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Tennessee epi-news

TENNESSEE DEPARTMENT OF HEALTH

COMMISSIONER JOHN J. DREYZEHNER, MD, MPH

Resurgent Measles Tests Tennessee's Preparedness, May 2014

A West TN man, "Mr. X", had felt under the weather for several days since returning from a trip to the Philippines. On the morning of Friday, April 25th he noticed a rash on his face. Later that day, the TDH West TN Regional Office (WTRO) received a call from an infectious disease physician reporting the presumptive case of measles. WTRO responded quickly to identify all individuals who had been in close proximity to Mr. X during his infectious period and to evaluate the measles immunity of all of these contacts. More than 125 contacts were identified within the window of time for vaccination to be protective (72 hours after initial exposure), so measles vaccine was offered on Saturday to all who needed it. WTRO also initiated surveillance to detect any additional measles cases.

Four secondary cases of measles were ultimately identified in three co-workers and an outpatient healthcare provider, all of whom had contact with Mr. X in the days prior to his rash onset. Two of the secondary cases traveled to other areas of the state while infectious, exposing many more people. In all, more than 500 contacts in five TN counties and two other states were informed of their exposure and instructed to notify the local health department immediately of any illness within 18 days of their last exposure to a person with measles.

Sustained measles transmission in the U.S. was interrupted more than a decade ago, due to high vaccination coverage. MMR vaccine is safe and highly effective in preventing measles and its complications. One dose is about 95% effective in producing immunity; two doses are 99% effective. However, measles is still common in many parts of the world, including some coun-

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CSMD is a Valuable Resource for Tennessee Clinicians

Starting with this issue of Epi-News, we will provide regular updates on Tennessee's Controlled Substance Monitoring Database. Since the Prescription Safety Act of 2012 made usage of the CSMD mandatory as of April, 2013, it has become a more effective resource to help address the growing issue of prescription drug abuse/misuse in our state.

Here is a quick snapshot of data points from calendar year 2013:

- Registrants increased by 57% to 34,802;
- Patient reports requested increased 140% to 4.49 million;
- Prescriptions reported to the CSMD increased by 0.7%;
- Opioid prescriptions decreased by 0.4%, while benzodiazepine prescriptions decreased by 3.6%; and
- High-utilization patients ("provider shoppers") identified steadily decreased (see chart on p. 4).

A survey of prescribers conducted in 2013 returned the following notable responses:

- 71% of responders have changed a treatment plan after viewing a CSMD report;
- 73% of responders are more likely to discuss substance abuse issues or concerns with a patient;
- 57% of responders are more likely to refer a patient for substance abuse treatment; and

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Resurgent Measles (continued)

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tries in Europe, Africa, Asia and the Pacific. More cases of measles have been reported in the U.S. in 2014 than in the past 15 years: 477 cases in 20 states as of June 13, mostly in unvaccinated individuals.

Measles is a highly contagious viral illness that can lead to serious complications in up to 30% of cases. Illness is characterized by high fever, cough and runny nose, followed in one to four days by conjunctivitis and a red rash that spreads from the head to the extremities. White spots on the buccal mucosa, known as Koplik's spots, also occur. Complications can include pneumonia, encephalitis, seizures and death. Up to 90% of susceptible (non-immune) individuals who are exposed will develop measles. A susceptible person can be infected after entering a room as long as two hours after a measles patient leaves. Ill persons can transmit virus from four days before to four days after rash onset. Susceptible contacts may become ill up to 18 days after exposure to a case.

If you suspect measles in a patient with a febrile rash illness, particularly with a history of recent international travel, immediately isolate the patient using airborne precautions or place in a private room with the door closed. Contact your local health department for assistance with measles assessment and possible testing. Prompt recognition and follow-up of exposed contacts are essential to minimize the scope of any outbreak. Great respect must be afforded this virus, as it is very adept at finding susceptible people. — *by Robb L. Garman, MPH* ❖

MMR vaccine recommendations

- Two doses:
  - ⇨ all children* at age 12–15 months and 4-6 years
  - ⇨ adults in high-risk groups (e.g. health care personnel, international travelers or students in post-high school educational settings) who lack documentation of immunity to measles
- At least one dose for all other adults born since 1956 who have no evidence of immunity to measles

*Infants 6-11 months should receive one dose prior to international travel, second dose at 12-15 months of age (at least 28 days after first dose) and third dose at 4-6 years.

Adopting the 2009 FDA Food Code in Shelby County

When the TN legislature adopted the 2009 FDA Food Code, food safety regulators across the state celebrated this as an important milestone to help prevent foodborne illnesses and improve food safety practices throughout the state. Changing the state law, however, was only the beginning. Regulators had a long list of things to do in implementing this directive. In Shelby County, for example, eight different jurisdictions (seven cities and Shelby County itself) have local food ordinances; all of them must be revised and harmonized to make adoption of the Food Code a reality. Since nearly 70% of all services and establishments impacted by the change are found in Memphis, work began there.

The Shelby County Health Department (SCHD) crafted a revised ordinance to align with the 2009 Food Code and recruited the president of the Memphis Restaurant Association to gather support for it. After several iterations a final draft was prepared and reviewed by a sponsor in the Memphis City Council, at which point it went to the city's legal office for review. It was then assigned to the Hospitals and Health committee for First Reading. After this an ordinance may go to full City Council If the ordinance passes the full City Council First Reading, it goes back to committee, and the process repeats for Second Reading and Third Reading. If an item does not pass the Third Reading, it may not be resubmitted for one full year.

The same procedure was followed for the Shelby County Commission. Fortunately, both the City Council and the County Commission approved the new ordinances. Before the 2009 Food Code can be adopted throughout Shelby County, however, this lengthy process must be repeated in six more municipalities. — *by David Sweat, MPH* ❖

Spotlight: Brenda Chapman, Maury Regional Medical Center

Brenda Chapman, RN, CIC, is a certified infection preventionist at Maury Regional Medical Center (MRMC) in Columbia, part of a healthcare system that also includes Marshall Medical Center in Lewisburg, Wayne Medical Center in Waynesboro, Lewis Health Center in Hohenwald and Maury Regional Spring Hill. Brenda has been a registered nurse for 34 years, with 15 years working in infection prevention at MRMC. Previously, Brenda was a registered nurse for MRMC and Columbia Pediatrics.

In her current position, Brenda has had a close relationship with public health in the TDH South Central Regional Office (SCRO). Local, regional and state health departments rely on partnerships with infection prevention professionals to participate in disease surveillance, reportable disease case investigations and outbreak investigations. Three of Brenda's facilities have participated in the SCRO syndromic surveillance program for more than 11 years. She sends daily emergency department presenting complaints data from the facilities to the SCRO regional epidemiologist, who routinely analyzes it for early evidence of an outbreak.

Brenda's role as an infection preventionist is critical to the safety of patients and staff in the MRMC system. Throughout the day, she monitors and assesses patient infections, laboratory cultures and medical records to assist in the delivery of safe, quality healthcare. To do this, she utilizes a real-time,

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Spotlight: Brenda Chapman (continued)

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web-based surveillance system which receives data feeds from MRMC. This system allows Brenda to analyze and interpret infection control data; notify local and state authorities about reportable diseases; plan, manage and evaluate infection prevention and control activities; and monitor infection control policies and procedures to ensure compliance with state and federal regulatory standards. — *by David E. Brumley, DDS, MPH* ❖

One Health: Emerging Viruses

What do HIV, Ebola, Marburg, hantavirus pulmonary syndrome, West Nile encephalitis, Nipah, Hendra, SARS, novel influenza and MERS have in common? They are all diseases that have emerged in humans (and domestic animals in some cases) in recent decades, caused by viruses that originated in wild animals. Most emerging infections in humans are zoonotic, and most are caused by viruses.

The latest of these to make headlines is MERS-CoV, a betacoronavirus first recognized in Saudi Arabia in 2012, which causes severe respiratory illness and renal failure in humans. Betacoronaviruses are usually associated with bats; viruses closely related to MERS-CoV have actually been isolated from bats. However, animal studies have shown MERS-CoV to be widespread among camels in the Middle East and Africa. Antibodies to MERS-CoV were even found in stored camel serum samples from the 1990s, suggesting the virus was present in camels long before human infections were recognized.

Some experts believe MERS-CoV likely originated in bats, and camels serve as an intermediate host, although much about its origin and transmission remains unknown. It is known, however, that bats harbor many viruses of human and veterinary importance. Of the remaining nine emerging diseases listed above, five (Ebola, Marburg, Nipah, Hendra and SARS) are caused by viruses that have been linked to bats. Bats' incredible diversity—comprising 20% of all known mammal species—as well as their roosting behaviors, food sources, movement patterns and long life spans may all play a role in making bats a rich source of viruses.

Some of these emerging pathogens, such as the Nipah and Hendra viruses, are thought to be ancient. What then is the cause of their recent emergence in humans and domestic animals? Activities that increase human and domestic animal exposure to bats, such as encroachment into and destruction of wildlife habitats, increase the likelihood of spillover of novel viruses. Additionally, transit of humans, animals and animal products around the world increases the chances of worldwide dissemination. Improved surveillance and detection methods are finding these viruses more efficiently, but further work is urgently needed to detect and respond to future spillover events before a novel virus becomes the next pandemic. — *by Heather Henderson, DVM, MPH* ❖

Impact of Culture-Independent Diagnostic Testing on Public Health Laboratories: Adapting and Moving Forward

A shift in clinical diagnostic practice for enteric pathogens that relies on culture-independent diagnostic tests (CIDT) is impacting public health lab surveillance efforts. CIDT provides many advantages from a clinical and patient perspective, including rapid diagnosis and a wider range of detectable pathogens. However, these tests lack surveillance tools, such as antimicrobial resistance and subtyping, which have been instrumental in detecting local and multistate outbreaks due to contaminated products. To have these critical tools, public health labs must recover an isolate from submitted specimens after CIDT has been performed, increasing material cost and workforce burden. Another obstacle is that targeted testing such as CIDT will not detect novel pathogens.

Epidemiologists and clinicians face challenges such as what to do with conflicting results from clinical and public health labs, as well as multiple-pathogen hits. Is the patient truly coinfected, or a only carrier? CIDT false positives will have negative results from the public health lab, but that could also be caused by culture sensitivity limitations compared to molecular assays or delay in culture due to transit. CIDT false negatives will remain unknown, as the clinical specimens will not be forwarded to the public health lab. Multiple pathogen detection is complicated, as patients can be carriers of pathogens such as *C. difficile* and norovirus without having symptomatic illness.

Technologies on the horizon, such as whole genome sequencing (WGS) will address some of these issues. As a broad-range methodology rather than a targeted test, WGS has the ability to detect novel pathogens and identify antimicrobial resistance markers. This is clearly an exciting time in pathogen detection; one that will ultimately benefit patient care and advance public health. — *by Amy Woron, MS, PhD and Corinne Tandy, MS* ❖

The Tennessee Mosquito and Vector Control Association's 2014 Annual Meeting

The TN Mosquito and Vector Control Association (TMVCA)'s 2014 annual meeting was held March 17-18 at the Ellington Agricultural Center. As always, the agenda included informative and entertaining presentations on a variety of vectorborne disease-related topics.

The first day featured sessions on Lyme disease vectors in Tennessee, chemoreception in *Anopheles gambiae* mosquitos, Chagas disease in Bolivia and implications for Tennessee, and an interactive table-top exercise on the chikungunya virus—which has recently become established in the western hemisphere.

The second day of the meeting was rounded out with presentations from a Nashville pest control company on their involvement in global malaria projects, a great example of multi-agency collaboration and research on bed bug abatement in affordable housing, and lessons learned and program updates from TN counties conducting mosquito surveillance and response.

The TMVCA is a professional scientific organization providing leadership, information and education for enhancement of public health and quality of life through the suppression of mosquitoes and other disease vectors. The group is made up of professionals in the fields of vector control, surveillance and research. TMVCA was formed by a steering committee of local and state agency officials in 2011 after the need for such a group was recognized by the state medical entomologist. TMVCA keeps members informed of new developments in vector-borne diseases and advancements in vector control and surveillance through its newsletter, workshops and annual meeting.

The group welcomes new members. For more information, visit the TMVCA website: http://tennmosquito.org/index.html. — *by Julie Shaffner, MS, MPH* ❖

CSMD (continued)

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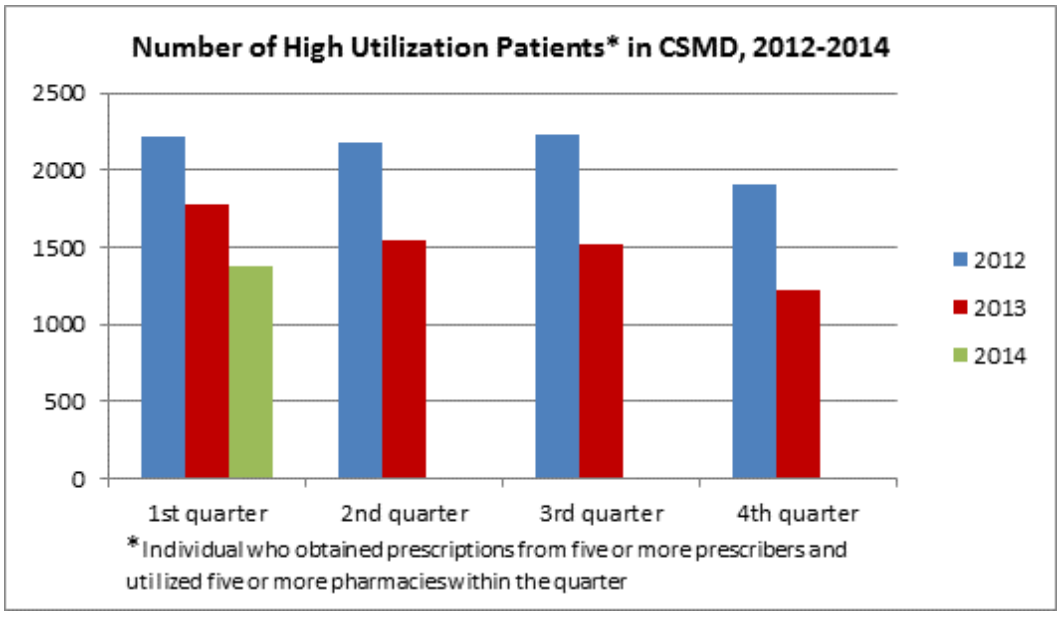
- 79% of respondents feel that the CSMD is useful for decreasing doctor shopping.

TDH welcomes suggestions and comments from all healthcare professionals who use the CSMD. Please forward those to Dr. Andy Holt at andrew.holt@tn.gov. For additional information about the CSMD, visit the website at http://health.state.tn.us/boards/Controlledsubstance/faq.shtml.❖



TENNESSEE DEPARTMENT OF HEALTH

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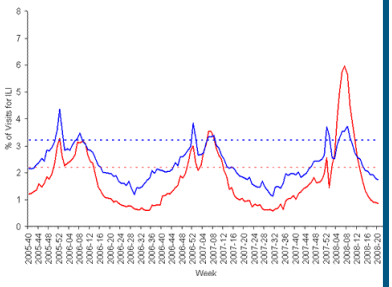

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Conducting year-round influenza surveillance including free laboratory testing for selected specimens.

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