Influenza Surveillance Activities - NREVSS

NREVSS Overview

NREVSS is a CDC-maintained online reporting system for select respiratory and enteric viruses including influenza, parainfluenza, respiratory syncytial virus (RSV), rhinovirus, enterovirus, adenovirus, coronavirus, human metapneumovirus and rotavirus. NREVSS reporters are hospital or public health laboratories that voluntarily enter aggregated weekly laboratory testing results into the online reporting system. Laboratories report the number of tests performed and the number of tests positive—by type or subtype, if applicable—as well as the type of testing performed (i.e., antigen detection testing, viral isolation or PCR). Laboratories may choose to report data on any or all viruses for which the system captures information. The deadline for reporting the previous week's data is each Tuesday by noon. An example of the online reporting form is included below.


Every Tuesday afternoon, the DSHS EAIDB ILINet Coordinator downloads the Texas data spreadsheet from the system and forwards it to a distribution list of regional influenza coordinators and other interested public health entities. Health departments that wish to be added

to this distribution list should send an email to flutexas@dshs.texas.gov with the name and organization of a contact person and the email address to which the file should be sent.

NREVSS data are monitored to determine when and where respiratory and enteric viruses are circulating. The types and subtypes of influenza detected throughout the state can also be monitored when laboratories that have those testing capabilities enter their data in NREVSS. The data from the NREVSS system are included in the Texas Weekly Flu Report, incorporated in the determination of Texas' weekly influenza activity code report to CDC and used to monitor the influenza viruses seen across Texas throughout the year. Data from other NREVSS viruses are monitored and reported as necessary. Additionally, an RSV report is compiled each week during RSV season using NREVSS data and posted to the DSHS website at https://www.dshs.texas.gov/IDCU/disease/rsv/Data.doc. An example of a NREVSS data graph for influenza viruses for the 2008-2009 season is shown below.

Influenza Types and Subtypes Reported by NREVSS Laboratories in Texas, 2008–09 (Extended) Season
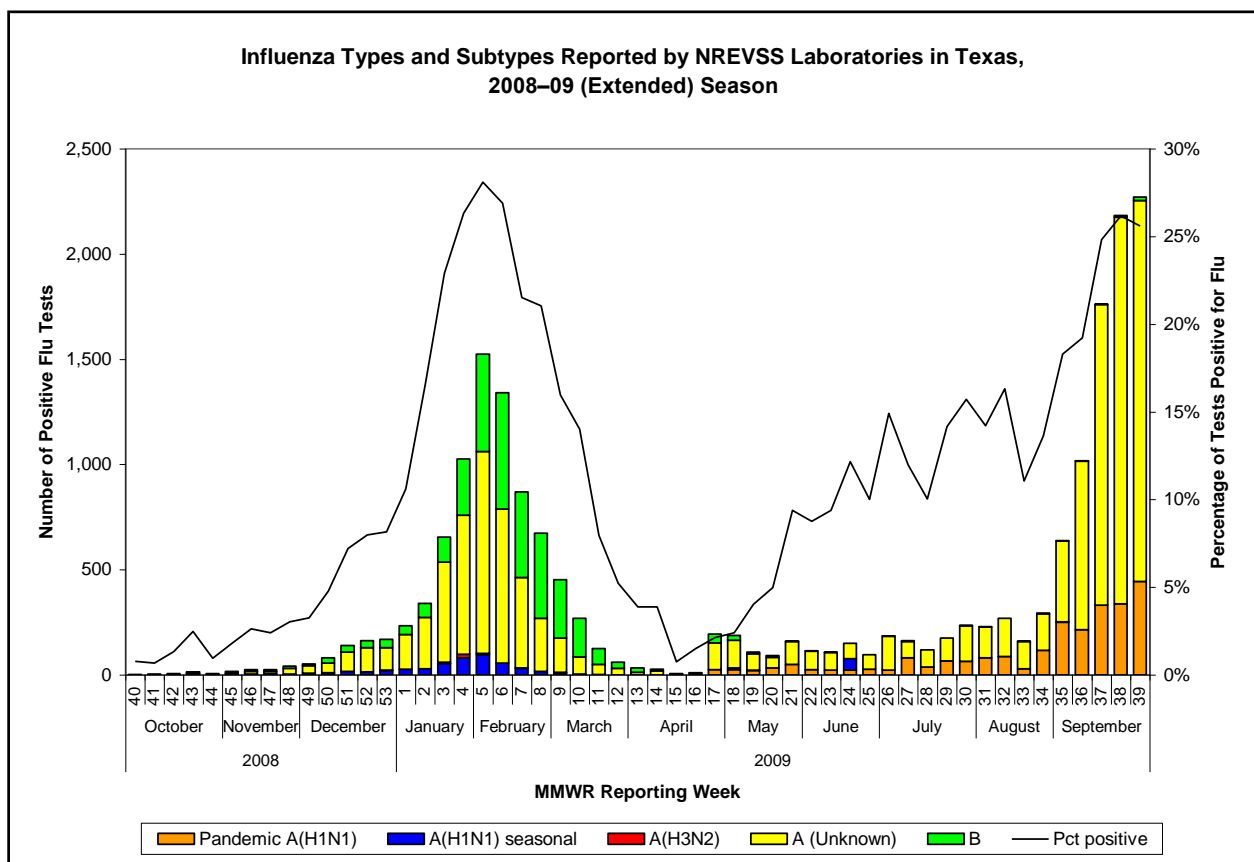
NREVSS participants are recruited by the local, regional and state health departments and enrolled by the CDC NREVSS Program. There is always a need for more laboratories to participate in the NREVSS program. Currently, the greatest need is for the recruitment of reliable reporting laboratories in the northern "panhandle" area of Texas, far western Texas (especially El Paso) and eastern areas of Texas. Interested laboratories may contact flutexas@dshs.texas.gov for information. Information on recruiting laboratories can be found in section V.

How to Use NREVSS Data

The NREVSS file is a Microsoft Excel file that contains the most recent one to two years of data at a time. The data file is updated each week to include new data from laboratories reporting for the most recent MMWR week, as well as data from laboratories reporting "late" for previous MMWR weeks. The EAIDB ILINet Coordinator emails NREVSS data to regional influenza surveillance coordinators and other interested public health personnel every week.

One of the most useful ways to look at the data is to create a pivot table either in Microsoft Excel or Access. Pivot tables easily and dynamically organize and summarize data.

Note: These instructions were created using Microsoft Office Excel 2013.
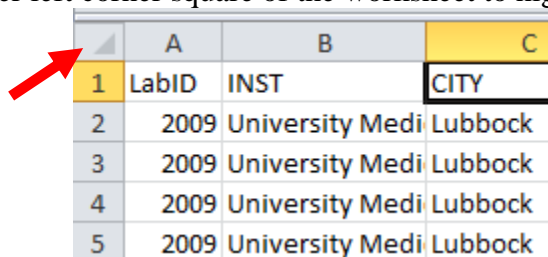
Note: These instructions were created using the NREVSS data file sent on 09-22-2015 without any sorting performed on the data. Later data files may show updated data and therefore totals may be different.

Example questions:
1. How many influenza tests were performed and reported from NREVSS participating laboratories in San Antonio during 2014 MMWR week 10?
2. How many of these influenza tests were positive?
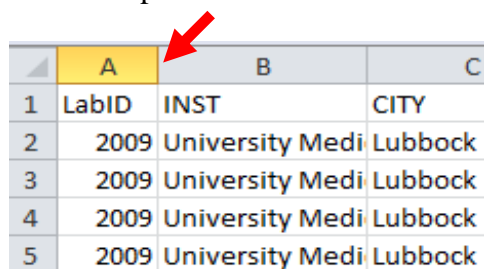
Question 1
1. Open the NREVSS data file that was forwarded to you from flutexas@dshs.texas.gov.
2. Click on the upper left corner square of the worksheet to highlight the entire worksheet.

3. With the worksheet highlighted, double-click with your mouse on the vertical line that separates columns A and B to expand all of the columns and rows so that the data can be viewed fully.

4. Spend some time familiarizing yourself with the data contained in the NREVSS columns and rows so that you will be prepared to pivot the data appropriately. Please refer to the NREVSS data dictionary at the end of this subsection for more information.

      a. The columns of interest are: CITY, WEEK, FLU_TEST, FluPanAH1N1pos , AH3N2POS, AUNK_POS, FLUB_POS

5. In order to make it a little easier to answer to Question 2 later, we need to add a new column to the NREVSS dataset that is the sum of all of the influenza positive columns.
    a. On the NREVSS data worksheet, insert a column between the columns "FLUB_POS" and "CoVTest". [to add a column: click on the column Z heading to highlight column Z (CovTest); right click with your mouse and select Insert]
    b. Name the column "TOTALFLU_POS"
    c. In cell Z2, type the following formula: =sum(V2:Y2)
    d. Press Enter to finish the formula. You should now have a zero in cell Z2.
    e. In order to populate the formula all the way down the worksheet to the end of the data lines, click on cell Z2 to make sure it is selected. Then, double-click on the fill handle (little black box at the lower right corner of the highlighted cell Z2).

Y	Z	AA
FLUB_POS	TOTALFLU_POS	CoVTest
0	0	0
0		0
0		0

6. Now you are ready to create a pivot table.
    a. To create a pivot table, click anywhere in the body of the data (not in the column headers line).
    b. Then go to the ribbon, select the *Insert* tab and then select *PivotTable* to start the PivotTable Wizard.
    c. A box with the title "Create PivotTable" will pop up.
        i. The radio button next to "Select a table or range" should be selected, and the appropriate range of your data set should be populated in the "Table/Range:". Check to see that all of your NREVSS data are selected, and correct the data selection if it is incorrect.
        ii. The radio button next to "Use an external data source" should not be selected.
        iii. Under the wording "Choose where you want the PivotTable to be placed", select the radio button for New Worksheet, and click OK.
    d. Now you should see a blank pivot table on a new worksheet.
        i. Drag "CITY" into the Rows field.
        ii. Drag "WEEK" into the Filters field.
        iii. Finally, since we want to know how many influenza tests were performed, drag "FLU_TEST" into the Values field. (Because we chose a field containing numbers for the Values field, the pivot table automatically defaulted to sum the values in the FLU_TEST column.)
    e. Now that you have data in your pivot table, you need to perform two additional steps to answer question #1.
        i. In the dropdown menu next to "WEEK", select "1410" which stands for MMWR week 10 of 2014.
        ii. Click on the dropdown menu next to "CITY".

1. Click on "(Select All)" to uncheck all selections.
2. Then scroll down the list and click on the box next to San Antonio to check the box.
3. Click OK.
4. Only the results for San Antonio are displayed.

	A	B
1	WEEK	1410
2		
3	Sum of FLU_TEST	
4	CITY	Total
5	San Antonio	270
6	Grand Total	270

5. During MMWR week 10 in 2014, NREVSS participants in San Antonio reported performing 270 tests for influenza.

f. If you want a little more information about which institutions reported those tests and which types of tests they performed, you can also get that information in just a few more steps.

   i. Click on your pivot table to reveal the Pivot Table Field List. If that doesn't work, right click on the pivot table, go down to the bottom of the dropdown and select "Show Field List".

   ii. Drag "INST" (short for institution) into the Rows field of the pivot table, to the left of CITY. Move CITY from the Rows field up to the Filters by dragging and dropping it there.

      1. The current view shows flu test subtotals by institution.

   iii. Now you can add the test type data.

      1. Click on your pivot table to reveal the Pivot Table Field List. If that doesn't work, right click on the pivot table, go down to the bottom of the dropdown and select "Show Field List".
      2. Drag "TestType" into the Columns field of the pivot table.
      3. Now you see the totals for influenza tests performed by institution and by test type reported by San Antonio NREVSS participants during 2014 MMWR week 10.

	A	B	C
1	WEEK	1410	
2	CITY	San Antonio	
3			
4	Sum of FLU_TEST	TestType	
5	INST	AG	Grand Total
6	Santa Rosa Health Care	270	270
7	Grand Total	270	270

Question 2
1. Continue to use the same pivot table to answer question 2.
2. Locate the gray box in the pivot table that says "Sum of FLU_TEST" (this box is called the Values field).
    i.   Click on the Values field and drag "Sum of FLU_TEST" out of the bounds of the pivot table.
   ii.   Your pivot table should now have a blank Values field.
3. Now you are ready to add another data item to your Data Area.
    i.   Click on your pivot table to reveal the Pivot Table Field List. If that doesn't work, right click on the pivot table, go down to the bottom of the dropdown and select "Show Field List".
   ii.   Drag "TOTALFLU_POS" into the Values field of the pivot table.
  iii.   Your pivot table should now look like this:

	A	B	C
1	WEEK	1410	
2	CITY	San Antonio	
3			
4	Sum of TOTALFLU_POS	TestType	
5	INST	AG	Grand Total
6	Santa Rosa Health Care	21	21
7	Grand Total	21	21

    o   During 2014 MMWR week 10, a San Antonio NREVSS participant reported 21 antigen tests positive for influenza.

4. If you wanted to determine which types or subtypes were identified, you could do that by removing TestType from the PivotTable and pulling each type or subtype field into the Values field.

NREVSS Data Dictionary

Field Name	Description
LabID	Six digit unique identification number for a lab
INST	Name of lab
CITY	City where the lab is located
STATE	State where the lab is located
Season	The 2 years included in a particular reporting season that runs from July to June
WEEK	First 2 digits represent the year; last 2 digits represent the week number of that year
WeekEnding	The Saturday marking the end of a particular reporting week (Sunday-Saturday)
TestType	AG= antigen detection; VI= virus isolation; PCR=Polymerase chain reaction test
RSV_TEST	Number of RSV tests performed by a lab during a given week for a given test type
RSVA_POS	Number of positive RSV A test results reported by a lab during a given week for a given test type
RSVB_POS	Number of positive RSV B test results reported by a lab during a given week for a given test type
RSVUNK_POS	Number of unknown positive RSV test results reported by a lab during a given week
PARATEST	Number of human parainfluenza tests performed by a lab during a given week for a given test type
PAR1_POS	Number of positive human parainfluenza type 1 test results reported by a lab during a given week for a given test type
PAR2_POS	Number of positive human parainfluenza type 2 test results reported by a lab during a given week for a given test type
PAR3_POS	Number of positive human parainfluenza type 3 test results reported by a lab during a given week for a given test type
PAR4_POS	Number of positive human parainfluenza type 4 test results reported by a lab during a given week for a given test type
PARX_POS	Number of positive human parainfluenza untyped test results reported by a lab during a given week for a given test type
ADERTEST	Number of respiratory adenovirus tests performed by a lab during a given week for a given test type
ADER_POS	Number of positive respiratory adenovirus test results reported by a lab during a given week for a given test type
FLU_TEST	Number of influenza tests performed by a lab during a given week for a given test type
FluPanAH1N1Pos	Number of positive influenza A 2009 (H1N1) test results reported by a lab during the given week for a given test type
AH3N2POS	Number of positive influenza A (H3N2) test results reported by a lab during a given week for a given test type

Field Name	Description
AUNK_POS	Number of positive influenza A (untyped) test results reported by a lab during a given week for a given test type
FLUB_POS	Number of positive influenza B test results reported by a lab during a given week for a given test type
CoVTest	Number of seasonal coronavirus (CoV) tests performed by a lab during a given week for a given test type
CoVHKU1POS	Number of positive seasonal coronavirus HKU1 tests reported by a lab during a given week for a given test type
CovNL63Pos	Number of positive seasonal coronavirus NL63 tests reported by a lab during a given week for a given test type
CovOC43Pos	Number of positive seasonal coronavirus OC43 tests reported by a lab during a given week for a given test type
CoV229EPos	Number of positive seasonal coronavirus 229E tests reported by a lab during a given week for a given test type
RotaTest	Number of rotavirus tests performed by a lab during a given week for a given test type
RotaPos	Number of positive rotavirus test results reported by a lab during a given week for a given test type
EAdenoTest	Number of enteric adenovirus tests performed by a lab during a given week for a given test type
EAdenoPos	Number of positive enteric adenovirus test results reported by a lab during a given week for a given test type
HMPVTEST	Number of human metapneumovirus tests performed by a lab during a given week for a given test type
HMPVPOS	Number of positive human metapneumovirus test results reported by a lab during a given week for a given test type
RhinoTest	Number of rhinovirus tests performed by a lab during a given week for a given test type
RhinoPos	Number of positive rhinovirus test results reported by a lab during a given week for a given test type
EnteroTest	Number of enterovirus tests performed by a lab during a given week for a given test type
EnteroPos	Number of positive enterovirus test results reported by a lab during a given week for a given test type
LabSubmitDate	Date the record was entered