

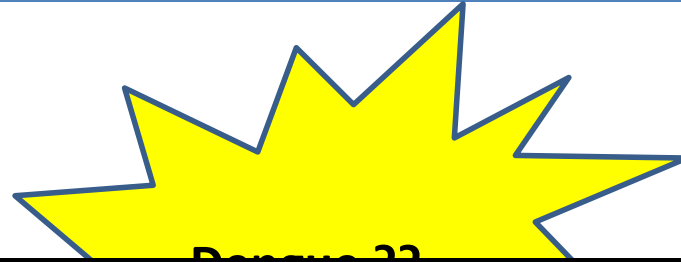
LE DIAGNOSTIC DES ARBOVIROSES ET DES LEPTOSPIROSES À L'IPNC : LE BON TEST AU BON MOMENT

**1^{ère} journée scientifique de l'Institut Pasteur de Nouvelle-
Calédonie- 21 November 2013**

Dr Ann-Claire GOURINAT



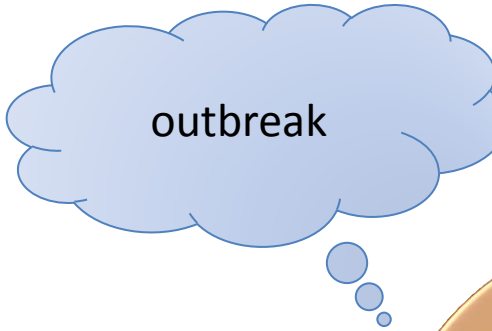
Case report



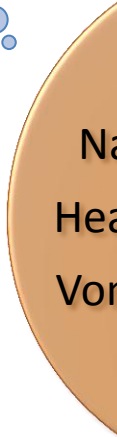
Person 22



CHIK ??



outbreak



Na
Hea
Vor



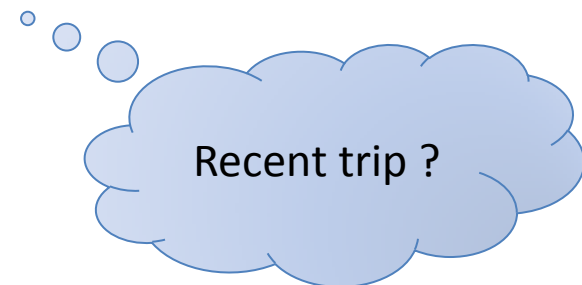
lgia
s



Myalgia
rash



Hunting /
fishing ?

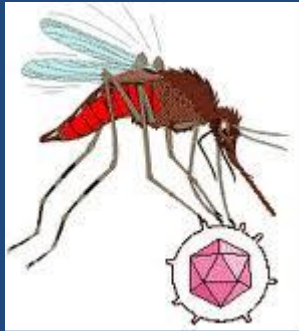


Recent trip ?



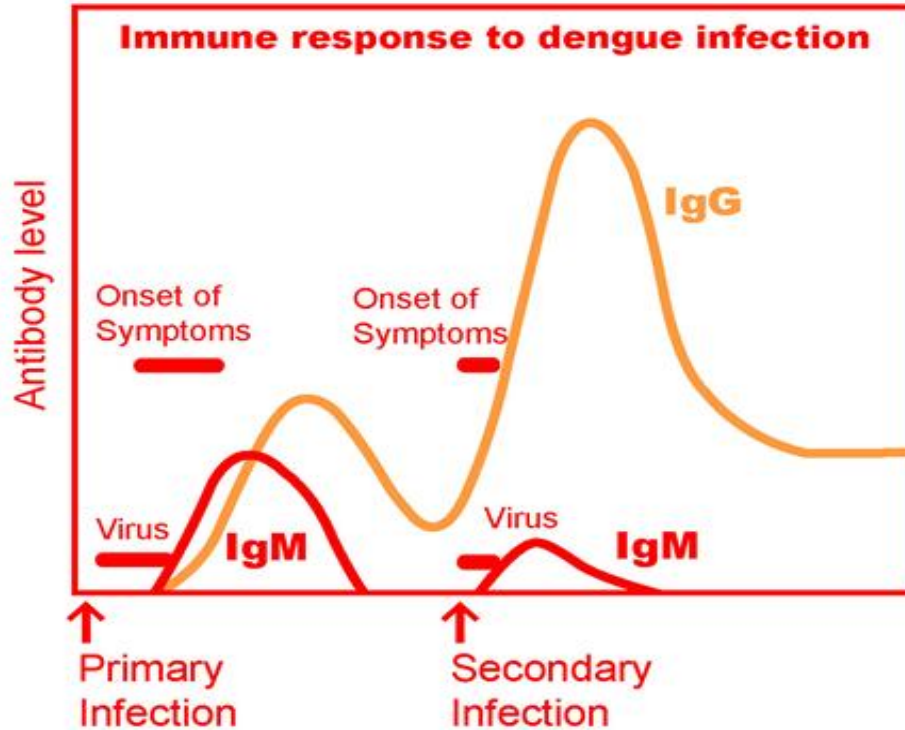
Tests biologiques





LABORATORY DIAGNOSIS OF DENGUE AND CHIKUNGUNYA

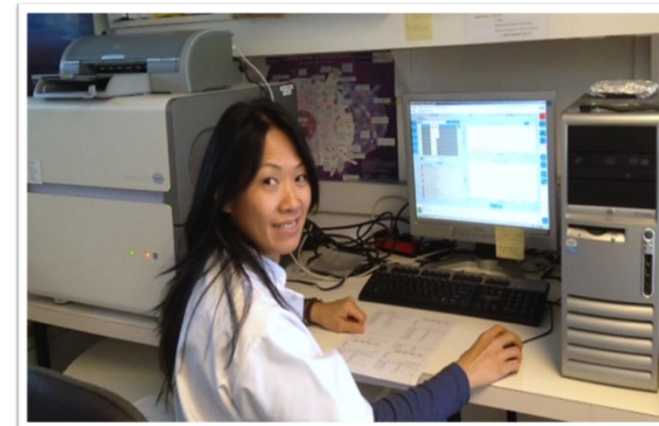
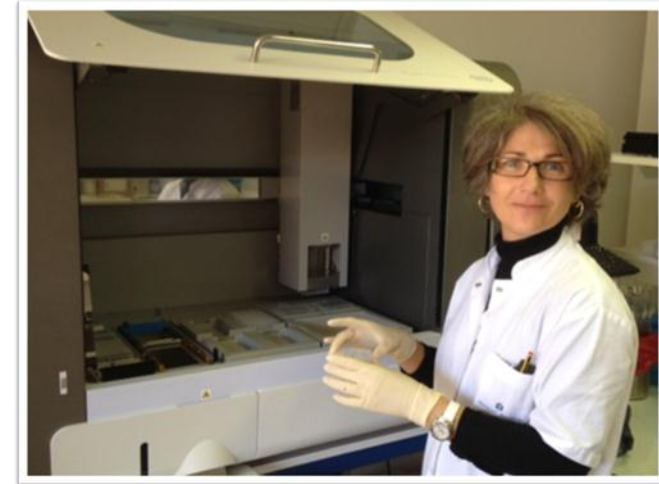
Dengue: Kinetics of virus and Ab



- **Diagnostic of recent infection:**
 - Direct diagnosis:
 - ☞ RT-PCR **détection of virus genome**
 - Indirect diagnosis:
 - ☞ Detection of **antibodies**

Early Diagnosis of Dengue and Chik at IPNC in 2013:

- For Dengue and Chikungunya :
 - Automated **extraction by MagnaPure*** Roche and amplification performed by **LC 480 Roche***
 - **real time RT-PCR (triplex)**
- Dengue detection (Warrilow, 2003)
- Chikungunya detection (Pastorino, 2004)

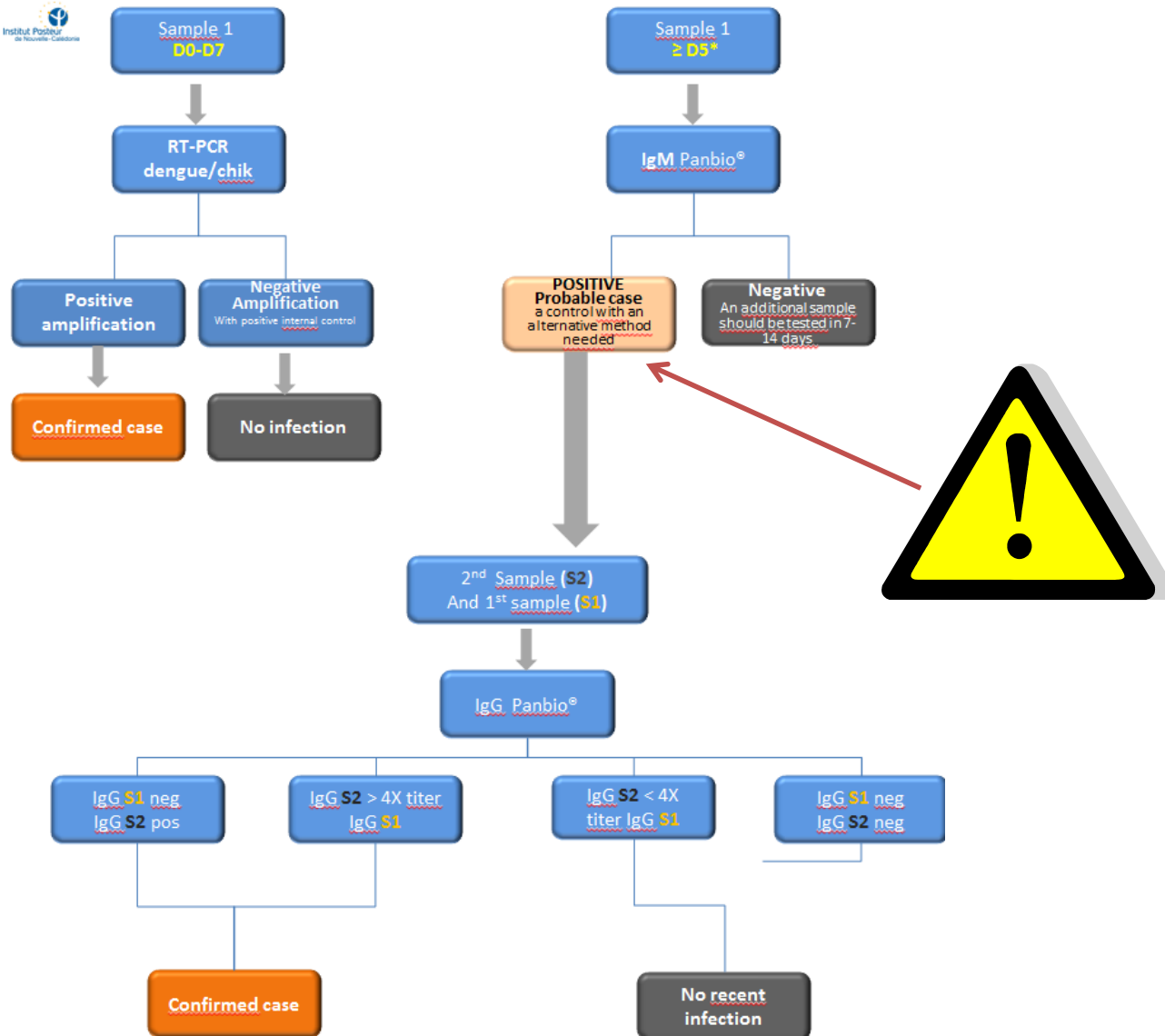


Late diagnosis:

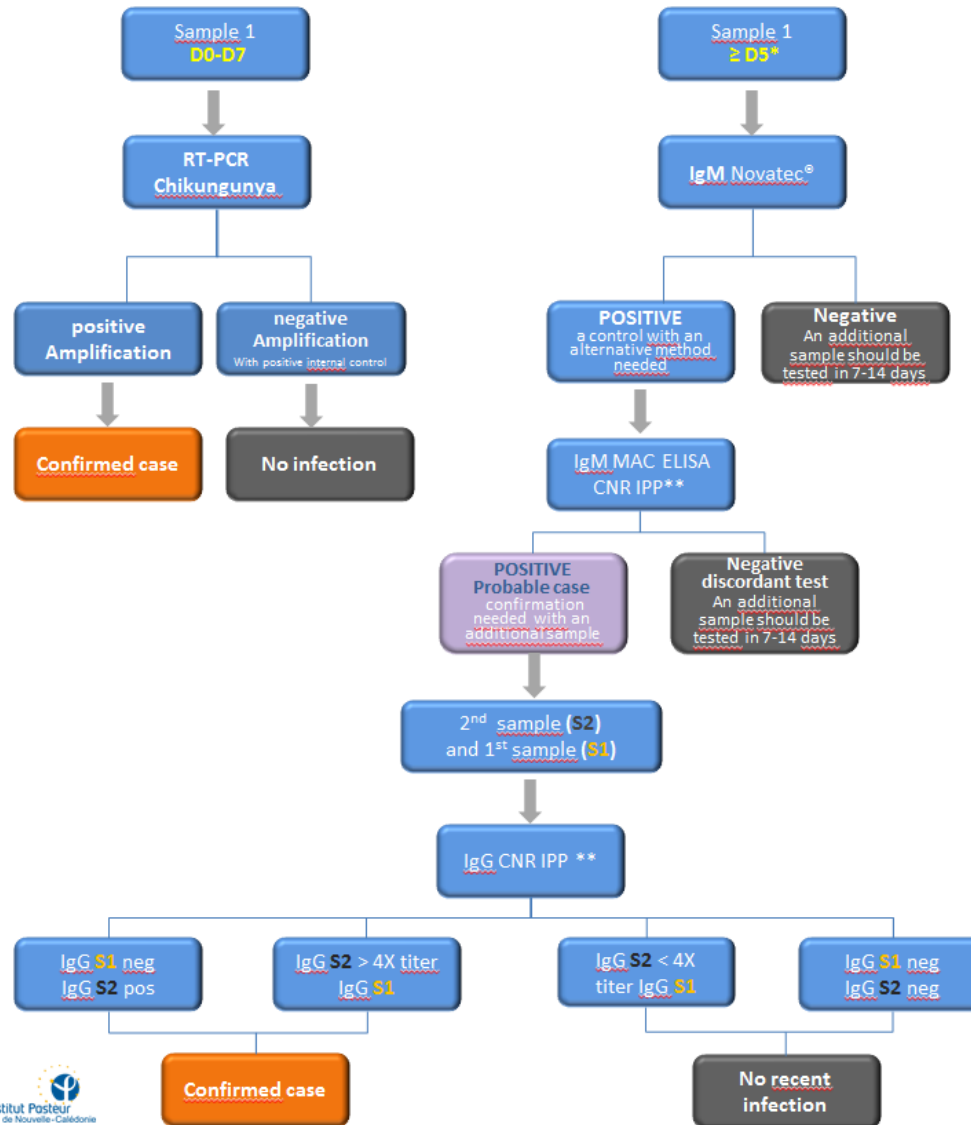
- For Dengue:
 - IgM Panbio serology
 - IgG Panbio serology (performed on paired samples)
- For Chikungunya:
 - IgM Novalisa → positive serum controled with MAC-ELISA
 - IgG (ELISA from French national reference Lab)



Dengue diagnosis strategy (inter-epidemic)

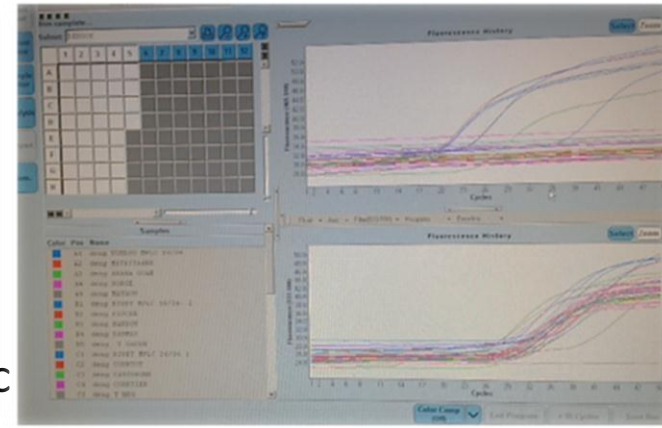


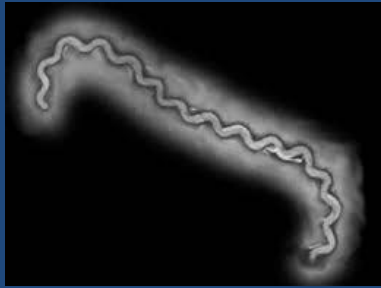
Chikungunya surveillance strategy



Dengue Serotyping:

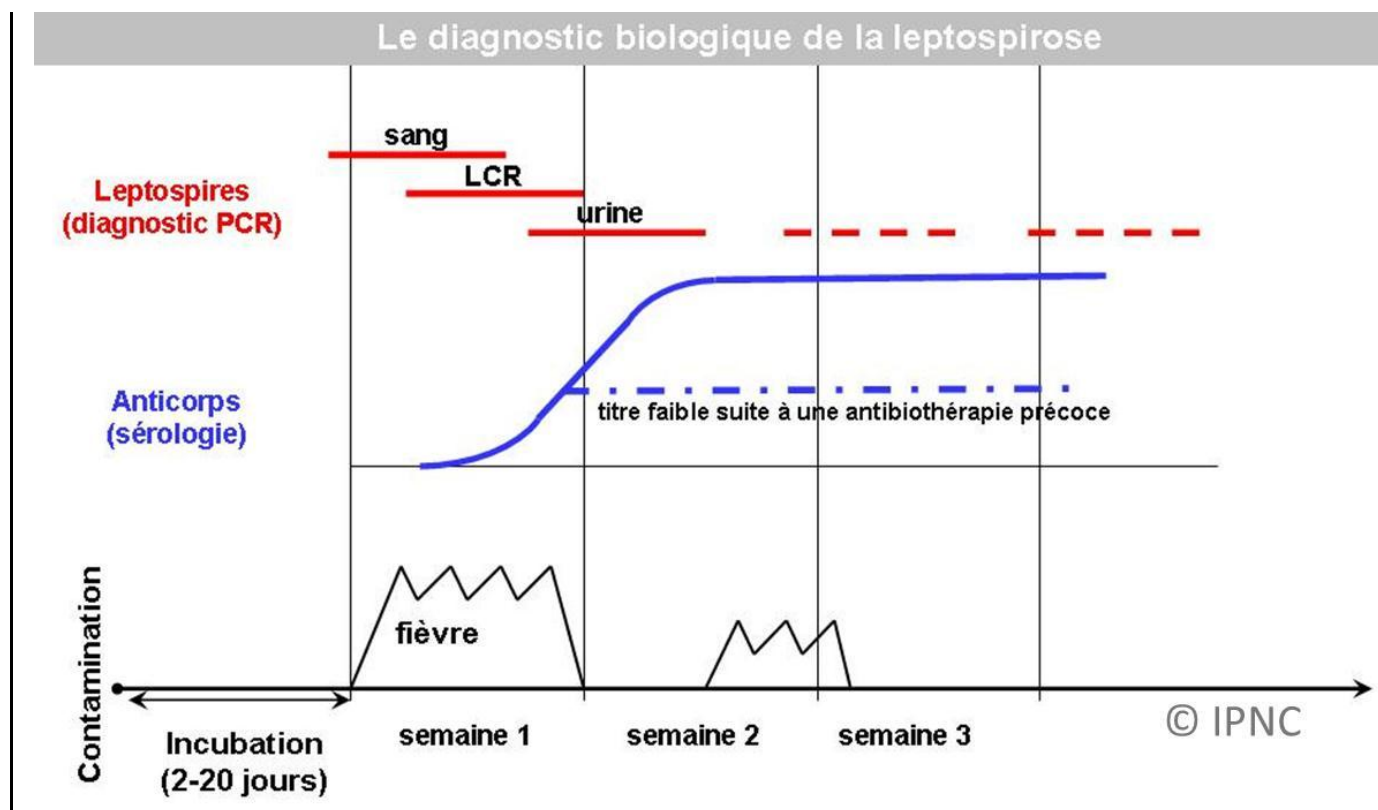
- Real time RT-PCR Fourplex (Johnson, 2005)
- No clinical interest, only for epidemiology and public health
- Inter-epidemic period:
 - All dengue positive case are typed
- during epidemics (*115 in 2013*)
 - Imported cases
 - Cases from new areas
 - Surveillance (monthly draw)
- In 2012 and 2013 all local cases were DENV-1
- Imported cases:
 - DENV-2 (French Guyana)
 - DENV-4 (Bangladesh)
 - DENV-1 (Tahiti, Indonesia, Vanuatu, Australia, Thailande)





LABORATORY DIAGNOSIS OF LEPTOSPIROSIS

Leptospirosis: Kinetics of bacteria and Ab



Laboratory Diagnosis

- Direct diagnosis (DNA detection)
 - DNA Extraction: **MagnaPure Roche***
 - Amplification: **Light Cycler Roche*2.0**
 - ☞ Detection of Pathogenic *Leptospira* spp. Through RealTime PCR (qPCR)
 - Targeting the LipL32 Gene (TaqMan)**
- Indirect diagnosis (antibody detection)
 - MAT (Microagglutination test)
 - Using 12 serovars (11 pathogenic and 1 saprophytic *L. Biflexa pathoc*)

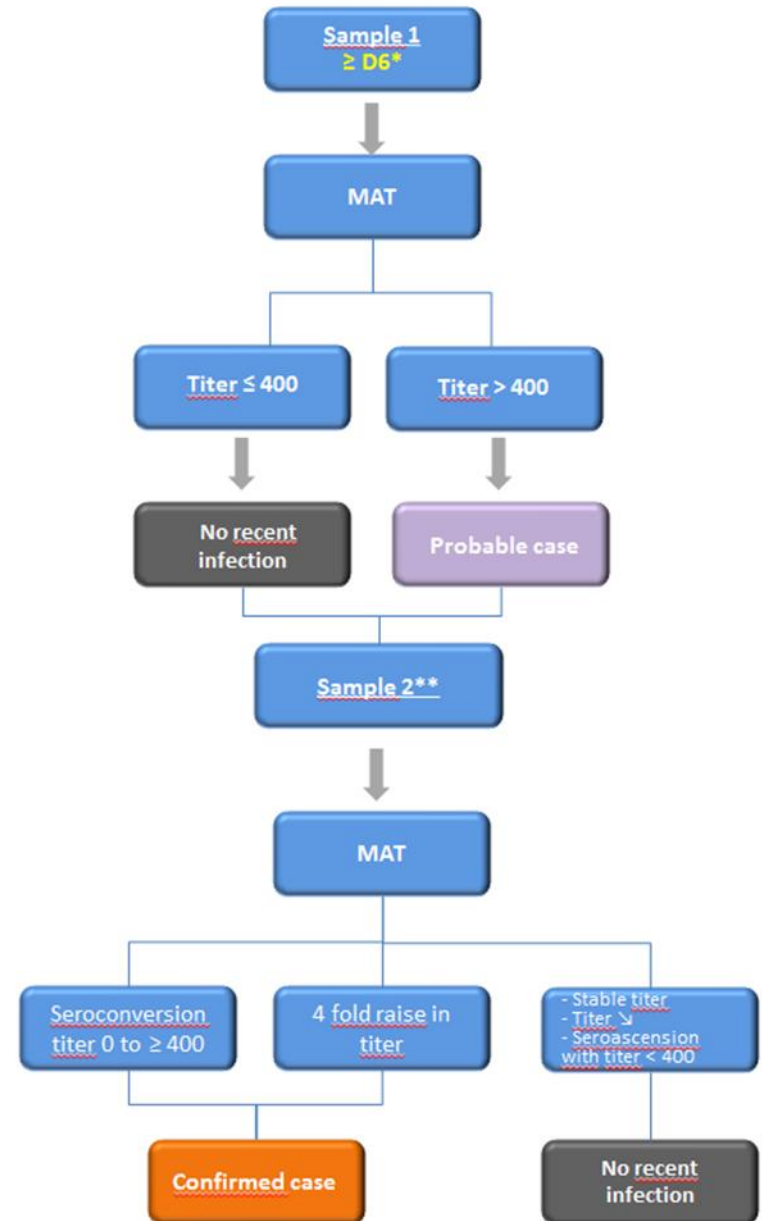
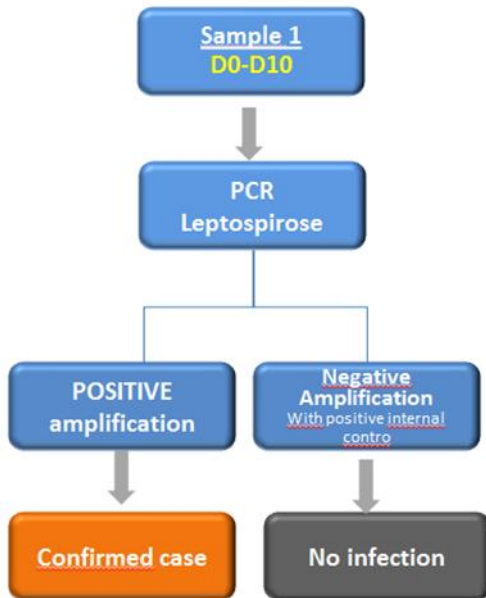


Light cycler 2.0

Australis	Australis
Autumnalis	Autumnalis
Ballum	Castellonis
Bataviae	Bataviae
Canicola	Canicola
Icterohemorragiae	Icterohaemorragiae
	Copenhageni
Panama	Panama
Pomona	Pomona
Pyrogenes	Pyrogenes
Tarassovi	Tarassovi
Semarang	Patoc

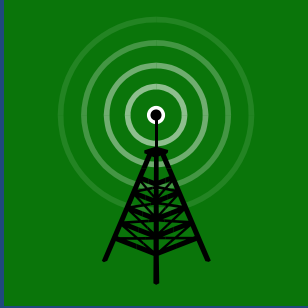
MAT Panel at IPNC 2013

Leptospirosis Diagnosis Strategy:



* For sample between D6 and D10 should be tested with PCR and MAT

**A 2nd serology will be conducted 5-7 days after the first one



TRANSMISSION OF POSITIVE CASES

Dengue/chik/lepto = Notifiable disease

Daily transmission of positive results

Microsoft Excel - déclaration dengue 26.05.09.xls

Cas de dengue Année 2009

Dr AC GOUBHAT
Laboratoire de Virologie
le 26.05.09

PO= Positif
POF= Positif Faible
DTX= Douteux

Numéro	Nom	Nom_JF	Prénom	DDN	Sexe	Adresse 1	Adresse 2	CP	Ville	Tel	Prescripteur	Date	Analyse	Résultat	N° patient	N° Integ
6946	Johanne	Nom-JF	Prénom	11-MAY-71	F	34 RUE VERLAN PORTES DE		98802 NOUMEA	CI 691 13 22		LABORATOIRE DU	12-MAY-09	ARBNS1	PO	1083379	109132
6947	Natacha	Nom-JF	Prénom	08-jul-72	F	16 RUE DU RALL VALLEE DES		98800 NOUMEA	82 23 46		Dr Jean-Marie SABC	12-MAY-09	ARBNS1	PO	1164618	109132
6948	Julien	Nom-JF	Prénom	20-oct-81	M	1 RUE R BRUN VAL DE MAGE		98800 NOUMEA	81 35 43		LABORATOIRE DE	12-MAY-09	ARBNS1	PO	1074584	109132
6949	Christophe	Nom-JF	Prénom	10-mars-97	M	22 RUE RAYMOND BIAZ APT		98800 NOUMEA	94 77 48		Dr Marie Agnes THIC	20/05/2009	ARBNS1	PO	1165056	109142
6950	Graziella	Nom-JF	Prénom	04-mars-67	F	MAGENTA 233 RUE ART		98802 NOUMEA	CI 79 62 30		Service Hospit Urg T	20/05/2009	ARBNS1	PO	1097962	109142
6951	Georgette	Nom-JF	Prénom	27-AUG-79	F	8 RUE CHARLES VESNAT		98850 KOUMAC	424059		Dr Philippe GIRAUD	20/05/2009	ARBNS1	PO	136102	109142
6952	Marie Helene	Nom-JF	Prénom	12-jan-61	F	DERRIERE L Eglise A HNAT		98830 LIFOU	824038		LABORATOIRE DU	23/05/2009	ARBNS1	PO	174883	109142
6953	Regine	Nom-JF	Prénom	31-janv-57	F						LABORATOIRE CEI	23/05/2009	ARBNS1	PO	1164666	109142
6954	Rosina	Nom-JF	Prénom	18-janv-87	F	65 ROUTE TERRI 16 RUE DE L		98836 DUMBEA	41 1636		Grossesses a risque	23/05/2009	ARBNS1	POF	199960	109142
6955	Moana	Nom-JF	Prénom	19-mars-84	M	1 LOT LA FOUGE KATRAMON		98830 DUMBEA	758530		LABORATOIRE ALA	23/05/2009	ARBNS1	POF	46167	109142
6956	Angela	Nom-JF	Prénom	17-jul-73	F	APPT 11 RES HA 45 RUE BEE		98830 DUMBEA	960763		LABORATOIRE DU	23/05/2009	ARBNS1	POF	1166151	109142
6957	Luce	Nom-JF	Prénom	13-janv-69	F	VILLAGE DE OUEPAM		98821 OUEGOA	386416		SERVICE MEDECIN	26/05/2009	ARBNS1	PO	27763	109142

Red arrows point from the following columns to labels: 1 (Declaration number), 7 (Address), 11 (Physician), 14 (Positive parameter).



Dengue chik

Lepto



control and prevention measures

City council

Conclusion

- Applied the right test

☞ If not **risk of false negative result**



- Importance of the date of the onset of symptoms
- Information of recent travel
- New arbovirus ? Zika

Thank you for your attention

Acknowledgements

- **UR-DA:** Myrielle Dupont-Rouzeyrol, Olivia O'Connor
- **UR-L:** Cyrille Goarant, Marie-Estelle Soupe
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