**Centers for Disease Control and Prevention**          **Dated: February 13, 2007**

# Pandemic Influenza Aggregate Vaccine Doses Data Exchange Requirements

# Revision History

| Version | Revision Date | Revised By | Changes |
|---|---|---|---|
| 1.0 | 05/09/2006 | Cindy Vinion | Initial implementation |
| 1.1 | 05/16/2006 | Cindy Vinion | Updated section 1 and 2 text |
| 1.2 | 06/08/2006 | Cindy Vinion | Eliminated the Organization section; added other updates |
| 1.3 | 06/14/2006 | Cindy Vinion | Updated to support ease of importing into CRA online |
| 1.4 | 06/28/2006 | Cindy Vinion | Updated to latest design of input file |
| 1.5 | 07/10/2006 | Cindy Vinion | Updated to reflect requirements gathering from NIP |
| Edits to 1.5 | 08/14/2006 | Warren Williams/Ed Brink | Updated based on call with stakeholders |
| Edits to 1.5 | 08/23/2006 | Warren Williams/Ed Brink | Updated based on call with stakeholders |
| Edits to 1.5 | 08/29/2006 | Warren Williams | Updated based on discussion and call with stakeholders |
| 1.9 | 09/12/2006 | Cindy Vinion | Updated table format |
| 1.9a | 09/13/2006 | Warren Williams | Added CVX codes |
| 1.9b | 10/25/2006 | Warren Williams | Added CV examples of transmission layouts |
| 2.0 | 01/18/2007 | Warren Williams/Cindy Vinion | Updated to include HL7 mapping and enhanced examples |
| 2.1 | 02/05/2007 | Cindy Vinion | Updated MSH segment of the HL7 example |
| 2.2 | 02/06/07 | Jeanne Tropper | Minor edits to fix typos and grammar; improve clarity |

# Table of Contents

# 1    Introduction

## 1.1    Purpose

The purpose of this document is to provide detailed specifications for the format, composition, data definition, business rules, and process for submitting aggregate reports on vaccinations used during a Pandemic Influenza Public Health Event to the Centers for Disease Control and Prevention (CDC) Countermeasure and Response Administration (CRA) system.  This document provides detailed specifications and data definitions required for the upload to be successful.

This document is designed to be used by any Public Health partner that:

1.  Is certified to use their own information technology system to collect aggregate data about the administration of vaccine during a Pandemic Flu Public Health Event and

2.  Will submit that electronic data file to CRA for reporting purposes

Terms referenced throughout the document include:

1.  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

2.  Product - A manufactured substance, generally a pharmaceutical

3.  CVX codes –Standardized vaccine codes promulgated by HL7 to support interoperability and data exchange

## 2    Description

### 2.1    Sending Files to CRA for Reporting of Aggregate Data on Pandemic Influenza Doses

CDC will provide an Upload Utility user interface as part of CDC's Countermeasure and Response Administration System (CRA). This will facilitate the upload of import files for any Public Health Partner administering or dispensing countermeasures for a Public Health Event. Each partner must be certified to use their own information technology system to collect data and to send a data file containing the collected data to CRA for reporting purposes.  CRA resides on the CDC's Secure Data Network (SDN), which is only accessible from a computer that has the appropriate security certificate.  Access to the Import Utility will require accessing the CRA application through the CDC's SDN; in addition, the Upload Utility will only be accessible by those users with the appropriate user role designation.  The user-selected partner jurisdiction, organization, event, and countermeasure must match the corresponding fields in the upload file in order for the upload to be successful.  In other words, the security structure of the SDN, CRA, and the Import Utility is a 3-level security structure; the Import Utility is only accessible by a user accessing CRA from a computer with a valid SDN digital certificate, access to the CRA application, and the appropriate CRA user role designation with appropriate selections.

To upload the file, the user accesses the CRA system, navigates to the Aggregate module, selects the required fields, and selects the "Upload Aggregate Report" control.  The user then finds the upload file and selects the file to upload.  (See the CRA OnLine Help Link for more specific information.)  The CRA system will validate, parse, and load the file.  Since the upload utility has been implemented within the Aggregate module of the CRA on-line system, each import file can only contain data for one and only one partner/organization/event/countermeasure combination.

### 2.2    File Validation and Upload

Validation and upload of the import file is a 3-step process.  The first step verifies that the user-selected fields in the CRA application match the corresponding fields in the upload.  The second step validates the file format and performs some of the field validation. Finally, the third step validates that the imported data loads into the CRA database correctly.

### 2.3    Communication

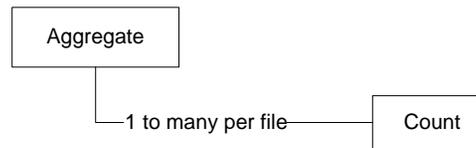The CRA system will notify the user if the user-selected options do not match the information in the import file, if the fields in the file do not contain an expected value or if the file does not contain the correct format.  In addition, upon successful load of a file, the CRA system will provide notification of a successful transfer and load and will notify the user of the availability of the data.

## 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 reporting period (start date and end date) 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 Pandemic Influenza vaccine (countermeasure) used within the partner jurisdiction

```
┌─────────────┐
│  Aggregate  │
└─────────────┘
       │
       └──1 to many per file──┌─────────┐
                              │  Count  │
                              └─────────┘
```

**Figure 1 - Aggregate File Layout**

### 3.2    Data Set

The data set, detailed below, defines the sections and the fields within each section that must be included in every upload file.  This layout supports uploading data for collecting aggregate count information about vaccines administered to counteract Pandemic Influenza.

### 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 abbreviation that sent the extract and to which the data contained in the extract belongs. | Alphanumeric | 80 | | | Yes | See Sender | Provides context to the upload file user.  Validated against selections made within the CRA system. Max of 60(states, DC, LA, CHI, NYC, PR+ territories) |

| # | Data Element Name | Description | Data type | Size | Format? | Unique? | Req'd? | Valid Values? | Notes |
|---|---|---|---|---|---|---|---|---|---|
| 2 | Event | Identifies the Public Health Event under which the aggregate information has been collected. For pandemic flu reporting this field will always be NPIP. For other events it will have other names. See table 4.3 | Alphanumeric | 40 | | | Yes | See Event | Provides context to the upload file user. Validated against selections made within the CRA system. |
| 3 | Start Date | Identifies the start date (it will always be a Sunday) for the week the vaccine counts begin. This is the beginning period of when the first dose of a vaccine was administered in a partner jurisdiction | Date | 10 | yyyy-mm-dd | | Yes | | The expected time frame of reporting will be one week. Sunday through Saturday. If administration of vaccine starts mid week, the reporting period will still begin on the preceding Sunday and continue through the next Saturday. For example if the vaccine administration for pan flu is initiated on August 16, 2006. The start date field will be August 13, 2006. The end date field will be Saturday August 19, 2006. Subsequent weeks will start from the next Sunday after the first vaccine was administered. |
| 4 | End Date | Identifies the end date (it will always be a Saturday) for the week the vaccine counts are administered. This is the ending period for the doses administered during that week in a partners jurisdiction | Date | 10 | yyyy-mm-dd | | Yes | | See above for start and end date notes. This end date will always be a Saturday. |

| # | Data Element Name | Description | Data type | Size | Format? | Unique? | Req'd? | Valid Values? | Notes |
|---|---|---|---|---|---|---|---|---|---|
| 5 | Countermeasure Name | Identifies the treatment (vaccine, substance, etc) to which the counts apply. For pandemic flu reporting this field will always be a CVX code. | Numeric | | | | Yes | See Countermeasure section 4.2 | Note: For immunization registries etc, will be reporting a vaccine type code (a CVX code) See http://www.cdc.gov/nip/registry/st_terr/tech/stds/hl7-cvx.htm for the most up to date list. For testing purposes use xyz |
| 6 | Total Count | The total number of vaccines administered. | Integer | | | Yes | 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 count categories; for example, all age group categories 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 sections 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 | Minimum size is 3; the maximum size of 20 is provided for implementation purposes. |
| 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 Count Category

Count category may change for each event and countermeasure combination. The event and countermeasure information for pandemic influenza reporting is used to group the categories in the table below.

| Code | Label | Short Name | Valid Date Range | Description | Business rule notes |
|---|---|---|---|---|---|
| AGE groups | | | | | All age responses should sum to the total number of vaccines which also corresponds to number reported in the total count field. See Section 6.1 below for additional information on age groups. |
| 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 | |
| Dose number category | | | | | All dose categories should sum to the total number of vaccines which also corresponds to number reported in the total count field. See Section 6.1 below for additional information on valid doses. |
| 721 | DS1 | 1st | 08/2006- | First Flu shot | |
| 365 | DS2 | 2nd | 08/2006- | Second Flu shot | |
| 243 | DS3 | unk | 08/2006- | Flu shot – Unknown, Other (i.e. a dose was given but it's unknown if it was the first or second dose, or if it was another dose such as the 3rd dose.) | |

| Code | Label | Short Name | Valid Date Range | Description | Business rule notes |
|---|---|---|---|---|---|
| **Risk group category** | | | | | All risk group categories should sum to the total number of vaccines which also corresponds to number reported in the total count field. If a vaccinated person corresponds to more than one priority group then he/she should be counted in the higher ranking group. (for example if someone belongs to a risk group 5 and risk group 1 then they are counted in risk group 1.) |
| 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 through 64 years with 2 or more influenza high risk conditions, not including essential hypertension. 3. Persons 6 months or older with history of hospitalization for pneumonia or influenza or other influenza high risk condition in the past year. | |
| 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. | |

| Code | Label | Short Name | Valid Date Range | Description | Business rule notes |
|---|---|---|---|---|---|
| 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, water, food, and medical supplies and ground public transportation). 5. Telecommunications/IT for essential network operation and maintenance | |
| 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   Countermeasure

(Pandemic Influenza vaccine reporting codes CVX table has complete list of other vaccines.)

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/adjuvantinfluenza 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 | |

## 4.3   Event

| Value | Name | Notes |
|---|---|---|
| NPIP | National Pandemic Influenza Preparedness | |

## 4.4  Partner

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

## 5 File Encoding

The aggregate data exchange for transmitting data to CDC's CRA 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 Note: The schema (xsd) file is available.

## 6 Event/Countermeasure Specific Information

### 6.1 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 online 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 system manageable for the event.

- Reporting updates: For each reporting period - defined as Saturday to Sunday (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 CDC-CRA.

- 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 CDC-CRA

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 pandemic influenza 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.

**Appendix A1 The Health Level 7 Reporting Formats**

The purpose of this appendix is to describe the transmission formats for the use of the Health Level 7 reporting formats for sending aggregate Pandemic flu reporting data to the CDC-CRA system. The example below contains data for 2 reporting periods; each reporting period begins with the OBR segment.

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 - multiple reports:

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|||127^Influenza (TBD) Influenza virus vaccine^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^AG1^2.16.840.1.114222.4.3.2||10|||||F<CR>

OBX|3|NM|124^AG2^2.16.840.1.114222.4.3.2||15|||||F<CR>

OBX|4|NM|369^AG3^2.16.840.1.114222.4.3.2||50|||||F<CR>

OBX|5|NM|671^AG4^2.16.840.1.114222.4.3.2||25|||||F<CR>

OBX|6|NM|851^AG5^2.16.840.1.114222.4.3.2||50|||||F<CR>

OBX|7|NM|721^DS1^2.16.840.1.114222.4.3.2||100|||||F<CR>

OBX|8|NM|365^DS2^2.16.840.1.114222.4.3.2||25|||||F<CR>

OBX|9|NM|243^DS3^2.16.840.1.114222.4.3.2||25|||||F<CR>

OBX|10|NM|221^RG1^2.16.840.1.114222.4.3.2||75|||||F<CR>

OBX|11|NM|110^RG2^2.16.840.1.114222.4.3.2||20|||||F<CR>

OBX|12|NM|190^RG3^2.16.840.1.114222.4.3.2||25|||||F<CR>

OBX|13|NM|632^RG4^2.16.840.1.114222.4.3.2||5|||||F<CR>

OBX|14|NM|430^RG5^2.16.840.1.114222.4.3.2||10|||||F<CR>

OBX|15|NM|102^RG6^2.16.840.1.114222.4.3.2||5|||||F<CR>

OBX|16|NM|333^RG7^2.16.840.1.114222.4.3.2||10|||||F<CR>

CTI|NPIP^2.16.840.1.114222.4.3.2^ISO<CR>

OBR|1|||127^Influenza (TBD) Influenza virus vaccine^2.16.840.1.114222.4.3.2|||20060924|20060930<CR>

OBX|1|NM|TOTAL^Total Administrations^2.16.840.1.114222.4.3.2||100|||||F<CR>

OBX|2|NM|256^AG1^2.16.840.1.114222.4.3.2||10|||||F<CR>

OBX|3|NM|124^AG2^2.16.840.1.114222.4.3.2||15|||||F<CR>

OBX|5|NM|671^AG4^2.16.840.1.114222.4.3.2||25|||||F<CR>

OBX|6|NM|851^AG5^2.16.840.1.114222.4.3.2||50|||||F<CR>

OBX|7|NM|721^DS1^2.16.840.1.114222.4.3.2||100|||||F<CR>

OBX|8|NM|365^DS2^2.16.840.1.114222.4.3.2||0|||||F<CR>

OBX|9|NM|243^DS3^2.16.840.1.114222.4.3.2||0|||||F<CR>

OBX|10|NM|221^RG1^2.16.840.1.114222.4.3.2||75|||||F<CR>

OBX|12|NM|190^RG3^2.16.840.1.114222.4.3.2||25|||||F<CR>

CTI|NPIP^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) 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 The 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 Pandemic flu reporting data to the CDC-CRA system.

In general it follows a pipe-delimited format with number id to identify variables.

Each row corresponds to the counts for a reporting period for a partner site and CVX code.

Syntax description

Partner site|event name-always NPIP|Start date|End date|CVX code||total number treated|agegroup1 code^##|agegroup 2 code^##| agegroup3 code^##| agegroup4 code^##|agegroup5 code^##|Dose number1 code^##|Dose number2 code^##|Dose number3 code^##|risk group code1^##| risk group code2^##| risk group code3^##| risk group code4^##| risk group code5^##| risk group code6^##| risk group code7^##|

Example - Single Report:

GA|NPIP|10/1/2006|10/7/2006|127|150|256^10|124^15|369^50|671^25|851^50|721^100|365^25|243^25|221^75|110^20|190^25|632^5|430^10|102^5|333^10<cr>


Example - Multiple Report:

GA|NPIP|10/1/2006|10/7/2006|127|150|256^10|124^15|369^50|671^25|851^50|721^100|365^25|243^25|221^75|110^20|190^25|632^5|430^10|102^5|333^10<cr>

GA|NPIP|10/1/2006|10/7/2006|127|150|256^10|124^15|369^50|671^25|851^50|721^100|365^25|243^25|221^75|110^20|190^25|632^5|430^10|102^5|333^10<cr>

## Appendix A3 The XML File Reporting Guidelines

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

```xml
<?xml version="1.0" encoding="UTF-8" ?>
<upload>
<aggregate sending="AL"  event="NPIP" start_date="2006-05-27" end_date="2006-06-02"
   countermeasure_name="XYZ" 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" />
<count category_code="RG1" number_treated="50" />
<count category_code="RG2" number_treated="20" />
<count category_code="RG3" number_treated="10" />
<count category_code="RG4" number_treated="20" />
<count category_code="RG5" number_treated="20" />
<count category_code="RG6" number_treated="40" />
<count category_code="RG7" number_treated="20" />
<count category_code="DS1" number_treated="40" />
<count category_code="DS2" number_treated="40" />
<count category_code="DS3" number_treated="100" />
</aggregate>
</upload>
```

**Figure 2 - XML Example - Single Report**

```xml
<?xml version="1.0" encoding="UTF-8" ?>
<upload>
<aggregate sending="AL"  event="NPIP" start_date="2006-05-27" end_date="2006-06-02"
    countermeasure_name="XYZ" 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" />
<count category_code="RG1" number_treated="50" />
<count category_code="RG2" number_treated="20" />
<count category_code="RG3" number_treated="10" />
<count category_code="RG4" number_treated="20" />
<count category_code="RG5" number_treated="20" />
<count category_code="RG6" number_treated="40" />
<count category_code="RG7" number_treated="20" />
<count category_code="DS1" number_treated="40" />
<count category_code="DS2" number_treated="40" />
<count category_code="DS3" number_treated="100" />
</aggregate>
<aggregate sending="AL"  event="NPIP" start_date="2006-06-03" end_date="2006-06-09"
    countermeasure_name="XYZ" total_count="180"/>
<count category_code="AG2" number_treated="20" />
<count category_code="AG3" number_treated="70" />
<count category_code="RG1" number_treated="50" />
<count category_code="RG5" number_treated="40" />
<count category_code="DS1" number_treated="40" />
<count category_code="DS2" number_treated="50" />
</aggregate>
</upload>
```

**Figure 3 - XML Example - Multiple Reports**