Training workshop on emerging infectious diseases – 2026 - Istanbul

25th and 26th March

French experience : management of indigenous cases of Dengue in continental France

Acknowledgments
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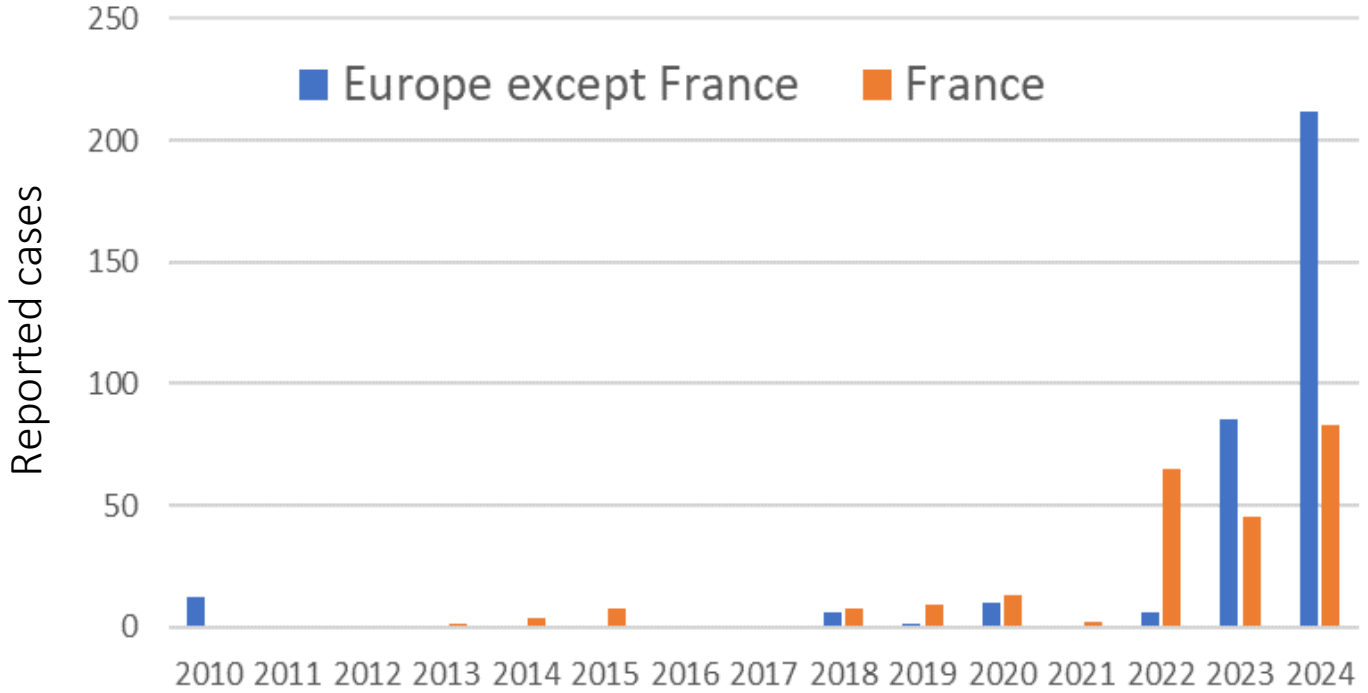
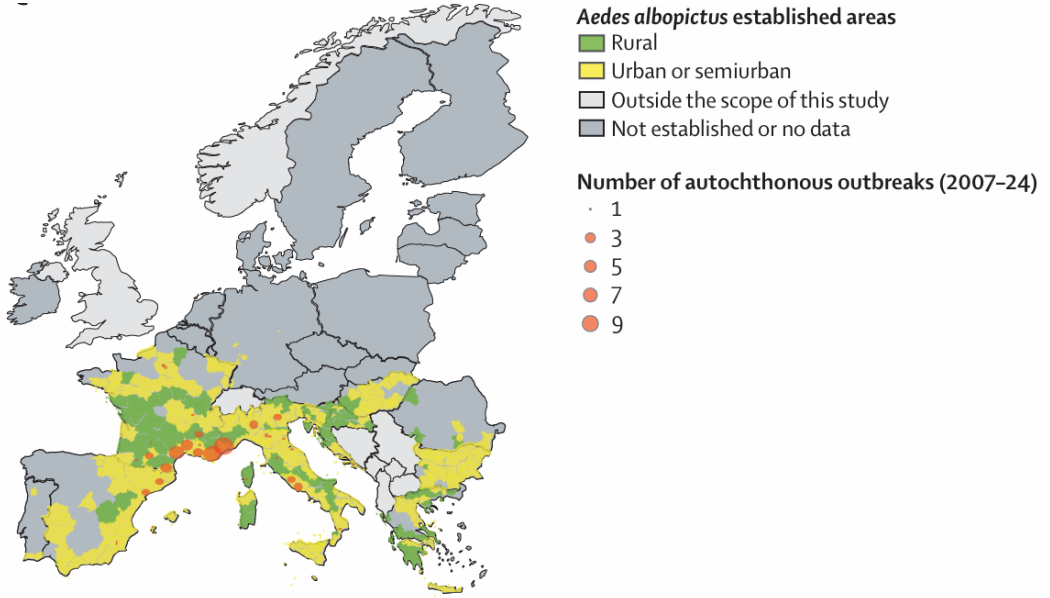
Autochthonous cases in Europe



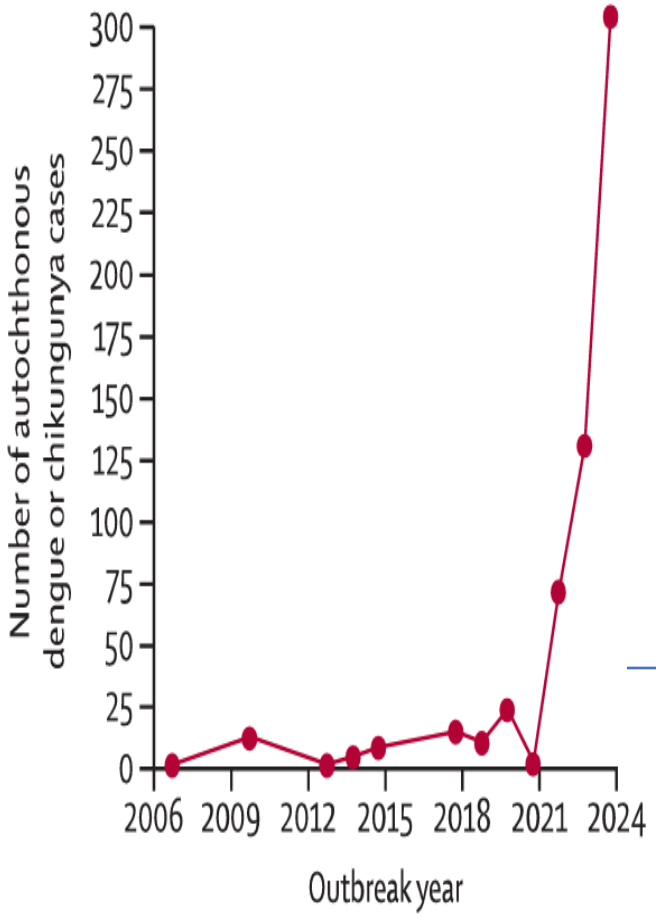


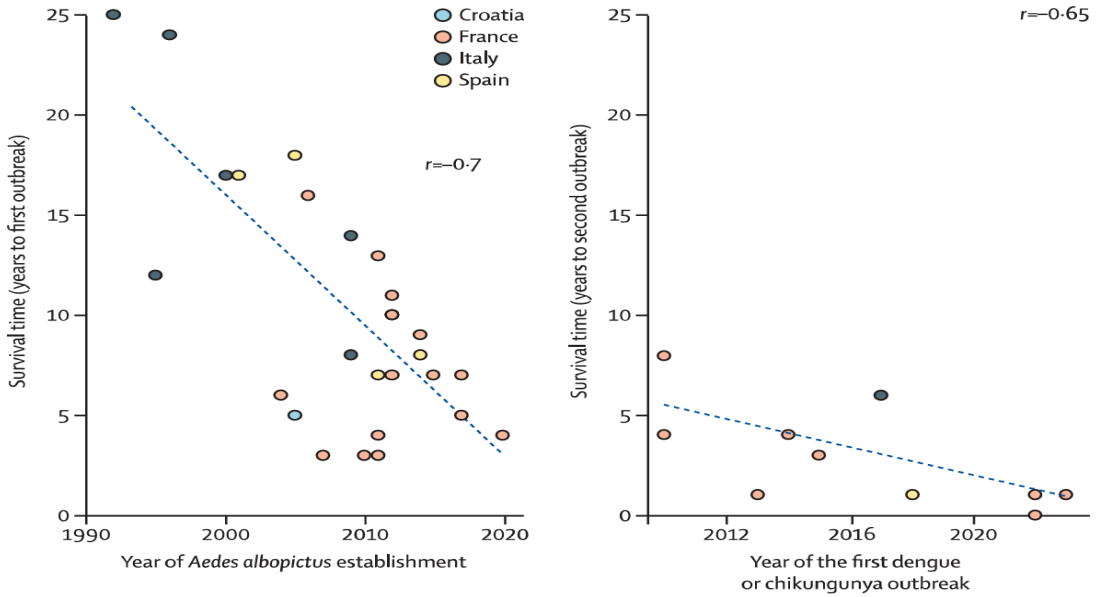
France

One of the main contributors,

together with Italy and Spain

Prospectively:
a faster and more intense epidemiological dynamic





Observed acceleration with a prospective analysis <u>over time</u> indicating:

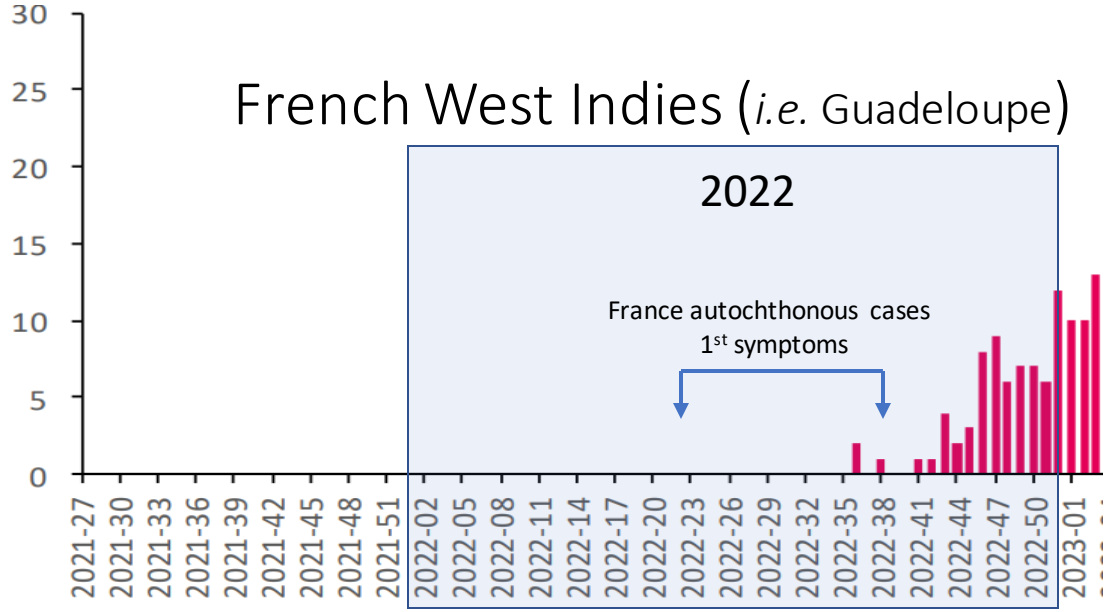
- a shorter interval between the mosquito's introduction and the 1st outbreak
- a shorter interval between the first two outbreak

Farooq Z. Lancet Planet Health . 2025 May;9(5):e374-e383.

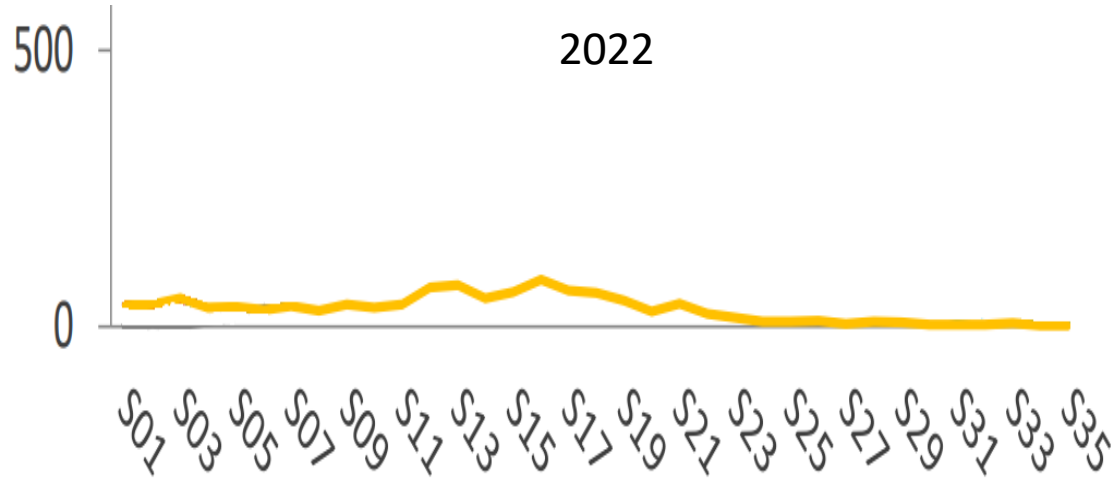
2022 Dengue outbreak in France : Where does it come from ?

What was dengue activity like in the Overseas Territories at that time ?

French West Indies (*i.e.* Guadeloupe)



Reunion island (Indian Ocean)



+ 272 imported cases from: 42% Americas, 35% Asia, 16% Africa

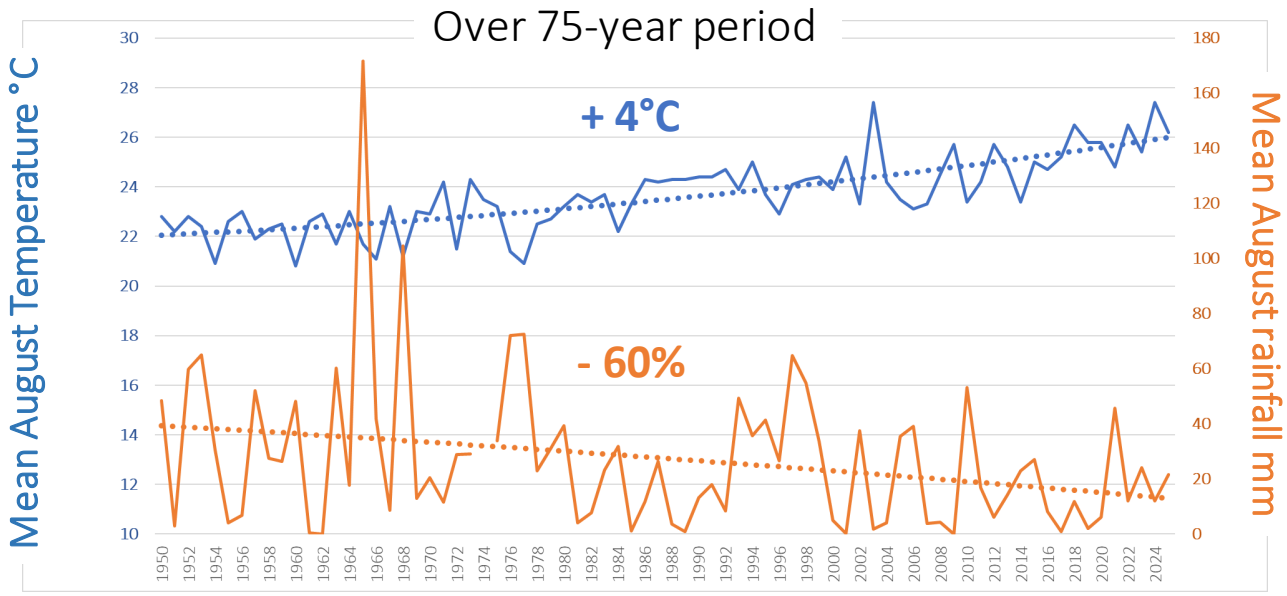
→The emergence is not closely linked to overseas territories outbreaks

→ Local conditions facilitate the emergence from few cases

→ Potential testing gap ?

2022 Dengue outbreak in the south east of France : Why this area ?

Small villages surrounded by rural areas and close to a big city and an international airport and...



... a local warming
that exceeds global warming

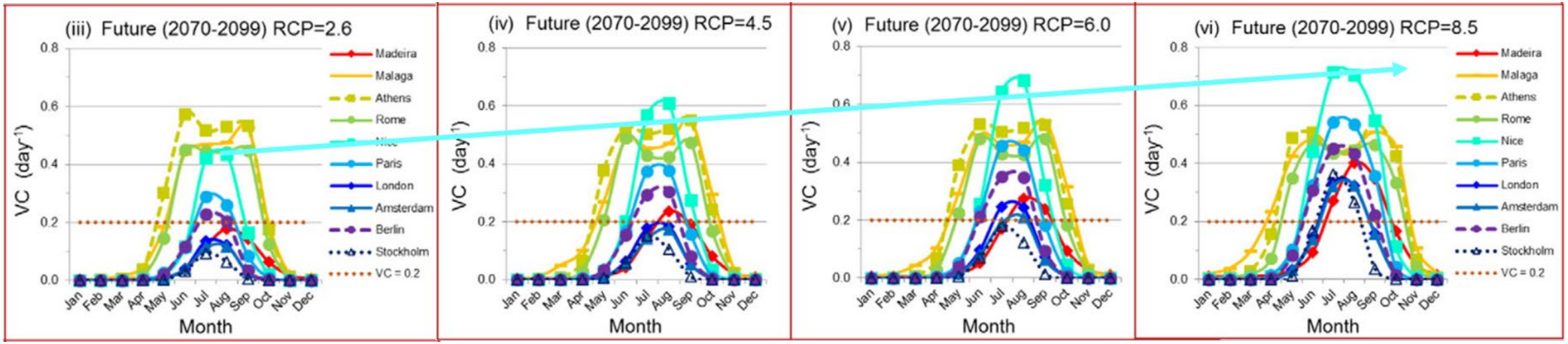
↓

to be aware of
local geo-climatic features

Key Concern

2022 Dengue outbreak in the south east of France : Why this area ?

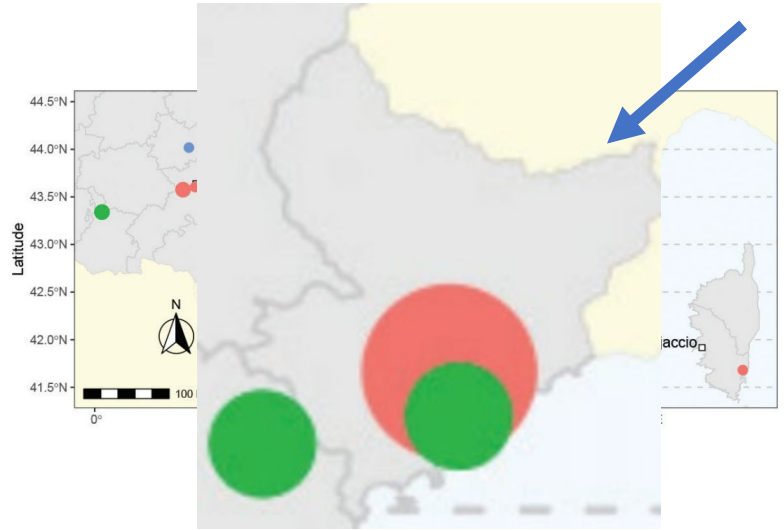
Nice, France…. as expected



« Get ready »

Liu-Helmersson J. *EBioMedicine* 2016:7:267-77.

2022 Dengue outbreak in the south east of France : Why does it look like ?



French cases 2022

51/65 = 78% in the Southeastern of France

n=11
DENV3

n=22
DENV3

n=1
DENV3

n=10
DENV1

Late June : Administrative district **Var** (n=7 DENV1)

Early August : Administrative district **Alpes Maritimes** n=44 DENV1/3

Cochet A. Euro Surveill . 2022;27(44):2200818.

2022 Dengue outbreak in the south east of France : The way we managed it !

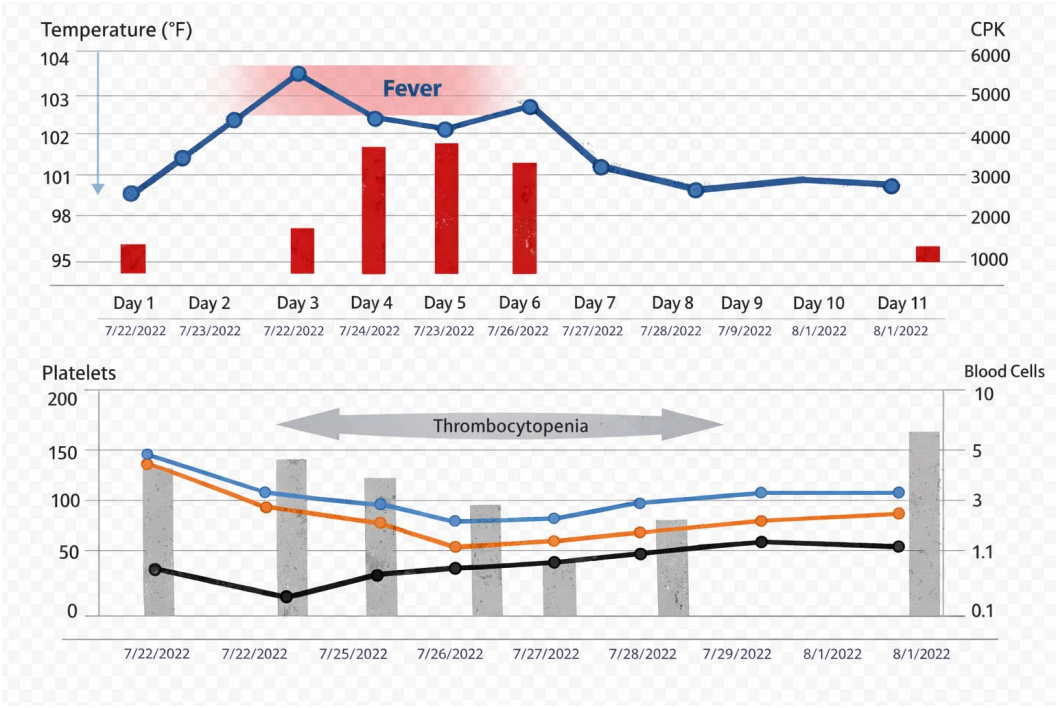
A limited number of cases → all but one managed in primary care

Case summary

41-year-old male
No recent travel
85% disabled following TBI
History of psychotic disorders

ED visit on 07/21: “seizure disorder”
Initial clinical presentation:

- Psychomotor slowing
- Dysarthria
- Afebrile



→ Blood diagnosis (NS1+PCR+) : D18
CSL diagnosis (PCR) : D26

vigilance !

The alert–response timeline

→in a region where dengue is not endemic,

→with a pre-alert issued one month earlier

Index case : August 7 fever / headache / retro-orbital pain / rash = **D0**

Primary care physician : Initial management of a viral illness / symptomatic treatment

DENV serology ordered (persistent symptoms + pre-alert recalled) **D9**

Serology **+** → Alert forwarded to the Regional Health Agency **D12**

Vector control interventions : D18-D52

The French Interdepartmental Agreement

for Mosquito Control of the Mediterranean Coast

→serves as a regional vector-control operator with a primary focus on wetland areas

→created in 1959

→Public agency

→Operational contract with the Regional Health Agency

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OPÉRATEUR PUBLIC EN ZONES HUMIDES
Démoustication

Vector control interventions : D18-D52

Bacillus thuringiensis israelensis (Bti) larvicide spraying

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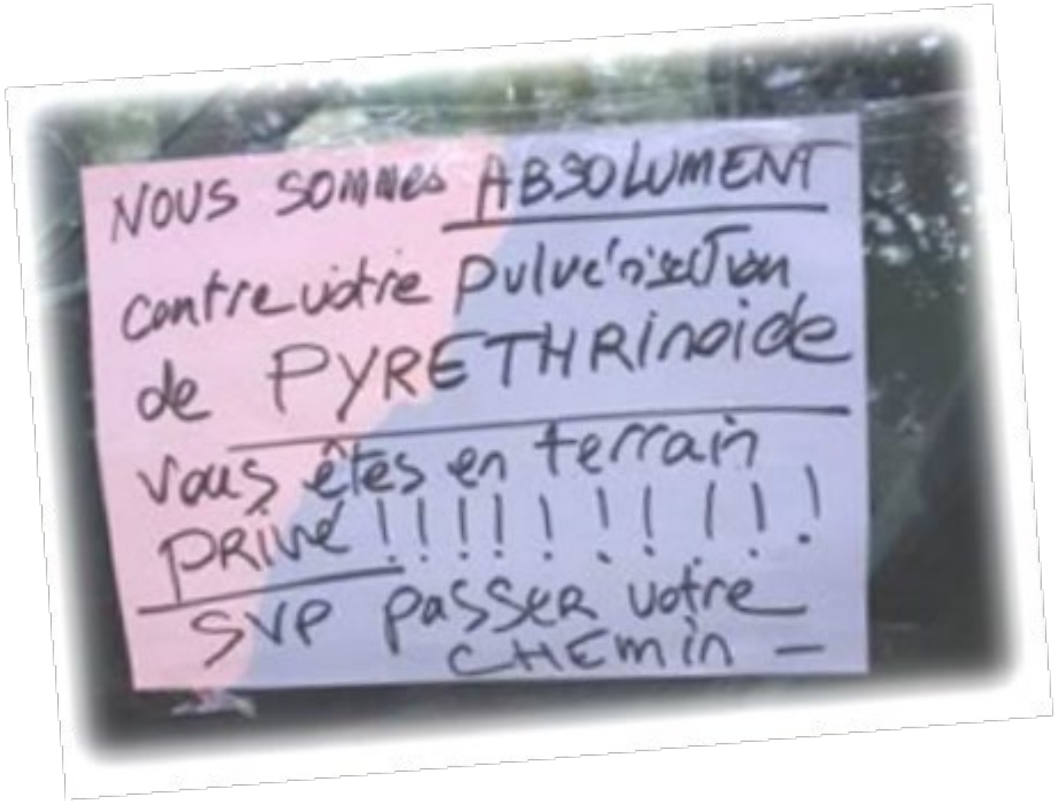
Vector control interventions : D18-D52



We are ABSOLUTELY opposed to your PYRETHROID spraying. You are on private property!!!!!!!!!! Please leave immediately

Some degree of public concern/resistance

Key Concern

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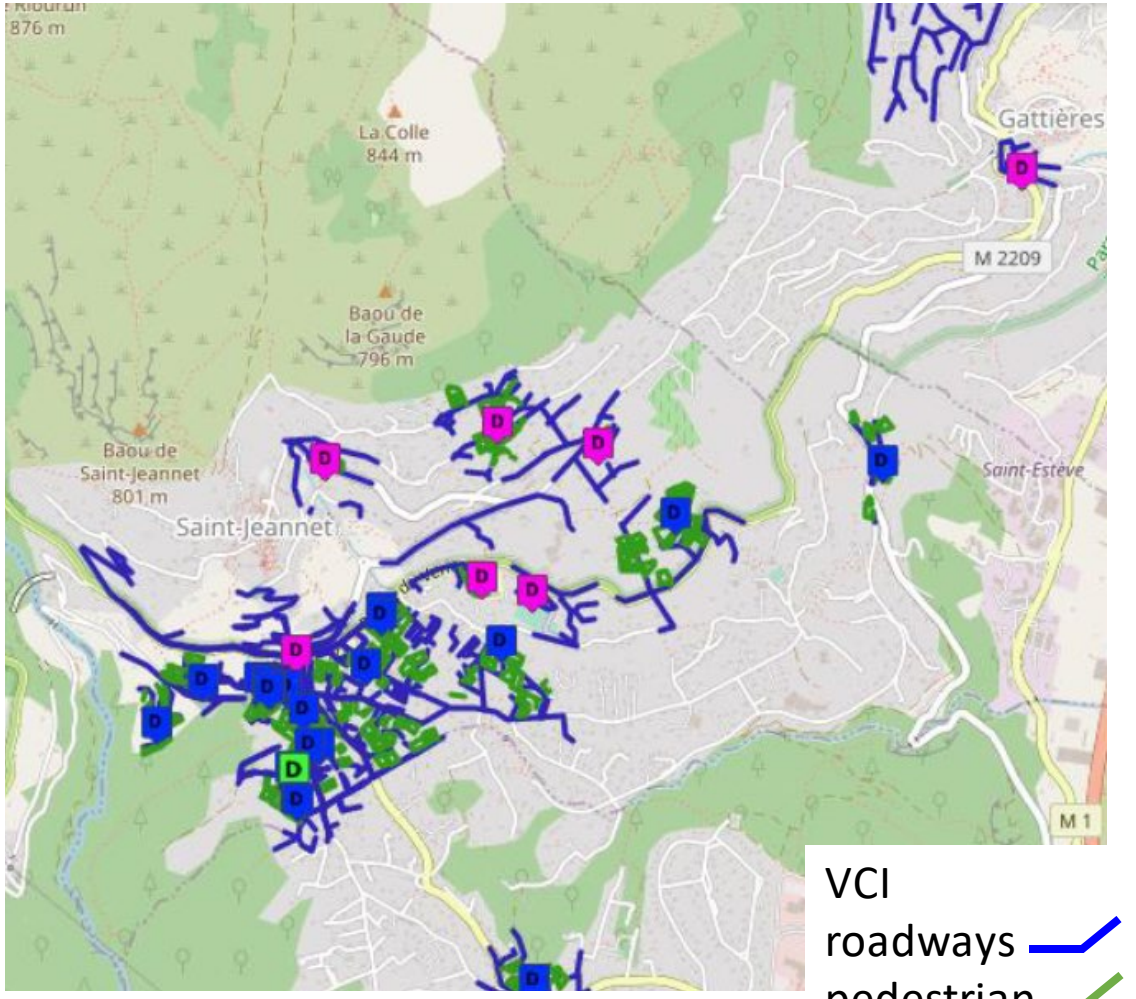
Vector control interventions

- Household field investigations
- (Indoor) Larval habitat elimination
- Trap deployment
- Post-spraying monitoring



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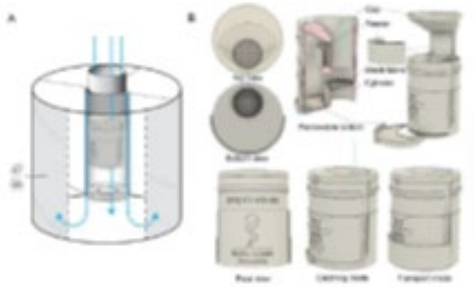
Vector control interventions

Mosquito trap



Post-spraying monitoring

Assessment of Vector control intervention (VCI) **effect**: Treatments 1 or 2 days before collection

VCI Zone	HH Trap	W1	W2	W3	W4	Avg. Before (/D)	Avg. After (/D)	Reduction
Intra	DS14	16	15	3	10	**2.4**	**0.9**	64%
Intra	DS11	31	46	2	7	**4.3**	**0.9**	78%

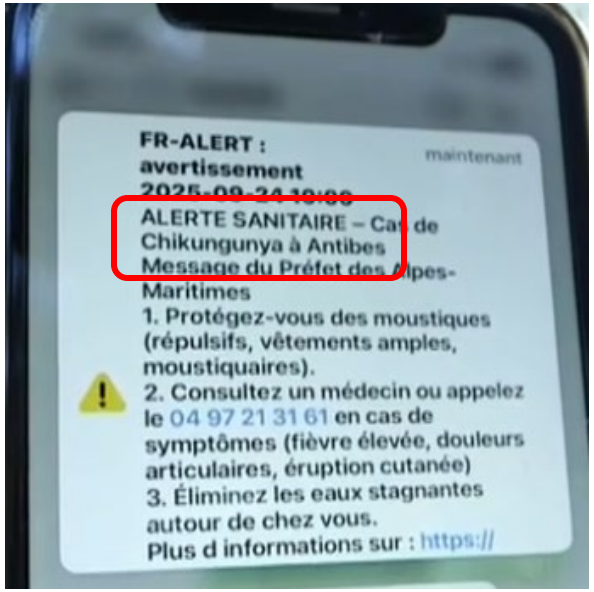
2022 Dengue outbreak in the south east of France : What have we learned !

Epidemiologic perspective

1. Arboviruses, a growing concern

CHIKV Administrative district Alpes Maritimes

n=206 autochthonous cases



2. **South East of France** : a climate-crisis hot-spot

40% increase in
heat-related death rate (end of the century)

Garcia-Leon D. Lancet Public Health 2024 Sep;9(9):e644-e653.

Alert and Medical Response

1. Primary care is key for early detection

Primary care practitionner awareness

→ unexplained fever
→ rash with fever
→ fever + thrombocytopenia

→

- Education
- Awarness messages from the Regional Health Agency
- Easy access to an infectious diseases hotline

2. Infectious diseases referral center needs to be prepared

	Reported cases	ED reported cases	Number of hospitalization	Severe cases / deaths
SouthEast France – 2022	51	2 (4%)	1	0
French west Indies – 2023/2024	37388	2969 (8%)	563 (**19%**)	85 / 16

→ Up to 20% of cases needs hospital care

Vector control interventions VCI

1. Preventive and curative vector control is essential to limiting vector-borne epidemic risk

New method to reduce mosquito density :
Releases of sterile male mosquitoes carrying a biocide

Bouyer J. Sci Rep 2025 May 21;15(1):17648.

2. Community education is crucial for prevention (larval habitats) and for epidemic control (acceptance of interventions)

Because **prevention** is always
the most effective way to protect **health**

and

the **climate crisis** has, and will continue to have,
a **major impact on it**

→ We should consistently work

to **mitigate climate change**

by **adapting our lifestyles**