Pacific Pathology Training Centre
Biochemistry
20 April – 15 May 2020

This training course will be delivered over four weeks at the Pacific Pathology Training Centre, based at the Wellington Hospital campus in Wellington, New Zealand to medical laboratory personnel working in hospital laboratories (or similar) in the South Pacific region.

Aim:

A comprehensive theoretical component are provided to students in the diagnostic medical field of Clinical Biochemistry procedures. Laboratory tours in the Wellington region is incorporated in this course. Various suppliers (Roche, Bio-Rad, EBOS, and BD etc.) of Biochemistry equipment and reagents are invited to present to the students as well. The purpose of the training is equip the students with sufficient knowledge to be able to work confidently in their home laboratories and be able to provide quality diagnostic test results to clinicians using the medical laboratory services for patient management and better health outcomes.

Course Content and Objectives:

This course provides students with the following:

- Basic equipment including pipettes, pH meters, water baths, centrifuges, balances
- Overview of blood gas analysis and results interpretation.
- Overview of commonly used general chemistry and immunoassay analytical principles focussing on different calibration concepts.
- Overview of internal quality control and external quality assessment concepts in the Biochemistry laboratory and the measurement of uncertainties.
- Overview of Diabetes in terms of pathology diagnosis, laboratory management and point of care testing.
- Overview of other biochemistry tests; liver function tests, pancreatic enzymes, renal function tests including calcium, magnesium and phosphate, iron studies and lipid with regards to analyses and results interpretation.
- Overview of cardiac biomarkers in health and disease focusing on myocardial infarction, diagnosis and laboratory management.
- Advances in protein analysis and specialist biochemical analysis.
- Overview of thyroid, parathyroid and adrenal functions and associated abnormalities.
- Overview of commonly used biochemical tumour markers.
- Overview of commonly tested fertility hormones.
- Overview of commonly used fluid analysis.
- Overview of urine chemistry tests analyses.
- Overview of commonly available drug testing principles and analysis.
- Molecular approach to biochemical pathology.
- Organisation and effective management of the Biochemistry laboratory.
- Reporting of urgent and critical Results.
- Presentations from various Biochemistry suppliers will be incorporated
- Discussion of quality systems, standard operating procedures, stock control and its management, result processing, audit trails, reducing error and process improvement.
- Staff competency/ personal records, quality manual essentials, documentation framework, auditing and quality review is also covered.
- Overview of laboratory information systems
- Students are presented with a tour of Wellington City, Lower Hutt and Kenepuru Hospital laboratories.
- Blood collection sets and vacutainer tubes and needle systems
- IATA Regulations and packaging techniques for biological substances