



## ... CAUSING A SIGNIFICANT BURDEN

- Rabies is known since antiquity (India, Babylon and Egypt)<sup>(1)</sup>.
- The disease still occurs in more than 150 countries and territories, and it is widespread in over 100 of these, mainly in Asia and Africa<sup>(2,3)</sup>.
- An estimated 59,000 people die from rabies each year, i.e. one death every ten minutes<sup>(3,4)</sup>.
- 99% of cases are transmitted by dog bites; a small proportion is transmitted via wild animals such as foxes, wolves, jackals, bats, raccoons, skunks, or mongoose<sup>(2,4)</sup>.
- Rabies remains a neglected disease, and rabies deaths are rarely reported. For instance, Haiti has the highest rate of human rabies deaths in the Western Hemisphere, with an estimated 2 each week. Yet, only about 7 of these deaths are reported to health authorities each year<sup>(2,3,5)</sup>.
- The overall economic cost of dog-mediated rabies is estimated to be \$8.6 billion<sup>(3)</sup>.

## ... AND ALMOST ALWAYS FATAL

- Once the first clinical symptoms have occurred, rabies is almost always fatal<sup>(2,4)</sup>.
- 95% of human deaths occur in Asia and Africa<sup>(2)</sup>.
- Rabies primarily affects poor and vulnerable populations in remote rural areas who have limited access to health care<sup>(2)</sup>.
- 40% of people bitten by suspect rabid animals are 15 years of age or less<sup>(2)</sup>.
- Children are at higher risk of rabies because they play with animals; are more likely to be scratched or bitten at the head, face, and arms; and may not report bites or scratches<sup>(6)</sup>.

## RABIES FACTS: CARRIERS AND TRANSMISSION

- A country is defined as free of dog rabies if no indigenously acquired dog-mediated rabies cases have been confirmed for at least two years<sup>(3)</sup>.
- Dog-mediated rabies has been eliminated from Western Europe, Canada, the United States of America, Japan, and some Latin American countries<sup>(3)</sup>.
  - In the Americas, bats are the major source of human rabies deaths; and bat rabies is also an emerging threat in Australia and Western Europe<sup>(2)</sup>.
  - In Africa and Asia, dogs are the main host and vector<sup>(2,3)</sup>.
- Rabies is transmitted to humans after bites or scratches by infected animals<sup>(2)</sup>.
- Transmission can also occur when infectious material – usually saliva – comes into direct contact with human mucosa or fresh skin wounds<sup>(2)</sup>.
- After penetration of the virus into the body, the rabies virus replicates and spreads to and via the nervous system to many tissues including the salivary glands<sup>(4)</sup>.
- The incubation period in humans is generally 2 to 3 months but can be as short as 5 days or longer than 1 year<sup>(2,3,4)</sup>.
- Human-to-human transmission of rabies has never been confirmed, except extremely rarely via tissue or organ transplants from infected individuals<sup>(3)</sup>.



## A HIGHLY EFFECTIVE PREVENTION (NEAR TO 100%) IN PRE-EXPOSURE OR POST-EXPOSURE SITUATIONS

- Pre-exposure vaccination is recommended for anyone at high risk of exposure to rabies virus. This includes:
  - sub-populations in highly endemic settings with limited access to timely and adequate post-exposure treatment<sup>(4)</sup>;
  - anyone frequently exposed to potentially infected animals (laboratory staff, veterinarians, animal handlers, wildlife rangers...)<sup>(2,5)</sup>;
  - travelers to areas with high risk of rabies<sup>(2)</sup>;
  - children living in, or visiting, remote, high-risk areas. As they play with animals, they may be exposed to more severe bites or scratches, which they may not report<sup>(2)</sup>.
- Post-exposure prophylaxis depends on the type of contact with the infected animal, as categorized by the World Health Organization<sup>(4,6,7,8)</sup>:
  - Category I: Touching or feeding animals, licks on intact skin (no exposure);
  - Category II: Nibbling of uncovered skin, minor scratches or abrasions without bleeding (exposure);
  - Category III: Single or multiple transdermal bites or scratches, contamination of mucous membrane or broken skin with saliva from animal licks, exposures due to direct contact with bats (severe exposure).

- All bite wounds and scratches (cat. II and III) should be attended to immediately or as soon as possible after the exposure. Recommended first-aid procedures include thorough washing and flushing of the wound for approximately 15 minutes, with soap or detergent and plenty of water. If no soap is available, flush with water alone. Where available, an iodine-containing, or similarly viricidal topical preparation should be applied to the wound.
- Rabies immunoglobulins (RIG) must be infiltrated into the wound for severe category III exposures. Wounds that require suturing should be sutured loosely and only after RIG infiltration into the wound.
- Mass vaccination of dogs (at least 70% of the population) has proven to reduce markedly the incidence of dog and human rabies<sup>(9)</sup>.

## SANOFI PASTEUR: LEADING THE FIGHT AGAINST RABIES

- In the last 40 years, over 200 million vaccine doses have been distributed in 100 countries worldwide.
- Through a close collaboration with GARC (Global Alliance for Rabies Control), Sanofi Pasteur is supporting conferences and meetings in Africa, Asia, and the Middle East, with the objective to train health workers and improve rabies prevention and treatment.



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