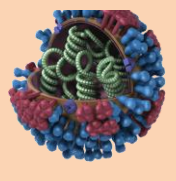
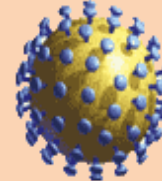
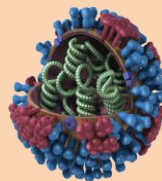
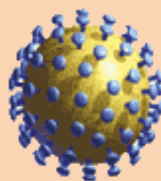
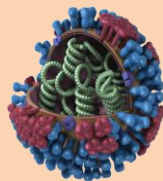
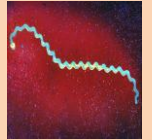


Institut Pasteur de Nouvelle-Calédonie

Annual report 2012



Professor Dominique BAUDON
IPNC Director General

Doc. n° 198/1/2013-IPNC/DG du 24 juin 2013

Institut Pasteur of New Caledonia - Member of Institut Pasteur International Network

9-11, avenue Paul Doumer BP 61 - 98845 Nouméa Cedex Nouvelle-Calédonie

Téléphone : +687 27 02 80 - Télécopie : 687 27 33 90 E-mail : diripnc@pasteur.nc www.institutpasteur.nc

IPNC Key figures and information from 2012

L'IPNC

- A branch of Institut Pasteur in Paris
- A private foundation recognized as being «of public usefulness»
- Member of Institut Pasteur International network
- *Main mission : Combatting infectious diseases*

4 Main activities

- Medical analyses, water & food analyses
- Public health (biological surveillance of diseases)
- Research et expertises
- Training

Finance

8.9 Million € = 1.061 billion XPF
for IPNC's budget

Origin of Financial resources

- IPNC's own resources : 72 %
- New-Caledonian subsidies : 12%
- French government subsidy : 6,3%

3 Laboratories of medical biology

- Bacteriology/Parasitology
- Immuno-serology/molecular Biology
- Haematology

1 high-biosafety laboratory P2+

The only one present in New Caledonia

5 Research & Expertise Units (URE)

- Leptospirosis
- Arboviroses
- Rheumatic fever
- Epidemiology of infectious diseases
- Medical Entomology

27 research projects

11 Publications (international journals)

16 communications
(international symposiums)

Total staff : 80

Scientific and associated staff : **51** - 67%

Research : **8** researchers
2 technicians

Biology : **6** biologists
31 laboratory technicians
4 others

Staff support : **29** - 36 %

1 staff support for **1.8** scientists

Director General change over in 2012
Suzanne Chanteau until 15th November 2012
Pr Dominique Baudon from 16th November 2012

Institut Pasteur of New Caledonia
Annual Report 2012

Report plan

Report summary and IPNC presentation	p.4
Organisational chart : December 2012	p.7
I - Administrative and Financial Affairs Department	p.8
II - Quality Assurance office	p.10
III – Service Activities	p.11
III.1 - Medical Biology Laboratory - LBM	p.11
Bacteriology/Parasitology Laboratory	
Immuno-serology/ Molecular Biology Laboratory	
Laboratory of Hematology	
III.2 – Hygiene & Environment Laboratory - LHE	p.13
III.3 – Laboratories external quality Controls	p.13
IV - Public Health activities	p.14
- Biological Surveillance of diseases	
- Entomological surveillance	
V - Research	p. 17
- Scientific Valuation in 2012	p.19
VI - Initial and continuous training	p.23
Annex 1 : Departmental and Research unit heads email list	p.25

Report compiled with the assistance of:

Pr D. Baudon	: Director general (from 1 st November 2012)
P. Cochou,	: Administrative & financial Affairs Director
A.C. Gourinat, A. Barthel	: Serology Immunology & Molecular Biology Laboratory
R. Goursaud, N. Amédéo.....	: Bacteriology/parasitology Laboratory
S. Mermond :	: Hematology & Regional observatory for pneumococci
C. Goarant, M. Matsui :	: URE - Leptospirosis
M. Dupont-Rouzeyrol, O. O'Connor : ...:	: URE – Dengue & other arboviroses
E. D’Ortenzio, N. Baroux :	: URE - Epidemiology of infectious diseases & URE-Rheumatic fever
L. Guillaumot :	: URE - Medical Entomology

**Institut Pasteur de Nouvelle-Calédonie IPNC
IPNC Presentation
And 2012 annual report summary**

80 staff (78.1 ETP = Full-time equivalent)

14 scientists (medical researchers & clinical pathologists) – 33 laboratory technicians
- 7 administrative executives

Premises: 1,500 sq. m. including 700 sq. m. of laboratories

The Institut Pasteur of New Caledonia (IPNC) is a branch of the Pasteur Institut in Paris (IP), a private foundation recognized as being of public usefulness. In 1955, the Institut de microbiologie of New Caledonia (founded in 1913), became 'Institut Pasteur de Nouméa', and was then renamed 'Institut Pasteur de Nouvelle-Calédonie' in 1989.

As a member of the Institut Pasteur International Network (RIIP), IPNC shares the same mission statement:

Combatting infectious diseases. IPNC therefore has four main activities:

Research, Public Health, Service, Training

32 Instituts across five continents make up this network, employing close to 10,000 collaborators

2012 Budget : 8.9 million € 1.061 billion XPF

Service Laboratories

Laboratory of Medical Biology, Laboratory of Hygiene of Environment

IPNC carries out the Gaston Bourret Territorial Hospital center's microbiology and hematology diagnostic tests and shares its premises. IPNC is also a medical biology laboratory for NC and carries out specialized examinations.

Medical biology diagnostics are carried out in the Hematology, Bacteriology Parasitology and molecular Immunoserology/biology laboratories.

*In 2012, 242,895 analyses were carried out on 142,123 samples (received or made in-house),
79 % of which came from the CHT*

The Laboratory Hygiene and Environment performs microbiological analyses of food and water resources. It shares its expertise with the New Caledonian government in assessing bathing waters and exports such as shrimp and tuna. **The laboratory is also involved in monitoring hospital hygiene.**

Roughly 8,700 water/food samples analysed in 2012

The laboratories of service activities accounted for 72 % of IPNC's income in 2012

IPNC : a Research Centre

3 important fields: Arboviroses, Leptospirosis and Rheumatic Fever

Research fields are chosen with regards to prominent public health matters in New Caledonia and the wider Pacific Region. Throughout 2012 28 research projects were carried out on the following themes:

Leptospirosis (13), Dengue (3) - Rheumatic fever (6) - Medical Entomology (4) - Others (2)

**IPNC has a high-biosafety laboratory of level 2+ (P2 +),
The only one present in New Caledonia**

All research programs are carried out in association with national and international organizations including but not limited to RIIP et IP, IRD, IFREMER, University of New Caledonia, Institut Agronomique Calédonien, Secretariat of the Pacific Community, Monash University Australia, Collaborating Centre for Arbovirus Reference and Research Australia, Westmead hospital Australia, Murdoch Research Children Institut of Melbourne, Melbourne University, Institut de Recherche L. Malardé (French Polynesia) (non exhaustive list).

Programs receive financing from different sources: Institut Pasteur, Higher Education & Research Ministry, Overseas Ministry, Government of New Caledonia, Fonds Pacifique through AFD, ANR, ANRS, IPNC.

Because of its technical and scientific capacities, IPNC is actively involved in the "Research Platform for Biological Sciences in New Caledonia " which pools technological resources of 6 locally-based research organisations with the support of the French Government. IPNC postulated to be a member partner in the future PRESICA, New Caledonian Research center of Higher education and Innovation.

11 Publications in 2012 in international journals : 5 as 1st author

12 Communications, among which 2 Posters for international meetings: 9 as 1st author

21 Publications, communications & posters in New Caledonia

Public Health

Biological Surveillance of diseases - entomological Surveillance

At the request of local sanitary authorities, the Department of Health & Social Actions (DASS), the Health & Social Agency (ASS), and in close collaboration with them, IPNC participates in health monitoring and epidemiological surveillance of disease. In particular, IPNC carries out **biological surveillance of endemic infectious diseases** (leptospirosis, tuberculosis, sexually transmitted diseases, infections in pneumococci, etc.), and those that risk developing into epidemics such as dengue and the flu.

Reference et expertises

- IPNC is a WHO National Reference Center for Human Flu and Bird flu.
- It is considered as the Reference Laboratory for the biological surveillance of dengue and other arboviruses in New Caledonia (NC) and for leptospirosis in NC and Wallis & Futuna.
- It houses the Level 2 laboratory for the Pacific Public Health Surveillance Network.
- It is the Regional Observatory for Pneumococci allowing the follow-up of the circulating serotypes.
- The Research and Expertise Unit "medical Entomology", in close partnership with the DASS and the municipalities of "Greater Nouméa", is responsible for the spatiotemporal monitoring of the disease bearing mosquitos density as well as determining insecticide sensibility. This unit is also in charge of surveillance around the harbour and airport zones in compliance with International Sanitary Regulations.

IPNC monitors bacterial antibiotic resistance in close collaboration with clinicians of the CHT G. Bourret and other hospitals of NC; IPNC is a member of the public hospital "Committee for the Control of Nosocomial Infections". IPNC is the Regional Observatory for Pneumococci for NC, and monitors circulating serotypes.

This biological surveillance is made in close collaboration with our laboratories, allowing the isolation and/or the molecular identification of viruses such as dengue, chikungunya, the human flu (among which that of the pandemic Flu HAS / H1N1), bird flu, HIV, and bacteria as the leptospira, the pneumococci, the bacillus of the tuberculosis. The Government of New Caledonia partially finances the biological surveillance of infectious diseases and entomological surveillance.

Training

The IPNC laboratories welcome trainees currently pursuing a Bachelor's degree, a Master's degree, a Doctoral thesis, a post-doctoral internship (training course), an internship in biology, and a medicine and pharmacy thesis, as well as laboratory technicians who are beginning or continuing training. In 2012, 1 PhD student, 1 Master's degree, 1 Bachelor's degree.

- IPNC organizes or participates in courses and workshops for local and regional training of laboratory technicians.
- IPNC scientists actively participate in teaching at the University of New Caledonia.

Training quality is connected to research, public health and service activities carried out by the IPNC, (as our teachers are actors of ground each in their domain).

Continuous professional training in 2012

Number of trainings carried out : 26

Number of beneficiaries : 105

Scientific & technical trainings : 12

« Human resources, Administration and Computing » trainings : 8

« Quality Assurance » trainings : 3

« Safety » trainings : 3

Coût : 1.925 million XPF – 37.707 €,

This represents double the legal obligation of financing by the employer.

Looking ahead

2016 will see the creation of Médipole at KOUTIO comprised of the IPNC, the Territorial Hospital center Gaston Bourret and the Cancer research centre. This will lead to a substantial increase in laboratory space allowing provision of services and high-quality expertise in concordance with international standards for hygiene and biosafety.

The objective will be to obtain the COFRAC accreditations for the medical biology and Hygiene and environment laboratories two years following the installation.

Médipole Campus in Koutio, Nouméa northern periphery – forecast 2016
(General plan II.A.Zuga SARL –Beauvais et associates Agency)

Territorial Hospital Centre Gaston Bourret

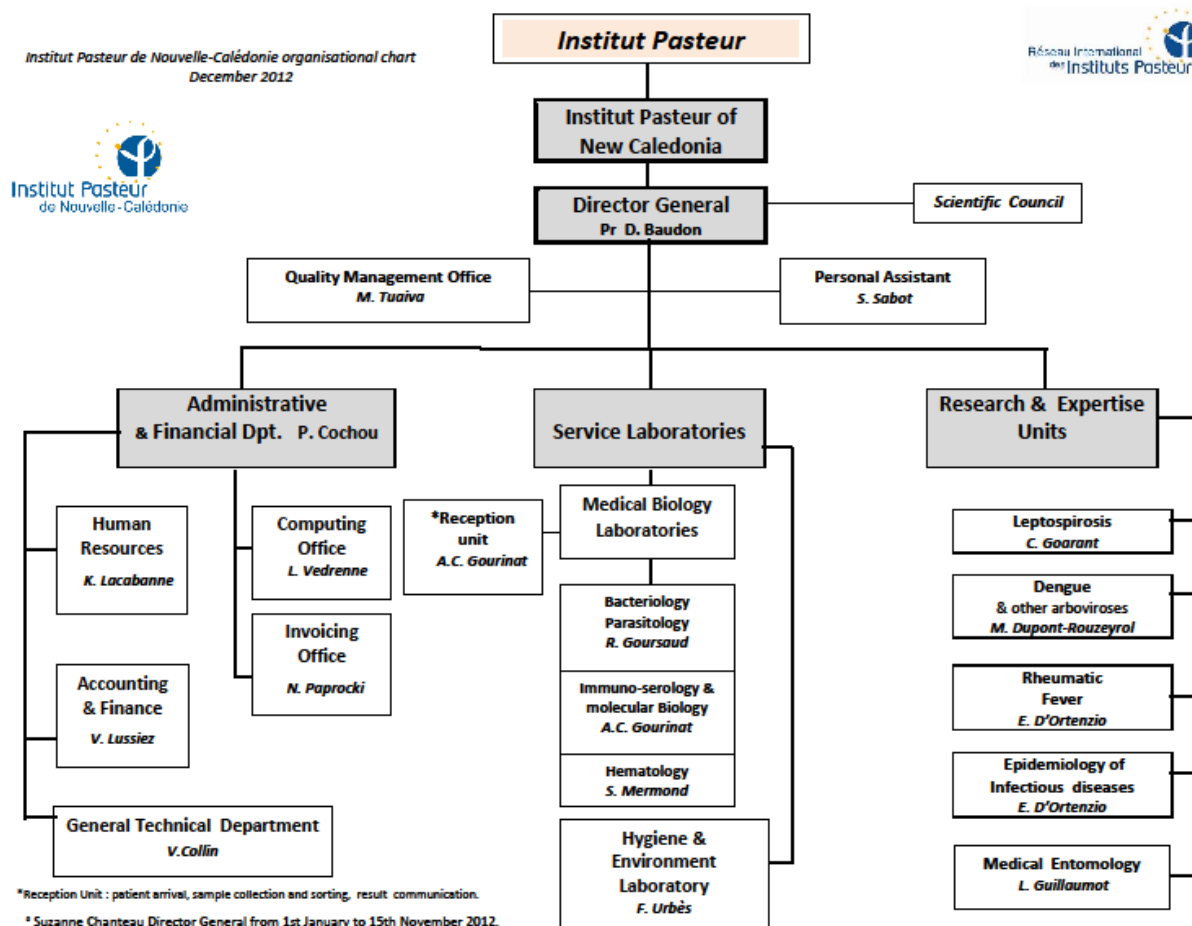


Within the framework of the fight against the infectious diseases, the IPNC aims to be a microbiological monitoring centre for human health, and benefit New Caledonian populations and the wider Pacific Region. IPNC's four missions - Service, Public health, Research, Training - are closely interwoven and offer synergy. It is what makes the strength and the quality of the IPNC and which explains the scientific recognition it has received at the local, regional and international level.

IPNC Organisational Chart - December 2012

Until November 15th, 2012, Suzanne CHANTEAU was in charge of the executive management. Professor Dominique BAUDON has been in charge since 16 November 2012.

With regards to Research, in this report and on this organisational chart the terms Of URE are used, Unit of Research and Expertise, although this terminology was officialized only in 2013.



I - Administrative & Financial Affairs Department

IPNC 2012 Report on financial Resources & Charges : M. Pierre Cochou.

Staff : 14 among which 3 executives
 financial & Administrative Affairs Director 1 - RH (2) – Accounts department (2) – Invoicing office (3)
 Computing office (2) - General Technical Department (4)

Financial review 2012
Budget : 1.061 billion XPF 8.9 million €

Operating funds are comprised of the income generated by IPNC’s own activities (turnover-CA), of the French Government’s subsidy for Research (Ministry of Higher Education and Research-MESR) and subsidies from the New Caledonia Government.

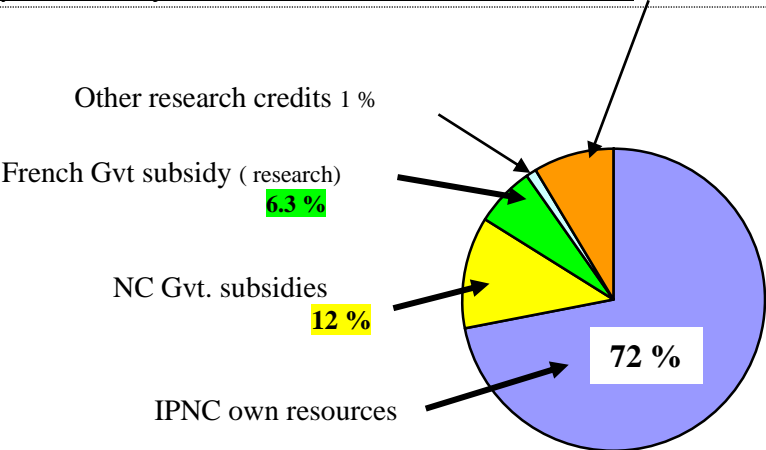
1 - Own Resources	763.3 million XPF – 6.4 Million €	72 % of Budget
<i>Own ressources from medical analyses: 696.4 million XPF, 5.8 million € (91.2 % of total CA)</i>		
<i>Number of analyses carried out: 242,895 - Number of B carried out : 11.1 million</i>		
<i>Own resources from the Hygiene et Environment dpt.</i>		
	60.7 million XPF, (8 % of total CA)	
	508,670 €	
<i>Other own resources: 6.2 million de XPF, 51, 956 € (0.8 % of total CA)</i>		

2 - Subsidies from NC Government	127.6 million XPF 1.07 million €	12 % of Budget
<i>- 77.3 million XPF for public health activities (subsidy of balance of participation in the implementation of the activities of biological surveillance of the diseases and the entomological surveillance).</i>		
<i>- 50.3 million XPF in conformance with three subsidized posts (a director general, a clinical pathologist, a researcher)</i>		

3 - Research subsidy from French Governement –MESR	67 million XPF - 561,468 €	6.3 % of Budget
<i>Paid by the Institut Pasteur (Paris) (stemming from the global subsidy granted by the MESR for the research activities).</i>		

4 - Outer credits for Research	11.1 million XPF 93,019 €	1 % of Budget
<i>(Overseas Ministry, Pacific Funds, ANR, Government of New Caledonia)</i>		

5 - Other products, Reversals of provisions, adjournments of resources, transfers of costs	92 million XPF 770. 971 €	



Financing structure : IPNC Functioning Resources

<i>Operational budget of Institut Pasteur de Nouvelle-Calédonie IPNC sources of funding from 2009 to 2012 – in million XPF</i>						
Item	2009	2010	2011	2012	Variation 2012/2011	Variation 2012/2009
Income generated by own activities (own resources or turnover)	728.3 68.0 %	705.1 73.2 %	761.4 76.1 %	763.3 71.9 % 6.4 million €	+ 2.5 %	+ 4.8 %
Subsidies of French government (MESR)	75.2 7.0 %	74.0 7.7 %	73.1 7.3 %	67,0 6.3 % 0.56 million €	- 8.3 %	- 10.9 %
Subsidies of NC government (Public Health activities – staffs)	210.2 19.6 %	115.9 12.0 %	116.4 11.6 %	127.6 12.0 % 1.1 million €	+ 9.6 %	- 39.3 %
Research Credit (outside Resources)	8.9 0.8 %	24.3 2.5 %	9.6 1.0 %	11,1 0.07 million €	+ 15.6 %	+ 24.7 %
Other products, reversals of provisions, transfers of resources and transfers of charges	48,0 4.6 %	44,1 4.6 %	39,8 4.0 %	92,0 8.7 % 0.77 million €	+ 131.2 %	+ 91.7 %
Total of Operational resources	1,070.6 100 %	963.4 100 %	1,000.3 100 %	1,061.0 100 % 8.9 million €	+ 6.1 %	- 0.9 %

Income obtained from IPNC's own activities accounted for approximately 72 % of the IPNC Budget in 2012.

10.9 % decrease of the research subsidy (MESR) compared to 2009.

39.3 % decrease of the subsidy of the NC Government compared to 2009.

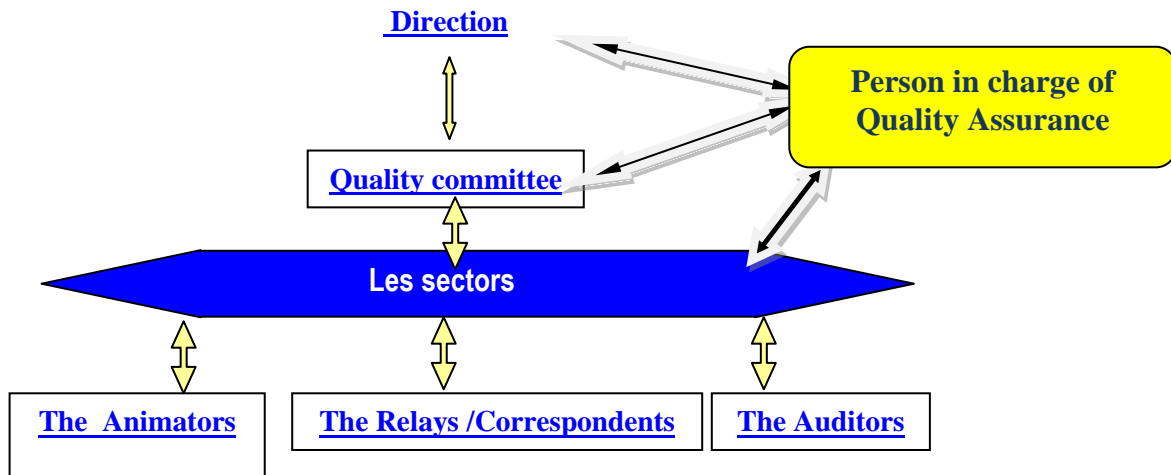
Financing of public health activities	
Expenses bound to public health activities in 2012	
144.2 Million XPF / 1.2 million € corresponding to 13.5 % of IPNC budget	
Origin of the financial resources for the realization of the public health missions	
NC Government Subsidy:	59.3 % - 85.45 million XPF 716,081 €
IPNC own resources :	40.7 % - 58.75 million XPF 483,919 €

Financement of Research	
Budget 104.11 million XPF / 872,532 € corresponding to 9.8 % of IPNC budget	
Origin of financial resources	
Ministry of Higher Education & Research : 64.3 %	
Institut Pasteur (Paris) : 18.2 %	
NC Government : 11.9 %	
Overseas Ministry : 2.3 %	
Miscellaneous (ANRS, ANR, Pacific Funds) : 3.3 %	

II - QUALITY ASSURANCE OFFICE

The quality process in 2012

Functional organization chart



In 2012, IPNC quality assurance system was evaluated by Mr Olivier Michel, external quality control manager of the vocational training center “ Grieps” (France). To meet customers, statutory and legal requirements, it was suggested directing and updating the quality assurance process, its policy and its objectives towards a management system of the quality according to the requirements of the standards ISO 15189 for the laboratory of medical biology, ISO 17025 for the hygiene and environment laboratory, and ISO 9001 for the units of research.

To reach this purpose, human, financial, and material means were deployed as well as of new organizations.

Activities realized in 2012

- 1) The training of new internal auditors and the annual planning of quality audits.
8 staffs are internal auditors, and 37.5 % of audits were realized in 2012.
- 2) 7 meetings of the quality committee : 4 quarterly and 3 extraordinary meetings.
- 3) Identification of the equipment useful for the criticality of the results for the implementation of the metrology (93 probes).
- 4) Inventory of the equipment by business sector to implement the Kalilab software and the implementation of the exercise books of life on the ground.
- 5) Definitions of the sectorial processes with the persons in charge and the organization of the IPNC.
- 6) The follow-up and the inventory of meetings of department, quality, communication and information, training with very variable frequencies: 151 meetings realized in 2012.
- 7) Implement the EDM (electronic document management) of quality documents: 681 documents realized in 2012, any merged sectors.
- 8) Replace the transmission register by a non-compliances and complaints form in accordance with the software “INLOG”.

III - THE SERVICE LABORATORIES

Medical Biology et Hygiene & Environment laboratories

III.1 - Medical Biology Laboratories - LBM

242,895 analyses in 2012

Hematology : 42.8 % - Sero-immunology/ molecular Biology: 29.8 % - Bacteriology/parasitology : 27.3 %

IPNC laboratory of medical Biology groups three laboratories: bacteriology parasitology, immuno-serology and molecular biology, hematology.

It is the laboratory of the Territorial Hospital center Gaston Bourret in Nouméa for these main disciplines.

IPNC also welcomes private patients, on average 56 persons per working day in 2012, within the framework of its activities of biological diagnosis.

At the end of 2012, the restructuring of secretarial departments involved in the welcome of the patients, taking samples, sorting out the samples received from the CHT and the private laboratories, and the transmission of the results, lead to the creation of a " Front desk " under the responsibility of a medical Biologist, the Dr A.C. Gourinat. This Unit includes 6 medical secretaries and two nurses; it works in narrow relation with the office in charge of the invoicing.

In parallel, LBM intervenes in public health activities.

It participates at the request of the Department of Health & Social Affairs (DASS) in the epidemiological surveillance of the infectious diseases by realizing the biological surveillance. These activities are carried out in association with the Department of Health & Social Actions (DASS), the Health & Social Agency (ASS), the Territorial Hospital center (CHT) and private laboratories of New Caledonia (NC).

(Refer to chapter « Public Health », pages 14-16)

Bacteriology/Parasitology Laboratory

Head of the Laboratory : Dr Régis Goursaud

*Staff : 1 clinical pathologist, 1 resident clinical pathologist, 1 supervisor (in common with the hematology activity), 11 ETP day technicians, 3.5 ETP night technicians, 1 technical assistant, 1 bio-cleaning agent.

*The Bacteriology platform : 2 automatons of bacterial identification and antibiogramme : Vitek2C et mini Api (Biomérieux™), 1 hemoculture automaton BacT/ALERT® 3D (Biomérieux™), 5 microscopes.

Bacteriology : 88.5 % of analyses
among which 26 % of hemoculture and 24 % of urinary examinations

Mycobacteriology : 8.5 % of analyses
- 29 patients were diagnosed as affected by tuberculosis.

Mycology : 1.6 % of medical analyses
215 identified microscopic fungi among which 100 yeasts, 31 aspergillus, 26 dermatophytes et 16 *Sporothrix schenkkii*.

Parasitology : 1.4 % of medical analyses

Laboratory of immunology-serology & molecular biology

Head of Laboratory : Dr Ann-Claire Gourinat

***Staffs** : 2 clinical pathologists (among which 1 in common with the hematology activity), 1 technical supervisor, 10 technicians.

* **Immunology- serology Platform**: 1 automaton ARCHITECT i1000SR[®] (Abbott™), 1 automaton microplaque Elisa ELISPEED DUO (Bioadvance™), 1 automaton VIDAS (Biomérieux™), 2 microscopes with fluorescence.

* **Molecular biology Platform** : 2 extraction automatons MagNa Pure LC2.0 (Roche™) et Easy Mag (Biomérieux™), 1 Light Cycler 480 (Roche™) shared with the Research units, 1 Light Cycler 2.0 (Roche™), 1 NucliSENS EasyQ (Biomérieux™)

Molecular Biology: 17.7 % of tests (among which 38% of dengue diagnosis)
(Chikungunya PCR, dengue, leptospirosis, HSV, VZV, CMV, enterovirus, *Mycoplasma pneumoniae*, *Chlamydomphila pneumoniae*, gonocoque, *Chlamydiae trachomatis*, HIV (viral load), flu, Whooping cough.
Implementation of the whooping cough PCR in August 2012.c

Bacterial serologies: 17.3 % of tests (among which 67 % for the syphilis screening)
(Leptospirosis, syphilis, *Chlamydiae trachomatis*, salmonelloses, mycoplasmes, streptococci)
Implementation of syphilis IgM serologies by ELISA technique in August, 2012.

Parasitic serologies: 8.5 % of tests (among which 84 % of toxoplasmosis serologies)
(Malaria, amibiase, toxoplasmosis)

Viral serologies: 43 % of tests
(Dengue, chikungunya, hepatitis A, hepatitis B, hepatitis C, HIV, CMV, EBV, rubella, VZV, HSV)

Immunology : 3.6 % of tests
(Anti-nuclear antibodies, anti-native DNA antibody, rheumatoid factors)

Tumoral Markers: 5.4 % of tests (CA19.9, CA15.3, CA125, AFP, ACE, PSA)

Others : 4.5 % of tests VRS (Antigenic Direct Research), CRP (external activity only)

Laboratory of Hematology

Head of the Laboratory : Dr Sylvain Mermond

***Staffs** : 1 pathologist physician, 1 pathologist pharmacist (in common with microbiological activity) et 3 technicians among which 2 for day activity and 1 (in common with microbiological activity for night activity).

***Hematological cytology platform**: 2 automatons Cell-Dyn 3700[®] (Abbott™), 1 FACSCount[®] (Beckton-Dickinson™) for the Follow-up of the lymphocytaires sub-populations CD3-CD4-CD8, 1 colorateur Aerospray (Ellitech™), 3 microscopes.

Cytohematology : 98 % of tests

Blood Parasitology: 0.1 % of tests

78 searches for *Plasmodium* : 4 positive cases - *P falciparum* (n = 2) et *P vivax* (n = 2).

The positive takings are transmitted to the national reference laboratory for Malaria based in Paris (Bichat hospital) (identification PCR and analyses of antimalarial resistance).

Phenotyping by flow Cytometre : 0.8 % of tests

94 % of lymphocytes typings CD3 / CD4 / CD8 (follow-up of the HIV-positive patients and for the characterization of immunizing deficits).

6 % of requests for lymphocytes immunophenotyping transmitted to CERBA laboratory with characterization of 5 chronic lymphoïdal leukaemia and of a lymphoma B.

III. 2 - The Hygiene & Environment Laboratory

Head of the Laboratory : Florence Urbès
8,622 samples analysed in 2012
<p><u>Staffs</u> : - 1 Engineer - 1 technical Coordinator - 2 Technicians - 1 Technical Assistant. - 1 Secretary (0.5 ETP)</p> <hr style="border-top: 1px dashed black;"/> <p>8,622 samples : Waters 51 % - Foods : 31 % - Industrial products: 6 % Environmental analyses for the hospital : 12 %</p> <p>Responsible for Audits shrimps sector on behalf a French certifying organization : SGS-Qualicert.</p>

III.3 External Quality of laboratories in 2012

IPNC is registered on several external quality controls

Sectors	Centres of external controls
Hygiene & Environment Laboratory – LHE	Ass. AGLAE RAEMA
Medical Biology Laboratories - LBM	
Hematology	Ass. de Biologie Praticienne - AFSSAPS PROBIOQUAL UKNEQUAS - ANSM
Bacteriology	Ass. de Biologie Praticienne - AFSSAPS Queensland Mycobacterium Ref. Lab. - WHO / EQAP
Sérologie, immuno-virology, & Molecular Biology	Ass. de Biologie Praticienne - AFSSAPS National Serology Ref. Laboratory (NRL) RCPA / QAP - WHO / EQAP - QCMD

IV - PUBLIC HEALTH MISSIONS IN 2012

Biological Surveillance of infectious diseases - Expertises

At the request of the local sanitary authorities, the Department of Health and Social Actions (DASS), the Health and Social Agency (ASS), and in close collaboration with them, IPNC participates in the health monitoring and in the epidemiological surveillance of the diseases.

IPNC realizes in particular at the request of the DASS the biological surveillance of the endemic infectious diseases (leptospirosis, tuberculosis, sexually transmitted infections, pneumococci, etc.), and those at epidemic risk as the dengue and other arboviruses and the flu.

This biological surveillance is made with the cooperation of our laboratories and Units of Research and Expertise (URE), this allows for the isolation and/or the molecular identification of virus as those of the dengue, the chikungunya, the human flu (among which that of the pandemic Flu HAS / H1N1), of the bird flu, the HIV, and the bacteria as the leptospira, the pneumococci, the bacillus of the tuberculosis.

IPNC participates in the follow-up on resistance to antibiotics shown by bacteria of medical interest, in close collaboration with the clinicians of the G. Bourret Territorial Hospital and other hospitals of NC; IPNC is a member of the public hospitals' Committee for the Control of Nosocomial Infections .

The transverse Secretariat of Public Health activities (STASP/ IPNC)

It is situated within the Unit of Research and Expertise " Epidemiology of the infectious diseases "

It is the relay between the IPNC and the sanitary authorities concerning the data transmission by leading the following activities:

- monthly Statements of the Diseases with Compulsory Declaration(MDO) to the DASS.
- Transmission of the results of IPNC biological analyses to the DASS within the framework of the biological surveillance of the infectious diseases (fax + administrative data)

This close and direct collaboration between the DASS and IPNC is one of factors explaining the quality of the epidemiological surveillance in NC.

IPNC : Reference and expertises

- IPNC is WHO National Reference Center for the Human Flu and the Bird flu.
- It is considered as the Reference Laboratory for the biological surveillance of the dengue and other arboviruses for New Caledonia (NC), of the leptospirosis for the NC and Wallis & Futuna.
- It is the Level 2 laboratory in the Pacific Public Health Surveillance Network.
- It is the Regional Observatory for Pneumococci allowing the follow-up of the circulating serotypes.
- The Research and Expertise Unit "medical Entomology", in a close partnership with the DASS and the municipalities of "Greater Nouméa", is responsible for the spatiotemporal follow-up of the density, as well as for the check of the sensibility in insecticides of mosquitoes, vector of diseases. It is also in charge of the surveillance around the harbour and airport zones in compliance with the International Sanitary Regulation.

The financing of the biological surveillance of the infectious diseases and the entomological surveillance (realized by the IPNC) is assured partially by The Government of New Caledonia, and partially by the IPNC on its own resources (Refer to chapter I, page 7 of this report).

The biological Surveillance in 2012 : key information

Arboviroses

Dengue Epidemic in 2012 with a circulation of the serotype DENV-1

- **706 positive cases diagnosed** by IPNC for **4,061 samples analyzed**.
- **2 epidemic peaks** observed: a 1st at the end of hot season - a 2nd large-scale in summer, 2012
- **Sérotype DENV-1 with circulation of 2 genotypes: IV** and the **genotype I** dominant in the 2nd half-year
- **Chikungunya** : no case was detected in NC in 2012

Flu

623 samples received in the IPNC - 148 positive cases (24 %)

- **89 % of the samples came from the CHT, 11 % from 9 centers of the Sentinel Network.**
 - **Diagnosis by real-time RT-PCR on all the received respiratory samples.**
 - **2 Epidemic peaks of flu, type B in July) and type A (H3N2) in August (fresh season).**
- The flu-like viruses of subcategory A (H3N2) was antigenically similar in strains A/Victoria/36 /2011-like, those of subcategory A (H1N1) pdm in strains A/California /7/2009-like.
- The flu-like viruses B were of strain-lining B / VICTORIA.
- **The immunity conferred by the North hemisphere 2011-2012 vaccine was not protective against the strains which circulated locally.**

Leptospirosis

75 cases - rate of incidence of 30.6 cases for 100,000 inhabitants

The real time PCR confirmed 92 % of the cases (69/75), on unique samples

- **Determining seasonal factor: more than 80 % of the cases in the 1st half-year - Peak of 25 % of the cases in April**
- **Identification of the origin of the infecting strain in 96 % of the cases (72/75)**
- The Icterohaemorrhagiae serogroup is always majority: 56 %
- 60 % of the cases attributable to the Rodents reservoir (serogroups Icterohaemorrhagiae and Ballum)

Microbiological Watch

- **Salmonellas:** the dominant serovar is *S. weltevreden*. *S. Typhimurium* comes in second position of the isolated human strains (epidemic in a poultry farm);
- **C. difficile & strains E. faecium** are vancomycine-resistant and keep on circulating.

Collection of strains

In 2012, the IPNC managed a collection of several thousand bacteria and about ten thousand serums of positive patients for the dengue, the chikungunya and the leptospirosis, current and past epidemics.

Antibioresistance in New Caledonia

- **SaRM** : *Staphylococcus aureus* resisting in meticilline in light increase as the previous years.
- **EBLSE** : Entérobacterium expressing one β -lactamase of wide spectre. 15 % of holder-patients furthermore than in 2011, the phenomenon does not seem mastered.

IPNC, the Regional Observatory for Pneumococci in New Caledonia (ORP-NC)

64 strains analyzed by ORP-NC

36 invasive strains: 5 meningitises and 31 pneumococcus septicaemia

Multiresistance to Antibiotics : 11.5% of strains

Biological Surveillance of Tuberculosis in New Caledonia in 2012

29 patients Culture(+) among whom **14 had a direct test (+)** and **12 were positive**

18 patients with not tubercular mycobacteries in culture

Majority of samples of respiratory origin (3,461, that is 89 %)

Majority of the patients sent by hospital departments: (1,310, that is 86%)

Diagnosis in the Laboratory:

- Put in the standards of the working conditions in the high-biosafety laboratory " P2 +"
- Interest of the exhaustive surveillance of sensibility strains
- Single one clone INH-resistant circulating in NC, no import of MDR was located.

HIV

IPNC is the reference laboratory for the confirmation and the follow-up of HIV infections in New Caledonia (NC). It is the only one to practise HIV-1 and 2 tests of confirmations in techniques of immunoblot, and to realize the measure of the viral load (circulating viral ARN). Furthermore, the IPNC holds the file " line activates HIV " which groups the new diagnosed infections and the known HIV-positive patients arriving in New Caledonia. An anonymous number is attributed to these patients, what will allow them to benefit from the free access of the care, in connection with their infection, while remaining anonymous.

- **26 new patients diagnosed and/or declared** by the IPNC, among whom 9 were detected in NC and 17 newcomers infected before their arrival and already knowing their seropositivity.
- **479 Numeration of Lymphocytes CD4** and **368 viral loads realized in the IPNC.**
- **26 resistance genotypes sent to the laboratory CERBA: 8 presented resistances.**

The accumulation of the cases of the patients declared HIV-positive recorded in the IPNC since 1986, is 388 among whom 209 (53.8 %) detected locally.

Surveillance of vector mosquitoes (dengue, chikungunya) *Realized by IPNC Research & Expertise Unit of "Medical Entomology"*

***Aedes aegypti* was in 2012 the only important vector for the Public health present in NC.**

Moderate entomological index, but in light increase compared with the previous years.

Decreased sensibility of *Ae. aegypti* to deltaméthrine, but still stable.

Sensitivity of *Ae. aegypti* to malathion : normal.

No introduction of exogenous mosquito in the international entry points (harbours and airport).

IPNC staffs involved in Public Health en 2012

12.1 ETP corresponding to 15.5 % of ETP (12.1/78 full-time Equivalents)

among whom 8.1 ETP involved in technical activities and

4 ETP involved in administrative activities

The complete report on Public Health activities (biological surveillance in 2012) presents all the results transmitted to DASS by IPNC (report n° 86/2013-IPNC/DG of 28 March 2013)

V - IPNC RESEARCH IN 2012

In this annual report, we present the list of research projects as well as a chapter on " scientific Valuation ". IPNC complete 2012 research report (doc. n° 198/2/2013-IPNC/DG of 24th June 2013) also contains a concise description of current research programs as well as international publications abstracts. It is annexed to this report.

Research budget for 2012 : 104.11 million XFP, corresponding to 872,532 € (see chapter I, page 8)

5 Research and Expertise Units /URE 28 Research projects with 19 as Principal Researcher 3 themes : Leptospirosis, Arboviroses et its vectors, Rheumatic Fever

Research and Expertise Unit : URE	Unit Head	Staffs in 2012
Leptospirosis : 13 Research projects (46 %)	Cyrille Goarant	- Mariko Matsui (Dr Sc., Researcher) - Marie-Estelle Soupé-Gilbert (Research Technician) - Jérôme Bécam (Research Engineer) until September 2012
Arboviroses 3 projets de recherche (11 %)	Myrielle Dupont-Rouzeyrol	- Olivia O'Connor (Research Technician) - Elefthérios Chalkiadakis (Doctoral student)
Rheumatic Fever 6 Research projects (21 %)	Eric D'Ortenzio	Noémie Baroux : Epidemiologist statistician
Medical Entomology 4 Research Projects (14%)	Laurent Guillaumot	1 Laboratory Assistant
Epidemiology of Infectious Diseases - projects support	Eric D'Ortenzio	Noémie Baroux : Epidémiologist Statistician - 1 medical secretary

2 Research Projects, outside these themes : one on the Bioprospecting and the biodiversity of the marine bacteria of the atypical New Caledonia environment - one on the detection of the enteric pathogenic viruses in New Caledonia (see below).

V.1 - List of 27 ongoing or finalized research projects in 2012, categorized by themes

Leptospirosis : 13 projects

Head Researcher: Cyrille GOARANT (Head of the Leptospirosis Research and Expertise Unit / IPNC)

- * Development of a rapid diagnostic test for leptospirosis diagnosis
- * Study of an avirulent mutant of *Leptospira interrogans*
- * Research of severe prognostic indicators during a *Leptospira* infection: follow-up of hospitalized patients.
- * Gene expression of major *Leptospira* proteins *in vivo*
- * Molecular epidemiology of human leptospirosis in New Caledonia
- * Leptospirosis eco-epidemiology in New Caledonia and Futuna
- * Creation of a leptospirosis research group in the RIIP: diagnostic methods, importance in public health
- * Leptospirosis in Pacific Islands : development of diagnostic tools and evaluation of the disease's impact.

Head Researcher: Mariko MATSUI (IPNC / URE-L)

- * Comparative study between resistant and susceptible animal models
- * Renal pathophysiology during carriage of pathogenic *Leptospira*
- * *in vivo* regulation of the *Leptospira* flagellar system

Head Researcher : Benoît GARIN, Institut Pasteur de Madagascar - IPNC Researcher: Cyrille GOARANT (IPNC/URE-L)
*Leptospirosis diagnostic among risk and febrile syndrome presenting groups in Tananarive and Banguy

Head Researchers : Dr Gilles GUERRIER (CHT, Nouméa) and Dr Eric D'ORTENZIO (URE-Emi IPNC)
* Literature review of the Jarisch-Herxheimer reaction on leptospirosis stricken patients treated with amoxicillin.

Arboviroses: 3 projects

Head researcher : M. Dupont-Rouzeyrol (finalised) (IPNC / URE-DA)
*Dengue viral pseudo-particles: application to serodiagnostic and seroneutralisation

Head researcher : DASS-NC- CNR Marseille – IPNC researcher : M. Dupont-Rouzeyrol (IPNC/URE-DA)
*Dengue and other arboviroses prevalence in New Caledonia (in-process)

Head researcher : VM. Cao-Lormeau – IPNC researcher: M. Dupont-Rouzeyrol (IPNC/URE-DA)
*DenPacSud : Molecular epidemiology of dengue viruses from past and ongoing epidemics in New Caledonia and South Pacific (in-process)

Medical entomology: 4 projects

Head researcher : L. Guillaumot (IPNC / URE-EM)
*AeDenPac : *Aedes aegypti*, dengue and chikungunya mosquito vector in the pacific : surveillance and knowledge improvement towards a better control. (in-process)

Head researcher : I. Dusfour (IPG) - IPNC researcher : L. Guillaumot (IPNC / URE-EM)
*Impact of temperature on detoxifying enzyme expression and activity, and its consequences on *Aedes aegypti* insecticide resistance. (in-process ACIP)

Head researcher : Jean-Paul Grangeon (DASS-NC) – IPNC researcher : L. Guillaumot (IPNC/URE-EM)
*Assessment of an auto-dissémination of pyriproxyfène for *Aedes aegypti* (Diptera, Culicidae) control in New Caledonia. (in-process)

Head researcher : Nathalie Daval - IPNC researcher : L. Guillaumot (IPNC/URE -EM)
*First report of autochthonous canine leishmaniasis in New Caledonia (Western Pacific): non-vectorial transmission suspected

Rheumatic fever : 6 projects

Head Researcher: Dr. E. D'Ortenzio (IPNC /URE-RF)
* Epidemiological, clinical and molecular study of group A streptococcus, New Caledonia, 2012
* Determinants of poor adherence to secondary antibiotic prophylaxis for rheumatic fever recurrence on Lifou, New Caledonia: a retrospective cohort study. (M.D Thesis. B.Gasse)
* Risk factors of rheumatic heart disease in schoolchildren: a case-control study in New Caledonia

Head Researcher: Tom Parks, Wellcome Trust Centre for Human Genetics, University of Oxford, Oxford, UK.
IPNC Researcher: Dr. E. D'Ortenzio, N. Baroux (IPNC / URE-RF)
*Genetic susceptibility to Invasive group A streptococcal disease in the Pacific

Head researcher : N. Baroux (IPNC /URE-RF)
* Prevalence of rheumatic heart disease in school children detected by echocardiography screening in New Caledonia
* Potential rheumatogenic group A streptococcal: a systematic review.

Other research projects: 2

Head researcher: M. Dupont-Rouzeyrol (IPNC-URE/DA) et C. Simon-Colin, avec E. Chalkiadakis (Doctoral student) (IPNC/IFREMER)

* Bioprospecting and biodiversity of marine bacteria in atypical areas of New Caledonia: Biotechnological valuation. (in process) (IPNC/URE-DA)

Chercheur principal : Jérémie LANGLET (ESR New Zealand)

IPNC Participants: Ann-Claire GOURINAT (Laboratory of immuno-serology/ moleculare Biology - Florence URBES (Hygiene &t Environment Laboratory)

* Detection of the pathogenic enteric viruses in New Caledonia (in process).

V. 2 – Scientific Valuation in 2012

11 Publications in 2012 in international journals : 5 as 1st author
12 Communications, including 2 Posters in international conferences: 9 as 1st author
21 Publications, communications and posters in New Caledonia

53 % on Arboviroses and their vectors

V.2.1 - International-level Valuation

11 Publications in peer-reviewed international journal

Arboviroses : 4

Aubry M, Roche C, Dupont-Rouzeyrol M, Aaskov J, Viallon J, Marfel M, Lalita P, Elbourne-Duituturaga S, Chanteau S, Musso D, Pavlin BI, Harrison D, Kool JL, Cao-Lormeau VM. Use of serum and blood samples on filter paper to improve the surveillance of dengue in Pacific Island Countries. **J Clin Virol**. 2012 Jun 11.

Dupont-Rouzeyrol M, Caro V, Guillaumot L, Vazeille M, D'Ortenzio E, Thiberge JM, Baroux N, Gourinat AC, Grandadam M, Failloux AB. Chikungunya virus and the mosquito vector Aedes aegypti in New Caledonia (South Pacific Region). **Vector Borne Zoonotic Dis**. 2012 Dec;12(12):1036-41.

E. Descloux, M. Mangeas, C-E. Menkes, M. Lengaigne, A. Leroy, T Tehei, L Guillaumot, Teurlai, A-C. Gourinat, J. Benzler, A. Pfannstiel, J-P. Grangeon, N. Degallier, X. De Lamballerie. Climate-Based Models for Understanding and Forecasting Dengue Epidemics. **PloS Negl Trop Dis**. 2012;6 (2):e1470

L. Guillaumot, R. Ofanaoa, L. Swillen, N. Singh, H. Bossin, F. Schaffner. Distribution of Aedes albopictus (Diptera, Culicidae) in southwestern Pacific countries, with first report from the Kingdom of Tonga Climate-Based Models for Understanding and Forecasting Dengue Epidemics. **Parasites & Vectors**. 2012, nov ., 6; 5:247

Leptospirosis : 2

Matsui M, Soupé, M.E., Becam, J., Goarant C. Differential in vivo gene expression of major Leptospira proteins in resistant or susceptible animal models. **Applied and environmental microbiology**. 2012, sept : 78, 6372-6376.

Bourhy P, Nato F, Chanteau S, Goarant C, Dartevelle S, Picardeau M. 2012. **European Patent EP123062150**: Use of *Leptospira fainei* serovar Hurstridge bacteria for diagnosing leptospirosis

Miscellaneous : 5

Mermond S, Zurawski V, D'Ortenzio E, Driscoll AJ, DeLuca AN, Deloria-Knoll M, Mo JC, Murdoch DR, Missotte I, Besson-Leaud L, Chevalier C, Debarnot V, Feray F, Noireterre S, Duparc B, Fresnais F, O'Connor O, Dupont-Rouzeyrol M, Levine OS. Lower Respiratory Infections Among Hospitalized Children in New Caledonia: A Pilot Study for the Pneumonia Etiology Research for Child Health Project. **Clin Infect Dis**. 2012;54 (Suppl 2).

Lahra MM, Limnios EA, Dorji D, Bakar HM, Guillard B, Sopheak H, Ping YY, Buadromo EM, Kumar P, Singh S, Lo J, Lo A, Bala M, Risbud A, Deguchi T, Tanaka M, Watanabe Y, Lee K, Chong Y, Noikaseumy S, Phouthavane T, Sam IC, Tundev O, Lwin KM, Eh PH, Goarant C, Goursaud R, et al. Surveillance of antibiotic resistance in *Neisseria gonorrhoeae* in the WHO Western Pacific and South East Asian Regions, 2010. **Commun Dis Intell Q Rep**. 2012 Mar 31;36(1):95-100.

Matsui M, Adib-Conquy M, Coste A, Kumar-Roiné S, Pipy B, Laurent D, Pauillac S. Aqueous extract of *Vitex trifolia* L. (Labiatae) inhibits LPS-dependent regulation of inflammatory mediators in RAW 264.7 macrophages through inhibition of Nuclear Factor kappa B translocation and expression. **J Ethnopharmacol**. 2012, 143(1):24-32

Garin B, Gouali M, Wouafo M, Perchec AM, Thu PM, Ravaonindrina N, Urbès F, Gay M, Diawara A, Leclercq A, Rocourt J, Pouillot R. Prevalence, quantification and antimicrobial resistance of *Campylobacter* spp. On chicken neck-skins at points of slaughter in 5 major cities located on 4 continents. **International Journal of Food Microbiology**, 157 (2012) 102-107

Members of the Western Pacific Region Global Influenza Surveillance and Response System. Epidemiological and virological characteristics of influenza in the Western Pacific Region of the World Health Organization, 2006-2010. *PLoS One*. 2012;7(5):e37568.

10 Communications, 2 posters - Conferences, symposium outside New Caledonia

Arboviroses and vectors : 8

Workshop on dengue and emerging arboviruses in PICTs, September 3, 2012, Tahiti, French Polynesia

Dupont-Rouzeyrol M, Caro V, Guillaumot L, Vazeille M, D'Ortenzio E, Thiberge JM, Baroux N, Gourinat AC, Grandadam M, Failloux AB. Chikungunya and *Aedes aegypti* in New Caledonia. *Speaker : M. Dupont-Rouzeyrol*

Guillaumot L. The AeDenPac project. *Speaker: L. Guillaumot*

MCAA/ARA Conference September 13, 2012, Surfers Paradise, Australie.

Dupont-Rouzeyrol M, Caro V, Guillaumot L, Vazeille M, D'Ortenzio E, Thiberge JM, Baroux N, Gourinat AC, Grandadam M, Failloux AB. Chikungunya and *Aedes aegypti* in New Caledonia. *Speaker: M. Dupont-Rouzeyrol*

Guillaumot L, Ofanoa R, Swillen L, Singh N, Bossin HC, Schaffner F, *Aedes albopictus* in Southern Pacific countries, first report from the Kingdom of Tonga. *Speaker: L. Guillaumot*

Lucien K, Grangeon JP, Guillaumot L, Chikungunya virus alert in New Caledonia. When conventional methods of vector control need dramatic enhancement. *Speaker: L. Guillaumot*

Roche User Group, septembre 2012, Taupo, New Zealand.

Girault D, Gourinat AC, Dupont-Rouzeyrol M : Evolution of the Dengue virus detection in New Caledonia. *Speaker: D. Girault*

Dupont-Rouzeyrol M, Aubry M, O'Connor O, Roche C, Gourinat AC, Grangeon JP, Chanteau S, Aaskov J, Cao-Lormeau VM. Inhabituelle circulation prolongée de dengue en Nouvelle Calédonie. *Speaker: M. Dupont-Rouzeyrol*

2nd Meeting of the Institut Pasteur International Network Americas Region "Alliance for Molecular Research in Infectious Diseases", Institut Pasteur de Montevideo, Oct. 30, 2012, Montevideo - Uruguay

Dusfour I., Guillaumot L, Ramdini C, Strode C, Robello C, Unravelling insecticide resistance in mosquitoes: combination of field and molecular technology expertise. *Speaker: I. Dusfour*

Leptospirosis : 2

Communication dans le cadre du projet fond Pacifique leptospirose

Vila Central Hospital, aout 2012, Port Vila, Vanuatu

Gourinat AC, D'Ortenzio E, Goarant C. The human disease leptospirosis. *Speaker : AC Gourinat*

Gordon Conference "Biology of Spirochetes", Ventura, CA, USA, Janvier 2012 - Poster

Becam J, Gourinat AC, Laumond-Barney S, Goarant C (2012) : Molecular epidemiology of leptospirosis in New Caledonia evidences an emerging strain.

Miscellaneous : 2

Roche User Group, septembre 2012, Taupo, Nouvelle-Zélande.

E. Chalkiadakis, M. Dupont-Rouzeyrol, C. Simon-Colin. The application of the LightCycler 2.0 Instrument ROCHE RT-PCR for bacteria phylogenetic study. *Speaker: E. Chalkiadakis*

Sixth Meeting of National Influenza Centres in the Western Pacific and South-East Asia Regions, 29-31 May 2012. Hanoi, Viet Nam - Poster

Gourinat AC, Barthel A, Granjeon JP. Dynamic pattern of circulating seasonal and pandemic influenza viruses from 2001 to 2011 in New Caledonia.

V.2.2 - Valuation : New Caledonia
6 publications and 15 scientific communications
4 all public communications

6 Publications

Arboviroses and vectors : 4

E. Descloux , M. Mangeas, CE Menkès, A. Leroy, T. Tehei, L. Guillaumot, M. Teurlai, AC Gourinat et al. Influence du climat sur la dynamique des épidémies de dengue en Nouvelle-Calédonie, 1971-2010, Apport de la modélisation pour comprendre et anticiper les risques. - **Inform'Action** n°36, Novembre 2012, p 14-18

-D'Ortenzio E, Gourinat AC, Dupont-Rouzerol M, Guillaumot L, Chanteau S, Grandadam M.
Chikungunya : Actualités sur une maladie émergente en Nouvelle-Calédonie. **Bulletin Médical Calédonien et Polynésien** n°60, Mars 2012. p 12-14.

D'Ortenzio E, Guillaumot L. Changements climatiques et extension des maladies à transmission vectorielles : mythe ou réalité ? - **Inform'Action** n° 36, Novembre 2012. p. 10-13

-Guillaumot L, D'Ortenzio E. **Bulletin du Réseau de Surveillance Entomologique du Vecteur de la Dengue et du Chikungunya en Nouvelle-Calédonie**. 2012 – Diffusion par courrier électronique et sur le site internet IPNC – 10 numéros.

Legionelles : 2

Florence Urbès, Régis Goursaud, Eric D'Ortenzio. Légionelle et légionellose en Nouvelle-Calédonie, 2005-2010. **Inform'Action** n°35. Mai 2012. p 15-20.

Florence Urbès, Régis Goursaud, Eric D'Ortenzio. Information Légionelle et légionellose en Nouvelle-Calédonie, 2005-2010. **Revue parlementaire**, 2012

15 Communications including which 1 poster

Arbovirus and vectors : 8

AeDenPac kick-off meeting, November 12, 2012, Noumea. Nouvelle-Calédonie.

Dupont-Rouzeyrol M, Caro V, Guillaumot L, Vazeille M, D'Ortenzio E, Thiberge JM, Baroux N, Gourinat AC, Grandadam M, Failloux AB. Chikungunya and *Aedes aegypti*: The New Caledonia story.

Speaker: M. Dupont-Rouzeyrol

M. Dupont-Rouzeyrol. Dengue virus in New Caledonia, 2001-2012: molecular epidemiology aspects.

Speaker: M. Dupont-Rouzeyrol

Guillaumot L. AeDenPac, Project summary

Speaker: L. Guillaumot

Pfannstiel A, Guillaumot L. Dengue and Chikungunya history and situation in New Caledonia,

Speaker: L. Guillaumot

Guillaumot L, Vector Situation , Surveillance and Control in New Caledonia,

Speaker: L. Guillaumot

Gourinat AC. Dengue diagnosis and surveillance in New Caledonia, *Speaker: AC GOURINAT*

Forum de l'Œil - Observatoire de l'Environnement en NC. 18-21 juin 2012, Nouméa NC
Surveillance des moustiques vecteurs de maladies en Nouvelle-Calédonie.

Speaker: L. Guillaumot

Labnet Meeting, 26-28 juin 2012, Nouméa

Gourinat AC. Update activities and way forward for Dengue, influenza and leptospirosis.

Speaker: AC Gourinat

Leptospiroses : 3

Goarant C, Perez J, Brescia F. Rodent reservoirs of leptospirosis in a high endemic area, consequences for rodent control Caledonian Medical Days, June 2012, Noumea, New Caledonia, Speaker: Dr C. Goarant.

Becam J, Gourinat AC, Goarant C. Contribution of PCR in early diagnostic and molecular epidemiology of leptospirosis. Caledonian Medical Days, June 2012, Noumea, New Caledonia, Speaker: J. Becam.

Goarant C: Leptospirosis in New Caledonia. Knowledge in service epidemiology for vaccine concern. Presentation requested by physicians from the New Caledonian occupational medicine. May 2012, Noumea, New Caledonia. Speaker: Dr C. Goarant

Rheumatic fever : 1

D'Ortenzio E, Baroux N, Rouchon B. Les facteurs de risque de la cardiopathie rhumatismale chez les enfants en Nouvelle-Calédonie. 1^{ère} **Journée médicale du Centre Hospitalier Territorial de Nouvelle-Calédonie**, Juin 2012, Nouméa, Nouvelle-Calédonie. *Speaker : Eric D'Ortenzio*

Miscellaneous : 3

E. Chalkiadakis, H. Amir, J. Guezennec, S. Chanteau, M. Dupont-Rouzeyrol et C. Simon-Colin Bioprospection des micro-organismes marins issus des milieux atypiques de la Nouvelle-Calédonie : Recherche, Caractérisation et Valorisation des biopolymères en biotechnologie. **Doctoriales de l'UNC**. Octobre 2012, Nouméa. *Speaker: E. Chalkiadakis*

Mermond S, Zurawski V, D'Ortenzio E, Driscoll AJ, DeLuca AN, Deloria-Knoll M, Mo JC, Murdoch DR, Missotte I, Besson-Leaud L, Chevalier C, Debarnot V, Feray F, Noireterre S, Duparc B, Fresnais F, O'Connor O, Dupont-Rouzeyrol M, Levine OS. Les infections respiratoires basses de l'enfant responsables d'hospitalisation en Nouvelle-Calédonie : projet PERCH (Pneumonia Etiology Research for Child Health). **Journée Médicale Calédonienne**, Nouméa, 22 juin 2012. *Speaker : Sylvain Mermond*

Chalus E, O'Connor O, Oftadeh S, Baroux N, D'Ortenzio E, Mermond S Etude de l'impact des vaccins pneumococques conjugués en Nouvelle-Calédonie : état des lieux des sérotypes circulants et de la résistance aux antibiotiques en 2009. **Poster - Journée Médicale Calédonienne**, Nouméa, 22 juin 2012.

4 all public Communications in New Caledonia

Goarant C, Brescia F : : Feedback presentation of the study regarding the rodents and leptospirosis led in 2 tribes in Bourail. Deva House, Bourail, 18th June 2012. *Speakers: Dr C. Goarant and Dr F. Brescia*

Goarant C, Brescia F : Feedback presentation of the study regarding the rodents and leptospirosis led in Pothé and Bouirou. Bouirou Tribe, Bourail, 10th November 2012. *Speakers: Dr C. Goarant and Dr F. Brescia.*

Fête de la Science 2012 : IPNC on-site presentations (science villages) : in Lifou, Kone et Noumea. Reception of secondary and high school classes at IPNC. Conference : Qu'est-ce que l'épidémiologie, N. Baroux in Kone, October 2012.

Guillaumot L, Kilama S : Dengue and Chikungunya control mobilization week, Noumea Townhall room. IPNC Medical Entomology stand , school pupils reception, November 19th to 22th 2012.

Participation in Conferences, workshops, seminars and meetings outside NC : 14 for 7 scientists.

VI - IPNC TRAINING IN 2012

VI.1 - IPNC professional education in 2012

Number of completed trainings: 26

Number of participants: 105

Scientific and technical trainings: 12

Human Resources, Administration and computing trainings : 8

Quality Assurance trainings: 3

Safety training : 3

Cost: 1,925 million XPP – 37,707 €,

this represents the double of the legal financing obligation by the employer.

VI.1.1 - Scientific and technical trainings : 12

Trainings outside New Caledonia in 2012: 6

- CHALKIADAKIS Eleftherios : Training in production and characterization of the bacterial bio-polymers techniques. Ifremer Brest. 28 Nov. 2011 to 14 Feb.2012.
- MERMOND Sylvain : further education in hematology. Hôpital St. Antoine, Paris. 25/06 au 29/06 - Setup of a new approach in the Medical Biology Laboratory, AFNOR, Paris. 02 et 03 July.
- GOURSAUD Régis : Continuing medical training course. Bordeaux University Hospital Center, 24 to 28 Sep.
- GOURINAT Ann-Claire : Continuing medical training course. 24 to 28 Sep.
- GOURINAT Ann-Claire : Updating Medical Biology knowledge. Deux Alpes. 18 to 23 March.
- BAROUX Noémie : Method in epidemiology for Health Research. Institut Pasteur of Ho Chi Minh, Vietnam. 17 to 21 Sep.

Training in New Caledonia and in situ

- Training in water quality control dispensed by IFAP from 26 to 30 Nov. 2012: 1 technician
- In situ at IPNC

Cyrille Goarant, Head of Leptospirosis URE and referent for molecular biology, lecturer.	The Polymerization in Chain Reaction (PCR) and other nucleic acid amplification techniques.	2 internal training courses of 3 hours each
Cyrille Goarant, Head of Leptospirosis URE and referent for molecular biology, lecturer.	Real-time PCR and the applications of PCR.	2 internal training courses of 3 hours each
Myrielle Dupont-Rouzeyrol, Head of Dengue & Arboviroses URE, and Marie-José Wemama, LBM technician in charge of the NSB2+ laboratory, lecturers.	Access & work in NSB2+ Laboratory	5 internal training courses of 1.30 hour each
E. learning	Hematology, Parasitology and mycology	8 training courses : 9 participants

V.1.2 - Human Resources, Administration & Computing Training: 8

- « How to manage and behave in response to change» Feb. 2012 : 18 executives
- « Auditor » in March 2012 : 1 executive
- « How to lead an annual professional interview » in March 2012 : 8 executives
- Support for validation of acquired professional experience (VAE) : 1 accountant
- Collective negotiations in the enterprise : 2 technicians, 2 medical secretaries , 1 Human Resources Assistant
- Managing a Human Resources Department : 1 Human Resources Assistant
- How to manage customers claims and aggressive behaviour : 1 medical secretary
- How to represent the staff : 2 Laboratory technicians

VI.1.3 - Quality Assurance trainings: 3

- « Kalilab administrator : level 1, 2 et 3 » from 30 Nov. to 04 Dec. : 7 executives
- « Kalilab user » in December 2012 : 30 technicians
- Internal Quality Audit training: 5 executives and technicians

VI.1.4 - Security training: 3

- Management and maintenance of laboratory animals: 2 researchers & 1 technician
- Awareness to the airport safety : 1 laboratory assistant
- « Autoclave » in June 2012 : 8 scientists and technicians

VI.2 - Training supervised by IPNC scientists

Bachelor's degree : Training of Miss Laureen Malejac, third year in bachelor' degree in "Environment and Earth Life & Science" at the "Université de Nouvelle-Calédonie", from October 22nd to November 23rd 2012.

Title of the thesis: : « Introduction à l'Entomologie Médicale ». IPNC responsible scientist : L. Guillaumot (IPNC / URE-EM)

Master's degree : Ms Claire Fouquet welcomed from 18 June to 10 August at the Hygiene & Environment Laboratory, as part of the 1st year of her master's degree in Health-Chemistry undertaken at l'Université René Descartes – Paris V – Pharmaceutical and biological science department.

VI.3 - Training carried out by IPNC scientists to assist New Caledonian and overseas institutions: 8

Leptospirosis biological diagnosis training delivered to Talica Cabemaiwai (Fiji Ministry of Health) et Manasa Mainaquelevu (Fiji National University, College of Medicine, Nursing and Health Sciences), 21 to 24 February 2012. As part of the regional project on this disease coordinated by Leptospirosis URE. IPNC instructors : Goarant C (IPNC / URE-L) et Gourinat AC (IPNC / LBM).

Dengue biological diagnosis training delivered to Talica Cabemaiwai (Fiji Ministry of Health) et Manasa Mainaquelevu (Fiji National University, College of Medicine, Nursing and Health Sciences) from 27 Feb. to 2 March 2012. Training financed by SPC. IPNC instructors : O'Connor O (IPNC / URE-DA), Dupont-Rouzeyrol M (IPNC / URE-DA) et Gourinat AC (IPNC / LBM).

Training of staff recruited as part of the Programme Provincial d'Insertion Citoyenne (PPIC) for vector-borne diseases prevention by the Prevention and Health Promotion Service of the New Caledonia South Province. La Foa, Nov. 26th 2012, Noumea, Dec. 5th and 6th 2012. Twenty five personnel members involved. IPNC instructor : L. Guillaumot (IPNC / URE-EM).

Training in vector mosquitoes surveillance and control of Mr Vineshwaran Rama and Mr Paula Laqere, Environmental Health Inspectors from the Fiji Ministry of Health. November 15th to 23th 2012. This training took place as a part of the AeDenPac project. IPNC instructors : Guillaumot L (IPNC / URE-EM) and Kilama S (IPNC / URE-EM).

Hand cleaning training for 3 Quick restaurants, 3 groups 10 people. One 1-hour course. IPNC instructor: Urbès F.

Training on Legionellas risk, for SLN company, 3 groups of 10 people. One 4 hour-course. IPNC Instructor: Urbès F.

Training on the Legionellas risk for the Koniambo Nickel company and sample, 1 group of 5 people. One 6-hour course. IPNC nstructor: Urbès F.

Training in food hygiene and microbiology for SIPRES, one group of 6 people. Two 4-hour courses. IPNC instructor: Urbès F.

Email addresses for further information

If you wish to have more detailed information on the activities of the IPNC in 2012, you can contact the persons in charge of the URE and the Heads of the various laboratories and departments via e-mail. These are listed below.

Head	Service	E-mail
Pr Dominique BAUDON	General Direction	dbaudon@pasteur.nc
Pierre COCHOU	Administrative & financial Direction	pcochou@pasteur.nc
Marie-Gloria LUTUI-TEFUKA	Management of Quality	mlutui@pasteur.nc
Julien COLOT	Laboratory of bacteriology & parasitology	jcolot@pasteur.nc
Ann-Claire GOURINAT	Laboratory of Immunology-serology & molecular biology	agourinat@pasteur.nc
Sylvain MERMOND	Laboratory of hematology	smermond@pasteur.nc
Florence URBES	Hygiene & Environment Laboratory	furbes@pasteur.nc
Cyrille GOARANT	Leptospirosis Research & Expertise Unit (URE-L)	cgoarant@pasteur.nc
Myrielle DUPONT-ROUZEYROL	Dengue & other Arboviroses Research & Expertise Unit (URE-DA)	mdupont@pasteur.nc
Noémie BAROUX*	Research & expertise Unit: - Epidemiology of Infectious Diseases (URE-Emi) - Rheumatic Fever (URE-Raa)	nbaroux@pasteur.nc
Laurent GUILLAUMOT	Medical Entomology Research & Expertise Unit (URE-EM)	lguillaumot@pasteur.nc

* Dr Eric D'ORTENZIO was in 2012 in charge of the URE-Emi and URE-Raa in 2012. He left IPNC in 2013. For information relating to these UREs, please contact temporary replacement Noémie BAROUX, Statistician Epidemiologist.