Tick-borne encephalitis

Last update: 2025-08-29

Key facts

- Tick-borne Encephalitis (TBE) is a viral infection of the central nervous system caused by the Tick-borne Encephalitis Virus (TBEV).
- It is transmitted through the bite of infected Ixodes ticks, which are commonly found in forested and grassy areas of Europe and Asia.
- The disease can range from mild flu-like symptoms to severe neurological conditions and long-term complications.
- There are three subtypes of TBEV, each associated with different geographical regions.
  - European (TBEV-Eur)
  - Siberian (TBEV-Sib)
  - Far Eastern (TBEV-FE)

Transmission: vector-borne (ticks)

- It is primarily transmitted through the bite of infected Ixodes ticks during their blood-feeding.
- However, in some regions, particularly in Europe, unpasteurized milk from infected livestock can also transmit the virus when consumed.

Most vulnerable to contracting the disease

- Individuals living in or traveling to regions where TBE is common, particularly in parts of Europe and Asia.
- Those who frequently spend time in tick-infested areas, such as forested or grassy environments.
- In regions where the virus can be transmitted through unpasteurized milk, consumers of such milt are at increased risk.

Symptoms

Symptoms can vary, ranging from mild to severe:

- Early Symptoms
  - Fever
  - Headache
  - Muscle aches
  - Fatigue
- Neurological Symptoms
  - Confusion
  - Neck stiffness
  - Seizures
  - Ataxia (lack of muscle coordination).
- Long-term Effects
  - Cognitive difficulties
  - Motor impairments.

What can you do to prevent and control an epidemic?

Personal protection

- Encourage the community members to stay away from wooded and grassy areas where ticks are commonly found, especially during peak seasons.
- Encourage them to apply tick repellents containing DEET or other approved chemicals to exposed skin and clothing.
- Encourage them to wear long sleeves, long pants, and tick-resistant clothing when in tick habitats.
- Encourage them to regularly check for ticks on the body and remove them promptly with fine-tipped tweezers.

Monitoring the community and identifying sick people

- Identify community members who have suspected TBE based on the community case definition

Treatment and management

- Rapidly detect and refer severe cases to health facilities early
- Provide psychosocial support to the sick person and their family members

Social mobilisation and behaviour change

- Find out the specific advice being given by health and other relevant authorities
- Model following this advice and inform community members of current health practice advice
- Offer support and encouragement to follow the advice
- Try to gain understanding about if and why health practice advice is not being followed
- With the guidance of your supervisor and health authorities, work with communities to overcome barriers to following health advice and recommended practices

Immunization

- In some endemic regions, vaccines are available and recommended for people at high risk of exposure.

Mapping and community assessment

- Make a map of the community.
- Mark the following information on the map:
  - How many people have fallen sick with Tick-borne encephalitis? Where?
  - How many people have died? Where? When?
  - Who and where are the vulnerable people?
  - Where are the local health facilities and services? (include traditional healers)
- Record the following information on the back of the map:
  - When did people start to fall sick with tick-borne encephalitis?
  - How many people live in the affected community?
    - How many are children are under five years old?
  - What are the usual ways of disposing of rubbish and solid waste in the community?
  - How common is it for people to live in houses with insect screens on windows and doors?
  - What are the community's habits, practices and beliefs about repellents and sprays?
  - What are the community's habits, practices and beliefs about caring for and feeding sick people? Consider any differences in roles and responsibilities between men and women.
    - When babies and infants are sick, do women continue to breastfeed them?
  - Are children badly affected by tick-borne encephalitis? Are there other groups (specific ages, occupations, geographic areas, etc.) that are badly affected?
  - Is a social mobilization or health promotion programme in place?
  - Which sources do people use/trust the most for information?
  - Are there rumours or misinformation about tick-borne encephalitis? What are the rumours?

Other resources

- World Health Organization Tick-borne encephalitis