Influenza Surveillance Activities – Other Surveillance Activities

Other Surveillance Activities Overview

Outbreak Investigations
Influenza can cause outbreaks in long-term care facilities, correctional facilities, schools, summer camps and other settings where people congregate. The number of reported outbreaks is an indicator of the impact of disease on a community. Furthermore, if control measures are not successfully implemented facilities may be unable to operate because of lack of well staff which may have additional community impacts. For example, if too many teachers are absent then schools may be forced to close for a few days; when schools close, parents have to find alternative care for their children or may have to stay home from work. Refer to Section VII of this handbook for additional information on outbreak investigations.

Enhanced influenza surveillance
Standard influenza surveillance may be enhanced during outbreak investigations or during pandemic influenza responses. The nature of the enhancements will vary depending on the situation. Enhancements may include:
- Collecting data on individuals with ILI or influenza
- Conducting individual case investigations of influenza illnesses
- Collecting additional aggregate influenza-related data from reporters
- Increasing the frequency of reporting
- Actively calling reporters to obtain data
- Requesting submission of additional influenza specimens

During the 2009 influenza A (H1N1) pandemic, standard influenza surveillance was enhanced through a variety of surveillance activities conducted during different stages of the pandemic. Individual case investigations of ILI and influenza were conducted at the beginning of the pandemic. As the number of cases increased, individual case reporting for all pH1N1 influenza cases was replaced with aggregate reporting of confirmed pH1N1 hospitalizations, ICU admissions and deaths. In addition, the requirements for individual case investigations were limited to cases in which confirmed pH1N1-related ICU admission or death had occurred. Voluntary reporting of confirmed pH1N1 influenza-related deaths among pregnant or postpartum (up to 6 weeks) women continued throughout the pandemic.

Active influenza surveillance
Most influenza surveillance is passive. Public health relies on healthcare partners to report on their own initiative. Active surveillance occurs when public health directly contacts healthcare partners asking them to submit their reports. Active surveillance may consist of contacting healthcare providers on a monthly, weekly or even daily basis over a specified period of time. It is very labor intensive.

Absenteeism surveillance
Absenteeism data may provide insight into mild ILI and other illnesses among people who do not necessarily seek medical care. General absenteeism data on its own is not a useful tool because the factors affecting absenteeism are diverse and often are not associated with infectious diseases. However, absenteeism data can provide increased situational awareness when viewed in context with other surveillance systems. For example, if ILINet is showing a peak of ILI activity, absenteeism data can be used to help define geographical areas of increased activity and to estimate the impact on schools and businesses.

Absenteeism data can potentially be collected from schools, large businesses and first responder agencies. Substantial increases in absenteeism require follow-up to assess the likely cause(s) and rule out possible outbreaks. It is helpful, but not always feasible to collect the specific reason for absence (e.g., ill with ILI, ill with non-ILI, vacation, other).

Syndromic surveillance
The CDC defines syndromic surveillance as surveillance using health-related data that precede diagnosis and signal a sufficient probability of a case or an outbreak to warrant further public health response. For the purpose of this handbook, the definition of syndromic surveillance systems is further limited to those that use automated data feeds to collect health-related data to look for trends in syndrome categories. Most syndromic surveillance systems extract data from hospital emergency departments; however, syndromic surveillance systems can tap into any electronic system that stores health related information including medical clinics, pharmacies and EMS databases. DSHS does not endorse any one commercial syndromic surveillance system. The syndromic surveillance systems named here are ones that are commonly used in Texas and should not be viewed as recommendations or endorsements.

>   **Hospital/emergency room visit-based syndromic surveillance systems**
>   RODS and ESSENCE are two of the most common syndromic surveillance systems used by health departments in Texas. Both systems use automatic data feeds to mine data on hospital emergency room visits. The Texas Association of Local Health Officials (TALHO) and the Southwest Center for Advanced Public Health Practice (APC) in Tarrant County were both involved with developing and expanding this type of syndromic surveillance in Texas.
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>   BioSense 2.0 is a CDC supported syndromic surveillance system using cloud-based computing technology. BioSense essentially provides a data repository of emergency room visits and hospitalizations from participating healthcare facilities and from health departments using other healthcare data mining systems such as RODS or ESSENCE.
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>   **Medication-based syndromic surveillance**
>   Over-the-counter (OTC) sales of medications are used to estimate illness among people who do not routinely seek or who have not yet sought medical care. The University of Pittsburg runs the National Retail Data Monitor (NRDM) system which collects data on over-the-counter medication sales from pharmacies, grocery stores and mass merchandise

stores across the United States. NRDM provides a platform to analyze and interpret the data. There is a fee to access the system.

Health departments may develop agreements with pharmacies to report aggregate sales data for over-the-counter cough/cold/flu/anti-fever medications and prescription cough/cold/flu/anti-fever medications filled. These data can be difficult to interpret without advanced statistical trend analysis.

Internet search-based surveillance
Google estimates influenza activity by analyzing internet searches and shares the information through Google Flu Trends. Google searches for influenza and influenza-related terms increase when influenza-like illness increases. Google compared their trend lines with ILI trend lines released by the CDC from 2004 to 2009. During this time period, the peaks in both systems at the national level appeared to match.

Google Flu Trend information is available at the national and state levels. Some city-level data are also available, but it is unclear how well these data correlate to ILI activity. As of August 2010, city-level trends are available for 8 cities in Texas: Austin, Dallas, Fort Worth, Houston, Irving, Lubbock, Plano and San Antonio. Google Flu Trends is no longer publishing current estimates of flu, but historical data can be freely accessed at http://www.google.org/flutrends/about/#US.

Self-report surveillance
Flu Near You (FNY) is an initiative of the American Public Health Association to track self-reports of influenza-like illness by the general public. Any resident of the US or Canada over the age of 13 can sign up to participate. Every Monday, an email is sent to participants asking them to record any symptoms they had during the previous week through a web link or through a smart phone application. In addition to allowing people to report symptoms of influenza, the site allows users to search for locations providing vaccine and see how many people reported illness in their community. Beginning with the 2015-2016 influenza season, state health departments were invited to access aggregate FNY data for their jurisdiction, via a password protected dashboard portal, to complement existing surveillance systems. Flu Near You can be freely accessed at https://flunearyou.org.

Influenza Surveillance at the Border
The Border Influenza Surveillance Network (BISN) is a multi-state collaboration facilitated by the CDC US-Mexico Unit to share influenza data from the border regions of California, New Mexico, Texas and Mexico. The network uses data from existing influenza surveillance activities. Texas has 32 counties that qualify as border counties based upon their distance to the US–Mexico border. In Texas, Regions 8, 9/10 and 11 participate in BISN. The regional influenza surveillance coordinator or a regional employee working with the Early Warning Infectious Disease Surveillance (EWIDS) Program shares influenza data with the CDC US-Mexico Unit during influenza season.