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Tennessee *epi-news*

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

Investigation of community health status in Roane County

On December 22, 2008, more than one billion gallons of coal ash sludge were released from a Tennessee Valley Authority (TVA) facility near Kingston, following the collapse of a retention pond wall. The Tennessee Department of Health (TDH), in collaboration with the CDC, quickly designed and administered a survey to identify and describe any adverse health effects in the community. GPS coordinates were recorded at all households to support ongoing outreach to residents and for spatial analysis.

In early January 2009, assessment teams visited 324 residences and interviewed 368 participants in 170 participating households. Nearly half (47%) of respondents reported fly ash present in their yards,

though only 4% reported participating in fly ash cleanup. A third of participants (33%) reported that their shoes or clothing had been in contact with the fly ash, and a smaller number (13%) reported direct skin contact. Nearly 2/3 (62%) of respondents reported no change in physical health status after the release; approximately 1/3 reported worsening of one or more symptoms. Among the most common symptoms reported were worsening of cough (27%), headache (25%), wheezing (14%), and shortness of breath (14%). Symptoms of stress and anxiety were reported by 52% of the participants. Most people living close to the release did not report a change in physical health status at the time of this survey. However, anxiety and stress were

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Tennessee Dogs Exposed to Chagas Disease Parasite

Chagas disease, caused by the parasite *Trypanosoma cruzi*, is endemic in Latin America and the southeastern U.S. Only six autochthonous human cases (originating from local exposure) have ever been reported in the U.S., including one in Rutherford County, Tennessee.

T. cruzi, which causes disease and sometimes fatality in both humans and animals, is transmitted by the feces of triatomine bugs (kissing bugs). After a kissing bug takes a blood meal and defecates, the parasite is left on its host. Transmission occurs

when the parasite is rubbed into the wound, an eye or the mouth.

During summer 2008, 860 canine serum samples were collected by Tennessee Veterinary Medical Association members in 30 counties statewide. These counties represented 5 of the state's 8 level III ecoregions. Seroprevalence has previously been reported for several mammalian wildlife species including opossums, wood rats, raccoons, armadillos, and coyotes. Our study found a seroprevalence of 6.4% (55/860) among canines.

Antibodies to *T. cruzi* were found in serum by using indirect immunofluorescence assays (IFA), and statistical analysis helped identify factors affecting infection. Older dogs and dogs kept outdoors were more likely to be positive for *T. cruzi*, perhaps because they have had more time and opportunity to be exposed to the insect vector carrying the parasite.

In Latin America dogs serve as disease sentinels for human surveillance efforts. Additionally, because canines exhibit per-

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Investigation of community health status in Roane County (continued)

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prominent findings.

TDH work in response to this incident

continues through monitoring of the cleanup efforts and the preparation of an ATSDR Public Health Assessment. This report will discuss sampling data for various routes of exposure, will draw conclu-

sions, and make recommendations for future action. It will be available later this year for public review. — by *Bonnie Bashor, MS* ❖

Tennessee Dogs Exposed to Chagas' Disease Parasite (continued)

(Continued from page 1)

sistent parasitemia they have potential to infect an uninfected bug vector and in-

crease the potential for human transmission. Though the potential role of dogs in transmission remains unclear, this disease continues to emerge as a public health con-

cern in the US, and further investigation is warranted. — by *Abelardo Moncayo, PhD* ❖

Malaria in Zambia

How time flies. We've been in Zambia for over a year. I miss my wonderful colleagues in Tennessee but I've found this new work at CDC tremendously challenging and rewarding. Day to day, I work with a Zambian colleague Dr. Oliver Lulembo at USAID and with National Malaria Control Center staff to implement the President's Malaria Initiative in Zambia. We support the Ministry of Health in scaling up effective, evidenced-based interventions: indoor residual spraying with insecticides, artemisinin-containing combination therapy for treating acute malaria, intermittent preventive treatment for pregnant women with sulfadoxine-pyrimethamine and insecticide treated bednets (ITN). We helped fund a nationwide cluster sample survey of over 4400 homes conducted by the National Malaria Control Center with support from the Malaria Control and Evaluation Partnership in Africa in

April/May of 2008. The results showed increases in ITN use and reductions in malaria prevalence rates in children <5 years old (**Table**) and in severe anemia rates in the same group. Malaria is particularly dangerous in children <5 years old and pregnant women.

This is a particularly exciting time to be involved in malaria control efforts. For the first time since the 1970s, malaria elimination is being openly discussed. There is a critical level of interest and funding for malaria control, which includes the Roll Back Malaria Partnership, Global Fund to Fight AIDS, Tuberculosis and Malaria; the U.S. President's Malaria Initiative; World Bank Malaria Booster Program; and the Bill and Melinda



Gates Foundation. Maintaining the recent dramatic reduction of malaria in Zambia will be a challenge in light of the global economic slowdown which impacts all of us. — by *Allen S. Craig, MD, CDC Resident Advisor, U.S. President's Malaria Initiative* ❖

Malaria Indicator Survey Results, Zambia, 2006 & 2008

Indicators	2006	2008
▶ Households with at least one insecticide treated bednets (ITN)	44%	60%
▶ Percentage of children <5 who slept under an ITN last night	23%	38%
▶ Percentage of pregnant women who slept under an ITN last night	24%	40%
▶ Children <5 years old with severe anemia (hemoglobin <8 grams/deciliter)	13%	5%
▶ Parasitemia rates	22%	10%

Evaluating the Impact of the HPV Vaccine in Tennessee

In 2006, a vaccine against human papillomavirus (HPV) was approved for use in girls and woman ages 11-26. Though it will take decades to measure the impact of the vaccine on cervical cancer incidence, short term changes can be assessed through surveillance of cervical dysplasia, which occurs with greater frequency and is detectable much earlier than cancer.

To monitor trends in high-grade cervical lesions, identify changes in HPV subtypes causing disease, and assess the impact of the HPV vaccine, the CDC has partnered with Tennessee as one of five states nationally to initiate a novel surveillance project entitled the HPV Vaccine Impact Monitoring Project (HPV-IMPACT). The work in the state will be accomplished through a partnership between the Tennes-

see Emerging Infections Program (EIP) and the Tennessee Cancer Registry (TCR).

The study will be piloted in Davidson County, and cases will be identified by reporting from hospital and commercial pathology laboratories directly to the cancer registry. For some cases, histologic specimens will be sent to the CDC for

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Evaluating the Impact of the HPV Vaccine in Tennessee (continued)

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HPV subtyping.

This multi-faceted effort will also involve monitoring vaccine coverage and cervical screening patterns in the population. Providers in Davidson County will be asked for information about patients reported to the TCR with high-grade cervical dyspla-

sia. All communications and data collection methods are designed with careful attention to protecting patient confidentiality. Study personnel look forward to working with providers and laboratories in this groundbreaking effort to monitor the impact of the HPV vaccine among the women of Tennessee.

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— by Karen Bloch, MD, MPH, Tennessee Emerging Infections Program, Vanderbilt University ❖

SPOTLIGHT: David Gregory, MD

When David Gregory, MD, of Nashville, founded and began treating patients at what he called the Siloam Family Health Center in 1991, he could hardly imagine what the small clinic would become. Today, Siloam's professional staff includes more than 400 volunteers and 25 employees, working out of a modern 12,000 square-foot clinic facility, offer high-quality, affordable health care for uninsured patients throughout Middle Tennessee. Refugees who have been relocated to the Nashville area are a substantial part of the patient population. Siloam staff and volunteers seek to minister to their patients' physical, emotional, and spiritual

needs. For more information about Siloam, go to their website at <http://www.siloamhealth.org/>.

Dr. Gregory's visionary leadership has been instrumental in Siloam's ability to serve this population and led to his recently being awarded the American College of Physicians Oscar E. Edwards Memorial Award for Volunteerism and Community Service. Even while dedicating much time and energy to the work at Siloam, Dr. Gregory continued his work as Associate Professor of Medicine at Vanderbilt University and a member of the medical staff at Nashville's VA hospital.

His medical curiosity and experiences have led to numerous publications on infectious disease diagnosis and treatment and prompt his frequent attendance at weekly infectious disease rounds and other events such as the annual EIP Day organized by the Tennessee Department of Health and Vanderbilt University. — by L. Rand Carpenter, DVM ❖



Environmental Health Tools Now Available in Spanish



Pediatric environmental health tools are now available in Spanish for health care professionals serving the Hispanic community. These educational tools in Spanish, along with tools in English, are provided by the National Environmental Education Foundation (NEEF), website <http://www.neefusa.org/health/index.htm>,

or telephone (202) 833-2933.

Children are highly susceptible to environmental pollutants. Furthermore, minorities and low income families are disproportionately exposed to environmental hazards, leading to higher rates of adverse health outcomes such as asthma and elevated blood lead levels.

The tools include "Environmental Management of Pediatric Asthma: Guidelines for Health Care Providers," designed to help pediatric primary care providers advise families about environmental triggers for children diagnosed with asthma, the nation's leading pediatric chronic illness.

Also available in Spanish are the Pediatric Environmental History Form, including both a one-page questionnaire to capture the most common environmental exposures to children as well as a follow-up survey, with more in-depth questions, that can help providers collect more information on specific exposures.

NEEF translated the materials in partnership with the National Hispanic Medical Association to ensure that the documents were adapted in a culturally appropriate manner. Additional resources include Spanish-language online presentations. — by David Borowski, MS ❖

Pharmaceuticals, Environment, and Abuse

Pharmaceuticals introduced into the water supply and their potential effects on human health, including impacts on growth and development, antibiotic resistance, and adverse drug events, are growing concerns. Several federal agencies, including EPA

and ATSDR, establish standards and acceptable levels for pharmaceuticals in the water supply, though little scientific data exists demonstrating the association between these levels and toxic health effects.

Adding to concerns regarding proper pharmaceutical disposal is the fact that certain pharmaceuticals are required to carry specific disposal statements to minimize misuse or abuse. Abusive, drug-seeking be-

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Pharmaceuticals, Environment, and Abuse (continued)



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haviors include going through the trash of

chronic pain patients to search for drugs such as used fentanyl patches that contain a potent narcotic medication. Guidelines for some easily abused medications instruct that flushing down the toilet is the recommended disposal method. These guidelines can be found at (http://www.whitehousedrugpolicy.gov/drugfacts/ht/proper_disposal.html).

While this type of disposal can be effective for preventing abuse, possible toxic effects from this type of disposal as well as from normal excretion from patients' bodies on the water supply need additional research.

To encourage proper disposal of prescription and over-the-counter drugs, some communities offer drug take-back programs or other programs that collect drugs at a central location for proper disposal. Providers, patients and pharmacists are encouraged to call their city or county governments' household trash and recycling services to find out more about drug take-back programs available in each community. Many pharmacists and the Tennessee Poison Center can also assist in providing proper medication disposal instructions. — *by Paul Petersen, PharmD* ❖

Seasonal and Pandemic Influenza Vaccine 2009-2010

The influenza season of 2009-2010 will be complex and challenging for clinicians who provide influenza vaccine. Vaccine is particularly important for people at high risk for complications or severe disease and those who live with and care for them.

The 2009 H1N1 pandemic strain necessitated production of a monovalent pandemic vaccine, in addition to the seasonal trivalent vaccine already in production. The pandemic influenza virus has primarily affected younger people, with strikingly low rates of disease and mortality among persons aged ≥ 65 years; CDC recommends targeting younger people for pandemic vaccination before expanding to those ≥ 65 . Nevertheless, 90% of deaths due to seasonal influenza occur in this older group, and they remain among the highest priority recipients for seasonal (non-pandemic) influenza vaccine.

Other groups are targeted for vaccination for certain reasons, and the **table** below is a quick reference. Target groups are not listed in any particular order.

When pandemic influenza vaccine supplies are sufficient to meet demand among target groups, availability will be extended first to healthy people ages 25-64 years, then, as supplies permit, to persons aged ≥ 65 years. The timing of expansion will depend upon the level of demand among the target populations relative to supplies.

Clinicians interested in receiving and administering the vaccine to patients may register for information. Go to <http://twis.tn.gov> for more information. Facilities only need to register one time. For current information on pandemic influenza, visit



<http://www.cdc.gov/h1n1flu/> or <http://health.state.tn.us/H1N1.htm>. — *by Kelly Moore, MD, MPH* ❖

Targeted Influenza Vaccination Groups

Seasonal Vaccine

- ▶ Pregnant women
- ▶ Health care personnel
- ▶ All children 6 months through 18 years
- ▶ Household contacts and caregivers of children <5 years of age (especially <6 months)
- ▶ All persons 19-49 years who have health conditions associated with higher risk of medical complications from influenza*
- ▶ All persons ≥ 50 years
- ▶ Household contacts and caregivers of persons ≥ 5 years with medical conditions that put them at higher risk for severe complications from influenza*, including all adults ≥ 50

Pandemic H1N1 Vaccine

- ▶ Pregnant women
- ▶ Health care and emergency medical services personnel
- ▶ All persons 6 months through 24 years
- ▶ Household contacts and caregivers for children <6 months of age
- ▶ Persons aged 25-64 years who have health conditions associated with higher risk of medical complications from influenza*

*Persons at higher risk of complications from seasonal and pandemic influenza include pregnant women; children <5 years; children <18 on long-term aspirin therapy (risk of Reye's Syndrome); adults and children who have chronic pulmonary (including asthma) or cardiovascular (except hypertension), renal, hepatic, neurological/neuromuscular, hematologic, or metabolic disorders (including diabetes mellitus); adults and children who have immunosuppression (including immunosuppression caused by medications or by HIV); and residents of nursing homes and other long-term care facilities.

How Many Food Recalls Can You Recall?

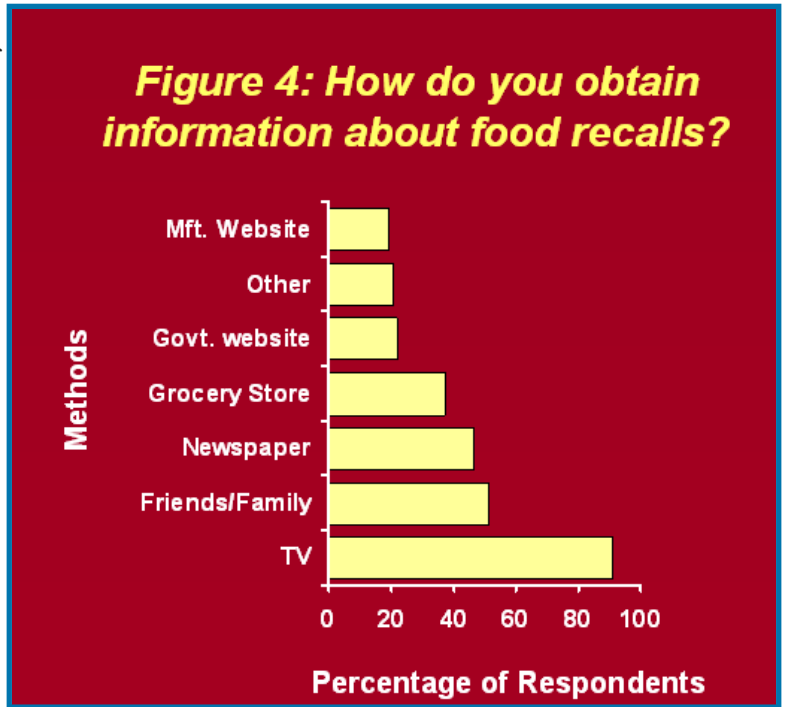


Foodborne illnesses are a substantial public health burden in the U.S., and outbreak investigations have led to large food recalls. Food recalls are voluntary and initiated by the manufacturer or distributor. Class I recall notices occur in the case of a reasonable probability that eating the particular food will cause health problems or death. In 2008, >180 such recalls were issued — more than 3 per week. Consumers’ response to recall information is poorly understood. The Tennessee Department of Health and the Nashville/Davidson Metropolitan Public Health Department conducted a survey about recalls among consumers statewide.

Awareness of food recalls was low; only 25% of respondents were aware of at least 4 food recalls, and only 30% routinely tried to learn about food recalls. Few respondents reported obtaining information about food recalls from government agencies such as FDA or USDA (**Figure**). These results suggest that many TN con-

sumers have little knowledge of food recalls and that government agencies need improved food recall public education strategies.

The Tennessee Food Safety Taskforce recently hosted a day-long meeting focused on food recalls, which included state and federal public health officials and beef and food retail and manufacturing representatives. The meeting focused on interagency roles and communication, especially during outbreaks, as well as discussion of how investigations are used to initiate a food recall. More information about the meeting’s proceedings is avail-



able at <http://www.foodsafetytaskforce.org/resources>. — by Katie Garman, MPH, CHES ❖

Reported Cases, by Year of Diagnosis, Tennessee, 2005-2009					
Condition	2005	2006	2007	2008	2009*
Chlamydia	23041	25320	26969	27939	22358
Gonorrhea	8619	9687	9584	8754	6092
Meningococcal Disease	28	25	21	21	10
Methicillin-resistant <i>Staphylococcus aureus</i> (MRSA), invasive	1994	2029	1973	1988	1314
Pertussis	213	179	74	120	139
Rocky Mountain Spotted Fever	139	260	188	231	142
<i>Salmonella</i> , non-Typhi	820	844	851	905	523
<i>Shigella</i>	507	200	363	968	296
Penicillin-sensitive <i>Streptococcus pneumoniae</i> , invasive	807	837	722	872	557
Penicillin-resistant <i>Streptococcus pneumoniae</i> , invasive	165	154	198	234	117
Syphilis	907	1016	1207	1271	998
Tuberculosis (TB)	299	277	234	282	157
Pediatric TB 0-4 yrs	10	11	4	13	3
Pediatric TB 5-15 yrs	6	6	7	2	4
West Nile virus (WNV)	18	22	11	19	2

* YTD Totals as of September 26, 2009

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



Diarrhea or dumb coaching, it takes a team to know for sure

Does this sound familiar? Taking it easy on a warm Saturday afternoon, perhaps watching a football game, you gradually notice an unsettled feeling. Is it the excitement of a close game? The urgency as someone moves in for an interception? Perhaps, but there is another kind of urgency too. Numerous trips to the bathroom ensue. A family member insists on a trip to the doctor.

To determine what caused your illness, your doctor requests a stool sample. She also recommends rehydrating fluids and a bland diet. Within several days you are on the mend. The doctor's office calls to

inform you that the culture grew *Salmonella*.

What happens next? Thinking back, you wonder, *what did I eat? Where did I go? What did I do?* One of the roles of the Communicable and Environmental Disease Services branch of the Tennessee Department of Health is to determine whether your illness might be part of a more widespread problem.

Stool samples positive for certain pathogens are required to be forwarded to the Tennessee State Public Health Laboratory. At the lab, these culture isolates are further characterized by additional culture, antibiotic susceptibility testing, serotyping, and genetic analysis. Databases maintained at CDC allow these results to be compared nationally. If there are multiple matches, it is possible that others had the same exposure. To prevent further illness, epidemiologists interview patients to help identify common foods or locations of exposure. Statistical analysis can help determine the probable contaminated item, whether food, water, or the environment. In national foodborne disease outbreaks, recalls or advisories could be issued to help prevent further illness.

It takes teamwork among private practitioners, clinical laboratories, public health laboratories, environmentalists, and epidemiologists to make this happen, but keeping people healthy and limiting that unique kind of urgency among Tennesseans and visitors are tangible rewards. — by *Alice Green, MS, DVM* ❖

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