Pan American Health Organization
Regional Office of the World Health Organization
Veterinary Public Health
Pan American Foot-and-Mouth Disease Center

1902 - 2012

14ª MEETING OF DIRECTORS OF NATIONAL PROGRAMS FOR RABIES CONTROL IN LATIN AMERICA (REDIPRA)

Lima, Perú, 20-22 de agosto de 2013

Action Plan to eliminate human rabies transmitted by Dogs

REDIPRA14/S8.GR1_Ing

I. INTRODUCTION

1. Rabies is a neglected zoonotic disease that affects especially communities with inadequate access to health services. Historically, most cases of human rabies transmitted by dogs have occurred in vulnerable populations under precarious living and working conditions. Typically, these communities have a large proportion of dogs that have not been vaccinated against rabies[1] and where there is an insufficient availability of immunobiologicals for preventive or post-exposure prophylaxis[2,3].

2. The Americas region has the knowledge and the tools needed for eliminating dog-transmitted rabies.[4] This has been demonstrated by a marked decline in the number of human and canine rabies in a large part of the Americas in the last thirty years. However, some areas still pose major challenges to local and national governments in the implementation of their programs to control this disease. Rabies still cause's deaths in endemic areas, where 95 percent of human deaths are due to bites from rabies-infected dogs.[5] This situation should be changed through prevention and control actions to achieve the definitive elimination of this disease.

3. Rabies can be prevented through vaccination.[6] Coordinated actions for eliminating human rabies transmitted by dogs in the Americas region began in 1983, with technical cooperation from the Pan-American Health Organization (PAHO), which is in charge of coordinating the regional rabies elimination program as well as of the operation of the regional rabies epidemiologic surveillance system.[7] The long-standing solidarity among the countries supports the goal of eliminating human rabies transmitted by dogs.

4. It is ethically unacceptable that cases of human rabies still occur in this decade. Eliminating this disease depends on implementation of specific local strategies, participation of the population in general, and technical cooperation among the countries. The main challenges for eliminating human rabies transmitted by dogs are not technical; they have to do with political determination and commitment by all interested parties, both public and private.

5. This document presents the background and analysis of the situation of dog-transmitted rabies in the Americas and offers an action plan for its elimination, in accordance with the initiative for eliminating neglected diseases and other infections associated with poverty, in conformity with Resolution 19 of the 49th Session of PAHO's Directing Council.[8] This action plan suggests coordination elements at all levels, with special emphasis on mechanisms to ensure the commitment of both authorities and donors. It presupposes that political commitment should extend beyond the cessation of cases of human rabies, so as to prevent reintroduction of the disease, as well as reflecting in sustainable structures and mechanisms.

6. This action plan is aimed on a priority basis at human rabies transmitted by dogs, but recognizes the magnitude of the rabies problem in wild and production animal species, particularly that of bat-transmitted rabies.

II. BACKGROUND

7. The technical fundament of the regional program to eliminate rabies in the Americas is provided by resolutions of the Meeting of Directors of National Programs to Control Rabies in the Americas (REDIPRA). Approximately every two years PAHO convenes REDIPRA, at which the countries' epidemiologic situation is addressed and the strategies to prevent and eliminate rabies are updated. REDIPRA's conclusions and recommendations are submitted to the approval of the ministers of health and of agriculture of the PAHO member countries at the Inter-American Meeting at Ministerial Level on Health and Agriculture (RIMSA). The regional inter-sector policies related to the rabies elimination program are discussed at RIMSA, to be later submitted to PAHO's Directive Council.

8. There are firm international political commitments and mandates for the elimination of human rabies transmitted by dogs.[9-20] The current rabies program resulted from a RIMSA III[21] initiative and from the 21st Session of PAHO's Directive Council in 1983, which led to the first REDIPRA, held in Guayaquil, Ecuador, in December of that same year. That meeting approved the strategies and the action plan for eliminating urban rabies from Latin America's major cities[9].

9. The objectives of the rabies control program were expanded in 1992 by REDIPRA IV, which added the objective of eliminating dog-transmitted rabies in small settlements and in rural areas. That meeting stressed the importance of wild rabies.[11] In 2005, PAHO, at the request of RIMSA XIV, revised the action plan, giving origin to a new version for the 2005-2009[22-23] period. In 2008, PAHO's Directive Council issued Resolution CD 48.R[13], urging the countries to adopt and maintain the requisite actions to eliminate human rabies transmitted by dogs by 2012.[24] In 2009, the 49th

Session of PAHO's Directive Council,[8] having in view the initiative to control neglected diseases associated with poverty, issued Resolution[19], urging the countries to undertake the commitment to eliminate the neglected diseases, including rabies, by 2015.

10. PAHO is in charge of maintaining the Regional Information System of Epidemiologic Surveillance of Rabies in the Americas (SIRVERA). This data collection tool has been crucial to the epidemiologic surveillance of rabies, as it has produced reports on human and on animal rabies, based on official data periodically entered into the system by the ministries of health and of agriculture of the member countries.[25-26]

11. The progress achieved in controlling the disease in the region in the last thirty years indicates that human rabies transmitted by dogs can be eliminated on the American continent[27]. This achievement has been due largely to strong cooperation between the health and the agricultural sectors, as well as with regional and international organizations, public and private agencies, and nongovernmental organizations. Governments must undertake the political commitment to eliminate human rabies transmitted by dogs and to appropriate funds to achieve the elimination goal, as well as including rabies on the agenda of their public policies. It should be pointed out that the Americas region has succeeded in eliminating the circulation of the rabies virus in the canine population.[28-29].

12. The progress achieved in areas now free from rabies must be maintained. The requisite control and surveillance for eliminating rabies presuppose the continuity of political, technical, and budgetary support.

III. ANALYSIS OF THE SITUATION

13. Since the introduction of the Rabies Elimination Program in 1983, the number of cases of human rabies has dropped 95 percent (from 355 cases in 1982 to 10 cases in 2012).[30] The decline in the number of rabies in dogs has been of 98 percent (from 25,000 cases in 1980 to 400 in 2010).

14. Today, cases of human rabies transmitted by dogs show localized geographic distribution.[31] Of the 570 first-level subnational units (province, state, department) in Latin America, only 11 units (2 percent) have recorded cases of human rabies in the last four years. The cases are concentrated on the outskirts of large cities and on international border zones, where the transient population has little knowledge of the risks of the disease and limited access to quality health services.

15. The reduction of the disease's burden in the general population, coupled with the appearance of other health priorities, has led to the decline of institutional interest in rabies and of the resources to control it. This has hindered the elimination of the disease and increased the risk of its introduction in free areas. Under these circumstances, one of the most important elements is the efficient application of immunologic agents in a timely manner and of the proper quality in priority risk areas. The inconsistent purchase and availability of vaccines affect the planning and

implementation of vaccination campaigns. Although more than forty million dogs are vaccinated in the Americas region, many risk areas are unable to maintain the required vaccination levels to reduce the transmission of rabies among dogs. Moreover, extending the effective post-exposure prophylaxis to all humans that have been exposed poses a logistic challenge, owing to the marginalization of the currently affected populations.

16. In addition to the poverty conditions that characterize the outskirts of large cities still affected by the disease, there are international border zones affected with violence and social insecurity, with a transient population that has little information about the risks associated with rabies and about the proper health care in case of exposure.

17. The limitations to the efforts to control rabies in areas of greater risk affect also the epidemiologic surveillance systems. Although the major urban centers do have proper surveillance systems, the areas of greater risk face limitations of sensitivity, readiness, and coverage regarding detection of and early attention to urban and wild rabies foci. The surveillance systems show efforts for cooperation and functional coordination among the laboratories of the National Laboratories Network, both internally and with the health and agricultural laboratories. But only some of the laboratories adopt systems to monitor diagnostic quality, coordinated by national reference laboratories, by sending codified samples to the different laboratories for evaluation.

18. Since the introduction of the regional program in 1983, great efforts have been spent on education and communication. The combination of multiple education activities, such as Monica and friends against rabies, the World Rabies Control Day, and the Red Collars campaign, have helped to maintain alive the population's awareness of the disease. Owing to the significant decline in the number of rabies cases in recent years and the marginalization of affected populations, the disease has received less attention and space from the communication media.

IV. ACTION PLAN FOR ELIMINATING HUMAN RABIES TRANSMITTED BY DOGS

The objectives of this action plan are centered on the elimination of human rabies transmitted by dogs, by reinforcing and updating the strategies that have been successfully adopted so far, through activities to be undertaken in the 2014-2018 period.

19. This action plan for eliminating human rabies transmitted by dogs:

    1) Is based on the available data, as regards both its conception and implementation. It will promote and support models appropriate to local realities, having in view the subregional initiatives under way. It will be subject to changes owing to the incorporation of new data on the disease's epidemiology or on the results of interventions.

    2) It aims at inter-program and inter-institutional coordination and at alignment with other programs or projects that may contribute to the elimination of human rabies transmitted by dogs.

    3) It will promote solutions that are sustainable in the long term, which will last beyond the plan's lifetime, and will do so through across-the-board activities that foster general capabilities or that have application in other health areas.

20. The action plan is grounded on the following realities:

    1) Rabies is a disease that can be prevented by vaccination.

    2) Human rabies is a disease that affects mostly vulnerable populations, particularly children.

    3) In addition to its obvious negative effects on human wellbeing, rabies has economic implications: direct implications, stemming for instance from the cost of human vaccination and of programs of vaccination and control of canine populations; and indirect implications, such as its impact on tourism owing to a negative perception of the disease’s risk.

    4) Elimination of human rabies transmitted by dogs can be achieved by a combination of the following actions: pre- and post-exposure prophylaxis of people exposed to rabies, control and/or elimination of rabies in dogs, inter-sector cooperation at all levels, and education and awareness of the community.

OBJECTIVE 1: To ensure timely access to and availability and quality of immunobiological agents for persons exposed to the rabies virus

Indicators

- Number of countries that use vaccines produced in cell culture (CC). (Baseline: 17; target: 21).
- Number of countries with immunobiologics estimates and ensured purchase mechanisms. (Baseline: 14; target: 21)
- Number of countries where 100 percent of local health care units considered essential for providing timely service to the population under rabies risk with ensured access to immunobiologics to all persons exposed to the rabies virus. (Baseline: unknown; target: 17).
- Number of countries that have up-to-date guides according to WHO norms (2013) on post-exposure prophylaxis (PEP) and an up-to-date record system (Baseline: 0; target: 21)

OBJECTIVE 2: To maintain appropriate vaccine coverage of dogs in risk areas.

Indicators

- Number of countries that have mechanisms for planning, purchasing, and distributing canine rabies vaccines (Baseline: 8; target: 17)
- Number of countries that have estimates of canine populations in risk areas. (Baseline: 0; target: 17)
- Number of countries that submit yearly indicators of vaccine coverage and report on the effectiveness (to be determined) of vaccination campaigns in risk áreas (Baseline: 0; target: 17)

OBJECTIVE 3: To strengthen national action plans to control rabies, based on the data available at all administrative levels.

Indicators

- Number of countries that have national plans and the required funds for their implementation (Baseline: 0; target: 17).
- Number of countries that do yearly evaluation of their rabies control program (Baseline: 0; target: 17).
- Number of countries where cases of human rabies transmitted by dogs have been recorded in the last three years and which undertake an independent evaluation of their rabies control programs (Baseline: 0; target: 7).
- Number of countries that apply risk stratification and define intervention priorities (Baseline: 10; target: 17).
- Number of countries that have systematic record and learning mechanisms after the occurrence of cases of human rabies transmitted by dogs (Baseline: 0; target: 17).

OBJECTIVE 4: To strengthen REDIPRA through networks to ensure participation of and cooperation among countries.

Indicators

- Number of scientific and technical committees that systematically contribute to this plan's implementation (epidemiologic surveillance, laboratories, prevention and prophylaxis, communication and education, and evaluation) (Baseline: 0; target: 5).

OBJECTIVE 5: To strengthen the epidemiologic surveillance of human rabies transmitted by dogs.

Indicators

- Number of countries that yearly submit samples for laboratory diagnostic of a minimum of 0.1 percent of the estimated canine population in risk areas, distributed regularly over the entire year (Baseline: 0; target: 17).
- Number of countries that have surveillance systems that allow the analysis of epidemiologic data at different levels of aggregation (time, space, and demographic characteristics) (Baseline: 12; target: 17).
- Number of countries that report cases of human rabies immediately and cases of canine rabies on a monthly basis to SIRVERA, including the nonoccurrence of cases and the number of processed samples. (Baseline: 12; target: 17).

OBJECTIVE 6: To implement an Inter-American Network of Rabies Diagnostic Laboratories (REDILAR) to facilitate expeditious diagnostic, provide training, and establish a quality control system, with emphasis on risk areas.

Indicators

- Number of countries that participate in REDILAR, which have approved bylaws defining the network's operation base (Baseline: 2; target: 25).
- Number of countries that have a quality system in place in their laboratories. (Baseline: 9; target: 25).
- Number of countries that do antigen characterization of 100 percent of the human and canine rabies samples (Baseline: 11; target: 25).

OBJECTIVE 7: To implement a mechanism of education and communication about the rabies risk.

Indicators

- Number of countries that have risk communication strategies in case of rabies outbreaks (Baseline: 17; target: 21)
- Number of countries that carry out studies in risk communities to identify the need of communication about the rabies risk, behavior, and responsible ownership of dogs (Baseline: 0; target: 11)
- Number of countries with recent cases (in the last three years) or that are in a risk situation, which carry out systematic actions to raise the awareness of the different segments of society (e.g., health personnel, school population, communities in risk areas, etc.) about the risks of rabies (Baseline: 14; target: 21)

OBJECTIVE 8. Adoption, by the countries of the region, of the document “Procedures for the declaration of countries or areas as free of dog-transmitted human rabies, variants 1 and 2”.

Indicators

- Number of countries that approve and accept the document to be implemented in their territory (Baseline: 3; target: 21).
- Percentage of countries that have developed and implemented the normative mechanism for the declaration of municipalities and areas as free inside their territories (Baseline: 10; target: 21)

V. MONITORING, ANALYSIS, AND EVALUATION

21. The follow-up and evaluation of this strategy are aligned with the management framework based on the Organization results, as well as on its performance follow-up and evaluation processes. Accordingly, progress reports will be prepared, based on the information available each semester during the 2014-2018 period.

22. The progress in the implementation of the strategies for the prevention and elimination of human rabies, particularly human rabies transmitted by dogs, must be continuously controlled and evaluated at both the national and the regional levels. Functional follow-up and evaluation are crucial for the action plan's success. Follow-up and evaluation at the national level are essential for determining the effectiveness of the national strategy, the identification of areas to be improved, and the optimization of the use of financial and human resources. The successful follow-up and evaluation requires data; to this effect, rabies must be a disease of obligatory notification. At the regional level, monitoring and evaluation are essential for guiding the planning and execution of the regional strategy to eliminate human rabies transmitted by dogs.

23. Based on the reports on the action plan's implementation, which will be prepared and distributed by the pertinent technical staff and which will point out implementation strengths and weaknesses, corrective actions will be proposed.

VI. REFERENCES

1. Fooks, A. R. Rabies remains a 'neglected disease'. Euro Surveill. 2005 Nov; 10(11):211-2. http://www.eurosurveillance.org/ViewArticle.aspx?ArticleId=574
2. Ruiz, M.; Chávez, C. B. Rabies in Latin America. Neurol Res. 2010 Apr;32(3):272-7 http://www.ingentaconnect.com/content/maney/nres/2010/00000032/00000003/art00007?token=00591fa815909fd14027fb3573d2570257045494a6c7a316a42576b357c4e75477e4324576b6427383c42526b
3. Benitez, J. A.; Rodriguez-Morales, A. J.; Vivas, P.; Plaz, J. Burden of zoonotic diseases in Venezuela during 2004 and 2005. Ann N Y Acad Sci. 2008 Dec;1149:315-7. http://onlinelibrary.wiley.com/doi/10.1196/annals.1428.051/abstract;jsessionid=EBD61AB515422BA536A530B86C40D05D.d02t04
4. Pan-American Health Organization. Epidemiological profiles of neglected diseases and other infections related to poverty in Latin America and the Caribbean. Washington, D.C.: PAHO; 2009. 107p. (HSD/CD/543). http://www2.paho.org/hq/dmdocuments/2009/nds-epi-profiles.pdf
5. M. C. Schneider; A. Belotto; M. P. Adé; S. Hendrickx; L. F. Leanes; M. J. F. Rodrigues; G. Medina; and E. Correa. "Current status of human rabies transmitted by dogs in Latin America," Cadernos de Saúde Pública, v. 23, n.9, p. 2049-2063, 2009. http://www.plosntds.org/article/info%3Adoi%2F10.1371%2Fjournal.pntd.0000964
6. Takayama, N. Rabies: a preventable but incurable disease. J. Infect Chemother. 2008 Feb;14(1):8-14. http://link.springer.com/article/10.1007%2Fs10156-007-0573-0
7. Pan-American Health Organization. Elimination of human rabies transmitted by dogs in Latin America. Washington, DC, 2005. http://bvs1.panaftosa.org.br/cgi-bin/wxis1660.exe/lildbi/iah/
8. Pan-American Health Organization. Resolution CD49.R19: Elimination of neglected diseases and other infections related to poverty. In: 49th Directive Council, 61th Session of the World Health Organization (WHO)'s Regional Committee for the Americas; September 28-October 2, 2005; Washington, D.C., USA. http://new.paho.org/hq/dmdocuments/2009/CD49.R19%20(Esp.).pdf
9. Pan-American Health Organization (PAHO). I Meeting of Directors of National Programs to Control Rabies in Latin America; December 12-14, 1983; Guayaquil, Ecuador. http://bvs1.panaftosa.org.br/local/File/textoc/I-REDIPRA-esp.pdf
10. Pan-American Health Organization (PAHO). III Meeting of Directors of National Programs to Control Rabies in Latin America; October 20-21, 1989; Porto Alegre, RS, Brazil. http://bvs1.panaftosa.org.br/local/File/textoc/III_Redipra_esp.pdf
11. Pan-American Health Organization (PAHO). IV Meeting of Directors of National Programs to Control Rabies in Latin America; October 8-9, 1992; Mexico City, D.F., Mexico. http://bvs1.panaftosa.org.br/local/File/textoc/IV_Redipra_esp.pdf
12. Pan-American Health Organization (PAHO). V Meeting of Directors of National Programs to Control Rabies in Latin America; February 13-15, 1995; Santo Domingo, Dominican Republic. http://bvs1.panaftosa.org.br/local/File/textoc/V_Redipra_esp.pdf
13. Pan-American Health Organization (PAHO). VI Meeting of Directors of National Programs to Control Rabies in Latin America; April 1-3, 1997; Quito, Ecuador. http://bvs1.panaftosa.org.br/local/File/textoc/VI_Redipra_esp.pdf
14. Pan-American Health Organization (PAHO). VII Meeting of Directors of National Programs to Control Rabies in Latin America; ? 12-14, 1998; Puerto Vallarta, Jalisco, Mexico. http://bvs1.panaftosa.org.br/local/File/textoc/VII_Redipra_esp.pdf
15. Pan-American Health Organization (PAHO). VIII Meeting of Directors of National Programs to Control Rabies in Latin America a; October 16-18, 2000; Lima, Peru. http://bvs1.panaftosa.org.br/local/File/textoc/VIII_Redipra_esp.pdf

16. Pan-American Health Organization (PAHO). IX Meeting of Directors of National Programs to Control Rabies in Latin America; October 7-9, 2002; Santa Cruz de la Sierra, Bolivia. http://bvs1.panaftosa.org.br/local/File/textoc/IX_Redipra_esp.pdf

17. Pan-American Health Organization (PAHO). X Meeting of Directors of National Programs to Control Rabies in Latin America; October 28-30, 2004; Santo Domingo, Dominican Republic. http://bvs1.panaftosa.org.br/local/File/textoc/X-redipra-esp.pdf

18. Pan-American Health Organization (PAHO). XI Meeting of Directors of National Programs to Control Rabies in Latin America; October 12-13, 2006; Brasilia, DF, Brazil. http://bvs1.panaftosa.org.br/local/File/textoc/XI-Redipra-esp.pdf

19. Pan-American Health Organization (PAHO). XII Meeting of Directors of National Programs to Control Rabies in Latin America; November 30-December 2, 2008; Antigua Guatemala, Guatemala. http://bvs1.panaftosa.org.br/local/File/textoc/XII-Redipra-conclusiones.pdf

20. Pan-American Health Organization (PAHO). XIII Meeting of Directors of National Programs to Control Rabies in Latin America; August 24-25, 2010; Buenos Aires, Argentina. http://bvs1.panaftosa.org.br/local/File/textoc/REDIPRA13-conclusiones.pdf

21. Pan-American Health Organization (PAHO). RIMSA III. Inter-American Meeting at Ministerial Level on Health and Agriculture. Washington, D.C. June-July 1983 http://hist.library.paho.org/spanish/GOV/CE/CE90_16.pdf

22. Pan-American Health Organization (PAHO). RIMSA III. Inter-American Meeting at Ministerial Level on Health and Agriculture; June 20-24, 2005. Buenos Aires, Argentina http://www.paho.org/spanish/gov/ce/ce136-13-s.pdf

23. Pan-American Health Organization (PAHO). Action Plan for Prevention and Control of Rabies in the Americas, Phase 2005-2009 http://www.paho.org/spanish/AD/DPC/VP/rabia-plan-05-09.htm

24. Pan-American Health Organization. Resolution CD48.R13: 15th Inter-American Meeting at Ministerial Level on Health and Agriculture (RIMSA): "Agriculture and Health: Alliance for Equity and Rural Development in the Americas". In: 48th Directive Council, 60th Session of the World Health Organization's Regional Committee for the Americas; Washington, D.C., USA, September 29-October 3, 2008. http://www.paho.org/spanish/gov/cd/cd48.r13-s.pdf

25. Pan-American Health Organization (PAHO). System of Epidemiologic Information on Rabies (SIEPI). http://siepi.panaftosa.org.br/Panel.aspx?Idioma=e

26. Pan-American Health Organization (PAHO). Regional System of Information on Rabies Epidemiologic Surveillance (SIRVERA). http://sirvera.panaftosa.org.br/AcessoLivre/Logon.aspx?ReturnUrl=%2fAcessoGeral%2fDefault.aspx

27. 27. M. C. Schneider, A. Belotto, M. P. Adé, S. Hendrickx, L. F. Leanes, M. J. F. Rodrigues, G. Medina, and E. Correa, "Current status of human rabies transmitted by dogs in Latin America," Cadernos de Saúde Pública, v. 23, n.9, p. 2049-2063, 2009. http://www.scielosp.org/pdf/csp/v23n9/06.pdf

28. Belotto, A.; Leanes, L .F; Schneider, M. C.; Tamayo, H.; Correa, E. Overview of rabies in the Americas Virus Res. 2005; 111: 5-12. http://bvs.panaftosa.org.br/textoc/Belotto-Leanes-overview-rabies-Americas.pdf

29. Rupprecht, C E.; Barrett, J.; Briggs, D.; Cliquet, F.; Fooks, A. R.; Lumlertdacha, B.; Meslin, F.X.; Müler, T.; Nel, L. H.; Schneider, C.; Tordo, N.; Wandeler, A. I. Can rabies be eradicated? Dev Biol (Basel). 2008;131:95-121. http://www.ncbi.nlm.nih.gov/pubmed/18634470

30. Pan-American Health Organization. Elimination of human rabies transmitted by dogs in Latin America: analysis of the situation, year 2004. http://www.paho.org/spanish/ad/dpc/vp/rabia-sit.pdf

31. Schneider, M.C.; Aguilera, X.P.; Barbosa da Silva Junior, J.; Ault, S.K.; Najera, P.; Martinez, J.; Requejo, R.; Nicholls, R.S.; Yadon, Z.; Silva, J.C.; Leanes, L.F.; Periago, M.R. Elimination of neglected diseases in Latin America and the Caribbean: a mapping of selected diseases. PLoS Negl Trop Dis. 2011 Feb 15;5(2):e964. http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3039687/pdf/pntd.0000964.pdf