Centers for Disease Control and Prevention   **Dated: September 19, 2007**

Public Health Event Countermeasure Activity Aggregate Reporting

Data Exchange Specification

Revision History

Version	Revision Date	Revised By	Changes
1.0	09/14/2007	Cindy Vinion	Initial implementation. (Note: This document replaces the Pandemic Influenza Aggregate Vaccine Doses Administered Data Exchange document dated February 13, 2007)
1.1	09/19/2007	Cindy Vinion	Updated to reflect customer requirements.

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1 Introduction

1.1 Description

The Countermeasure Response Administration Countermeasure Administration Tracking (CRA CAT) system supports collecting countermeasure activities such as administrations or dispensing of drugs that occur under the auspices of a public health event. In order to support the needs of all Project Areas, the system is capable of collecting event/countermeasure data using three options:

- Option 1: Project areas would collect data using an existing system such as an Immunization Information System (IIS) and upload or message a data file to CDC's CRA CAT system.

- Option 2: Project areas collect administration data manually and enter aggregate counts for a provider directly into the CRA CAT system using a Web browser.

- Option 3: Project areas collect patient-level administration data and enter the data into CDC's CRA CAT system using a Web browser. CRA CAT uses the patient-level data to automatically create the aggregate counts.

Each Project Area may select one option for each Event/Countermeasure combination for which the CDC is requesting aggregate data.

1.2 Purpose

The purpose of this document is to provide detailed specifications for the format, composition, data definition, and vocabulary for submitting aggregate reports to the CRA CAT system in support of any event and any countermeasure using Option 1. This document provides detailed specifications and data definitions required for the Project Areas or partners to build data files for sending data to CRA CAT.

This document is designed to be used by any Public Health Project Area that has selected Aggregate Reporting (AR) Option 1 as their reporting option.

1.3 Terms and Definitions

Terms referenced throughout the document include:

- Public Health Event - An act or series of acts used to prepare for, counteract, or offset a possible (preparedness) or actual (response) agent release or disease outbreak

- Project Area - an area, generally geo-political, recognized by the CDC as participating in a Public Health Event. Generally, a project area is a state or metropolitan area. Within a Project Area, a governmental agency or corporation has public health oversight and/or management responsibilities; a territorial range of authority or control.

- Report - Aggregate counts for a single event, countermeasure, and timeframe. Identified in the data file by a unique combination of Partner, Event< Countermeasure Name, Start Date, and End Date.

2 Sending Files to CRA for Reporting of Aggregate Data

CDC's CRA CAT system will support both manual and automatic file transfer. Manual file transfer will use an upload user interface within CRA CAT; the automatic file transfer will use a PHINMS Receiver installed at the CDC. Once received by the CRA CAT system, the data file will be processed y the system to look for any errors in the file. If the file passes validation, the data will be loaded to the CRA CAT system and made available for further analysis.

2.1.1 Communication

The CRA system will provide notification of a successful transfer and load that will also notify the user of the availability of the data. The CRA system will also provide failure notification containing enough information for the sender to rectify the error and resend the file.

3   Data Exchange Format Requirements

3.1   Import File Description

The import file's data elements are described below. The Aggregate section of the import file will repeat for each report, identified by Event, Start Date, End Date, and Countermeasure Name, for which the partner jurisdiction is submitting aggregate counts. The Count section of the import file will be nested below the Aggregate section and will be present for each count category for each report.
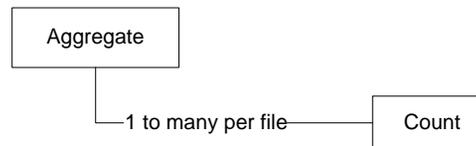
Figure 1 - Aggregate File Layout

3.2   Data Set

3.2.1 Aggregate Section Data Set

The data elements for the Aggregate section are listed in the table below. Any and all format, uniqueness, and valid value requirements must be followed and will be validated during upload and/or transformation to the CRA database.

#	Data Element Name	Description	Data type	Size	Format?	Unique?	Req'd?	Valid Values?	Notes
1	Partner	The Partner or Project Area abbreviation that sent the extract and to which the data contained in the extract belongs.	Alphanumeric	5			Yes	See Partner	Provides context to the upload file user. Validated data stored within the CRA system.
2	Event	Identifies the Public Health Event under which the aggregate information has been collected.	Alphanumeric	20			Yes	See Event	Provides context to the upload file user. Validated against data stored within the CRA system.
3	Start Date	Identifies the start date for the time period the vaccine counts begin.	Date	10	yyyy-mm-dd		Yes		Each Event/Countermeasure combination may have different reporting periods. For example, PIDAPRE supports daily reporting of vaccine counts while NPIP supports weekly reporting.

#	Data Element Name	Description	Data type	Size	Format?	Unique?	Req'd?	Valid Values?	Notes
4	End Date	Identifies the end date of time period the vaccine counts are administered.	Date	10	yyyy-mm-dd		Yes		Each Event/Countermeasure combination may have different reporting periods. For example, PIDAPRE supports daily reporting of vaccine counts while NPIP supports weekly reporting.
5	Countermeasure Name	Identifies the treatment (vaccine, substance, etc) to which the counts apply.	Alphanumeric	20			Yes	See Countermeasure	
6	Total Count	The total number of vaccines administered.	Integer				Yes		For example if the total number of vaccines is 45 then the reported number is 45. This count will be validated against a subtotal of the Category Codes; for example, all age group category codes will be subtotaled and matched against this total.

3.2.2 Counts Section Data Set

The data elements for the Count section are listed in the table below; any and all format, uniqueness, and valid value requirements must be followed and will be validated during upload and/or transformation to the CRA database. There may be one or more count section in the file.

#	Data Element Name	Description	Data type	Size	Format?	Unique?	Req'd?	Valid Values?	Notes
1	Category Code	Identifies the counts being collected.	Alphanumeric	20			Yes	See Count Category	
2	Number Treated	The total number of patients treated with the countermeasure in the partners' jurisdiction that correspond to the classification listed in section 4.1	Integer	10			Yes		

4 Valid Value Lists

4.1 Countermeasure

4.1.1 NPIP Countermeasure

Will contain applicable CVX codes - initial codes are listed below; additional codes will be accepted as they become available.

Value	Name	Notes
123	Influenza, 1203 influenza virus vaccine, H5N1, A/Vietnam/1203/200	
124	Influenza, 1203, w/adjuvant influenza virus vaccine, H5N1, A/Vietnam/1203/2004, w/adjuvant	
125	Influenza (TBD) Influenza virus vaccine	
126	Influenza (TBD) Influenza virus vaccine	
127	Influenza (TBD) Influenza virus vaccine	Primary code for IIS pandemic use
128	Influenza (TBD) Influenza virus vaccine	
129	Influenza (TBD) Influenza virus vaccine	

4.1.2 PIDAPRE Countermeasures

Value	Name	Notes
16	influenza virus vaccine, whole virus	
15	influenza virus vaccine, split virus (incl. purified surface antigen)	
111	influenza virus vaccine, live, attenuated, for intranasal use	

4.2 Count Category

NOTE: Either the Numeric Code or Value (Code) will be accepted in the data exchange file.

4.2.1 NPIP Count Category

Numeric Code	Value (Code)	Short Name	Valid Date Range	Description
256	AG1	6-23 m	08/2006-	Ages 6 through 23 Months
124	AG2	2-18 y	08/2006-	Ages 2 through 18 Years
369	AG3	19-49 y	08/2006-	Ages 19 through 49 Years
671	AG4	50-64 y	08/2006-	Ages 50 through 64 Years
851	AG5	65+y	08/2006-	Ages 65 years and above
721	DS1	1st	08/2006-	First Flu shot

Numeric Code	Value (Code)	Short Name	Valid Date Range	Description
365	DS2	2nd	08/2006-	Second Flu shot
243	DS3	unk	08/2006-	Flu shot - Unknown
221	RG1	1-A	08/2006-	1. Medical, public health, and health support services with direct patient contact or care. 2. Vaccine/antiviral manufacturers and others essential to manufacturing and critical support.
110	RG2	1-B	08/2006-	1. Persons 65+ years with 1 or more influenza high risk conditions, not including essential hypertension. 2. Persons 6 months to 64 years with 2 or more influenza high risk conditions, not including essential hypertension. 3. Persons 6 months or older with
190	RG3	1-C	08/2006-	1. Household contacts of severely immunocompromised persons who would not be vaccinated due to likely poor response to vaccine. 2. Household contacts of children <6 months. 3. Pregnant women
632	RG4	1-D	08/2006-	1. Public health emergency response workers critical to pandemic response (1/3 of public health workforce). 2. Key government leaders.
430	RG5	2-A	08/2006-	1. Healthy 65 years and older. 2. 6-month through 64 years with 1 influenza high-risk condition. 3. 6-23 months and healthy.
102	RG6	2-B	08/2006-	1. Other public health emergency responders (remaining 2/3s of public health force). 2. Public safety workers (including fire, police, 911, and jail). 3. Utility workers essential for power, water, sewage system functioning. 4. Transportation workers (fuel
333	RG7	3 and 4	08/2006-	1. Key government health decision makers. 2. Funeral directors/embalmers. 3. Healthy persons 2-64 years not included in any of the above conditions.

4.2.2 PIDAPRE Count Category

Numeric Code	Value (Code)	Short Name	Valid Date Range	Description
256	AG1	6-23 m	11/01/2007-12/31/2007	Ages 6 through 23 Months
124	AG2	2-18 y	11/01/2007-12/31/2007	Ages 2 through 18 Years
369	AG3	19-49 y	11/01/2007-12/31/2007	Ages 19 through 49 Years
671	AG4	50-64 y	11/01/2007-12/31/2007	Ages 50 through 64 Years
851	AG5	65+y	11/01/2007-12/31/2007	Ages 65 years and above

4.3 Event

Value	Name	Notes
PIDAPRE	Pandemic Influenza Doses Administered Pilot Reporting Event	
NPIP	National Pandemic Influenza Preparedness Program	

4.4 Partner

Value	Description	Value	Description
AK	Alaska	MO	Missouri
AL	Alabama	MP	Northern Mariana Islands
AR	Arkansas	MS	Mississippi
AS	American Samoa	MT	Montana
AZ	Arizona	NC	North Carolina
CA	California	ND	North Dakota
CHI	Chicago	NE	Nebraska
CO	Colorado	NH	New Hampshire
CT	Connecticut	NJ	New Jersey
DC	District of Columbia	NM	New Mexico
DE	Delaware	NV	Nevada
FL	Florida	NY	New York
FM	Micronesia	NYC	New York City
GA	Georgia	OH	Ohio
GU	Guam	OK	Oklahoma
HI	Hawaii	OR	Oregon
IA	Iowa	PA	Pennsylvania
ID	Idaho	PR	Puerto Rico
IL	Illinois	PW	Palau
IN	Indiana	RI	Rhode Island
KS	Kansas	SC	South Carolina
KY	Kentucky	SD	South Dakota
LA	Louisiana	TN	Tennessee
LOS	Los Angeles	TX	Texas
MA	Massachusetts	UT	Utah
MD	Maryland	VA	Virginia
ME	Maine	VI	Virgin Islands
MH	Marshall Islands	VT	Vermont
MI	Michigan	WA	Washington
MN	Minnesota	WI	Wisconsin

Value	Description		Value	Description
WV	West Virginia		WY	Wyoming

5   File Encoding

The aggregate data exchange for transmitting data to CRA CAT system supports the following three file formats:

- ORU R01 version 2.5 HL7 Message following the PHIN Messaging Standard Aggregate Reporting Message Implementation Guide. See appendix a1 for the HL7 version.

- Pipe-delimited. See appendix a2 for the pipe-delimited file version.

- XML encoding. See appendix a3 for the XML version.

6 Event/Countermeasure Specific Information

6.1 Relevant Notes on Reporting Aggregate Data for Pandemic Influenza Doses Administered Pilot Reporting Event

- The Daily reports (start and end dates equal).

- Aggregate counts for 2 days are expected during the PIDAPRE test period, November 1, 2007 through December 31, 2007.

- Each partner jurisdiction sending data to the CRA CAT system is assumed to be submitting one set of counts for each reporting period.

- For each reporting period, defined as one day (start date equal to end date), report all information for that time frame. If new information comes in for that reporting period, use a full replace of the data already submitted along with the new data.

- These guidelines only include information pertinent to public health at the federal level. Jurisdictions using immunization information or other automated applications to collect individual level data are expected to capture much more detail about the encounter. These will include clinical information on the shot and may include data for jurisdictional analysis and tracking purposes.

Age Group Business Rule:

- The screening phase should ensure that age has been correctly determined. If it is determined after vaccination that a child was less than 6 months of age he/she should be counted in the 6-23 month age group for purposes of the minimum data set to be aggregated and exchanged with CDC-CRA.

Doses Administered to Patients Who Live in Partner Jurisdiction Different From Where They Receive a Vaccine:

- If a patient receives a vaccine dose in a jurisdiction different from the jurisdiction where they reside, the system should aggregate and report to CDC-CRA the dose based on where the vaccine was administered. Subsequently the system may report the vaccination to the partner jurisdiction where the patient resides for future tracking purposes.

6.2 Relevant Notes on Reporting Aggregate Data for National Pandemic Influenza Preparedness/Avian Flu Vaccine

- The Event name (National Pandemic Influenza Preparedness) and Countermeasure name have not been finalized; however, the countermeasure name will be the CVX code.

- Due to the anticipated size and scope of vaccine administration activities in support of the Pandemic Influenza event, each partner jurisdiction uploading data to the CRA CAT system is assumed to be submitting one set of counts for each

reporting period. This will allow for complete reporting of the partner's administration data while keeping the size of the CRA CAT system manageable.

- Reporting updates: For each reporting period - defined as Sunday to Saturday (see start date/end date), report all information for that time frame. If new information comes in for that reporting period, use a full replace of the data already submitted along with the new data.

- These guidelines only include information pertinent to public health at the federal level. Jurisdictions using immunization information or other automated applications to collect individual level data will likely capture much more detail about the encounter. These may include clinical information on the shot as well as data for jurisdictional analysis and tracking purposes.

- Screening in this situation is extremely important. Every effort should be taken to ensure the proper procedures are followed and vaccines are administered to persons meeting appropriate priority, age, and time between dose groupings.

Invalid Dose Business Rule:

- Every effort should be made to avoid administering invalid doses. Doses are deemed invalid if the second dose is administered before the minimum time interval between dose one and dose two has passed. All invalid doses should be counted as a second dose for the purposes of the minimum data set to be aggregated and exchanged with CRA CAT.

- Partial doses are expected to occur very infrequently. Regardless of whether one chose to repeat the dose or not, all partial doses are to be considered as one dose for the purposes of the minimum data set to be aggregated and exchanged with CRA CAT.

Age Group Business Rule:

- The screening phase should ensure that age has been correctly determined. If it is determined after vaccination that a child was less than 6 months of age he/she should be counted in the 6-23 month age group for purposes of the minimum data set to be aggregated and exchanged with CRA CAT.

Doses Administered to Patients Who Live in Partner Jurisdiction Different From Where They Receive a Vaccine:

- If a patient receives a pandemic influenza vaccine dose in a jurisdiction different from the jurisdiction where they reside, the system should aggregate and report to CRA CAT the dose based on where the vaccine was administered. Subsequently the system may report the vaccination to the partner jurisdiction where the patient resides for future tracking purposes.

Appendix A1 Health Level 7 Reporting Format

The purpose of this appendix is to describe the transmission formats for the use of the Health Level 7 reporting formats for sending aggregate data to the CRA CAT system.

Aggregate Section Mapping to HL7 Message

#	Data Element Name	HL7 Message Segment & Field	HL7 Message Field Name	Notes
1	Partner	MSH.4	Sending Facility	
2	Event	CTI.1	Sponsor Study ID	
3	Start Date	OBR.7	Observation Date/Time	
4	End Date	OBR.8	Observation End Date/Time	
5	Countermeasure Name	OBR.4	Universal Service Identifier	
6	Total Count	OBX.5	Observation Value	OBX.3 = "TOTAL" (see example)

Counts Section Mapping to HL7 Message

#	Data Element Name	HL7 Message Segment & Field	HL7 Message Field Name	Notes
1	Category Code	OBX.3	Observation Identifier	
2	Number Treated	OBX.5	Observation Value	

Example - single report of Pandemic Influenza Doses Administered Pilot Reporting Event aggregate counts:

MSH|^~\&||GA^2.16.840.1.114222.4.3.2^ISO||CDC^2.16.840.1.114222.4.3.2^ISO|20061008||ORU^R01^ORU_R01|200610080045|P|2.5|||||||||^PHIN^2.16.840.1.114222.4^ISO<CR>

OBR|1|||16^influenza virus vaccine, whole virus^2.16.840.1.114222.4.3.2|||20061001|20061007<CR>

OBX|1|NM|TOTAL^Total Administrations^2.16.840.1.114222.4.3.2||150|||||F<CR>

OBX|2|NM|256^6-23 m^2.16.840.1.114222.4.3.2||10|||||F<CR>

OBX|3|NM|124^2-18 y^2.16.840.1.114222.4.3.2||15|||||F<CR>

OBX|4|NM|369^19-49y^2.16.840.1.114222.4.3.2||50|||||F<CR>

OBX|5|NM|671^50-64 y^2.16.840.1.114222.4.3.2||25|||||F<CR>

OBX|6|NM|851^65+ y^2.16.840.1.114222.4.3.2||50|||||F<CR>

CTI|PIDAPRE^2.16.840.1.114222.4.3.2^ISO<CR>

Requirements to message:

- The Sending Facility (MSH 4) needs to have an Object Identifier (OID) and to have the OID registered with the CDC PHIN OID Registry

- OIDs for the receiving application (CRA CAT) and the receiving facility (CDC) will be provided. These values are needed for MSH 5 and MSH 6

- An OID for the Event (CTI 1) will be provided

Contact the PHIN Help Desk (PHINTech@cdc.gov) for messaging assistance

Appendix A2 Flat File Reporting Formats

The purpose of this appendix A2 is to describe the transmission formats for the use of ASCII flat file reporting formats for sending aggregate data to the CRA CAT system.

In general it follows a pipe-delimited format with an identifier to identify variables.

Each row corresponds to the counts for a reporting period for a partner site, event, and countermeasure name.

Syntax description

Partner site|event name|Start date|End date|countermeasure name||total number treated|category code 1^##|category code 2^##|category code 3^##|category code 4^##|category code^##|

Examples:

Single Report of Pandemic Influenza Doses Administered Pilot Reporting Event aggregate counts using the "Value (Code)" as identifiers for the Count Category:

GA|PIDAPRE|11/10/2007|11/10/2007|15|150|AG1^10|AG2^15|AG3^50|AG4^25|AG5^50<cr>

Single Report of Pandemic Influenza Doses Administered Pilot Reporting Event aggregate counts using the "Numeric Code" as identifiers for the Count Category:

GA|PIDAPRE|11/10/2007|11/10/2007|16|150|256^10|124^15|369^50|671^25|851^50<cr>

Appendix A3 XML File Reporting Format

The purpose of this appendix is to describe the transmission formats for the use of XML reporting formats for sending aggregate reporting data to the CRA CAT system.

```xml
<?xml version="1.0" encoding="UTF-8" ?>
<upload>
<aggregate sending="AL" event="PIDAPRE" start_date="2007-11-15" end_date="2007-11-15"
    countermeasure_name="15" total_count="180"/>
<count category_code="AG1" number_treated="20" />
<count category_code="AG2" number_treated="20" />
<count category_code="AG3" number_treated="50" />
<count category_code="AG4" number_treated="40" />
<count category_code="AG5" number_treated="50" />
</aggregate>
</upload>
```

Figure 2 - XML Example - Single Report for Pandemic Influenza Doses Administered Pilot Reporting Event