Influenza Surveillance Activities – Pediatric Mortality

Influenza-Associated Pediatric Mortality Overview

Influenza-associated pediatric mortality surveillance
Influenza-associated pediatric deaths have been reportable in Texas since 2007. Surveillance for influenza-associated pediatric deaths is passive; however, providers who report influenza and ILI data should be reminded every year that pediatric deaths associated with influenza are reportable. If disease reporting training is conducted for healthcare providers in your jurisdiction, make sure that influenza-associated pediatric death reporting is covered.

Influenza-associated pediatric deaths can occur year-round even when influenza and ILI activity are at low levels. Healthcare providers should be encouraged to order influenza testing on any severe pediatric illness that is compatible with influenza regardless of the time of year. PCR and viral culture are the recommended testing types to confirm influenza-associated pediatric deaths. This testing is particularly important during the summer months when influenza typically circulates at low levels and rapid influenza tests are more likely to produce inaccurate results.

When summarizing influenza-associated pediatric deaths for influenza surveillance reports, vaccination status, age, underlying health conditions and type of influenza are important variables. All of this information is captured on the influenza-associated pediatric death report form.

Influenza-associated pediatric mortality investigations
The CDC investigation form for influenza-associated pediatric deaths is a valuable tool for investigating cases. The current investigation form is maintained on the DSHS website at http://www.dshs.texas.gov/idcu/investigation. The form specifies what information is required by the CDC for reporting and captures critical information to guide local responses. Deaths in children often result in intense public interest. The media and the general public will likely want to know why the child died and specifically if the death was preventable. It is important to keep the health department leadership and communications office apprised of the status of the investigation in order to effectively respond to concerns from the public and media inquiries.

When investigating a report of influenza-associated pediatric mortality, it is important to verify that the case meets the case definition. An influenza-associated pediatric death is defined for surveillance purposes as a death in a person less than 18 years of age resulting from a clinically compatible illness that was confirmed to be influenza by an appropriate laboratory or rapid diagnostic test. A death should not be reported if there is no laboratory confirmation of influenza virus infection; the influenza illness is followed by full recovery to baseline health status prior to death; the death occurs in a person 18 years or older; or after review and consultation there is an alternative agreed upon cause of death which is unrelated to an infectious process.

The following tests laboratory tests are acceptable:

- Influenza virus isolation in tissue cell culture from respiratory specimens

- Reverse-transcription polymerase chain reaction (RT-PCR) testing of respiratory specimens
- Immunofluorescent antibody staining (direct or indirect) of respiratory specimens
- Rapid influenza diagnostic testing of respiratory specimens
- Immunohistochemical (IHC) staining for influenza viral antigens in respiratory tract tissue from autopsy specimens
- Four-fold rise in influenza hemagglutination inhibition (HI) antibody titer in paired acute and convalescent sera (*1*)

It is important to determine if the child died from a vaccine preventable strain of influenza. As soon as the case is reported, inquire about available respiratory specimens in order to maximize the possibility that healthcare facilities or clinical laboratories are still in possession of these specimens and can forward them to a public health laboratory. If influenza was confirmed by a hospital or commercial laboratory, request that the isolate be forwarded to the DSHS Laboratory in Austin or to your local LRN. If the only test done to confirm influenza was a rapid test, then request that any available respiratory specimens be sent to the DSHS Laboratory in Austin or to your local LRN. If specimens are not available, find out if and where an autopsy will be performed. On a case by case basis, the CDC may perform testing on tissue samples collected during an autopsy. Contact the DSHS EAIDB Influenza Surveillance Coordinator to obtain current information on CDC testing.

Another key aspect in the investigation is to determine if the case was vaccinated for influenza for the current season. A parent or guardian is the best source of information on the child's vaccination history. However, it can be difficult to reach or interview a grieving parent. The healthcare provider who reported the death may or may not have information on vaccination history but will often be able to provide the name of the primary healthcare provider. The primary healthcare provider will have information on any vaccinations given to the child by his office. The Texas Immunization Registry, ImmTrac, can also be a good source of information.

Influenza-associated pediatric mortality reporting

Influenza-associated pediatric deaths should be reported to the health department within one working day of identification. Healthcare providers, infection preventionists, medical examiners, justices of the peace or any other persons who determine that the death was associated with influenza should contact their local or regional health department by phone or by fax. Contact information for local and regional health departments is available on the DSHS website at http://www.dshs.texas.gov/regions/default.shtm.

The health department with jurisdiction will conduct an investigation and complete the CDC investigation form for influenza-associated pediatric deaths. The current investigation form is maintained on the DSHS website at http://www.dshs.texas.gov/idcu/investigation . This form should be faxed to DSHS EAIDB at 512-776-7616 as soon as possible. The case should also be entered into the National Electronic Disease Surveillance System (NEDSS) base system (NBS). Instructions for entering influenza-associated pediatric deaths are found in the NBS Data Entry Guide. The NBS Data Entry Guide is found under the documentation link on the log-in page for NBS. Upon first hearing of a death, a courtesy phone call from local and regional health departments to DSHS EAIDB with preliminary information would be greatly appreciated. If

there is a long delay (>30 days) between the date of death and the date that the case is reported to the health department, please document the reason for this delay (e.g., case not reported by hospital and found upon death certificate review, influenza test and death occurred in different locations, etc.).

DSHS EAIDB uses both NBS and a secure influenza-associated pediatric death reporting system to share reports with the CDC.

References

1. Bekka N., editor. Epi Case Criteria Guide, 2017 [Internet]. Infectious Disease Control Unit, Texas Department of State Health Services; Mar 2017 [09 Sept 2017]. Available from: http://www.dshs.texas.gov/idcu/investigation .