

# Risk Communications Webinar

CSTE Vectorborne Diseases Subcommittee Webinar Series

February 17, 2015

3:00 – 4:00 pm Eastern



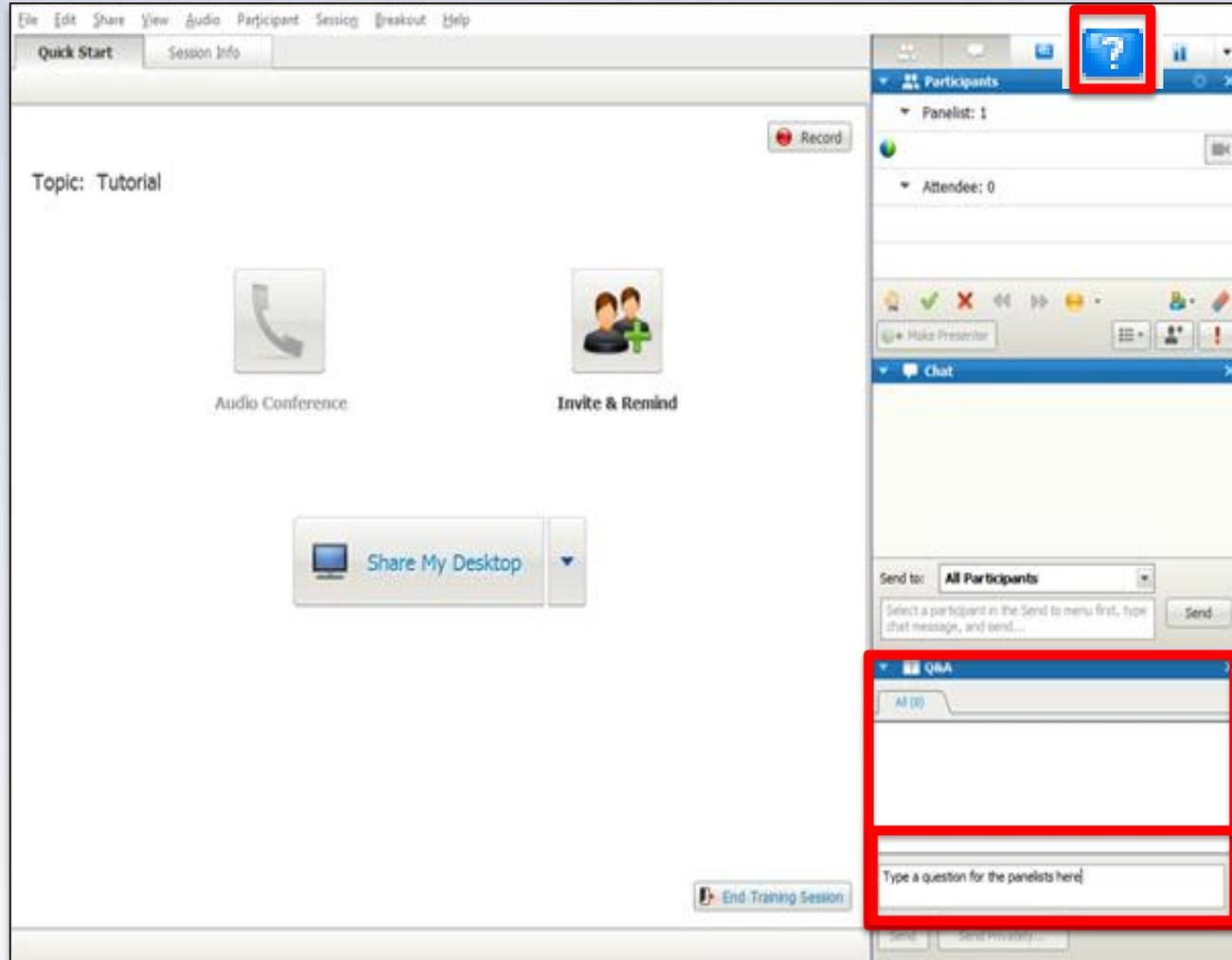
COUNCIL OF STATE AND  
TERRITORIAL EPIDEMIOLOGISTS

# Webinar Housekeeping

- **Please note that today's webinar is being recorded**
  - The webinar recording and presentation slides will be available in the webinar library on CSTE's website:  
<http://www.cste.org/?page=WebinarLibrary>
- **All phone lines have been placed on mute**
- **There will be a question-and-answer session at the end of the webinar**
  - To ask a question, please use the Q&A box on the right side of your screen

# To Ask a Question

- Click on the blue question mark tab on the top right panel of your screen
- This will open the Q&A box on the bottom right panel on your screen
- Type a question
- Send questions to All Panelists
- Questions will be answered during the Q&A period



# Vector-Borne Diseases Risk Communication Messaging

LCDR Sue Partridge  
Division of Vector-Borne Diseases  
Centers for Disease Control and  
Prevention

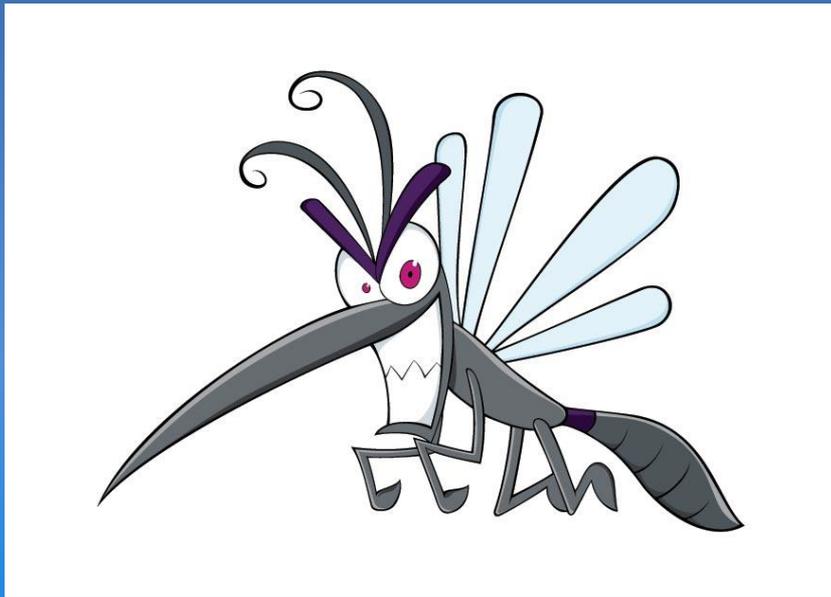


# Learning Objectives

- Identify key tick and mosquito borne disease threats to the U.S.
- Identify key vector-borne diseases (VBD) impacting international travelers
- Identify key mosquito-borne (MBD) disease health communication messages and resources re: symptoms, transmission, and prevention
- Identify key tick-borne disease (TBD) health communications messages and resources re: symptoms, transmission and prevention

**No Bites = No disease  
people, animals, vectors**

**SOCO: Prevent mosquito and tick bites!**



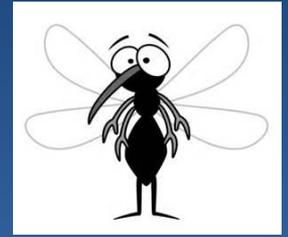
# VBD Prevention: Insect Repellents

- Repellents containing **DEET**, **picaridin**, **IR3535**, and **oil of lemon eucalyptus** and **para-menthane-diol** products provide long-lasting protection.
- Spray only exposed skin.
- Do not spray skin and then cover with clothing.
- Treat clothing with permethrin or purchase permethrin-treated clothing.
- Always follow the label instructions when using insect repellent or sunscreen.

**BUT...**



# Reality is...



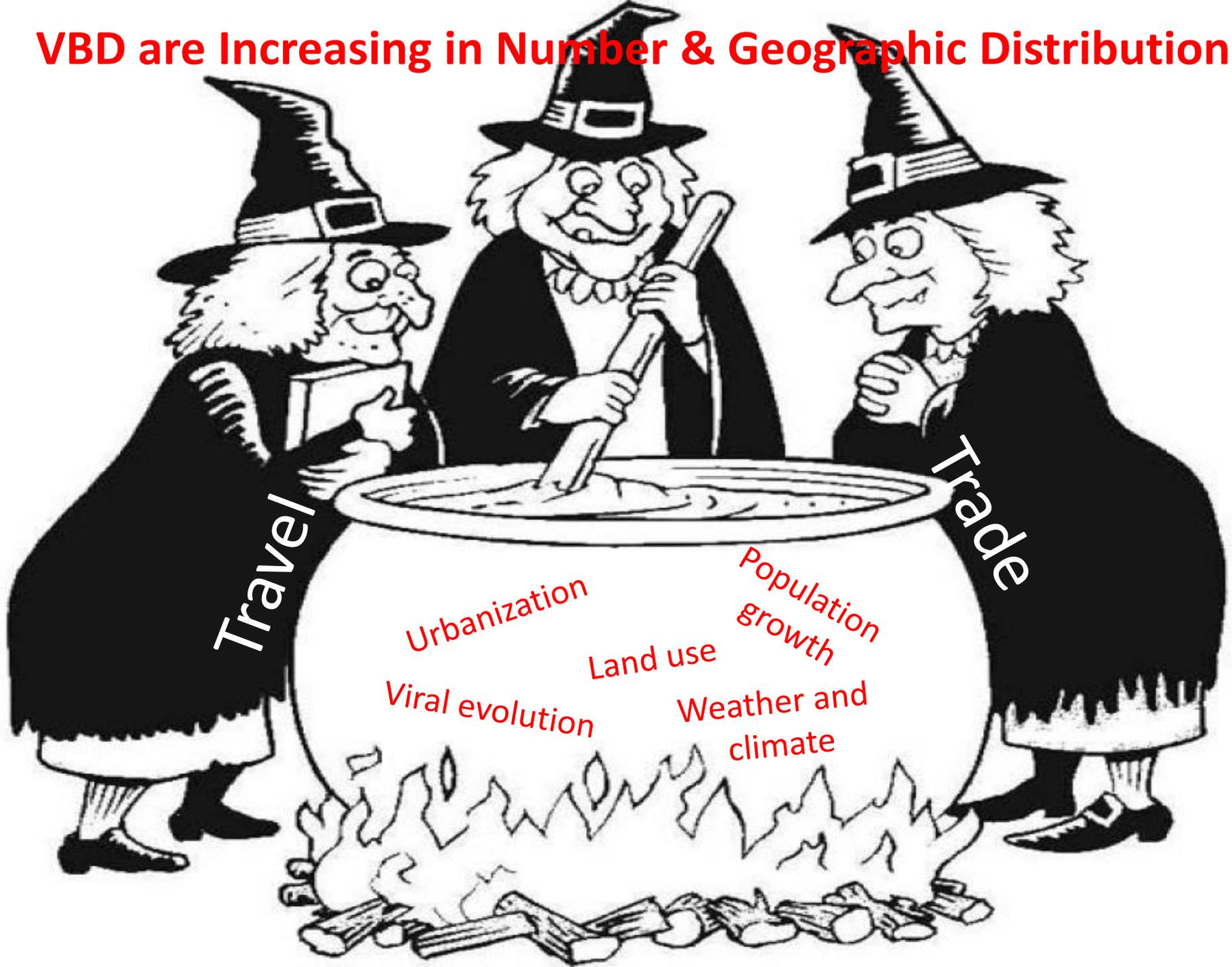
- During an outbreak of WNV, only 25% of people will regularly apply insect repellent.
  - It stinks
  - Chemicals aren't safe
  - I forgot
  - Perception of risk



- Promoting personal protection

measures to prevent tick/mosquito bites is our most reliable prevention “tool.”

# VBD are Increasing in Number & Geographic Distribution



Travel

Trade

Urbanization

Population growth

Land use

Viral evolution

Weather and climate

# Mosquito-Borne Threats

- Malaria
- Cache Valley
- Chikungunya
- Dengue
- Eastern equine encephalitis
- Japanese encephalitis
- LaCrosse
- St. Louis encephalitis
- Venezuelan equine encephalitis
- Western equine encephalitis
- West Nile



# MBD: Symptoms

**Sudden onset:** fever, headache, body/muscle aches, vomiting, fatigue, rash

## Severe Disease:

- Dengue: warning signs begin when fever subsides; severe abdominal pain, abnormal bleeding, drowsiness, irritability, difficulty breathing  
<http://www.cdc.gov/dengue/training/cme.html>
- Chikungunya: neurological, ocular, cardiovascular, dermatological, and renal symptoms possible  
[http://www.cdc.gov/chikungunya/pdfs/Chikungunya-atypical-severe-disease\\_Healthcare-provider-factsheet-10-07-2014.pdf](http://www.cdc.gov/chikungunya/pdfs/Chikungunya-atypical-severe-disease_Healthcare-provider-factsheet-10-07-2014.pdf)
- West Nile: stiff neck, disorientation, coma, paralysis, seizures, and death



# Key Messages: Symptoms

Mosquitoes spread diseases that can make you really sick. Protect yourself and your family.

**It's not FLU!** Fever or flu-like symptoms during the summer is not likely the flu.

If you develop fever or other flu-like symptoms over the summer, see your health care provider (HCP).

Symptoms may take weeks, months, or years to resolve, if ever.

# Key Messages: Transmission



PROTECT YOURSELF from MOSQUITO BITES  
and the diseases they spread DAY and NIGHT



Mosquitoes that spread  
chikungunya virus  
are aggressive daytime biters.



Mosquitoes that spread  
West Nile virus  
bite in the evening  
from dusk to dawn



Look for the following active ingredients:  
• DEET • PICARIDIN • IR3535  
• OIL of LEMON EUCALYPTUS  
• PARAMETHANE-DIOL

Wear insect repellent whenever you're outdoors.



U.S. Department of  
Health and Human Services  
Centers for Disease  
Control and Prevention

For more information:  
[www.cdc.gov/westnile/](http://www.cdc.gov/westnile/)  
[www.cdc.gov/chikungunya/](http://www.cdc.gov/chikungunya/)

# Key Messages: MBD Prevention (II)

- No vaccine to prevent, no medication to treat
- Use AC, window and door screens to keep mosquitoes out of the house or hotel.
- Sleep under a bed net.
- Weekly, empty standing water from containers inside and outside the home.
- When weather permits, wear long sleeved shirts and long pants.

# Prevention: Dengue and Chikungunya



## Sick with CHIKUNGUNYA virus?

Protect yourself and others from mosquito bites during the first week of illness.



- During the first week of illness, chikungunya virus can be found in the blood.

- The virus can be passed from an infected person to a mosquito through mosquito bites.

- An infected mosquito can then transmit the virus to other people.



7 days



- Keep mosquitoes out of your house
- If possible, use the air-conditioner
- Repair window and door screens

For more information: [www.cdc.gov/chikungunya](http://www.cdc.gov/chikungunya)



U.S. Department of  
Health and Human Services  
Centers for Disease  
Control and Prevention

# MBD: Prevention Resources

## Protect Yourself and Your Baby from Dengue



### Avoid mosquito bites during pregnancy to prevent dengue in your newborn baby

- Dengue is transmitted by the bite of infected *Aedes aegypti* mosquitoes
- A pregnant woman infected with dengue virus may infect her unborn baby or her newborn baby at birth
- Harmful effects of dengue virus infection include death of the unborn baby, low birth weight and premature birth
- If a pregnant woman has dengue at the time of delivery, her newborn baby may develop dengue during the first two weeks of life
- To prevent dengue virus infection during pregnancy
  - Use mosquito repellents with up to 50% DEET, picaridin, IR3535 or Oil of Lemon Eucalyptus during pregnancy. Product with this ingredients include, but are not limited to Off!, Cutter, Skin So Soft Bug Guard Plus and Repel. Always read and follow the directions on the product
  - Dress in loose cotton clothing that covers your arms and legs

### Protect your baby from getting dengue. Babies between 4 to 12 months of age are at higher risk for severe dengue

- Cover cribs, strollers and baby carriers with mosquito netting at all times — day and night — both inside and outside of your home
- For babies over 2 months of age, use repellents with up to 30% DEET, picaridin or IR3535. Always read and follow the directions on the product
- Do not use repellents on babies less than 2 months of age
- Dress your baby in loose cotton clothing that covers arms and legs

### How to know if you have dengue

Dengue fever begins with the following symptoms:

- Fever (38 degrees Celsius or 100.4 degrees Fahrenheit or more)
- Severe headache
- Eye pain often with movement and behind the eyes
- Pain in muscles, joints and bones
- Rash
- Bleeding often mild from nose and gums

It's hard to know if your baby has dengue symptoms.

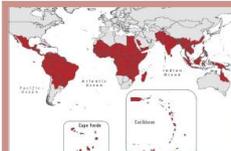
But, watch for the following signs in babies:

- Fever (38 degrees Celsius or 100.4 degrees Fahrenheit or more) OR low temperature (less than 36 degrees Celsius or 96.8 degrees Fahrenheit)
- Being irritable, fussy, overly agitated, sleepy, or refusing to eat
- Rash



## Prevent Dengue on a Mission

Dengue is a viral illness spread through mosquito bites. Travelers to tropical and subtropical regions are at risk of getting dengue. Dengue is more common in urban areas and is not usually seen at altitudes above 5,500 feet (1,500 meters). The mosquito that carries dengue virus bites mostly during the day and is commonly found indoors as well as outdoors, around homes and hotels.



Areas where dengue is a risk are highlighted. Travelers to these areas should take steps to prevent mosquito bites.

Symptoms of dengue can be mild and include fever, headache, nausea, vomiting, rash, and pain behind the eyes, joints, and muscles. Symptoms can take up to 2 weeks to develop but usually end in a week. If a mild case of dengue becomes severe, warning signs develop: intense stomach pain, repeated vomiting, and abnormal bleeding from the nose or gums or in stool. Since dengue can be fatal, see a doctor or go to the emergency room right away if you develop any of these symptoms.

### How can I prevent dengue?

If you are going on a mission trip to a risk area, protect yourself from dengue by preventing mosquito bites:

- Cover exposed skin by wearing long-sleeved shirts, long pants, and hats.
- Use an appropriate insect repellent (see below), and always follow instructions.
- Use permethrin products on clothing and gear. Do not use permethrin directly on skin.
- Stay and sleep in screened or air-conditioned rooms.
- Use a bed net if the area where you are sleeping is exposed to the outdoors.
- Empty containers of standing water near where you are staying to keep mosquito eggs from hatching.

### Choosing an insect repellent

An appropriate insect repellent contains one of the following ingredients:

- DEET
- Picaridin (also known as KBR 3023, Bayrepe, and icaridin)
- Oil of lemon eucalyptus (OLE) or PMD
- IR3535 (Avon Skin So Soft Bug Guard Plus)

Higher percentages of active ingredient provide longer protection.

For more information, visit [www.cdc.gov/dengue](http://www.cdc.gov/dengue) or [www.cdc.gov/travel](http://www.cdc.gov/travel) or call 800-CDC-INFO (800-232-4636).

Recommend Tweet Share

## Health Education Resources

### Public Service Announcements

PSAs are available for free use and download.

### Podcasts

#### English

- The Buzz About West Nile Virus PSA (:15)
- The Buzz About West Nile Virus PSA (:30)
- Kidstastics: The Buzz-z-z on West Nile Virus (2:10)

#### En español

- ¿Ha oído hablar del West Nile Virus? - PSA (:30)
- Kidstastics: Lo que dicen del virus del Nilo Occidental (2:41)

## Publications

West Nile virus is a risk you can do something about.

[PDF - pages]

*West Nile Virus is a risk you can do something about en español* - Virus del Nilo Occidental. Protejase contra las picaduras!

[PDF - 2 pages]

[Order these publications »](#)

## American Society of Microbiology

### FAQ: West Nile Virus, July 2013

Video: Microbes After Hours



Where does the virus come from? How is it spread?

Can we predict when and where outbreaks will occur?

What factors determine how sick a person will become if they are infected with West Nile virus?

To help answer the many questions people have about this multi-faceted virus, the American Academy of Microbiology has issued a new report entitled FAQ: West Nile Virus.

[Get the full report free >>](#)

PSAs— WNV  
Fact Sheets  
Posters  
Infographics  
Photos

[www.cdc.gov/chikungunya](http://www.cdc.gov/chikungunya)  
[www.cdc.gov/dengue](http://www.cdc.gov/dengue)  
[www.cdc.gov/westnile](http://www.cdc.gov/westnile)



# Traveler's Health: [www.cdc.gov/travel](http://www.cdc.gov/travel)

**Before travel:** Do your homework!

Travel Health Notices:

<http://wwwnc.cdc.gov/travel/notices>

**During travel:** If you develop a fever with other symptoms, see a doctor. Treat fever and pain with acetaminophen or paracetamol.

**When you get home:** If you get sick within 2 weeks of travel, see a doctor. Tell the doctor where you traveled.



# Cumulative Chikungunya in the Americas

## January 30, 2015

- 43 countries
- 1,179,875 suspect/confirmed cases

### 2014

- 46 states reporting cases
- 2,481 travel-associated cases†
  - 18% Florida
  - 30% New York
- 11 locally-acquired cases (FL)



# GOING TO THE AMERICAN TROPICS?

**MOSQUITOES** spread diseases such as **CHIKUNGUNYA** and **DENGUE**.



Mosquitoes bite day and night.  
Prevent mosquito bites by using insect repellent.

**DON'T LET MOSQUITOES RUIN YOUR TRIP.**



For more information: call 800-CDC-INFO (232-4636) or visit [www.cdc.gov/travel](http://www.cdc.gov/travel).



# RECENTLY IN THE AMERICAN TROPICS?



**MOSQUITOES** spread diseases such as **CHIKUNGUNYA** and **DENGUE**.



Watch for fever with joint pains or rash in the next 2 weeks.

2 WEEKS						
Sun	Mon	Tue	Wed	Thu	Fri	Sat
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	31	1	2	3	4



If you get sick, see a doctor.  
Tell the doctor where you traveled.

For more information: call 800-CDC-INFO (232-4636) or visit [www.cdc.gov/travel](http://www.cdc.gov/travel).



# *Aedes* mosquitoes in the U.S.

- Dengue epidemics once common through 1940s
  - 8 outbreaks in Texas since 1980
  - 2 outbreaks in Florida since 2009
- Chikungunya 11 locally acquired cases, 2014
- Outbreak risk areas, dengue and chikungunya: border states, states with *Aedes* mosquitoes

*Aedes aegypti*



*Aedes albopictus*



# Chikungunya Risk Communication

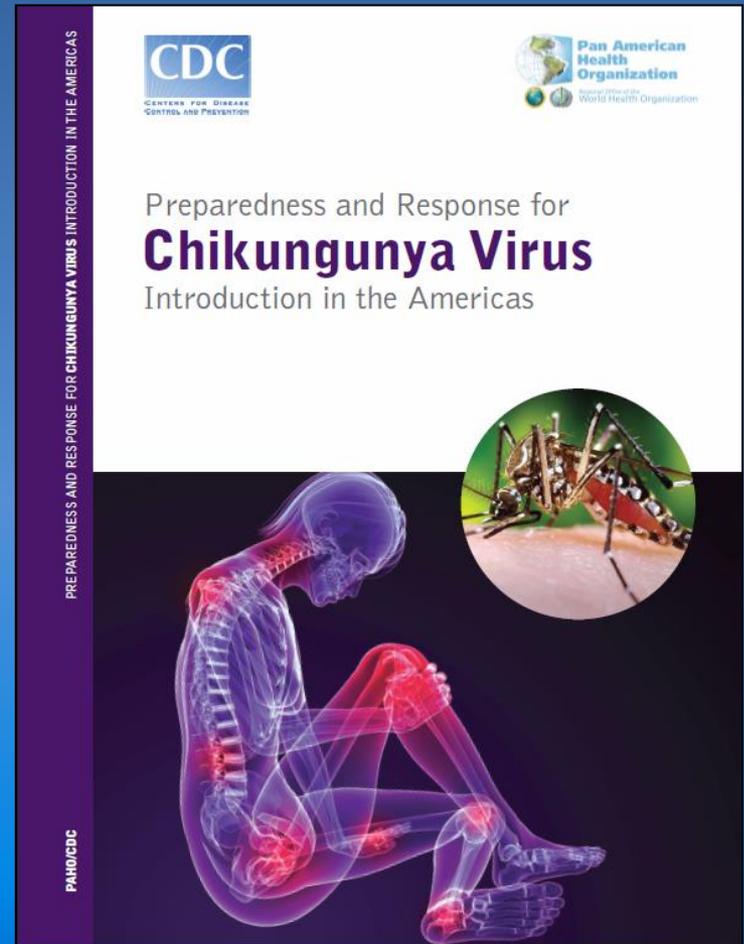
## Audiences

- Ministries of Health
- Physicians/Health care providers
- Public
- Travelers
- Public health partners
- TSA, Customs and Border Control
- Cruise Industry
- Media
- Policy makers: Congress, White House

# Preparedness and Response for Chikungunya Virus Introduction in the Americas

## Topics

- **Epidemiology**
- **Clinical**
- **Laboratory**
- **Case Management**
- **Surveillance And Outbreak Response**
- **Vector Surveillance And Control**
- **Risk And Outbreak Communication**



# Chikungunya Communication

## PRE OUTBREAK

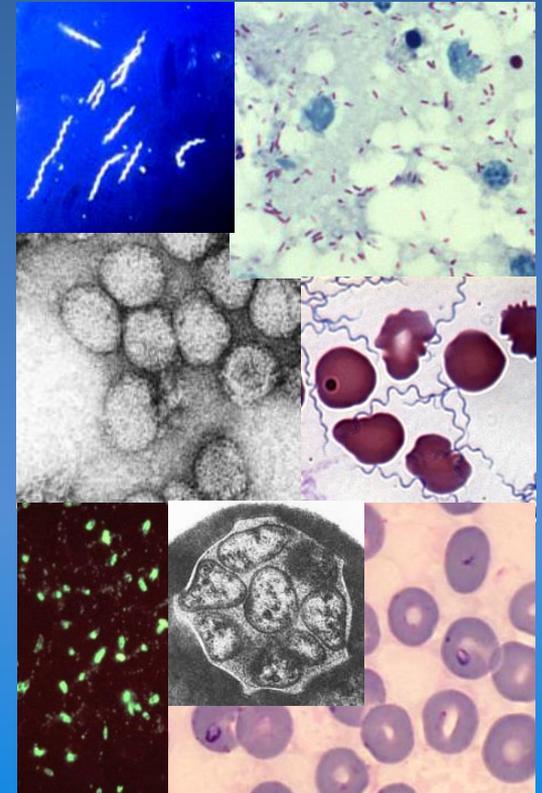
- Diagnostic testing protocols
- Produced a stockpile of reagents
- Diagnostic test training, proficiency evaluation program
- Expanded ArboNET to allow reporting of chikungunya cases
- CDC website updates
- Partner outreach: coordinate comms

# Communications During the Outbreak

- Fact sheets and weekly updates of CHIKV human cases posted on web site, English and Spanish
- Social Media—Twitter, Facebook posts
- Yellow Book updates, Traveler's Health updates
- Health Alert Network (HAN) notices
- Inbound/outbound travel posters
- Press releases
- Digital press kit
- MMWR reports
- Training: Webinars, Medscape, Media
- 3 Hill Alert notifications
- Congressional Briefings

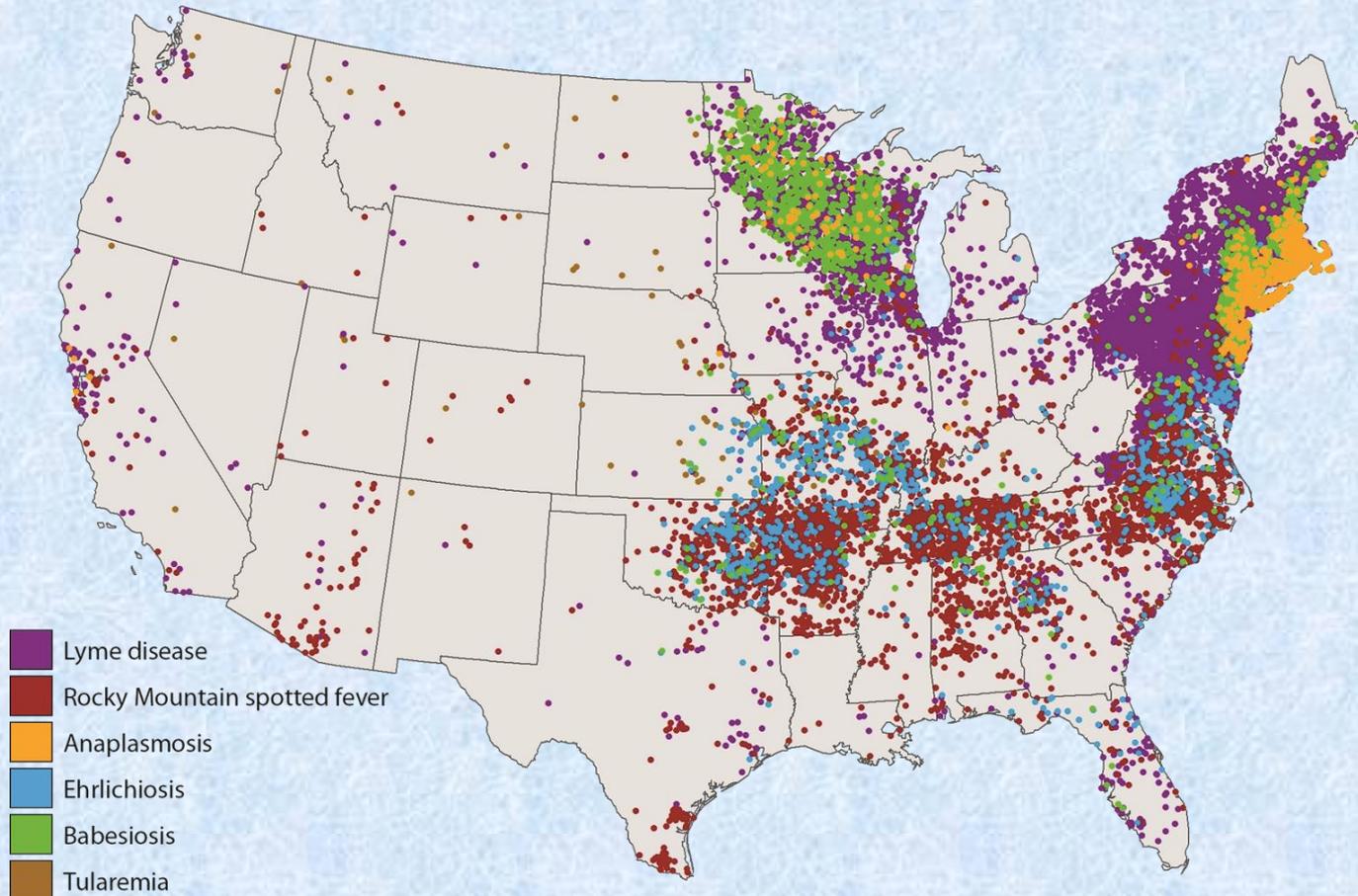
# Tick-Borne Diseases

- **Lyme disease (#6 on the National Notifiable Disease list, 2013)**
- Anaplasmosis
- Babesiosis
- *Borrelia miyamotoi* infection (2013)
- Bourbon virus (2014)
- CO tick fever
- Ehrlichiosis
- *Ehrlichia muris*-like (2009)
- Heartland virus (2012)
- Spotted Fever Group *Rickettsia*
- Southern tick-associated rash illness (STARI)
- Tularemia
- Tickborne Relapsing Fever (TBRF)
- Powassan
- Rocky Mountain spotted fever (RMSF)



[www.cdc.gov/ticks/diseases/](http://www.cdc.gov/ticks/diseases/)

## Distribution of Key Tickborne Diseases, 2012



NOTE: Each dot represents one case. Cases are reported from the infected person's county of residence, not necessarily the place where they were infected.

NOTE: During 2012, babesiosis was reportable in Alabama, California, Connecticut, Delaware, Indiana, Maine, Maryland, Massachusetts, Michigan, Minnesota, Nebraska, New Hampshire, New Jersey, New York, North Dakota, Oregon, Rhode Island, Tennessee, Vermont, Washington, Wisconsin, and Wyoming. CDC was not notified through the national surveillance system of cases in other states.

NOTE: In 2012, no cases of tickborne illness were reported from Hawaii. In 2012, Alaska reported ten travel-related cases of Lyme disease.

# TBD Symptoms

## Acute

Fever/chills

- Aches and pains
- Rash – rash presentation varies by disease

## NOTE

HCP should evaluate

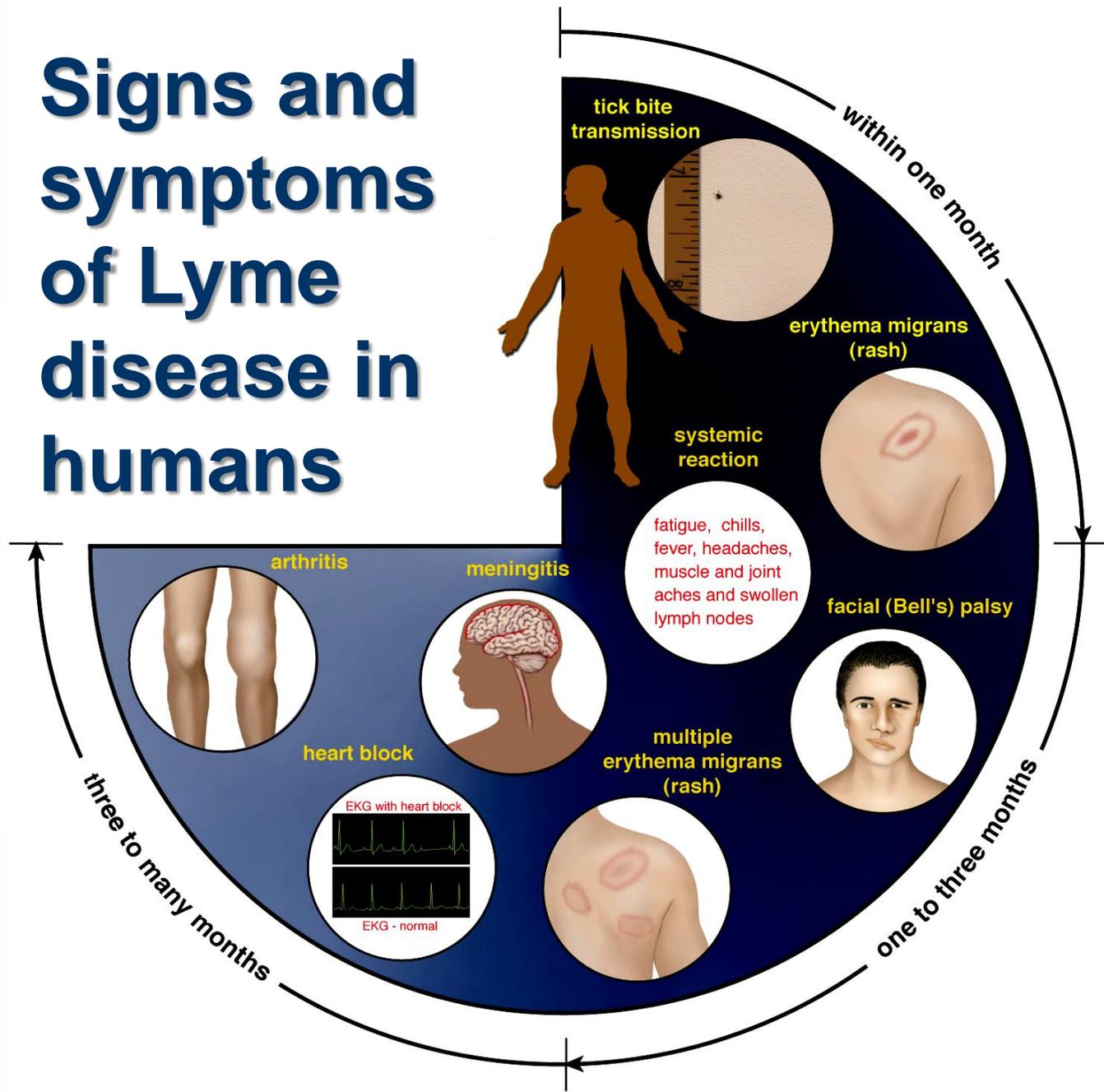
- Symptoms
- Geographic region where bitten
- Before\* ordering laboratory tests, offering treatment



# Key TBD messages: Symptoms

- Many TBD diseases can have similar signs and symptoms.
- Not all TBD are found throughout the U.S.
- See your doctor immediately if you have been bitten by a tick and develop a fever or rash, or other symptoms. BUT: People don't always remember being bitten.

# Signs and symptoms of Lyme disease in humans



# Principles of TBD Prevention

## 1. Personal protection



## 2. Environmental management



## 3. Community intervention



# Personal Protective Measures

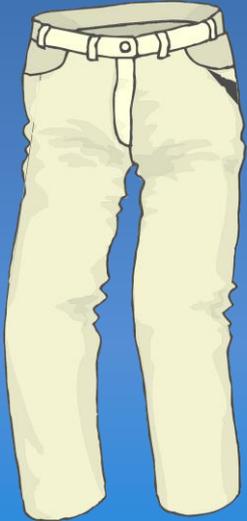


# Key Messages: Prevention

- Avoid tick habitat
- Use DEET (at least 20%) or wear permethrin-treated clothing
- Daily tick checks—remove attached ticks ASAP
- Shower soon after being outdoors
  - Washes away unseen nymphs and gets tick-infested clothing off of the body



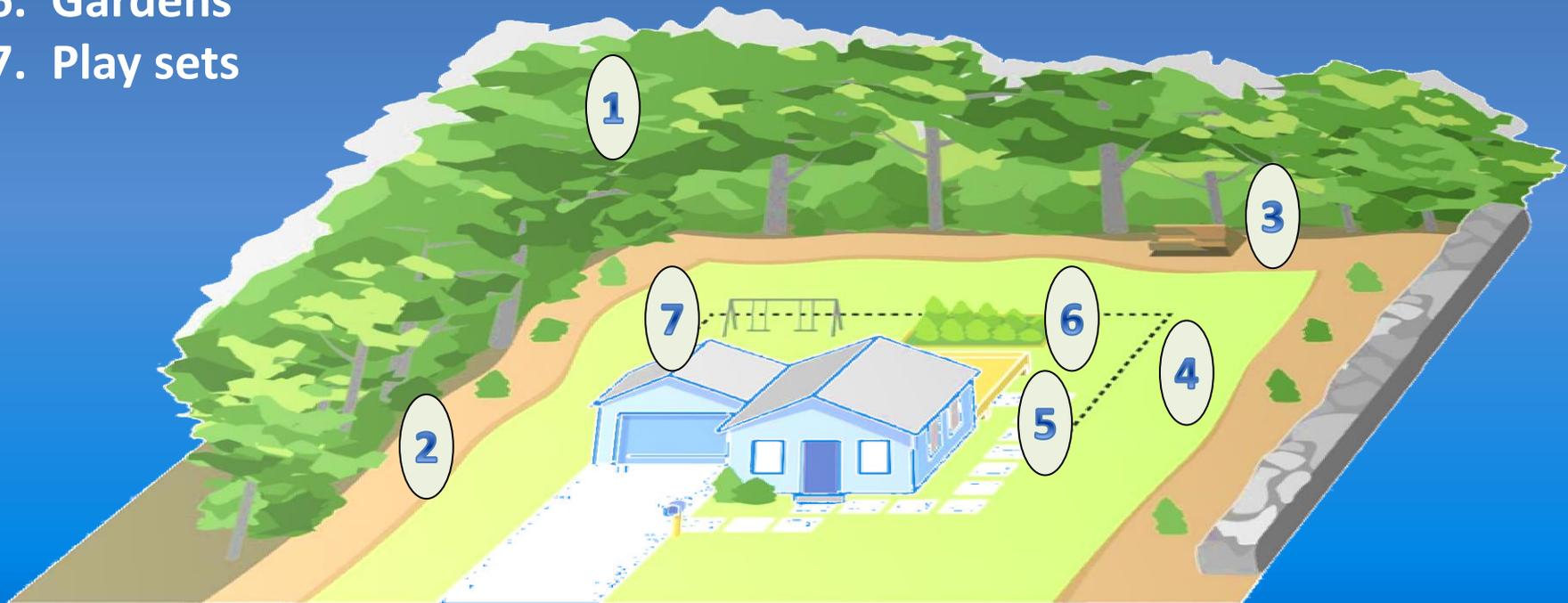
# Personal Protective Measures with No Demonstrated Effect



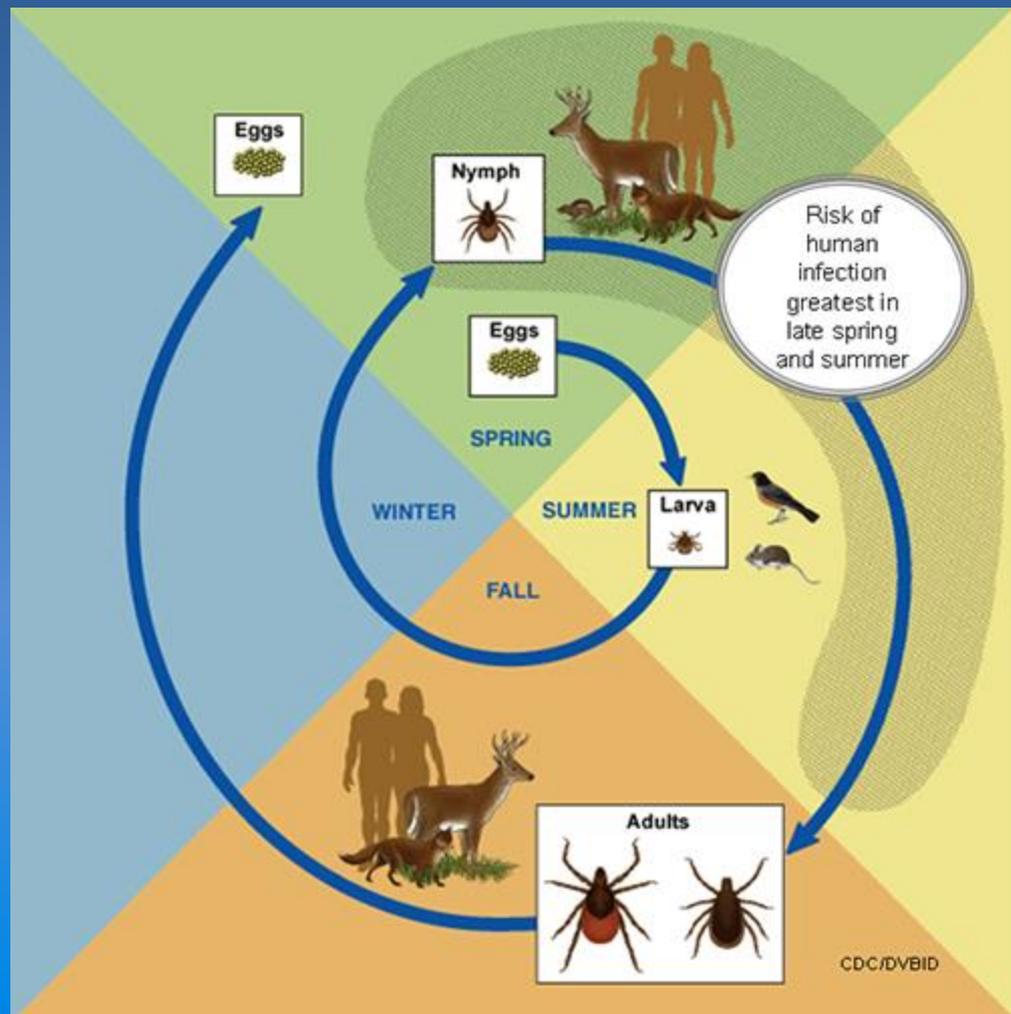
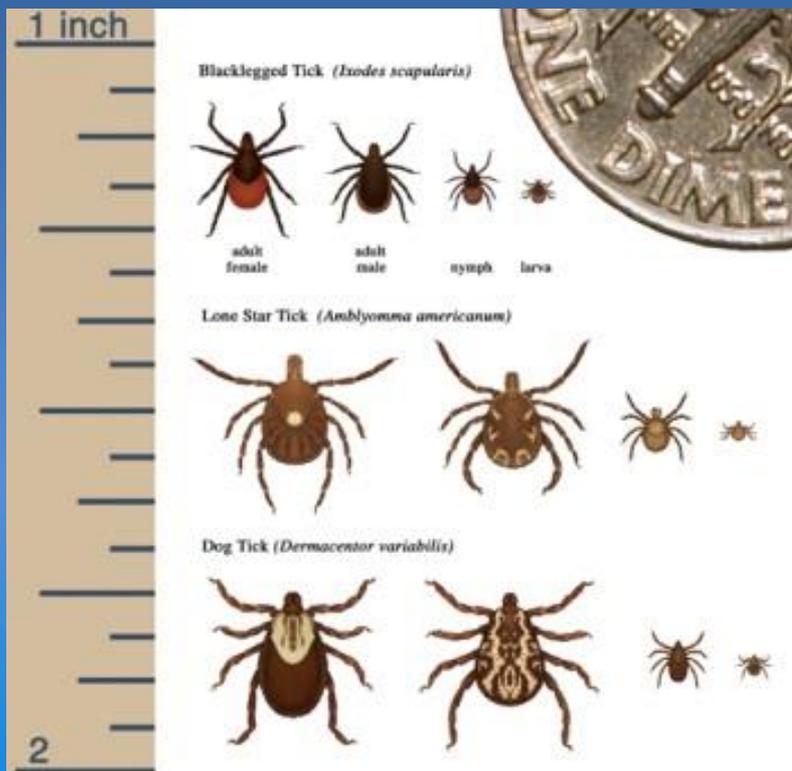
- Tucking pants into socks (5 studies)
- Wearing light-colored clothing (4 studies)
- Method of tick removal: pulling with fingers, twisting, use of tweezers, use of match (4 studies)

# Environmental Measures—Preventing Ticks in the Yard

1. Tick zone
2. Wood chip barrier
3. Wood pile
4. Tick migration zone
5. Tick safe zone
6. Gardens
7. Play sets



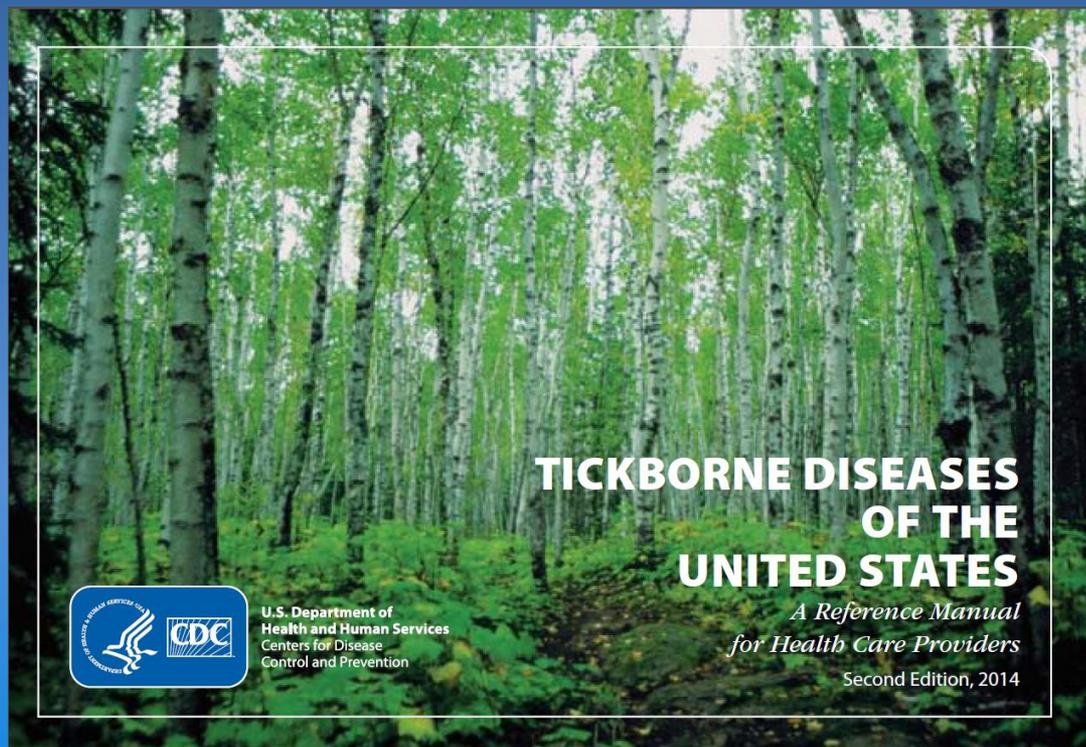
# TBD Transmission



# CDC Resource: Tickborne Diseases of the United States

Coming soon as an app!

- Maps
- Tick identification
- Tick specific info
- Tick bite prevention



# <http://www.cdc.gov/ticks/index.html>

- One stop shop for all your communication needs! Various audiences: adults, kids, HCP
- Prevention
- Disease info
- Symptoms
- Webinar
- Diagnostics
- Treatment
- “How to”

The screenshot shows the CDC website's 'Ticks' page. At the top, it says 'CDC Home' and 'Centers for Disease Control and Prevention' with the tagline 'CDC 24/7: Saving Lives. Protecting People.™'. Below this is an 'A-Z Index' navigation bar. The main heading is 'Ticks'. Under 'Avoiding Ticks', there are three links: 'On people', 'On pets', and 'In the yard', each with a tick icon. To the right is a featured article 'Rickettsia in Africa' with a video player showing a CDC expert commentary by Jennifer McQuiston, DVM, MS. Below the video are three numbered navigation buttons (1, 2, 3). Under 'Bitten by a tick?', there are links for 'Tick Removal' and 'Symptoms of tickborne illness'. Under 'All about ticks', there are links for 'Geographic distribution' and 'Tick life cycle and hosts'. Under 'Notable tickborne diseases', there is a list: Anaplasmosis, Babesiosis, Ehrlichiosis, Lyme disease, Rocky Mountain spotted fever, and Other tickborne diseases. The 'Resources' section includes links for 'HHS joint webinar! Novel and Emerging Tickborne Diseases - Agents, Clinical Features, and Surveillance', 'New Handbook - Tickborne Diseases of the United States: A Reference Manual for Health Care Providers, Second Edition. [PDF - 21 pages]', 'Tick Bite Prevention Comic for Summer Campers - Don't Let a Tick Make You Sick! [PDF - 1 page]', and 'Hunter Safety Fact Sheet - It's Open Season on Ticks! [PDF - 2 pages]'.

# Lyme: Materials for the Public

Lyme disease communication toolkit

The screenshot shows the CDC website for Lyme Disease. At the top, it says "CDC Home" and "Centers for Disease Control and Prevention" with the tagline "CDC 24/7: Saving Lives. Protecting People.™". There is a search bar and a navigation menu with letters A-Z and a hash symbol. The main heading is "Lyme Disease". Below it, a paragraph explains that Lyme disease is caused by the bacterium *Borrelia burgdorferi* and is transmitted to humans through the bite of infected blacklegged ticks. It lists typical symptoms like fever, headache, fatigue, and a skin rash called erythema migrans. It also mentions that if left untreated, infection can spread to joints, the heart, and the nervous system. The text states that Lyme disease is diagnosed based on symptoms, physical findings (e.g., rash), and the possibility of exposure to infected ticks; laboratory testing is helpful if used correctly and performed with validated methods. Most cases of Lyme disease can be treated successfully with a few weeks of antibiotics. Steps to prevent Lyme disease include using insect repellent, removing ticks promptly, applying pesticides, and reducing tick habitat. The ticks that transmit Lyme disease can occasionally transmit other tickborne diseases as well.

On the right side, there are links for "Email page link", "Print page", and "Updates" (which is circled in red). Below these are "Contact Us" details for the Bacterial Diseases Branch, including the address, phone number (800-CDC-INFO), and TTY number.

The main content area is divided into several sections:

- Patient Information:** Transmission (How ticks spread Lyme disease...), Signs and Symptoms (Signs and symptoms of illness...), Diagnosis and Testing (What to expect from your office visit...), Treatment (What to expect from treatment...).
- General Lyme Topics:** Prevention (Avoid getting infected...), Tick Removal (How to remove a tick...), Communications Tool Kit (Resources for spreading the message...), Statistics (Incidence, geography, seasonality and more...).
- Lyme Disease FAQs:** Frequently Asked Questions and Hot Topics (All about Lyme disease...).
- Healthcare Professionals:** Clinicians, public health officials, and veterinarians... (In-depth information and links...).
- Helpful Links:** New Handbook - Tickborne Diseases of the United States: A Reference Manual for...

At the bottom right, there is a "Prevent Lyme disease!" section with buttons for "Wear repellent", "Check for ticks daily", and "Shower soon after being outdoors".



www.cdc.gov/lyme/

# Questions?

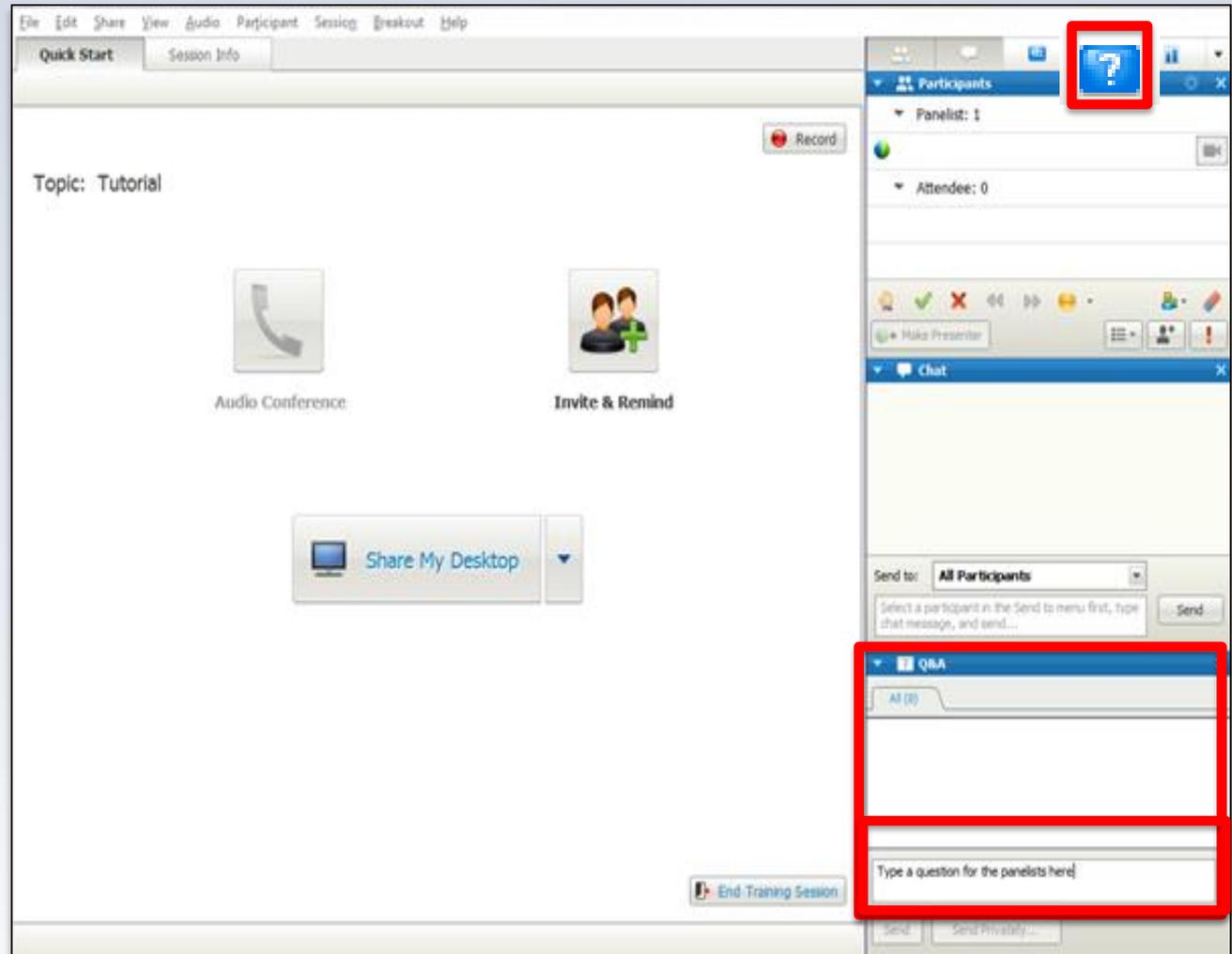
Sue Partridge

[spartridge@cdc.gov](mailto:spartridge@cdc.gov)

Tel: 970.221.6477

# To Ask a Question

- Click on the blue question mark tab on the top right panel of your screen
- This will open the Q&A box on the bottom right panel on your screen
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# Thank you for your participation!

- Please complete the webinar evaluation:  
[https://www.research.net/s/CSTE\\_VBD2](https://www.research.net/s/CSTE_VBD2)
- The webinar recording & slides will be available CSTE's website in the webinar library: <http://www.cste.org/?page=WebinarLibrary>