

West Nile virus risk assessment tool

| Risk level | Description and triggers | Questions to be addressed | Surveillance activities | Suggested public health actions and interventions |
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| 0 | <ul style="list-style-type: none"> Free area No historical circulation of WNV | Is there any risk of WNV transmission in this area? | <p>Obligatory:</p> <ul style="list-style-type: none"> Human: passive surveillance Veterinary: passive surveillance for horses SoHO: standard haemovigilance, biovigilance and post-transfusion/transplantation surveillance (not specific for WNV) | <p>Health sector</p> <ul style="list-style-type: none"> Increase awareness amongst healthcare professionals about WNV so as it will be considered in the differential diagnosis of travellers returning from affected areas. Education of travellers to affected areas on how to reduce the risk. Ensure there are laboratory capabilities within the country for diagnosis. Ensure SoHo donation authorities have implemented measures to prevent transmission through travellers returning from affected areas (see WNV and blood safety introduction to a preparedness plan [67]). |
| 1 | <ul style="list-style-type: none"> Predisposed areas where the ecological conditions are suitable for WNV circulation. No historical circulation of WNV is known. The probability of a human outbreak is unknown but likely to be low. | <ul style="list-style-type: none"> Is there any risk of WNV transmission in this area in the season? Would we detect WNV circulation if it occurred? | <p>Obligatory:</p> <ul style="list-style-type: none"> Human: passive surveillance Veterinary: passive surveillance for horses; SoHO: standard haemovigilance-biovigilance and post-transfusion/transplantation surveillance (not specific for WNV) <p>Desirable:</p> <ul style="list-style-type: none"> Assess the risk of WNV transmission in the area. | <p>Multi-sectoral collaboration and coordination</p> <ul style="list-style-type: none"> Consider drafting WNV preparedness plan <p>Health sector</p> <ul style="list-style-type: none"> Response as level above Ensure there are laboratory capabilities within the country for diagnosis of WNV <p>Public communication</p> <ul style="list-style-type: none"> No specific action <p>Vector management response</p> <ul style="list-style-type: none"> No specific action. |
| 2 | <ul style="list-style-type: none"> Imperilled areas where the ecological conditions are suitable for WNV circulation Past evidence of WNV circulation The probability of a human outbreak is unknown. | <ul style="list-style-type: none"> To what extent has the virus infected local animal populations? What is the prevalence of infection in animal populations? Are passive/active surveillance systems (including laboratory diagnostics) in place to be able to identify horse and human infections with WNV? | <p>Obligatory:</p> <ul style="list-style-type: none"> As above <p>AND:</p> <ul style="list-style-type: none"> Ensure timely detection and reporting of human cases by passive surveillance; Develop and implement a surveillance plan including mosquito, bird and equid surveillance enabling the detection of WNV circulation. | <p>Multi-sectoral collaboration and coordination</p> <ul style="list-style-type: none"> Develop a WNV preparedness plan, including surveillance activities and an integrated vector control plan. Allocate resources necessary to enable emergency response (i.e. vector control, communication plan). Establish close and regular exchange of information between all sectors as part of the WNV preparedness plan. <p>Health sector</p> <ul style="list-style-type: none"> Response as level above <p>AND:</p> <ul style="list-style-type: none"> to assure an appropriate level of awareness among health care professionals; to define roles and responsibilities, but also training courses, curricula, information and management recommendations; availability of national guidelines for clinical management. <p>Public communication</p> <ul style="list-style-type: none"> Conduct public information campaigns during the mosquito season to strengthen use of personal protection measures against |

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| | | | | <p>mosquito bites.</p> <p>Vector management response</p> <ul style="list-style-type: none"> As part of the WNV preparedness plan: consider preparing vector control activities if entomological indicators suggest the need. Allocate resources necessary to enable emergency response (i.e. vector control). Implement larval control as part of the integrated vector control in the event of there having been WNV circulation in the previous year. |
| 3a | <ul style="list-style-type: none"> Imperilled areas Current surveillance findings (i.e. mosquito or bird screening) indicating WNV epizootic activity in the area in the second part of the season (i.e. August-September-October) The probability of a human outbreak is low. | <ul style="list-style-type: none"> What is the geographic extension of the area where WNV is circulating? What is the seasonal dynamic of WNV circulation? What is the real risk for people? | <p>Obligatory:</p> <ul style="list-style-type: none"> As above <p>AND:</p> <ul style="list-style-type: none"> Ensure timely detection and reporting of human cases by passive surveillance. As part of the surveillance plan: ensure the proper continuation of the surveillance activities. | <p>Multi-sectoral collaboration and coordination</p> <ul style="list-style-type: none"> Response as level above <p>Health sector</p> <ul style="list-style-type: none"> Response as level above <p>Public communication</p> <ul style="list-style-type: none"> Consider public information campaigns to support vector control response <p>Vector management response</p> <ul style="list-style-type: none"> Response as level above; <p>AND:</p> <ul style="list-style-type: none"> Implement public education programs focused on risk potential and personal protection, and emphasising residential source reduction. Vector control focuses on larval control. |
| 3b | <p>Imperilled areas</p> <ul style="list-style-type: none"> Current surveillance findings (i.e. mosquito or bird screening) indicating WNV epizootic activity in the area, in the first part of the season (May-June-July) The probability of a human outbreak is low to moderate. | Idem as level above | <p>Obligatory:</p> <ul style="list-style-type: none"> As above <p>AND:</p> <ul style="list-style-type: none"> Human: active/enhanced surveillance in the area with confirmed virus circulation. Ensure timely reporting of human cases by passive/active surveillance. As part of the surveillance plan: increase the mosquito and bird surveillance activities. | <p>Multi-sectoral collaboration and coordination</p> <ul style="list-style-type: none"> Response as level above <p>Health sector</p> <ul style="list-style-type: none"> Response as level above <p>Public communication</p> <ul style="list-style-type: none"> Response as level above <p>AND:</p> <ul style="list-style-type: none"> Implement public information on personal protection and source reduction <p>Vector management response</p> <ul style="list-style-type: none"> Response as level above <p>AND:</p> <ul style="list-style-type: none"> increase effort for public information on personal protection and source reduction continued larval control If surveillance indicates virus circulation is increasing initiate ground adult mosquito control in areas at high risk for humans or in hot spot sites (if known) |
| 4 | <p>Imperilled areas</p> <ul style="list-style-type: none"> WNV-specific IgM detected in local non-vaccinated horse(s) or WNV isolated from local horse. The probability of a human outbreak is high. | <p>What is the geographic extension of the area where WNV is being transmitted to horses (as humans are likely to follow soon)?</p> | <p>Obligatory:</p> <ul style="list-style-type: none"> As above <p>AND:</p> <ul style="list-style-type: none"> Human: active/enhanced surveillance in the area with confirmed virus circulation Ensure timely reporting of human cases by passive/active surveillance As part of the | <p>Multi-sectoral collaboration and coordination</p> <ul style="list-style-type: none"> Create/establish multi-sectoral outbreak response team <p>Health sector</p> <ul style="list-style-type: none"> Response as level above Increase awareness among health professionals <p>Public communication</p> <ul style="list-style-type: none"> Conduct public information campaigns to strengthen use of personal protection measures against mosquito bites and source reduction. |

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| | | | <p>surveillance plan: increase the mosquito, bird and horse surveillance activities.</p> | <p>Vector management response</p> <ul style="list-style-type: none">• Response as level above• If surveillance indicates virus circulation is increasing, initiate ground adult control in high-risk areas for humans or in hot spot sites (if known). |
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| 5 | <p>Affected area</p> <ul style="list-style-type: none"> At least one human case detected (i.e. probable or confirmed human case according to EU case definition). Outbreak ongoing. | <ul style="list-style-type: none"> What is the geographic extension of the 'affected area' where WNV is being transmitted to humans? What is the risk of increasing numbers of human cases? | <p>Obligatory:</p> <ul style="list-style-type: none"> As above <p>AND:</p> <ul style="list-style-type: none"> Human: active/enhanced surveillance in the area with confirmed virus circulation. Ensure timely reporting of human cases by passive/active surveillance. As part of the surveillance plan: continue the surveillance activities. | <p>Multi-sectoral collaboration and coordination</p> <ul style="list-style-type: none"> Regular meetings of multi-sectoral outbreak emergency response team Establishment of geographical boundaries of affected area. <p>Health sector</p> <ul style="list-style-type: none"> Response as level above Increase awareness among health professionals Safety of SoHO: implement EU directive for blood, tissues, cells and organ safety in affected area, quantitative risk assessment of transfusions/transplantations, implement deferral policy, +/- NAT screening, +/- inactivation techniques, evaluate impact of measures implemented on blood supplies. <p>Public communication</p> <ul style="list-style-type: none"> Response as level above; <p>AND:</p> <ul style="list-style-type: none"> Increase public information campaigns in order to reach most people at risk. <p>Vector management response</p> <ul style="list-style-type: none"> Response as level above; <p>AND:</p> <ul style="list-style-type: none"> Intensify ground adult mosquito control with multiple applications in areas of high risk of human cases. Enhance risk communication. Monitor efficacy of spraying on target mosquito populations. If a large area is involved coordinate the programme through an emergency unit with all authorities involved. |

