

# Rabies Immunization WHO Recommendations and New Gavi Support

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# Rabies is vaccine-preventable

An indicator for impact on inequity, capacity of health system and One Health

**RABIES** **Zero deaths by 2030**

**99%** human cases result from dog bites

**One death** every 15 minutes worldwide

**4 out of 10 deaths** are in children

**100% vaccine preventable**

**no bite no rabies**

**learn how to interact**

**VACCINATE TO STOP TRANSMISSION**

**VACCINATE TO SAVE LIVES**

**3030**

**TODAY**

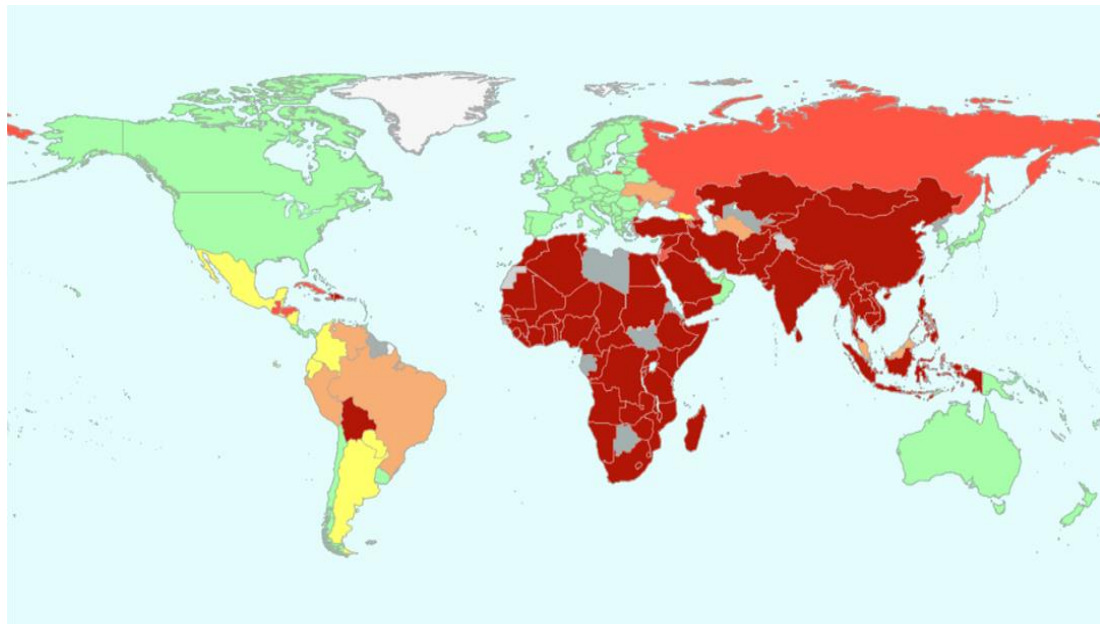
**#rabies**  
**28 September**  
**World Rabies Day**  
[www.who.int/rabies/en](http://www.who.int/rabies/en)

World Health Organization

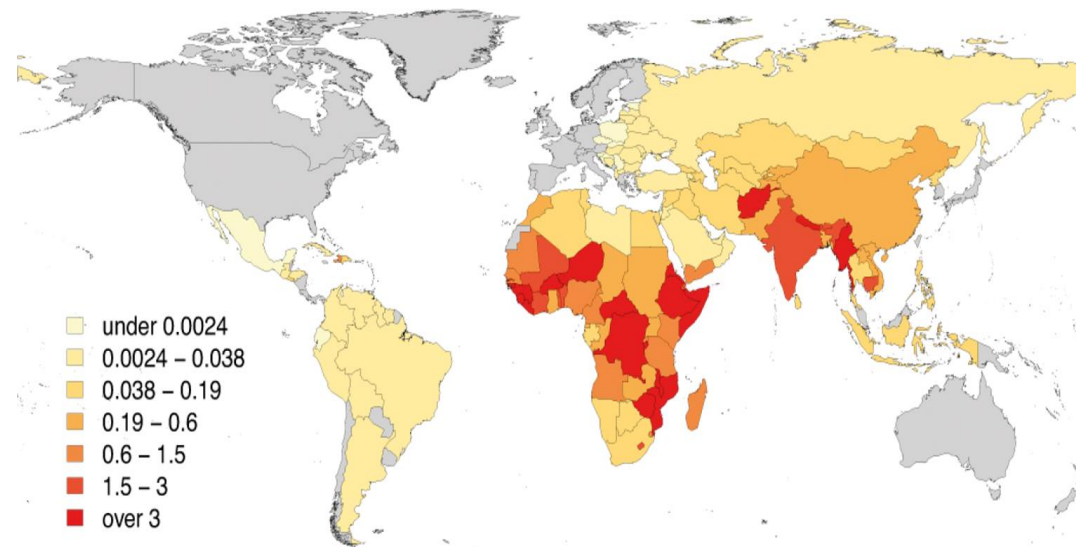
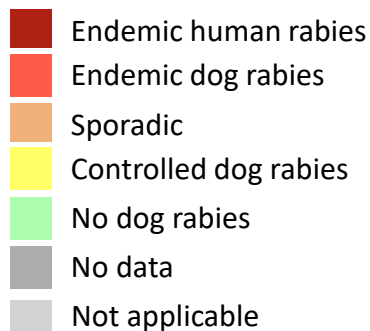
**Our Goal:**  
**Zero by 30**

**3 GOOD HEALTH AND WELL-BEING**

# Rabies endemicity & disease burden



A: Rabies endemicity

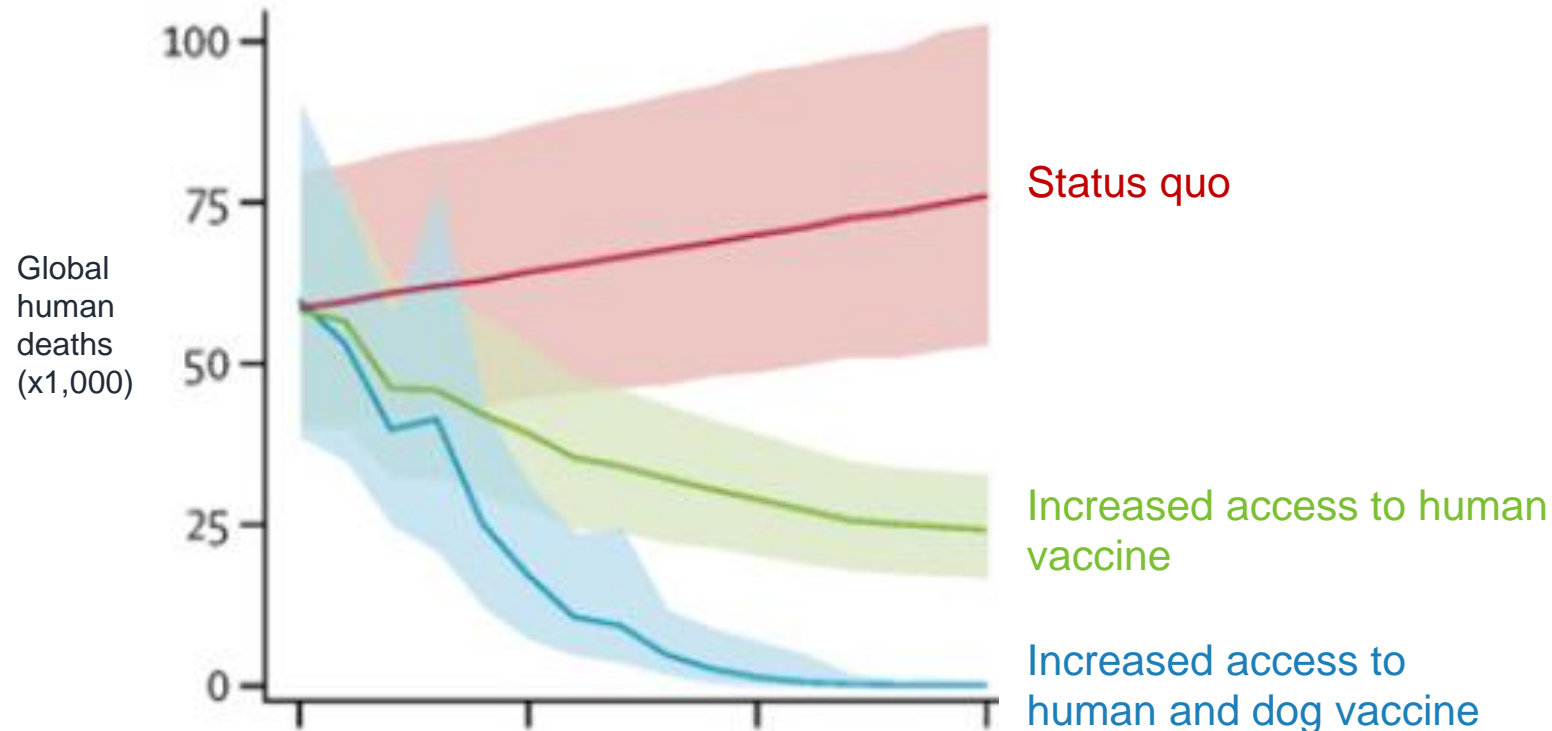


B: per capita death rates (per 100,000 persons)

**99%** are infected through a dog bite  
**40%** are children under the age of 15

Comparing estimates, rabies is currently **underreported** by a factor up to **20 times in Asia** and **160 times in Africa**

# Cost-effective and sustainable rabies programmes follow an One Health approach



- **Dog culling does not eliminate rabies**
- **Mass Dog Vaccinations**
  - **controls** canine rabies
  - **safeguards** those who struggle to access post-exposure prophylaxis
  - **eliminates** dog-mediated human rabies deaths
  - **protects** the lives of livestock and the livelihood of rural communities



# Rabies elimination needs a three-pronged approach

Effective rabies programmes are based on 3 key pillars:

Timely care



Dog vaccination & dog population management



Awareness & community engagement



# A coalition of actors



We are United Against Rabies.

**ZERO BY 30**  
THE GLOBAL STRATEGIC PLAN



TO END

**HUMAN DEATHS FROM DOG-MEDIATED RABIES BY 2030**

**1 every 9 minutes**

1 person dies from rabies every 9 minutes and almost half of them are children.

**99%**

Up to 99% of human rabies infections are caused by a bite from a rabid dog.

**100% preventable**

We have effective dog vaccines and vaccines to treat people who are bitten.

Together, we can end all human deaths from dog-mediated rabies by 2030.

<https://www.unitedagainstrabies.org/>



Food and Agriculture Organization of the United Nations



World Organisation for Animal Health  
Founded as OIE



World Health Organization



Food and Agriculture Organization of the United Nations



World Organisation for Animal Health



World Health Organization



Global Alliance for Rabies Control

# A coalition at country level, sub-national and community levels

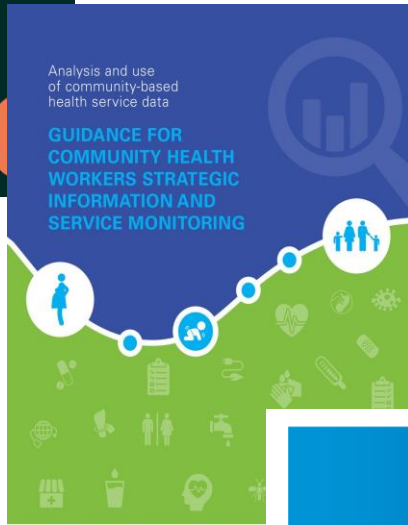
WHO strongly encourages collaboration between

- National rabies programme staff
- National immunisation programme
- National Immunization Technical Advisory Group (NITAG)
  
- Animal health sector
- Education sector
- Civil society
- Community
- .....

# Health Management Information Systems (HMIS) – integration and mainstreaming

Health facility data tool kit

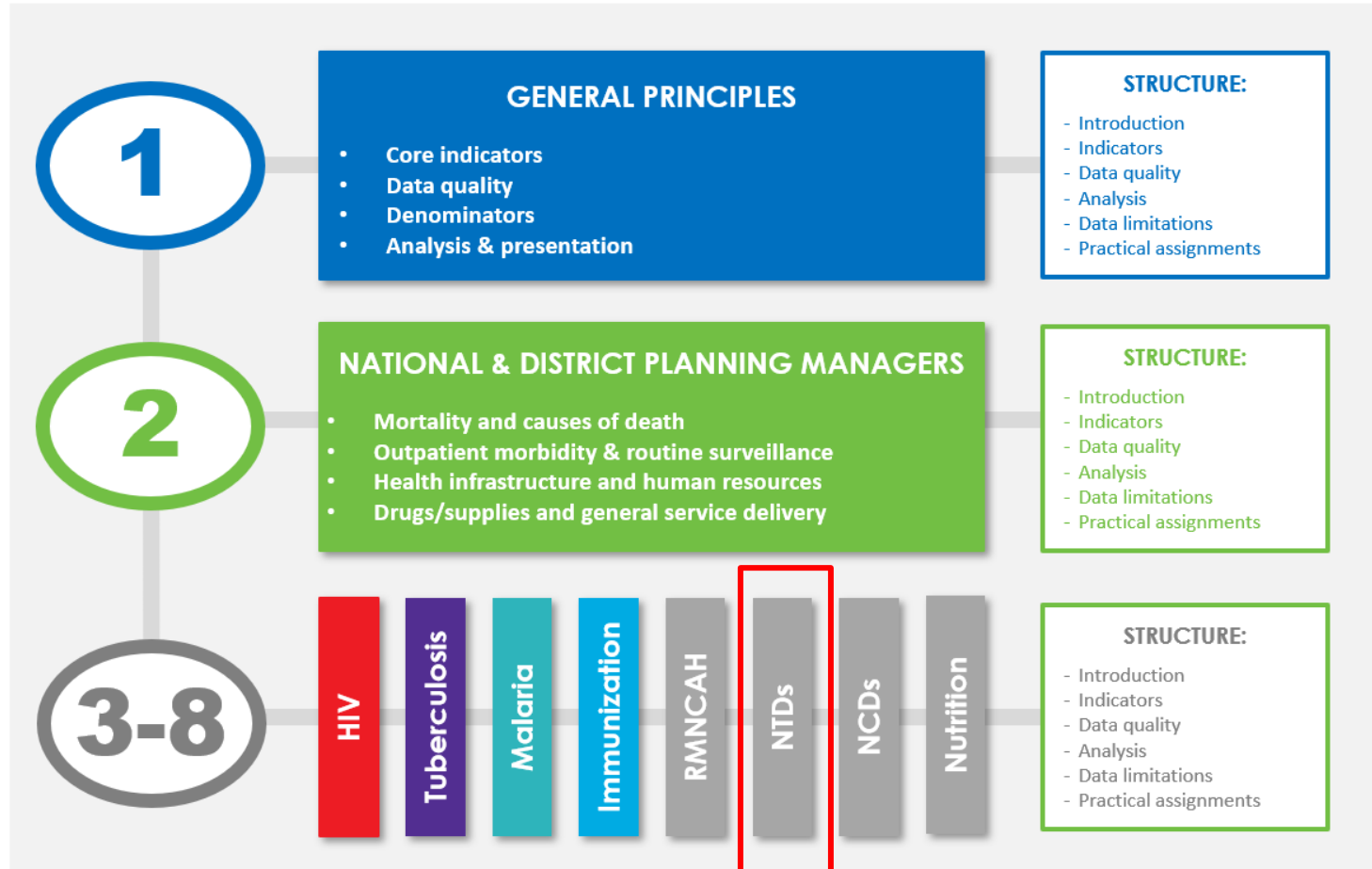
## ANALYSIS AND USE OF HEALTH FACILITY DATA: GUIDANCE OUTLINE



ANALYSIS AND USE OF HEALTH FACILITY DATA

General principles

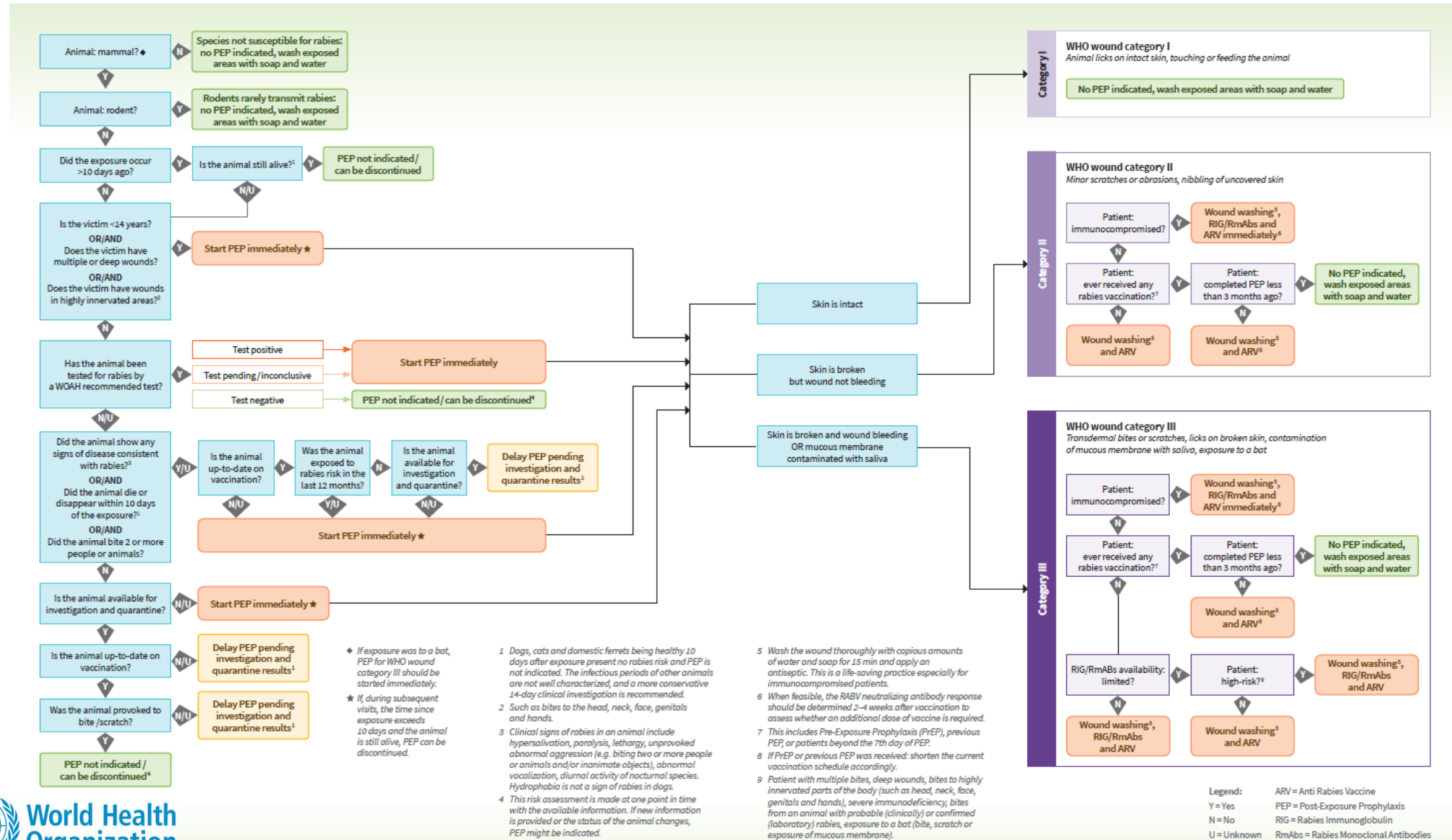
WORKING DOCUMENT, FEBRUARY 2018





# Rabies PEP administration decision tree

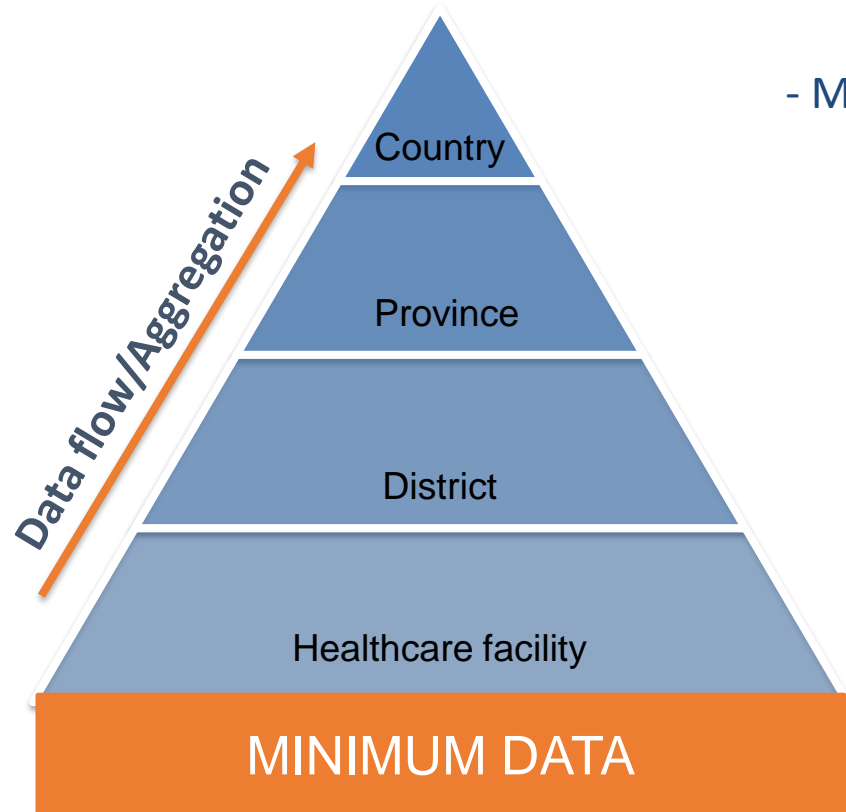
<https://www.who.int/publications/i/item/B09018>



# Rabies tracker in WHO's Toolkit for RHIS Data

## BENEFITS

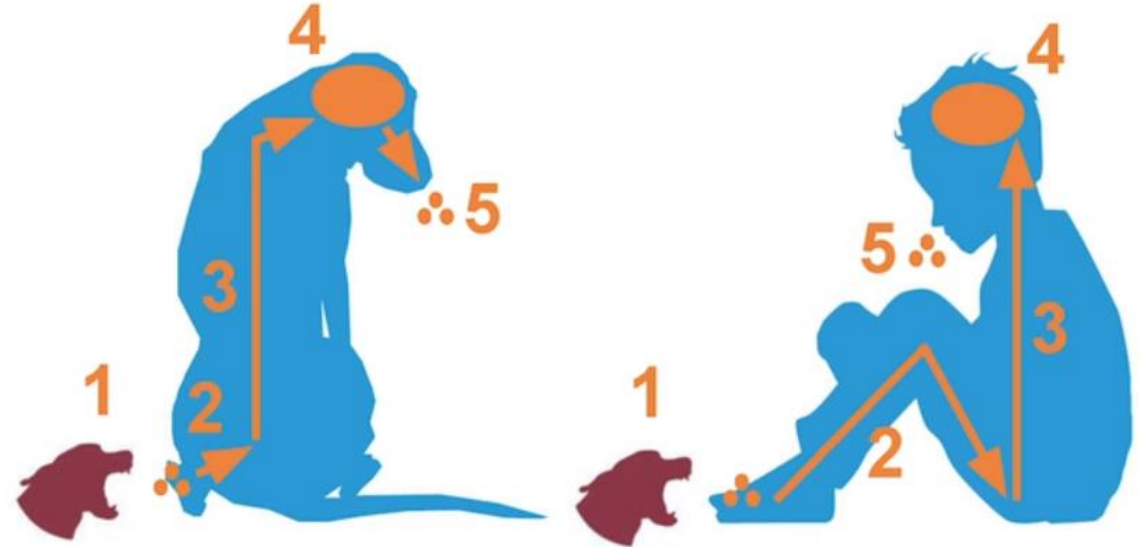
- Facilitating data collection and reporting at the community level
- Helping clinicians make better PEP-related decisions through the « tracker tool » = a healthcare facility-based data entry and collection tool that issues PEP advice after data entry
- Measuring progress towards 2030:



| Minimum indicator  | 2020 (estimate) | 2030           |
|--|-----------------|----------------|
| # countries having achieved zero human deaths from dog-transmitted rabies      | 80/169 (47%)    | 155/169 (92%)  |
| # countries having progressed to zero human deaths from dog-transmitted rabies | 100/169 (59%)   | 169/169 (100%) |
| # countries having reached 70% vaccination coverage of dogs in high-risk areas | 63/169 (37%)    | 154/169 (91%)  |

# Rabies is transmitted via infectious saliva

- 1 Inoculation of infectious **saliva** via a bite (most common), scratch, or direct contact with mucosa (e. g. eyes, mouth, or open wound)
- 2 Local **muscle** infection and uptake into peripheral nerves
- 3 Spread to **central nervous system**
- 4 Replication in the **brain**
- 5 Spread to salivary glands and excretion in **saliva**



## Rarely documented transmission:

- Human-to-human transmission via tissue and organ transplantation or mucosal route
- Inhalation of aerosolised virus (e.g. in labs)
- Handling of raw meat

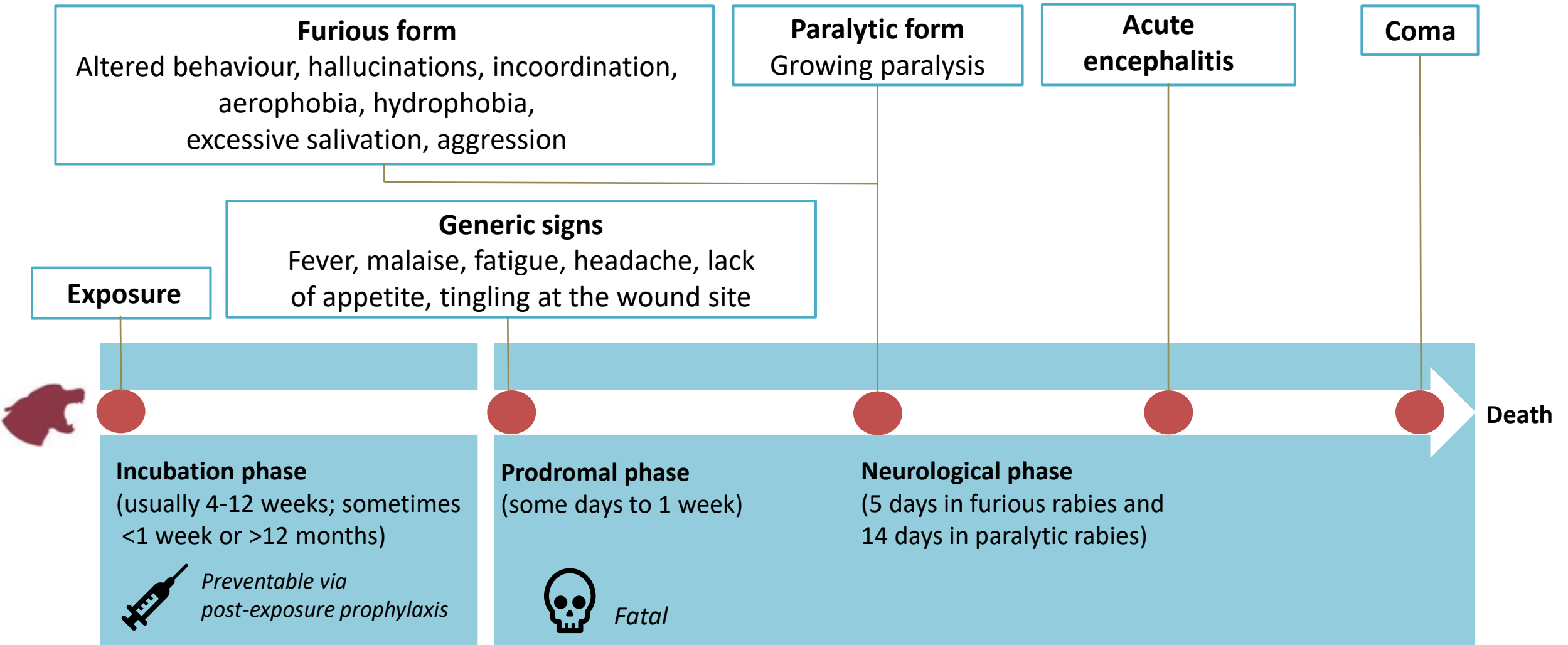
## Never documented transmission:

- Consumption of raw milk
- Rodent bites

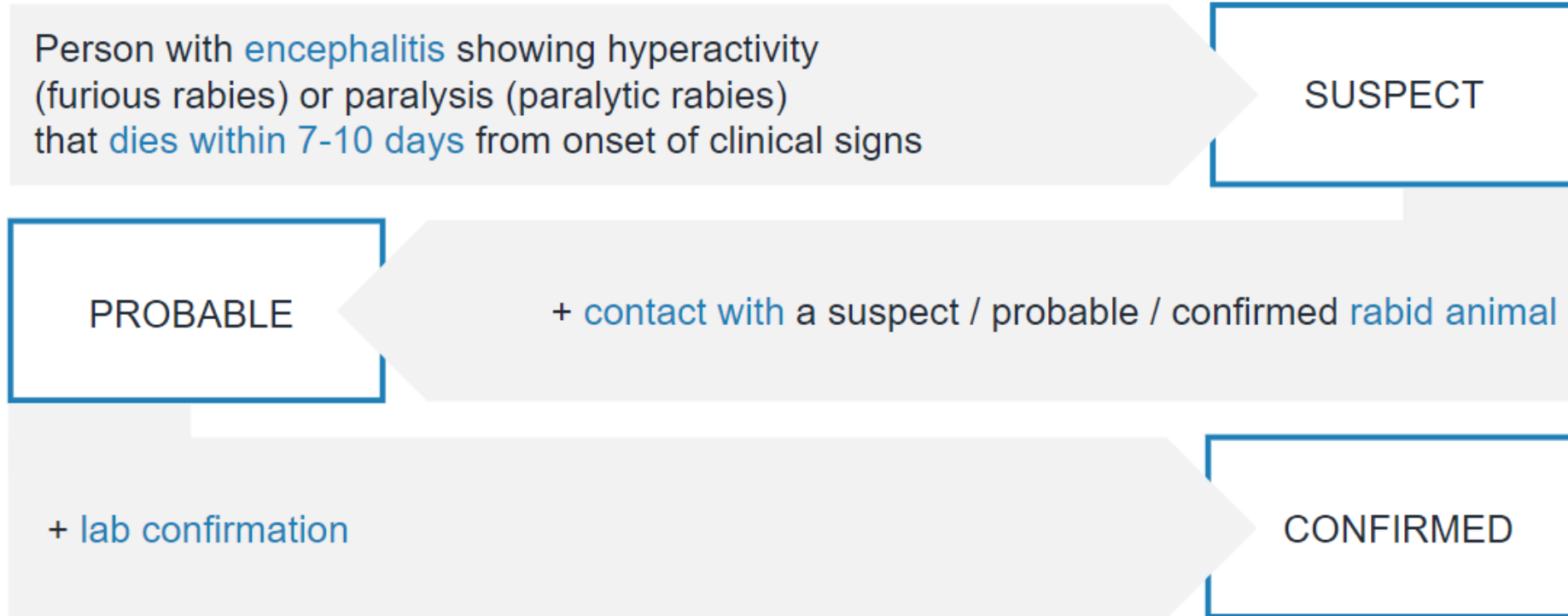


# Rabies is fatal once clinical signs appear

The clinical signs and development of rabies in humans are:



# Clinical case definitions...

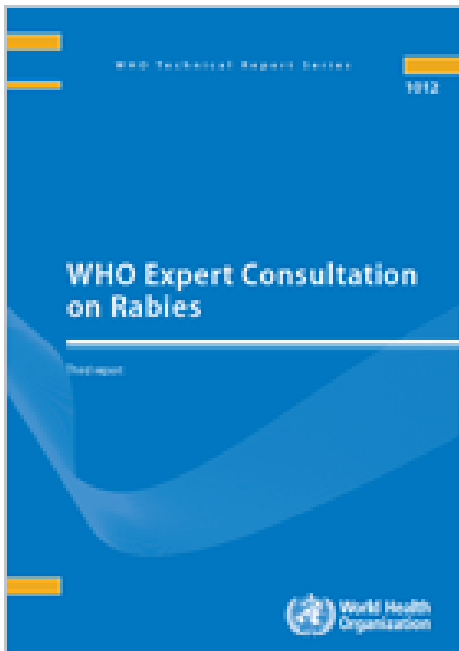


NOT A CASE:

Suspect / probable case ruled out by lab tests  
OR  
No animal contact in the past 6 months

# WHO guidelines for Post-exposure Prophylaxis (PEP) and Pre-exposure Prophylaxis (PrEP) recommendations

## Expert Report on Rabies 2018



## Rabies vaccines: WHO position paper, April 2018

2018, 93, 201-220 No. 16

**World Health Organization**  
Organisation mondiale de la Santé

Weekly epidemiological record  
Relevé épidémiologique hebdomadaire

20 APRIL 2018, 93rd YEAR / 20 AVRIL 2018, 93<sup>e</sup> ANNÉE  
No. 16, 2018, 93, 201-220  
<http://www.who.int/wer>

**Rabies vaccines: WHO position paper – April 2018**

**Introduction**  
In accordance with its mandate to provide guidance to Member States on health policy matters, WHO issues a series of regularly updated position papers on vaccines and combinations of vaccines against diseases that have an international public health impact. They summarize essential background information on diseases and vaccines and conclude with the current WHO position on the use of vaccines worldwide.

**Introduction**  
Conformément à son mandat qui est de donner aux États Membres des conseils sur les questions de politique de santé, l'OMS publie une série de notes de synthèse régulièrement actualisées sur les vaccins et les associations vaccinales contre les maladies ayant un impact sur la santé publique au niveau international. Elles révisent les informations essentielles sur les maladies et les vaccins et présentent en conclusion la position actuelle de l'OMS concernant l'utilisation des vaccins dans le contexte mondial.

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**Conclusion**  
The position paper replaces the 2010 WHO position on rabies vaccines. It presents new evidence in the field of rabies and the use of rabies vaccines, focusing on programme feasibility, simplification of vaccination schedules and improved cost-effectiveness. The recommendations

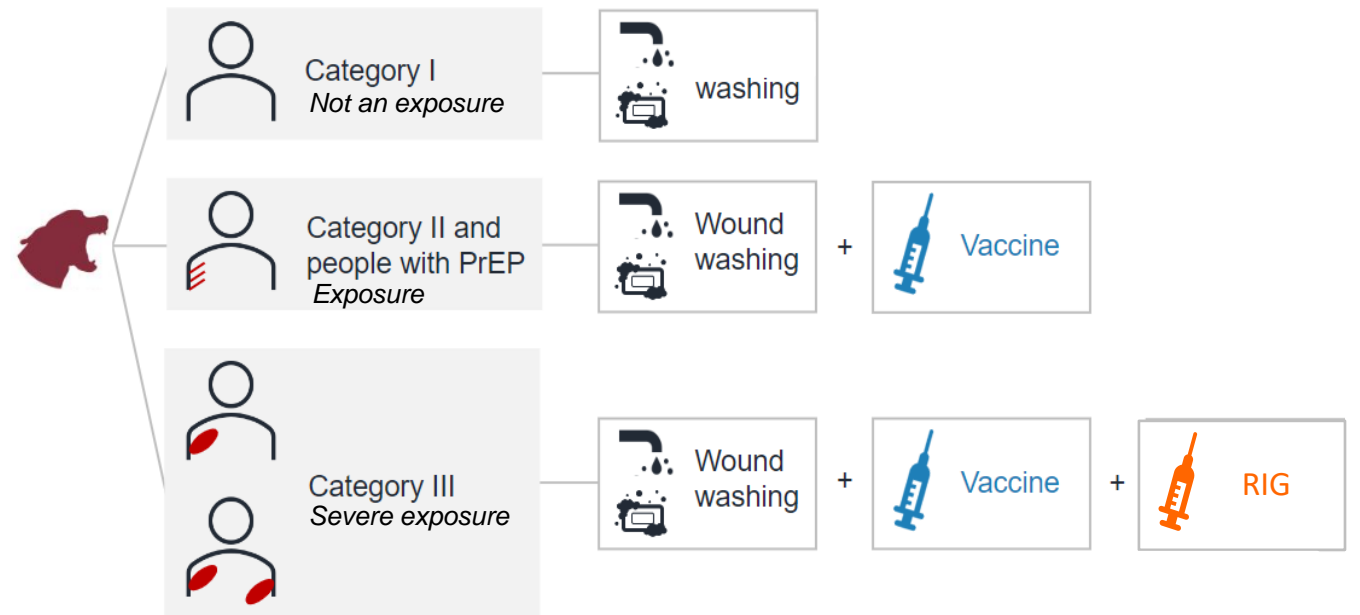
**Conclusion**  
Ce document remplace la note de synthèse de l'OMS sur les vaccins antirabiques publiée en 2010. Il présente de nouvelles données scientifiques dans le domaine de la rage et de l'utilisation des vaccins antirabiques, en mettant l'accent sur la faisabilité programmatique, la simplification des sché-

**ORGANIZATION**  
**MONDIALE**  
**DE LA SANTÉ**  
Lebanon

Année 93, 2018, 93<sup>e</sup> année  
No. 16, 2018, 93, 201-220  
Printed in Switzerland

201

PEP requires vaccines and rabies immunoglobulin (RIG)

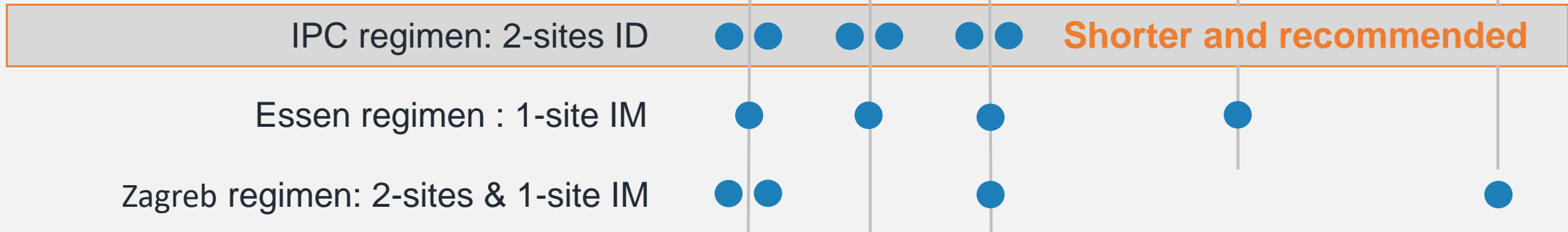




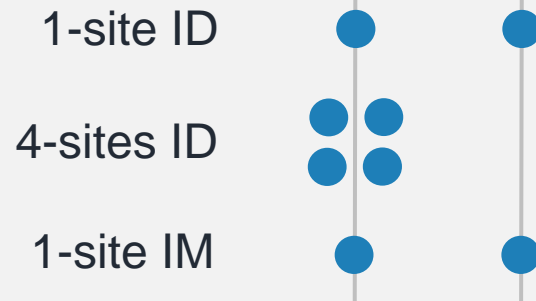
# WHO recommends a dose-, time- and cost-saving vaccination schedule



## Never vaccinated patients



## Previously vaccinated patients



# Pre-exposure prophylaxis for at-risk groups

2-site ID vaccine administered on days 0 and 7

1-site IM vaccine administration on days 0 and 7

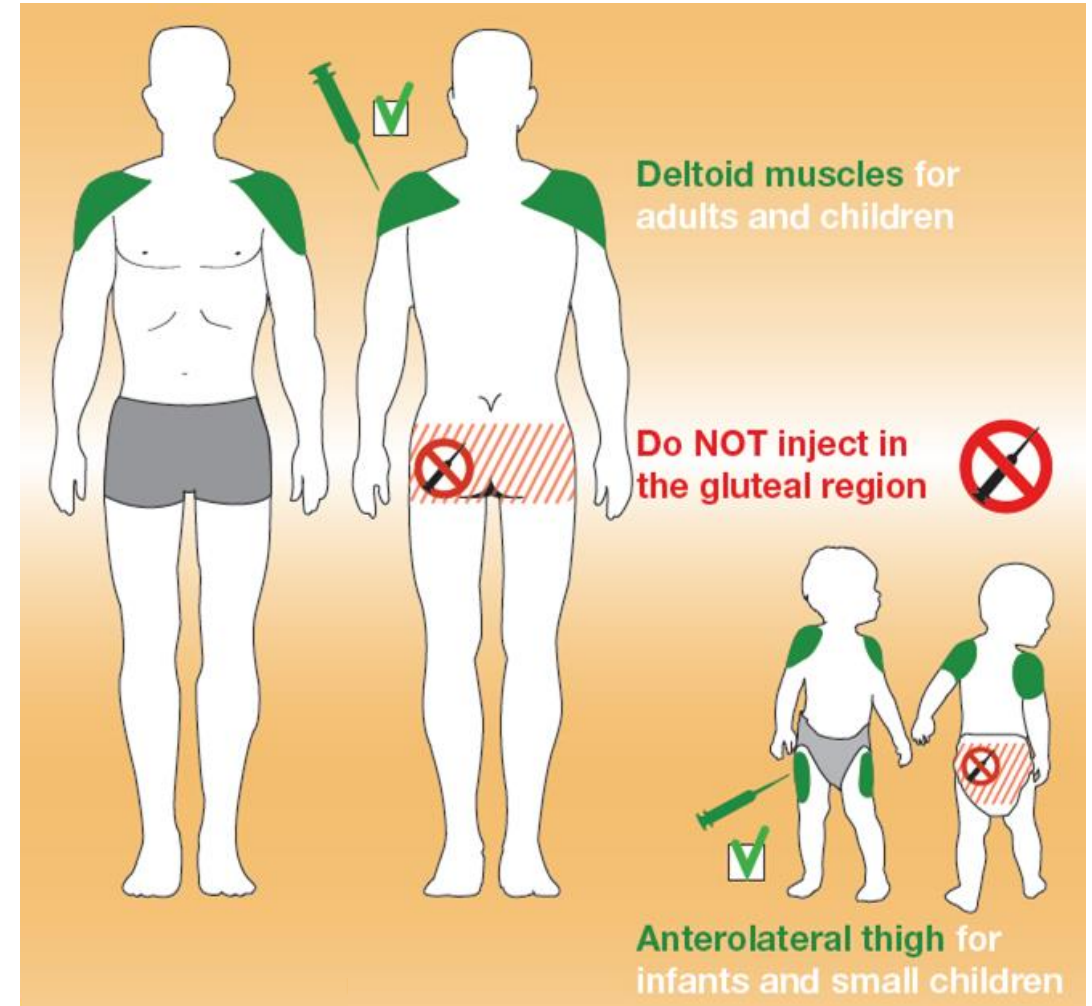


# PrEP and PEP can be given intra-dermally or intra-muscularly

Intra-dermal (ID) = in the skin  
1 dose = 0.1 mL of vaccine

Intra-muscular (IM) = in the muscle  
1 dose = 1 entire vial (which is 0.5 mL or 1.0 mL of vaccine, depending on the product)

- All WHO pre-qualified vaccines can be administered by either route
- The injection sites for ID and IM are the same
- For ID, opened vials can be used up to 8 hours ([WHO policy on the use of opened multi-dose vaccine vials](#))
- ID administration is simple to perform, if health care providers are adequately trained



**! Do not inject vaccine in the gluteal region !**



# WHO Position: Administration of rabies immunoglobulins (RIG)

- RIG should be administered only once, preferably at, or as soon as possible after, the initiation of PEP.
- RIG can be given up to day 7 after the first rabies vaccine administration.
- For optimal effectiveness, the maximum dose calculation for RIG is 40 IU/kg body weight for equine derived RIG (eRIG) products, and 20 IU/kg body weight for human derived RIG (hRIG).
- RIG is infiltrated into and around the wound. IM no longer recommended
- Skin testing before eRIG administration should not be done because of unreliable prediction of adverse effects.
- 2 monoclonal products available



# Pre-exposure prophylaxis (PrEP) shortens, but does not replace, the post-exposure vaccine

**PrEP** is recommended for at **high-risk individuals**:



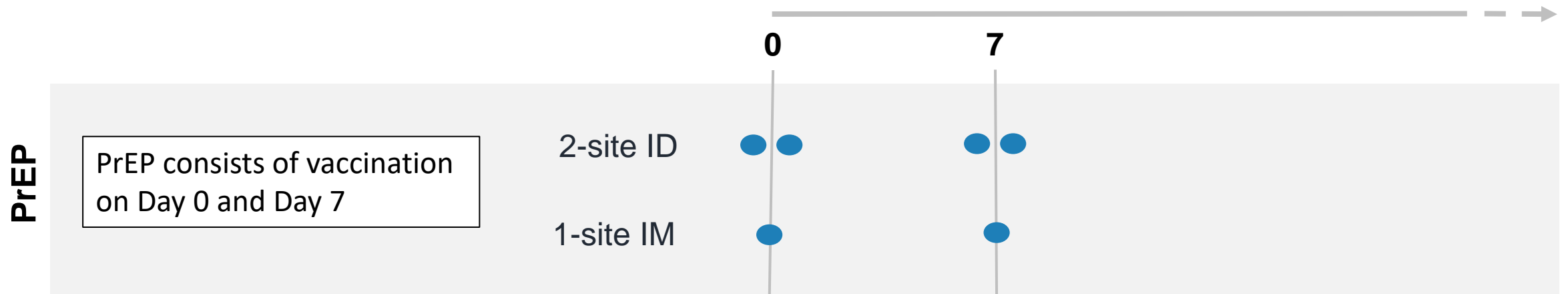
**communities** in remote, highly endemic settings with limited access to proper PEP



**travellers** to remote, highly endemic settings with limited access to proper PEP



**individuals at occupational risk** e.g., laboratory staff, veterinarians,



# Off-Label Vaccine use

- Before vaccines can be placed on the market, they need to obtain a market authorization by the National Regulatory Authority (NRA).
- The NRA authorizes the use of the vaccine for a given indication outlined in the vaccine product information sheet
- Following approval, the **National Immunization Technical Advisory Group (NITAG)**, can issue public health recommendations for use of the vaccine.

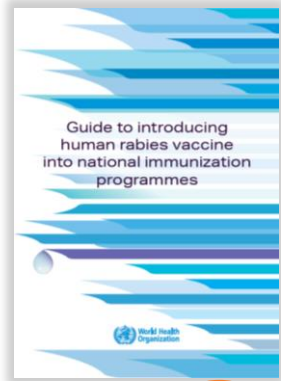
Recommendations on vaccine use at the global level are formulated by **Strategic Advisory Group of Experts on Immunization (SAGE)** that advises WHO.

These may be off-label until manufacturers update their labels and inserts to address

- specific population groups
- Vaccine shortages
- Simplified immunization schedules

[Explanatory note](#)

# Guidance is available for countries to roll out rabies vaccination programmes



**To highlight considerations specific to rabies PEP**  
that can be integrated into existing systems

**To inform policy discussions and operational planning**  
to introduce or expand rabies PEP into a national immunization programme:

1

Decision-making



2

National planning



3

Microplanning  
at selected  
health  
facilities



4

Training  
and  
service  
delivery



5

Communication  
and  
social  
mobilisation



6

Monitoring  
and  
evaluation





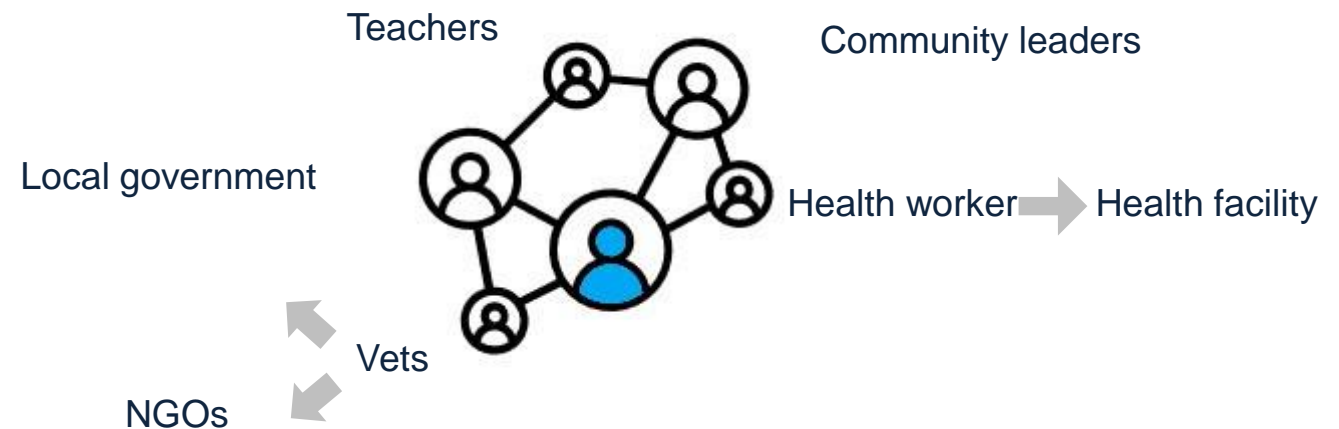
# It takes a village to eliminate rabies



C: World Animal Protection

Local communities are not programme recipients, but **key stakeholders** to work with to:

- understand local needs
- raise awareness
- teach rabies in schools
- increase access and demand for affordable PEP
- design sustainable mass dog vaccination campaigns
- build relations between the human and animal sectors
- trigger national and global action



# All you want to know about rabies and One Health in NTDs

## One Health in action against Neglected Tropical Diseases

OpenWHO

Course is available

Learnings Discussions Progress Certificates Collab Space Course Details Documents Announcements



Share Tweet LinkedIn Share Mail

Neglected Tropical Diseases (NTDs) continue to cause hardship and harm to over one billion people worldwide, burdening individuals, families and communities who are already marginalized and disadvantaged. Taking a One Health approach that recognizes the relationship between human, animal, and environmental health is key to sustainably addressing NTDs. This course provides practical ideas, tools, and examples to enable each of us to take One Health action towards the global goal of substantially reducing the burden of NTDs by 2030.

Photo credits: WHO/Olyas Ahmed

Self-paced  
Language: English  
NTD

Enroll me for this course

## Rabies & One Health: From basics to cross-sectoral action to stop human rabies deaths

OpenWHO

Course is available

Learnings Discussions Progress Certificates Collab Space Course Details Documents Announcements



Share Tweet LinkedIn Share Mail

Despite being fully preventable, dog-mediated human rabies kills tens of thousands of people every year, especially in rural and impoverished areas in Africa and Asia. This course provides participants with knowledge about the biology and epidemiology of this Neglected Zoonotic Disease, the current 'Zero by 30' rabies elimination strategy, and how to prevent rabies in people and dogs by taking a One Health approach. The learning package consists of seven modules, which include downloadable video-lectures by global experts and professionals confronted with rabies in the field.

Photo credit: WHO/ Budi Chandra

Self-paced  
Language: English  
Rabies

Enroll me for this course



<https://apps.who.int/iris/handle/10665/351193>

<https://openwho.org/courses/NTDs-one-health>

<https://openwho.org/courses/NTDs-Rabies-and-one-health>

# Rabies Resources

- Guide to introducing human rabies vaccine into national immunization programmes (Eng) <https://www.who.int/publications/i/item/9789240052499>
- Rabies vaccines: WHO position paper – April 2018 (Eng) <https://www.who.int/publications/i/item/who-wer9316>
- WHO Expert Consultation on Rabies: WHO TRS N°1012 <https://www.who.int/publications/i/item/WHO-TRS-1012>
- Rabies Post-Exposure Prophylaxis Decision Tree: Decide with Confidence [https://cdn.who.int/media/docs/default-source/searo/ntd/who-searo\\_rabies-pep-decision-tree-poster.pdf?sfvrsn=f2249312\\_6](https://cdn.who.int/media/docs/default-source/searo/ntd/who-searo_rabies-pep-decision-tree-poster.pdf?sfvrsn=f2249312_6)
- Protocol for a well-performed rabies post-exposure prophylaxis delivery: to read along with the decision trees 1- Wound risk assessment and 2 - PEP risk assessment <https://www.who.int/publications/i/item/B09018>
- Open WHO Rabies & One Health <https://openwho.org/courses/NTDs-Rabies-and-one-health>
- GAVI Funding Guidelines FR– Rabies page 67 – 69 [https://www.gavi.org/sites/default/files/support/guidelines-2024/GAVI-Vaccine-Funding-Guidelines-july2024\\_FR.pdf](https://www.gavi.org/sites/default/files/support/guidelines-2024/GAVI-Vaccine-Funding-Guidelines-july2024_FR.pdf)
- WHO AFRO Webinar Recording : WHO Rabies Vaccination: WHO Recommendations and New GAVI Report 20th March 2024. Link: [https://who.zoom.us/rec/share/T\\_4r48lFn\\_Xgc79h781cTS2cJ3UQQEhsJFKcPkpQy73wFDSFUSPF5ue6A0PCXzDH.uuWHZLDtVA62-1BJ](https://who.zoom.us/rec/share/T_4r48lFn_Xgc79h781cTS2cJ3UQQEhsJFKcPkpQy73wFDSFUSPF5ue6A0PCXzDH.uuWHZLDtVA62-1BJ)  
Passcode: @Rabies2024
- Off-label vaccine use: explanatory note for countries [note\\_off-label\\_vaccine\\_use\\_considerations\\_countries\\_22\\_dec\\_2023.pdf \(who.int\)](https://www.who.int/publications/i/item/note_off-label_vaccine_use_considerations_countries_22_dec_2023)
- Global Market Study Human Rabies Vaccines [https://cdn.who.int/media/docs/default-source/immunization/mi4a/human-rabies-vaccine-market-study\\_public\\_summary.pdf?sfvrsn=2dee3e4\\_1&download=true](https://cdn.who.int/media/docs/default-source/immunization/mi4a/human-rabies-vaccine-market-study_public_summary.pdf?sfvrsn=2dee3e4_1&download=true)
- WHO List of Prequalified Vaccines [Prequalified Vaccines | WHO - Prequalification of Medical Products \(IVDs, Medicines, Vaccines and Immunization Devices, Vector Control\)](https://www.who.int/prequalification/Products/Prequalified-Vaccines)





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