

BCCDC Laboratory Services News

MEDICAL STAFF

Dr. Judith Isaac-Renton
Public Health Lab Director

Dr. Mel Krajden
Associate Director

Dr. Linda Hoang
Medical Microbiologist

Dr. Patrick Tang
Medical Microbiologist

LABORATORY MANAGER

Mr. Jeff Stott

Ms. Amelia Trinidad
Chief Technologist

SENIOR SCIENTISTS
Dr. M.G. Morshed
Clinical Microbiologist

Dr. Martin Petric
Clinical Virologist

Dr. Swee Han Goh
Senior Scientist

Dr. Corinne Ong
Senior Scientist

SECTION HEADS

Mr. John Chan
Technical Support/Projects

Mr. Joe Fung
Environmental Microbiology

Ms. Annie Mak
Virus Isolation

Mr. Alan McNabb
Molecular/Advanced
Technology Platforms

Ms. Ana Paccagnella
Bacteriology/Mycology

Dr. Mabel Rodrigues
Mycobacteriology/TB

Ms. Quantine Wong
Parasitology/ZEP

Mr. Neil Chin
Containment Level 3/Lab
Biosafety

Mr. Bruce Gamage
Infection Control Consultant

Welcome, Dr. Hoang & Dr. Tang

Dr. Linda Hoang and Dr. Patrick Tang, have joined us recently, taking up leadership positions of Dr. Bill Black and Dr. Gwen Stephens. We are ecstatic to have such outstanding talented, energetic leaders now at BCCDC. The positive impact of their arrivals is already being felt – new Lab rounds, new tests, new approaches.

Dr. Hoang is the Head of our Bacteriology, Enterics and Mycology Program. Although she started working in this new role on August 1st, Dr. Hoang is well known at BCCDC as a UBC Medical Microbiology Resident. She completed her MSc and MD training at UBC and then went on to earn a Diploma in Tropical Medicine and Hygiene from the London School of Hygiene and Tropical Medicine.



Dr. Tang, Head of the TB/Mycobacteriology Program, joined us more recently on November 1st. He completed his Medical Microbiology residency training in Toronto and a combined MD/PhD at UBC. For the past two years, Dr. Tang was a visiting post-doctoral research fellow with the Howard Hughes Medical Institute at the University of California, San Francisco, working on a pan-viral microarray.

What's New at the BCCDC Public Health and Reference Labs?

* Outbreak Investigation

As the provincial public health microbiology reference laboratory in the PHS Labs, BCCDC Laboratory Services offers a variety of molecular-based, rapid testing for surveillance, outbreak detection and response. This is one of our key public health core functions. For advice on new rapid tests or assistance on GI Outbreaks, please contact the Outbreak Coordinator (604-660-6079). For assistance on clusters of health care acquired infections, please contact the Provincial Infection Control Consultant (604-660-6076). For other outbreaks or concerns after hours, weekends and on holidays, please contact the Medical Microbiologist On-Call (604-661-7033).

* New Molecular Mycoplasma Test (for Community-Acquired Pneumonia)

Atypical pneumonia caused by *Mycoplasma pneumoniae* (mp), *Chlamydia pneumoniae* (cp) and *Legionella pneumophila*, accounts for 15-50% of all community acquired pneumonias. They pose a diagnostic challenge impacting both patient care and public health. The current diagnostic tests

**BCCDC
Web Site**
www.bccdc.org

**Laboratory
General Inquiries**
(604) 660-5100

**Administration
Telephone**
(604) 660-6030

**Administration
Fax**
(604) 660-6073

available for these agents have long turn-around times, are non-specific and insensitive. Due to the relatively high seroprevalence of Mp and Cp in the community and general absence of increased IgM titres in non-pediatric populations, for example, it is difficult to determine whether an elevated IgM response is due to acute or remote exposure to these organisms.

Recently, an outbreak of *M. pneumoniae* infections was identified in Clearwater, BC. It affected almost 400 people in this community with a population of about 5000 (8% of the population). Public Health investigation showed that the majority of the cases were between the ages of 0-19 and older than 65. Patients' primary clinical findings were cough, fever and auscultatory lung findings.

Due to this outbreak and as well due to the ongoing voiced needs for a rapid and reliable test for agents of atypical pneumonia, BCCDC Bacteriology Section and our new Advanced Technology Platforms (ATP) Section are validating a real-time multiplex PCR testing for *Mycoplasma pneumoniae*, *Chlamydia pneumoniae* and *Legionella pneumophila* from respiratory specimens.

During the process of test validation, we are requesting that all specimens be reviewed by the local Medical Microbiologists/ General Pathologists for clinical history and only tested when the presentation is clearly consistent with Community-Acquired Pneumonia (CAP).

We are accepting clinical specimens from the upper and lower respiratory tract for testing under the following conditions/with the following requirements:

1. For sporadic cases of atypical pneumonia (CAP) with persisting symptoms, severe illness, in the very young, very old and immunocompromised, the best clinical specimens are nasopharyngeal washes.
2. Please indicate clearly on the requisition, the clinical presentation, the working diagnosis and any risk factors for atypical pneumonia.
3. For cases in which *Mycoplasma pneumoniae* disease is suspected, blood for IgM should be submitted to BCCDC (use the new Public Health Serology Screening Requisition).
4. For any cases of possible *Legionella* infection please also submit urine for antigen and request DFA for direct respiratory specimen testing.

This will not only facilitate our validation efforts for these pathogens but will make the test available for routine diagnosis sooner.

Currently, we are running this nucleic acid amplification test (NAT) once weekly. Requests for STAT testing must be approved by Dr. Linda Hoang (604-660-6029), Medical Microbiologist or in the event of an outbreak or cluster, the Medical Microbiologist On-Call (604-661-7033).

* New Drinking Water Studies

Parasite detection in drinking water is costly and laborious but may be done when a public health-related event concerning waterborne protozoa occurs (*Cryptosporidium* or *Giardia*) or is suspected.

Individual *Cryptosporidium* or *Giardia* species are not distinguishable using the current, standard method. BCCDC has recently developed molecular capabilities to speciate and genotype both parasites detected in environmental samples.

BCCDC is partnering with several Health Authorities on a public health "Pathogen Source Tracking" program. This collaboration is partly sponsored by a CIHR funded project to enhance public health surveillance for safe drinking water.

* "Virochip" to be Introduced at BCCDC

The Virochip is an oligonucleotide microarray that can test for all known viruses simultaneously as well as reveal the taxonomy of novel viruses. It was developed in the laboratories of Drs. Joseph DeRisi and Don Ganem at the University of California, San Francisco. The microarray contains 20,000 elements representing the genetic sequences of all known viruses from bacteriophage to plant viroids to animal and human viruses. An earlier version of the

Virochip was pivotal in recovering the genetic sequence of the SARS virus for the CDC (Atlanta) and was used to discover a novel retrovirus associated with familial prostate cancer.

Dr. Tang, our newest Medical Microbiologist, was part of the UCSF team that piloted the current Virochip. He will be setting up a laboratory at the BCCDC to produce and use the Virochip as a virus diagnostic and discovery tool.

