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‘Dewshine’-Associated Intoxications and Deaths

In January 2016, the Tennessee Poison Center and TDH learned of the deaths of two adolescents, and intoxication of two others, after ingesting a mixture of racing fuel and Mountain Dew® (known as “dewshine”). These are the first reported deaths in the United States linked to ingestion of dewshine.

According to investigators, approximately one-half gallon of racing fuel was mixed with Mountain Dew® and consumed at a party, presumably as a substitute for ethyl alcohol. One of the adolescents, a 16-year-old male, was

found dead at home approximately 11 hours after ingesting the mixture. A second 16-year-old male had seizure-like activity approximately 12 hours after ingestion. He was urgently transported to the hospital, but despite aggressive measures, died five days later. The two surviving adolescents were both evaluated at hospitals and released.

The life-threatening component of dewshine is the racing fuel, which is almost 100% methanol. Methanol is an

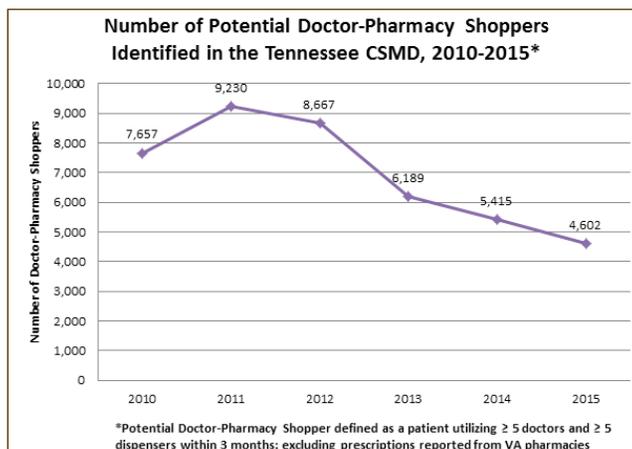


organic solvent commonly found in laboratory, industrial, automotive and residential products. The predominant
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CSMD Update: Decline in Doctor-Pharmacy Shoppers

To assess prescription drug diversion within our state, Tennessee utilizes the 5-5-3 definition of a potential doctor-pharmacy shopper (an individual visiting five prescribers and five dispensers within a three month period). This definition does not exclude high utilizers, such as palliative care and chronic pain patients, but it does provide a measurable outcome for the CSMD.

The 2016 CSMD legislative



report revealed a 50% decrease of identified doctor-pharmacy shoppers since 2011, with a record low of 4,602 in 2015. This decline may be partially attributable to an array of recent state laws aimed at decreasing prescription drug abuse and improving prescribing and dispensing practices.

It is not clear if doctor-pharmacy shoppers are venturing outside of state lines to avoid detection. To investigate this
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'Dewshine' Intoxications

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symptoms associated with methanol ingestion are drowsiness and gastrointestinal symptoms. Over time, methanol is metabolized to formic acid, which is highly toxic. A relatively asymptomatic latent period (ranging from 6-36 hours depending on the dose ingested) can occur, after which more serious symptoms, including vision loss, abnormal breathing, seizures and death, have been reported. As little as 15 milliliters of methanol can be fatal, and the absence of symptoms should not slow medical

evaluation. Early medical treatment can increase the probability of survival.

The consumption of dewshine has not been previously recognized as an established practice, although the mixture, and its name, may have historical origins. Mountain Dew® was originally formulated in Tennessee in the 1940s as a mixer for whiskey. However, the name "mountain dew" was already well-established vernacular for moonshine (high-proof distilled liquor), as demonstrated by the Appalachian folk song "Good

Old Mountain Dew" recorded in 1928.

Nationwide, there have been no other reports of adolescents drinking mixtures such as dewshine. It is important that parents, educators, community leaders, and the medical and public health communities monitor for similar practices in adolescents, and consistently reinforce the message that methanol is a highly toxic substance which can cause serious illness and death.

Mary-Margaret Fill, MD

Changes in Tennessee Restaurant Inspections

The TDH food safety program underwent some major changes beginning July 1, 2015. That's when legislation went into effect requiring that the rules governing food service establishments were to be based on the 2009 FDA Food Code.

During the 2013 legislative session, TDH collaborated with the food industry, the Tennessee Department of Agriculture, the Tennessee Food Safety Task Force, FDA and representatives from the food service industry to draft legislation that led to passage of the Tennessee Retail Food Safety Act. Prior to passage of the Act, Tennessee's food safety and inspection program was based on the 1976 version of the FDA Code.

Some of the major changes brought about by the new law include a prohibition on bare-hand contact with ready-to-

eat foods, requiring food establishments to have an employee illness policy, and requiring managers of food establishments to have food safety certification or to be able to demonstrate knowledge of



food safety relevant to their operation.

Environmental Health Specialists across the state now focus their inspections on the risk factors that, if not addressed, could lead to foodborne ill-

ness outbreaks. They check for proper personal hygiene (handwashing), as well as making sure that all food comes from a proper source, foods are cooked to and held at proper temperatures,

proper cooling procedures are in place, all utensils are sanitized and there is no cross contamination. The new rules also allow TDH to conduct fewer inspections in establishments with less complex food service operations and to conduct more inspections in the higher-risk, more complex establishments.

This new approach to the food safety and inspection program should lead to food service establishments in Tennessee having better control over the risk factors that, if not addressed, could lead to foodborne illness outbreaks.

Hugh Adkins, REHS/RS

Tennessee Hepatitis C Reporting Requirements

In response to the HIV/hepatitis C outbreak in Scott County, Indiana, the CDC recently conducted an HIV Vulnerability Index analysis to identify counties in the United States that have demographic and social determinants of health patterns similar to those of Scott County. As a result of this study, 41 Tennessee counties (home to 20% of the state's population) were deemed at risk for the rapid dissemination of HIV and hepatitis C virus (HCV)

among persons who inject drugs.

In addition to TDH's ongoing viral hepatitis prevention efforts, the viral hepatitis program has augmented its surveillance capacity to investigate all suspected cases of acute HCV as well as to heighten capability for early detection and response to an HIV/HCV outbreak among persons who inject drugs. While HIV detection and case investigation is well-established, HCV case investigation has historically been limited by

high case load and inadequate resources. Until recently, HCV case investigations were limited to clinician-reported suspected cases of acute HCV. Beginning in July 2015, TDH's viral hepatitis team has worked with the health regions to standardize, simplify and expand HCV case reporting. These efforts align with updated HCV case definitions.

Clinicians in Tennessee continue to be responsible for reporting suspected cases of acute HCV to their local or state

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Hepatitis C Reporting

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health department using the PH-1600 form. Additionally, effective January 2016, TDH's viral hepatitis surveillance team investigates all newly reported HCV laboratory reports, without an existing HCV classification, among individuals belonging to groups deemed to be at increased risk of acute HCV (i.e. individuals 18-30 or more than 70

years of age and all dialysis patients). These recently developed surveillance tools and systems have made HCV case investigation easier, more accurate and more likely to collect comprehensive risk factor data. All of these factors are critical for monitoring an epidemic that is largely driven by injection drug use.

For more information concerning

clinician reporting requirements, laboratory reporting requirements or ascertainment of risk factor information, contact the HIV/STD/Viral Hepatitis Program office at 615-741-7500.

*Lindsey Sizemore, MPH, CPH and
Michael Rickles, PhD*

The Risks of Raw Milk

Pasteurization of dairy products became common in the United States in the early to mid-20th century, and, with it, milk went from being one of the most dangerous foods to one of the safest. Prior to the advent of pasteurization, milk was a common vehicle for devastating diseases such as brucellosis and tuberculosis. While

being contaminated with these pathogens than do pasteurized milk products. The CDC estimates the risk of outbreaks caused by raw milk to be at least 150 times greater than the risk of outbreaks caused by pasteurized milk.

It is illegal to sell raw milk in Tennessee for human consumption; however in 2009 Tennessee authorized the owner of a cow or goat to sell raw milk to anyone who purchases a share of the animal. This is known as "cowsharing." There are many cowshare programs across Tennessee making raw milk products available to the public.

Since cowsharing became legal in Tennessee, two gastroin-

infected with Shiga toxin-producing *E. coli*. The common thread linking all nine cases together was drinking raw milk from the same cowshare program.

The CDC recently published a study concluding that the number of raw milk outbreaks increased from 30 in 2007-2009 to 51 in 2010-2012. Most outbreaks (81%) occurred from the consumption of raw milk products purchased from states where the sale of unpasteurized milk was legal. This study also found that children were at the highest risk for illness from raw milk. Fifty-nine percent of outbreaks involved at least one child under the age of five. Raw milk and other unpasteurized dairy products are inherently risky to consumers, especially children, the elderly and those with a compromised immune system. Pasteurization is the only way to kill many of the bacteria in milk that can make people sick.

To learn more about the dangers of raw milk, visit the following websites:

<http://www.cdc.gov/foodsafety/rawmilk/raw-milk-index.html> and

<http://www.realrawmilkfacts.com>

Katie Garman, MPH, CHES



these pathogens have been eliminated from cattle herds in the United States, cattle are host to a number of enteric bacteria and parasites, such as Shiga toxin-producing *E. coli*, *Campylobacter* and *Cryptosporidium*, that can cause disease in humans. Raw milk products carry a much higher risk of

testinal disease outbreaks linked to raw milk have been reported to TDH. In 2013 nine children were sickened with *E. coli* O157:H7; four were hospitalized and three developed hemolytic uremic syndrome. Hemolytic uremic syndrome is a life-threatening complication that occurs in about 10% of those

It's Tick Time in Tennessee!

Numerous species of ticks are present in Tennessee and can serve as vectors for various bacteria, parasites and viruses that are pathogenic to humans and animals. Currently in Tennessee there are six tickborne diseases that are reportable: spotted fever rickettsiosis, ehrlichiosis,

anaplasmosis, Lyme disease, babesiosis and tularemia. The majority of tickborne infections are diagnosed and reported between April and September—warmer months when ticks are most active and people spend more time outdoors.

Many tickborne diseases can have similar signs and symptoms, and indi-

vidual ticks can harbor more than one disease-causing agent. These diseases are easily treated if antimicrobial therapy is initiated early; however, tickborne diseases can be difficult to diagnose early in their clinical course. Patients may present with various non-specific symptoms such as fever, headache, fatigue, muscle

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Decline in Doctor Shopping

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possibility, the CSMD Committee and TDH are exploring ways to partner with Kentucky to conduct a cross-border surveillance pilot project aimed at examining this question. Both states hypothesize that, through this

partnership, doctor-pharmacy shoppers will be identified who would otherwise escape detection. This could lead to more targeted interventions within both states.

D. Todd Bess, Pharm. D

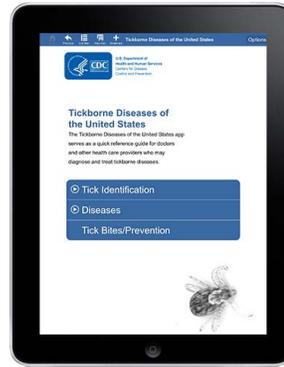
Tick Time

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pain, nausea, rash and vomiting. In addition, many patients may not specifically recall tick exposure or an actual tick bite. The absence of a definite tick attachment should not deter a clinician from considering the diagnosis of a tickborne illness.

Several laboratory methods are available to assist in diagnosing tickborne diseases; however, they vary in the time required to obtain results and in the type of information they provide. A fundamental understanding of the signs, symptoms and epidemiology of the diseases is critical in guiding requests for laboratory tests. When compared to patients' clinical findings and histories, test results have limited value in diagnosing tickborne infections. As a general rule, clinicians should not delay therapy while waiting on the results of specific laboratory tests.

The CDC has designed a mobile app for healthcare providers to access concise,



comprehensive and up-to-date information about the prevention, identification and treatment of tickborne diseases. Key features include summarized signs and symptoms, diagnostic and supporting lab tests, treatment summaries and live links to additional resources. The CDC Tickborne Diseases app is available at www.cdc.gov/mobile/mobileapp.html.

David Brumley, DDS, MPH

Selected Reportable Conditions

CONDITION	2012	2013	2014	2015	2016 Year to date
Campylobacteriosis	445	418	375	734	210
Chlamydia	31834	29635	30449	30734	12142
Enterobacteriaceae, Carbapenem-reducing (CRE)	280	249	224	427	322
Gonorrhea	8922	7202	7125	8202	3633
Hemolytic Uremic Syndrome (HUS)	19	21	12	14	4
Hepatitis A, acute	22	21	13	14	2
Hepatitis B, acute	264	283	272	264	135
Hepatitis C, acute	150	138	181	197	92
Lyme Disease	30	25	17	25	9
Meningococcal Disease	7	8	7	3	4
Pertussis	314	239	306	155	44
Salmonellosis	1106	863	955	867	247
Shiga toxin-producing E. coli (STEC)	130	71	142	158	49
Shigellosis	205	705	789	202	57
Spotted Fever Rickettsiosis	696	548	546	602	109
Syphilis	948	875	904	1082	362
Tuberculosis	169	143	147	132	42

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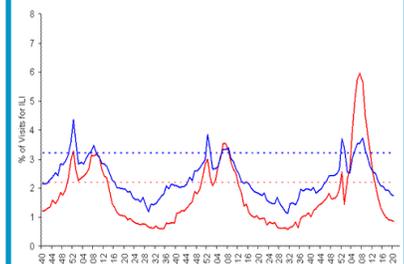


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**Contact Robb Garman for more information:
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robb.garman@tn.gov**