



## HIGH UNDERREPORTING OF TBE IN POLAND

### Background:

In Poland, only two regions—Podlaskie and Warmińsko-Mazurskie voivodeships in the northeast—are officially recognized as endemic for tick-borne encephalitis (TBE) virus. Despite the presence of the virus, TBE vaccine uptake remains low nationwide. Between 2010 and 2020, merely 1.1% of the Polish population received TBE vaccination, a figure attributable to limited public awareness regarding the risk of TBE virus infection (see, for example, Snapshot Week 40/2024) and the financial burden associated with vaccination. Theoretical analyses have previously proposed that the entire territory of Poland should be considered endemic for TBE virus.

However, the true prevalence of TBE is likely underestimated, as many diagnoses are recorded under the generic International Classification of Diseases (ICD) code A87, which encompasses all viral encephalitides, rather than the more specific code A84 for TBE. It is estimated that only half of TBE cases in Poland are accurately coded under A84.

### Method & Results:

A recent study addressed this issue by conducting systematic serological analyses of serum and cerebrospinal fluid (CSF) samples from patients presenting with unexplained neuro-infections in traditionally non-endemic regions of Poland. The study, conducted from April 2018 to December 2022, involved 29 neurology departments located in areas with historically limited official reporting of TBE cases. Serological testing for IgM and IgG antibodies in both serum and CSF samples was performed using a commercial ELISA kit.

A total of 766 patients were included in the study, of whom 124 were diagnosed with TBE. None of the patients had been vaccinated against TBE, yellow fever, or Japanese encephalitis. The study encompassed 10 out of Poland's 16 voivodeships, with patient ages ranging from 3 to 80 years. Among the serum samples, 83 were IgM positive

and 49 were IgG positive; among the CSF samples, 47 were IgM positive and 33 were IgG positive.

The highest rates of positive samples were observed in the southern voivodeships, while the lowest rates were found in the north. Cases were detected throughout the year, with a peak incidence from July to October. Importantly, every participating neurology department identified at least one positive case.

### Discussion:

The incidence of TBE virus infections in Polish regions traditionally considered non-endemic is substantially underestimated due to insufficient diagnostic testing. The prevailing assumption that these regions are free of TBE is primarily a reflection of low testing rates rather than the genuine absence of the virus. In the recent study, 16% of patients with unexplained central nervous system infections in previously non-endemic regions were diagnosed with TBE, indicating that a broader swath of Poland should be classified as TBE endemic. Poland's climate is conducive to the establishment and maintenance of TBE virus habitats nationwide.

The implications of these findings extend well beyond epidemiological interest and are highly relevant for public health policy. The study highlights the urgent need for enhanced surveillance and increased public awareness of TBE throughout Poland. Furthermore, these results underscore the necessity for robust public health campaigns aimed at promoting TBE vaccination and improving overall immunization coverage.



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### Literature:

Zajkowska et al.

The impact of serological testing implementation  
on the tick-borne encephalitis detection in Poland

*PLOS ONE*, 2025; Volume 20: e0323022

DOI: 10.1371/journal.pone.0323022

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**Compiled:** June 2025

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