included on the patient record: patient's first name, patient's last name, gender, date of birth, mother's name (if patient is under 18 years old), immunization administration dates, vaccine names

ests a report comparable to what the clinic would use  
led information about current CPT codes the link is  
<https://isstandards.vaccines.aso7.net/cpt>  
rd will be compared to information in the import data  
o calculate an accuracy rate based on the number of  
tal number of reported data on the patient records.  
95% accuracy rate before ongoing import of data is

ges indicated by the first two columns. The first  
are no longer used by the Centers for Disease Control  
ond column shows the new CPT code and should be  
are sent to CIIS. The next two columns indicate the  
oding; vaccine discontinuation dates or  
n vaccine listed. Please note some of the vaccine  
l.  
the clinic contact to troubleshoot any discrepancies  
validation. This may include the CIIS public health  
he clinic contact to determine if vaccines have been  
ay need to be repeated) rather than incorrectly coded.  
for each CPT code in column one in Table 1. The  
% and represents the number of patients who did not  
age of service requirement (numerator) to the overall  
d the immunization (denominator).

irect ages?

7, 90658 – Are these coded appropriately for age

– Are these coded appropriately for age ranges?

ctual vaccine cannot be determined. Any  
future with specific CPT codes will overwrite  
v.

ly be given for those 18 and older

in 1999 – Is site using code for administered

o Typhoid prior to 1999

- 5 Cholera deleted in 2000
- 5 Rabies deleted in 1999
- 3 BCG deleted in 1999 (use 90585 BCG instead)
- 3 Hep B 2-dose Adolescent not given often – Is site coding for this?
- 5 Hep B adolescent/high risk infant dosage deleted 2000 – Is site coding for

ll be applied to ALL data imports. The old CPT codes will be considered a  
e of the correct CPT codes helps CIIS retain the most accurate client records

#### De Data Validation:

w CPT code	Date of Service	Age at Service	Old Description	New Description
648	>= 1/1/2002		HibOC-Hib Titer	Hib PRT-T ActHib
658	>= 1/1/2005		Influenza Whole Virus	Influenza >3yr
658		>= 50	Influenza Intranasal	Influenza >3yr
670	>= 6/1/2011		Prevmar-7	Prevmar-13
700	>= 1/1/1999		DTP	DTaP
713	>= 1/1/2002		OPV	IPV
721	>= 1/1/1999		DTP-Hib	DTaP-Hib
633		< 19		
632		>= 19		
746		>= 20		
744		< 20		
656		>= 3		
655		< 3		
658		>= 3		
657		< 3		

ving data edits are recommended by the American Immunization Registry  
on (AIRA) for the precertification process. Details can be found in [Data Quality  
e in Immunization Information Systems: Incoming Data, pages 62-63](#) located at  
[www.immregistries.org/pdf/AIRA\\_MROV\\_Chap3\\_DOA\\_02112008.pdf](http://www.immregistries.org/pdf/AIRA_MROV_Chap3_DOA_02112008.pdf)  
ort files will also be tested against these edits.

shows criteria based on AIRA quality assurance of immunization registry data.  
indicators for twelve best practices included in the data edit checks are listed

TERIA	CVX code	CPT code
ate		
days old	03	90707
days old	21	90716
eks old	133	90670
	100	90669
eks old	48	90648
	49	90647
s old	09	90718
	113	90714
ual to 7 yrs old;	28	90702
	106	90700
	20	90700
ual to 5 yrs old;	48	90648
	49	90647
	50	90721
	51	90748
	120	90698
old	33	90732
ual to 5 yrs old	133	90670
	100	90669
weeks of age	03	90707
	09	90718
ation is correct am needs to be	20	90700
	21	90716
	28	90702
	48	90648
	49	90647
	91	90714
	106	90700
	113	90714
	133	90670
at 6mos old	28	90702
	48	90648
	49	90647
	106	90700

# Questions?



Heather Shull, MA

Interface Coordinator

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303.692.2289