



## MEETING REPORT

# Expert consultation on guidelines for the surveillance of native mosquitoes

Stockholm, 21–22 January 2014

## 1 Background

Vector-borne diseases are a specific group of infections that represent a burden of disease and (re-)emerging threat to Europe requiring particular attention. The presence of a competent vector in an area does not by itself result in the transmission of vector-borne pathogens but it is the basic requirement for transmission to occur in this area. Some mosquito-borne diseases (MBD), such as West Nile fever, are already present in several European countries. The potential vectors of these diseases are widespread across Europe, but detailed information on their distribution and abundance is scarce. These vectors include mosquitoes from different genera: *Anopheles* (e.g. *An. atroparvus*, *An. labranchiae* and *An. sacharovi* vectors of malaria); *Aedes* (e.g. *Ae. vexans* involved in the transmission of Sindbis fever) and *Culex* (e.g. *Cx. pipiens* 'group', *Cx. modestus* and several other species can transmit West Nile and Tahyna viruses)<sup>1</sup>. There is a need to be better prepared at the European level regarding these threats. The surveillance of these mosquito vectors will provide the necessary information to develop appropriate and timely response and therefore help to prevent human disease associated with mosquito-borne viruses.

In order to support the systematic collection of data about vector distribution in Europe, and as a first step, ECDC developed guidelines for the surveillance of invasive mosquito species in Europe<sup>2</sup> in 2012. In this second step, ECDC aims to support the surveillance of other mosquito vectors of public health importance, through the extension of the guidelines to native mosquitoes. This will contribute to identify or better define the spatial distribution of these native species; and in areas where they are established, the surveillance of abundance and further spread is needed for timely risk assessment of pathogen transmission and to prevent or control outbreaks of vector-borne diseases.

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1 Lundström JO. Mosquito-borne viruses in Western Europe: a review. *J Vector Ecol.* 1999; 24(1):1–39.

2 European Centre for Disease Prevention and Control. Guidelines for the surveillance of invasive mosquitoes in Europe. Stockholm: ECDC; 2012. Available here: <http://ecdc.europa.eu/en/publications/Publications/TER-Mosquito-surveillance-guidelines.pdf>

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*The views expressed in this publication do not necessarily reflect the views of the European Centre for Disease Prevention and Control (ECDC).*

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In line with the first guidelines, the new guidelines shall provide comprehensive and practical information to help the implementation of native mosquito surveillance in Europe. The guidelines are based on the same structure as the existing ECDC guidelines in order to achieve, at the end, two complementary guidelines that will ensure a comprehensive coverage of surveillance activities within Europe, and help to provide comparable and timely information about both native and invasive mosquito vectors. In the longer term, ECDC would like to present the different parts of the two guidelines in dedicated html pages on its website, in order to make access to relevant information easier for end-users.

## Objectives of the consultation

The main objective of the consultation was for a panel of experts and potential users to review the draft guidelines for the surveillance of native mosquitoes prepared by the selected contractor following an open call, in order to assess its utility and its value as a reference document for comprehensive and harmonised native mosquito surveillance in Europe.

The specific objectives included:

- evaluate the accuracy of described surveillance approaches (algorithms), taking into account financial aspects, and appropriateness of technical support
- evaluate the ease of implementation of the proposed approaches in different situations observed in Europe
- collect comments on the documents as well as discuss recommendations to improve the guidelines document
- collect expectations and inputs for the presentation of the two guidelines in dedicated areas of ECDC's website.

## Method

In working groups (see Agenda in Annex 1), the meeting attendees (see list of participants in Annex 2) have tested the guidelines to evaluate the soundness of the content and identify points to be improved. Comments from the working groups have been discussed, highlighting management and entomological issues. Recommendations for improvement of the guidelines and its publication (method and design) on html pages of the ECDC website are summarised below.

## Recommendations

### General comments

The guidelines draft was perceived as a very useful and clear document. However proposals for improvement have been identified. They are summarised below, grouped according to four key issues.

### Questions and process for a rapid risk assessment

- The list of questions might be revised/adapted in particular by (1) deleting the first questions that correspond to a step that is a prerequisite before opening these guidelines; (2) revising the groups and their subtitles; and (3) revising some wording to take into account different target audiences and ensure a common understanding.

## Options for passive surveillance:

- Examples of passive surveillance have been presented (for Germany, Sweden, and UK) and more have been introduced by other meeting participants, raising their usefulness; it is suggested some of these (representing different options) are presented in an annex of the guidelines. Passive surveillance should be listed as a tool among others, with its strengths and weaknesses.

## Guidelines content

- The scenarios might be better described and divided in parts each according to levels of threats, considering: for pre-disease stage, both distant and imminent threat sections; for disease stage, both 'new disease' (= Occasional MBD cases) and 'endemic disease' (= Recurrent MBD cases). These situations will be shown as scenarios or sub-scenarios, depending how surveillance procedures differ between them.
- It is suggested that selection/implementation of surveillance procedures according to the scenarios and levels of threats might be suggested within algorithms on flow charts.
- On the list of important vector species, *Anopheles atroparvus* might be added as well in the tables where the species are listed.
- In the table presenting collection methods of adult mosquitoes, the part on trapping/sampling methods efficacy might be further completed according to published data and expert input.
- Finally, it is suggested to add some trap density values (e.g. no. of traps per km<sup>2</sup>) or minimum numbers of traps for gaining valuable information in the table detailing the recommended methods of mosquito collection.

## Guidelines web publication

- Clearly a number of participants wish to have a rapid access to the whole guidelines document as a downloadable pdf file.
- It is also suggested to provide guidelines content on an HTML page, with links between parts/tables/annexes and between both guidelines; the guidelines can be split according to chapter divisions but not in smaller part, in order to avoid losing information (e.g. text that completes the tables).
- To introduce the guidelines, it is suggested that a detailed executive summary or one or two figures, presenting the content of the guidelines and introducing the flow chart of the decision-making process, with links to the different document parts should be produced.
- Additional links to complementary information (e.g. vector distribution maps, disease maps, fact sheets) might be given as well.

## Annex 1. Meeting agenda

### Tuesday, 21 January 2014

8:30-9:00	Registration
9:00-9:10	Welcome and introduction (Hervé Zeller, Laurence Marrama)
9:10-09:40	Presentation of the guidelines for the surveillance of native mosquito species (Laurence Marrama, Francis Schaffner)
9:40-10:00	Lessons learnt from the use of ECDC guidelines for the surveillance of invasive mosquito species and general comments on the new guidelines document (Laurence Marrama, Francis Schaffner)
10:00-10:10	Presentation of the work in groups (2 groups) (Laurence Marrama, Francis Schaffner)
10:10-10:30	Working group session 1: Plenary presentation (Jolyon Medlock)
10:30-11:00	Coffee break
11:00-12:00	Working group session 1: Working group discussion
12:00-13:00	Lunch
13:00-14:00	Working group session 1: Restitution and plenary discussion (WG leaders)
14:00-14:30	Working group session 2: Plenary presentation (Country participants: Alex Vaux (UK), Helge Kampen (DE), Anders Lindström (SU))
14:30-15:00	Coffee break
15:00-16:30	Working group session 2: Working group discussion
16:30-17:30	Working group session 2: Restitution and plenary discussion (WG leaders)

### Wednesday, 22 January 2014

8:30-9:00	Registration
9:00-9:15	Welcome and introduction for day 2
09:15-09:45	Working group session 3: Plenary presentation (Francis Schaffner, Laurence Marrama)
09:45-10:30	Working group session 3: Working group discussion (part1)
10:30-11:00	Coffee break
11:00-11:45	Working group session 3: Working group discussion (part2)
11:45-12:30	Working group session 3: Restitution and plenary discussion (WG leaders)
12:30-13:30	Lunch
13:30-14:30	Discussion of the issues related to the presentation of the two guidelines in dedicated individually selectable pages of ECDC website (Laurence Marrama, Francis Schaffner)
14:30-15:00	Summary of meeting discussions, recommendations for improvement and further steps (Laurence Marrama, Hervé Zeller)
15:00	End of the consultation

## Annex 2. List of participants

EU Member States		
Bulgaria	Ognyan Mikov	National Centre of Infectious and Parasitic Diseases
Croatia	Pavle Jelacic	Croatian National Institute of Public Health
Czech Republic	Frantisek Rettich	National Institute of Public Health
Denmark	René Bødker	DTU National Veterinary Institut
Finland	Lorna Culverwell	University of Helsinki
France	Albert Godal	DGS - Direction générale de la Santé
Germany	Helge Kampen	Friedrich-Loeffler-Institut, German Federal Research Institute for Animal Health
Greece	Annita Vakali	KEELPNO - Hellenic Centre for Disease Control and Prevention
Hungary	Victor Zöldi	National Center for Epidemiology
Ireland	Finán O Galláchoir	Health Services Executive
Italy	Roberto Romi	Istituto Superiore di Sanita
Portugal	Ana Clara Silva	Health and Social Affairs Institute of the Autonomous Region of Madeira
	Ana Leça	Directorate General of Health
Romania	Cornelia Ceianu	National Institute for Research and Development Microbiology and Immunology "Cantacuzino"
Slovakia	Nasir Jalili	Institute of Microbiology, Faculty of Medicine, Comenius University
Slovenia	Katja Kalan	University of Primorska, Science and research centre
Spain	Ricardo Molina	Instituto de Salud Carlos III
Sweden	Anders Lindström	National Veterinary Institute
the Netherlands	Marieta Braks	RIVM - National Institute of Public Health and the Environment
United Kingdom	Alex Vaux	Public Health England
Other European countries*		
Albania	Enkelejda Dikolli Velo	Institute of Public Health
Kosovo	Naser Ramadani	National Institute of Public Health
Serbia	Bojana Grgic	Institute of Public Health of Serbia "Dr Milan Jovanovic Batut"
Contractors team		
Belgium	Francis Schaffner	Senior Entomologist AVIA- GIS
United Kingdom	Jolyon Medlock	Public Health England
ECDC		
	Birgitta de Jong	
	Eva Warns-Petit	
	Hervé Zeller	
	Isabelle Devaux	
	Laurence Marrama	
	Wim van Bortel	

\* ECDC pre-accession programme (ECDC-IPA3 project)