

# Description of a Dengue outbreak, New Caledonia 2012-2013

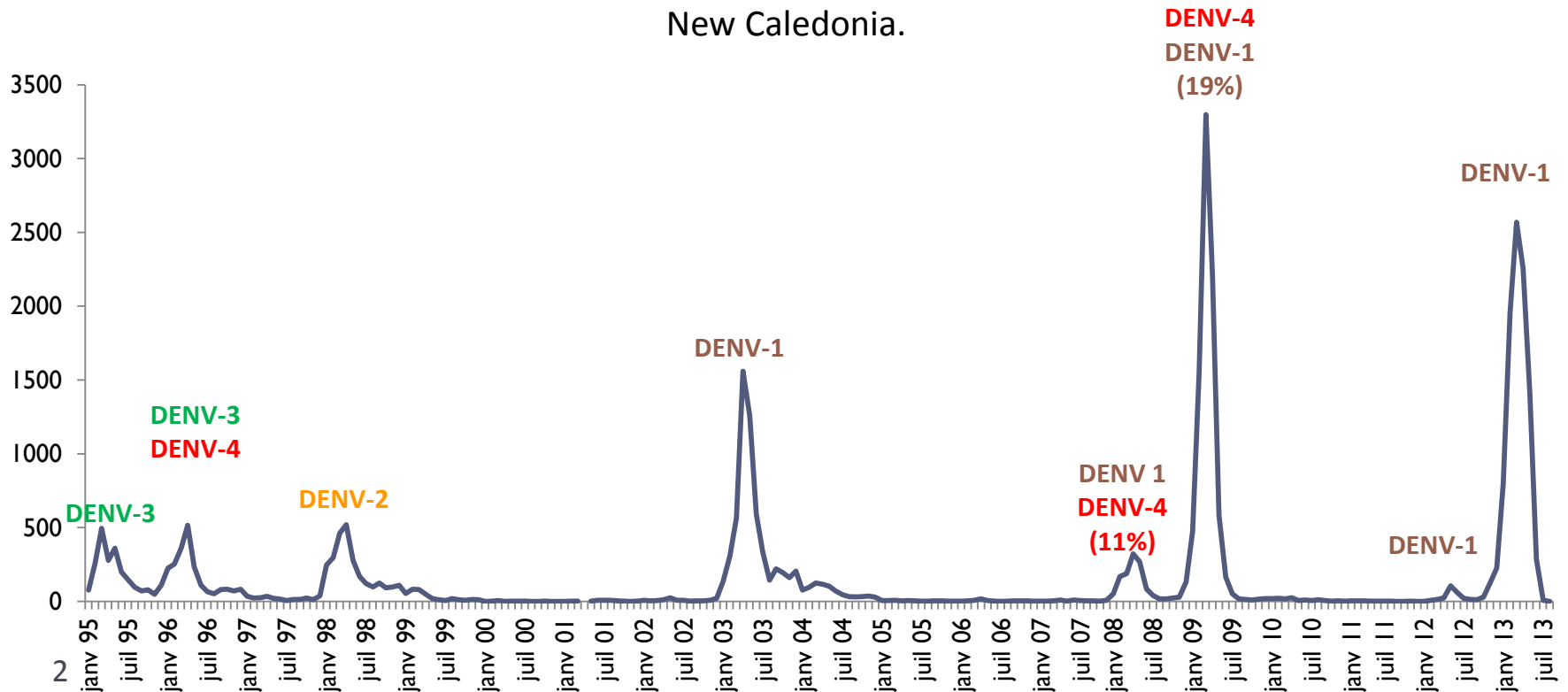
*JS – IPNC*  
*21 november 2013*

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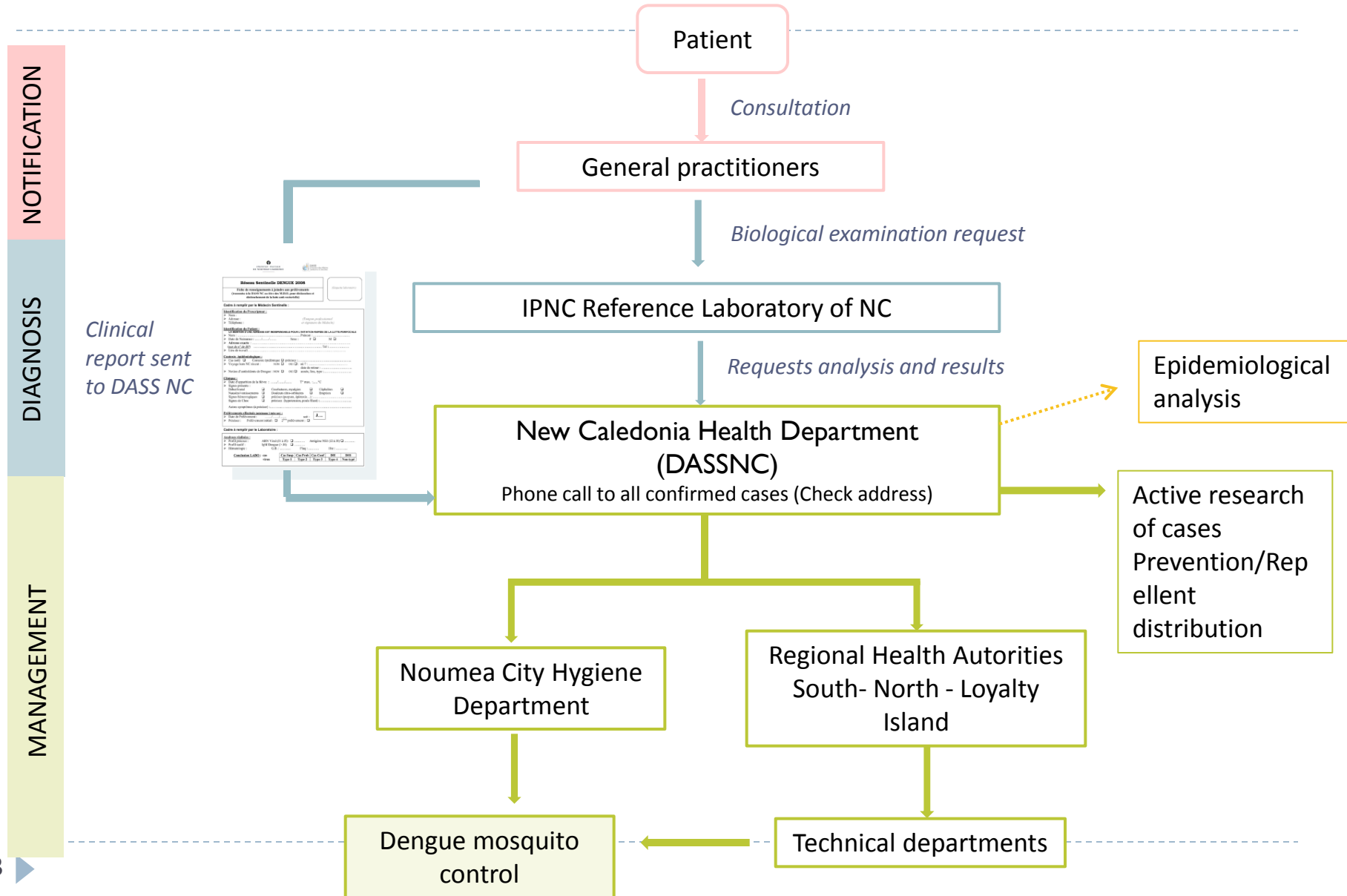
# Context in NC

- ▶ Major outbreaks every 3 to 5 years
- ▶ Since 2003, mainly Dengue type DENV-1

Evolution of reported cases of dengue and major serotypes identified between 1995-2013, New Caledonia.



# Dengue surveillance in NC



# Dengue mosquito control

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- ▶ Municipalities : responsibility for legislation enforcement in relation with public health risks against mosquitoes
  - ▶ 33 mosquito control municipalities in New Caledonia
- ▶ Dengue mosquito control activities
  - ▶ Hot fogging with deltamethrin immediately around patients' house
  - ▶ Space sprayings at D 1, D 3 and D 8 (with malathion in Noumea, deltamethrin elsewhere), in patients' dwellings only
  - ▶ Source reduction within a 100m radius of home owner
  - ▶ Neighbours information, flyer distribution



# 2013 Outbreak

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- ▶ Périod : septembre 1<sup>st</sup>, 2012 to july 15<sup>th</sup>, 2013
- ▶ 112 samples analysed for serotypes with 99.1% type DENV-1
- ▶ Cases reported: N= 10 909
  - ▶ 85.5% biologically confirmed cases
  - ▶ 3.5% hospitalized
  - ▶ 5 deaths (letality= 0.05%)

# 2013 Outbreak

- ▶ All of the 33 departments affected :
  - ▶ Highest incidence rate in Bourail (9.7/10 000) and La Foa (9.1/10 000)

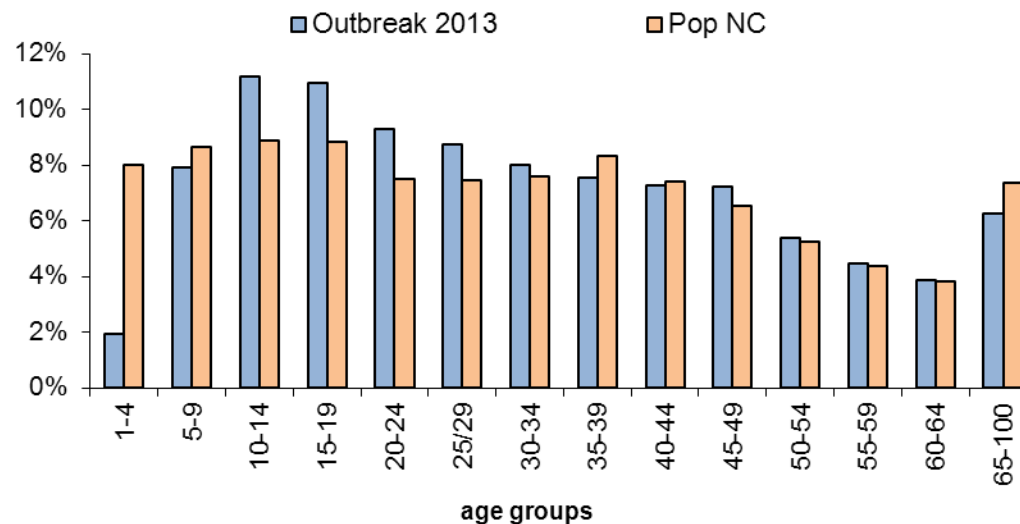
Comparison by age, sex and place of declaration of reported cases of dengue between 2012/2013 and the general population of New Caledonia

	2013 Outbreak N= 10 909 (%)	NC population N=245 580	<i>p-value</i>
Place of declaration :			
Grand Nouméa	66.0	66,7	<i>NS</i>
Rural NC	34.0	33,3	
Mean age ( <i>standard error</i> )	33.2 (19.1)	29.4	<i>NS</i>
Sex : F	49.4	49,3	<i>NS</i>
M	50.6	50,7	

# 2013 Outbreak

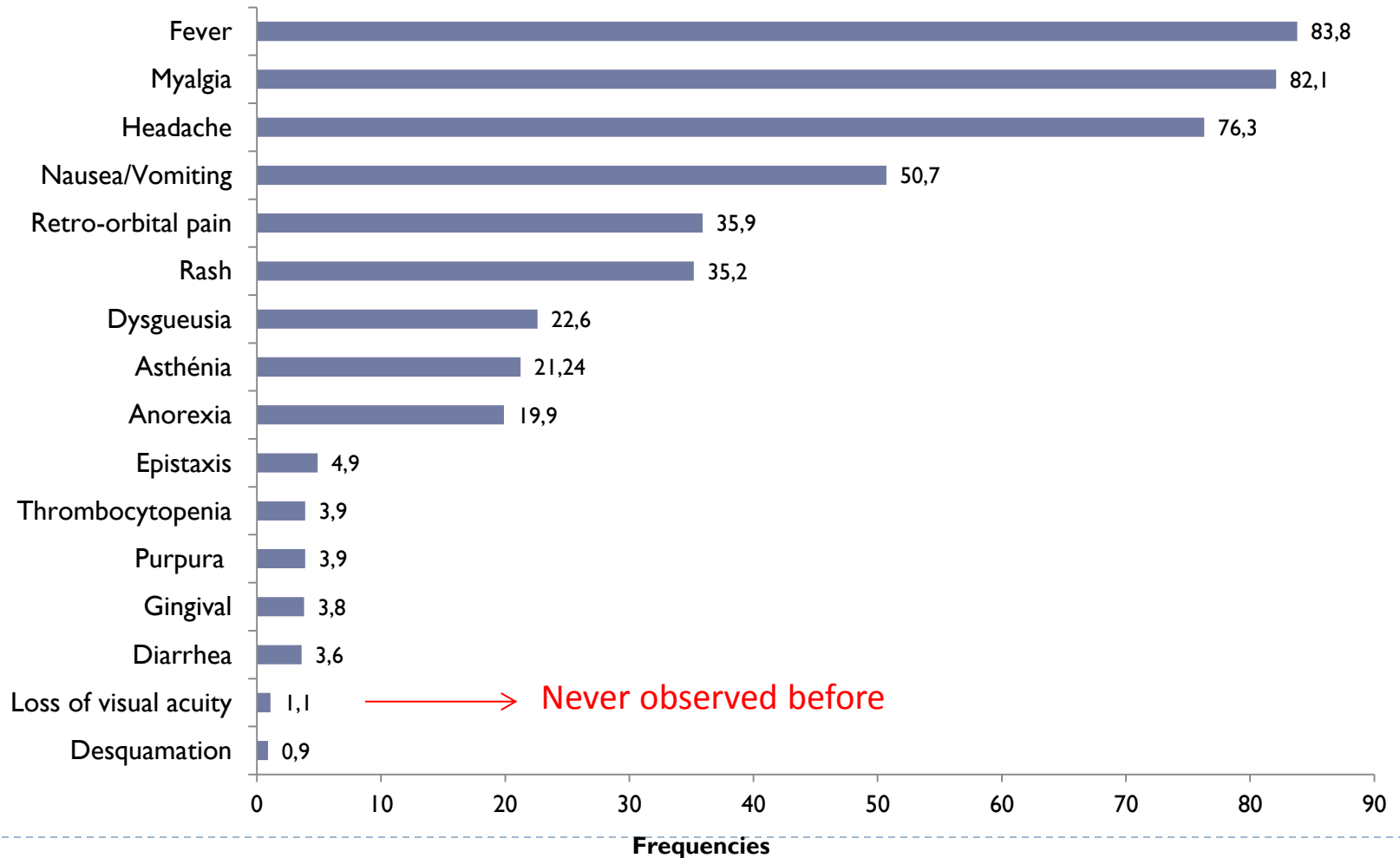
- ▶ Differences by age groups:
  - ▶ 10-29 years particularly concerned ( $p < 0.001$ )
  - ▶  $< 4$  years little concerned ( $p < 0.001$ )
- ▶ 54.7% of men less than 19 years old versus 45.3% of women ( $p < 0.001$ )

Comparison between reported cases of dengue and the population of New Caledonia by age groups, 2012-2013



# 2013 Outbreak

Clinical symptoms declared during 2013 outbreak, New-Caledonia





# Discussion : Comparison with the 2009 outbreak

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- ▶ **N= 8467**
- ▶ **DENV-4 with 19% of DENV-I**
- ▶ **Same trend observed for age groups :**
  - ▶ Men less than 19 years old are more affected by dengue than women
  - ▶ Children under 4 years little concerned
- ▶ **2009 epidemic less virulent than in 2013**
  - ▶ Frequency of all clinical symptoms lower
  - ▶ 3% of dengue haemorrhagic symptoms versus 6% in 2013

# Discussion: surveillance system evolution

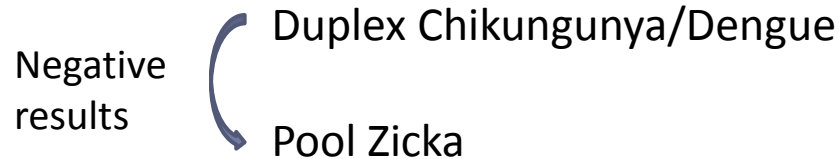
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- ▶ **Non outbreak period**
  - ▶ activation of sentinel surveillance (general practitioner)

# Discussion: surveillance system evolution

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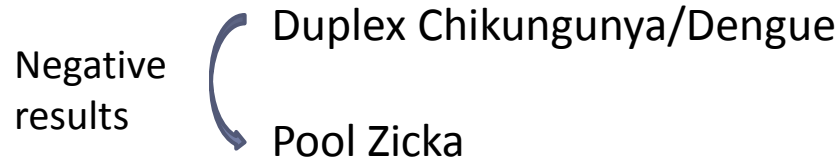
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  - ▶ activation of sentinel surveillance (general practitioner)
- ▶ **Pre-epidemic period :**
  - ▶ All general practitioners
  - ▶ Biological analysis for all cases :



# Discussion: surveillance system evolution

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- ▶ **Non outbreak period**
  - ▶ activation of sentinel surveillance (general practitioner)
- ▶ **Pre-epidemic period :**
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- ▶ **Outbreak period :**
  - ▶ Sentinel surveillance => biological analysis
  - ▶ All general practitioners => clinical report

Thanks for your attention !

