

One Health Webinar
November 10, 2015

Lyme Disease Healthcare Provider
Education Project
Arbovirus Update
New Rabies Resources

Veronica Fialkowski, MPH
Kim Signs, DVM



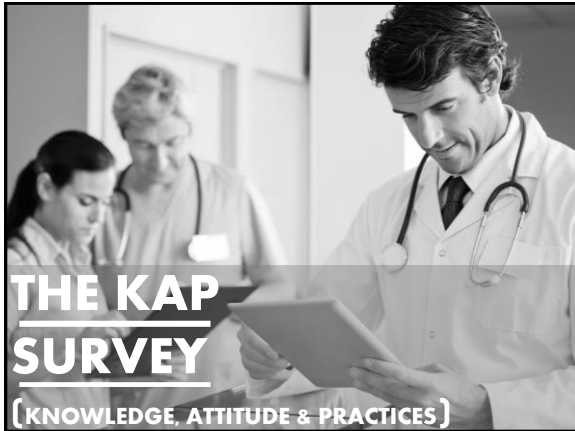
Spreading the Word About **Lyme Disease** with Tools **Targeted** for Michigan Health Care Providers

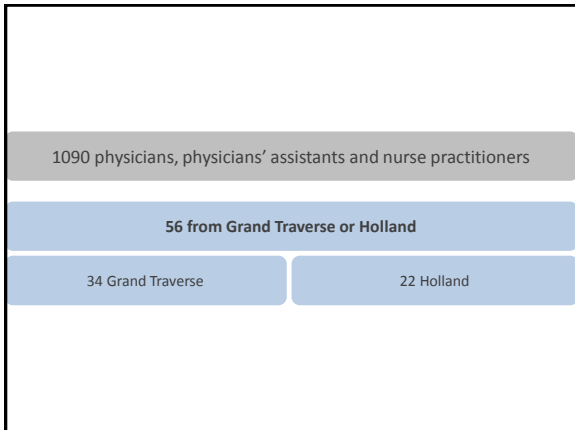
Veronica Fialkowski, MPH

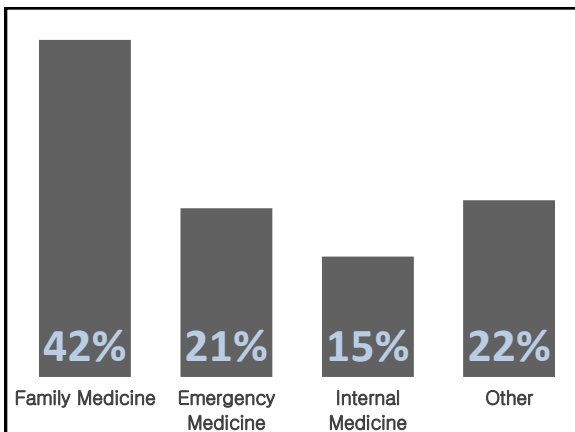
30,000 cases/year reported

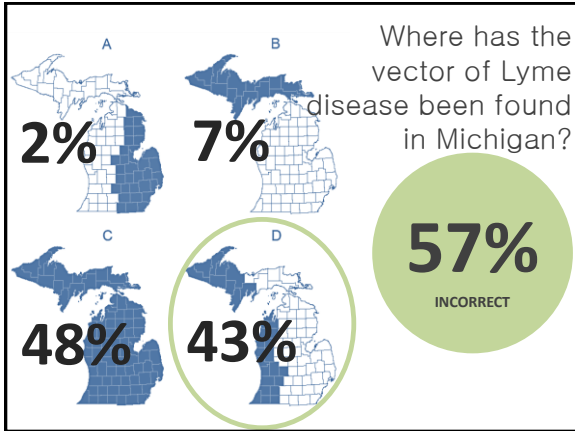
cases **10X** underreported

estimated 300,000 cases/year diagnosed

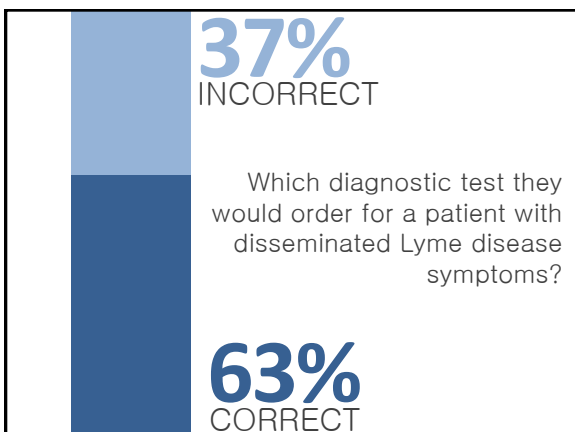








>20% of providers answered that laboratory confirmation would be needed to justify treatment for a patient presenting with EM





62% of providers **correctly** answered which treatment is recommended for Lyme disease.

Lyme disease is a reportable condition.

12% answered:

“There is **NO** requirement to report Lyme disease in the State of Michigan.”

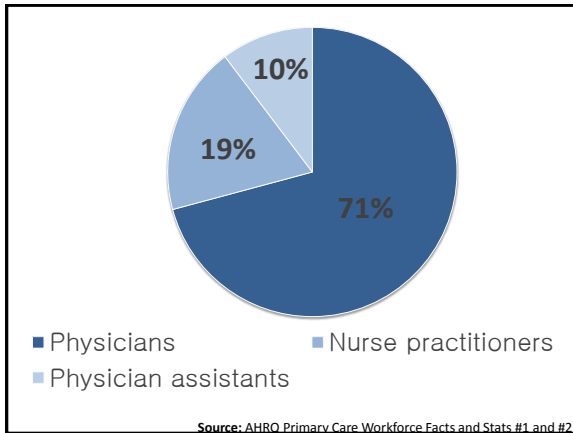
“I see now that I need to learn more about Lyme disease!”

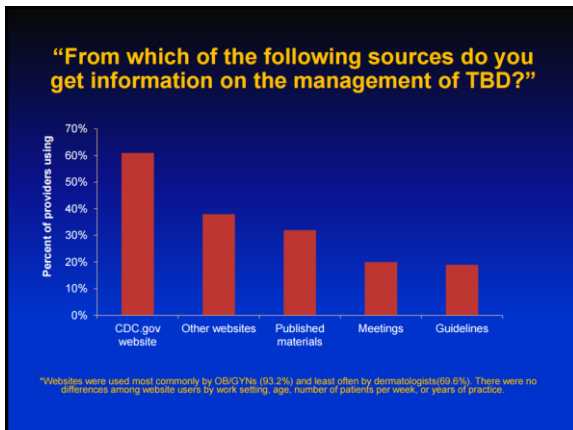




Not just targeting physicians.

Because...





“Websites are an excellent way to communicate to practitioners.”



www.michigan.gov/lymeinfo

Lyme Disease Toolkit

Available Resources for Healthcare Providers

Website
Up-to-date information regarding Lyme disease & a one-page tip sheet

Printed Resources
Posters, brochures & tick ID cards

Webinar & Free CME Credit
Free on-demand webinar with 0.50 CME credits

Order form

Tick Submission Kit
Submit ticks for identification & testing

Order here

Michigan Emerging Disease Issues

Diseases that may affect humans or animals

Home **Site Map**

Emerging Disease Issues - Lyme Disease - Info for Healthcare Providers

Lyme disease
Information for Michigan healthcare providers regarding Lyme disease diagnosis, treatment, and prevention in Michigan.

Free Webinar
LYME DISEASE IN MICHIGAN - Free CME credit

LYME DISEASE
LYME DISEASE is becoming an increasingly important health issue in Michigan. The Michigan Department of Health and Human Services has created web-based educational materials regarding Lyme disease in our state specifically targeted for healthcare providers.

The tabs below contain the most up-to-date information available regarding Lyme disease from the Michigan Department of Health and Human Services and the U.S. Centers for Disease Control and Prevention.

Epidemiology **Prevention** **Symptoms** **Diagnostics** **Treatment**

Clinical Signs and Symptoms

- Looking for a bull's-eye rash?
- Look again - erythema migrans can take many forms.
- Signs and Symptoms of Lyme Disease
- Lyme Carditis
- Post-Treatment Lyme Disease Syndrome (PTLDS)

Other Tickborne Diseases

www.michigan.gov/lymeinfo

Lyme Disease Toolkit

Available Resources for Healthcare Providers



Website
Up-to-date information regarding Lyme disease & a one-page tip sheet

Website >



Webinar & Free CME Credit
Free on-demand webinar with 0.50 CME credits

Webinar >



Printed Resources
Posters, brochures & tick ID cards

Order "Ticks and Your Health" Brochure

Order posters for your clinic

Pocket-sized card to ID common ticks in MI

Order form >



Tick Submission Kit
Submit ticks for identification & testing

Order here >

Michigan Emerging Disease Issues

Free Webinar - LYME DISEASE IN MICHIGAN - Free CME Credits

1. Go to Mi-TRAIN
2. Log-in or create new account
3. Search for course ID# 1057135
4. Take the pre-assessment
5. Watch the webinar
6. Take the post-assessment
7. Do the evaluation
8. After completing steps 1-7 you can print your certificate under your 'dashboard'



LYME DISEASE IN MICHIGAN:

What healthcare providers need to know




Emerging and Zoonotic Infectious Diseases Section

Evaluation



Lyme Disease Toolkit Available Resources for Healthcare Providers

www.michigan.gov/lymeinfo

Website
Up-to-date information regarding Lyme disease & a one-page tip sheet

Printed Resources
Posters, brochures & tick ID cards

Order "Ticks and Your Health" Brochure
Order posters for your clinic

Pocket-sized card to common ticks in Michigan

Order form

Webinar & Free CME Credit
Free on-demand webinar with 0.50 CME credits

Tick Submission Kit
Submit ticks for identification & testing

Order here

Posters

Tick Bite and Lyme Disease Prevention

Children and Lyme disease

Children are at greater risk of Lyme disease because they often spend a lot of time outdoors and are at higher risk of being bitten by a tick.

How to keep your children "Tick Free"

1. Use tick repellent on your children's clothing and skin.
2. Check your children's clothing and skin for ticks after they have been outdoors.
3. Use a fine-toothed comb to check your children's hair for ticks.
4. Shower your children after they have been outdoors.
5. Wash your children's clothing in hot water.
6. Use a fine-toothed comb to check your children's hair for ticks.
7. Use a fine-toothed comb to check your children's hair for ticks.
8. Use a fine-toothed comb to check your children's hair for ticks.

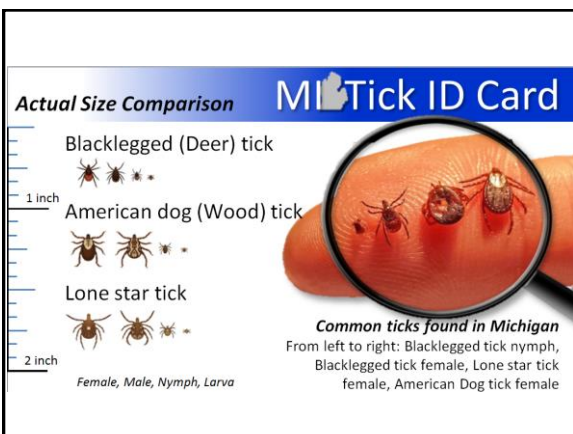
Tick Bite Prevention in Michigan's Outdoors

How to prevent tick bites when hiking and camping

1. Use tick repellent on your clothing and skin.
2. Check your clothing and skin for ticks after you have been outdoors.
3. Use a fine-toothed comb to check your clothing and skin for ticks.
4. Shower after you have been outdoors.
5. Wash your clothing in hot water.
6. Use a fine-toothed comb to check your clothing and skin for ticks.
7. Use a fine-toothed comb to check your clothing and skin for ticks.
8. Use a fine-toothed comb to check your clothing and skin for ticks.

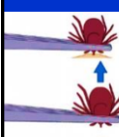






Tick removal tips

www.michigan.gov/lyme



- Remove as quickly as possible.
- Use tweezers to grasp the head close to the skin.
- Pull gently.
- Use soap and water, or antiseptic on the bite.

...preventing tick bites

- Use a repellent containing no more than 30 percent **DEET**.
- Use repellents that contain **permethrin** on clothing.
- See your healthcare provider if you have symptoms of fever, rash, body aches or fatigue after a tick bite.

Michigan Department of Health & Human Services



Ticks and Your Health

Preventing tick-borne illness in Michigan

Michigan Department of Health & Human Services
Michigan Department of Agriculture & Rural Development
Michigan Department of Natural Resources
Michigan State University

www.michigan.gov/lymeinfo

Lyme Disease Toolkit

Available Resources for Healthcare Providers



Website
Up-to-date information regarding Lyme disease & a one-page tip sheet

Website >



Printed Resources
Posters, brochures & tick ID cards

Order "Ticks and Your Health" Brochure

Order posters for your clinic

Pocket-sized card to ID common ticks in MI



Webinar & Free CME Credits
Free on-demand webinar with 0.50 CME credits

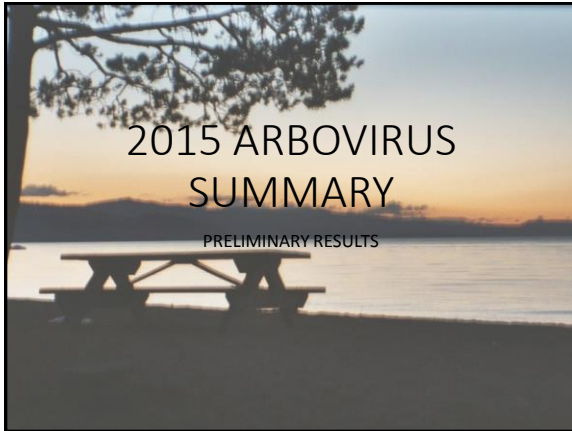
Webinar >

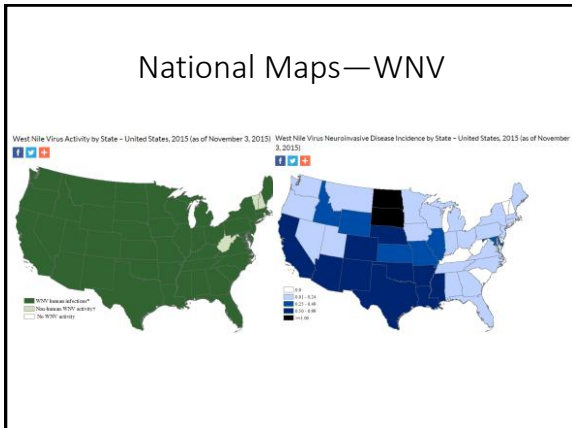


Order form

Tick Submission Kit
Submit ticks for identification & testing

Order here >





A Tale of Two Seasons

Epizootic year for wildlife

- 155 *animal* cases
 - 50 corvids
 - 87 non-corvids
- 14 mammals
 - 6 horses
 - 2 WNV, 4 EEE
 - 6 cervids (deer, elk, moose)
 - 3 WNV, 3 WNV/EEE
 - 1 bat, 1 squirrel

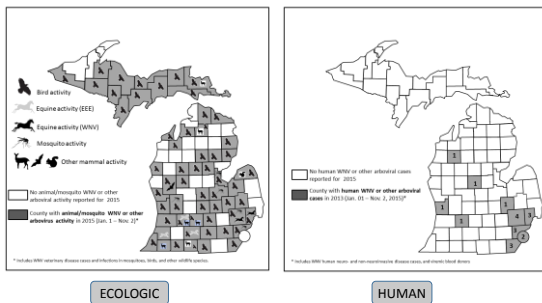
Mild year for human cases

- 17 *human* WNV cases
 - 16 neuro-invasive
 - 2 deaths
- 3 viremic blood donors

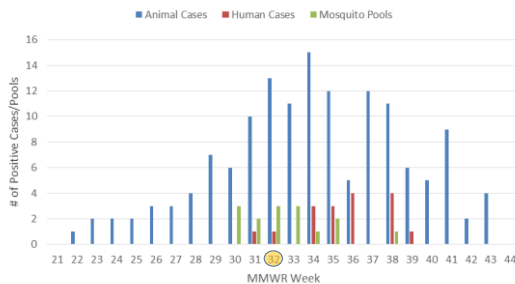
Human Case Demographics

- 17 WNV cases
- 9 males
 - Age range: 22 years -85 years
- Median age: 61 years
- 2 deaths
 - Average age: 83 years
- Onset dates ranged from July 27-Sept. 21
- 3 WNV Viremic Blood Donors
 - Age range: 29-59 years
 - Donation dates ranged from Aug. 20-Sept. 20.

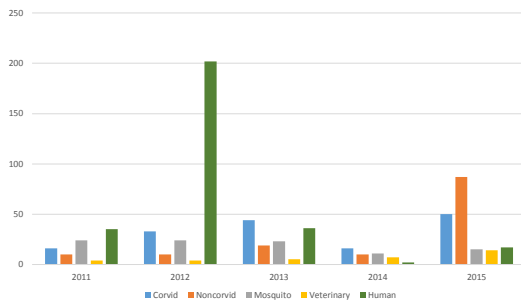
A Tale of Two Seasons



2015 Michigan Arboviruses Activity by MMWR Week



Arbovirus Activity 2011-2015



Ecological Variables and WNV

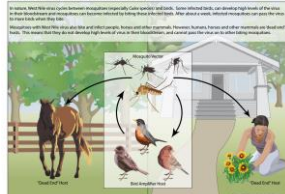


- Effects of seasonal temperatures
 - La Dean et al (Ecological Research-2010): ↑ winter temps
 - Paz et al (PLOS One-2013): ↑ summer temps
 - Wimberly et al (AJTMH-2014): winter temps, spring/summer temps, precipitation
- Ecosystems
 - Johnson et al (Urban Ecosystems-2012)-urban ecosystems favor WNV more than adjacent wetlands
- Virus genome
 - Duggal et al (AJTMH-2013): 2012 WNV outbreak not associated with adaptive changes in the virus

Mosquito Bridge Vectors

- Birds are the primary reservoir species for WNV
- Many different mosquito species are competent vectors for WNV (many mosquitoes that prefer to feed on birds)
- In Michigan, *Culex pipiens* and *Culex restuans* are probably responsible for most human WNV infections
- They breed in similar habitats and feed on mammals at the same rate (~20% of blood meals)
- Control measures focused on *Culex sp* are likely to have the most impact in preventing human cases

West Nile Virus Transmission Cycle

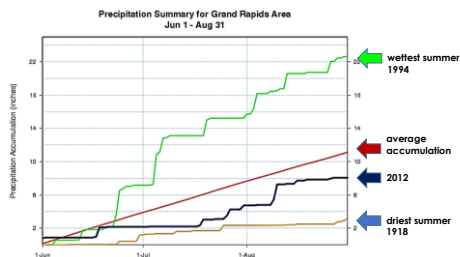
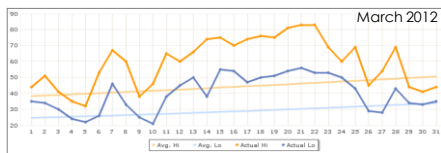


Michigan Trends

- Hot and dry summers
- Urban/suburban distribution in outbreak years
- *Culex pipiens/restuans* are important bridge vectors
- Mild winters

How Weather impacts WNV: Winter – Summer, 2012

- The winter of 2011-2012 was **the fourth warmest on record** (records since 1894) in lower Michigan with monthly temperatures an average of 5.49F (4.89-5.99) above 30-year averages
 - Mild winters allow for greater survival of overwintering adult *Culex* mosquito populations
- The 2012 spring season (March – May) was **the warmest on record** in Michigan
 - Resulted in early emergence of *Culex* mosquitoes and is a factor in the early amplification of WNV in bird populations
- The 2012 summer season (June – August) was **the 10th warmest on record** in Michigan

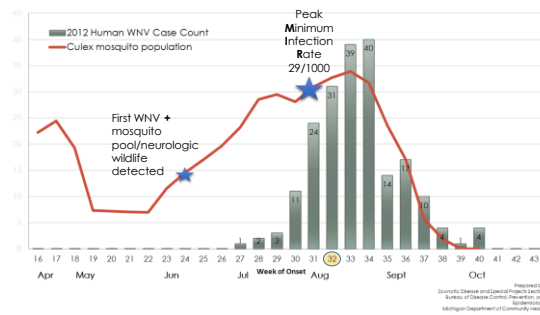


2012 Summer precipitation in Grand Rapids

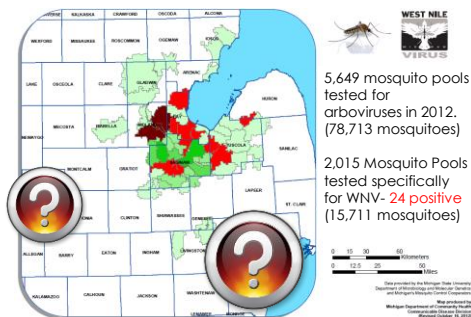
Hot and Dry summers lead to more human WNV cases

Data: National Weather Service

2012 West Nile Virus Activity* in Michigan

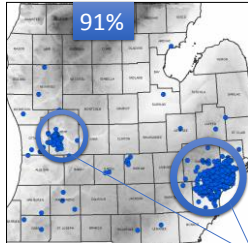


2012 Mosquito Surveillance

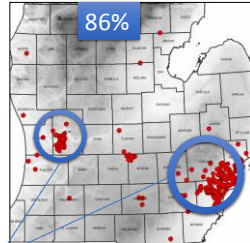


Outbreak Year Comparison: Geography

2002 MI WNV Outbreak



2012 MI WNV Outbreak



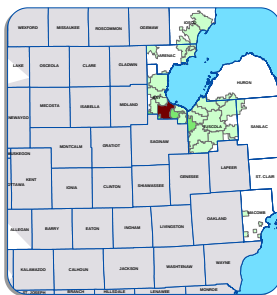
Historically the Grand Rapids and Detroit Metro Areas account for a significant percentage of annual WNV cases

Community Mosquito Surveillance

- Initiated in 2013
- Target human WNV high incidence counties
- Train and equip LHD workforce to conduct mosquito surveillance
- Initiate public health prevention and measures based on surveillance findings



2015 WNV Mosquito Surveillance



2015 Mosquitoes tested for WNV

Statewide

Total # Pools: 2238
Total # Mosquitoes: 24,091
Positive Pools: 15

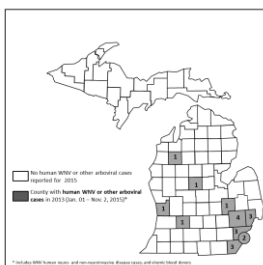
Local Health Departments Project

Total # Pools: 402
Total # Mosquitoes: 8,598
Positive Pools: 8

A Tale of Two Seasons



ECOLOGIC



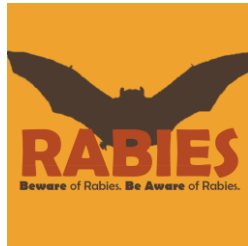
HUMAN

Resources

- www.michigan.gov/westnilevirus
- www.cdc.gov/westnile
- diseasemaps.usgs.gov/mapviewer

Updated Rabies Materials

- What is rabies?
- How can you be exposed?
- Prevention
- Signs of rabies in animals
- Rabies in bats and other animals
- Protecting pets and livestock
- What to do if bitten?



Refrigerator Magnet



- When should you capture a bat?
- How to safely capture a bat
- Who to call once you capture a bat

Stickers for Kids



- Brightly colored stickers that are appealing to kids
- Reminds them to "Look but don't touch" bats
- Teaches them to tell a parent if they find a bat

Communicable Disease Division		ORDER FORM
Currently Available Publications		
Order Form		
Publication Title:	Amount Requested:	
Publication Title:	Amount Requested:	
Publication Title:	Amount Requested:	
Publication Title:	Amount Requested:	
To Whom Shipped (Attn):		
Street Address:		
City:	State:	Zip Code:
Phone:		
Email:		