

EVIDENCE SUMMARY

Japanese encephalitis virus (JEV) risk in Pacific Island Countries and areas (PICs)

Key points

- A 2026 study assessed the risk of JEV reaching and spreading within 22 PICs, with each classified as having endemic potential, epidemic potential or low risk.
- Findings indicated that 15 of the 22 PICs could sustain JEV transmission if virus was introduced. Eight could support ongoing (endemic) transmission, including Papua New Guinea, where JEV already circulates.
- Preparedness requires strengthening human, animal and mosquito surveillance, diagnostic capacity and regional coordination, including vaccine access, before JEV becomes established.

Background

JEV is the leading cause of viral brain infection (encephalitis) in Asia. It cycles between *Culex* mosquitoes and vertebrates (herons, egrets, pigs) which amplify the virus. People can become severely ill but do not pass JEV on to mosquitoes.

In Australia, JEV spread to the temperate south-eastern region (2022) and further human cases (2024 and 2025) raise the risk of introduction to nearby PICs, where it may go undetected.

Methods

A recent qualitative assessment on JEV risk in PICs by [Skinner et al. 2026](#) examined how likely JEV is to arrive (migratory bird flyways, windborne mosquitoes, and closeness to affected regions), whether local mosquitoes, water birds and pigs could sustain transmission, and generated a combined risk profile for each PIC.

Findings

Risk profiles show relative risk with actual likelihood of JEV establishment uncertain.

ENDEMIC POTENTIAL (8 PICs)

Enough mosquito vectors and water birds to sustain long-term transmission if introduced.

Countries: PNG (already endemic), Solomon Islands, New Caledonia, Palau, Northern Mariana Islands, Fiji, Vanuatu, Guam

EPIDEMIC POTENTIAL (7 PICs)

Pigs and mosquitoes could amplify outbreaks, but too few water birds for long-term persistence.

Countries: Federated States of Micronesia, Tonga, Samoa, Tuvalu, Naoero, Cook Islands, Wallis and Futuna

LOW RISK (7 PICs)

Few vectors and hosts; establishment unlikely.

Countries: American Samoa, French Polynesia, Kiribati, Marshall Islands, Niue, Pitcairn Islands, Tokelau

Implications and recommendations

- **Endemic potential PICs** are highest priority for enhanced surveillance and preparedness: surveillance (human, pig, bird and mosquito) and targeted mosquito control where wetlands, water birds and pig farming
- **Epidemic potential PICs** should focus on rapid outbreak detection and response: surveillance of acute encephalitis in people and reproductive disease in pigs, vector surveillance, and referral of specimens to regional reference laboratories
- **Low risk PICs** are not risk-free: syndromic surveillance and links to regional laboratory networks to detect any introduction.
- **All PICs** would benefit from regional coordination, including shared diagnostic networks, data sharing and agreed vaccine access pathways

Further information

This summary was produced by the [PacMOSSI](#) consortium. The authors of the original research and the scientific report or publication can be referred to for more details.