

FORENSIC PATHOLOGY

Various highly specialized investigations are carried out here for criminal and legal purposes. Training in this speciality is usually only carried out in only a few centers in Africa.

RESPONSIBILITIES OF THE MEDICAL TECHNOLOGIST

The medical technologist is responsible and accountable for the accuracy and reliability of the results produced. The scope of practice of a medical technologist is governed and regulated by law. A sound knowledge of the principles and procedures of tests employed is required. He/she must be familiar with the operation and maintenance of equipment used. Strict protocols and quality control procedures must be adhered to. A strict code of ethics must be adhered to, which entails, amongst others, strict confidentiality.

TRAINING AS A MEDICAL TECHNOLOGIST / SCIENTIST

Training of Medical Technologist or Biomedical Scientist was previously offered in neighboring countries such as South Africa, Zimbabwe and other international institutions. From 2008 The Polytechnic of Namibia introduced a four (4) year Bachelor degree course of Biomedical Scientist Training program. This program will relieve the present shortage of medical technologists or biomedical scientists experienced in the country.

ENTRY REQUIREMENTS:

A NSSC higher or NSSC ordinary Certificate with Mathematics, Physical Science and Biology, of which the marks must be such as to obtain a 25 point score or more. A reasonable mark in English is an additional requirement. (Specific entry requirements can be obtained from the respective training institutions)

QUALIFICATION:

A four year study period in Biomedical Technology, which comprises of 3 years formal study period at a Technikon or university after which a National Diploma or degree is obtained, and a one year internship in an approved training laboratory. The main Central Reference Laboratory of NIP, in Windhoek, is approved by the professional boards of Namibia and South Africa, as a training laboratory. Registration as a health professional with the Allied Health Professions Council of Namibia is a prerequisite for employment as a medical

technologist and is only obtainable after completion of above mentioned training period. Since training could be obtained outside Namibia, students must meet the requirements for registration with the professional board of that country in which they receive their training before they can apply for registration with the Allied Health Professions Council of Namibia.

The National Diploma can be obtained with a major in the various categories already mentioned.

The most commonly required in Namibia is the category of Clinical Pathology which encompasses the three main fields i.e. Haematology, Chemical Pathology and Microbiology. Additional qualifications may be acquired after a further study period at various educational institutions worldwide.

JOB OPPORTUNITIES

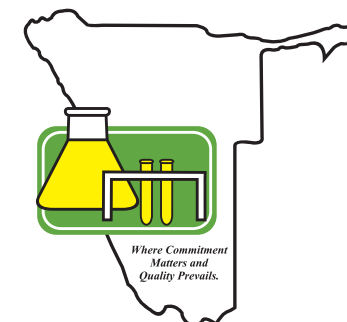
NIP Pathology Departments, Blood Transfusion laboratories and private pathology laboratories are the main employers of medical technologists. Medical technologists who comply with certain standards can open up a private laboratory practice. Some medical technologists also work in veterinary laboratories, municipal laboratories and in food factories that carry out microbiological analysis on their produce. In Namibia there has generally been a shortage of medical technologists. NIP employs about 46 medical technologists countrywide and at present there are approximately 20 medical technologists employed in the other laboratories.

SALARY & BENEFITS

NIP offers a market related salary for a qualified and registered medical technologist, and benefits like medical aid, pension fund and housing subsidy can be expected. Student medical technologists doing their internship could be absorbed to complete internship, subject to the availability of such positions.

CATEGORIES OF LABORATORY WORKERS

Two levels of technical staff are employed by NIP medical technologists and medical laboratory technicians.



Namibia Institute of Pathology Limited



Medical Technology

A CAREER IN THE MEDICAL LABORATORY

Guide to explain the career of a Medical Technologist

INTRODUCTION

Medical laboratories are an important component and integral part of the application of good health services and health planning.

Medical laboratories play an important role to:-

- Increase the accuracy and assist in disease diagnosis and treatment of the individual patient.
- Assist in screening of the population for health problems and assessing their response to treatment.
- Contribute to rapid investigation, identification of epidemics and diagnosis of communicable diseases.
- Contribute to achieve efficiency and cost effectiveness to reduce expenditure in treatment of diseases.
- Sufficiently properly trained and educated personnel essential to deliver a quality laboratory service to provide the needs of the country.

It is therefore of paramount importance to recruit, educate and train suitable people in medical technology.

CAREER DESCRIPTION OF A MEDICAL TECHNOLOGIST

The medical technologist assists in the diagnosis of disease as well as with the monitoring of treatment. The medical technologist is an important member of the health team, and works in close collaboration with pathologists, medical specialists, clinicians and other health workers.

The medical technologist analyses various samples or specimens using very sophisticated equipment and techniques. Although a result is required as soon as possible after submission of a specimen in order to facilitate a diagnosis, accuracy are of vital importance.

Although the medical technologist seldom comes into contact with a patient, a very intimate relationship between the medical technologist and the condition and welfare of a patient exists. For that reason a high level of conscientiousness, integrity, discretion and honesty are essential requirements of the medical technologist. Self-sacrifice must be an important attribute of a medical technologist because, as with any medical profession, the medical technologist is often required to work long and irregular hours.

FIELDS OF WORK IN THE MEDICAL LABORATORY

The diagnostic laboratory comprises of the following main specialities:



MICROBIOLOGY

Microbiology is the study of microscopic organisms, either unicellular, multicellular or acellular. Microbiology includes the disciplines virology, mycology, parasitology and bacteriology. In medical microbiology we study the role of microbes in human illness.

In microbiology technologists culture and identify various pathogenic (disease causing) microorganisms.

CHEMICAL PATHOLOGY

Chemical pathology is the branch of pathology dealing with the biochemistry of disease processes and the measurement of the amounts of substances present in body fluids and other samples as an aid to diagnosis.

The concentration and relationship of various components is indicative of various pathogenic conditions. The following are some examples of commonly analyzed components.

Inorganic ions, e.g. Sodium, Potassium, Magnesium, Calcium, Iron, etc. Organic ions and molecules e.g. various proteins, Urea, Creatinine etc. Enzymes like Liver Enzymes, Cardiac Enzymes etc. Hormones and Vitamins e.g. Thyroid Hormones, Endocrine Hormones etc.

Drug levels, e.g. monitoring of substances for treatment, i.e. drug levels for therapeutic monitoring, diabetes monitoring etc.

HAEMATOLOGY

Haematology is the branch of pathology that is concerned with the study of blood, the blood forming organs and blood diseases. It includes the study of etiology, diagnosis, treatment and prognosis of blood disease. In a clinical laboratory the haematology department performs numerous different tests on blood. The most commonly performed test is the full blood count (FBC), which includes; white blood cell count, platelet count, haemoglobin level and several parameters of red blood cells. Coagulation is a sub-speciality of haematology; basic general coagulation tests are the prothrombin time (PT) and partial thromboplastin time (PTT).



Another common haematology test is the erythrocyte sedimentation rate (ESR) and malaria smear.

Investigation of various hereditary and acquired blood abnormalities Investigation for blood parasites.

Analysis for abnormalities in the blood clotting mechanism and monitoring of anticoagulant therapy.

In each of the above-mentioned main departments there are additional subdivisions where other specialized investigations are carried out.

IMMUNOLOGY

In this field, blood is analyzed for antibodies that are formed by the body in reaction to certain viruses and bacteria. In some cases the presence of certain antigens is also determined. This specific field is developing rapidly with new developments in laboratory medicine.

Well-known examples of diseases investigated for by the techniques employed in this subdivision are HIV and Hepatitis infections and many more.

HISTOLOGY

Investigation for abnormalities such as malignancies in various human tissues and cells obtained by excision, biopsy, scraping etc. In this field the medical technologist mainly prepares the tissue for a histopathologist (medical specialist) to examine, although specialized techniques for further investigations are carried out by the medical technologist.

There are also other specialized fields that one can specialize in and some examples of these other fields of laboratory work for diagnostic and other purposes are as follows:

CYTOLOGY

Investigation of tissue smears for abnormal cells like cancer cells. Pap smears are investigated in this department by medical technologists specialized in Cytology.

BLOOD TRANSFUSION TECHNOLOGY

Blood groups are determined and investigations for blood antibodies are carried out. Blood donors are screened for suitability for blood transfusion purposes. Medical technologists working in this field are specialized in Blood Transfusion Technology.