Istituto Zooprofilattico Sperimentale del Lazio e della Toscana *M. Aleandri*

SIE - API 2026
Roma, 14-18 settembre

CeRMaPri
Centro di Referenza Nazionale per le Malattie nei Primati non Umani

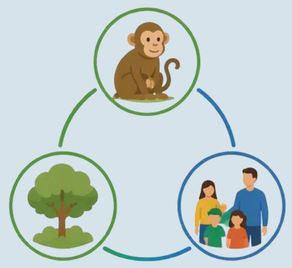
XXVI Congresso Nazionale dell'Associazione Primatologi Italiani (API)
Bioparco, Roma. 16-18 settembre 2026

CAPTIVE NON-HUMAN PRIMATES AS ONE HEALTH SENTINELS FOR ZOONOTIC PATHOGENS: A FIVE-YEAR INTEGRATED SURVEILLANCE REPORT IN LAZIO AND TUSCANY (2021–2025)

Garofalo L.[1], Barlozzari G.[1], Caprioli A.[1], Carvelli A.[1], Cersini A.[1], De Liberato C.[1], De Marchis M.L.[1], Galietta V.[2], Ricci I.[1], Battisti A.[1], Sala M.[1], Scarpulla M.[1], Scicluna M.T.[1], Eleni C.[2]

1. Istituto Zooprofilattico Sperimentale del Lazio e della Toscana "M. Aleandri", via Appia nuova 1411, 00178 Roma, Italy. Email: luisa.garofalo@izslt.it
2. Centro di Referenza Nazionale per le Malattie nei Primati non Umani (CeRMaPri), Istituto Zooprofilattico Sperimentale del Lazio e della Toscana "*M. Aleandri*", via Appia nuova 1411, 00178 Roma, Italy. Contatti: cermapri@izslt.it - https://cermapri.izslt.it/

The importance of disease surveillance in non-human primates

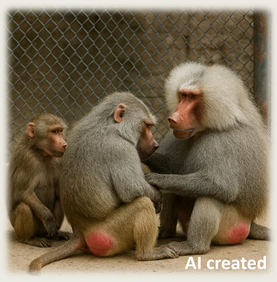


Non-human primates (NHPs) in captivity may act as early sentinels and potential reservoirs of zoonotic pathogens. Their close phylogenetic relationship with humans, combined with their potential exposure to wildlife, vectors, environmental sources, other captive animals, zoo personnel, and visitors, makes their surveillance relevant to both animal and public health.

This study summarizes the findings of a multi-pathogen surveillance conducted on captive NHPs from zoological parks and private facilities in Central Italy by the *Istituto Zooprofilattico Sperimentale del Lazio e della Toscana* (IZSLT). Surveillance targeted both WOAH-listed diseases, which are internationally notifiable because of their relevance to animal health, public health, wildlife, or trade, and non-listed diseases of potential public health significance.

MATERIALS and METHODS

- Passive and active surveillance conducted in six zoological and private facilities from Lazio and Tuscany from 2021 to 2025;
- NHP individuals sampled belonging mainly to *Callithrix spp., Cercocebus spp., Lemur spp.* and *Macaca spp.;*
- Post-mortem investigations carried out on 70 individuals, including histopathology and targeted organ analyses;
- 236 faecal and 28 blood samples also collected from live animals, both healthy and diseased;
- Diagnosis targeted WOAH-listed and other infectious diseases, using parasitological, bacteriological, and virological diagnostic methods.



RESULTS - Twenty-five NHPs from four zoological facilities were positive for at least one viral, bacterial, or protozoan pathogen (Fig. 1). Among these, 13 animals were investigated post mortem through passive surveillance, whereas 12 identified through active health surveillance activities. The detected pathogens encompassed vector-borne, food-/fecal-oral, contact-transmitted, and rodent-associated agents, highlighting multiple pathways of pathogen exposure in the captive NHPs studied.

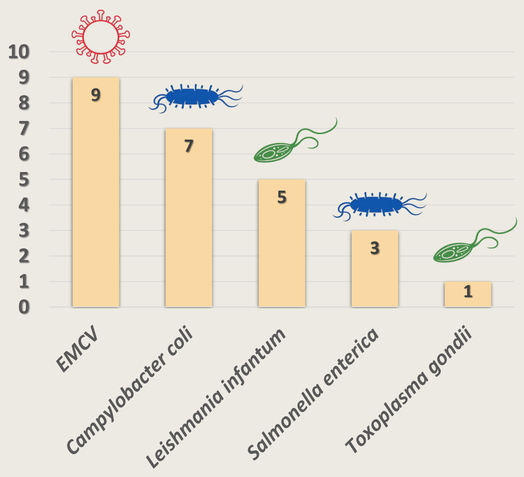


Figure 1. Number of pathogens detected in the NHP samples from the monitored zoos in central Italy (2021-2025).

VIRAL PATHOGENS

Encephalomyocarditis virus (EMCV): was the most frequently detected viral agent, accounting for nine cases identified in *Macaca sylvanus, M. fuscata, M. mulatta,* and *Callithrix pygmaea* from three facilities (two in Lazio and one in Tuscany).

Non-herpes B virus: two coinfections with EMCV were detected in two facilities and subsequently characterized as *Lymphocryptovirus 1* in *M. sylvanus* and as *Callitrichine herpesvirus* in *C. pygmaea*.

BACTERIAL PATHOGENS

Campylobacter coli: seven faecal samples from *M. fascicularis* and *M. sylvanus* tested positive. All cases involved animals from two facilities in Tuscany.

Salmonella enterica: three tissue samples from *M. sylvanus, M. mulatta,* and *Callithrix spp.* tested positive. One isolate was identified as serovar Enteritidis. All cases were from two facilities in Tuscany.

Coagulase-positive staphylococci: isolated from tissue samples of six EMCV-positive macaques housed in three facilities (two in Lazio and one in Tuscany).

PROTOZOAN PATHOGENS

***Leishmania infantum* (WOAH-listed disease)**: five detections in blood samples from one *Cercocebus lunulatus* and four *M. fuscata* from the same facility in Lazio.

Toxoplasma gondii: one *Lemur catta* tested positive in tissue samples.

KEY TAKE-HOME MESSAGES

- **Captive NHPs monitored in Central Italian facilities tested positive to several zoonotic pathogens, including the vector-borne *Leishmania infantum*, the only WOAH-listed disease identified;**
- **EMCV was the most frequently detected pathogen and was likely linked to rodent-mediated environmental contamination;**
- **Outdoor housing may increase exposure to pathogens through contact with wildlife, vectors, and contaminated environmental sources;**
- **Integrated surveillance supports early detection and risk assessment, strengthening One Health preparedness in zoological settings.**