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# Tennessee *epi-news*

GOVERNOR BILL HASLAM

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## Outbreak of Gastrointestinal Illness at a Hotel

In January 2015, Metro Nashville Public Health Department (MPHD) received a call from a local news outlet regarding a possible outbreak of gastrointestinal illness at an area hotel and conference center. As the day went on, calls continued to come in from conference center attendees complaining of GI symptoms.

A team immediately began to investigate by interviewing ill attendees and inspecting the facility. Interviews were conducted with more than 400 people by telephone or online survey. More than 620 attendees were identified

with GI symptoms. Food was not identified as a risk factor for illness; however, many interviewees named one particular ballroom among places they had visited before becoming ill.

The MPHD Environmental/Food Service department performed several inspections at the hotel examining food preparation, food handlers, cleaning procedures and ill worker policies. Several vomiting incidents were identified in various places in the hotel—most notably in the ballroom that interviewees had frequently identified.



Hotel staff conducted multiple thorough cleanings and closed the ballroom for one week.

The outbreak ultimately spanned four weeks and included visitors from four large groups, with a total attendance of 14,000. Attack rates of illness within

*(Continued on page 2)*

## CSMD Update

The CSMD Program recently released its 2015 Report to the 109<sup>th</sup> Tennessee General Assembly. The data show that utilization of the CSMD has significantly increased in the last 5 years as a result of the Prescription Safety Act of 2012 and education of clinicians throughout Tennessee.

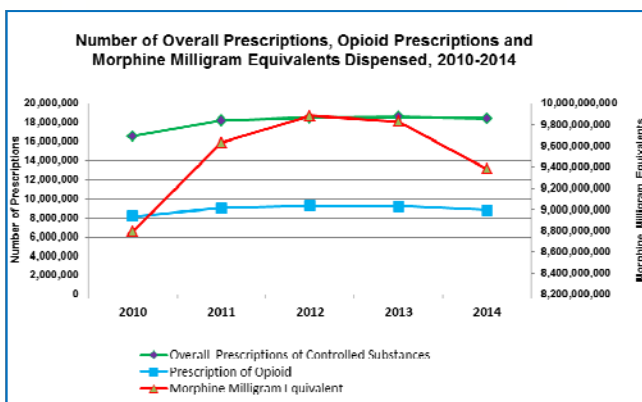
The CSMD patient report has been enhanced to include the patient's current Morphine Milligram Equivalents (MME). This

feature is a quantification of MME for all "active" opioid prescriptions (based

on fill date, quantity and day supply), standardized to an equivalent dose of

morphine. This standardization of opioid dose helps determine opioid exposure and aids in clinical decision-making.

Analysis of 2014 data indicates that, for the first time, Tennessee saw a slight decline in overall controlled prescriptions and opioid prescriptions, as well as a larger decline in MME (4.6%) compared to the previous year. ❖



## Hotel Outbreak (continued)

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the groups ranged from 8% to 33%. The MPH team was able to interview cases rapidly to assess potential sources of exposure, and the hotel cooperated completely with the investigation. The State Public Health Laboratory rapidly identified norovirus in clinical specimens from several affected guests.

The ease with which norovirus spreads from person to person, either directly

or via contaminated surfaces, makes it especially difficult to determine the source of exposure in an outbreak. Other difficulties the team encountered in the investigation included reluctance of groups to provide attendee contact information, the large number of ill persons over a long time span, difficulty getting a sample of well attendees as a comparison group for analysis, and lack of information on the baseline level of GI illness in guests at a large hotel.

Despite the challenges, the team was able to work with the hotel to improve surveillance for guest illness and to create protocols for responding to incidents of vomiting in public areas. In addition, MPH is working on a project to better understand baseline illness levels in area hotels and will provide training to help hotels respond to future incidents. — *by Cynthia Woodard, RN* ❖

## Management of Infants Born to Hepatitis B Virus-Infected Mothers

Perinatal hepatitis B infection can have serious long-term consequences for the estimated 24,000 infants born each year to HBV-infected mothers in the U.S. The TDH Perinatal Hepatitis B Prevention (PHBP) program works to prevent HBV transmission to these infants at birth by identifying and case-managing each one. Management of infants is a team effort: the mother, the delivery hospital and the pediatrician must all do their part to prevent HBV transmission. Infant case management by the PHBP program continues throughout the 9-15 months required to complete the HBV vaccine series and post-vaccination serology testing (PVST).

Administering post-exposure prophylaxis (PEP), consisting of hepatitis B immune globulin (HBIG) and vaccine, within 12 hours of birth is up to 95% effective in preventing infection. All delivery hospitals are encouraged to follow the CDC recommendations for

administering PEP to newborns of HBV-positive mothers, by implementing policies and procedures to ensure infants are protected. Hospital protocols should require identification of all in-



fant born to mothers who are HBV-positive as well as mothers with unknown status, ensure appropriate PEP for these infants, and administer the

HBV vaccine birth dose to all newborns before hospital discharge.

Pediatric providers should know the HBV status of mothers of all infants under their care. They should make sure the infant receives three HBV vaccine doses by six months of age and PVST is performed at 9-15 months of age, after vaccination is complete. PVST includes testing for HBV surface antigen (HBsAg), which indicates an active infection, and surface antibody (anti-HBs), which indicates immunity.

Even with current PEP practices, 800-1000 infants become infected at birth in the U.S. every year. These infants will have a 90% chance of chronic HBV infection, and 25% of them will ultimately die prematurely from liver cancer, cirrhosis or liver failure. For more information on perinatal HBV infection and prevention, contact the TDH PHBP coordinator ([m.janice.johnson@tn.gov](mailto:m.janice.johnson@tn.gov)). — *by Janice Johnson, RN* ❖

## Rates of Foodborne Illness in the United States, 2014

TDH is one of ten sites participating in the Foodborne Diseases Active Surveillance Network (FoodNet). FoodNet monitors the incidence of laboratory-confirmed infections caused by nine pathogens commonly transmitted

through food: *Campylobacter*, *Cryptosporidium*, *Cyclospora*, *Listeria*, *Salmonella*, Shiga toxin-producing *E. coli* (STEC) O157 and non-O157, *Shigella*, *Vibrio* and *Yersinia*. FoodNet provides a foundation for food safety policy and foodborne ill-

ness prevention, by utilizing surveillance data to inform where efforts are needed.

Progress in reducing foodborne

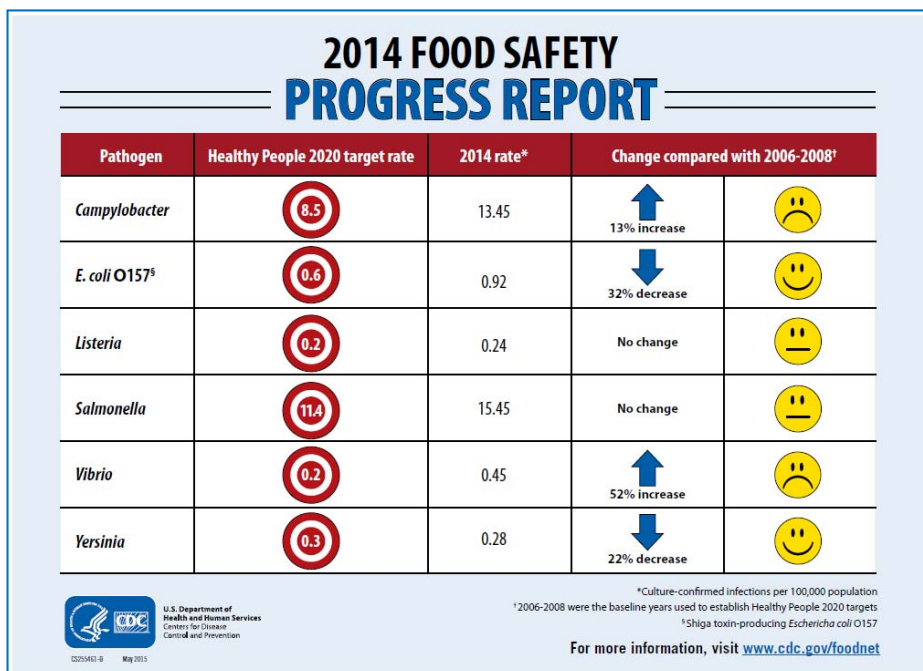
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## Rates of Foodborne Illness (continued)

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illness has been mixed in recent years. This year's FoodNet report shows some positive results, but much work remains to be done. Here are a few of the findings from 2014:

- ▶ More than 19,500 cases of laboratory-confirmed bacterial and parasitic infection, 4,445 hospitalizations and 71 deaths were identified among 48 million residents of the ten participating states (15% of the U.S. population).
- ▶ The most frequent cause of infection was *Salmonella*, which accounted for 38% of reported infections. *Campylobacter* was second, with 33% of infections.
- ▶ STEC O157 infections have decreased 32% since 2006-2008; non-O157 infections increased 22% when compared with recent years, partly due to new diagnostic tests that make testing faster and easier.
- ▶ *Campylobacter* infections, often linked to chicken, are up 13% since 2006-2008. At nearly 13.5 lab-confirmed cases per 100,000 people, the rate is far above the federal target of 8 cases per 100,000.
- ▶ *Salmonella* infections overall are at 2006-2008 levels; however, infection with *Salmonella* serotype Typhimurium, often linked to beef and poultry, is down 27%.



Reducing all types of foodborne infections will require new initiatives and a variety of approaches. Collaboration between public health, regulatory agencies, industry and the public will be essential. The full 2014 FoodNet report is available at [http://www.cdc.gov/mmwr/preview/mmwrhtml/mm6418a4.htm?s\\_cid=mm6418a4\\_w](http://www.cdc.gov/mmwr/preview/mmwrhtml/mm6418a4.htm?s_cid=mm6418a4_w).

## One Health: Chikungunya

The One Health concept refers to the interrelationships between human, animal and environmental health. Nothing better demonstrates these relationships than vectorborne diseases. An important vectorborne disease that is newly emerging in the Western Hemisphere is chikungunya virus infection. The chikungunya virus originally circulated between mosquitos and non-human primates in Africa. The virus was first identified in the 1950s after it began causing epidemics in humans. Its mosquito vectors have expanded their geographic range in recent decades, leading to outbreaks in new areas.

In December 2013, an outbreak of chikungunya began on the Caribbean



island of St. Martin. Since that time, more than one million cases have occurred in the region, and transmission of the disease has been confirmed in 44 countries throughout the Caribbean and Central and South America. Nearly 2500 cases were identified among U.S. travelers to affected regions in 2014, including 43 Tennesseans. Additionally, 11 locally-transmitted cases were reported in Florida.

The disease, which is marked by acute onset of fever and severe joint pain, is rarely fatal. Deaths attributed to chikungunya usually occur among the elderly or those with preexisting medical conditions. In addition to fever and joint pain, frequent symptoms include muscle pain, headache, nausea, fatigue and rash. In some patients, joint pain can recur for weeks to months. There is no specific treatment; however, most affected individuals will recover fully.

The virus is spread by the same *Aedes* mosquito species which transmit dengue virus. Chikungunya can often be difficult to distinguish from dengue, especially in the first week of illness.

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# Chikungunya (continued)

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Health care providers are encouraged to test for both chikungunya and dengue in patients with compatible symptoms and travel history. Because there is no vaccine, the best way to avoid chikungunya is to avoid being bitten by mosquitoes—by wearing repellants and eliminating potential mosquito breeding sites such as buckets, flower pots and tires. Those who are ill should avoid being bitten by mosquitoes to prevent spread of the disease. — by Julie Shaffner, MS, MPH ❖

## TB in Tennessee Department of Health History

March 24<sup>th</sup> was World TB day. TDH TB Elimination Program staff took the opportunity to look back at the history of TB and to remind everyone of the importance of controlling this devastating disease. Below are a few excerpts from the history of TB in Tennessee.

- ▶ 1923: Legislature creates the Tennessee Department of Health.
- ▶ 1927: Legislature creates the Division of Tuberculosis Control.
- ▶ 1938: Special TB education kits developed for school aged children.
- ▶ 1939: 3,206 TB cases reported statewide—a rate of 111.6 per 100,000 population (these numbers exclude childhood cases.)
- ▶ 1951: The first state-owned TB hospital in Tennessee, the Learline Reave Sanatorium in Greeneville, closes. The Tennessee Tuberculosis Hospital in Chattanooga accepts its first patients. Other state TB hospitals operate in Memphis, Knoxville and Nashville. The average daily census of all state TB hospitals is 630 patients.
- ▶ 1960: 357 Tennessee residents die from TB, while 2,202 new cases are reported. Routine health department X-ray examination clinics are provided in 91 counties, administering more than 117,000 x-ray examinations.
- ▶ 1965: 251 Tennesseans die from TB.
- ▶ 1971: Tuberculosis Control Act reorganized as Division of Tuberculosis Control.
- ▶ 1974: Record low number of cases (854) prompts discussions to close all state-operated TB hospitals.
- ▶ 1975: Hospitals in Chattanooga and Memphis close. First regional chest disease clinics open in Chattanooga and Columbia.
- ▶ 1976: Hospital in Nashville closes. Four new regional chest disease clinics open.
- ▶ 1985: 49 TB deaths are reported in Tennessee—a 95% decrease from annually reported deaths in the 1930s.
- ▶ 2010-2014: Tennessee averages 161 cases per year. At 2.5 cases per 100,000 population, the rate is slightly lower than that of the U.S. overall.



Architect's drawing of the Middle Tennessee Tuberculosis Hospital in Nashville, now renovated and serving as the State Public Health Laboratory

The Tennessee Tuberculosis Elimination Program provides programmatic oversight, clinical guidance, education, training and resources to Tennessee's 13 regional public health TB programs, which serve all 95 counties. — by Jason Cummins, MPH ❖

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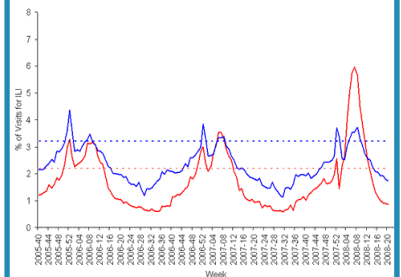
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