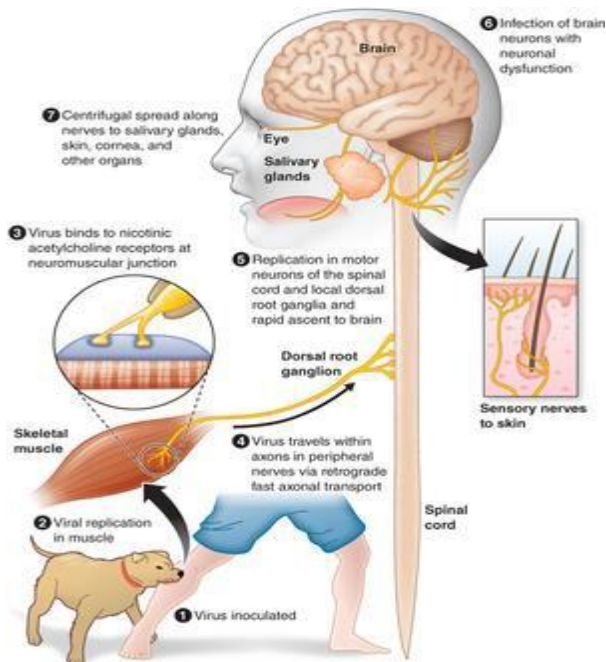


Regional approach for the Elimination of Dog-mediated Human rabies in the Middle East.



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Tollwut
 داء الكلب
 Rabies
 Rage
 狂犬病
 Rabia
 रेबीज
 Rabbia
 Haromotana
 wścieklizna
 Raiva
 бешенство
 พิษสุนัขบ้า
 Kuduz
 ...

**RABIES
 ENDS
 HERE
 WITH ME**



Every 15 minutes, someone dies from rabies. | I join
 I stop the disease: I vaccinate a dog. | #rabiesendshere

Additional logo

Additional logo

Toward elimination of Dog-mediated human rabies in the Middle

Preamble:

Each year, on the 28th of September, the international community comes together to promote the fight against rabies. World Rabies Day (WRD) is a day of action and awareness raising and offers opportunities for individuals, institutions and governments to join the global movement in the fight against rabies.

Every year the OIE promotes the participation of its Member Countries in WRD and also coordinates activities with the Tripartite (FAO/OIE/WHO), such as joint communication messages. In 2016, the main theme for the OIE WRD was “**Educate, Vaccinate, eliminate**”, “**Zero by 2030**” in 2017,” **Share the Message, save a Life**” in 2018, and in 2019 “**Vaccinate to Eliminate**” a clear reference to the goal of eliminating dog-mediated human rabies by 2030.

Introduction:

Rabies is one of the deadliest zoonotic diseases. It is listed among the World Organisation for Animal Health’s (OIE) diseases under the category “multiple species diseases, infections and infestations” (Code chapter 8.14).

It is estimated that approximately 60,000 people worldwide die each year because of rabies, mostly children in developing countries of Asia and Africa. Globally, the vast majority of human cases, more than 95%, are caused by exposure to rabid dog bites.

For hundreds of years, rabies has been a dual public horror and biomedical dilemma. In the 20th century scientific improvement and technical advances for rabies diagnosis and vaccination in humans, domestic animals and wildlife, achieved a significant milestone in public health, agriculture and conservation biology.

However, in spite of rapid advances in diagnostics, vaccine development and the application of novel technologies to control the disease, rabies remains a significant cause of deaths in human following exposure to rabid animals.

The disease mainly affects poor rural communities where access to appropriate post-exposure prophylaxis (PEP) is limited/neglected or non-existent. In contrast with many other diseases, the tools needed to eliminate rabies already exist.

It is therefore the prime responsibility of any national veterinary service to apply its knowledge, capacity and skills in animal disease control to create a buffer between the animal source and the susceptible human beings.

The OIE, fully realizing the need of many developing and in transition countries to improve the governance and delivery of their veterinary services, has embarked upon a global campaign to publicise the importance of accepting the delivery of veterinary services as an international public good.

Only by assisting countries in need to apply the minimum standards for animal disease control will be able to fully benefit from the advantages of new technologies and eventually move towards the elimination of rabies.

Since May 2019, OIE Standards on rabies include guidance for countries to apply, on a voluntary basis, for **the endorsement of their national control programmes for dog-mediated rabies**. These guidelines support countries to compile in a standard manner, documented evidence that demonstrates compliance with the requirements described in the *Terrestrial Code*. The standard operating procedures for the official recognition of disease status / endorsement of national official control programme applications are available. (Annex I).

An important prerequisite to achieve the objective of disease control is the ability of the Veterinary Services to institute and apply the international standards for the control of animal diseases and Zoonoses.

Veterinarians and the national Veterinary Services of OIE Member Countries have a major role to play in implementing these strategies at the national and regional level. Their involvement is a vital element in coordinating operations between public health services, local authorities including town councils, law enforcement agencies, and NGOs working in some of the poorest countries

For the control or eradication of Rabies, like any other zoonotic disease, the veterinary sector cannot accomplish it alone. Intersectoral collaboration is a paramount for any successful achievement. Joint efforts should involve the public health and environment sectors veterinary private sector, municipalities, educational institutes, media and NGO's working in animal welfare, added to the various stakeholders dealing with all these sectors including wildlife.

Any national surveillance plan should also be coordinated with the relevant authorities of neighbouring countries, in order to harmonise actions, especially at border posts, and exchange data, skills and experience.

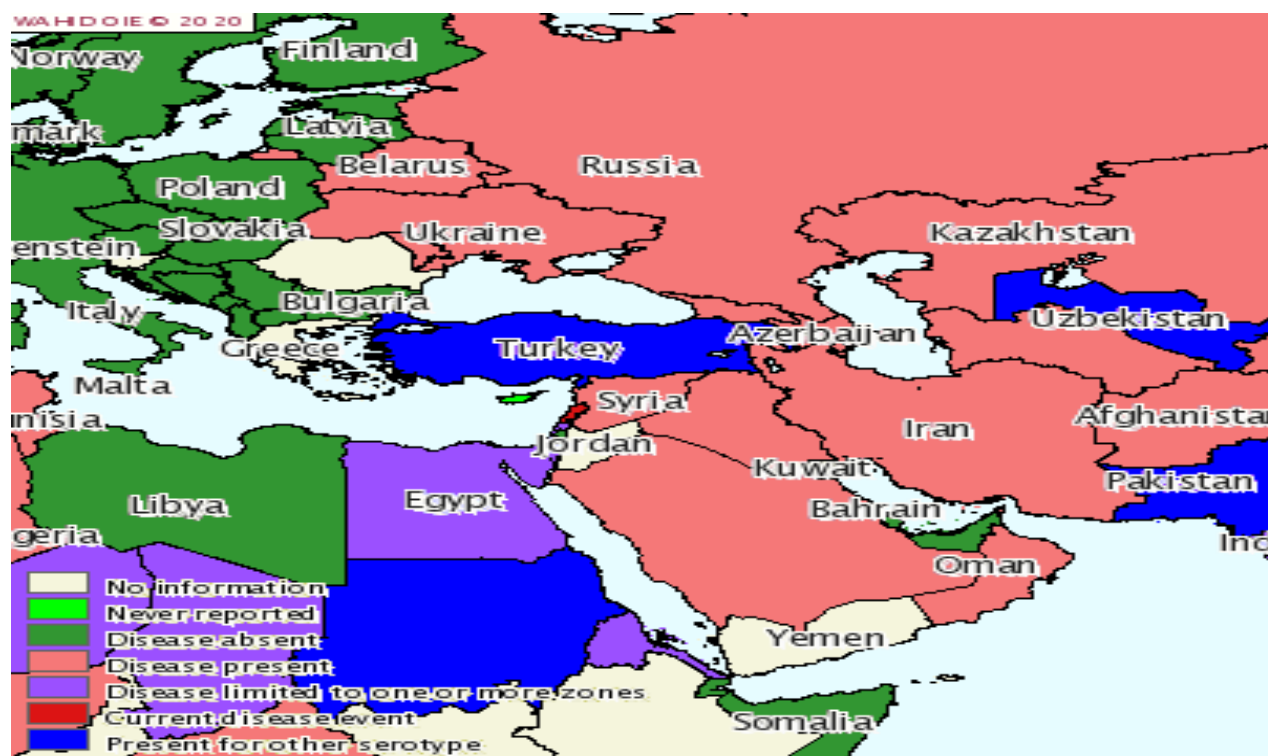
Working together at the regional level, under the global guidance will enhance the chance to success.

The OIE, together with WHO, FAO and the Global Alliance for Rabies Control (GARC), joined efforts and formed the United Against Rabies Collaboration which elaborated the Global strategic plan to end human deaths from dog-mediated rabies by 2030.

As an output of this collaboration, aiming to reinforce and support countries on elaboration and implementation of the national strategies for rabies elimination, were made available various tools to support countries on the development of their national strategies and action plans.

One of these tools is the Blueprint and Stepwise Approach towards Rabies Elimination (SARE). (Annex 2)

Rabies status in the Middle East (WAHID)



For the epidemiology of the most important zoonotic diseases, the Middle East may be considered as an extension of the Mediterranean region, particularly the southern and littoral countries. These regions present many similarities in climatic, geophysical and socio-cultural characteristics. Rabies is endemic in most of the countries, with few exceptions in some Gulf countries.

Endemic rabies creates a serious public health for the whole region. This is expressed through considerable human death and post exposure treatment rates.

Dog is the main source of human infection, while cats constitute the second most important

group of domestic animals, followed by others such as sheep, goats, cattle, camels and donkeys and the wild animals such as foxes, jackals and wolves. For FAO, more than 30% for the free roaming dog population in the region is under the age of one year. The density of stray dog population is estimated to be between 0.6 and 1.5/km² in urban areas and 1.2 to 2.6/km² in peri-urban and rural areas.

Also, there is an average of more than 250 human cases of rabies reported annually in the ME, and several hundred thousand cases of post exposure treatment. The majority of these cases are reported in Egypt, Iraq, Iran, Sudan and Yemen.

National rabies control strategies include vaccination, control of stray dog populations and raising awareness among at risk human populations. Unfortunately, these strategies are only partially implemented because of limited resources and lack of coordination among all stakeholders. Accordingly, Rabies elimination requires a coherent and sustainable long-term strategy, which should be based on a participatory approach and coordination of all concerned stakeholders.

In consideration of the above, the Middle East joint action is necessary to reconsider the fundamental parameters, basic priorities, and practical goals for substantial regional rabies reduction, with dynamic partnerships forged among international organizations, entities and nongovernmental organizations. The main objective of this communication is to consider rabies eradication, elimination, prevention and control as a priority towards desired and observed success of fresh future perspectives and additional progress on a global basis.

GLOBAL FRAMEWORK FOR THE ELIMINATION OF DOG-MEDIATED HUMAN RABIES

Dog-mediated human rabies kills tens of thousands of people every year worldwide. Freedom from dog-mediated human rabies is a global public good and is feasible with currently available tools.

In accordance with the consensus of the Global Conference (Geneva, 10-11 December 2015), this framework provides a coordinated approach and vision for the global elimination of dog-mediated human rabies. It is intended to harmonize actions and provide adaptable, achievable guidance for country and regional strategies.

The five pillars of rabies elimination (STOP-R)

1 SOCIO-CULTURAL

Rabies control involves a wide range of stakeholders including the general public. The socio-cultural context influences rabies perceptions and dog-keeping practices of at-risk populations. Understanding the context guides approaches to motivate behavioural change and plan feasible delivery of services.

Includes activities for:

- **Awareness:** build awareness of dog-mediated rabies as a preventable global public health problem including through participation in initiatives such as World Rabies Day and the EndRabiesNow campaign
- **Responsible dog ownership:** promote responsible dog ownership and dog population management practices, including dog vaccination, in accordance with OIE standards
- **Bite prevention and treatment:** develop and implement education programmes on bite prevention and first aid for both children and adults
- **Post-exposure prophylaxis:** increase awareness and understanding of post-exposure prophylaxis (PEP) imperatives and options including intradermal administration
- **Community engagement:** encourage community involvement and engagement in activities to eliminate dog-mediated rabies

2 TECHNICAL

Effective animal health and public health systems are required to eliminate dog-mediated human rabies. These systems must be strengthened and resourced appropriately, and gaps identified and filled.

Includes activities for:

- **Vaccination:** ensure safe, efficacious and accessible dog and human vaccines and immunoglobulins, and promote and implement mass dog vaccination as the most cost-effective intervention to achieve dog-mediated human rabies elimination
- **Logistics:** collect data on needs forecasts to inform the vaccine procurement system and to create and sustain the logistics and infrastructure required for effective delivery and implementation of mass dog vaccination programmes and PEP administration
- **Diagnostics:** ensure capacity and capability for rapid and accurate rabies diagnosis through accessible, well equipped laboratories and trained personnel
- **Surveillance:** support improved surveillance, sampling, reporting, and data-sharing
- **Technical support:** provide guidance and technical support for the development and tailoring of regional and national plans, including promoting the use of existing tools
- **Proof of concept:** support proof-of-concept programmes, and then scale up through leveraging of success

3 ORGANIZATION

The One Health approach of close collaboration is applied. Leadership, partnership and coordination for rabies elimination activities arise from the human health and animal health sectors and other stakeholders.

Includes activities for:

- **One Health:** promote the One Health approach and intersectoral coordination through national and regional networks
- **Good governance:** establish good governance, including clear roles, chain of command, measurable outcomes and timelines
- **Harmonization:** align work plans and activities with national and regional priorities and approaches fostering synergies among sectors
- **Coordination:** coordinate and combine human resources, logistics and infrastructure of other programmes and initiatives, as appropriate and feasible
- **Indicators and performance:** identify targets and their indicators to support performance measurement, including surveillance and validation data, to identify areas requiring attention or extra support
- **Monitoring and evaluation:** support monitoring and evaluation of national plans to ensure timely and cost effective delivery

4 POLITICAL

Success depends on political will and support for elimination of dog-mediated human rabies. Political will results from recognition of rabies elimination as a national, regional and global public good.

Includes activities for:

- **Political support:** political support is essential and most relevant during and following country instability (political upheaval, natural disasters, etc.)
- **International support:** encourage countries to request a resolution on dog-mediated human rabies elimination through the World Health Assembly (WHO) and the General Assembly of Delegates (OIE)
- **Legal frameworks:** establish and enforce appropriate legal frameworks for rabies notification and elimination
- **Demonstrating impacts:** demonstrate the compelling case for mass dog vaccination programmes and their impact on protecting and saving human lives
- **Regional engagement:** support active national and regional engagement and cooperation to commit to a rabies elimination programme and promote the exchange of lessons learnt and experiences to leverage resources and engagement

5 RESOURCES

Rabies elimination activities frequently span several years and therefore require sustained, long-term support.

Includes activities for:

- **Case for investment:** promote the case for investment in dog-mediated human rabies elimination to persuade countries, policy makers and donors of the feasibility, merit and value of investing in rabies elimination strategies
- **Business plans:** prepare business plans based on the Global Framework for Dog-mediated Human Rabies Elimination
- **Investment:** encourage different forms of investment and partnerships (private and public investment) to leverage resources and engagement

CRITICAL SUCCESS FACTORS

- Long-term political and social commitment
- Community engagement
- Sustainable vaccination of 70% of the at-risk dog population
- Proof of concept: start small, scale up
- Sufficient resources, logistics and infrastructure
- Promote vaccine banks and other strategies for acquisition of rabies immunoglobulins to ensure sufficient supply of quality-assured rabies vaccines and human immunoglobulin
- Reach remote, rural and at-risk populations
- Conduct performance measurement at all levels
- Maintain trained and motivated implementation personnel

STRATEGIC VISION: zero human deaths from dog-mediated rabies by 2030 in participating countries

Operational plan for dog-mediated rabies control.

A- Preamble: Elimination of dog-mediated human rabies is perfectly feasible by vaccinating dogs with good quality vaccines, in combination with other tools such as public education, promoting responsible dog ownership, and by ensuring appropriate human post-exposure prophylaxis.

Vaccinating 70% of the dog population in high-risk areas is recommended as a way of breaking the transmission cycle and eliminating dog-mediated rabies.

The Global elimination of dog mediated rabies” acknowledged that controlling the disease in dogs remains the most cost-effective way to prevent rabies in humans.

The Global Framework has five pillars for rabies elimination (STOP-R) that include aspects of socio-cultural, technical, organisational, political, and resource mobilisation. The Framework also defines the critical factors that are required for the successful implementation of the elimination of dog-mediated human rabies.

B- The overall objective: Elimination of dog mediated human rabies

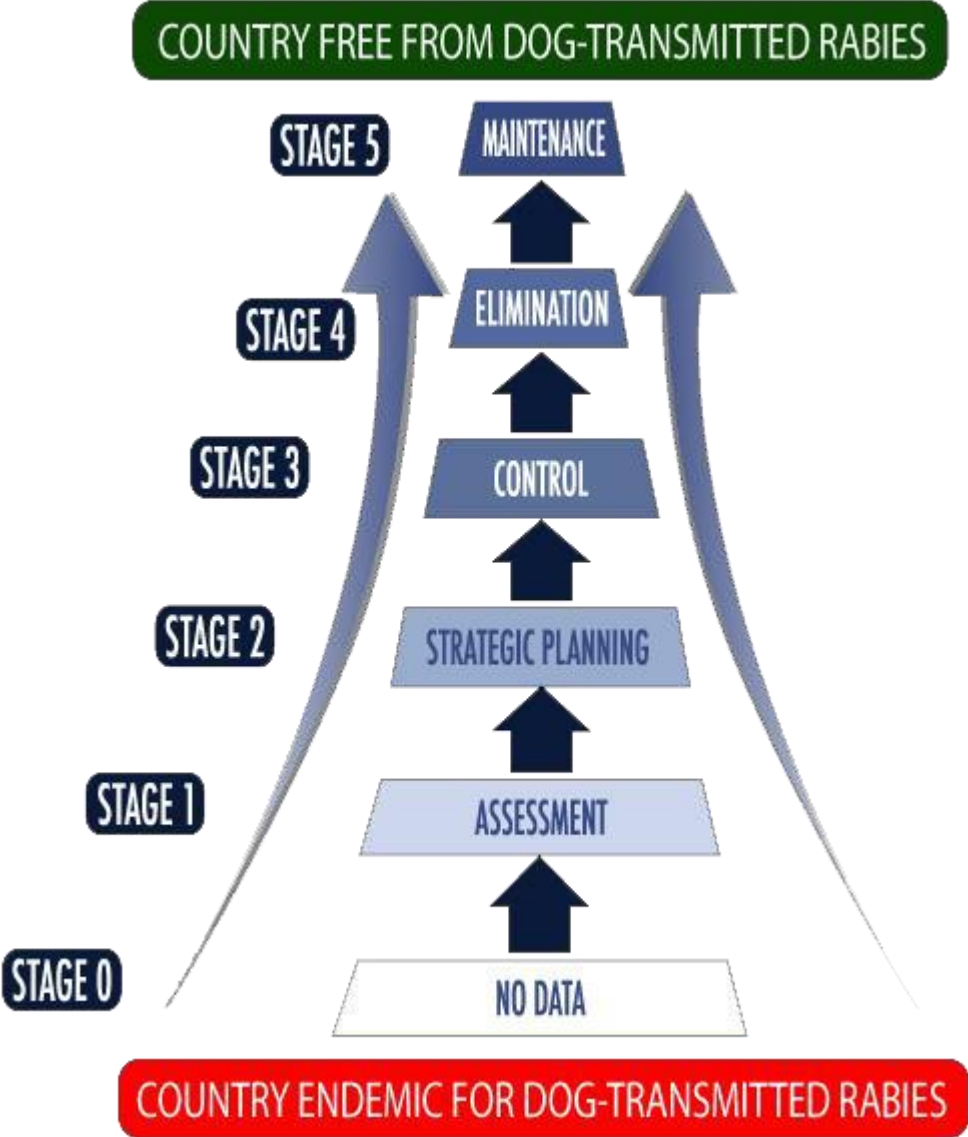
In the Middle East, most reports clearly showed that there was a suspicion of severe underreporting, both, in human and in animal cases. Rabies seems to occur mainly in rural areas, where more vulnerable populations are located (access to health facilities limited, lower education level). In general, the diagnostic capabilities (infrastructure and training of personnel) revealed to be minimal or poor which additionally contributes to underreporting. Human cases are rarely confirmed by laboratory testing and solely based on observation of clinical signs and exposure history.

In the development of rabies elimination strategies, it is important to provide a detailed description of the rabies situation in the country. Showing the distribution of the disease on maps, facilitates the planning and implementation of actions in the field. Data analysis is also important to establish risk factors and to identify priorities. Showing figures is the most efficient and convincing way to raise awareness among decision makers and get the authorities engaged.

National Authorities when designing the rabies control strategy should define the objectives to be achieved, the activities to be implemented, and the expected outcomes. The strategy should include a rabies control programme and a work plan to guide the implementation of activities as well as setting a budget and a timeline.

To achieve the expected outcomes, a dog-mediated rabies elimination strategy should provide a detailed description of its main components, including demographic aspects on human and dogs population related to the occurrence of rabies, define the governance of the national control programme, identifying the competent authorities involved, a description of the rabies epidemiological situation, rabies surveillance, rabies diagnosis, case investigation protocol, national and international collaboration, rabies awareness and education programmes etc.

Below is the diagram of phases that each country should proceed when preparing the national strategy to comply for the achievement of the ultimate goal towards the elimination of dog mediated human rabies.



In the terrestrial animal health code (Chapter 3.1.17), the OIE set the procedures for the application to request official endorsement of national control plan. It is a clear roadmap for countries to embark in the rabies elimination along with the global guidelines.

Having the OIE endorsement of the official control programme would also support the national public health authorities obtain the WHO official validation of zero human deaths from rabies.

In addition to the international standards on rabies, the OIE provides the Performance of Veterinary Services (PVS) Pathway as a tool to assess the quality of Veterinary Services, where each country can use for self-assessment at the beginning of the workplan and during its accomplishment.

Through the OIE PVS pathway, the OIE has been able to support many governments to identify their overarching needs in terms of enhancing the delivery of veterinary services, upon which hinges rabies control.

C- The output objectives:

To coordinate the implementation of a dog mediated rabies control strategy, it is important to establish a **work plan**, the timelines, and the budget of the official control programme. For monitoring the implementation of the workplan, indicators should be selected related to the most important areas and steps where improvements in the programme are needed to decrease incidence of cases in dogs and humans.

The main pillar of a successful strategy to eliminate human rabies is **vaccination** of dogs. 99% of human rabies cases are transmitted by dogs. Vaccination planning should be thoroughly described in a rabies control programme. Aspects related to the epidemiology of the disease, such as risk factors, spatial distribution, species involved, as well as socio-economic and cultural factors, must be considered.

Surveillance is another essential component of a Rabies control program. Surveillance is crucial to establish countries rabies epidemiological profile.

The competent authorities should coordinate actions to collect, dispatch samples, perform the **diagnosis** and share data.

Procedures for notification, reporting, sampling, and testing should be established.

The **analysis of laboratory** data provides valuable information for the competent authorities to identify areas of risk and to define priorities. All aspects on surveillance should be detailed on the control programmes.

Other technical elements should be also defined such as the legal framework to conduct the surveillance and prevention plans, the frequency of vaccination campaigns, the geospatial and temporal distribution of the campaigns, etc. It should also mention the planning for

emergency vaccination and the methods used for estimating vaccination coverage and monitoring.

The plans should also describe the activities for dog population management and methods used for dog population estimation.

Objective 1: Strategic plan established/strengthened on dog-mediated human rabies elimination

Activities

1. Formation of Task Force (national, regional and local level) based on National Rabies elimination plan: VS, PH, Municipalities, Veterinary association, NGO's, MF, Security, etc
2. Develop National Rabies Elimination plan
3. Meeting/workshop/seminar
4. Information sharing system between veterinary and human health
5. Border harmonization activities
6. Others.

Objective 2: Rabies Awareness education campaign conducted

Activities

1. Production of rabies awareness material (radio and TV program on rabies, posters, leaflets, etc)
2. Awareness campaign to the general public (mass media, Church, Mosque...)
3. Rabies education to school children (and evaluation of the awareness program through KAP surveys, etc.)
4. World Rabies Day commemoration

Activities such as awareness campaigns, training, and education programmes on rabies, responsible dog ownership and dog bite prevention should be integrated into the strategy. The targeted audience should be identified and the collaboration with other Competent Authorities should be encouraged.

The programme should also cover the training for personnel involved in surveillance, dog vaccination campaigns and rabies prevention.

Objective 3: Mass dog vaccination campaigns implemented annually (with > 70% coverage)

Activities

1. Procurement of rabies vaccine (OIE Vaccine Bank)
2. Procurement of vaccination materials (dog catching nets, syringe, needles, hand gloves etc.)

3. Dog population estimation (stray, free-roaming, owned dogs) using dog census, household surveys, transect survey, mark-resight survey etc prior to the implementation of the project)
4. Baseline rabies data collection (prevalence in dogs/animals and in humans, dog bite incidence etc before project)
5. Training of the dog vaccinators, other than veterinarians, (identification and formation of vaccination team and training)
6. Conduct of mass dog vaccination campaigns (fixed point vaccination, door to door vaccination....)
7. Mass dog vaccination data capturing and management (should have mobile apps/paper-based form to capture the vaccination data and Analysis)
8. Post-vaccination survey to assess the vaccination coverage (evaluation and monitoring the impact of the vaccination campaign)
9. Dog population management /pet ownership
10. Others.

Objective 4: Rabies surveillance system established or strengthened (indicators based)

Activities

1. Build /strengthen laboratory diagnostic facilities (test kits, diagnostic reagents, sampling kits...)
2. Build laboratory capacities through training/twinning programme
3. Post-mortem brain sample collection and transport to the lab
4. Rabies surveillance database and analysis
5. Integrated Bite Case Management (IBCM)
6. Others.....

Objective 5: Rabies research strengthened

Activities:

1. Build capacity on rabies research/data analysis
2. KAP studies on rabies and dog bites
3. Patterns of rabies occurrences in animals and in humans
4. Analysis and publication of the project outputs
5. Meeting/workshop/seminar to share the experiences
6. Others.

Conclusion: To fight rabies with the objective of eliminating dog-mediated human rabies by 2030, it is important that national governments support the development of public awareness campaigns and the education of target communities to participate in these campaigns.

Improving surveillance (and post vaccination monitoring/surveillance), is also

an important pillar that supports the understanding of trends and guides action in rabies elimination.

Substantial evidence from modelling studies and empirical data indicates that vaccination of 70% of dogs will be sufficient to eliminate canine rabies. This target threshold applies to dog populations across a wide range of settings in the Middle East, regardless of dog density or ownership patterns.

Finally, improving access to affordable and efficacious dog vaccines and human post-exposure prophylaxis vaccines through regional vaccine banks are therefore of paramount importance to the successful control of rabies.

Annex II:

The Blueprint for Canine Rabies Prevention and Control

The Blueprint for Canine Rabies Prevention and Control is an online resource developed by global rabies experts to enable ministries and other interested parties to help themselves through the process of designing, implementing and evaluating a large-scale rabies control programme.

The Blueprint provides:

- Detailed, practical guidance on rabies control
- Single online point of access to all relevant international resources
- Modules on [canine rabies](#), [fox rabies](#) and [surveillance](#)
- User-friendly, Frequently Asked Questions format

The Canine Rabies Blueprint incorporates the **Stepwise Approach towards Rabies Elimination (SARE)**. The SARE tool provides measurable steps, designed as a logical flow of activities, to progress from Stage 0 to Stage 5, in efforts towards freedom from dog-

transmitted rabies. Countries with no information on rabies start at Stage 0, while others may start further along the scale, and when the country reaches Stage 5, it is free from dog-transmitted rabies.

The [SARE tool](#), when used with the rest of the [Canine Rabies Blueprint](#), provides guidance on institutional responsibilities concerning each activity and who might carry out the work. It encourages relevant stakeholders to work together to progress from stage to stage towards rabies elimination.

Regional networks such as the [Pan-African Rabies Control Network](#) (PARACON) are using the SARE tool to self-assess the status of the rabies prevention and control programmes in each country as well as to identify gaps and challenges.

Stepwise Approach towards Rabies Elimination (SARE)

The Stepwise Approach towards Rabies Elimination (SARE) has been developed as a practical planning, monitoring and evaluation tool to guide, develop and refine rabies control programmes. To do this, the Microsoft Excel-based SARE relies on a two-step process:

1. Users assess their own rabies control and elimination programmes' strengths and weaknesses
2. The SARE then assists the user with the development of a customised rabies workplan.

The Assessment component of the SARE enables users to objectively assess the present-day rabies situation across a country, with the tool assessing strengths and weaknesses in terms of seven core components that are critical for effective rabies control and elimination strategies.

The SARE diagram depicting the pathway to rabies elimination, beginning at Stage 0, where little or no data is available for rabies, and progressing through different stages until Stage 5 where a country is declared free from dog-mediated rabies.

SARE Score

Upon completing the Assessment component, a SARE score is automatically generated. The score provides an indication of the progress the assessed country has made towards achieving rabies elimination. The score is provided in increments of 0,5, beginning at Stage 0 (endemic for dog-mediated rabies) and reaching Stage 5 (freedom from dog-mediated rabies).

Detailed outputs from the SARE assessment

In addition to the SARE score, a comprehensive list of both accomplished and pending activities are presented to the user.

Accomplished activities

While the SARE score is valuable in terms of measuring programmatic progress, the accomplished activities provide the users with an exceptional advocacy tool that can be used to highlight successes, measure progress, and lobby for further investment in the rabies control programme.

Pending activities

The pending activities, on the other hand, can help users focus their efforts on the continued implementation and improvement of rabies control and elimination programmes.

To address and accomplish these pending activities, expert guidance is provided through direct links to the Canine Rabies Blueprint for every activity. This provides users with resources and tools that would help accomplish the pending activities. In addition, the next steps to address the pending activities can be planned through the generation of a country-specific workplan as described below.

Workplan



The 7 components of the SARE are the critical components of a dog rabies elimination programme and align with the STOP-R framework and Global Strategic Plan.

The Practical workplan component summarizes all the “pending SARE activities” and **automatically creates** a unique rabies control and elimination workplan that can be used to ensure the pending activities get addressed in a timely manner. To do this, the workplan generates suggested contents for each “Pending SARE activity”, with the information broken down according to the following headings:

1. Suggested steps to achieve the activity.
2. Expected Outcomes.
3. Responsible authorities.
4. Timeframes (including Gantt charts); and
5. Key Performance Indicators.

As the workplan is populated with suggested contents when being generated, users only need to customize the workplan to fit their own needs instead of drafting an entire document. In so doing, the automatically generated multi-year workplan is immediately actionable and measurable on an activity-by-activity basis.

It should be noted that the rabies workplan is not intended to replace a National Strategic Plan (NSP). Instead, the workplan supplements the NSP by providing the granular details with regards to how the NSP will be implemented and be realized.

RABIES: THE FACTS World Health Organization

VIRUS TRANSMISSION



Saliva of infected animals



99% of human cases are caused by **dog bites**

The virus attacks the brain
Rabies is **fatal** once symptoms appear

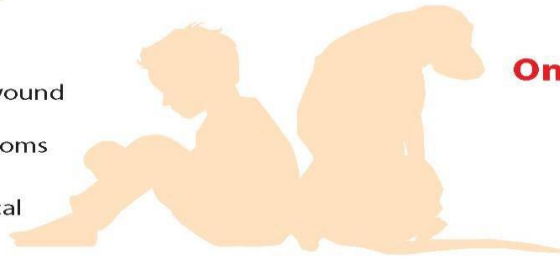


TREATMENT



Thorough washing of the wound with soap, and, vaccine injections can avoid symptoms and **save lives**.

Seek immediate medical care if bitten.



FATALITIES

Rabies affects **poor rural communities** mostly in Asia and Africa



About **One death** every **9 mins**



40% of the victims are children younger than 15



HOW TO PREVENT RABIES TRANSMISSION FROM DOGS?



Raise public **awareness**

Learn **dog body language**



NO DOG BITE = NO RABIES

VACCINATING DOGS SAVES HUMAN LIVES

Rabies is 100% preventable



Vaccinating **70%** of dogs **breaks rabies transmission cycle** in an area at risk

Every dog owner is concerned



28 September

• **World Rabies Day** •

#rabies