OSHA Worker Safety and Health Activities and the Ongoing Zika Virus Outbreak

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Zika virus background

• Viral disease mainly transmitted by mosquitoes
  – Mainly *Aedes* species, which can be aggressive biters

  ![A. aegypti](image1)  
  Better vector; will rest indoors.

  ![A. albopictus](image2)  
  Better suited to temperate climates.

• In some instances, may be also spread via
  – Bloodborne (contact) transmission
  – Aerosol exposure (in labs, based on animal models)
  – Sexual transmission

Zika virus background

In 2016, the estimated range of *Aedes* mosquitoes’ includes states in every OSHA region except Region X.

These maps DO NOT show: Exact locations or numbers of mosquitoes living in an area or risk or likelihood that these mosquitoes will spread viruses.

Zika virus background

- Zika identified in Uganda in 1947 in monkeys.¹
- First human outbreak in Africa in 1952.¹
- Human case in researcher confirmed through virus isolation and re-isolation in 1964.²
- Other cases have been associated with outbreaks in Africa, Asia, and Pacific Islands.
- Some other occupational cases
  - 1972: Lab worker³
  - 2008: Scientists⁴ (mosquito bites)

Current outbreak

• Began in countries throughout Central and South America (Brazil) and Pacific Islands
• **Active transmission in defined areas of U.S. mainland:** small areas of Florida
• Active transmission in U.S. territories
  – PR
  – USVI
  – AS

Occupational exposures & cases

• Occupational cases may not be well surveilled, particularly outside of the U.S.
  – Domestically, state reporting to CDC may vary

• One laboratory-acquired case at University of Pittsburgh
  – Sharps injury to individual working with Zika virus
  – Student (not a covered employee)
  – OSHA made contact with university, but OSHA did not have jurisdiction
Signs and Symptoms

• Approximately 1 in 5 infected people develop signs and symptoms
  – Usually mild
  – Typically begin 2-7 days after exposure
  – Generally last 2-7 days

• Generally include fever, rash, joint pain and red or pink eyes¹

• Muscle pain and headache, in some cases²

• No specific treatment or vaccine (yet)

Reproductive effects

• **Microcephaly**
  
  – Linked to Zika virus infection preceding or during pregnancy
  
  – Developmental disorder characterized by *smaller-than-expected head size, brain underdevelopment, and neurocognitive problems* in newborns

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Photo credit: CDC
Other health effects

• **Guillain-Barré syndrome (GBS)**¹
  – Autoimmune disorder often marked by weakness, paralysis, and respiratory impairment

• **Thrombocytopenia**²
  – Low platelet count in blood
  – Bleeding into the tissues, bruising, slow blood clotting after injury

• **Death** (in extreme circumstances)
  – Associated with bleeding from severe thrombocytopenia


What is OSHA doing?

• Technical support and assistance, as requested, to federal, state, local and other levels of government

• Other federal interagency coordination

• Direct support to private sector employers’ and worker groups’ questions

• Coordinating with OSHA NY regional office to ensure guidance materials available in Spanish
What is OSHA doing?

- Published joint recommendations with NIOSH
  - Available as an OSHA-NIOSH FactSheet
  - English and Spanish
  - Webpage format at www.osha.gov/zika

- Guidance covers outdoor, healthcare, laboratory, and traveling workers

- Advisory in nature, but OSHA standards still apply
What is OSHA doing?

- Published outdoor worker QuickCards
  - **English** and **Spanish**
  - Or “Z” for Zika under OSHA publications

- Guidance targeted toward **outdoor workers** only
- Advisory in nature, but OSHA standards still apply
What is OSHA doing?

• Federal workforce guidance
  – Joint effort with DOL, OPM, EEOC

• OSHA’s piece is a job hazard analysis template for federal agencies
  – Adaptable to many types of federal agency operations and job tasks

Source: https://www.chcoc.gov/content/human-resources-flexibilities-and-authorities-federal-employees-affected-zika-virus
General recommendations

• If requested by a worker and if feasible, employers may **consider reassigning** anyone who indicates she is or may become pregnant, or who is male and has a sex partner who is or may become pregnant, to indoor tasks to reduce their risk of mosquito bites.
  – Buildings with screened windows and doors
  – Air conditioning

• If job functions preclude reassignment, may be possible to **modify work practices** to minimize total time a worker spends outdoors
General recommendations

• May not always be possible to re-assign workers, especially if job is outside:
  – Construction and agriculture industries together make up about 5.5 percent of total U.S. employment.¹
  – Other outdoor workers may include:
    • public works and services
    • public safety
    • oil and gas extraction (excluding off-shore drilling operations)
    • amusement parks
    • travel and transportation operations
    • many others

General recommendations

• Base precautions on risk

• For most U.S. workers, there is no significantly elevated risk of Zika virus exposure outside of CDC-identified Zika-transmission areas
  – Currently, affected U.S. territories and isolated (i.e., <5-mi² zones) around Miami, FL

• Inside transmission areas, risk is greatest for those impacted by reproductive effects.
  – Pregnant / could become pregnant
  – Sexual partners
General recommendations

• Mosquitoes lay eggs in standing water, including around worksites

• Whenever possible, **get rid of standing water**
  – Buckets
  – Bottles
  – Barrels
  – Tires
  – Drain pipes
  – Gutters
General recommendations

• Provide **insect repellent** to workers who may be bitten by mosquitoes
  – Use according to manufacturer instructions
  – Also follow OSHA/NIOSH guidance for reapplication and use with sun screens
  – Choose repellent with EPA-registered active ingredient (e.g., DEET, picaridin)
  – The more active ingredient, the longer the protection time (up to a point)
  – Only apply permethrin to clothing, not directly to skin
Other controls...

• Follow the **hierarchy of controls** to help reduce or eliminate worker exposures to Zika virus
  – In conjunction with preventive actions, and especially when preventive actions (like reassignment) are not possible

• Focus on **preventing mosquito bites** and other potential sources of exposure
Engineering controls

• Built into a worker’s physical environment
• Provide protection without the worker having to do anything specific
• Examples:
  – Enclosures (operator booth of amusement park ride, cab of construction or agricultural equipment)
  – In healthcare: needles/syringes, IV administration kits, etc. with engineered sharps injury protection
  – In laboratories: biosafety cabinets
Admin Controls / Work Practices

• Require an employer or worker to do something in order to achieve the intended protection

• Examples:
  – Implementing hand hygiene protocols, and providing facilities for workers to wash up after removing PPE, after using bug spray
  – In healthcare and labs: implementing *universal and standard precautions*
  – In healthcare and labs: avoiding work tasks that contribute to the generation of bioaerosols or droplet sprays

Strictly speaking, reassignment / rotating duties are also administrative controls.
PPE

• Worker has to wear or use a garment or piece of equipment to achieve protection

• Examples:
  – When outdoors, **clothing to cover exposed skin**: Long pants, sleeves, hats with mosquito netting
    • Clothing treated with repellent (e.g., permethrin)
  – For workers with potential bloodborne exposures: Gloves, gowns, masks, face shields
  – Certain healthcare and lab tasks may require enhanced precautions.
Additional guidance for specific worker groups

• Laboratory workers
  – Follow HHS “Biosafety in Microbiological and Biomedical Laboratories” guidance for arboviruses

• Workers conducting mosquito control operations
  – Consult EPA Worker Protection Standards that apply to insecticides
  – Implement controls appropriate for hazardous chemicals or areas with dense mosquito populations (e.g., respiratory protection, other enhanced PPE)
Additional information

• The OSHA/NIOSH guidance also presents CDC public health information in the context of workplace hazard prevention and control:
  – Recognizing and reporting symptoms of Zika
  – What to do if sick
  – Travel guidelines and warnings
  – Information about pregnancy and birth defects

• For more information:
  www.cdc.gov/zika
  www.cdc.gov/niosh
Other recommended employer actions

• Conduct **hazard assessment**, select **appropriate controls**
  – May be required by some OSHA standards
• Consider offering **flexible leave** and **flexible travel policies**
• Provide **worker training**
  – On protective measures, PPE, insect repellent use, workplace flexibilities, etc.
  – May be required by some OSHA standards
Applicable Standards (29 CFR)

- 1910.132 – PPE General Requirements
- 1910.133 – Eye and Face Protection
- 1910.134 – Respiratory Protection
- 1910.138 – Hand Protection
- 1910.1030 – Bloodborne Pathogens
- 1910.1200 – Hazard Communication

*Other requirements may apply in certain situations.*
For Federal Agencies

- Occupational Safety and Health Act of 1970
- Executive Order 12196
- 29 CFR 1960

…Require the heads of Federal agencies to furnish to employees places and conditions of employment that are free from job safety and health hazards.
Emergency Preparedness and Response Resources

Visit OSHA’s web site for additional information. The OSHA page links to many emergency preparedness and response resources.

- Click on “A to Z Index”
- Scroll to emergency topics in the list.

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Questions?

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NIOSH Worker Safety and Health Team Update

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Case Counts in the US  (updated October 12, 2016)

US States
- Locally transmitted: 128
- Travel-associated: 3,807
- Laboratory acquired: 1

US Territories (PR, AS, USVI)
- Locally transmitted: 25,871
- Travel-associated: 84
- Laboratory acquired: 0
The National Institute for Occupational Safety and Health (NIOSH)

Workplace Safety and Health Topics
- Mosquito-Borne Diseases
- West Nile Virus
- Zika Virus
- Insect Repellent Safety
- Other Mosquito-Borne Diseases

Hazards to Outdoor Workers
- Physical Hazards
- Heat Stress
- Cold Stress

NIOSH > Workplace Safety and Health Topics > Mosquito-Borne Diseases

Zika Virus

Key Worker Resources
- OSHA/NIOSH Interim Guidance for Protecting Workers from Occupational Exposure to Zika Virus
- NIOSH Zika: Protecting Outdoor Workers
- NIOSH Zika: Protecting US Businesses and Business Travelers
- NIOSH Zika: Protecting Healthcare and Laboratory Workers
- Reminder about Preventing Sharps Injuries and the Zika Virus

www.cdc.gov/niosh/zika
Do your homework before traveling

• If you are pregnant, do not travel to areas with Zika.
• Pregnant women should talk with their healthcare provider and consider postponing nonessential travel to Southeast Asia, where Zika is endemic.
• If you must travel, talk to your doctor or other healthcare provider before your trip.
• If you are trying to get pregnant, consider avoiding nonessential travel to areas with Zika.
Do your homework before traveling

- If you travel to an area with Zika:
  - Strictly follow steps to prevent mosquito bites.
  - Use condoms or do not have sex during the trip.
  - Even if you do not feel sick, take steps to prevent mosquito bites for 3 weeks after you return so you don’t spread Zika to uninfected mosquitoes.

Keep mosquitoes outside when traveling

- When traveling
  - Stay in places with air conditioning and with window and door screens.
  - Use a bed net if air conditioned or screened rooms are not available or if sleeping outdoors.
Do your homework before traveling

See the latest travel notices at:

wwwnc.cdc.gov/travel/page/zika-travel-information

*Employers should consider allowing flexibility in required travel to areas with active Zika transmission for concerned staff
What is CDC doing?

- Activated Emergency Operations Center (EOC) to level 1.
- Providing on-the-ground support in areas with Zika.
- Educating healthcare providers and the public about Zika.
- Posting travel guidance.
- Providing laboratories with diagnostic tests.
- Creating and distributing Zika Prevention Kits to affected US territories.
- Conducting a study to evaluate the persistence of Zika virus in semen, vaginal fluids and urine.
What is CDC doing?

• Working with partners to
  – Monitor and report cases.
  – Conduct studies to learn more about the potential link between Zika and Guillain-Barré syndrome.
  – Create action plans for state and local health officials to improve Zika preparedness.
  – Publish and disseminate guidelines to inform testing and treatment of people with suspected or confirmed Zika.
  – Publish and disseminate conclusions on the causal association between Zika and microcephaly.
For the most current information, visit www.cdc.gov/zika

The findings and conclusions in this report are those of the authors and do not necessarily represent the official position of the Centers for Disease Control and Prevention.