



Rabies

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Key facts

- Rabies is a viral zoonotic neglected tropical disease that causes inflammation of the brain in warm-blooded animals
- Approximately 59,000 human deaths are attributed to rabies annually, however, due to underreporting, estimates often differ from the true situation.
- Though the disease is present in all countries except Antarctica, 95% of human deaths cases occurring in Asia and Africa and 40% of those affected being children under 15.
- In the Americas, Australia and parts of western Europe where dog-mediated rabies is mostly controlled, blood-feeding bats are now the primary source of human rabies, becoming an emerging public health threat.
- Domestic dogs are the main source of rabies in humans, contributing up to 99% of all transmissions, while other sources of rabies could include cats, livestock and wildlife (especially blood-feeding bats).
- Rabies is 100% vaccine-preventable, and while effective human vaccines and immunoglobulins exist for rabies, these are often inaccessible or unaffordable to those in need (mostly in rural marginalized communities).
- Rabies is 100% fatal once clinical symptoms appear.
- It is also of socioeconomic importance costing about US\$ 8.6 billion per year including lost lives and livelihoods, medical care and associated costs, as well as uncalculated psychological trauma.

Transmission

- Through the bite or scratch of an infected animal (mostly from dogs)
- Contact by saliva or brain tissue of an infected animal comes into contact with mucous membranes (eyes, nose, mouth) or an open wound

Most Vulnerable to contracting the Disease

- Children with pets in their homes (especially dogs and cats)
- Individuals living in rural areas, especially in regions where rabies is endemic
- Communities with predominantly roaming dogs with inefficient dog population control and mass dog

vaccination schemes

- Veterinarians, animal handlers, wildlife workers, hunters, dog traders/breeders, and consumers of dogs

Signs and Symptoms

In animals (dogs)

- May initially start with non-specific signs such as fever, vomiting and weight loss.
- Within days, signs can progress to
 - Poor muscle control with clumsy movements
 - Weakness
 - Paralysis,
 - Difficulty in breathing and swallowing
 - Excessive drooling and salivation,
 - Abnormal behavior, excessive barking and aggressiveness
 - Self-mutilation or barking at the site where they were exposed to the virus

In humans

- Prodromal Symptoms:
 - Early symptoms are nonspecific and can include;
 - Fever
 - Pain
 - Unexplained tingling and pricking
 - Burning sensation at the wound site.
- Furious symptoms
 - Hyperactivity
 - Excitable behavior
 - Hydrophobia (fear of water)
 - Aerophobia (fear of air drafts)
 - Difficulty swallowing
 - Agitation
 - Hallucinations
 - Paralysis
 - Death
- Paralytic (Dumb) symptoms:
 - Paralysis starting at the site of the bite or scratch
 - Coma
 - Death

What can you do to prevent and control an epidemic?

Vaccination

- The most cost-effective control strategy and primary prevention method for rabies is the implementation mass dog vaccination and this must be done for all dogs annually
- Additionally, pre-exposure vaccination should be given to high-risk personnel including veterinarians, animal health and welfare practitioners, dog handlers, laboratory workers handling live rabies and related viruses, and wildlife rangers,
- Post-exposure vaccination should be provided for contacts of cases of dog bites, where available.

Reservoir control and prevention

- Quarantine animals and people that are potentially sick with rabies
- Avoid direct contact with bats (especially blood-feeding bats)

Monitor the community and identify sick people

- Identify and isolate sick animal and people

Treatment and management

- Any person bitten by a dog must be referred to the hospital immediately for wound washing and post-exposure prophylaxis for rabies vaccine, if indicate
- Rapidly refer suspected cases to the appropriate health facilities
- Support contact tracing and follow-up of contacts
- Provide psychosocial support to patients and family members

Sanitation and waste management

- Solid waste management
- Promote proper and safe disposal of dead animals and fluids from infected animals and individuals

Personal protection and hygiene

- Prevention of dog bites and scratches
- Promote handwashing with soap, especially:
 - After caring for or visiting sick people
 - After handling sick animals
 - After preparing bushmeat
- Promote the use of personal protective equipment (PPE) when caring for sick people or when touching sick or dead animals, specifically gloves and mask
- Discourage people from unnecessary touching of sick or dead animals or things that might have been contaminated by their blood or body fluids

Food hygiene and safety (during outbreaks originating in animals)

- Discourage wild animals and dogs as a food source if possible

Social mobilization and health promotion

- Find out the specific advice being given by health and other relevant authorities
 - Promote recommended health practices (such as vaccinating their dogs, use of PPE, etc.)
 - Public education for both children and adults on dog behaviour and bite prevention, what to do if bitten or scratched by a potentially rabid animal, and responsible pet ownership.
- 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

PER Treatment Categories

Categories of contact with suspect rabid animal	Post-exposure prophylaxis (PEP) measures
Category I - touching or feeding animals, animal licks on intact skin (no exposure)	Washing of exposed skin surfaces, no PEP
Category II - nibbling of uncovered skin, minor scratches or abrasions without bleeding (exposure)	Wound washing and immediate vaccination

<p>Category III - single or multiple skin bites or scratches, contamination of mucous membrane or broken skin with saliva from animal licks, exposures due to direct contact with bats (severe exposure)</p>	<p>Wound washing, immediate vaccination and administration of rabies immunoglobulin/monoclonal antibodies</p>
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Mapping and community assessment

- Make a map of the community.
- Mark the following information on the map:
 - How many people and animals have fallen sick with rabies? Where?
 - How many people and animals have died? Where? When?
 - Who and where are the vulnerable people?
 - Who is most affected by rabies?
 - Are there dog meat markets? Where are they?
 - Where are the health facilities? (include traditional healers)
 - Are there any advocacy and support for local support organizations that are against slaughtering dogs as a food source? Where are they and what do they do?
- Record the following information on the back of the map:
 - When did people and animals start to fall sick with rabies?
 - How many people and dogs live in the affected community?
 - Which people in the community have unvaccinated stray dogs?
 - Which people eat dog meat?
 - Are there handwashing facilities in the community, at animal markets and other areas? Are soap and water always available?
 - What are the community's habits, practices and beliefs about handling and slaughtering animals, especially dogs that are sick or dead?
 - Do any animal health agencies, veterinarians or agriculture ministry agencies work in the area?
 - Who and where are the vulnerable people? Who is most affected by rabies?
 - What are the community's habits, practices and beliefs about caring for and feeding sick people? Consider any differences in roles and responsibilities between women and men.
 - Is a social mobilization or health promotion programme in place?
 - Which sources do people use/trust the most for information?
 - Are there rumors or misinformation about vaccines? What are the rumors?

Other resources

- Centers for Disease Control and Prevention (CDC); [Rabies](#) (2024)

- World Health Organization (WHO); [Rabies](#) (2024)
- World Organisation for Animal Health (WOAH); [Rabies](#) (2023)
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