



## HEAT SHIELD

Giovedì 13 Luglio 2017 ore 9.30-12.30  
Accademia dei Georgofili - Logge Uffici Corti Firenze

Cambiamenti climatici e caldo:  
impatti sulla salute e produttività dei lavoratori  
impegnati in ambiti agricoli

# Cambiamenti climatici e patologie emergenti e riemergenti

*Firenze, 13/07/2016*

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UNIVERSITÀ  
DEGLI STUDI  
FIRENZE

Centro di Riferimento  
Regione Toscana per le  
malattie  
tropicali



**Azienda  
Ospedaliero  
Universitaria  
Careggi**

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**Environment International**

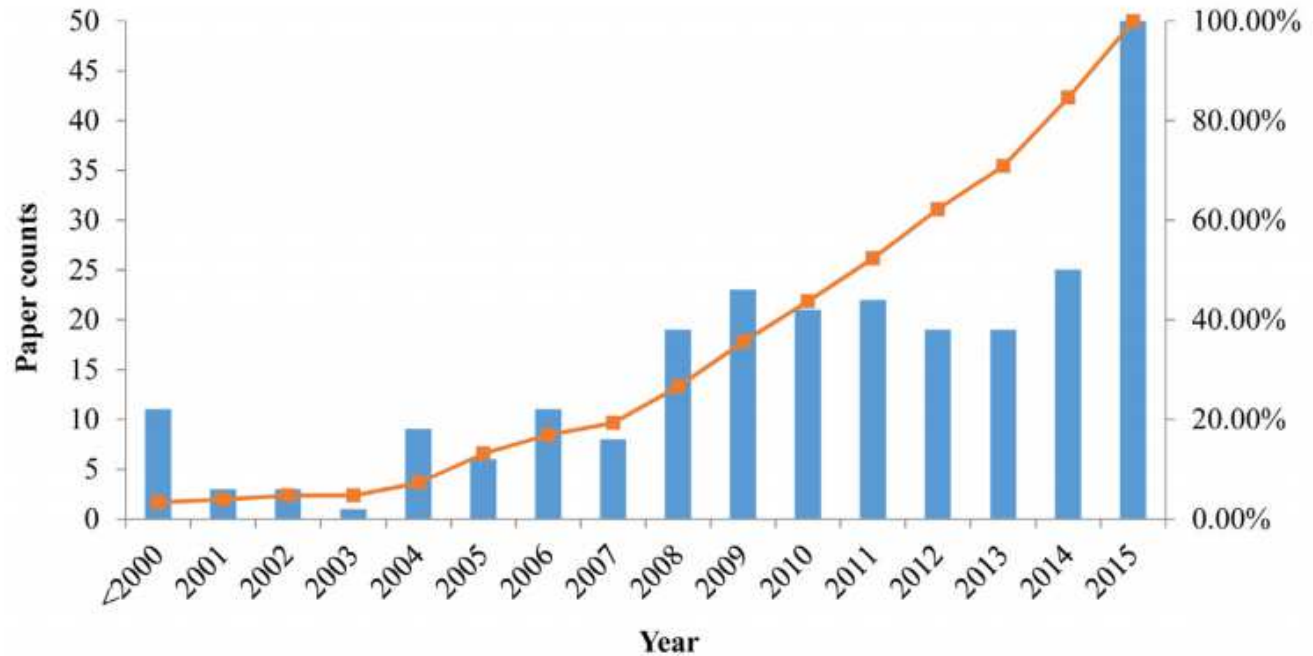
journal homepage: [www.elsevier.com/locate/envint](http://www.elsevier.com/locate/envint)



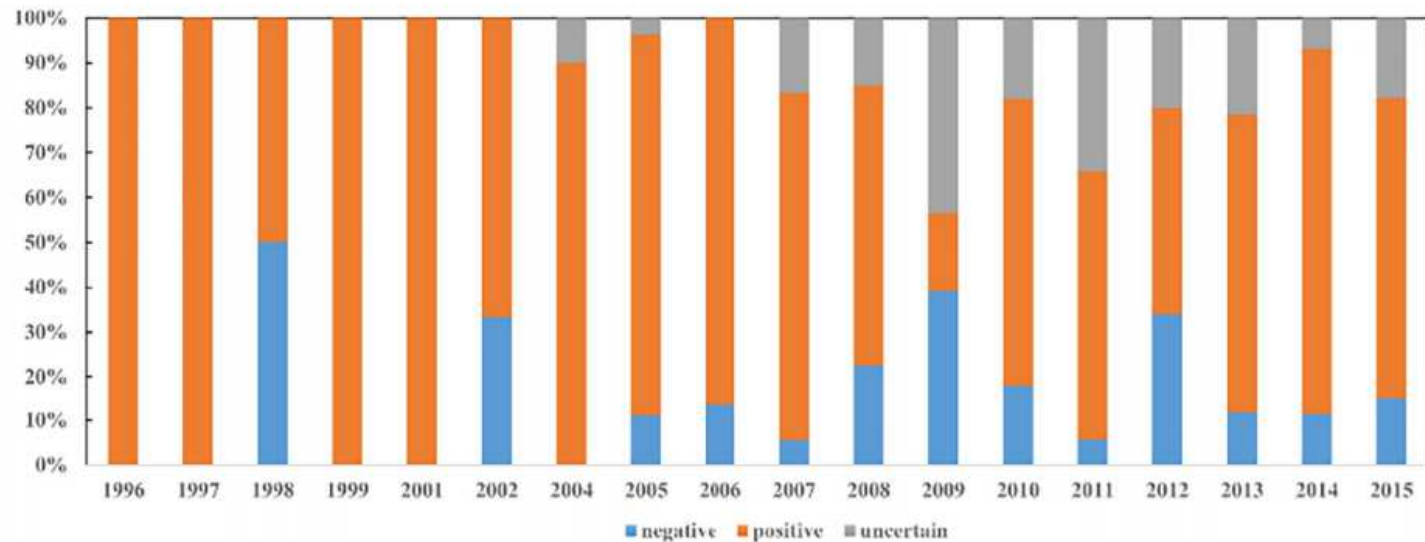
## Climate change and human infectious diseases: A synthesis of research findings from global and spatio-temporal perspectives

Lu Liang<sup>a,b,\*</sup>, Peng Gong<sup>b,c</sup>

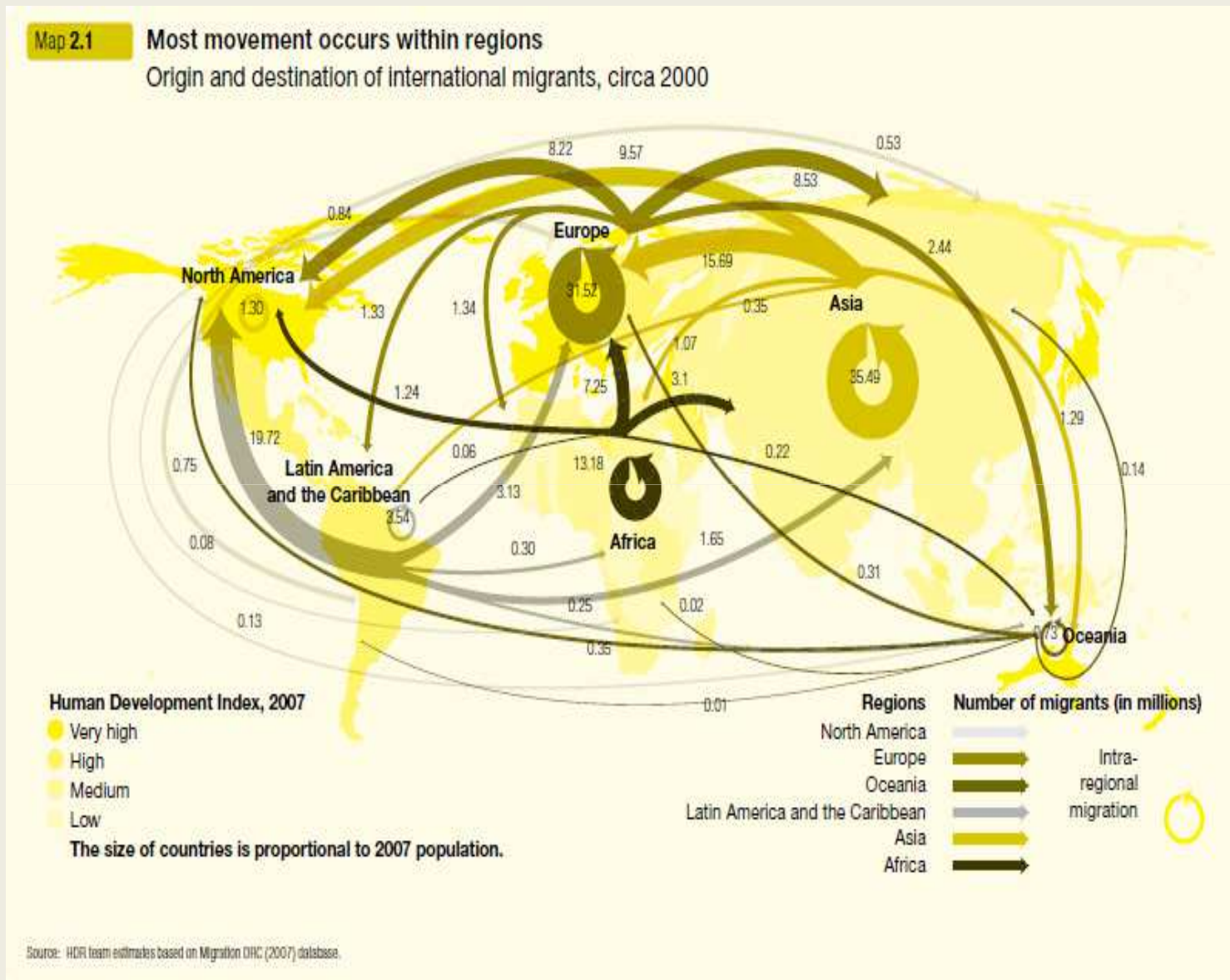
Numero di articoli pubblicati per anno relativi a interazioni tra cambiamenti climatici e malattie infettive



Proporzione di studi che indicano una correlazione positiva (in arancione), negativa (in azzurro) e neutra (in grigio) tra cambiamenti climatici e malattie infettive



# MIGRAZIONI



Migranti interni: 740 milioni

Migranti internazionali: 200 milioni



# Popolazione immigrata in Italia

5,421,000 stimati

(1,100,000 <18 anni)

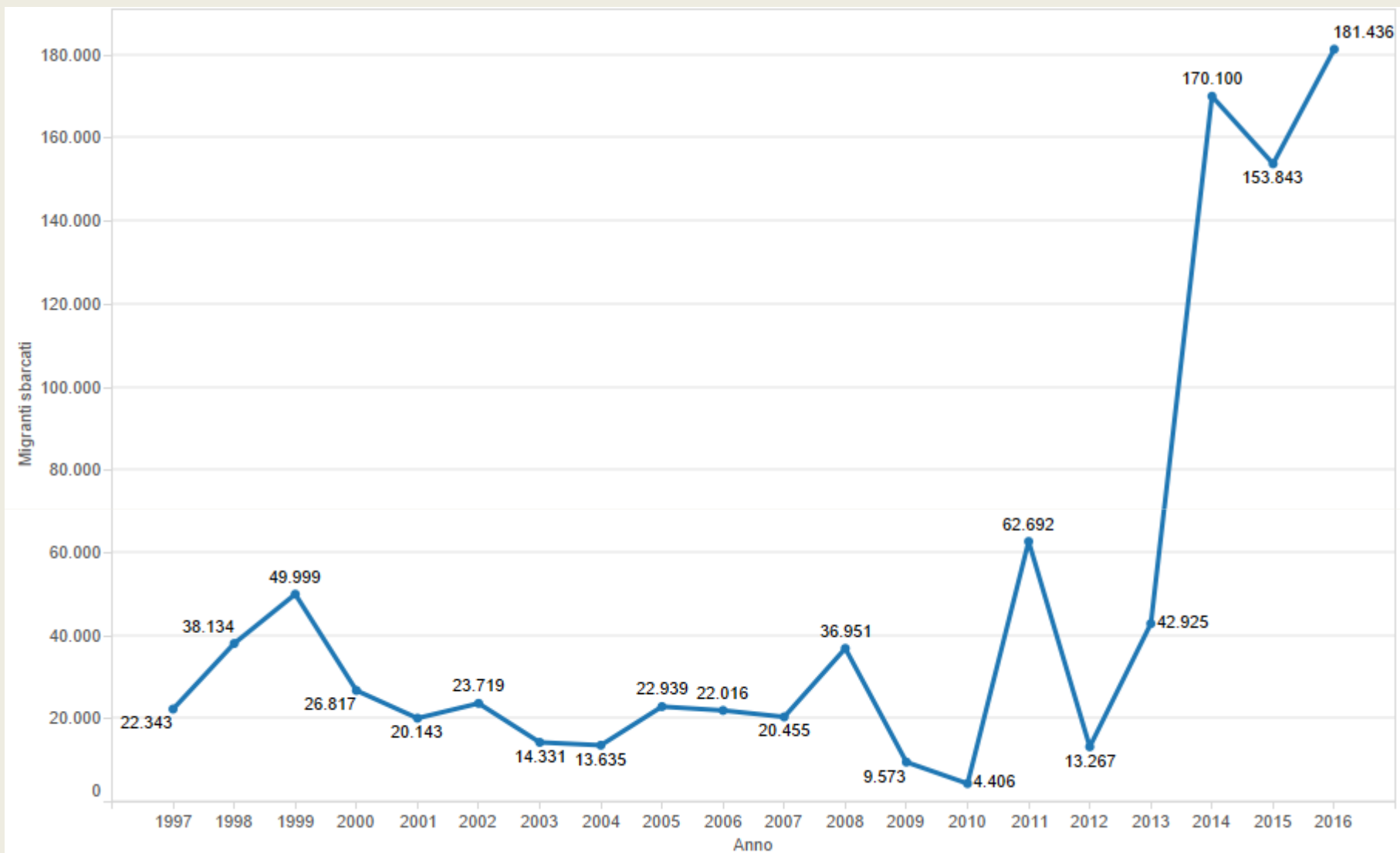
**(8.2% of Italian population)**

**Irregolari: 5 -700.000?**



**ID**Ossier Statistico  
Immigrazione





*Nel 2017 (gennaio-luglio): 85.042 sbarchi.*

*Sbarchi e richieste di asilo 1997-2016, in Fondazione Ismu.  
Statistiche immigrazione, in Ministero dell'Interno.*

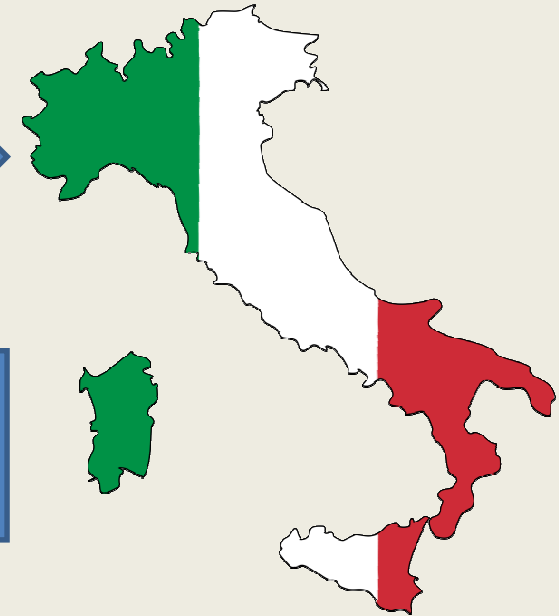


# Flussi turistici in Italia



48.600.000 international  
travellers to Italy in  
2014\*

13,617,248 Italian  
travellers to foreign  
countries in 2014\*\*



\*Source: World Tourism Organization (UNWTO) 2015 and

\*\* Source: "Viaggi e vacanze all'Estero e in Italia" ISTAT 2015.

Among International Italian travelers:

8.908.480 to UE-Europe

2.418.016 to non-UE-Europe,

2.290.752 to non European countries

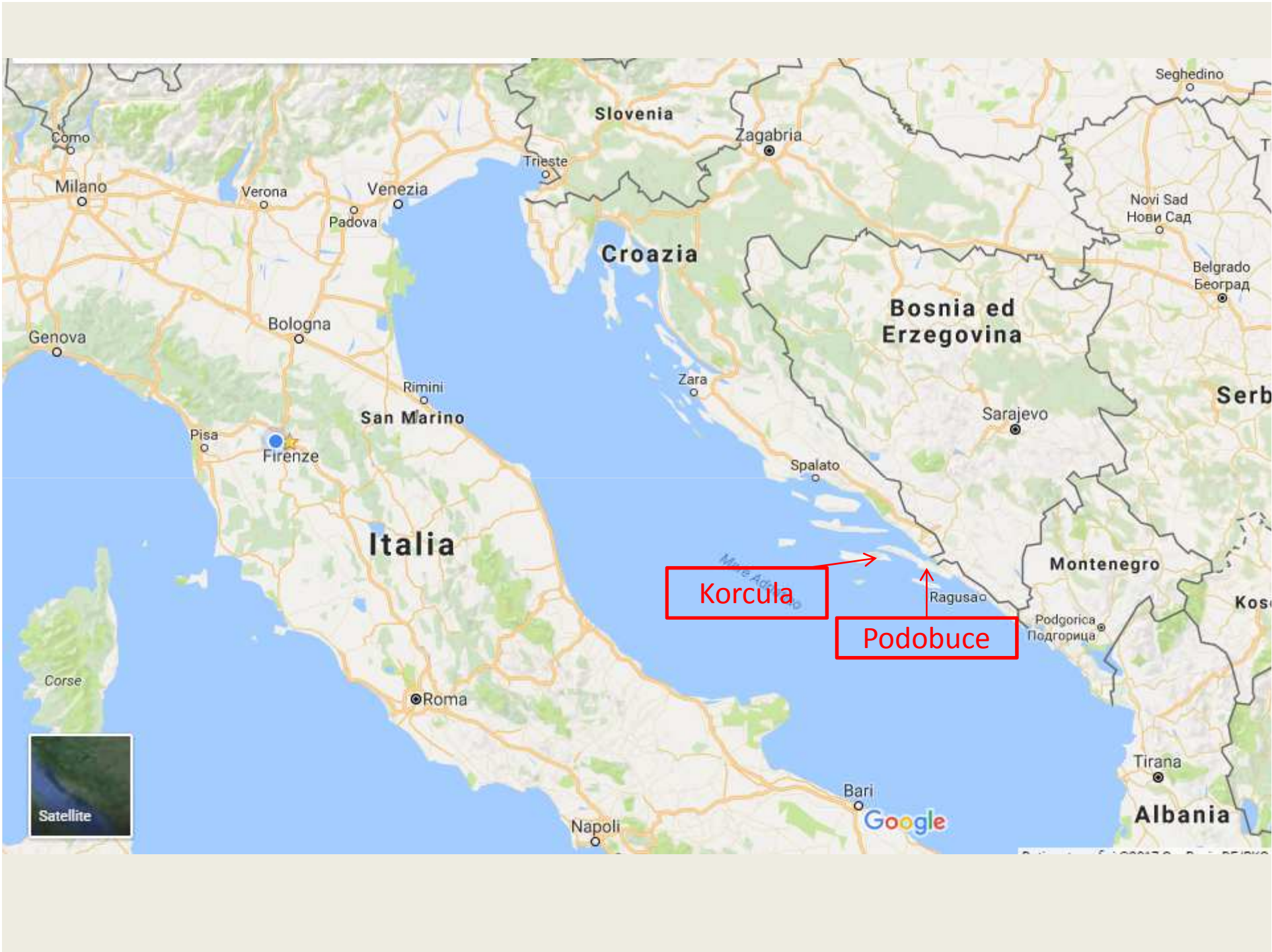
L'Italia è la 5° nazione per ricezione di turisti

Uomo tedesco di  
72 anni

Vacanza in  
Croazia dal 1 al  
15 agosto 2010  
con la famiglia







Korcula

Podobuce

Il 16 agosto (rientrato in Germania) sviluppa:

- Febbre  $>39^{\circ}\text{C}$
- Brividi
- Artralgie
- Cefalea
- Dolore retroorbitario

per 7 giorni



Emocromo con formula

.....  
.....  
.....  
.....

Dengue IgG-IgM



Piastrine 97,0000/mmc  
Dengue IgG negativo  
Dengue IgM positivo



In un secondo prelievo comparsa anche  
di Dengue IgG

# Dengue autoctona in Europa

## RAPID COMMUNICATIONS

### Dengue virus infection in a traveller returning from Croatia to Germany

J Schmidt-Chanasit (jonassi@gmx.de)<sup>1</sup>, M Haditsch<sup>2</sup>, I Schöneberg<sup>3</sup>, S Günther<sup>1</sup>, K Stark<sup>3</sup>, C Frank<sup>3</sup>

1. Bernhard Nocht Institute for Tropical Medicine, Department of Virology, Hamburg, Germany

2. Labor Hannover MVZ GmbH, Hannover, Germany

3. Robert Koch Institute, Department for Infectious Disease Epidemiology, Berlin, Germany

## RAPID COMMUNICATIONS

### Autochthonous dengue fever in Croatia, August–September 2010

I Gjenero-Margan (epidemiologija@hzjz.hr)<sup>1</sup>, B Aleraj<sup>1</sup>, D Krajcar<sup>2</sup>, V Lesnikar<sup>2</sup>, A Klobučar<sup>2</sup>, I Pem-Novosel<sup>1</sup>, S Kurečić-Filipović<sup>1</sup>, S Komparak<sup>3</sup>, R Martić<sup>3</sup>, S Đuričić<sup>4</sup>, L Betica-Radić<sup>4</sup>, J Okmadžić<sup>5</sup>, T Vilibić-Čavlek<sup>1</sup>, A Babić-Erceg<sup>1</sup>, B Turković<sup>1</sup>, T Avšič-Županc<sup>6</sup>, I Radić<sup>1</sup>, M Ljubić<sup>7</sup>, K Šarac<sup>1</sup>, N Benić<sup>2</sup>, G Mlinarić-Galinović<sup>1</sup>

1 symptomatic case + 15 subjects with serological evidence of infection



# Dengue autoctona in Europa

## RAPID COMMUNICATIONS

### First two autochthonous dengue virus infections in metropolitan France, September 2010

G La Ruche (g.laruche@invs.sante.fr)<sup>1</sup>, Y Souarès<sup>1</sup>, A Armengaud<sup>2</sup>, F Peloux-Petlot<sup>3</sup>, P Delaunay<sup>4</sup>, P Desprès<sup>5</sup>, A Lenglet<sup>6</sup>, F Jourdain<sup>7</sup>, I Leperc-Goffart<sup>8</sup>, F Charlet<sup>3</sup>, L Ollier<sup>4</sup>, K Mantey<sup>6</sup>, T Mollet<sup>6</sup>, J P Fournier<sup>4</sup>, R Torrents<sup>2</sup>, K Leltmeyer<sup>6</sup>, P Hilairet<sup>4</sup>, H Zeller<sup>6</sup>, W Van Bortel<sup>6</sup>, D Dejour-Salamanca<sup>1</sup>, M Grandadam<sup>5</sup>, M Gastellu-Etchegorry<sup>1</sup>

## RAPID COMMUNICATIONS

### Ongoing outbreak of dengue type 1 in the Autonomous Region of Madeira, Portugal: preliminary report

C A Sousa (casousa@ihmt.unl.pt)<sup>1,2</sup>, M Clairouin<sup>3</sup>, G Seixas<sup>1</sup>, B Viveiros<sup>3</sup>, M T Novo<sup>1,2</sup>, A C Silva<sup>3</sup>, M T Escoval<sup>4</sup>, A Economopoulou<sup>5</sup>  
1,891 cases in the period 03/10/2012-25/11/2012. DEN-1, probable Central or South American origin

## RAPID COMMUNICATIONS

### Autochthonous case of dengue in France, October 2013

E Marchand (ars-paca-cire@ars.sante.fr)<sup>1</sup>, C Prat<sup>2</sup>, C Jeannin<sup>3</sup>, E Lafont<sup>4</sup>, T Bergmann<sup>1</sup>, O Flusin<sup>2</sup>, J Rizzi<sup>4</sup>, N Roux<sup>4</sup>, V Busso<sup>5</sup>, J Deniau<sup>5</sup>, H Noel<sup>7</sup>, V Vaillant<sup>7</sup>, I Leperc-Goffart<sup>2</sup>, C Six<sup>1</sup>, M C Paty<sup>7</sup>

*Aedes albopictus*

Current known distribution: December 2011

- Indigenous
- Recently present
- Absent
- No data
- Unknown

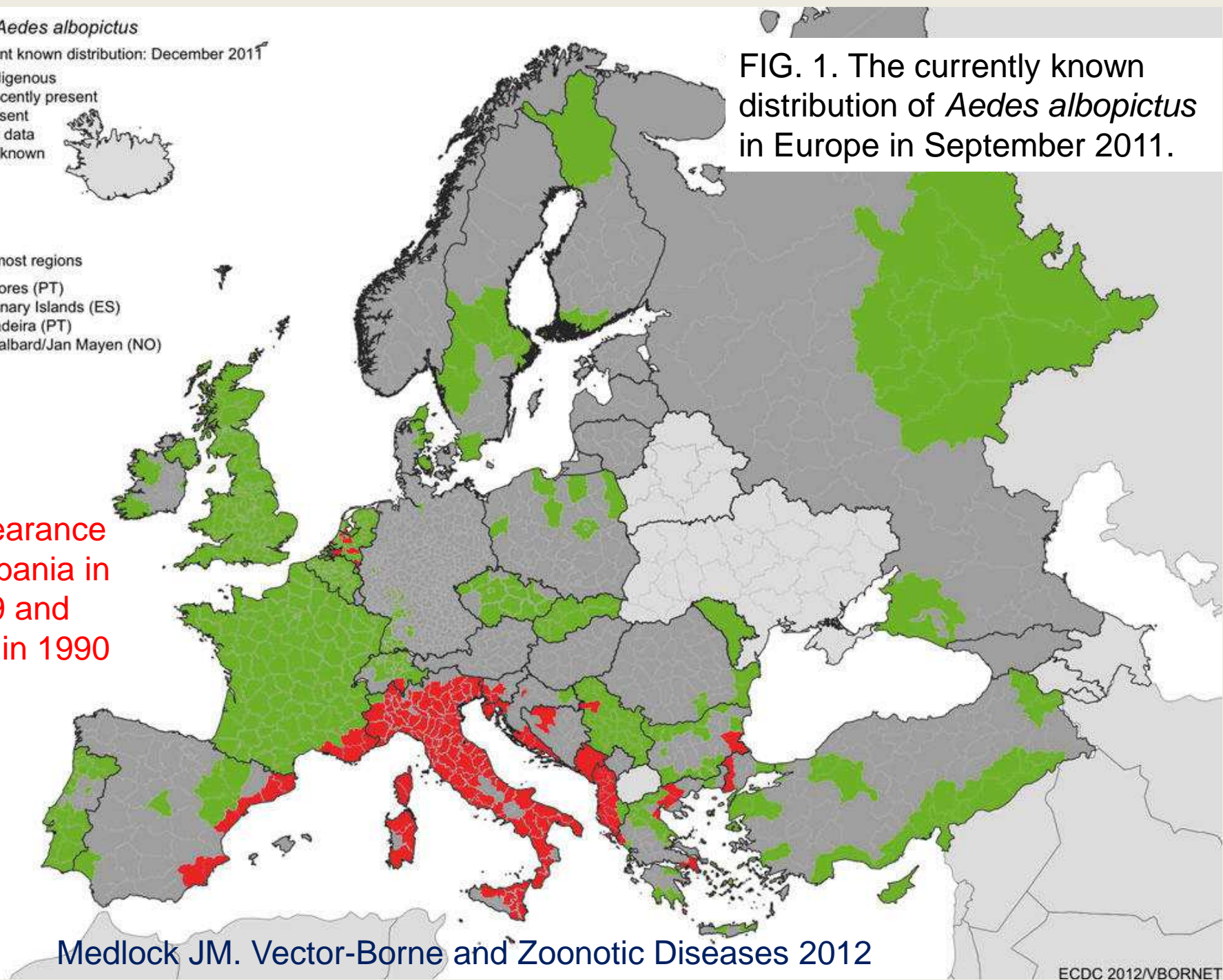


Outermost regions

- Azores (PT)
- Canary Islands (ES)
- Madeira (PT)
- Svalbard/Jan Mayen (NO)

First appearance in Albania in 1979 and Italy in 1990

FIG. 1. The currently known distribution of *Aedes albopictus* in Europe in September 2011.



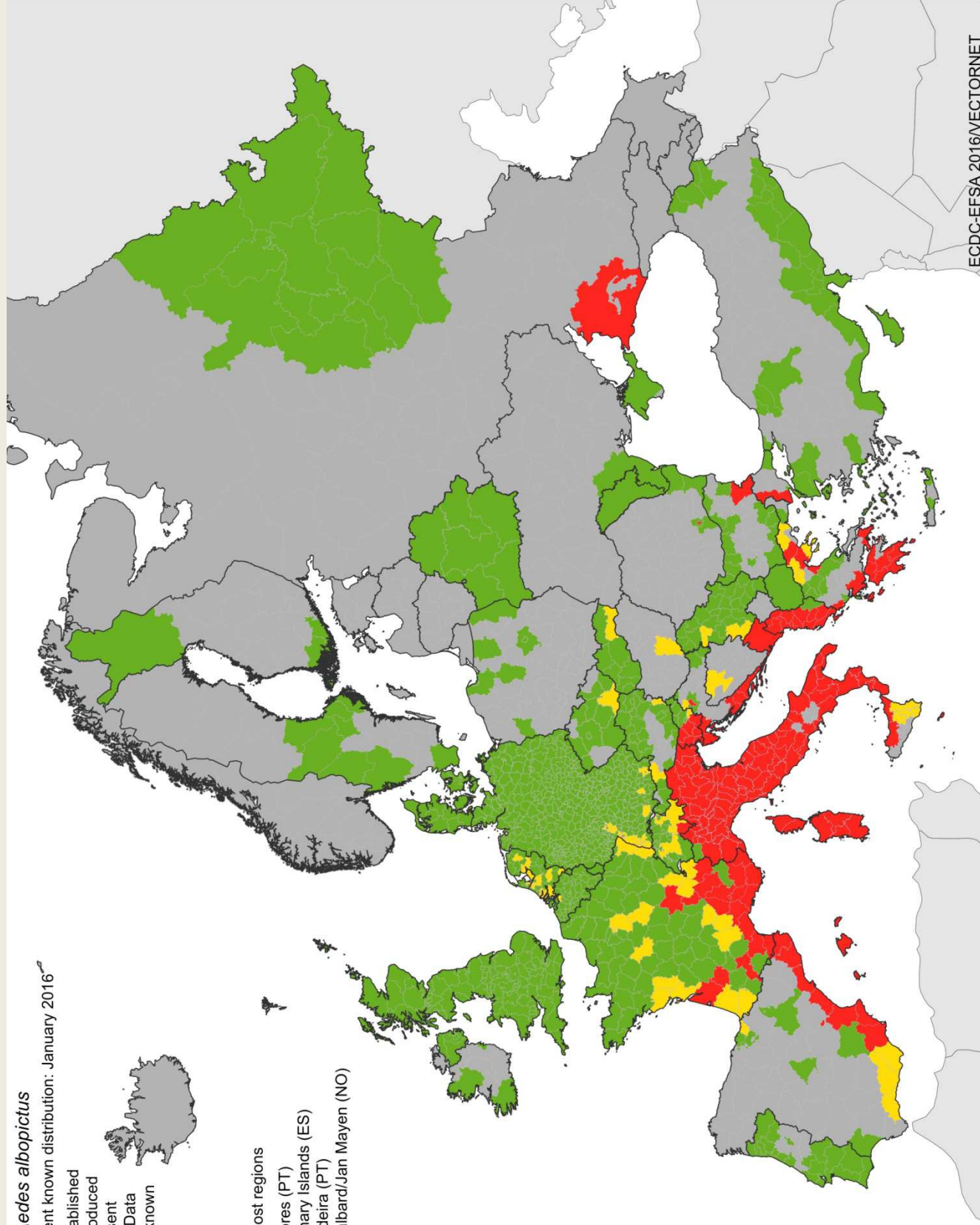


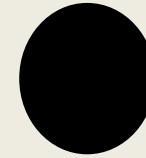
*Aedes albopictus*

Current known distribution: January 2016

- Established
- Introduced
- Absent
- No Data
- Unknown

- Outermost regions
- Azores (PT)
  - Canary Islands (ES)
  - Madeira (PT)
  - Svalbard/Jan Mayen (NO)

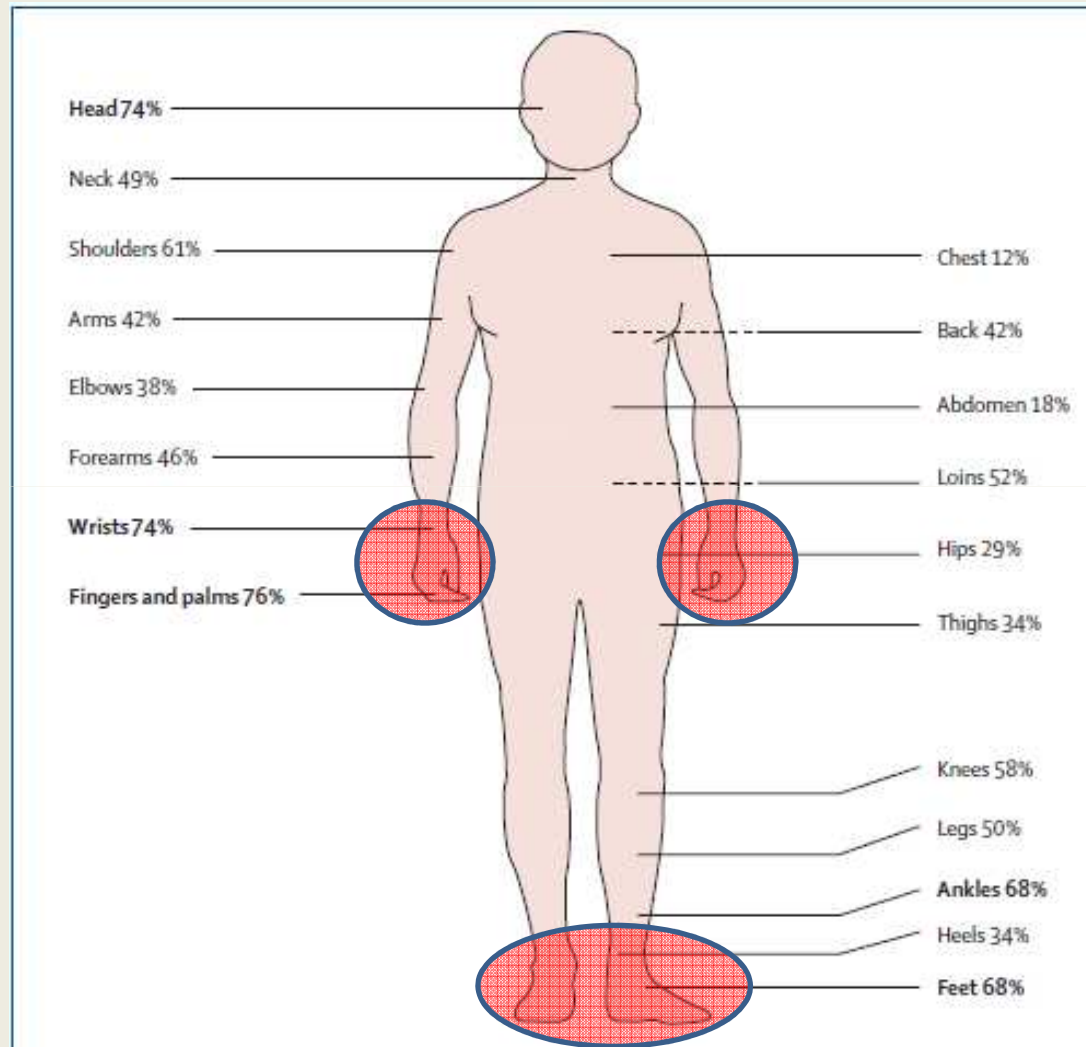




Signora colombiana rientrata da 3  
giorni dal suo paese d'origine con:  
-eruzione cutanea  
-dolori e tumefazioni articolari  
(mani piedi, ginocchia)  
- febbre 39°

**CHIKUNGUNYA**

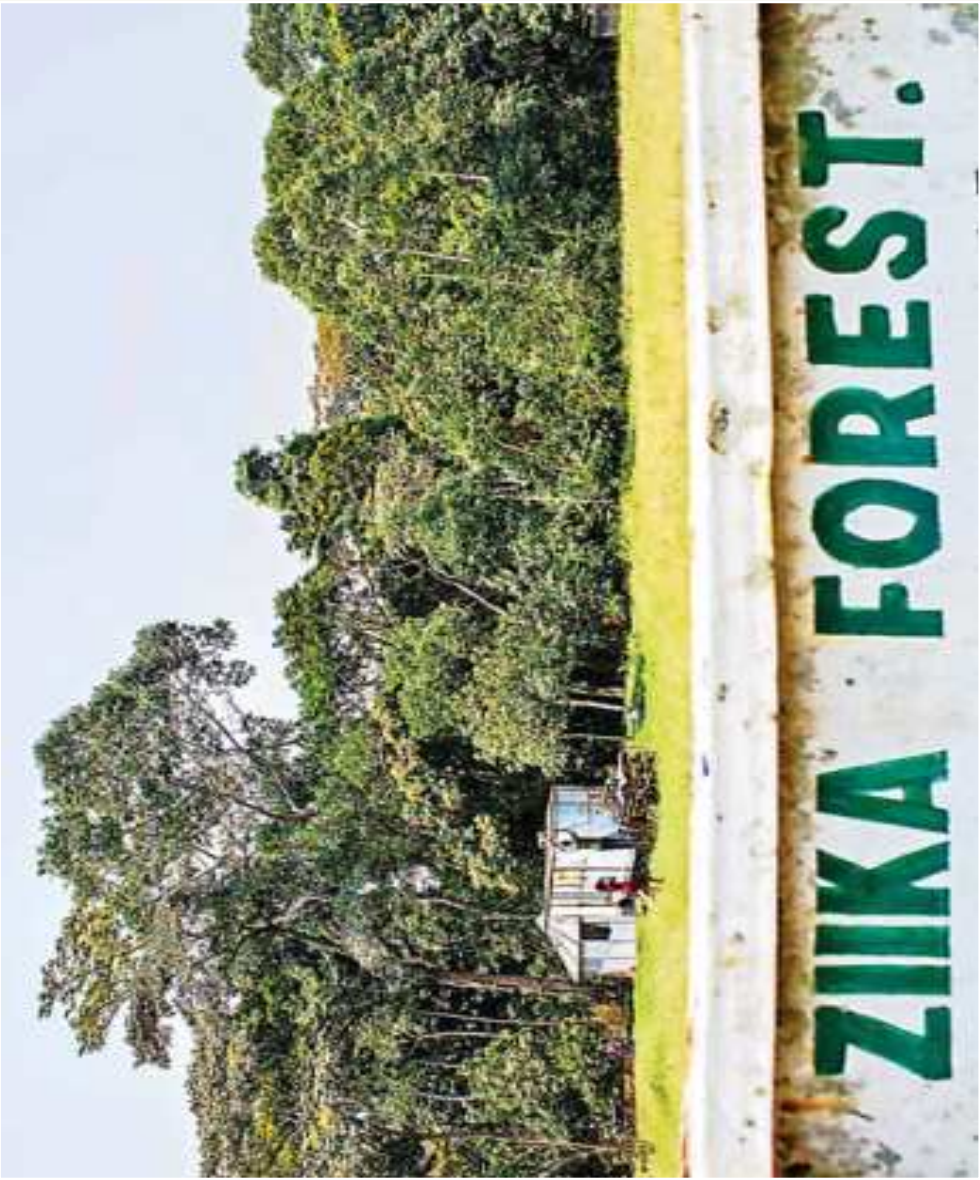
## Frequency of pain by location during acute stage of CHIKV infection



Queyriaux B, Lancet 2008

## Persistence or recurrence of arthralgia/arthritis after CHIKV infection

<b>Time after initial infection</b>	<b>Portion of symptomatic patient</b>	<b>Reference</b>
15 months	57% (persistence or episodes of recurrence of arthralgia)	Sissoko 2009
3 years	12% (stiffness, swelling, and pain)	Bringhton 1983
12 months	66.5%	Moro 2012







Contents lists available at ScienceDirect

Journal of Clinical Virology

journal homepage: [www.elsevier.com/locate/jcv](http://www.elsevier.com/locate/jcv)



Case report

Zika virus infections imported to Italy: Clinical, immunological and virological findings, and public health implications

<sup>1</sup> Lorenzo Zammarchi <sup>a</sup>, Giulia Stella <sup>a</sup>, Antonia Mantella <sup>a</sup>, Dario Bartolozzi <sup>b</sup>, Dennis Tappe <sup>c</sup>, Stephan Günther <sup>c</sup>, Lisa Oestereich <sup>c</sup>, Daniel Cadar <sup>c</sup>, César Muñoz-Fontela <sup>c,d</sup>, Alessandro Bartoloni <sup>a,b,\*</sup>,<sup>1</sup> Jonas Schmidt-Chanasit <sup>c,e,1</sup>

## RAPID COMMUNICATIONS

# Zika virus infection in a traveller returning to Europe from Brazil, March 2015

L Zammarchi<sup>1</sup>, D Tappe<sup>2</sup>, C Fortuna<sup>3</sup>, M E Remoli<sup>3</sup>, S Günther<sup>2</sup>, G Venturi<sup>3</sup>, A Bartoloni (alessandro.bartoloni@unifi.it)<sup>1</sup>, J Schmidt-Chanasit<sup>2</sup>

## RAPID COMMUNICATIONS

# An autochthonous case of Zika due to possible sexual transmission, Florence, Italy, 2014

G Venturi<sup>1</sup>, L Zammarchi<sup>2,3</sup>, C Fortuna<sup>1</sup>, ME Remoli<sup>1</sup>, E Benedetti<sup>1</sup>, C Fiorentini<sup>1</sup>, M Trotta<sup>3</sup>, C Rizzo<sup>4</sup>, A Mantella<sup>2</sup>, G Rezza<sup>1</sup>, A Bartoloni<sup>2,3</sup>



# Zika virus



## Incubazione 4-7 gg (<14 gg)

- **rash cutaneo** (90%) generalmente maculare o maculo-papulare, pruriginoso e a evoluzione centrifuga
- **cefalea** (67%)
- **febbre di basso grado** (67%)
- **artralgia** (58%)
- **mialgia** (49%)
- **dolore oculare retro-orbitario** (40%)
- **congiuntivite bilaterale** (39%)
- **edemi periarticolari** (23%)
- **linfadenopatia** localizzata o generalizzata (40% dei casi)

# Zika virus

## Possibili complicanze?



Georges Guillain



Jean-Alexandre Barré

- Associazione Sindrome di Guillain Barré con l'infezione da Zika
- Ricontrata per la prima volta in Polinesia Francese
- Rischio di sviluppare una sindrome di Guillain Barré dopo una infezione da Zika virus è intorno al 0,024% (simile a quello che si ha dopo una infezione da *Campylobacter jejuni*)
- Esordio della sintomatologia neurologica seguiva di circa 6 giorni quello l'esordio della sintomatologia dovuta a Zika virus.

### Guillain-Barré Syndrome outbreak associated with Zika virus infection in French Polynesia: a case-control study



Van-Mai Cao-Lormeau\*, Alexandre Blake\*, Sandrine Mons, Stéphane Lastère, Claudine Roche, Jessica Vanhomwegen, Timothée Dub, Laure Baudouin, Anita Teissier, Philippe Larre, Anne-Laure Vial, Christophe Decam, Valérie Choumet, Susan K Halstead, Hugh J Willison, Lucile Musset, Jean-Claude Manuguerra, Philippe Despres, Emmanuel Fournier, Henri-Pierre Mallet, Didier Musso, Arnaud Fontanet\*, Jean Neil\*, Frédéric Ghawché\*

Aumento dei casi di GBS osservato anche in: Brazil, Colombia, Dominican Republic, El Salvador, Honduras, Suriname and Venezuela in corso di epidemia di Zika virus

## Microcefalia grave con collasso delle ossa craniche

Figure 1. Cranial Morphology Supporting Fetal Brain Disruption Sequence Phenotype in Congenital Zika Syndrome

**A** Lateral view of skull irregularities



**B** Excessive scalp with folds



**C** Lateral skull radiograph



## Contratture congenite (piede torto, artrogriposi)

Figure 4. Infants With Congenital Zika Infection, Microcephaly, and Arthrogryposis

**A** Multiple contractures with knee dislocation

**B** Multiple contractures including right talipes equinovarus



A, Newborn infant with bilateral contractures of the hips and knees, bilateral talipes calcaneovalgus, and anterior dislocation of the knees. Hips are bilaterally dislocated. B, Newborn infant with bilateral contractures of the shoulders, elbows, wrists, hips, knees, and right talipes equinovarus. Hips are bilaterally dislocated.

**GRAZIE PER L'ATTENZIONE!**