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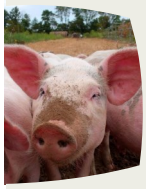

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TN Department of Health

Tennessee epi-news

GOVERNOR BILL HASLAM

COMMISSIONER JOHN J. DREYZEHNER, MD, MPH

Public Health Emergency Response to a Train Derailment

Shortly before 12:00 a.m. on July 1, a train car derailed near Maryville, Tennessee. The car was carrying 24,000 gallons of acrylonitrile—a flammable, toxic chemical used in the manufacture of plastics. Acrylonitrile is a possible carcinogen and can cause skin burns, headaches, nausea, dizziness and irritation of the respiratory system. When burned, it produces hydrogen cyanide. The derailment caused a fire that burned for 19 hours, sending a plume of poisonous smoke into the sky.

Mandatory evacuations of area residents began around 12:30 a.m. More than 5,000 people were ultimately evacuated within a two mile radius of the scene. Nearby businesses and schools were forced to close for the day.

Nearly 160 people presented to the emergency department at a local hospital, with most requiring decontamination. Fortunately, the hospital has a dedicated plumbing system to support a four-stage decontamination system and contain contaminants. Although it had previously been used for isolated incidents and drills, the system had never been used at the scale of this response. Despite the

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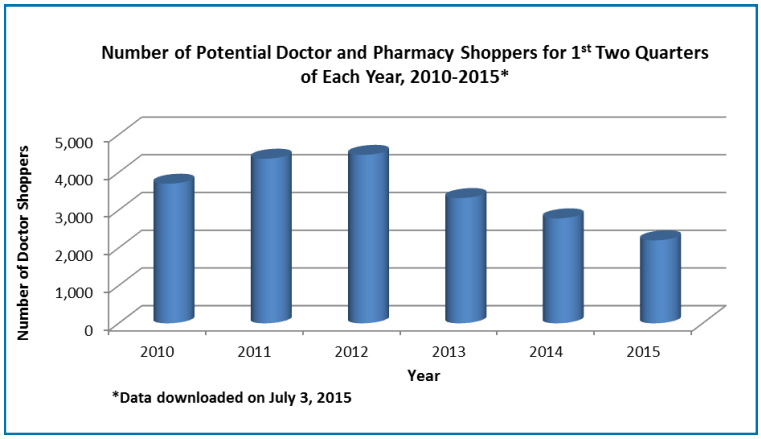
CSMD Update: Monitoring Rates of Doctor or Pharmacy Shoppers

Tennessee defines a doctor or pharmacy shopper as an individual visiting five or more prescribers and five or more dispensers in a three month period, referred to as 5-5-3 criteria. There is no universal consensus on a definition for doctor shopping; however, having an established definition in Tennessee allows TDH to observe trends in the overall number of potential doctor and pharmacy shoppers over time. This provides valuable information about the direction the state is moving in its efforts to reduce prescription drug abuse and diversion. The chart to the right illustrates this trend.



The number of potential doctor shoppers in the first two quarters of each year has dropped from a high of 4,464 in 2012 to 2,199 in 2015. The data also reveal a 21% decrease between the second quarters of 2014 and 2015. Since the 5-5-3 criteria used to determine these numbers have not been validated, it is possible the raw numbers include false positives in the form of high utilizers. Regardless, monitoring the trend provides a significant outcome measure for the CSMD. The steady decline in numbers of potential doctor and pharmacy shoppers over the past few years suggests the CSMD has been effective in helping prescribers better monitor their patients. ❖

Train Derailment (continued)

(Continued from page 1)
patient surge, the hospital was able to attend to everyone who presented for care.

Response to the derailment required extensive coordination and communication by the East Tennessee Regional Health Office (ETRO). ETRO promptly activated its Health Operations Center to establish and maintain communication with the various agencies involved. A shelter was established at a local high school, with nursing staff from the Blount County Health Department. To ensure optimal patient care, the Tennessee Hospital Resource Tracking System was activated to provide real-time information from hospitals to all involved parties, the ETRO "Ambubus" was mobilized to be used on scene as needed, and, within hours, injectable hydroxocobalamin (Cyanokit®) was transferred from locations across the state to the local hospital by Tennessee Highway Patrol.

The Knox / East Tennessee Healthcare Coalition played a vital role assisting community and facility needs. Drawing on the lessons learned from annual drills and the partnerships that had been established, contacts and membership contributions were identified early on and used to meet some of the challenges of this response. — *by Jack Cochran* ❖

Raising Awareness about Hepatitis C

Tennessee has one of the highest reported rates of acute hepatitis C virus (HCV) infection in the nation and, as illustrated in a recent report from CDC, case rates are on the rise. Tennessee, along with three other states in Central Appalachia, showed a 364% increase in reported acute HCV from 2006 to 2012 among individuals aged 30 years and younger. Case rates were twice as high in non-urban compared to urban areas. Over the same time period, drug treatment admissions attributed to opioid abuse increased by 21% among the same population, reinforcing the nature of the syndemic.

HCV is easily spread through direct blood contact, even in very small amounts, from an infected person—primarily through sharing needles, syringes and other equipment used to inject drugs. The virus can also be spread through unsanitary tattooing, from blood products and organ transplants prior to 1992, and to infants born to infected mothers. Rarely, HCV can be spread through sex where blood exposure is involved and from contaminated equipment in healthcare settings.

Approximately 75% of people with acute HCV will go on to develop chronic infection. Most do not know they are infected because they do not look or feel sick. Symptoms of chronic HCV can take decades to develop. Without treatment, approximately 25% of people with chronic HCV will develop serious liver disease, such as cirrhosis or hepatocellular carcinoma.

Both the CDC report on rising incidence in Tennessee and the recent HIV outbreak related to intravenous drug use in Indiana have raised much concern. As a result, TDH issued a public health advisory regarding the HCV epidemic, encouraging Tennessee residents to increase their awareness about HCV. The CDC recommends that all baby boomers (persons born from 1945 through 1965) and people of all ages with any risk factors be tested for HCV infection; if positive, individuals are encouraged to follow up with a healthcare provider for additional evaluation and treatment as indicated. Additional guidance documents from TDH can be found here.

For more information about HCV and intravenous drug use, see CDC's factsheet and hepatitis webpage, as well as the TDH hepatitis webpage. — *by Dana Jackson, RN, BSN and Carolyn Wester, MD, MPH* ❖

Project Public Health Ready

Regional and metro health departments in Tennessee have been nationally recognized for their ability to plan for, respond to and recover from public health emergencies. Project Public Health Ready is a competency-based training and recognition program that assesses preparedness and assists local health departments to respond to emergencies. PPHR first began in 2002 as a workforce development project. It later emerged as a bioterrorism planning project, eventually becoming an all-hazards public health preparedness planning and assessment program.

The PPHR criteria are nationally recognized standards for local public health preparedness that have been field tested and approved by local health departments. The National Association of County and City Health Officials regularly updates the criteria to align with recent federal initiatives and incorporate current research and guidelines from key federal programs, such as the CDC's Public Health Emergency Preparedness capabilities, the Public Health Accreditation Board's Standards and Measures, the National Incident Management System, and the Homeland Security Exercise and Evaluation Program.

PPHR has three goals: (1) all-hazards emergency preparedness and response planning, (2) workforce capacity development, and (3) quality improvement through exercises and real events. Health departments seeking PPHR recognition must demonstrate proficiency in all three areas. PPHR builds preparedness capacity and capability through a continuous quality improvement model that can be maintained within the participating health de-

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Project Public Health Ready (continued)

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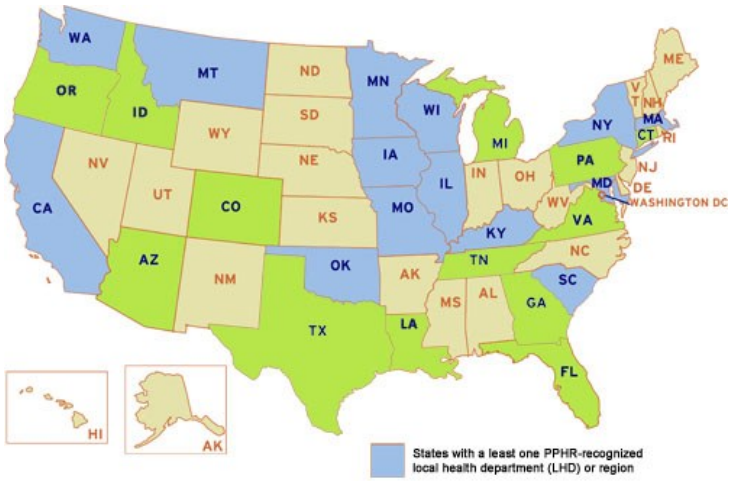
partment after recognition is achieved. By working with response partners to develop and enhance their plans and processes to meet the PPHR criteria, agencies strengthen working relationships and improve their integration within the preparedness community.

The East, Upper Cumberland, and Southeast Tennessee regional heath offices, along with the Jackson-Madison County, Chattanooga-Hamilton County, and Sullivan County health departments, have currently earned this recognition by demonstrating capabilities to meet comprehensive preparedness benchmarks. These six public health agencies are part of an elite group, distinguished for excellence in preparedness. Two additional regional health offices, the Northeast and South Central Tennessee regions, have submitted PPHR applications in 2015 for national recognition of their local public health preparedness capabilities. — *by David Brumley, DDS, MPH* ❖



http://www.naccho.org/topics/emergency/PPHR/

One Health: Zoonotic Influenza

Summer's end heralds the onset of fair season as well as flu season. While enjoying the autumn weather and funnel cakes this fall, it is important to be mindful of zoonotic diseases—diseases that originate in animals and can infect humans. Agricultural exhibitions provide valuable educational opportunities, but also allow individuals who may not have otherwise been exposed to these animals to become infected. Farm animals may harbor a number of pathogens, including influenza A viruses, which can cause illness in humans.

Aquatic birds are the natural host for influenza A viruses, although poultry can also be infected. Avian flu strains do not normally infect humans, but sporadic cases can occur in individuals having close contact with infected birds. The virus is present in the birds' feces and is spread via contaminated surfaces and water sources.

Pigs are susceptible to both avian and mammalian-adapted strains of influenza A and thus can act as "mixing vessels," with the potential for reassortment of viruses. Swine-origin influenza viruses can spread from pigs to people and from people to pigs. In recent years, infections with swine influenza H3N2 have occurred in individuals with occupational and recreational exposure, including exhibitors and patrons at state and county fair exhibits.

People who are healthy and at low risk for complications from flu are encouraged to continue enjoying these events, while taking protective measures to reduce the risk of infection. These include not taking food, drinks, strollers, toys or pacifiers into the exhibit, washing hands, and seeking medical care immediately if flu-like symptoms develop. Likewise, exhibitors are asked to provide hand washing stations near animal areas, remove any sick animals, post signage discouraging eating and drinking in animal areas, and notify agriculture or public health officials if an influenza outbreak occurs in animals or humans.

If a person were to become co-infected with human and animal strains of influenza, a novel mixed-origin virus strain (such as 2009 H1N1) could emerge with the potential for pandemic spread. Prompt investigation of any novel influenza A virus is important to limit transmission of the virus among animals and people, as well as to assess the potential for the virus to cause a pandemic. By following simple protective measures and minimizing cross species transfer, the risk of zoonotic influenza becoming a new pandemic strain can be reduced. — *by Allison Siu, MPH* ❖

Exclusion Guidance for High-Risk Individuals with Enteric Disease

Many enteric illnesses are easily spread from person to person, either by direct contact or via contaminated surfaces, food or water. Exclusion of high-risk individuals (e.g. food handlers, healthcare workers and childcare workers and attendees) with enteric disease is a common control measure used by public health to prevent or contain outbreaks. Recently, the TDH Medical Leadership Team created a guidance document outlining exclusion criteria for high-risk individuals with enteric illnesses. Because differing recommendations exist in regards to excluding ill and exposed persons from work or childcare, this document provides standardized guidelines for frontline public health staff and a framework to guide exclusion decisions. Recommendations were based on information published in a number of authoritative sources, including *Red Book*, *Control of Communicable Diseases Manual* and the FDA Food Code.

(Continued on page 4)

Exclusion Guidance (continued)

(Continued from page 3)

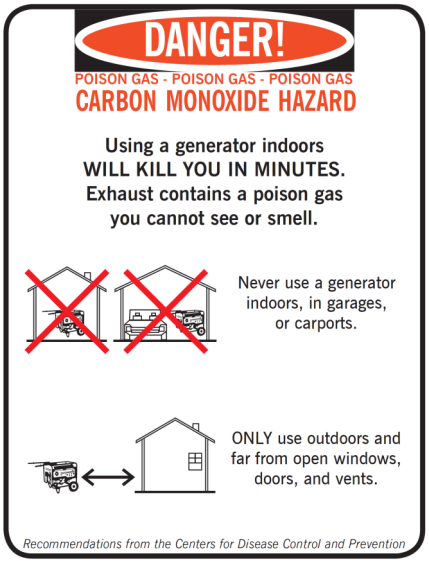
The resulting guidance document contains recommended exclusion and reinstatement criteria for individuals who have been exposed to or diagnosed with certain enteric infections. The primary foodborne pathogens specified by the FDA (shiga-toxin producing *E. coli* [STEC], *Shigella*, norovirus, *Salmonella* Typhi and hepatitis A virus) are included, as well as guidance for non-Typhi *Salmonella* infections and other enteric pathogens. Managing persons who have been diagnosed using non-culture-based diagnostic tests is also covered.

Below is an excerpt showing the recommendations for high risk individuals with STEC. The full document is available here. *— by Ashley Coatsworth, MPH* ❖

	Exposure to Norovirus, STEC, *Salmonella* Typhi, *Shigella*, or Hepatitis A for Food-handlers[1]***	Food-handlers[1]*†	Childcare Workers*
STEC	Restrict: the employee who works in a food establishment serving a highly susceptible population; Reinstate: if 1) more than 3 days have passed since last day they were potentially exposed, or 2) employee's household contact has been asymptomatic for more than 3 days	Restrict person diagnosed with STEC: if diagnosed but asymptomatic and works in a food establishment not serving a highly susceptible population; Exclude if diagnosed and symptomatic, or asymptomatic but serves a highly susceptible population; Reinstate: person in charge obtains approval from the department and has either 1) written medical documentation stating they are free of STEC based on 2 negative stools taken no earlier than 48 hours after antibiotics and 24 hours apart, 2) been asymptomatic for 7 days, or 3) didn't develop symptoms and more than 7 days have passed since diagnosed	Exclusion until two negative stool cultures, taken 24 hours apart, and 48 hours after stopping antimicrobial therapy[3]

Carbon Monoxide Poisoning

Whenever severe weather strikes, carbon monoxide poisoning events are of concern. Carbon monoxide (CO) is an odorless, colorless gas which is produced when a fossil fuel is burned. Exposure can cause headache, dizziness, weakness, upset stomach, vomiting, chest pain and confusion. Everyone is susceptible to CO poisoning; however, infants, the elderly, and those with chronic heart disease, anemia or breathing problems are at higher risk for illness or death. Each year in the U.S., there are more than 20,000 emergency room visits, 4,000 hospitalizations and 400 deaths from unintentional CO poisoning not related to fires.



About 50% of all CO poisoning events occur inside the home. Using alternative sources of power during a power outage can cause CO to accumulate in a home, thus poisoning those inside. To prevent CO poisoning during a power outage:

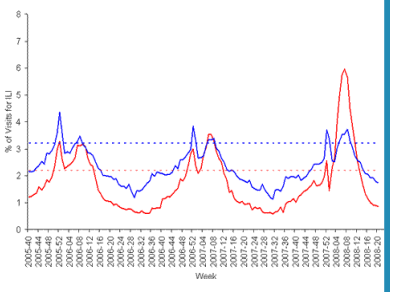
- never use a charcoal or gas grill in an enclosed space,
- never burn charcoal in a fireplace,
- never use a generator inside the home,
- never use a gas range or oven for heat,
- never sleep in a room while using an unvented gas or kerosene heater, and
- always have a battery-operated or battery back-up CO detector installed in the home.

Carbon monoxide poisoning events have been reportable in Tennessee since 2013. These events should be reported to TDH within one week of diagnosis. TDH also relies on the Tennessee Poison Center and the National Fire Incident Reporting System to record possible CO poisoning cases. TDH maintains CO poisoning data from emergency department visits and hospitalizations, which includes count and rate of health outcome, state and county of residence, and year of hospitalization or emergency department visit.

For more information, see https://tn.gov/health/article/carbon-monoxide and http://www.cdc.gov/co/. *— by Amanda Taylor, MPH* ❖

Flu happens!

(And we need you to tell us about it.)



Join the Tennessee Sentinel Providers Network

Conducting year-round influenza surveillance including free laboratory testing for selected specimens.

Contact Robb Garman for more information:
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