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Lessons for the world: Rabies resurgence in rabies-free Timor-Leste and the urgent actions needed for prevention measures

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ABSTRACT

Rabies, a fatal viral illness transmitted from animals to humans, remains a globally significant public health concern. Timor-Leste, previously considered rabies-free, reported its first fatal human rabies case in March 2024, signaling a resurgence of the disease. The case involved a 19-year-old female bitten by a dog in December 2023, highlighting gaps in post-exposure prophylaxis (PEP) administration. Subsequent investigations revealed 29 suspected rabies cases, prompting urgent public health responses including dog vaccinations and healthcare worker training. Despite challenges such as limited vaccine availability, comprehensive strategies advocated by the World Health Organization (WHO) offer hope for rabies control. This event underscores the critical need for proactive measures including vaccination programs, public education, surveillance enhancement, and regional cooperation to prevent rabies emergence and safeguard public health in Timor-Leste and beyond.

Keywords: rabies, Timor-Leste, resurgence, transmission, vaccination, public health, post-exposure prophylaxis, surveillance, prevention

DEAR EDITOR,

Rabies, a viral illness that affects the nervous system, can be prevented with vaccines and is transmitted from animals to humans. Once symptoms manifest, rabies is almost always fatal. In nearly all instances, domestic dogs are the primary source of rabies virus transmission to humans [1].

As of March 22, 2024, Timor-Leste, previously considered rabies-free, reported its first fatal human rabies case to the World Health Organization (WHO). The case, involving a 19-year-old female from Pasabe Sub-Region, Oecusse, was confirmed rabies-positive through laboratory testing. She had been bitten by a dog on December 26, 2023, and presented symptoms to a local health center on March 20, including fever, vomiting, and difficulty swallowing. Despite transfer to a national hospital in Dili, she surrendered to the disease on March 22, 2024. Ongoing investigations revealed 29 suspected rabies cases in humans exposed to dogs in Oecusse Municipality as of March 26, 2024. While all suspected cases received tetanus and rabies post-exposure vaccines, the supply of rabies immune globulin (RIG) was insufficient. Oecusse, situated within Indonesia's East Nusa Tenggara province, recorded six human rabies deaths from January to March 2024, following 30 deaths in 2023 [2]. This incident has sparked a heightened public health response, including dog vaccinations, risk communication efforts to raise awareness, and training for healthcare workers on managing suspected rabies cases.

The Northern Territory Centre for Disease Control (NT CDC) advises individuals traveling to rabies-endemic and risk countries, including Timor-Leste, to consider pre-exposure prevention measures such as rabies vaccinations, aligning with recommendations in the Australian Immunization Handbook [3,4]. Avoiding contact with wild and domestic animals overseas, especially dogs, bats, and monkeys,

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and ensuring supervision of children in such situations. In case of any bite or scratch from an animal in a rabies-endemic or risk countries, including Timor-Leste, prompt post-exposure prophylaxis (PEP) is recommended or arranged. Immediate wound washing with soap and water for at least 15 minutes, followed by application of antiseptic solutions like povidone-iodine or alcohol, is crucial, along with seeking urgent medical attention [3-5]. Despite these efforts, challenges persist, such as limited availability of rabies vaccines and gaps in knowledge among healthcare workers. The World Health Organization (WHO) has assessed the national risk as high due to various factors, including Timor-Leste's previous rabies-free status, the endemic nature of rabies in neighboring areas, and logistical hurdles in controlling the disease. However, the risk of international spread is considered low at this time. To combat rabies effectively, WHO emphasizes the importance of comprehensive strategies, including community engagement, immunization of individuals, mass dog vaccination, and even wildlife vaccination in certain cases. While the situation is challenging, with concerted efforts and international support, the goal of eliminating rabies remains achievable [2,6,7].

The recent emergence of rabies in Timor-Leste serves as an important reminder for all countries of the ever-present threat posed by this deadly disease. Timor-Leste's transition from rabies-free status to reporting its first fatal case underscores the importance of maintaining vigilant surveillance and robust public health measures. The most dangerous carelessness evident in Timor-Leste's response to the rabies emergence is the failure to provide post-exposure prophylaxis (PEP) to individuals who have been bitten by animals. In the reported case, the young woman who tragically died from rabies did not receive PEP after being bitten by a dog in December. This oversight highlights a critical gap in the country's healthcare system and underscores the importance of timely and appropriate medical intervention following animal bites to prevent the onset of rabies. Failure to administer PEP represents a significant lapse in public health protocol and could have potentially saved the victim's life had it been promptly provided. To prevent the emergence of rabies in Timor-Leste, several proactive measures could have been taken. Firstly, implementing a comprehensive vaccination program for domestic dogs, including stray and unowned dogs, could have helped control the spread of rabies within the canine population. Additionally, promoting awareness and education among the public about the importance of seeking medical attention and receiving post-exposure prophylaxis (PEP) after animal bites could have reduced the risk of human cases. Strengthening surveillance systems to promptly detect and respond to suspected cases, as well as ensuring the availability of rabies vaccines and immunoglobulins, could have enhanced the country's ability to manage potential outbreaks effectively. Moreover, cross-border collaboration with neighboring countries to address rabies endemicity and prevent the introduction of the virus could have been beneficial in maintaining Timor-Leste's rabies-free status. Overall, a combination of vaccination efforts, public awareness campaigns, surveillance enhancements, and regional cooperation could have mitigated the risk of rabies emergence in Timor-Leste.

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