THE REGIONAL PLAN TO FACE POSSIBLE CHIKUNGUNYA OUTBREAKS

Piazzi M. [1], Raso R. [2], Mosca A.[1], Lombardi D. [2]
1) Piedmont Mosquito Control - IPLA SpA - zanzare@ipla.org
2) SeREMI - Regione Piemonte - seg.epidemiologia@aslal.it

istituto per le piante da legno e l' ambiente ipla spa

SeREMI SSEpi

Introduction

Chikungunya (in the Makonde language "that which bends up") fever is a mosquito-borne viral disease. Is caused by an alphavirus from the TChikungunya (in the Makonde language "that which bends up") fever is a mosquito-borne viral disease. Is caused by an alphavirus from the Togaviridae family which is transmitted by Aedes mosquitoes to vertebrates, with symptoms such as fever, joint pain, muscle pain, shudders, cephalea, nausea, vomit, articular pains with or without signs of flogosis, pains in the low part of the trunk, cutaneous rash headache and nose and gum bleeding (Mandel et al., 2005).

Chikungunya is present in parts of Africa, Southeast Asia and on the Indian sub-continent. Recent and very large outbreaks have been reported from La Réunion, Mauritius, Mayotte and several Indian states (Paquet et al., 2006). All persons who are not immune to Chikungunya may become infected with the virus. Exposure to infected mosquitoes represents the principal risk for infection. Given the Chikungunya epidemics and the worldwide distribution of the vectors Aedes aegypti and Aedes albopictus, the risk of importation of the virus into new areas by infected travellers needs to be considered. Imported cases among tourists have been identified in several European countries.

The risk factors

After a consultation about the risk assessment for Europe, in 2006 ECDC agreed with this possibility (ECDC, 2006). According the ECDC report, the risk is related to three factors:

1. highest likelihood for virus introduction due to the high frequency of travel between high incidence areas in the Indian Ocean and Europe;
2. stable presence of a vector (Aedes albopictus) able to transmit the virus;
3. highest likelihood for interactions of the vector with the host.

In fact, the first spread within Europe was reported in August 2007 from Emilia Romagna (Angelini et al., 2007).

In consequence of these two facts, the Regional Health Bureau of Piedmont decided to create imme diately an informal working group with the objective of preparing a prevention plan against possible cases of imported disease or emergency related with the vector competence of Aedes albopictus. The group involved the Regional Service of Epidemiology for Infective Disease Surveillance, Preven tion and Control (SeREMI) and the Regional Mosquito Control organization (Ipla Mosquito Surveillance Unit).

The aim of the plan

The aim of the plan is to obtain a rapid response by means of a quick and standardized information flow between the two structures if a Chikungunya case should be diagnosed or suspected in Pied mont. The plan, built starting from the analysis of the existing activities such as health and prevention surveillance, entomological monitoring, vector control, take into consideration the ECDC recommendations (ECDC, 2008) and the Minister of Health indications (Ministero della Salute, 2006). The aim of the surveillance is to quantify the number of cases proved on the national territory providing them with information which let to discriminate between main cases (people who have contracted the disease abroad) and those who have contracted it in Italy.

Until the end of August 2007, the doctors who prove a suspected case or a certain one of Chikun gunya fever must communicate it within 48 hours contemporarily to the local Public Health Service (PHS), using an apposite fact file model (as shown below). The PHS informs the Heath Ministry, the National Health Service and the SeREMI. SeREMI contacts immediately the Ipla operative unit for vector control.

ALLEGATO 1

SCHEDA DI SEGNALAZIONE DI CASO SOSPETTO O CONFERMATO DI CHIKUNGUNYA

*** _____

Regione _____ |__|__|__| **Provincia** _____ |__|__|__|
Comune _____ |__|__|__| **ASL** _____ |__|__|__|

Cognome _____ Nome: _____ sesso: M F
Codice SSN |__|__|__|__|__|__|__|__|__|__|__|__|__|__|__|__| Cittadinanza _____
Luogo di nascita _____ data di nascita |__|__|__|__| (gg/mm/aa)
Domicilio abituale: _____ _____ _____
Via/piazza e numero civico — Comune — Provincia
Recapito telefonico del paziente o familiare _____
Permanenza all'estero nei 15 giorni precedenti l'inizio della sintomatologia
1. _____ _____ _____
2. _____ _____ _____
3. _____ _____ _____
Nazione — data inizio — data fine

Ospedale di diagnosi : _____

Segni e sintomi — Data inizio sintomatologia |__|__|__|__| (gg/mm/aa)

	S	N	NN		S	N	NN
febbre > 38,5				Astenia			
Artralgie				Mialgia			
Rush cutaneo				Cefalea			
Sintomi emorragici				Meningo-encefalite			

Descrizione dell'attuale stato del paziente _____

Test di conferma di laboratorio
NO (sospetto)
SI 1. _____ _____ |__|__|__|__|
2. _____ _____ |__|__|__|__|
3. _____ _____ |__|__|__|__|
Laboratorio — Metodica* — Data prelievo
IN CORSO
1. _____ _____ |__|__|__|__|
Laboratorio — Metodica* — Data prelievo
* indicare il metodo di laboratorio utilizzato (anticorpi, isolamento virale, PCR).

data di notifica |__|__|__|__| (gg/mm/aa) Sanitario che ha compilato la notifica (timbro e firma) _____

recapito_____ telefono_____telefax_____ e-mail_____

Note: _____

ISTRUZIONI E NOTE PER LA COMPILAZIONE

La scheda va compilata per tutti i casi sospetti o confermati di chikungunya. Se viene inviata la scheda di sospetto e successivamente si è reso disponibile un aggiornamento di un risultato di laboratorio, la scheda dovrebbe essere rinviata con la dicitura "già segnalato come sospetto" (da indicare nello spazio iniziale della scheda segnalato con ***)
Il flusso di notifica è il seguente:

Medico segnalatore ? ASL ? SeREMI, Ministero Salute, Istituto Superiore di Sanità

DEFINIZIONI DI CASO DI FEBBRE CHIKUNGUNYA

Descrizione clinica

1. Febbre >38,5
2. Artralgie
3. Rush cutaneo
4. Sintomi emorragici;
5. Astenia;
6. Mialgia;
7. Cefalea
8. Meningo-encefalite

Criteri diagnostici di laboratorio di conferma per caso di chikungunya

1. PCR positiva per virus chikungunya
2. Isolamento virale
3. dosaggio anticorpi con aumento del titolo anticorpale in due campioni prelevati a distanza di almeno due settimane

Classificazione dei casi

Per **caso sospetto** si intende un paziente:
- con sintomatologia clinica indicativa di chikungunya (vedi quadro clinico)
- non confermato mediante test di laboratorio.
- con criterio epidemiologico positivo (viaggio in area endemico o epidemica per questa malattia)

Per ogni caso sospetto è necessario completare l'iter diagnostico rivolgendosi ai centri di riferimento per la diagnosi di laboratorio (vedi sezione specifica)

Per **caso confermato** si intende un paziente:
- con sintomatologia clinica indicativa di chikungunya (vedi quadro clinico)
- confermato mediante test di laboratorio (PCR o ricerca anticorpi o coltura virale)

Da inviare al Referente SIMI della ASL territorialmente competente

Il Referente SIMI della ASL provvede ad inviare a:

Ministero della Salute
Ufficio V- Malattie Infettive e Profilassi Internazionale
Direzione Generale della Prevenzione Sanitaria
Fax: 06 5994 3096

Istituto Superiore di Sanità
Reparto Epidemiologia Malattie Infettive
Centro Nazionale. Epidemiologia, Sorveglianza e Protezione Salute
Fax 06 4423 2444

SeREMI
Servizio di riferimento Regionale di Epidemiologia
per la sorveglianza, la prevenzione
e il controllo delle Malattie Infettive
Fax 0131 30 7847
e-mail lombardidaniela@asl20.piemonte.it

SeREMI and IPLA

Together, SeREMI and Ipla analyse that particular event according to the evaluation of the risk com ponents and decide if specific interventions (treatments, monitoring, field inspections) are required. In case of positive evaluation, the protocol becomes immediately operative.

First of all, the areas where the patient stayed during or just before the symptoms appearance are identified: home, working site, school, etc. These critical areas are overlapped with the Ae. albopic tus regional distribution and the mosquito control project maps. Therefore, different scenarios could emerge.

Treatment plans

If the areas are inside a mosquito control project territory, the local project manager and the local authority are immediately informed. So, a treatment plan can immediately start if one of the critical sites overlaps an infested area. In any case, a monitoring is planned for at least a month.

If the case is related to an area not involved in a project, the local authority is informed and a task force verifies the situation on the field. According to this evaluation, Ipla, SeREMI and the local au thority decide if proceed only the monitoring or the treatment plan. This is divided in 4 steps: preli minary inspection, definition of the intervention area, treatments according the Ministry indications, and post-treatments inspection. For a single case, the intervention area should have at least a radius of 100 m around the case. The preliminary inspection could give different indications.

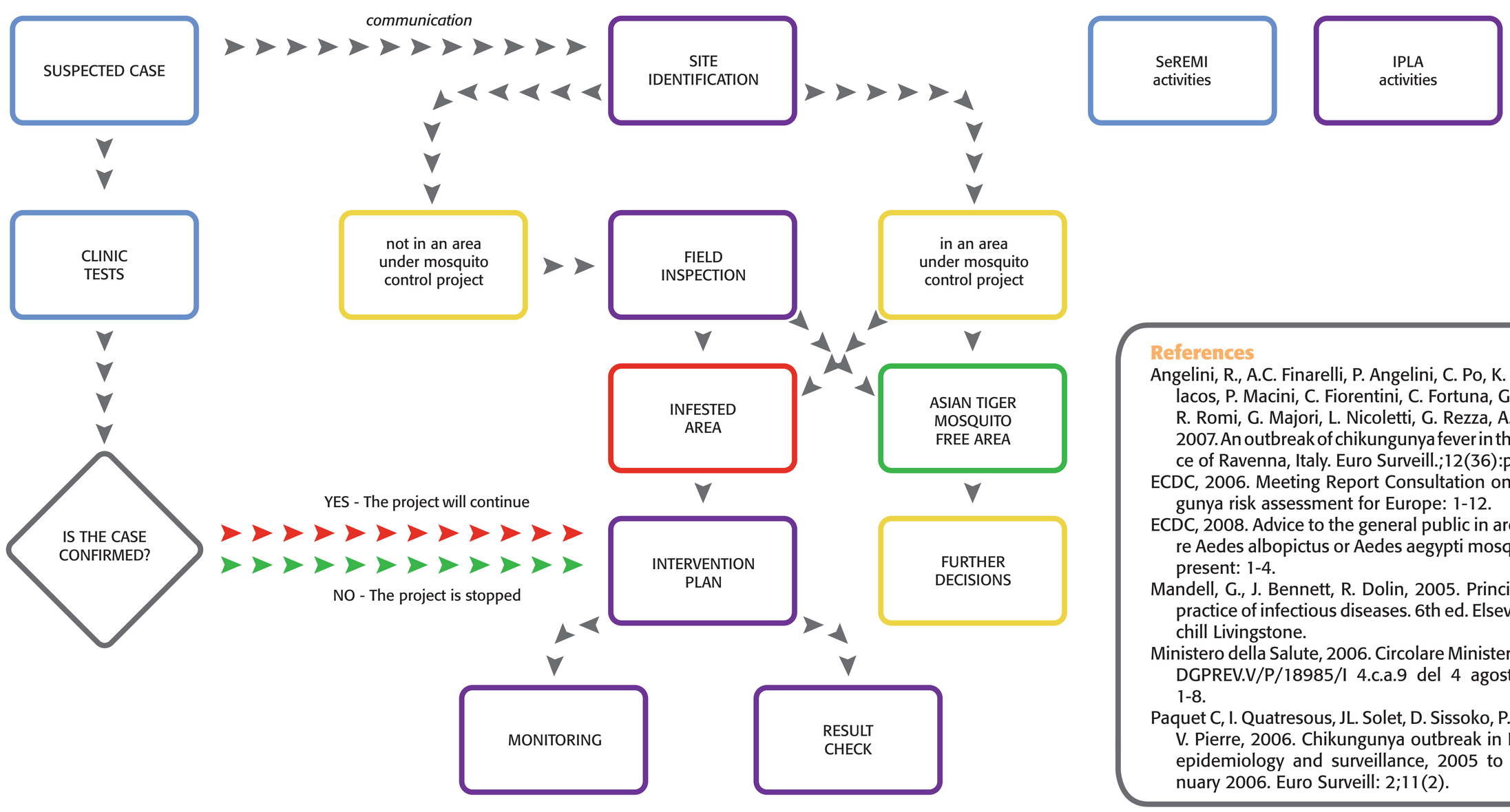
For a cluster of cases, the area will be indicatively increased to a radius of 300 meters.

Treatments work on three synergic lines: larvicidal, adulticidal and breeding site removal, according a door-to-door approach. The choices (active ingredients, number, timing and duration of the inter ventions, etc.) for the intervention plan will be done according the field inspection evidences and, if existing, the local mosquito control manager opinion. Particular care will be taken to protect the operators, to avoid accidental infections.

The monitoring is based on standard ovitraps and adult catch, and permits to exclude or confirm an area as no-infested and consequentially continue the treatment plan in the area.

At the same time, the clinic tests will continue, and their results determine the prosecution or the suspension of the protocol.

The methods for the Chikungunya virus diagnosis can be serological or molecular. It does not exist at the moment commercial kit for the diagnosis and the equipment of the serological tests must happen in a lab with a security level equal to 3 (BSL 3) assumed that it is necessary to cultivate the virus.



References

Angelini, R., A.C. Finarelli, P. Angelini, C. Po, K. Petropulacos, P. Macini, C. Fiorentini, C. Fortuna, G. Venturi, R. Romi, G. Majori, L. Nicoletti, G. Rezza, A. Casson, 2007. An outbreak of chikungunya fever in the province of Ravenna, Italy. Euro Surveill.;12(36):pii=3260.

ECDC, 2006. Meeting Report Consultation on Chikungunya risk assessment for Europe: 1-12.

ECDC, 2008. Advice to the general public in areas where Aedes albopictus or Aedes aegypti mosqitoes are present: 1-4.

Mandell, G., J. Bennett, R. Dolin, 2005. Principles and practice of infectious diseases. 6th ed. Elsevier Churchill Livingstone.

Ministero della Salute, 2006. Circolare Ministeriale Prot. DGPREV.V/P/18985/I 4.c.a.9 del 4 agosto 2006: 1-8.

Paquet C, I. Quatresous, JL. Solet, D. Sissoko, P. Renault, V. Pierre, 2006. Chikungunya outbreak in Reunion: epidemiology and surveillance, 2005 to early January 2006. Euro Surveill: 2;11(2).