



▶ TTBEP AND TDOC COLLABORATION IN TB CONTACT INVESTIGATIONS 2



▶ INCREASED REPORTS OF CRYPTOSPORIDIOSIS IN TENNESSEE 2

▶ SPOTLIGHT: DONNA GIBBS... 3

▶ BROTHER, CAN YOU SPARE A DOSE (H1N1 VACCINE)?..... 3

▶ EGGS, EGGS AND MORE EGGS!..... 4



▶ SALMONELLA INFECTION IN INFANTS LINKED TO SHOPPING CARTS 4

▶ NEWBORN SCREENING IN TENNESSEE 4

▶ CHANGE IN REPORTABLE DISEASES 5

Tennessee *epi-news*

TENNESSEE DEPARTMENT OF HEALTH
COMMISSIONER SUSAN R. COOPER, MSN, RN

National Toxic Substance Incidents Program

According to The National Response Center (NRC), the US agency that receives reports of oil and chemical spills, the nation saw a decrease in the total number of oil and chemical spill incidents during 2006 - 2008 yet Tennessee had the second largest percent increase in NRC-reported oil and chemical spills in the U.S. during 2006–2007. A substantial proportion of these incidents were reported as having an unknown cause and occurred in densely populated urban counties.

The Tennessee Department of Health (TDH) is working with the Agency for Toxic Substances and Disease Registry to create the National Toxic Substance Incidents Program (NTSIP), to reduce the morbidity and mortality associated with toxic substance incidents. As part of this work, TDH is partnering with federal, state, and local agencies that are involved with toxic substance activities. When a toxic substance is release TDH collects detailed information.

TDH will use these data to document the following:

- ▶ frequency and location of hazardous substance releases.
- ▶ substances most frequently involved in a release
- ▶ factors contributing to hazardous substance releases
- ▶ rate of hazardous substance releases per census population
- ▶ evacuation capabilities of the areas affected

This information and collaborative efforts are important to help train emergency responders and improve emergency response planning, promote methods to prevent future releases, mitigate the public health consequences when a release does occur, and improve patient care through enhanced knowledge of short-term and long-term health effects associated with chemical exposures.



For more information or to report a toxic substance release in Tennessee, please call the Environmental Epidemiology Program at (615)741-7247 or via e-mail at eep.health@tn.gov. For more information, visit <http://health.state.tn.us/environmental/NTSIP.htm> — by *Melissa Kranz, MPH* ❖

Tennessee Releases First Report on Healthcare Associated Infections

Healthcare-associated infections caused 1.7 million illnesses and 99,000 deaths in 2002, making it one of the top ten causes of death in the U.S. (Klevens et al, 2007, Public Health Reports). In 2006, the Tennessee legislature began requiring hospitals to report certain hospital-acquired infections to the Tennessee Department of Health.

Hospitals in Tennessee monitor central line associated blood stream infection (CLABSI) rates in many types of intensive care units (ICU). A central line is a tube placed in a patient's large vein, (e.g. neck, chest, arm or groin). The line is used to give fluids and medication and to withdraw blood. The development of a blood-stream infection anytime beyond 48 hours

after the insertion of a central line is considered a CLABSI.

Hospitals record the number of CLABSIs and the total number of days a central line was in place. Epidemiologists at the Tennessee Department of Health used this information to calculate infection rates.

(Continued on page 2)

Tennessee Releases First Report on Health-care Associated Infections (continued)

(Continued from page 1)

Pooled mean rates of CLABSIs in adult and pediatric ICUs in Tennessee in 2008 were compared to published national rates for 2006–2007.

In the first statewide report required by this

legislation, CLABSI rates among all reporting Tennessee adult and pediatric ICUs were 20% higher than nationally. Rates were highest in pediatric ICUs at 3.2 infections per 1,000 central line days and lowest in nonmajor medical surgical ICUs at 1.7 infections per 1,000 central line days.



To read the report in its entirety, please visit http://health.state.tn.us/Downloads/TN_HAI_Report_2008_Jan_Dec_final.pdf — by Beth Anne Frost, MPH ❖

Increased Reports of Cryptosporidiosis in Tennessee

During 2006-2009, Tennessee reported 315 cases of cryptosporidiosis statewide. Forty-nine (15.7%) were from the Northeast Region, though this region represents only 6% of the state's population. Forty-seven (96%) of 49 cases in the Northeast Region were from Greene and Washington counties. Investigation of cryptosporidiosis in this region is underway. Factors being examined include the frequency of specimen collection and reporting by physicians, potential pathogen sources in the environment, food and restaurant exposures, and direct contact with infected persons.

Tennessee Department of Health (TDH) Laboratory Services, Knoxville location,

conducts DNA-based speciation of *Cryptosporidium* in stool samples after antigen tests have shown the sample to be positive. This specific characterization of *Cryptosporidium* as *C. hominis* or *C. parvum* aids outbreak and sporadic case investigations by providing the causative agent of certain patients' infections and by helping to identify likely environmental sources. TDH Laboratory Services has also obtained equipment for field collection of water samples and laboratory testing of these environmental samples.

The development of a supplemental *Cryptosporidium* interview form has assisted in gathering complete information about food and restaurant exposures,

drinking water, treated and untreated recreational water exposures, and animal contact.

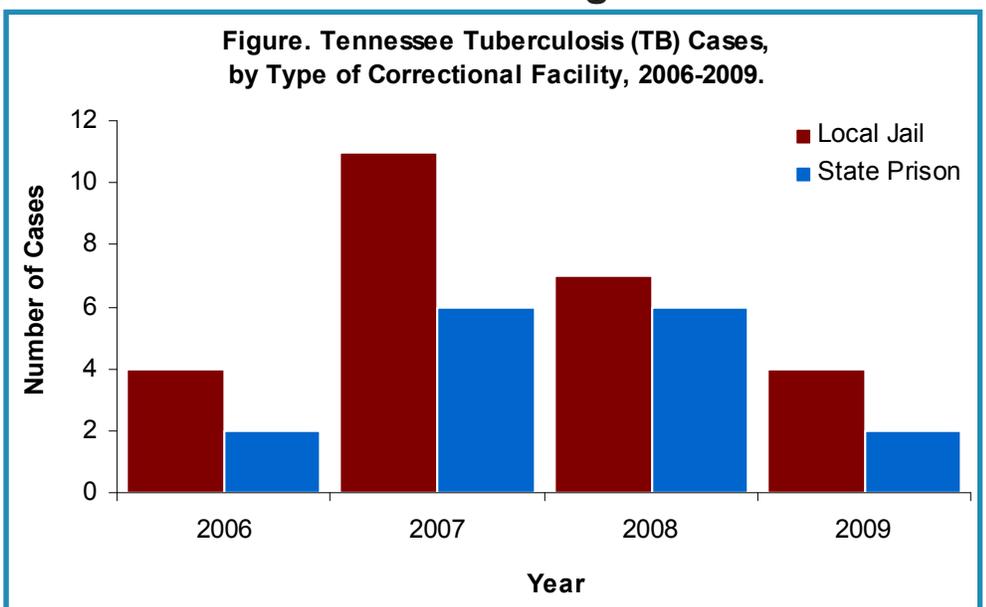
Finally, improved data sharing with the Tennessee Department of Environment and Conservation and the Tennessee Department of Agriculture will aid in identifying priority areas for additional education and environmental assessment. These efforts and interagency collaboration will help us understand cryptosporidiasis in Tennessee and add to the national conversation about the growing incidence of illness caused by *Cryptosporidium*. — by Judy Manners, MS ❖

TTBEP and TDOC Collaboration in TB Contact Investigations

Since 2006, there have been 953 cases of tuberculosis (TB) in Tennessee. Of these, 42 were diagnosed in correctional facilities and 16 in state prisons (Figure). Inmates in correctional facilities are at high risk for TB infection and remain a concern for the Tennessee TB Elimination Program (TTBEP).

When a case of TB is reported in a prison, extensive work begins to identify the infectious period, sites of exposure, and persons who were potentially exposed. During a contact investigation, several sites of exposure and hundreds of potentially exposed individuals can be identified in several different public health regions.

The TTBEP has partnered with the Tennessee Department of Corrections (TDOC) to assist with contact investigations in the state prison system. TTBEP and TDOC have identified a point-of-contact at each office through which all requests and infor-



mation flows. Having these points-of-contact has streamlined the communication flow and decreased the turnaround time when information is requested. The

TTBEP and TDOC collaboration will help TB elimination efforts in this vulnerable population. — by Jason Cummins, MPH ❖

SPOTLIGHT: Donna Gibbs



Donna Gibbs, Communicable and Environmental Disease Director for the South Central Region, has witnessed many changes since she began her public health career in 1974.

In the 1970's and 80's, annual TB skin testing was required for all teachers, bus drivers, cafeteria workers and restaurant workers, with annual x-rays for anyone ever diagnosed with TB. These x-rays,

made on a mobile bus, were performed with few safety regulations, and the x-ray tube was occasionally taken out and laid on the ground to cool!

Foodborne outbreaks, then known as food poisonings, were handled by environmental staff, with the main focus on collecting food samples. Donna began investigating these outbreaks with a "kit" that consisted of paper,

pencils, stapler, tape, t-shirt, flashlight and specimen collection bottles. She became so well known in the county that some patients would spot her ice-blue Corvette and call the health department to see if she was looking for them. The kit is history, but the Corvette is not!

Donna attended the first meeting held in Tennessee to discuss the AIDS epidemic and was on the committee that established

AIDS Centers of Excellence. Later, when she investigated a listeriosis outbreak that led to a nationwide recall of hotdogs, Donna received state and national recognition and was interviewed by reporters from the *Detroit Free Press*.

Donna helped investigate an outbreak of mumps in adolescents that contributed to the Advisory Committee on Immunization Practices' recommendation requiring children receive a second dose of the measles, mumps and rubella (MMR) vaccine. She was recognized as Tennessee Health Provider of the Year for this work.

A lifelong resident of Columbia, Tenn., Donna's hobbies are traveling and RVing with her husband, Jackie Gibbs, a nurse at Maury Regional Medical Center. They celebrated their 25th wedding anniversary this year, and are proud owners of Samantha, a bossy, 11-year-old salt-and-pepper miniature schnauzer.

Kudos, Donna, for your many contributions to public health in Tennessee! — by David Brumley, DDS, MPH ❖

Brother, Can You Spare a Dose (of H1N1 Vaccine)?: Flexibility Key to Efficient Distribution

To prevent delivery of 2009 H1N1 vaccine to Tennessee's myriad of public and private health care providers from being a shot in the dark, Tennessee Department of Health (TDH) staff employed an innovative distribution system. The process, designed with limited time and resources, resulted in >2.4 million doses of H1N1 vaccine arriving at 1,636 facilities in Tennessee.

In preliminary results, Tennessee accounted for 3.22% of the nation's weekly doses administered, but only 2% of the U.S. population. The unpredictable availability of the 9 different H1N1 vaccine products made flexibility key.

Public health typically only distributes vaccine for the Vaccines for Children program. When the World Health Organization declared a global pandemic of Novel H1N1 influenza in June 2009, the public demand for the vaccine to prevent the illness was

great. Though the federal government was committed to providing free H1N1 vaccine to health care providers, vaccine would not be available until well into the traditional flu season and initially in limited quantities.

Healthcare facilities were asked to preregister for vaccine via Tennessee's immunization registry web portal available to all facilities. TDH issued Pandemic PINs and created profiles for facilities eligible for direct shipping. Facilities electronically signed the Federal H1N1 Vaccine Provider Agreement and placed orders via online survey tools.

To allow flexibility in filling orders, facilities ordered injectable vaccine by ages of intended recipients and could specify multi-dose vials or prefilled syringes. Digital queries ranked facilities for each vaccine formulation. Within 24 hours of the allocation, most orders were transmitted to CDC and arrived to providers within 48 hours. An email shipping notifica-



tion system alerted facilities of a shipment.

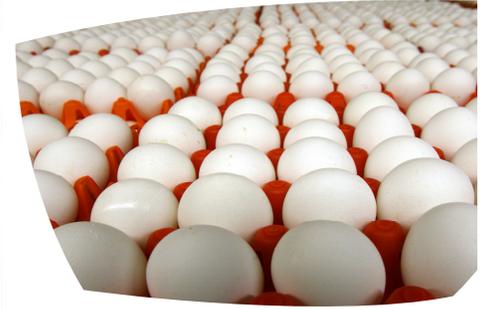
In conclusion, with minimal time and resources the distribution team developed a successful vaccine distribution and delivered the vaccine throughout Tennessee in a timely fashion. Thank you to the H1N1 Vaccine Distribution Team: Beth Anne Frost, Marion Kainer, Top Thianthai, Alice Green, Melissa Kranz, Jennifer MacFarquhar, Brian Moore, Amanda Ingram, and Kelly Moore. — *by Beth Anne Frost, MPH ❖*

Eggs, Eggs and More Eggs!

In the US, we expect >51,000 cases of *Salmonella* infections to be reported to public health each year, and 15-20% are serotype Enteritidis (SE). Eggs are a long documented source of these infections. In summer 2010, CDC identified sustained nationwide increase in the number of isolates with this pattern JEGX01.0004. Of the 2,612 SE illnesses with this pattern reported May 1–September 7, almost 60% appear associated with this outbreak, while up to 40% are likely to have been sporadic or associated with other, smaller outbreaks.

This outbreak has been linked to contaminated eggs produced at 2 Iowa farms and distributed nationwide. The production of eggs from the implicated farms was a substantial number of the >90 billion eggs produced nationally.

Because this serotype and pattern are common in a variety of foods including eggs, a substantial number of cases not directly related to the nationwide egg outbreak were reported. In Tennessee, many cases with this pattern was seen in summer 2010,



and several were part of an outbreak in Chattanooga-Hamilton County TN linked to consumption of egg sandwiches from
(Continued on page 5)

Salmonella Infection in Infants Linked to Shopping Carts

Findings from a study conducted by the CDC's Foodborne Diseases Active Surveillance Network (FoodNet), with Tennessee participation and leadership, suggest that becoming infected with *Salmonella* may be as easy as placing your infant in a shopping cart at the neighborhood grocery store. (Jones et al., 2006)

Some models estimate that there are over 1.4 million illnesses, including 400 deaths, caused by *Salmonella* in the U.S. each year. It is the second leading cause of bacterial diarrhea. Illness among adults has been linked to the consumption of animal products (e.g. beef, dairy, eggs and poultry), exposure to reptiles, international travel, and fresh produce. However, much less is known about the potential sources of infection that cause illness in infants.

During 2002-2004, FoodNet launched a case-control study of sporadic *Salmonella* infection among those under the age of one year. They made visits to all clinical laboratories in 8 sites trying to identify cases of laboratory-confirmed *Salmonella* infection. Participating sites were Connecticut, Minnesota, Oregon, and selected counties in California, Colorado, Georgia, New York and Tennessee, covering a population of approximately 35.2 million persons (12.1% of the U.S. population), including approximately 450,000 infants.

By the end of the study, FoodNet enrolled 442 infants infected with *Salmonella*, along with 928 healthy infants. Participants were asked about various environmental and dietary exposures they may have had in the 5 days before their illness onset or interview.

When compared with healthy infants, those with *Salmonella* infection were less likely to have been breastfed, and more likely to have had exposure to reptiles, ridden in a shopping cart next to meat or poultry, or consumed concentrated liquid infant formula during the 5-day exposure period. Travel outside the U.S. was associated with illness in those 3-6 months and >6 months of age. Attending daycare with a child with diarrhea was associated with *Salmonella* infection in infants >6 months of age.

As the study revealed, infants can become infected with *Salmonella* through a variety of exposures. Many exposures can be easily prevented with appropriate hand washing and health education. — by L. Amanda Ingram, MPH ❖

Newborn Screening in Tennessee



Newborn Screening is a mandated public health program to conduct metabolic and hearing screening for all infants born in Tennessee. The metabolic program operates by collecting a few drops of blood on a special type of filter paper from each infant, ideally 24-48 hours after birth, and testing it for >60

disorders. Through the hearing program, an infant hearing test is performed shortly after each birth in the hospital.

When follow-up is required for either the metabolic or hearing program, nursing staff members contact primary care physicians, health departments, department of education, audiologists and other specialists, as well as parents to locate the particular infant so the needed services can be provided. If not for these programs many deficiencies would remain undiagnosed until much later, and in many cases, too late. Infants identified through the screening programs that become confirmed cases of hearing loss or other metabolic disor-

ders receive hearing interventions or prompt medical treatment as early as possible, allowing more consistently positive outcomes.

In 2009, approximately 85,000 infants were screened for hearing loss; 89 infants were confirmed with permanent hearing loss and received early intervention and aural habilitation services. Approximately 88,000 infants were screened for metabolic disorders at the State laboratory, and 2,407 infants required further follow up. Of those, 159 were identified and treated. — by Cindy Wallace, Director, Genetics & Newborn Screening ❖

Change in Reportable Diseases

Reportable diseases are certain diseases or conditions that are required by Tennessee law and Health Department rules to be reported to local and state health departments. Healthcare providers and laboratories must notify the Health Department of a suspected case, positive culture, or laboratory test of these reportable diseases or events.

The list of diseases is evaluated, updated, and posted annually. The list is main-

tained by the Communicable and Environmental Disease Services section of the Tennessee Department of Health. The current matrix containing this list of reporting requirements is available at the following web site: <http://health.state.tn.us/Ceds/notifiable.htm>.

Clinical laboratories are required to submit cultures of certain organisms to the Department of Health Laboratory Services for confirmation, typing, and/or antibiotic

sensitivity testing. The new rule combines the list of diseases that are reportable and the list of diseases for which laboratories must submit cultures.

The change in reportable disease surveillance was designed to increase speed and efficiency in providing the current and accurate data needed to assess and respond to public health threats in Tennessee. — by *Sharon Hensley, DVM* ❖

Eggs, Eggs and More Eggs! (continued)

(Continued from page 4)

one catering company’s food trucks. The farm and distributor supplying eggs to this caterer did not receive eggs or layer chickens from Wright County Egg Farm (Galt, Iowa) or Hillandale Farms of Iowa, Inc., and this TN outbreak was not linked to the nationwide outbreak.

Large outbreaks involving a commonly recognized serotype and PFGE pattern are challenging for investigators, and standard methods of molecular subtyping alone are not sufficient to classify all cases. CDC is currently evaluating advanced molecular methodologies (MLVA=multiple-locus variable-number

tandem-repeats analysis) to see if they can help distinguish between outbreak-related cases and sporadic cases. — by *L. Amanda Ingram, MPH* ❖

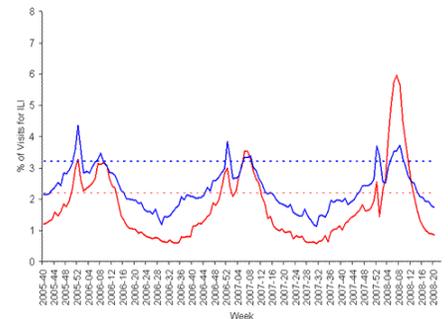
Reported Cases, by Year of Diagnosis, Tennessee, 2006-2010

Condition	2006	2007	2008	2009	2010*
Chlamydia	25320	26969	27939	29761	25364
Cryptosporidiosis	47	140	48	82	47
Gonorrhea	9694	9584	8754	7933	6336
HIV/AIDS	952	967	1009	1001	833
Meningococcal Disease	25	21	21	15	10
Methicillin-resistant <i>Staphylococcus aureus</i> (MRSA), invasive	2029	1973	1988	1954	1610
Pertussis	179	74	120	203	179
Rocky Mountain Spotted Fever	260	188	231	187	294
<i>Salmonella</i> , non-Typhi	849	852	923	779	969
Syphilis	1016	1207	1271	1316	1051
Tuberculosis (TB)	277	235	282	210	162
Pediatric TB 0-4 yrs	11	4	13	5	9
Pediatric TB 5-15 yrs	6	7	2	6	2
West Nile virus (WNV)	22	11	19	9	4

* YTD Totals as of November 27, 2010

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 info:
(615) 532-8507
robb.garman@tn.gov



Keeping Food Safe During Power Outages

Severe storms and other events can cause the power to go out unexpectedly. Knowing how to keep food safe during these times will help minimize the potential loss of food and reduce the risk of foodborne illness.

Ensure food safety during power outages using these tips (www.foodsafety.gov):

- ▶ Don't open the refrigerator door. Your fridge can keep food cold between 2 and 4 hours without power. Opening the door will cause it to warm up more quickly.
- ▶ If the power is out for more than 4 hours, move dairy products, meat, fish, eggs, and spoilable leftovers into a

cooler packed with dry or block ice. Plan ahead and know where block and dry ice can be purchased.

- ▶ A freezer that is half full will keep food cold for up to 24 hours. A full freezer will keep food cold for up to 48 hours, if you keep the door closed.
- ▶ Use a food thermometer to check the temperature of your food right before you cook or eat it. Throw away any food that has a temperature of more than 40° F.
- ▶ Be prepared by keeping some food items that don't require refrigeration. Shelf-stable foods, boxed or canned milk, water and canned goods should be part of a planned emergency food supply.
- ▶ For optimal food safety, refrigerators should maintain temperatures below 40° F. Freezers should stay below 0° F. When the power is out, a standalone appliance thermometer can be used to tell you what the temperature is inside your freezer or refrigerator at all times.
- ▶ Once the power is restored, food may be safely refrozen if the food still contains ice crystals or is at 40° F or below. You will need to evaluate each item separately. Partial thawing and re-freezing may reduce the quality of some food, but the food will remain safe to eat.

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