Illnesses on the rise

From mosquito, tick, and flea bites

Almost everyone has been bitten by a mosquito, tick, or flea. These can be vectors for spreading pathogens (germs). A person who gets bitten by a vector and gets sick has a vector-borne disease, like dengue, Zika, Lyme, or plague. Between 2004 and 2016, more than 640,000 cases of these diseases were reported, and 9 new germs spread by bites from infected mosquitoes and ticks were discovered or introduced in the US. State and local health departments and vector control organizations are the nation’s main defense against this increasing threat. Yet, 84% of local vector control organizations lack at least 1 of 5 core vector control competencies. Better control of mosquitoes and ticks is needed to protect people from these costly and deadly diseases.

State and local public health agencies can

- Build and sustain public health programs that test and track germs and the mosquitoes and ticks that spread them.
- Educate the public about how to prevent bites and control germs spread by mosquitoes, ticks, and fleas in their communities.
More cases in the US (2004-2016)

- The number of reported cases of disease from mosquito, tick, and flea bites has more than tripled.
- More than 640,000 cases of these diseases were reported from 2004 to 2016.
- Disease cases from ticks have doubled.
- Mosquito-borne disease epidemics happen more frequently.

More germs (2004-2016)

- Chikungunya and Zika viruses caused outbreaks in the US for the first time.
- Seven new tickborne germs can infect people in the US.

More people at risk

- Commerce moves mosquitoes, ticks, and fleas around the world.
- Infected travelers can introduce and spread germs across the world.
- Mosquitoes and ticks move germs into new areas of the US, causing more people to be at risk.

The US is not fully prepared

- Local and state health departments and vector control organizations face increasing demands to respond to these threats.
- More than 80% of vector control organizations report needing improvement in 1 or more of 5 core competencies, such as testing for pesticide resistance.
- More proven and publicly accepted mosquito and tick control methods are needed to prevent and control these diseases.
Recent outbreaks of Zika, chikungunya, and West Nile viruses and the steady increase in Lyme disease cases point to the need for state and local agencies to have comprehensive vector-borne disease prevention and control programs. The US needs better tools and more staff with greater expertise at local and state levels to reduce the growing threat of these diseases in the US.

**DISEASE CASES FROM MOSQUITOES (2004-2016, REPORTED)**

Disease counts include both locally transmitted and travel-associated cases.

**Top 20% (more than 1,678)**
**2nd 20% (1,138-1,678)**
**3rd 20% (545-1,137)**
**4th 20% (313-544)**
**Bottom 20% of states (87-312)**

*All states and territories in this quintile fell between 1,678 and 9,254, with the exception of Puerto Rico, which had 80,534 cases. Maps show case counts, not disease risk.*

**DISEASE CASES FROM TICKS (2004-2016, REPORTED)**

**Top 20% (more than 12,856)**
**2nd 20% (2,141-12,856)**
**3rd 20% (1,099-2,140)**
**4th 20% (313-1,098)**
**Bottom 20% of states (117-182)**
**None:** 0

Maps show case counts, not disease risk.

**CONTROLLING DISEASES FROM MOSQUITOES AND Ticks Requires 5 Core Competencies.**

1. Monitor and track mosquitoes and ticks locally.
2. Use data to drive local decisions about vector control.
3. Have an action plan to kill mosquitoes and ticks at every life stage.
4. Control vectors using multiple types of methods.
5. Conduct pesticide-resistance testing.
THE FEDERAL GOVERNMENT IS

- Funding states, territories, industry, university, and international groups to detect and respond to infections from mosquitoes, ticks, and fleas and report cases to CDC. [http://bit.ly/2GvmyDH](http://bit.ly/2GvmyDH)
- Convening a Tick-Borne Disease Working Group established by the 21st Century Cures Act to improve federal coordination of tickborne disease efforts.
- Supporting 5 regional centers of excellence to address emerging diseases from mosquitoes and ticks. [https://www.cdc.gov/vector](https://www.cdc.gov/vector)
- Conducting and developing diagnostic tests, vaccines, and treatments for these diseases.
- Educating the public about protecting themselves from diseases resulting from an infective mosquito, tick, or flea bite. [https://www.cdc.gov/vector](https://www.cdc.gov/vector)

STATE AND LOCAL GOVERNMENT AGENCIES CAN

- Build and sustain public health programs that test and track germs and the mosquitoes and ticks that spread them.
- Educate the public about how to prevent bites and control germs spread by mosquitoes, ticks, and fleas in their communities.

UNIVERSITIES AND COMPANIES CAN

- Study mosquitoes and ticks to better understand how to control them.
- Develop new or better methods and products to kill mosquitoes and ticks at each stage of life.
- Discover or improve tests for diagnosing new and known diseases from infective mosquito and tick bites.

EVERYONE CAN

- Wear long-sleeved shirts and long pants.
- Treat items, such as boots, pants, socks, and tents, with permethrin or buy permethrin-treated clothing and gear.
- Take steps to control ticks and fleas on pets.

For more information, please contact
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