

LabNet 2004 annual activity report from New Caledonia Pasteur Institute

LabNet is the regional public health laboratory network for the Pacific Public Health Surveillance Network (PPHSN), created at the initiative of SPC and the WHO Regional Office. Its goal is to further develop existing laboratories in the Pacific Island area and to facilitate technical assistance between Pacific Island countries and territories. LabNet is composed of three levels: front-line national laboratories (L1) that are in contact with patients, a sub-regional confirmation level (L2, with laboratories currently in Guam, Suva, Noumea and Papeete) and a reference level (L3), mainly composed of WHO collaborating centres in Australia and New Zealand.

Since the implementation of LabNet in 2000, the New Caledonia Pasteur Institute (IPNC) has been one of the network's Level 2 laboratories. It has also played an active role in development of the network, has supervised part of the regional activities and is a permanent member of LabNet's Technical Working Body.

The Working Body's annual meeting was held in Noumea on 1 June 2004. Among the issues discussed at the meeting was a proposal to create a "catalogue" of the laboratory services that L2 and L3 labs can propose to L1 labs. This document will explain in detail the range of available analyses and also pre-analysis conditions — that is, sampling, storage and transport conditions. To date, only the reference labs (L3) have provided the necessary data to the IPNC, which is in charge of preparing the document.

In 2005, it is hoped that discussions will reach a conclusion on using a regional revolving fund to finance these activities and, where necessary, transports costs.

Updates on ongoing programmes mentioned below were provided to the meeting and possible new activities for 2005 were discussed, in particular medical entomology and biological monitoring of water and foodstuffs.

Lab confirmation activities for regional outbreaks

As in the previous two years, most of the regional requests to which the IPNC responded in 2004 involved confirmation of cases of dengue fever. The outbreak, due to the type 1 virus, began in the Pacific in 2000 and has spared very few islands, and the number of samples treated annually has been increasing steadily since 1999. The details of the work in 2004 are given in the table below.

Date	Origin	Country	Number of samples	Type of sample	Tests carried out	Results
02/02/2004	Malardé Institute	French Polynesia	5	Serum	Leptospirosis serology (MAT*)	5 positive (Ab titre =1/400 for at least one serovar)
15/03/2004	Vila Central Hospital	Vanuatu	1	Serum	Dengue IgM and PCR, leptospirosis serology	Negative
05/04/2004	Lenakel Hospital	Vanuatu (Tanna)	3	Serum	Dengue IgM and PCR, leptospirosis and typhoid serology	1 patient positive for dengue IgM
19/04/2004	Vaiola Hospital	Tonga	12	Serum	Dengue IgM and PCR	3 patients positive for IgM
					Respiratory virus serology	3 patients positive for RSV, 1 for influenza A
04/08/2004	Palau MoH	Palau	10	Serum	Dengue IgM and PCR	5 patients positive for IgM, one positive for dengue-1 PCR
24/08/2004	Palau MoH	Palau	24	Serum	Dengue IgM and PCR	3 patients positive for IgM, one positive for dengue-1 PCR
24/11/2004	Yap DoH	Yap (FSM**)	53	Serum	Dengue IgM and PCR	25 patients positive for IgM, 14 positive for dengue-1 PCR
24/11/2004	Yap DoH	Yap (FSM**)	4	Respiratory secretions	Influenza and RSV (DIF***)	All negative
31/12/2004	Guam PHL	Guam	3	Serum	Dengue IgM and PCR	All negative
31/12/2004	Guam PHL	Chuuk (FSM**)	9	Serum	Dengue IgM and PCR	3 patients positive for IgM, one positive for dengue-1 PCR

- * Micro-agglutination test
- ** Federated States of Micronesia
- *** Direct immunofluorescence

Regional leptospirosis study

The IPNC continued its regional study on the incidence of leptospirosis, launched during the first LabNet meeting in 2003 in Suva. In 2004, only the French Pacific territories took an active part in this study (more than 100 samples received from Wallis and Futuna and French Polynesia), but other countries have joined the project and in early 2005, samples were received from Vanuatu and Tonga. The active participation of the countries and territories in the northern part of the region, where the disease has already been identified, is desirable to give this study a truly regional scope. A progress report was provided to the WHO Regional Office in August 2004 and the final report is scheduled for late 2005.

Influenza surveillance

Following the WHO technical workshops on influenza (Tokyo, May 2004), the PPHSN Influenza Specialist Group was asked to propose a lab surveillance project for a few L1 labs in the region.

At the IPNC's initiative, a project to begin detection of respiratory viruses (influenza and RSV) using an immunofluorescence technique was submitted to the WHO Regional Office in Manila at the end of the year. This project includes providing a fluorescence microscope and reagents for one year of work and includes technical training sessions at the IPNC or at hospital sites in Melbourne or Wellington. During the initial phase, three sites could be involved (Palau, Tonga and Wallis).

Dengue fever diagnosis strategy

According to current PPHSN recommendations, it is advisable that Level 1 labs have access to rapid tests to detect dengue fever IgM in the event of an outbreak. Selection of the type of kits must be based on both an acceptable performance level for the product and an affordable cost. The assessment of one immuno-chromatographic kit conducted at the IPNC in 2002 for LabNet revealed sub-optimal performance levels and so a more reliable test still needs to be found. For that reason, a new test, based on the principle of particle agglutination, was assessed by two of network's labs, the Yap Hospital and IPNC. The preliminary results show very satisfactory characteristics in terms of specificity and sensitivity. The complete assessment report will be published in *Inform'ACTION* later in 2005.

Regional programme to eliminate measles

The WHO Regional Office for the Western Pacific Region has set the goal of eliminating measles by 2015. Laboratories have a vital role in this programme's progress by confirming clinically reported cases and assisting in the identification of the regions or countries at risk, for which "catch-up" campaigns may be proposed.

The elimination plan is based on reinforced vaccination and laboratory activities.

A global laboratory network for measles surveillance (GMLN) has been created for this task, involving three levels: central (CDC Atlanta), regional and national.

Following the first regional meeting (Manila, August 2004) and given the special characteristics of the Pacific Islands region, it was decided during the workshop to align the GMLN to LabNet. This presupposed setting up another laboratory level, the sub-regional level. The four LabNet L2 labs have been designated to serve neighbouring countries by confirming the initial lab's measles results, mainly through detection of disease-specific IgM. The L2 labs must first meet WHO's technical requirements and then they will be officially accredited. The regional reference level (L3) will be represented by two labs, in Australia and Japan.

The proposed regional organisational diagram for the GMLN is as follows:

Level	L1	L2	L3
Role	<i>Recruiting patients suspected of having measles, sending samples to L2</i>	<i>Front line lab test (IgM), sending samples to L3</i>	<i>Validating L2 results on certain samples, virological and genotype studies</i>
Countries and territories	Countries in the northern part of the region, affiliated with the USA	Guam Public Health Laboratory	NIID*, Tokyo, Japan
	Vanuatu, Wallis and Futuna, New Caledonia	IPNC, Noumea	VIDRL**, Melbourne, Australia
	Cook Islands, French Polynesia	Malardé Institute, Papeete	VIDRL, Melbourne, Australia
	Other countries in the central part of the region	Mataika House, Fiji Islands	VIDRL, Melbourne, Australia

* National Institute for Infectious Diseases

** Victoria Infectious Disease Reference Laboratory

In early 2005, accreditation of the L2 laboratories was under way. The programme could be launched in the PPHSN zone after the meeting at the VIDRL (Melbourne) planned for May.

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