Tick-Borne Infections Council of North Carolina, Inc.

2013 SPRING NEWSLETTER

Highlights…

Scroll down to see these features and more!

- Letters to Medical Providers from the State Department of Public Health on Lyme Disease and Rickettsial Diseases
- State Data on Reportable Tick-borne Infections
- Ticks and the Role of the State of North Carolina
- TIC-NC at Shakori Hills Music Festival, April 2013
- A Tribute to Marcee Toliver: Formally with NC State Public Health Pest Management
- Pittsboro-Based Company Makes Plant-Based Safe Products to Use Against Ticks and Mosquitoes
- VA Lyme Testing Act - A Clarification, March 22, 2013
- Lyme Disease and Genetics
- Tick-Borne Disease Alliance March Forum with US Senators Gillibrand and Blumenthal, and Congressman Gibson
- More on Tick-Related Meat Allergy
- Lyme Disease Tests That May Be Ineffective Prompt New FDA Guidance
- CDC Lyme Disease Case Definitions and Their History
- Lyme Disease - 2011 Case Definition and Suggestions for Medical Care for Possible Lyme Disease
- TIC-NC's Scientific Advisor Has Letter Published in *Zoonoses and Public Health*
- Boy Gets Rare Tick Infection from Blood Transfusion

Quote of the season… *"I visited TIC-NC's booth at the NC State Health Expo and really enjoyed the information I got and learned."* – Public health worker from a NC county

Save your ticks! **Researchers at the University of North Florida want ticks for testing. See our website, TIC-NC.org, for their submission forms.**

State Vector-Borne Disease Working Group Meeting Schedule

- August 16, 2013
- November 8, 2013

All meetings are from 10 a.m. to 12 p.m. and are open to the public. Cardinal Conference Room, Building 1, 5505 Six Forks Road, Raleigh, NC.

Links to Letters to Medical Providers from the State Department of Public Health on Lyme Disease and Rickettsial Diseases

The State Department of Public Health issues letters every year to medical providers on Lyme disease and the Rickettsial diseases such as RMSF:

http://epi.publichealth.nc.gov/cd/rmsf/TBRD_surveillance_2013.pdf
http://epi.publichealth.nc.gov/cd/lyme/docs/Lyme_surveillance_2013.pdf

North Carolina Data on Reportable Tick-borne Infections

Disease	Total cases by year of report 2010 FINAL (Confirmed/Probable/Suspected)	Total cases by year of report 2011 Preliminary (Confirmed/Probable/Suspected)	Cases between 1/1/12 and 12/31/12 (Probable + Confirmed)
Lyme disease	82 (21/61/400)	88 (18/70/135)	127 (33 confirmed)
Rickettsioses*	286 (15/271/296)	327 (16/311/281)	598 (14 confirmed)
Ehrlichia	99 (19/80/77)	83 (27/56/102)	112 (19 confirmed)
Anaplasma	28 (0/2/178)	21 (1/20/19)	21 (all probable)

*RMSF now subsumed under Rickettsioses

Note: Haywood County now has a second confirmed case of Lyme disease in a person who had not traveled out of the county for 30 days after their tick exposure. Therefore, Haywood County is now considered endemic for Lyme disease bringing the total of endemic counties in NC to 3. (Wake, Guilford, and Haywood)

Editor's note: The Vector-Borne Disease Work Group, attended by representatives from the Division of Public Health (DPH), the State Lab of Public Health, Department of Agriculture, County Health Department and other interested parties, is a forum to discuss issues relating to mosquito and tick-borne illness across the state. Attendance is open and if you would like to attend, please contact Dr. Williams at carl.williams@dhhs.nc.gov

History of the Vector-Borne Disease Work Group

State Public Health's quarterly meetings of the Vector-Borne Disease Work Group (VBDWG) are run by Carl Williams, DVM, State Public Health Veterinarian, North Carolina Division of Public Health. The purpose is to foster communication and keep abreast of vector-borne diseases in North Carolina. Attendance changes somewhat depending on topics and interest. The group is not legislatively mandated and has no designated powers.

The VBDWG is an outgrowth of the West Nile Virus (WNV) Core Team which was formed by the state health director in 2001 in response to the emergent WNV outbreak. From 2001-2003 the group, with around $300,000 in yearly funding split between Public Health Pest Management (PHPM) and the State Lab, met almost on a weekly basis. As the outbreak declined, so did the funding and frequency of meetings. By 2011, PHPM was abolished by the state legislature. Dr. Jeffrey Engel, as section chief of Epidemiology, ran the meetings until 2008 when Dr. Williams was assigned that responsibility. Originally members, including representatives from state and local agencies, oversaw the CDC grant monies and provided guidance on control measures to pertinent agencies.

Ticks and the Role of the State of North Carolina

Until 2011, the Public Health Pest Management (PHPM) section of the NC Department of Environmental & Natural Resources was charged with helping to protect the public from vector-borne diseases. Historically focusing on mosquitoes, they received additional funding in 2008 to expand their focus on ticks and tick-borne disease. From 2008 until 2011, PHPM conducted extensive tick work, aiding the public with disease prevention. Legislative action abolished the section in July 2011 leaving the state without any public health branch to continue these activities.

Therefore, since 2011, in spite of growing problems from ticks and tick-borne infections, the only tick-related state public health function is reporting of certain tick-borne infections as required by the Communicable Disease law. epi.publichealth.nc.gov/cd/report.html

In 2004, the name was changed to the Vector-Borne Disease Task Force to reflect the growing concerns about other vector-borne diseases in North Carolina, especially La Crosse encephalitis and Rocky Mountain Spotted Fever. Meetings, not open to the public, were held two to three times a year. In 2006, the Tick-Borne Infections Council of North Carolina, Inc. (TIC-NC), a state-wide non-profit formed in 2005 to respond to growing risk of tick-borne infections, began dialogs with DPH and PHPM to encourage an enhanced response to the growing tick problem. Dr. Marcia E. Herman-Giddens from TIC-NC was appointed to the Task Force by Dr. Leah Devlin, then director of State Public Health. At TIC-NC's request the meetings became open to the public.

By 2008, under the direction of Dr. Williams, agendas and minutes for the two hour meetings began to be distributed to the list of members. Around 2011, the name was changed to the Vector-Borne Disease Work Group. Meetings comprise state reports and issues until the last 15 minutes when the public can ask to speak.

TIC-NC at Shakori Hills Music Festival, April 2013

TIC-NC returned to the Festival at its request after an absence of a couple of years. Our booth is very popular in part because there are a lot of ticks at the site and many attendees camp, and in part because many people there have been affected by ticks and tick-borne illnesses. The stories we hear are poignant and fascinating.

Prevention materials are very popular as are the tick removers we offer for a donation. We also distribute educational materials and solicit new members. See our new banner with our new logo in the pictures below.

Board Member Joanie Alexander and TIC-NC President, Susan Walser, talking with stoppers-by.

A Tribute to MARCEE TOLIVER: Formally with NC State Public Health Pest Management

TIC-NC wishes to express its gratitude to Marcee Toliver for her research and other tick-related work conducted on behalf of North Carolina's citizens between 2008 and 2011. Ms. Toliver worked with the Public Health Pest Management (PHPM) section of the NC Department of Environmental & Natural Resources. PHPM was charged with helping to protect the public from vector-borne diseases from the vector side. Primarily working with mosquitoes in its early days, PHMP received additional funding in 2008, with the help of TIC-NC, to expand work to include ticks and tick-borne disease. Legislative action abolished the section in July 2011. (Hopefully, the state will see fit to restore the branch that helps protect the public from vector-borne diseases in the future.)

Until PHPM was abolished, Ms. Toliver led the work with ticks, doing extensive collections as well as a tick attachment project she developed where a cohort was recruited to submit any and all ticks they encountered during their working and personal lives. Those ticks were identified and data on personal protection measures was collected. After losing her job (along with all state entomologists and other PHPM employees when the state withdrew all funding), as a volunteer she prepared educational slide shows for TIC-NC on tick species in NC and protection and prevention measures. The aggregated maps of the data collected from the attachment project are on our website. Please see http://www.tic-nc.org/ for those slide shows under the tabs "About Ticks" and "Prevent Illness."

Ms. Toliver currently works with the Department of Health and Human Services, under CDC grant funding to focus primarily on mosquito-borne diseases and human surveillance. The grant ends in July 2013. We hope it is renewed even though in this position she cannot continue tick collections and related studies. In her spare time, she works on publishing some of her previous work. We at TIC-NC are grateful for her knowledge, dedication and hard work (collecting ticks is not fun and is risky). The data she was able to collect during the years at PHPM working on tick issues were invaluable.

Pittsboro-Based Company Makes Plant-Based Safe Products to Use Against Ticks and Mosquitoes

Biteblocker Xtreme is effective for ticks. The 'plain' Biteblocker is for mosquitoes and black flies. It can be sprayed on skin, work boots, gloves, and pant legs. Do not use on vegetation. It will kill certain plants.
http://www.homs.com/products/biteblocker%C2%AE_biteblocker%C2%AE-organic-xtreme-insect-spray-6.7-oz.html

This and other products are manufactured by Homs, a US company based in Pittsboro, NC. **http://www.homs.com/about-us/** They have other types of repellents and pesticides, all plant based, all effective, all DEET free. **http://www.homs.com/Organic-Formula/** In Chatham County, their products may be purchased at Country Farm & Home Supply, Small Street, Pittsboro.

Alabama Now Has Four Counties Endemic for Lyme Disease

http://www.adph.org/epi/assets/Lyme_Disease_InvForm.pdf

Note: Exposure MUST occur in a county in which Lyme disease is endemic to be considered in case classification. To become endemic, a county must have ≥ 2 confirmed cases of Lyme disease acquired in the county. Currently, Lyme disease is endemic in Mobile, Jefferson, Shelby, and Chambers counties. http://dph.state.al.us/BCD/BCD_Morbidity_Report_files/frame.htm

VA Lyme Testing Act - A Clarification, March 22, 2013

In light of recent newsletters and blog posts from other Lyme groups, The National Capital Lyme Disease Association has clarified the contents of the Lyme disease Testing Information Disclosure Act.

Virginia has become the first state in the nation to require doctors who order tests for Lyme disease to provide written information directly into the hands of patients about the possibility of false negative results. A number of different wording versions were circulated, with various groups in opposition, before the bill was passed. The version that passed is provided here, followed by an interview from WRC-TV, NBC in Washington DC:

CLICK HERE To read the New Law on the VA Legislative Web Site

Be it enacted by the General Assembly of Virginia:
1. That the Code of Virginia is amended by adding a section numbered **54.1-2963.2** as follows:

§ 54.1-2963.2. Lyme disease testing information disclosure.

A. Every licensee or his in-office designee who orders a laboratory test for the presence of Lyme disease shall provide to the patient or his legal representative the following written information:

"ACCORDING TO THE CENTERS FOR DISEASE CONTROL AND PREVENTION, AS OF 2011 LYME DISEASE IS THE SIXTH FASTEST GROWING DISEASE IN THE UNITED STATES.

YOUR HEALTH CARE PROVIDER HAS ORDERED A LABORATORY TEST FOR THE PRESENCE OF LYME DISEASE FOR YOU. CURRENT LABORATORY TESTING FOR LYME DISEASE CAN BE PROBLEMATIC AND STANDARD LABORATORY TESTS OFTEN RESULT IN FALSE NEGATIVE AND FALSE POSITIVE RESULTS, AND IF DONE TOO EARLY, YOU MAY NOT HAVE PRODUCED ENOUGH ANTIBODIES TO BE CONSIDERED POSITIVE BECAUSE YOUR IMMUNE RESPONSE REQUIRES TIME TO DEVELOP ANTIBODIES. IF YOU ARE TESTED FOR LYME DISEASE, AND THE RESULTS ARE NEGATIVE, THIS DOES NOT NECESSARILY MEAN YOU DO NOT HAVE LYME DISEASE. IF YOU CONTINUE TO EXPERIENCE SYMPTOMS, YOU SHOULD CONTACT YOUR HEALTH CARE PROVIDER AND INQUIRE ABOUT THE APPROPRIATENESS OF RETESTING OR ADDITIONAL TREATMENT."

B. Licensees shall be immune from civil liability for the provision of the written information required by this section absent gross negligence or willful misconduct.

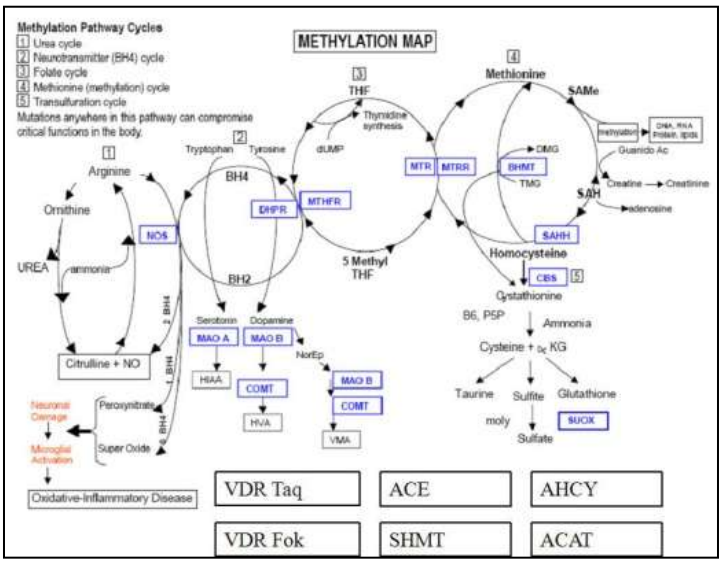
2. That the provisions of this act shall expire on July 1, 2018.

Lyme Disease and Genetics

Do our genes have a roll in the development of chronic Lyme disease?

Yes, it appears that they can. Biochemical pathways in our bodies are given directions by our genes. Imagine that these pathways work very much like gears that turn, and the biochemicals are messengers that travel around the gears, telling the next gear what the next step is. When working perfectly all the gears turn smoothly, with little effort in a nicely organized fashion. However, if one of the gears is missing a tooth, it is similar to our body missing a healthy gene, the system breaks down and the other gears work less efficiently because they don't get the right chemical messenger. In our bodies, the processes similar to gears turning is called "methylation" and the chemical messengers that pass from gear to gear are called "methyl groups". There are five cycles that are constantly turning in our bodies, as shown in the complex "Methylation Map". When our bodies have the right methyl groups available, the gears stay in good working condition, and allow our bodies to stay healthy. Our immune system, blood and hearts stay strong as we make an ample supply of the master antioxidant glutathione, to help us detoxify. With healthy methylation we also create neurotransmitters that help us be happy and sleep well.

Doctors who treat patients with Lyme disease are learning that some people with long-term Lyme have a genetic mutation that weakens their ability to fight infection. The gene defect affects a small number of people and occurs on a gene with an abbreviated name "MTHFR". This gene provides instruction for making an enzyme that goes by the name, Methyl Tetra Hydro Folate Reductase. The MTHFR gene is largely responsible for methylation, and when there is a mutation, the chemical messengers don't move easily from one gear to the next, creating blocks and thereby making the process ineffective.



There are lots of little sections or SNPs (Single Nucleotide Polymorphisms) on every gene, which are like the dots on the DNA helix. The MTHFR SNPs that affect the ability to detoxify and create glutathione have the numbers 677 and 1298 assigned to them. The SNPs also have letters before and/or after the numbers, which tells even more about the gene and how many copies a person has. Since people get one copy of each gene from both of our parents, a variety of combinations can be inherited that could affect health. When people have mutations on these genes it does not mean it is the source of all health issues, it is only one tiny piece of a complex puzzle. Altogether, there are about 50 known genes that affect the ability to methylate and detoxify.

When the 677 SNP is healthy it converts folic acid to folate, making methylfolate available for the body to keep the 'gears' turning. The end result is to create glutathione, which helps the body detoxify. The 1298 SNP also affects the ability to rid the bodies of toxins and affects the ability to make the neurotransmitters serotonin and dopamine, as well as remove ammonia from the body.

For more information:
http://ghr.nlm.nih.gov/gene/MTHFR

http://en.wikipedia.org/wiki/Methylenetetrahydrofolate_reductase

http://holisticprimarycare.net/topics/topics-a-g/functional-medicine/1353-mthfr-mutation-a-missing-piece-in-the-chronic-disease-puzzle

http://www.livewell2thrive.com/blog/mthfr/

Tick-Borne Disease Alliance March Forum with US Senators Gillibrand and Blumenthal, and Congressman Gibson

TBDA's forum Tick-Borne Diseases: A Public Health Crisis was held on March 11, 2013 in Manhattan with US Senators Kirsten Gillibrand (D-N.Y.) and Richard Blumenthal (D-CT), as well as US Congressman Chris Gibson (R-N.Y.).

The event in its entirety at http://tbdalliance.org/forum.

The forum, which was widely attended by doctors, researchers and health care providers, examined key breakthroughs in tick-borne disease research over the last decade as well as critical future research needs.

The panelists, who represented varied scientific, medical and personal perspectives, also discussed the threat of babesiosis contamination in the nation's blood supply and the growing risk associated with miyamotoi, a tick-borne bacterium that was recently discovered to cause disease in humans in the US for the first time.

All in attendance agreed that more research, increased awareness and patient involvement in political decision-making could only bring about positive change.

More on Tick-Related Meat Allergy

Here are some references to the meat allergy and lone star ticks. At this point it is not definitive that the meat allergy is only due to the lone star tick (or only that tick):

http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3085643/pdf/nihms-273885.pdf

http://www.sciencedaily.com/releases/2012/11/121109083742.htm

Lyme Disease Tests That May Be Ineffective Prompt New FDA Guidance, March 2013

A new guidance document published by the US Food and Drug Administration (FDA) establishes standards by which manufacturers of in vitro diagnostic (IVD) devices intended to detect the presence of *Borrelia burgdorferi* should test and validate their devices. For the document see: www.raps.org/focus-online/news/news-article-view/article/3092/ineffective-lyme-disease-tests-prompt-new-fda-guidance.aspx

This publication of this new document is apparently in response to the new (and expensive) test being marketed by Advance Labs, http://www.advanced-lab.com that does not have FDA approval, but has been embraced by the Lyme community. Everyone can agree that a reliable culture test for active *Borrelia* infection would be a breakthrough.

Fort Bragg Has Wildlife Facebook Page

This is interesting to follow if you like wildlife: https://www.facebook.com/fortbraggwildlife

Lyme Disease Caucus, 113th Congress

Rep. Frank Wolf (VA-10th) announced recently that he is again cosponsoring legislation to combat Lyme disease, which affects an estimated 275,000 Americans each year and is endemic to Virginia. He also announced he will again serve as co-chairman of the Lyme Disease Caucus for the 113th Congress along with Reps. Chris Smith (R-NJ) and Collin Peterson (D-MN). Wolf previously served as co-chairman of the Caucus during the 112th Congress.

Two bills, H.R. 610 and H.R. 611 were introduced. Both would require the secretary of Health and Human Services (HHS) to create a federal Tick-Borne Diseases Advisory Committee charged with coordinating research and advising federal agencies on priorities related to Lyme and other tick-borne diseases. H.R. 611 has a funding component. It would authorize $20 million for each of fiscal years 2014 through 2018 to fund the additional research.

Wolf said the goal of the legislation is to expand efforts to increase awareness, knowledge and transparency on Lyme disease issues, and would enhance research for Lyme diagnostics, treatments and prevention to help improve patient health.

The advisory committee would ensure coordination and communication among federal agencies, a broad range of medical professionals, and patients. The committee would meet at least twice a year, and submit, through the director of the Centers for Disease Control and Prevention and the director of the National Institutes of Health, an annual report of its activities.

Both bills are sponsored by Rep. Chris Smith (R-NJ), who introduced identical bills in both the 111th and 112th Congresses. Wolf cosponsored the bills in both Congresses.

Wolf has long been an advocate for victims of Lyme disease. He has hosted numerous community forums in the 10th district to help educate residents and medical professionals about the dangers of Lyme and how to protect themselves when outdoors from tick bites.

"I hope this legislation continues to raise awareness about this terrible disease and moves us closer to finding solutions for those infected," said Wolf.

Lyme is the most prevalent vector-borne disease in the U.S. today. If not diagnosed and treated early, Lyme disease can lead to disseminated infection and can affect every system in the body, including the central nervous system. Later symptoms of Lyme disease include arthritis of weight-bearing joints; neurological problems, such as facial paralysis, encephalopathy, memory problems, weakness

of the extremities; and heart symptoms, such as heart block and inflammation of the heart muscle. Lyme has been reported in every U.S. state and is becoming more prevalent.

"We must do all that we can to educate ourselves about the disease," Wolf said. "These bills are vital to our efforts to protect ourselves and our children from Lyme disease in the future."

Blog on Lyme Disease Worth Following

http://campother.blogspot.com/
From the author: "In the challenge to understand Lyme disease and its co-infections, Camp Other is looking to move away from the highly controversial and politically charged divide between the Infectious Disease Society of America (IDSA) camp and the International Lyme and Associated Diseases Society (ILADS) camp. Where is this middle ground Pam Weintraub spoke of at the October 2010 Institute of Medicine Workshop? We are seeking it here at Camp Other."

CDC Lyme Disease Case Definitions and Their History

Lyme disease case definitions for public health surveillance reporting are revised from time to time. To see the most current version and the previous definitions look under "Case Definitions" on the bar at the left on this link: http://wwwn.cdc.gov/nndss/
Or, go straight to: http://wwwn.cdc.gov/NNDSS/script/conditionsummary.aspx?CondID=100 for the historical definitions.
CDC's National Notifiable Diseases Surveillance System (NNDSS) is a multifaceted public health disease surveillance system that gives public health officials powerful capabilities to monitor the occurrence and spread of diseases. Facets of NNDSS are used by numerous state, territorial, tribal, and local health departments; and by partner organizations, such as the Council of State and Territorial Epidemiologists (CSTE), to

- facilitate collecting, managing, analyzing, interpreting, and disseminating health related data for diseases designated as nationally notifiable,
- develop and maintain national standards (for example, consistent case definitions for nationally notifiable diseases) applicable across states,
- maintain the official national notifiable diseases statistics,
- provide detailed data to CDC programs to aid in identifying specific disease trends,
- work with states and partners to implement and assess prevention and control programs, and
- publish summarized data findings from 57 state, territorial, and local reporting jurisdictions weekly and annually in the Morbidity and Mortality Weekly Report (*MMWR*).

Lyme Disease (*Borrelia burgdorferi*) - 2011 Case Definition and Suggestions for Medical Care for Possible Lyme Disease

- If you have to seek medical care with a question of possible Lyme disease, many medical providers do not know that the surveillance case definition was developed for national reporting of Lyme disease; **and is not intended to be used in clinical diagnosis** according to the CDC website (although there is some conflicting information there).

http://wwwn.cdc.gov/NNDSS/script/casedef.aspx?CondYrID=752&DatePub=1/1/2011%2012:00:00%20AM

- It may also be useful to review "The Two Standards of Care" document on our website and take in the 2013 letter on Lyme disease issued by our state Department of Public Health. The link to the letter is at the beginning of this newsletter and on the home page of our website.

Images For Public Viewing and Use From The CDC

http://phil.cdc.gov/phil/quicksearch.asp

Overview: Much of the information critical to the communication of public health messages is pictorial rather than text-based. Created by a Working Group at the Centers for Disease Control and Prevention (CDC), the PHIL offers an organized, universal electronic gateway to CDC's pictures. They welcome public health professionals, the media, laboratory scientists, educators, students, and the worldwide public to use this material for reference, teaching, presentation, and public health messages. The content is organized into hierarchical categories of people, places, and science, and is presented as single images, image sets, and multimedia files.

Lone Star Ticks all the Way to Nebraska Now!

In 2010 and 2011, field collections were undertaken to determine the geographic range of the lone star tick, *Amblyomma americanum* (L.), in Nebraska. In addition, tick identifications from submissions by the general public dating to 1911 were examined. Consistent lone star tick identifications from extreme southeast Nebraska began in 1987. Specimens have been identified from 27 counties, making lone star ticks the second most frequently and second most widely reported tick in the state after the American dog tick or Wood tick (*Dermacentor variabilis).* Surveys conducted in 70 sites in 43 counties yielded 2,169 ticks of which 1,035 were lone star ticks. Lone star ticks were more frequent in the southeast portion of the state and ticks were found in nine counties from which there were no known submissions. Life stage peaks observed during the surveys corresponded with those observed from submissions. Other ticks, incidental to the study, were also collected. Woody plant expansion into the tallgrass prairie, white-tailed deer (*Odocoileus virgianianus* L.) and wild turkey (*Meleagris gallopavo* L.) population growth, and the increased frequency of milder winters may be facilitating lone star tick occurrence in the region. Further studies will assess lone star tick establishment and disease pathogen prevalence in the state.

Cortinas R, Spomer S. **Lone Star Tick (Acari: Ixodidae) Occurrence in Nebraska: Historical and Current Perspectives.** *Journal of Medical Entomology* **2013** 50 (2), 244-251

TIC-NC's Scientific Advisor Has Letter Published in *Zoonoses and Public Health*

Tick-Borne Diseases in the South-East Need Human Studies: Lyme Disease, STARI and Beyond
Marcia E. Herman-Giddens, PA, DrPH
Zoonoses and Public Health (2013)
http://dx.doi.org/10.1111/zph.12035

Boy Gets Rare Tick Infection from Blood Transfusion

TIC-NC Ed. Note: Ehrlichiosis is not rare in NC and many other states.

A 9-year-old Georgia boy who developed a rare tick-borne disease got the infection from a blood transfusion, according to a report of his case. The case is the first time this infection, called ehrlichiosis, was spread by a transfusion, said Dr. Joanna Regan of the Centers for Disease Control and Prevention. The bacterial infection, though rare, is serious and can be fatal, Regan said. Ehrlichiosis can go undetected because routine tests don't look for it, and many people do not realize they were bitten by a tick. In this case, which occurred during the summer of 2011, the boy's condition deteriorated over the course of 10 days until a pathologist discovered the infection.
For entire story: http://www.myhealthnewsdaily.com/3689-boy-gets-rare-tick-infection-from-blood-transfusion.html
Apr 3, 2013 | Karen Rowan, MyHealthNewsDaily Managing Editor