



Community Engagement in Response to Rabies

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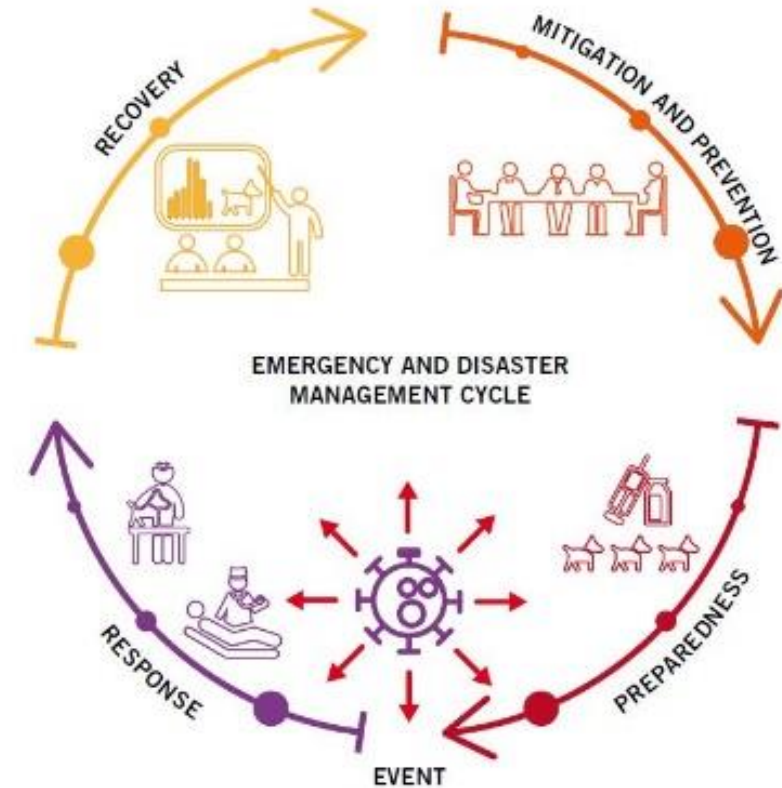
3-5 April 2023

Maison de la Chimie, Paris, France



Outline

- Rabies outbreak response and community engagement – in rabies-free setting
- Community engagement in rabies endemic setting
- Case examples from Asia, Africa, Americas



Rabies facts



**Once the symptoms
have appeared,
rabies is 100% lethal**

**99% of human
rabies cases**

are due to bites from infected dogs

**>95% of rabies
deaths**

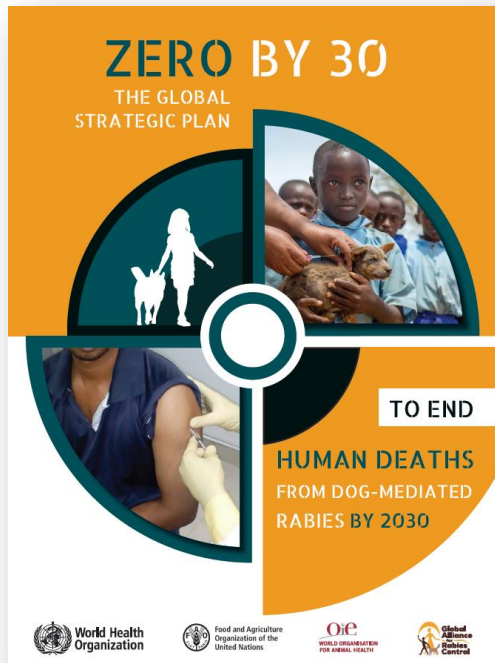
occur in Africa and Asia

**>80% of rabies
cases**

occur in rural areas with limited or inexistent access
to health education campaigns and post-bite
treatment

**4 out of 10 rabies
deaths**

are in children



Dog-mediated rabies elimination is possible

Unlike for many other diseases, the tools needed to eliminate dog-mediated rabies already exist. It is 100% preventable and rabies vaccines for dogs can efficiently eliminate the disease at its animal source.

Community engagement in response to rabies

Community engagement:

- increases public awareness of rabies
- identification of the rabies hotspots within the community
- knowledge of the dog population to facilitate vaccination
- support dog vaccination campaigns to achieve high coverage of vaccination
- responsible pet ownership to manage the dog population
- improve rabies surveillance - early reporting and rapid response
- support control program
- take community ownership of the rabies control/elimination programs

RESEARCH ARTICLE

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Community-based survey during rabies outbreaks in Rangjung town, Trashigang, eastern Bhutan, 2016

Tenzin Tenzin^{1*}, Jamyang Namgyal² and Sangay Letho³

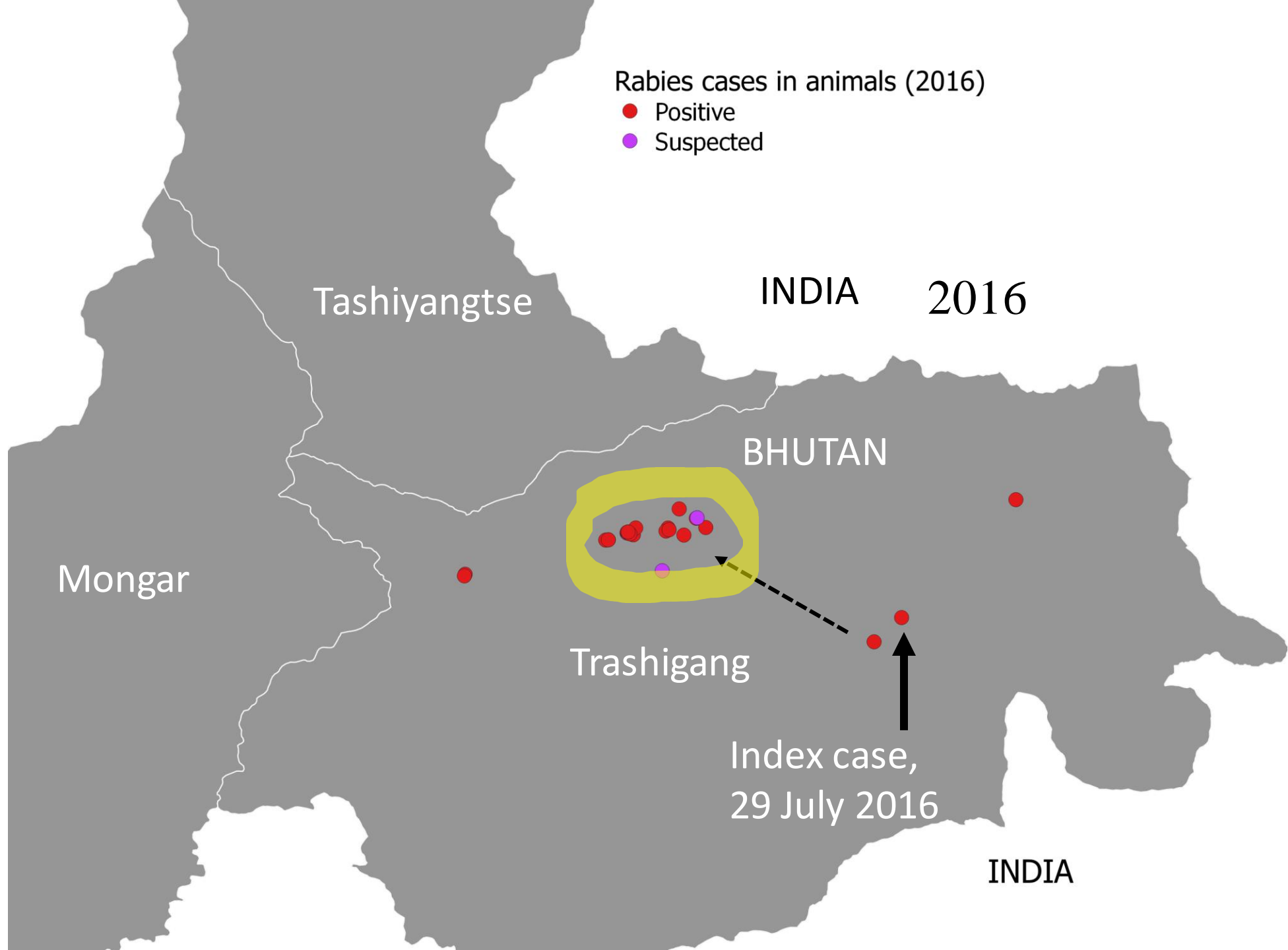
- Eastern region of Bhutan was free from rabies
- First case in a dog – reported on 29 July 2016
- Last case was detected in July 2020
- Human-mediated importation/introduction
- Community engagement – awareness, surveillance, and response

A wide-angle landscape photograph of eastern Bhutan, showing a valley with a small town and surrounding mountains under a clear blue sky. The foreground features green vegetation and a fence line.

Rabies outbreak response & community engagement in eastern Bhutan

Rabies cases in animals (2016)

- Positive
- Suspected



INDIA 2016

BHUTAN

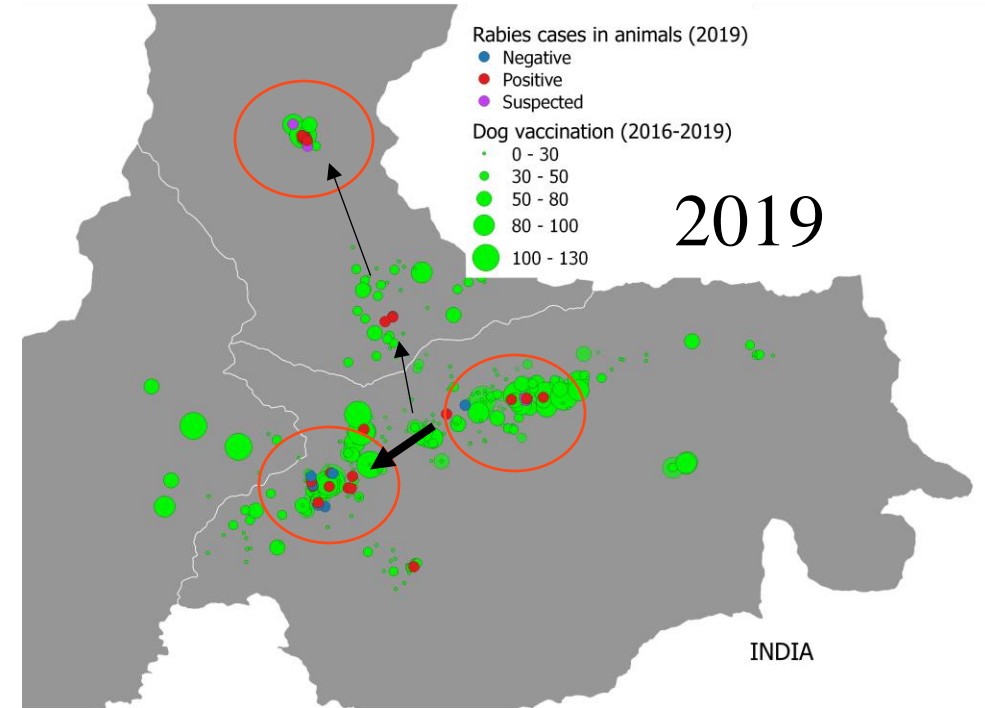
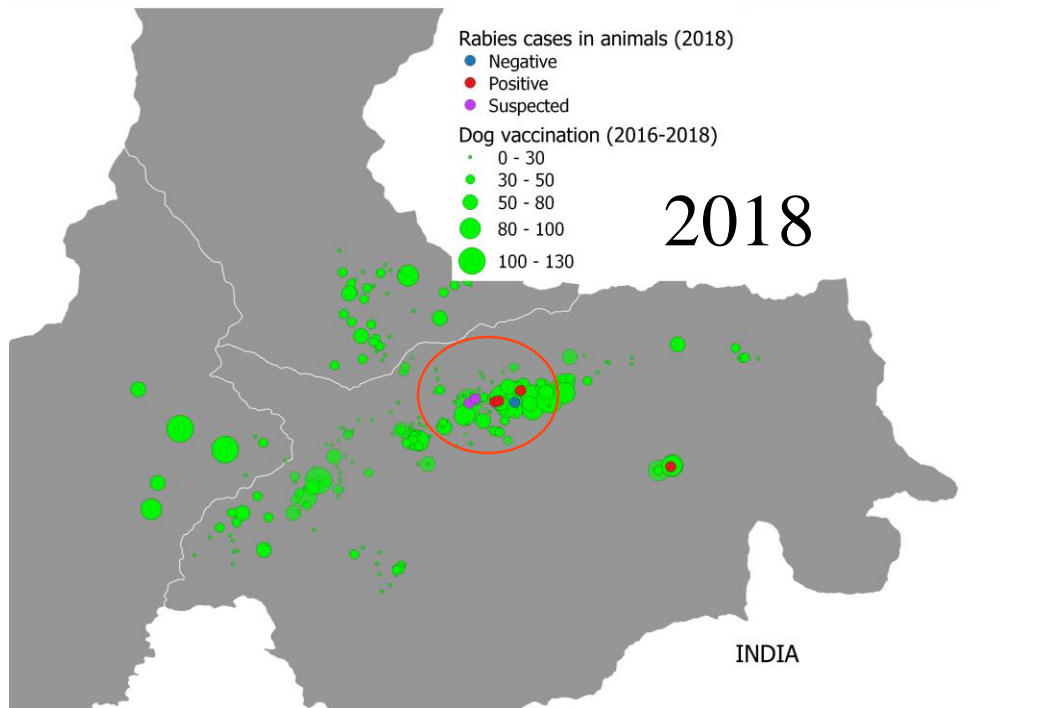
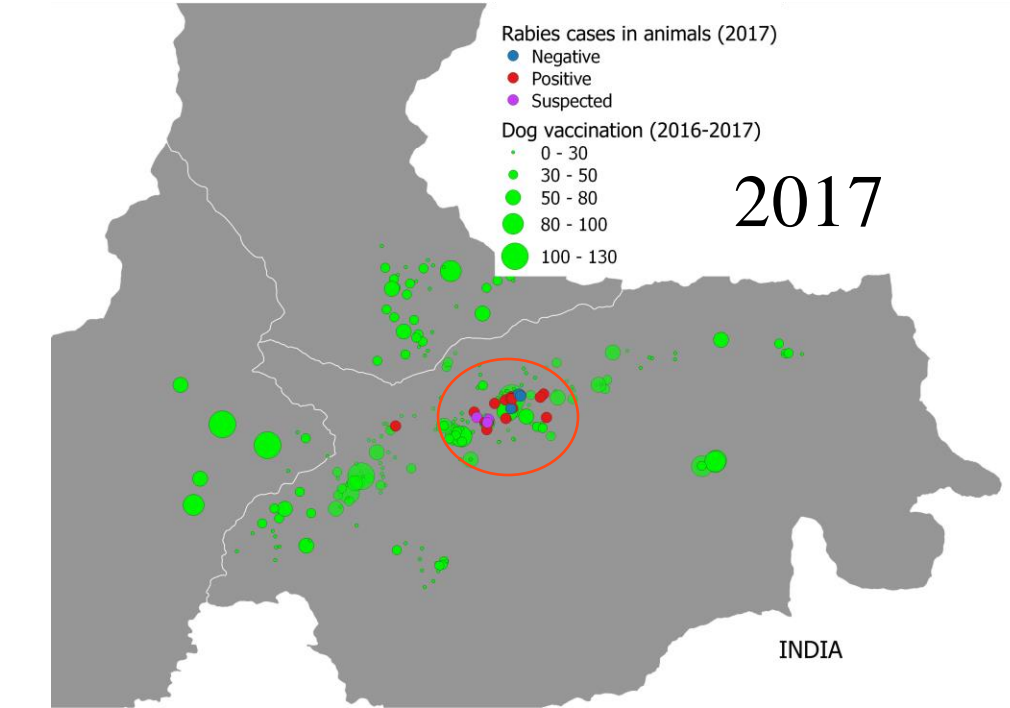
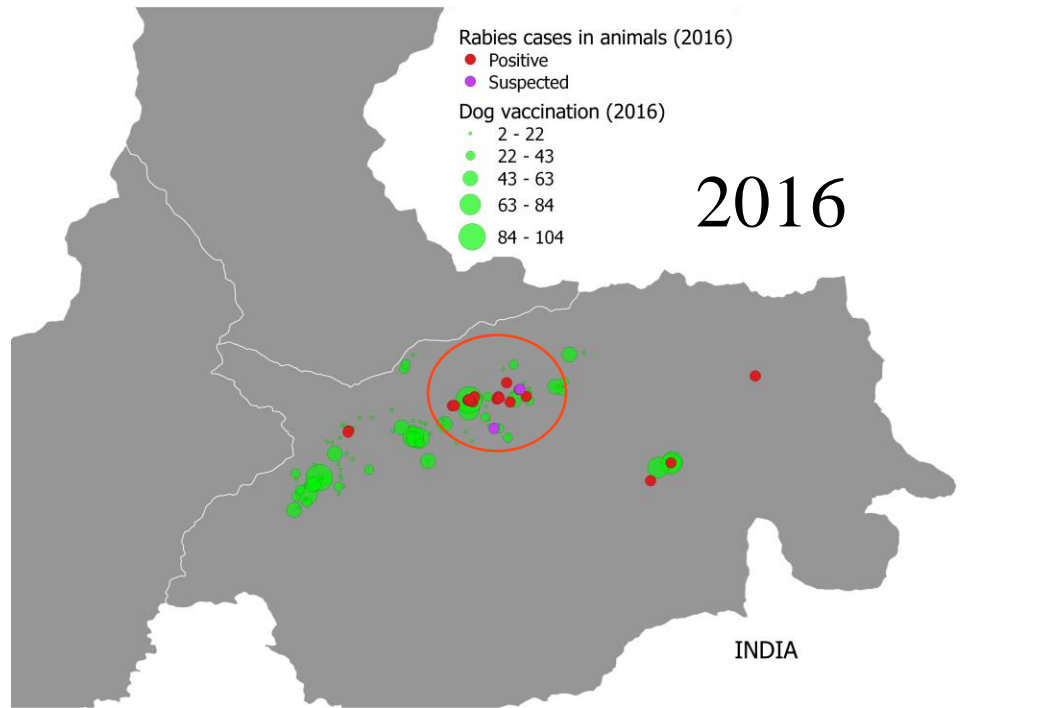
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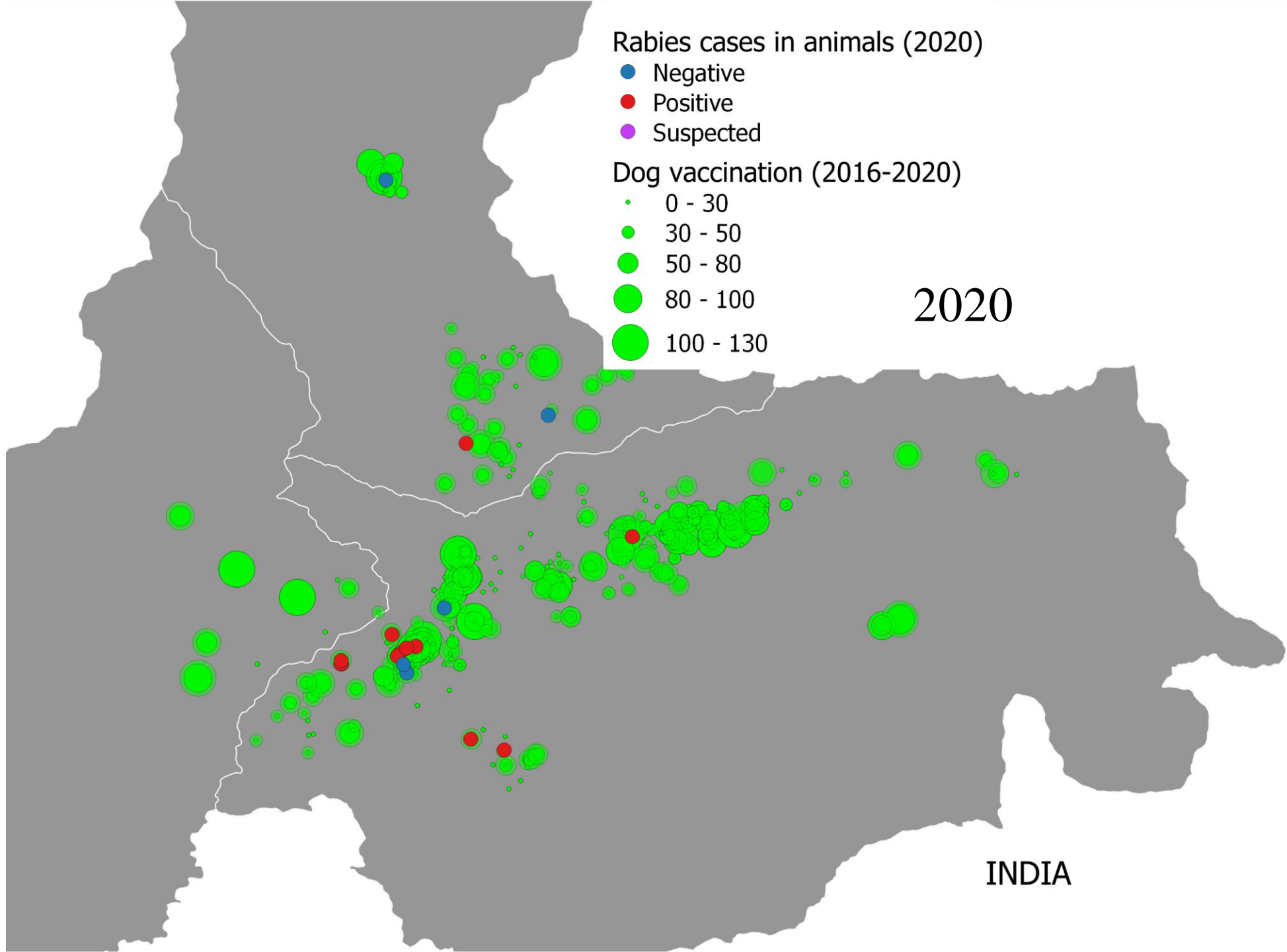
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Trashigang

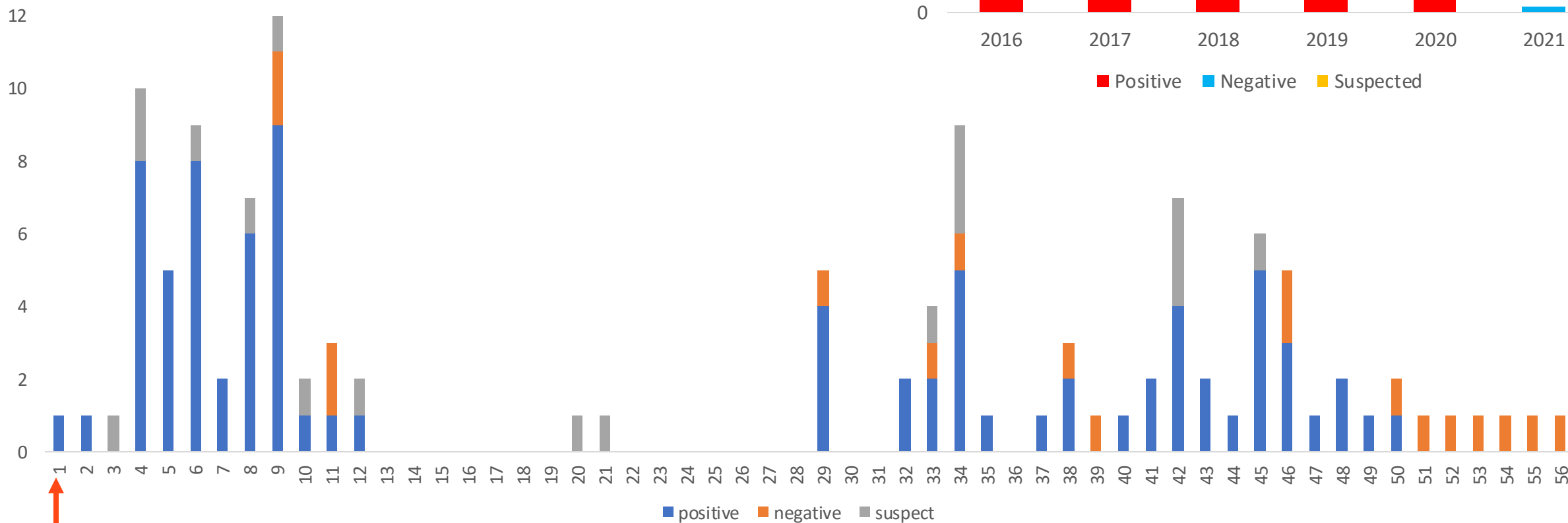
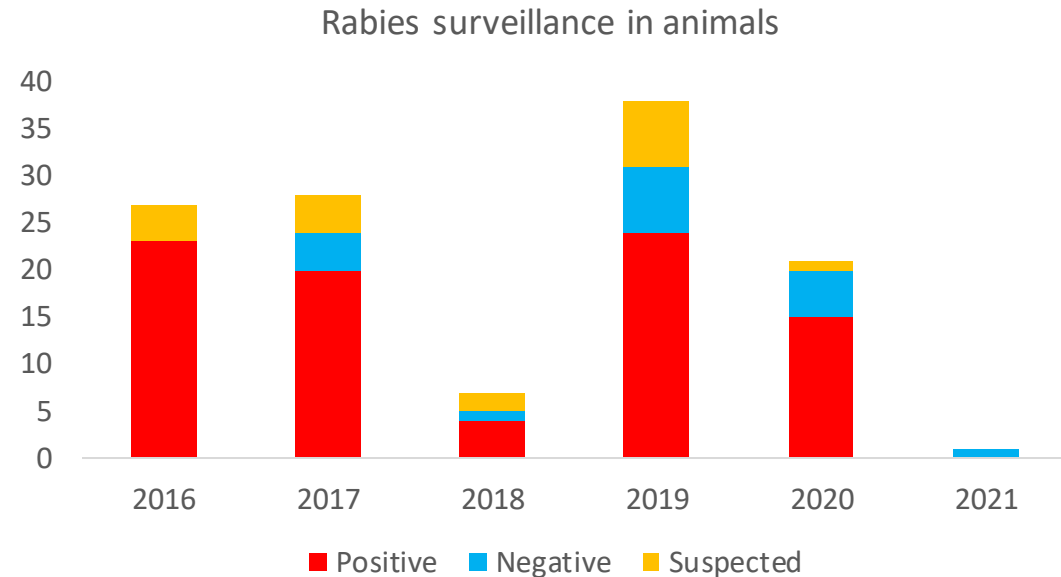
Index case,
29 July 2016

INDIA





Species	Positive	Negative	Suspect	Total	Positive (%)
Dog	58	13	16	87	67
Cattle	25	5	2	32	78
Cat	1	0	0	1	100
Pig	2	0	0	2	100
Total	86	18	18	122	70



First case in a dog
(29 July 2016)

Rabies surveillance in animals by month (2016-2021)



Rapid Response Team

Technical meeting

- Technical Meeting with Animal Health, Human Health and other stakeholders at the headquarter and district
- Advocacy meeting with the Head of the District
- Advocacy and Coordination Meeting with the local government
- Coordination Meeting with Stakeholder in the District





Community awareness is critical to engage people



Community participation during outbreak response



Catching and vaccinating a large number of free-roaming dogs was the challenge

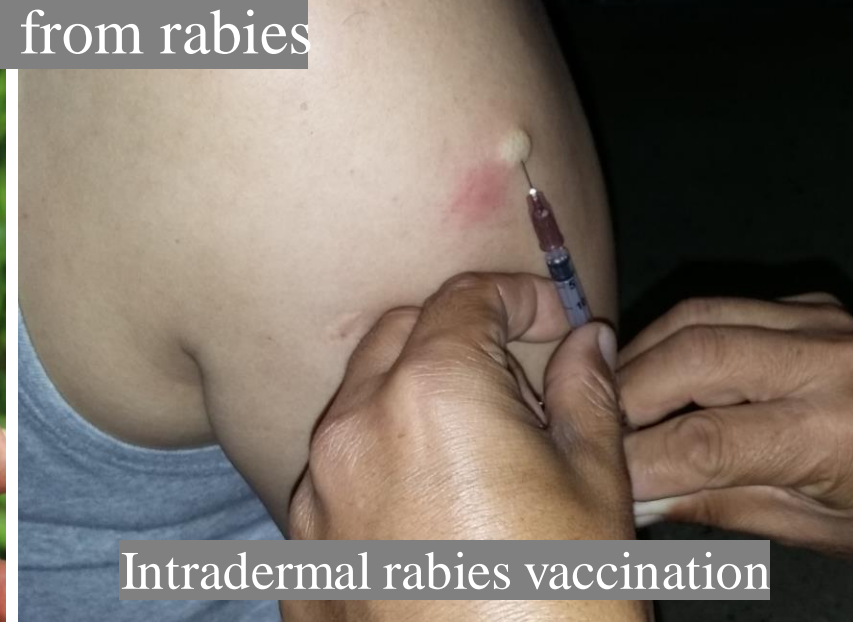


Rabies suspect case information sharing by the community & investigation

Rabies surveillance –trace, identify and test the samples



Identification of a confirmed rabid dog bite victims and referral to the hospital for post-exposure prophylaxis - prevented human deaths from rabies



Intradermal rabies vaccination



Human rabies immunoglobulin inj at the bite site

Media engagement during rabies outbreak

- *Media engagement* - local and national radio, television and newspapers to establish mechanisms for systematic release of accurate information to the public by the media



Rabid dog bites woman in Trashigang

March 27, 2017



A woman has been bitten by a rabid dog in Trashigang, the second case of a rabid dog attacking human in the dzongkhi bitten by another rabid dog earlier in the month.

According to the dzongkhag livestock officials five dogs tested positive for the rabies virus this month. Trashigang has v

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Happiness is Haa: Herald of a community-based ecotourism destination in

Rabies outbreak in Rongthong and Kanglung contained

April 17, 2019 11:13 am No Comments

A rabies outbreak in Rongthong and Kanglung in Trashigang are under control, official Regional Livestock Department Center (RLDC) in Kanglung confirmed.

Trashigang launches massive anti-rabies campaign after outbreak

Pema seldon 04/01/2017 BUSINESS Leave a comment 1,558 Views

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A massive anti-rabies vaccination and information campaign has been launched in Trashigang town and the nearby villages after a rabies virus was reported in a stray.

The dzongkhag's livestock department tried the Human Rabies Immunoglobulin, the most expensive rabies antibody or vaccine, on the dog, described to be drooling and panting. The stray bit a woman and died two days later.



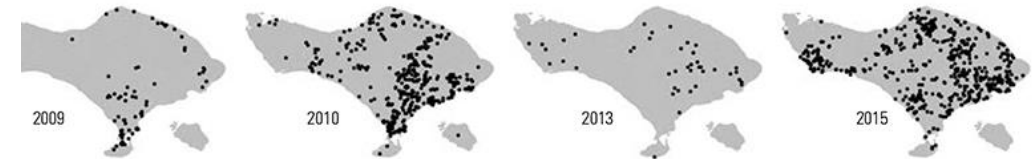
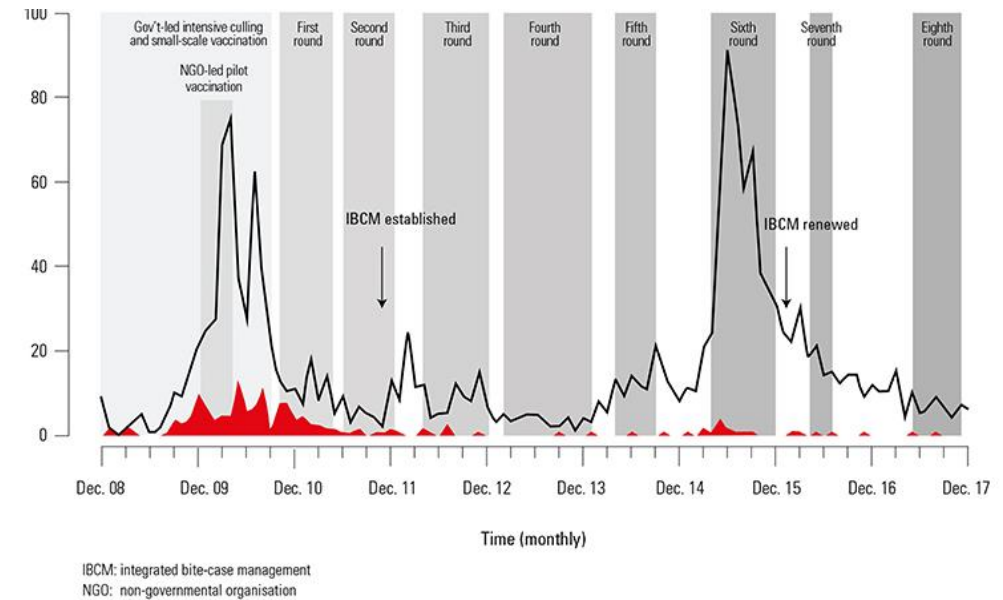
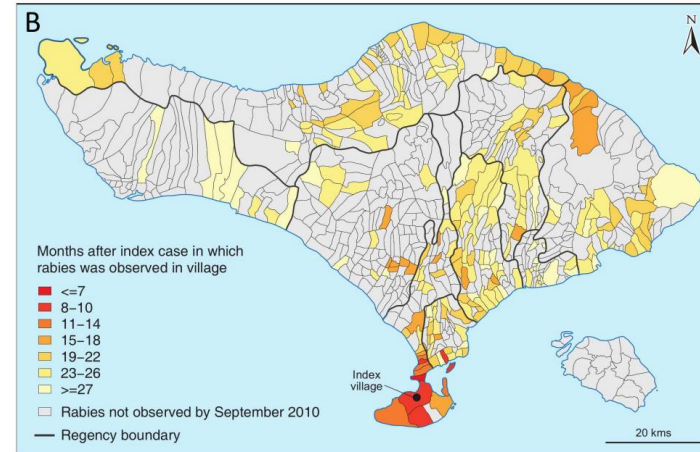
Lessons learned

- Community played a vital role – information sharing and support
 - Competing priorities of the community/farmers – crop sowing and harvest season
- Government support – funding and resources
- Large number of free-roaming dogs and dog movement - challenge
 - Circulation of the virus among unvaccinated free-roaming dogs sparks new cases
- Community awareness improved health seeking behavior of the bite victims
 - Prevented human deaths – zero human deaths from rabies during this outbreak
- Fatigue of the RRT
- Rabies virus was finally eliminated from the region and is rabies free again since mid-2020

Response to a Rabies Epidemic, Bali, Indonesia, 2008–2011

Anak Agung Gde Putra, Katie Hampson, Janice Girardi, Elly Hiby, Darryn Knobel, I. Wayan Mardiana, Sunny Townsend, and Helen Scott-Orr

Emergency vaccinations and culling failed to contain an outbreak of rabies in Bali, Indonesia, during 2008–2009. Subsequent island-wide mass vaccination (reaching 70% coverage, >200,000 dogs) led to substantial declines in rabies incidence and spread. However, the incidence of dog bites remains high, and repeat campaigns are necessary to eliminate rabies in Bali.



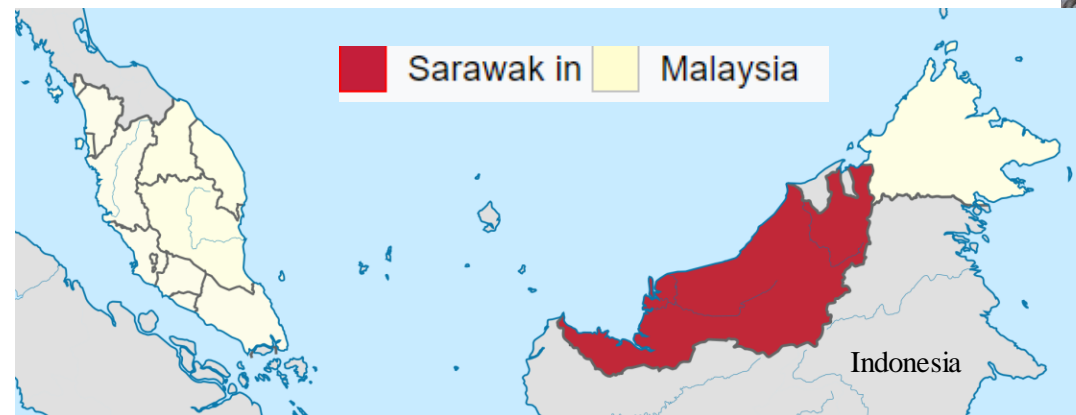
Rabies incidence in Bali from December 2008 to December 2017 (Black line- dog cases, Red area- human cases)

- First rabies case in human detected in Sept 2008
- Before this outbreak in 2008, Bali had no dog bite surveillance, rabies diagnostic facilities, vaccines for dogs & no policies for rabies PEP
- Many stakeholder and community engagement in response
- ~160 human deaths from rabies so far
- Lessons –preparedness, communication, surveillance, vaccination, monitoring

1. Townsend, et al. (2013) Designing Programs for Eliminating Canine Rabies from Islands: Bali, Indonesia as a Case Study. *PLoS Negl Trop Dis* 7(8): e2372. doi:10.1371/journal.pntd.0002372
2. Susen et al., 2019. Lessons for rabies control and elimination programmes: a decade of One Health experience from Bali, Indonesia. *Rev Sci Tech* 38. 213-224

Rabies outbreak response in Sarawak, Malaysia

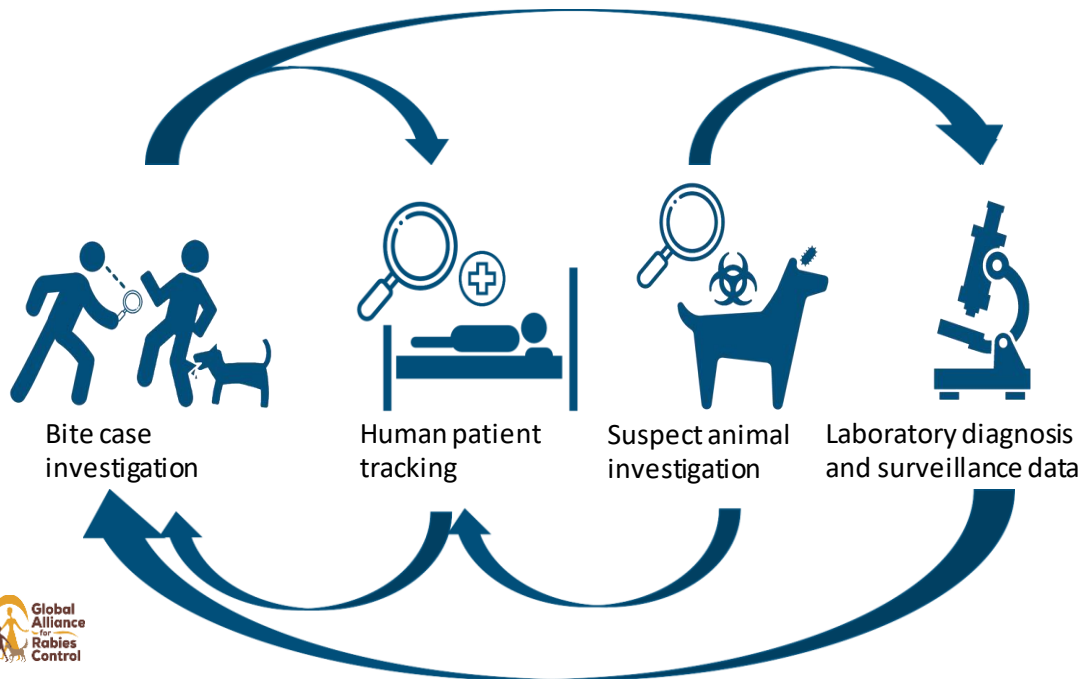
- Sarawak was historically free from rabies without vaccination
- First human rabies case reported - 30th June 2017
- Rabies outbreak response
- Awareness campaign, surveillance, mass dog vaccination
- Community engagement
- 48 people have died of rabies so far



1. Izani et al., 2022. Rabies in Malaysia: A Review on the Effectiveness of Prevention and Control Strategy through One Health Approach. *International Journal of Infectious Diseases* 116 (2022) S1–S130
2. Navanithakumar et al., 2019. An overview of rabies outbreaks in Malaysia, ordinances and laws. *M J Vet Research* 10, 148-158

Andrea.
Rabies in Borneo conference 2022

Community-based surveillance improved rabies case detection in animals and prevent human deaths – IBCM tool



Actors: Community, Veterinary, Human Health, Laboratory

- **Haiti:** 18-fold increase in case detection in dogs
- **Philippines (Albay province):** 4-fold increase in case detection in dogs
- **Malawi (Lilongwe):** 5-fold increase in case detection in dogs
- **Tanzania (20 districts):** 2-fold increase of dog bites in human
- **Chad, Madagascar, Indonesia (Bali), Kenya, Vietnam, India (Goa), Peru, Guatemala, Brazil**
- Tracing and identification of dog bite victims and referral to the hospital for post-exposure prophylaxis – preventing human deaths from rabies

- 1) Wallace et al., 2015 (Haiti). PLoS Negl Trop Dis 9(11): e0004245. doi:10.1371/journal.pntd.0004245
- 2) Rysava et al., 2022 (Philippines). Front. Trop. Dis. 3:787524. doi: 10.3389/fitd.2022.787524
- 3) Rajeev et al., 2019 (Madagascar). Vaccine 37 (1):35–44
- 4) Mastala et al., 2023 (Malawi)
- 5) Lushasi et al., 2020 (Tanzania). Front Public Health (2020) 8(13). doi: 10.3389/fpubh.2020.00013
- 6) Swedberg et al., 2022. Front Trop Diseases

Community participation at the rabies awareness program



Community response to the dog vaccination campaign



[Rabies Free Africa/Afya Serengeti Project](#)



Community engagement during dog vaccination campaign in Madagascar



DVS, Namibia

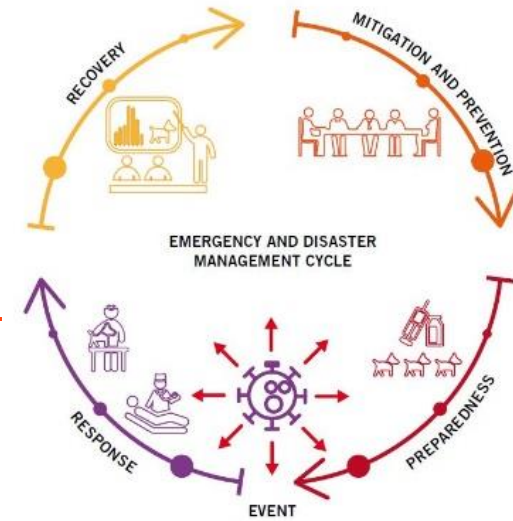
Children feel safe that their dogs are vaccinated and protected from rabies virus

Inform, Educate, and Empower school teachers about rabies risk



Conclusions

- ✓ Rabies-free countries or free zone are at-risk of becoming endemic when incursions happen
- ✓ Good surveillance system and response plan needed
- ✓ To achieve freedom or securing a free-status again following outbreaks requires sustained effort and commitment
- ✓ Community education, empowerment, and engagement are key for rabies prevention and outbreak response
- ✓ Investing in rabies at the community level will save lives but will also create strong resilient One health national health systems to fight against other health threats at the human-animal-ecosystem interface including pandemic





World Organisation
for Animal Health
Founded as OIE

Thank you

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