

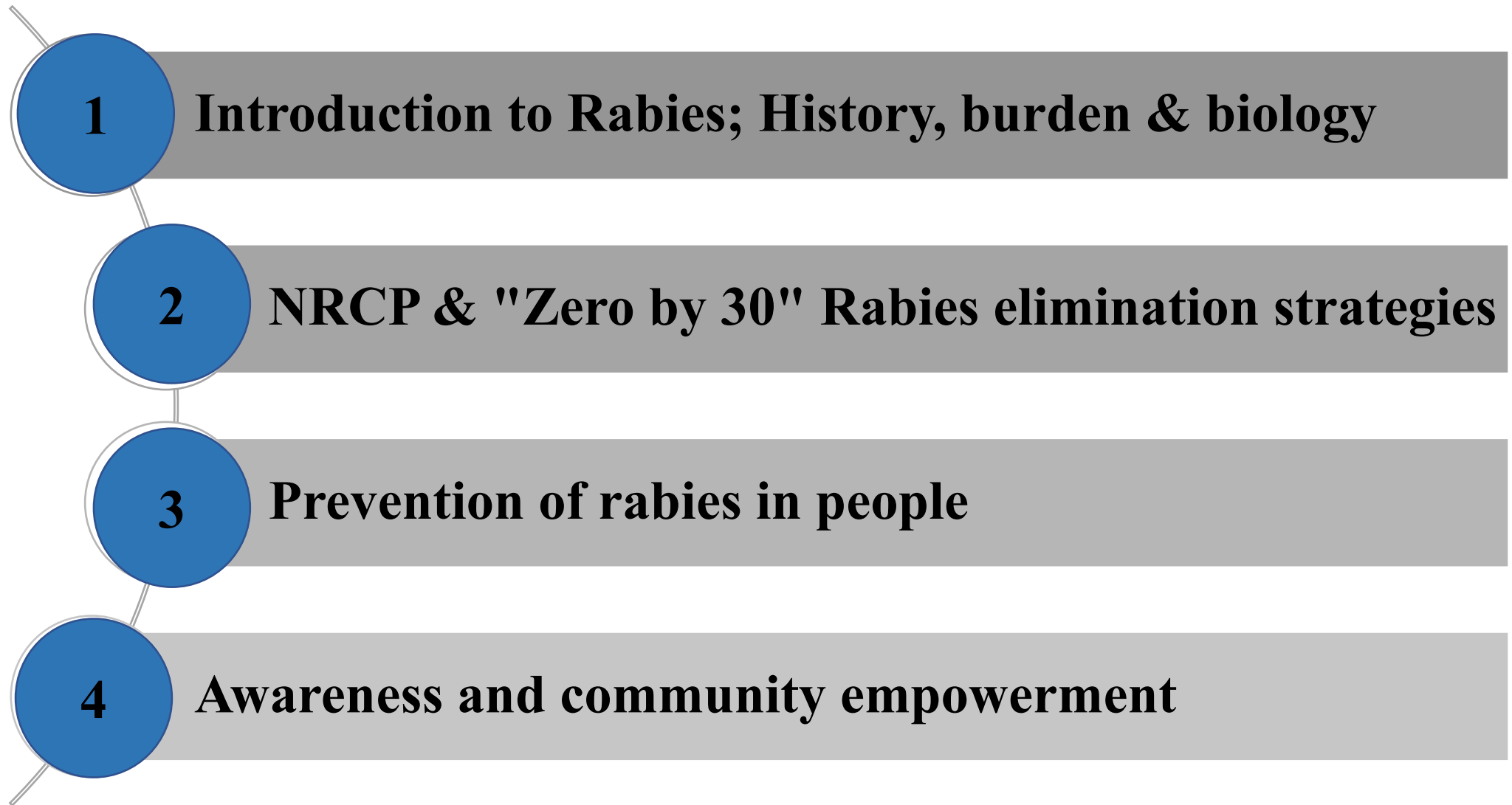
# National Rabies Control Programme (NRCP)

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# **Introduction to Rabies; History, burden & biology**

- What is rabies
- How it impacts community
- What its clinical signs are
- How and when it can be prevented
- How it can be managed, but very rarely cured

# Rabies: One of the oldest known disease

- “Rabies” comes from “rabhas”, violence in Sanskrit
- The causative agent for rabies: “Lyssavirus”
- It is probably the oldest infectious disease of people
- Lyssavirus probably appeared before 30, 000 BC
- Rabies has always been linked to “Mad dogs”

# Rabies: impact on the community (Global)



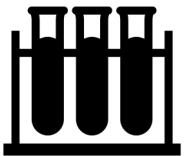
10 out of 1,000 people die of rabies in each year



99% are infected through dog bite



40% are children under the age of 15 years



0% can be tested before the onset of symptoms



**100% can be saved via prompt PEP**

# Rabies: impact on the community (Asia & India )



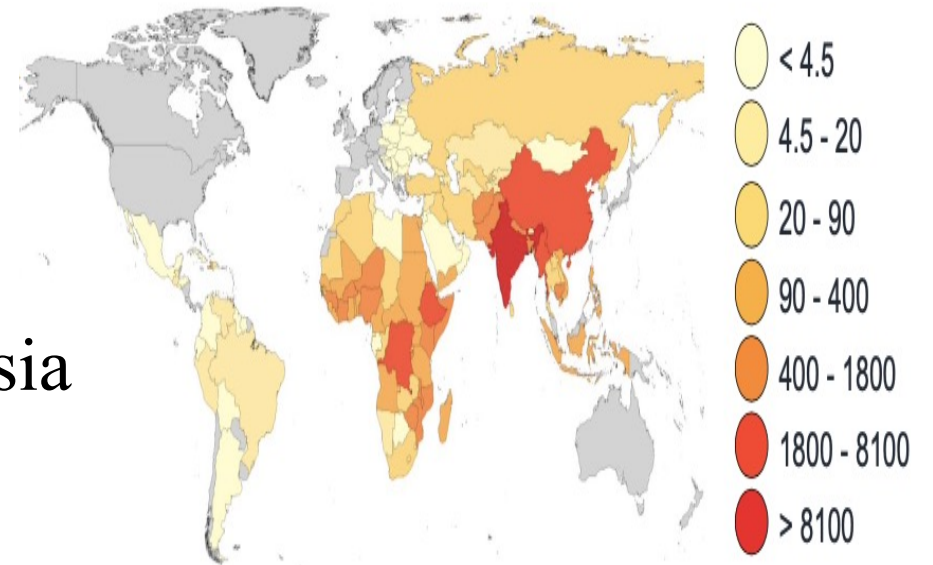
63% live in Asia



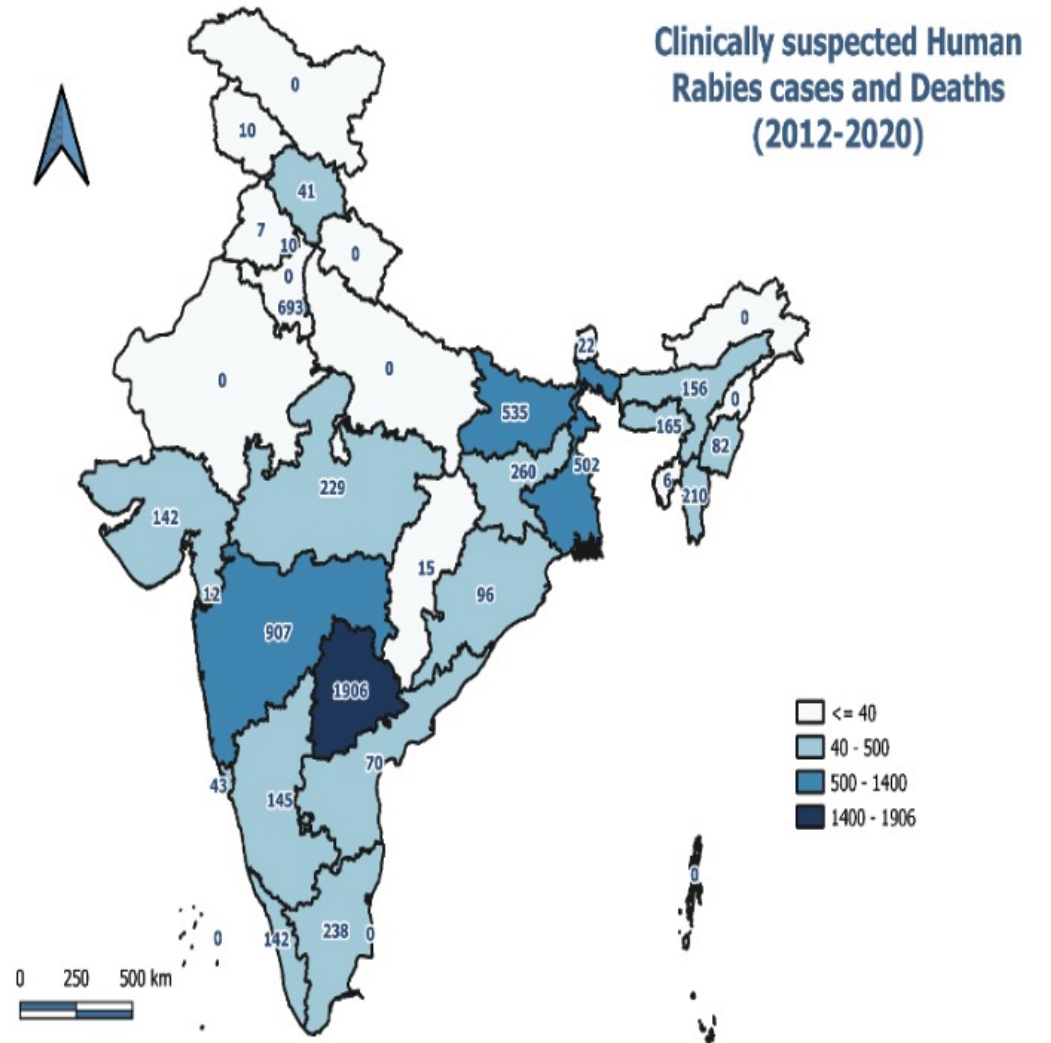
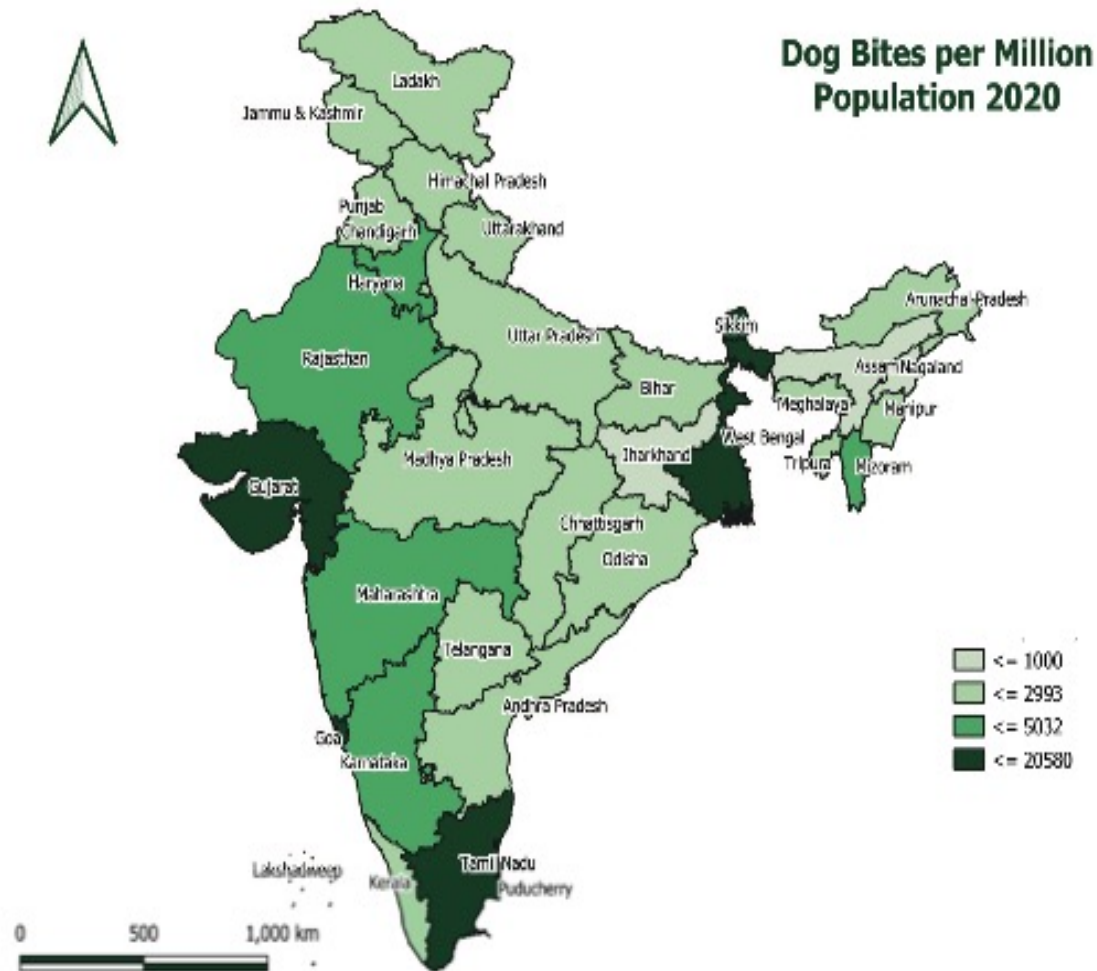
Account 36% global and 65% of human rabies deaths in south-east Asia region



NRCP reported 6644 clinically suspected human rabies cases and deaths reported in the year 2012-2020



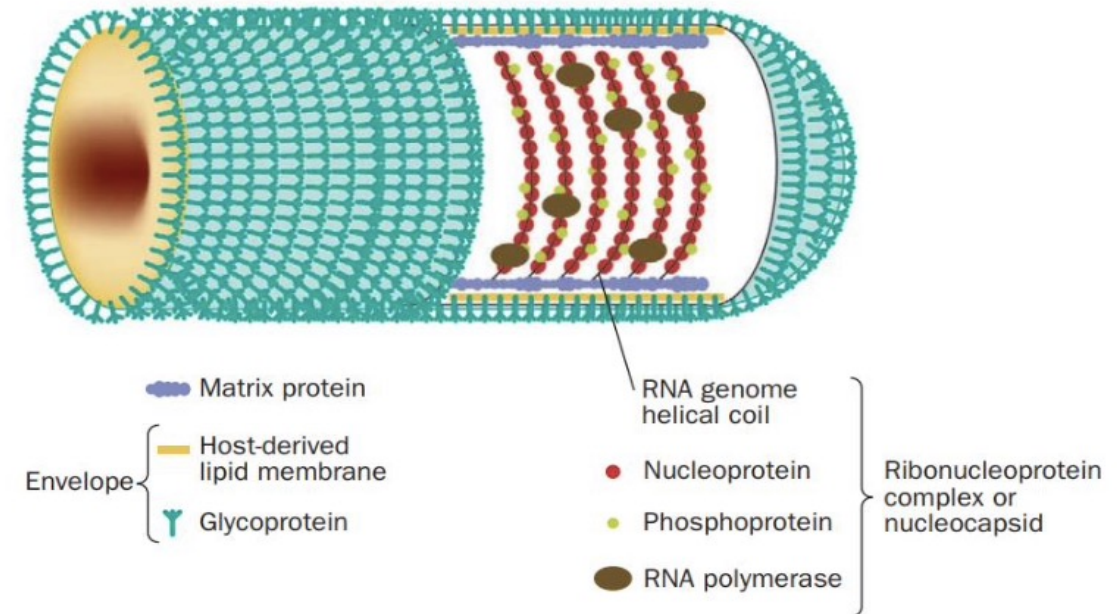
# Rabies: impact on the community (India )





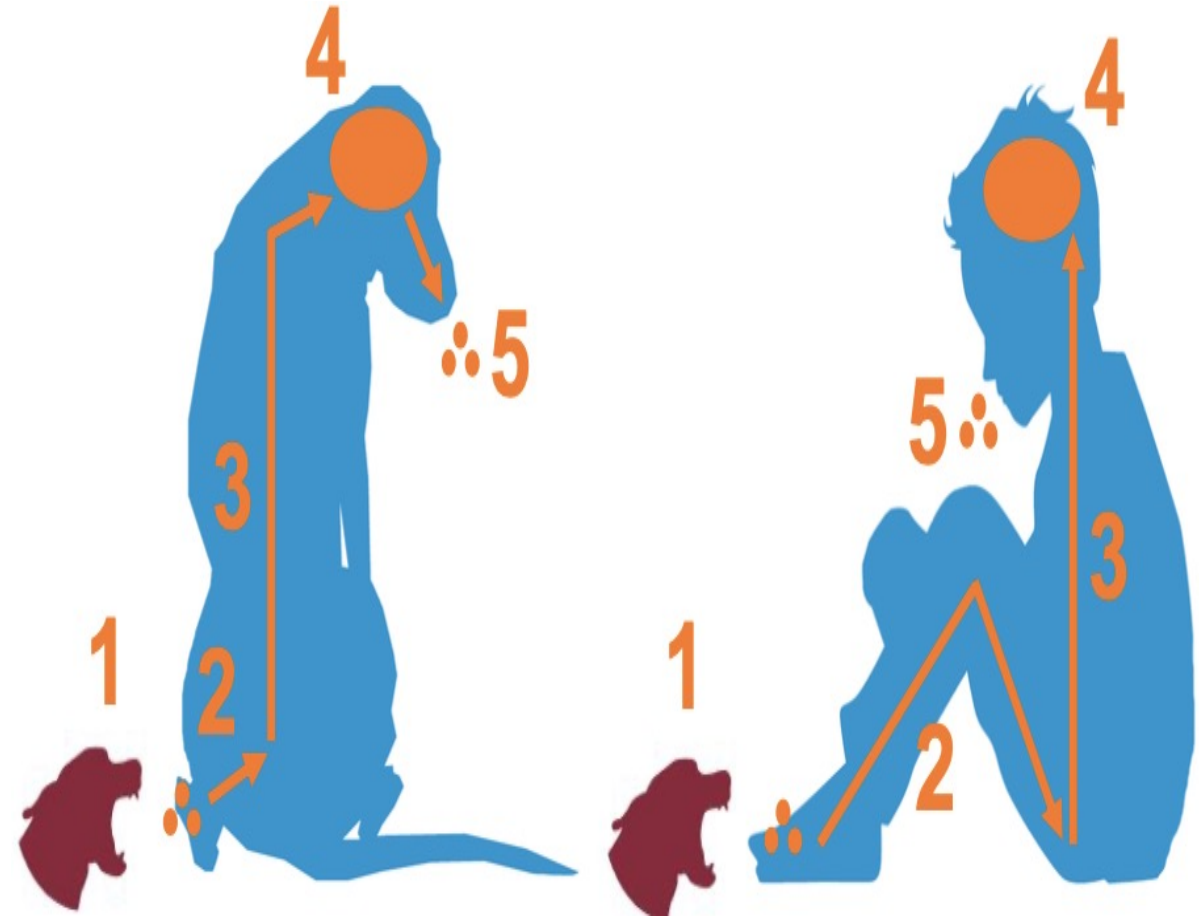
# Rabies: Causative agent

- It is a zoonotic disease that affect the **central nervous system**
- Spread from **bites**, **licks** and **scratches** from the **infected mammals**
- It is always fatal once clinical signs appear
- It is caused by **RNA viruses** in the family *Rhabdoviridae* and genus **Lyssavirus**



# Rabies: Mode of transmission (Infected saliva)

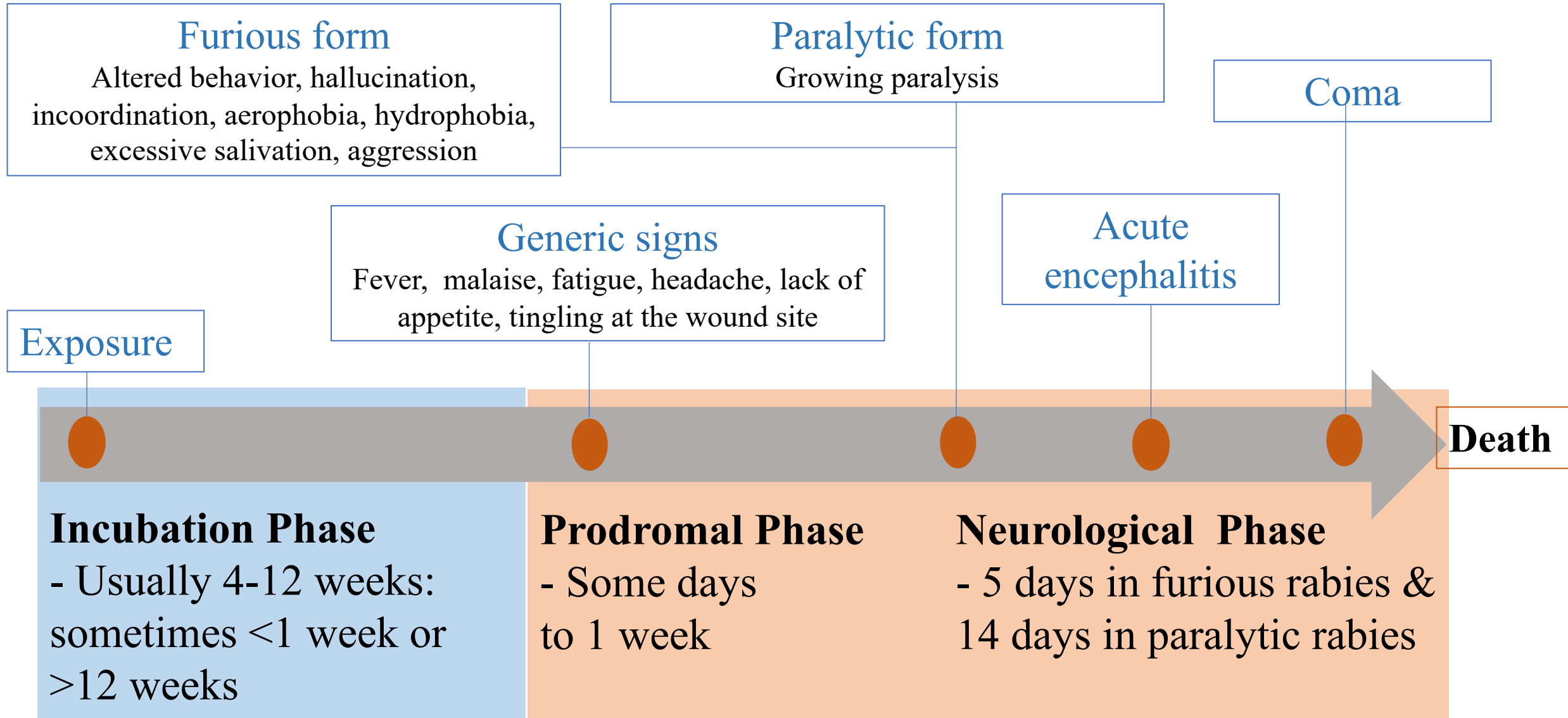
- Transmission is by inoculation of infected **saliva** by
  - Bite (**Most common**)
  - Scratch
  - Direct contact with mucosa (eyes, mouth and open wound)
- Local muscle infection and uptake to peripheral nerve
- Spread to CNS
- Replication in brain
- Spread to salivary glands and excretion in **saliva**



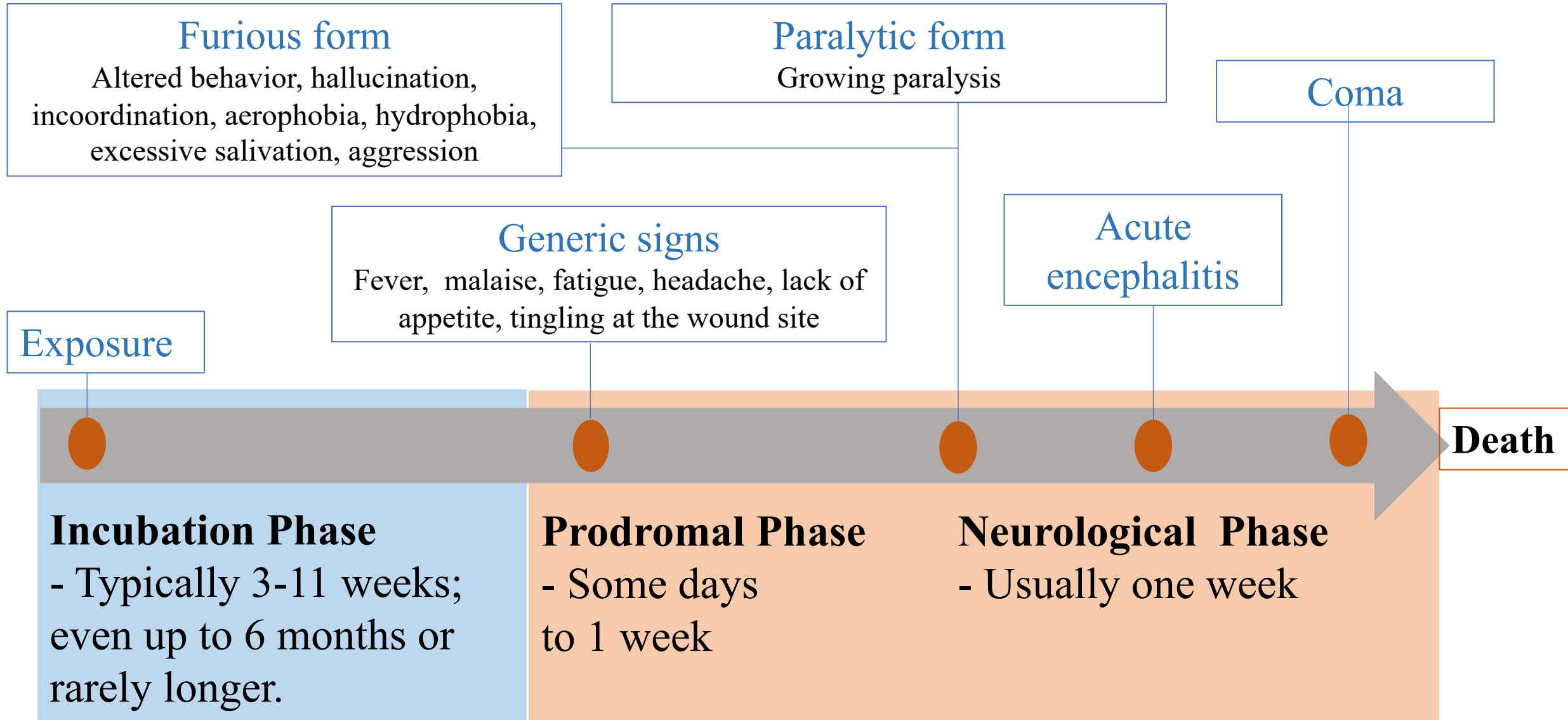
# Rabies: Mode of transmission (Infected saliva)

- Rarely documented transmission
  - Human to human transmission via tissue, organ transplantation and mucosal route.
  - Handling raw meat
- Never documented transmission
  - Consumption of raw milk
  - Rodent bites

# Rabies: Clinical signs and development of rabies (Human)



# Rabies: Clinical signs and development of rabies (Dog)



# Rabies is fatal but preventable

**It is preventable by**

- Wound washing



- Post exposure prophylaxis

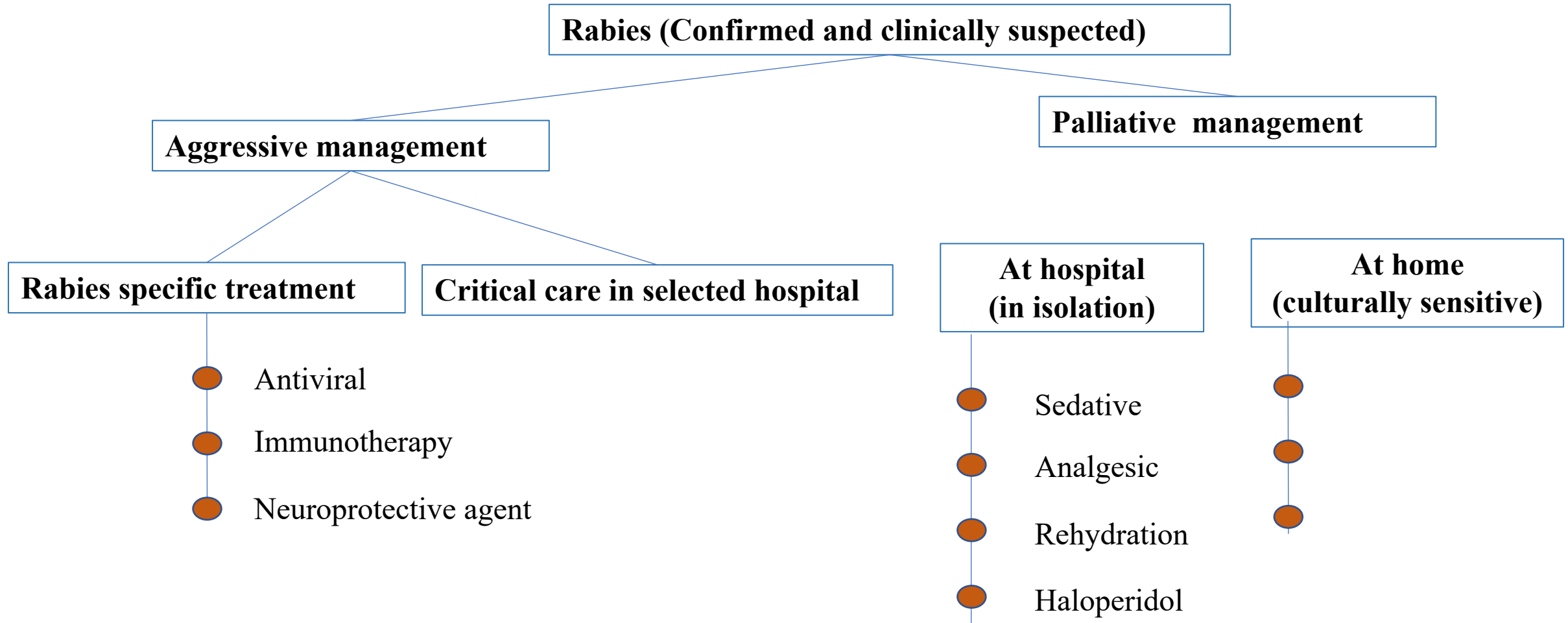
- Rabies vaccine



- Immunoglobulin



# Management of clinical rabies patient





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# **NRCP & "Zero by 30" Rabies elimination strategies**



# Milestones for Rabies control efforts in INDIA



2021: NAPRE (National action plan for rabies elimination)

2019: Revised guideline

2015:GOI,NCDC released revised national guideline on rabies prophylaxis

2012: Planned to expand the pilot project to whole nation (NRCP)

2008-2011: GOI introduced the pilot project on rabies control programme

2007: Identified rabies as a priority zoonotic disease

2004: Replace NTV with cell cultured vaccine for PEP

1970: BPL inactivated rabies vaccine developed

1907: Neural tissue anti-rabies vaccine manufactured in India

# If we do not do anything..



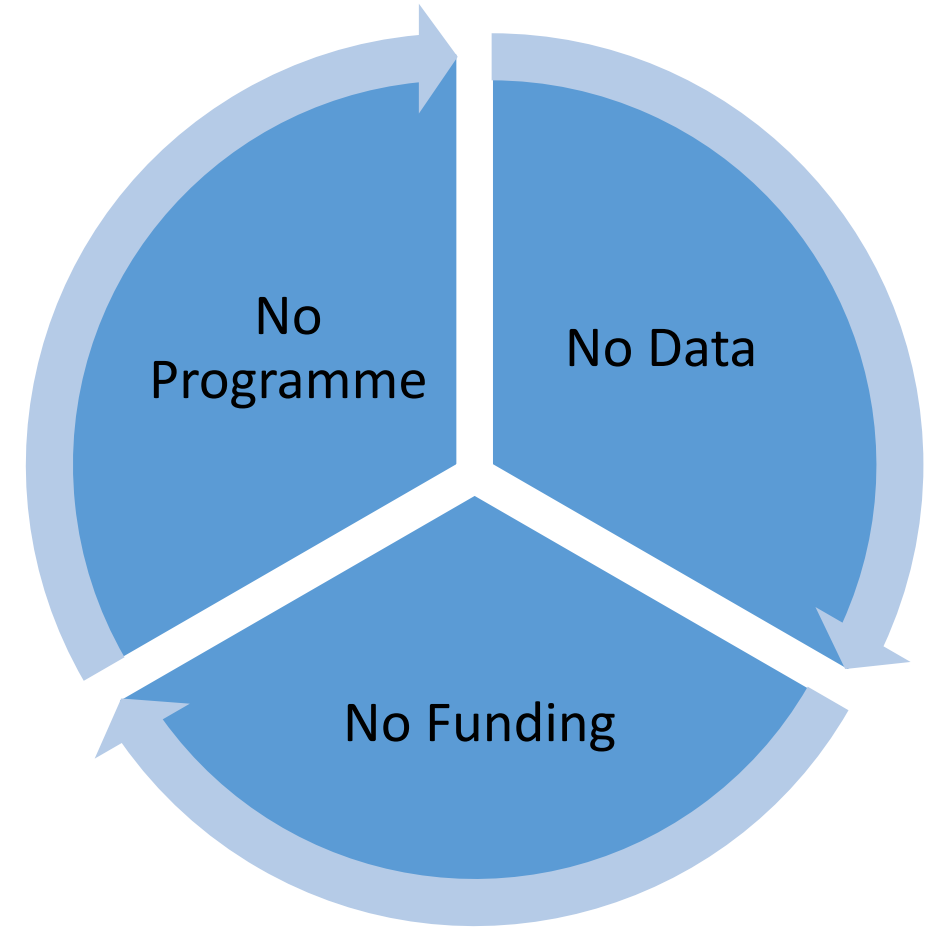
Over 1 million people will die of rabies before by 2030



The demand of PEP will escalate

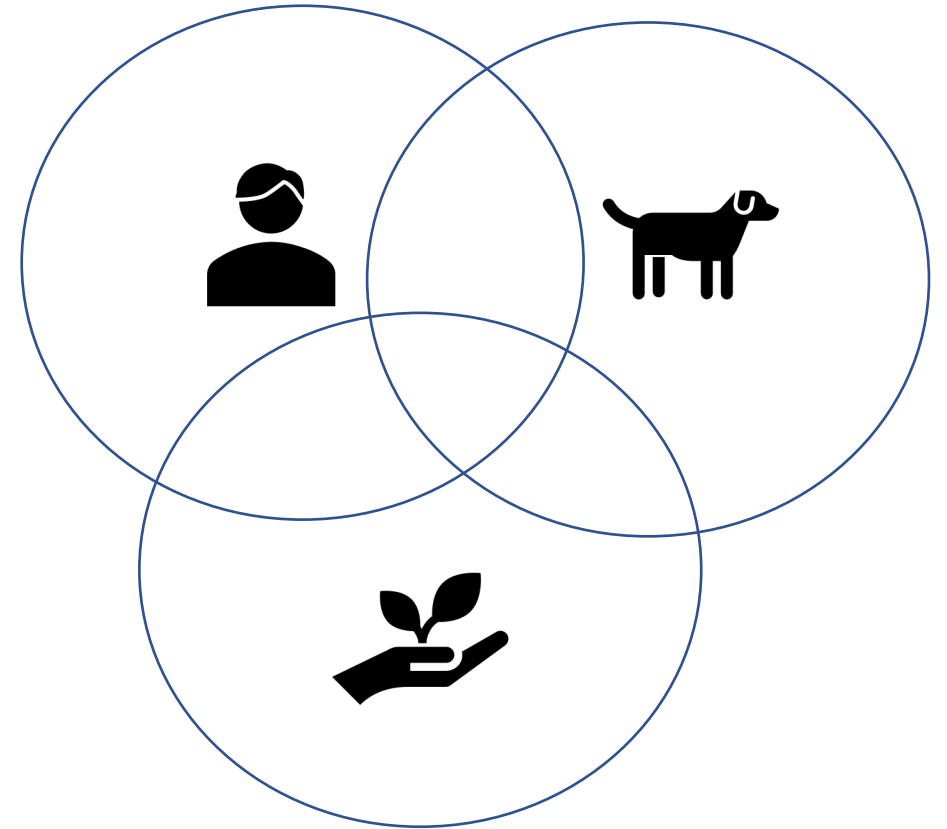


The cycle of neglect of rabies will continue



# One Health Approach

- Coordinated approach for human, animal and environment





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# **Prevention of rabies in people**

- What to do incase of animal bite
- How PEP works
- What rabies biologicals are available
- How rabies biologicals are best administrated
- What PEP Schedule look like
- What challenges exist in PEP

# When you suspect exposure

If you have received ( from animal suspected to have rabies)

- Nibbling of uncovered skin
- Minor scratch or abrasion, even without bleeding
- Bite/scratch with bleeding
- Animal saliva in mucous membranes or broken skin
- Contact with wild mammal

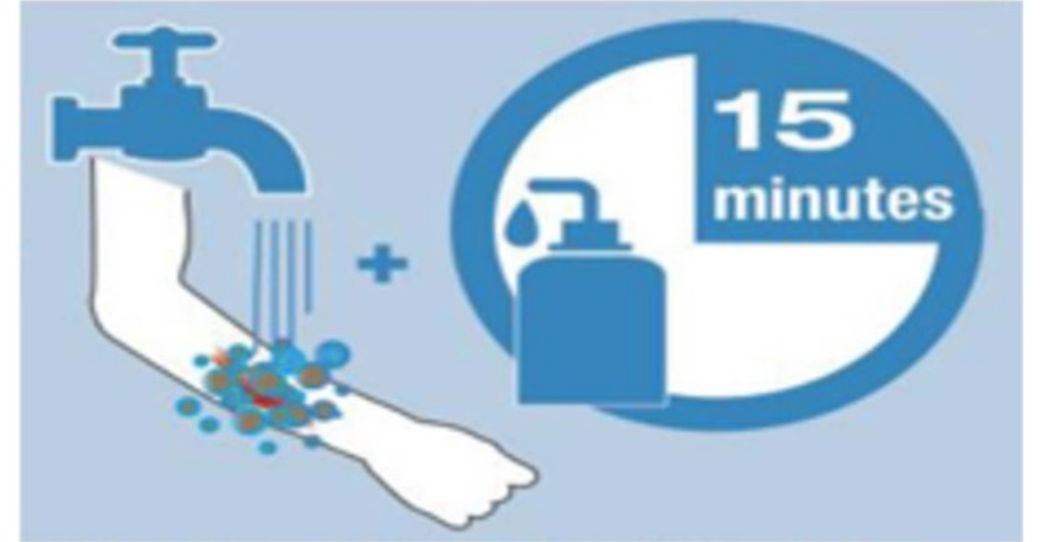
# Post exposure care

## Primary Treatment

- Wound washing

Wash the site of bite/scratch

- Immediately after exposure
- Thoroughly
- For 15 mins
- With copious amount of water and soap/detergent
- Apply an Iodine-containing topical preparation
- Never apply substance like chili, salt, lemon, herbs etc.



# Post exposure care

## Specific Treatment

- Categorization of wound
- Rabies Vaccination (PEP)
- Rabies Immunoglobulin (PEP)



# Post exposure care

## Specific Treatment

### ● Categorization of wound



- Animal licks on intact skin
- Troughing animal
- Feeding animal

Category-I  
(No exposure)



- Minor scratch or abrasions without bleeding
- Nibbling of uncovered skin

Category-II  
(Exposure)



- Single/multiple transdermal bite/scratch
- Contamination of mucosal membrane with saliva
- Contact with wild animal

Category-III  
(Severe Exposure)

# Post exposure care

## Specific Treatment

- Treatment protocol



Category-I  
(No exposure)



Wound washing



Category-II  
(Exposure)



Wound washing



Vaccine



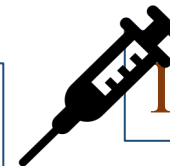
Category-III  
(Exposure)



Wound  
washing



Vaccine



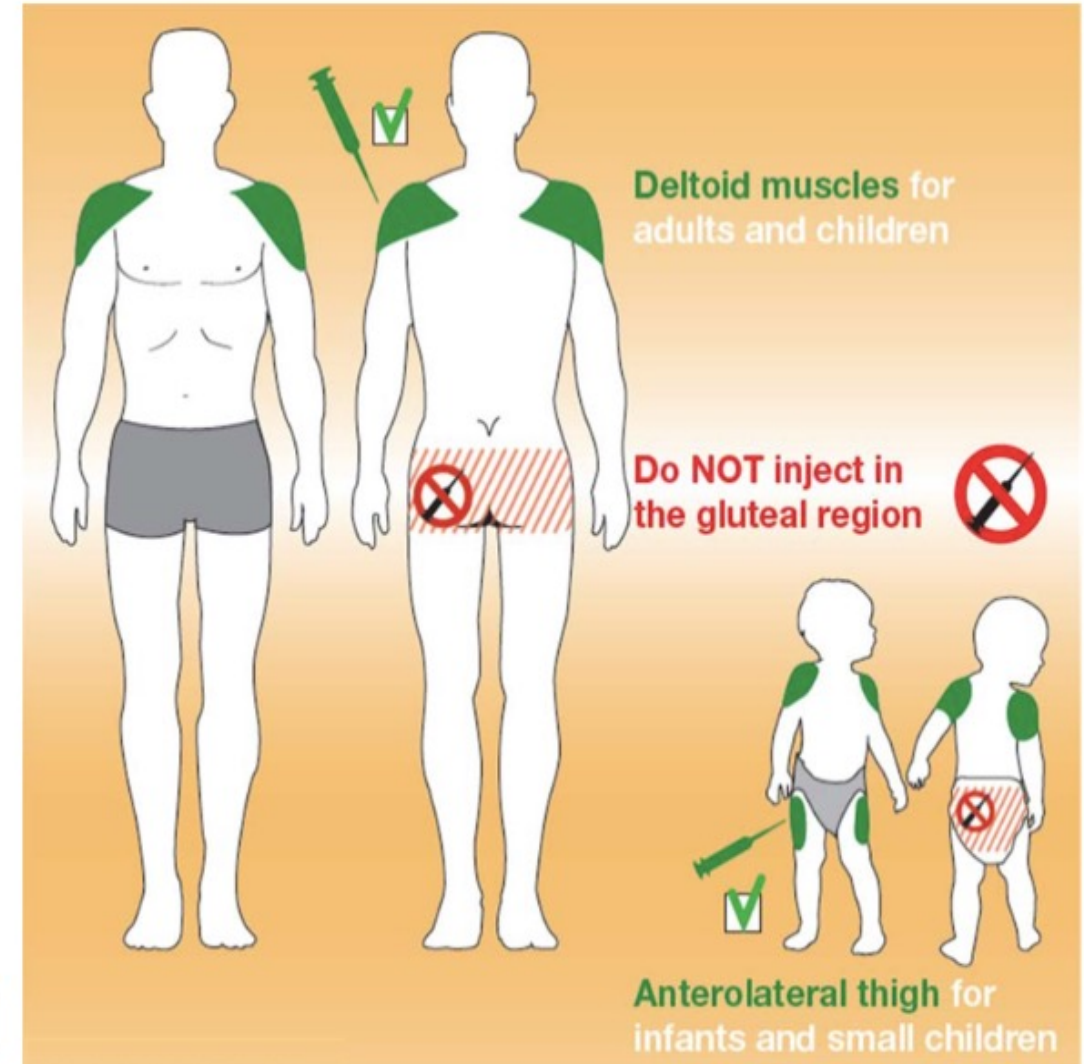
Immunoglobulin

## ● Vaccination (WHO Proposed Vaccine)

| Type of vaccine                   | Brand     | Producer                           | Country |
|-----------------------------------|-----------|------------------------------------|---------|
| Purified Chick Embryo Cell (PCEC) | VariRab-N | Cardial Health Ltd                 | India   |
| Purified Vero Cell (PVRV)         | Verorab   | Sanofi Pasture                     | France  |
| Purified Vero Cell (PVRV)         | Rabivax-s | Serum Institute of India           | India   |
| Purified Chick Embryo Cell (PCEC) | Rabipur   | Chiron Behring Vaccine Private Ltd | India   |

# Route of administration for vaccine

| Type of vaccine                   | Route of administration |
|-----------------------------------|-------------------------|
| Purified Chick Embryo Cell (PCEC) | IM/ID (0.5ml/0.1ml)     |
| Purified Vero Cell (PVRV)         | IM/ID(0.5ml/0.1ml)      |
| Purified Vero Cell (PVRV)         | IM/ID(0.5ml/0.1ml)      |
| Purified Chick Embryo Cell (PCEC) | IM/ID(0.5ml/0.1ml)      |

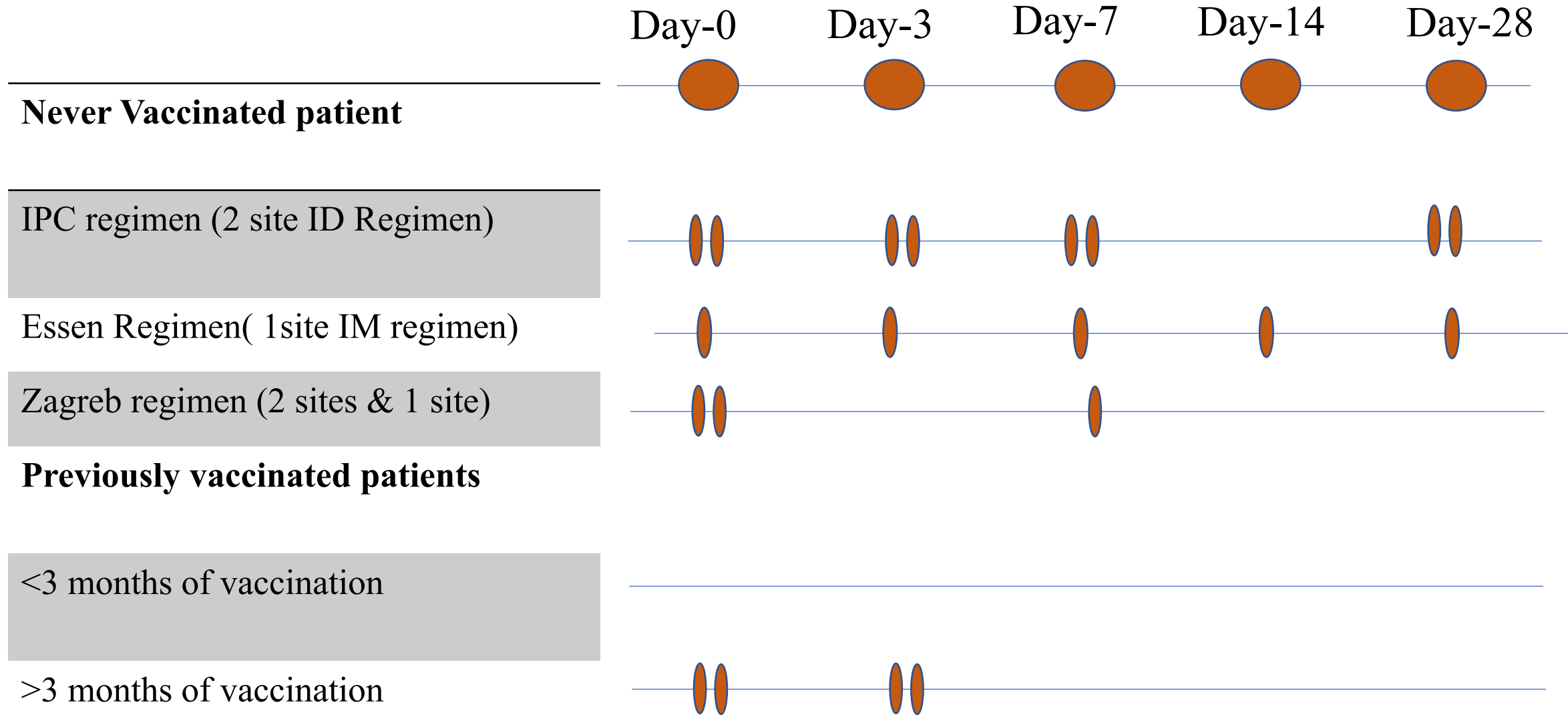


# Immunoglobulins

| Type of vaccine                  | Dose                                     | Route of administration                  |
|----------------------------------|--|--|
| HRIG (Human Rabies Ig)           | 20IU/kg body weight                      | Locally SC & remaining IM gluteal region |
| ERIG (Equine Rabies Ig)          | Locally SC & remaining IM gluteal region | Locally SC & remaining IM gluteal region |
| Rmab (Recombinant monoclonal Ab) | .33IU/kg body weight                     | Locally SC & remaining IM gluteal region |



# Schedule for PEP





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**Awareness and  
community  
empowerment**

# Vaccinating people and dogs saves lives and stops transmission



Prevent rabies in people by:

- dog bite prevention
- wound washing and post-exposure prophylaxis



Prevent rabies in dogs by :

- responsible dog ownership/care
- routine mass dog vaccination



# Avoid dog bites, understand dog behaviour

Before biting, most dogs express discomfort through body language

Playful



Happy



Suspicious



Anxious



Threatened



Angry



*More likely to bite*

We should avoid situations likely to upset dogs

Bothering them when they eat



Bothering them when they sleep



Putting our face right up to theirs



Taking their toys or bones away



Grabbing their ears or tails



Hugging and riding them



# 'If you feel threatened by a dog, do not run away and keep quiet!

You should:



*If the dog is a threat*

**Resist** the temptation to run

**Avoid eye contact** and speak softly

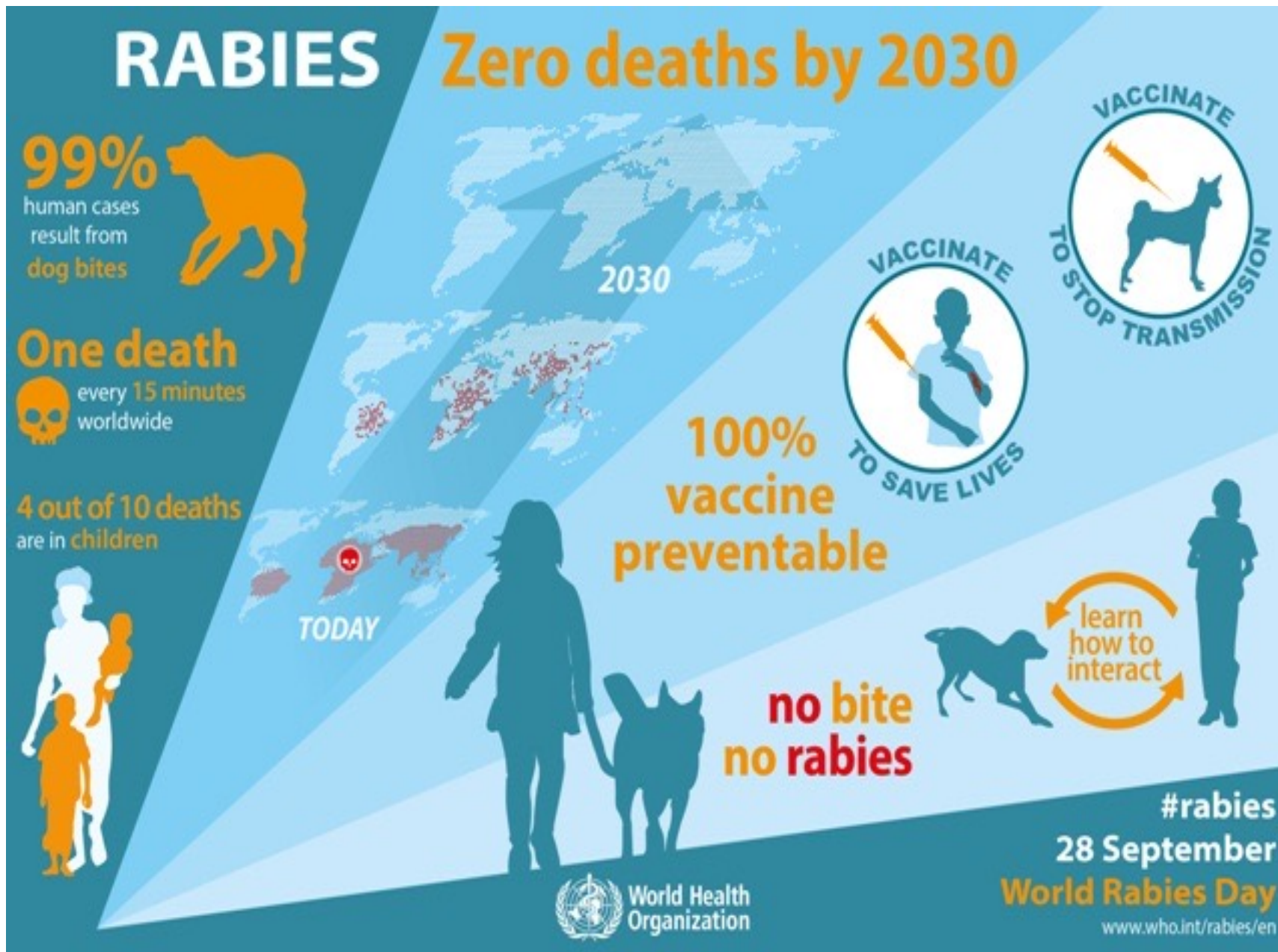
If possible, **slowly walk backwards**

*If the dog growls*

**Pretend to be a tree:**  
stay still with your hands at your side

*If the dog attacks*

**Pretend to be a rock:**  
curl into a ball and protect your face and body



*Thank you*