2016: the beginning of the end of rabies?

Published Online
September 27, 2016
http://dx.doi.org/10.1016/S2214-109X(16)30245-5

For **World Rabies Day** see https://rabiesalliance.org/world-rabies-day/

Sept 28 is the tenth annual World Rabies Day. It is a date that commemorates the anniversary of the 1895 death of Louis Pasteur, who developed the first human rabies vaccine. Modern effective vaccines, combined with other interventions, the necessary political will, and community awareness make the disease 100% preventable. Yet, an estimated 59 000 people still die from the disease every year.[1] World Rabies Day is thus an uncomfortable reminder for the global health community of the ongoing neglect of this disease. The theme for 2016 is "Educate. Vaccinate. Eliminate", a slogan that emphasises the pillars of rabies prevention and the vision to end human rabies deaths.

Rabies has no cure, and by the time of clinical onset it is invariably fatal. More than 95% of deaths occur in Africa and Asia, 80% of which are in people living in rural, underserved populations, most of whom are children.[2] Community awareness about the power of preventing dog bites and of life-saving human post-exposure prophylaxis is key. 95–99% of human rabies cases are from dog bites, meaning that canine vaccination programmes are crucial if the transmission cycle is to be broken.[3] Cross-sectoral solutions from stakeholders in both human and animal health systems are essential for the greatest benefits to be realised.

In December, 2015, WHO, the World Organisation for Animal Health (OIE), the Food and Agriculture Organization (FAO), and the Global Alliance for Rabies Control (GARC) endorsed a global framework to eliminate human deaths from dog-mediated disease by 2030.[4] The decision was reinforced by the OIE in May this year.[5] A business plan by the key organisations to quantify the costs of reaching zero rabies deaths across the world is under development.

Under our One Health Initiative, WHO, OIE, FAO, and GARC are working on concurrent campaigns to eliminate canine rabies through the vaccination of dogs, the treatment of all potential human rabies exposures with wound washing and post-exposure prophylaxis, and the improvement of education about rabies prevention where it is needed most. By prioritising rabies, our partnership also intends to leverage the global political will needed to eliminate the disease. Reaching zero rabies deaths would contribute towards fulfilling the Sustainable Development Goals, particularly goal 3·3, which targets an end to epidemics of neglected tropical diseases. The goal is ambitious but possible, as evidenced by the progress made in rabies campaigns around the world.[4,6] Such examples of successful multisectoral approaches serve as both a reference and motivation for future campaigns.

Countries will need improved access to high quality and optimally priced dog and human vaccines, as well as to rabies immunoglobulins. Insufficient national forecasting at present means that vaccine requests from countries to manufacturers can be left unfulfilled because of long lead times in production. In such instances, countries are forced to turn to suppliers without quality-assured vaccine. Improvements in supply will help to overcome these difficulties. To match the OIE-led dog rabies vaccine bank,[7] WHO is therefore creating a human rabies vaccine stockpile, planned to be operation by the end of next year.

The opportunity of a potential GAVI investment into human rabies vaccine in 2018 has rallied partners and countries to build the evidence base to help inform the investment decision process. Investment from GAVI would be a game changer and substantially increase awareness about this disease and stimulate the necessary political will. With dog vaccination campaigns increasing in reach, the possibility of interrupting rabies transmission will become more tangible. This goal is helped by the availability of online resources such as the Blueprint for Rabies Prevention and Control,[8] which offers practical information, expert advice, and case studies to support countries that want to eliminate rabies. FAO and GARC are assisting countries with practical tools for developing their rabies control strategies.[9]

World Rabies Day increases the awareness about this neglected and horrific disease. It will also make people aware of the realistic ambition of interrupting transmission in dogs and, in turn, the reality of one day eliminating dog-mediated rabies in people. We have all the tools to end this neglected zoonotic disease—what is required is a coordinated effort from all stakeholders at local, national, regional, and global levels to realise the vision of zero human deaths from dog-mediated rabies by 2030.

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We declare no competing interests.

1 WHO. Human rabies transmitted by dogs: current status of global data. *Wkly Epidemiol Rec* 2016; **2:** 13–20.
2 Hampson K, Coudeville L, Lembo T, et al. Estimating the global burden of endemic canine rabies. *PLoS Negl Trop Dis* 2015; **9:** e0003709.
3 WHO. Expert consultation on rabies: second Rrport. Geneva: World Health Organization, 2013.
4 WHO, World Organisation for Animal Health. Global elimination of rabies: the time is now. http://apps.who.int/iris/bitstream/10665/204621/1/WHO_HTM_NTD_NZD_2016.02_eng.pdf?ua=1 (accessed Aug 19, 2016).
5 World Organisation for Animal Health. Resolutions adopted by the World Assembly of the Delegates of the OIE. http://www.oie.int/fileadmin/Home/eng/About_us/docs/pdf/Session/2016/A_RESO_2016_public.pdf (accessed Aug 19, 2016).
6 Vigilato MA, Cosivi O, Knöbl T, Clavijo A, Silva HM. Rabies update for Latin American and the Caribbean. *Emerg Infect Dis* 2013; **19:** 768–69.
7 OIE. Vaccine banks. http://www.oie.int/support-to-oie-members/vaccine-bank/ (accessed Aug 19, 2016).
8 GARC. The blueprint for rabies prevention and control. http://rabiesblueprint.org/ (accessed Aug 19, 2016).
9 FAO. Developing a stepwise approach for rabies prevention and control. FAO/GARC Workshop; Rome, Italy; Nov 6–8, 2012. http://www.fao.org/docrep/019/i3467e/i3467e00.htm (accessed Aug 19, 2016).