



Rabies in Serbia

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April 23-25, 2018 * Annecy, France



INTRODUCTION Rabies is still present in Serbia. But only sporadic cases of fox rabies cases are registered in last couple of years. Namely the epizootiological situation of rabies in Serbia has been drastically changed since 2010, when Veterinary Directorate, Ministry of agriculture, forestry and water management has started multi-annual project of oral vaccination of wildlife against rabies, co-funded by EU. Mass vaccination campaigns of dogs have been started in 1960s, which enabled eradication of dog rabies in 1980s, when the last human rabies case was registered. From that period on sylvatic rabies with fox as the main reservoir of rabies prevailed in Serbia with occasional spillovers on domestic animals. Round 200 animal rabies cases were diagnosed on average annually till 2010, when the oral vaccination campaigns have started with huge success. In 2017 only one fox rabies case was registered.

HUMAN RABIES IN 2017

16.898 animal bites

0 Rabies deaths, 0 Clinically diagnosed, 0 Laboratory confirmed

SINCE 1980 THERE IS NO HUMAN RABIES CASES

PRE-EXPOSURE PROPHYLAXIS (PrEP)

Vaccination schedule: 3-Dose IM regimen 0, 7, 21

Is the most commonly used schedule

Vaccine used: Verorab®, Sanofi Pasteur

80 people received PrEP, only laboratory staff, veterinarians, animal handlers and wildlife officers as well as travelers to endemic countries.

Who pays for PrEP? Patient.

POST-EXPOSURE PROPHYLAXIS (PEP)

Vaccination schedule: 4 dose modified Essen regimen 0, 3, 7, 14

2 weeks after the last dose - serology testing (RFFIT).
If below 0.5 I.U./ml - buster dose and RFFIT once again.

Vaccine used: Verorab®, Sanofi Pasteur

430 people received PEP.

341 received RIG.

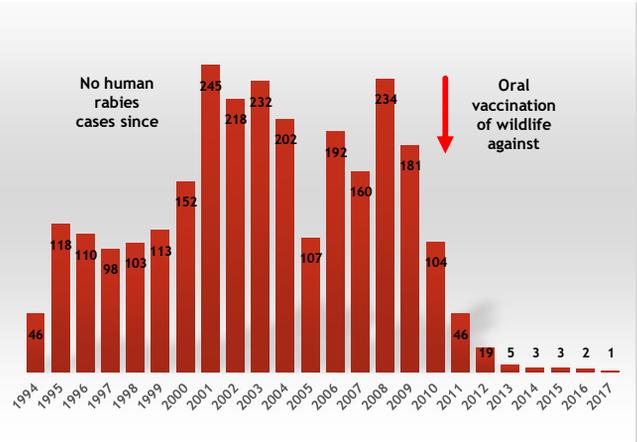
Who pays for PEP? Central and local government (through obligatory health insurance).

ANIMAL RABIES IN 2017

1 rabid fox (laboratory confirmed)

* 95.536 microchipped dogs 281.010 vaccinated dogs
Ca. 80-90% vaccinated

Animal rabies cases in Serbia and Montenegro 1994 – 2005 and in Republic of Serbia 2006 – 2017



* Source: Veterinary Directorate, Ministry of agriculture, forestry and water management

Pasteur Institute in Novi Sad is a national reference institution for rabies for more the 95 years, with national reference laboratory for rabies responsible for all aspects of rabies in Serbia. It is also a national rabies coordination unit with strong bonds with veterinary service and Veterinary Directorate, Ministry of agriculture, forestry and water management. The permanent data interchange enables the exact epizootiology situation concerning rabies cases in Serbia on a daily basis. Each of 27 antirabies treatment units in Serbia is timely informed about the result of rabies diagnostics in animal that injured the patients.

KEY ACTION POINTS - Oral vaccination of wildlife against rabies. Monitoring of the effectiveness of oral vaccination campaigns (in continuation from 2011). Systematic, compulsory by law, registration, microchipping and vaccination of dogs since 2007.

| Actions | Achieved or Progress so far? | Challenges | Future actions |
|---|---|--|--|
| 1) Post-exposure treatments in humans. | Through improved epizootiological situation a steady decrease in post-exposure treatments in humans. | Relaxation in necessity to impose a PEP could be fatal. | Timely informing the PEP antirabies treatment centers about the rabies epizootiological situation. |
| 2) Rapid response and observation of rabies - susceptible animals. Integrated (human-animal) bite cases management. | Good coordination within health and veterinary service. All information is archived in Pasteur Institute and in Veterinary directorate. | Often able to treat human bite case, not always able to locate the animal responsible for bite. Increasing number of stray dogs. | Financial motivation of veterinarians in private praxis to participate more. Motivation of community to solve the problem of stray dogs. |
| 3) Information, Education and Communication (IEC). | Rabies education initiatives in public schools and continuing medical education of physicians (CME). | More financial resources needed for IEC and CME. Lower sense of urgency when there is no outbreak. | Seek government commitment to allocate budget for IEC and CME. |



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But only sporadic cases of fox rabies cases are registered in last couple of years.
- ▶ Epizootiological situation of rabies in Serbia has been drastically changed since 2010, when Veterinary Directorate, Ministry of agriculture, forestry and water management has started multi-annual project of oral vaccination of wildlife against rabies, co-funded by EU.
- ▶ Mass vaccination campaigns of dogs have been started in 1960s, which enabled eradication of dog rabies in 1980s, when the last human rabies case was registered.
- ▶ From that period on sylvatic rabies with fox as the main reservoir of rabies prevailed in Serbia with occasional spillovers on domestic animals.
- ▶ Round 200 animal rabies cases were diagnosed on average annually till 2010, when the oral vaccination campaigns have started with huge success.
- ▶ In 2017 only one fox rabies case was registered.

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Who pays for PrEP?

Institution bear the costs for their employee or they pay for itself. It is not currently covered by the National Health Insurance Fund

ANIMAL RABIES IN 2017

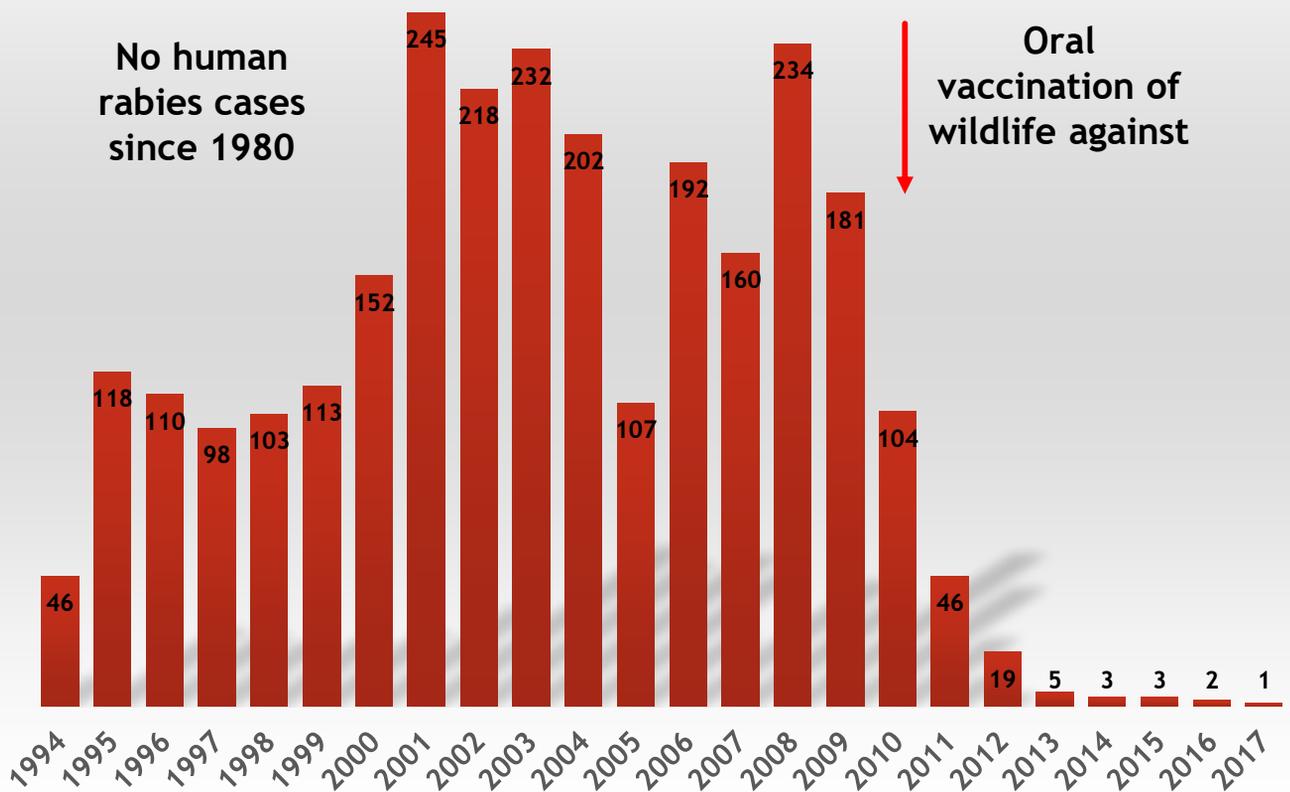
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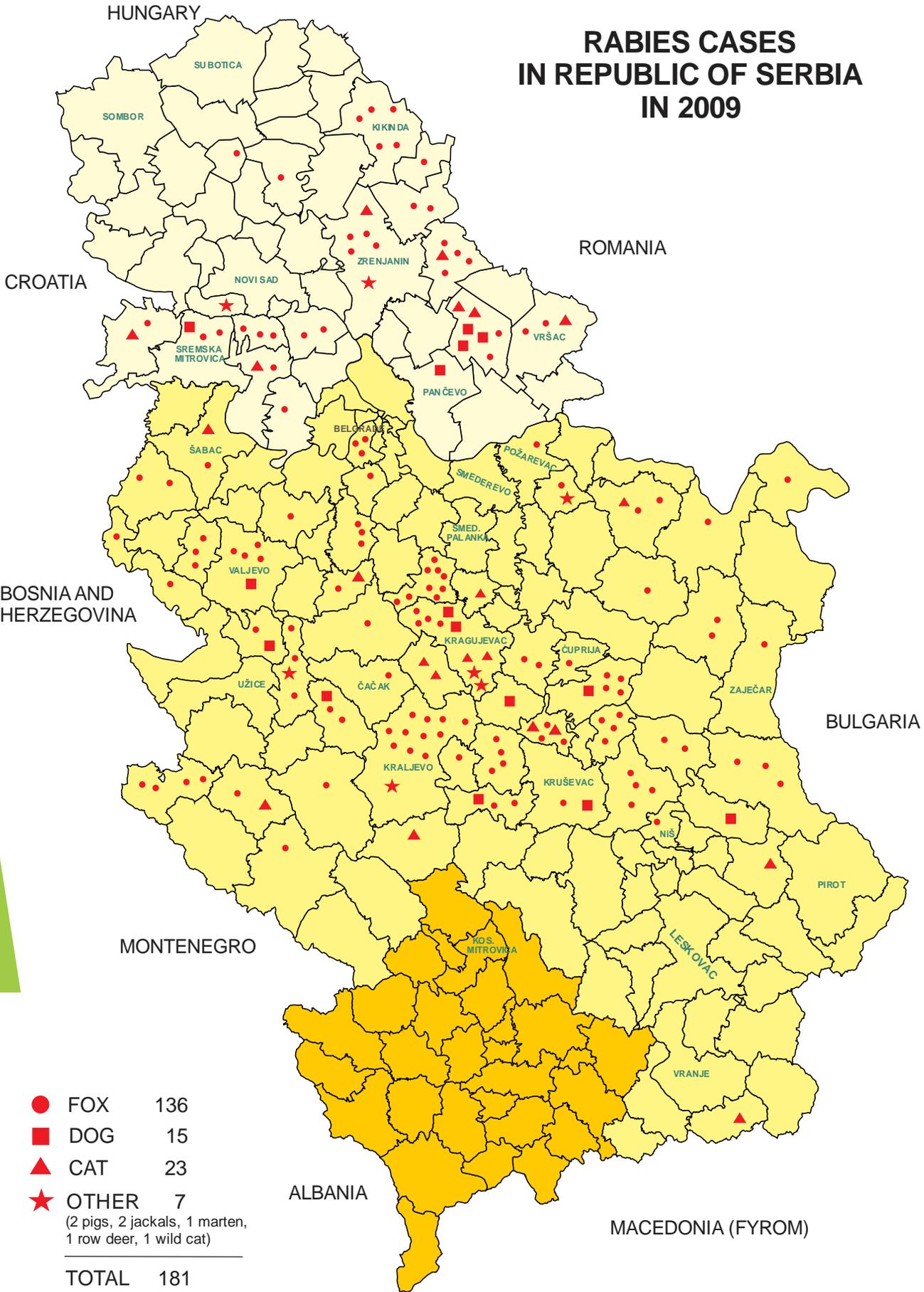
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RABIES CASES IN REPUBLIC OF SERBIA IN 2009



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