WHAT HAPPENS TO YOUR PATHOLOGY SPECIMEN?

Have you ever wondered what happens to your specimen when it is sent to the Pathology Laboratory?

Do you know who tests your pathology specimen?
Is it a doctor? Or is it a nurse? Well, actually neither!

Your pathology specimen is tested by BIOMEDICAL SCIENTISTS, without whom doctors would not be able to diagnose diseases properly or treat patients effectively. The term 'biomedical science' is applied to the investigations carried out by Biomedical Scientists.

In the laboratory the Microbiology department is concerned with the study of microorganisms (bugs) that cause disease in man, eg meningitis, tuberculosis and food poisoning. These organisms are identified and the appropriate antibiotic treatment required to kill them is determined in order to stop the disease. Virology is the study of viruses and the diseases caused by them, eg German measles, HIV and chickenpox; it is also involved in monitoring the effectiveness of vaccines. Biomedical Scientists in Immunology deal with the condition of the body's immune system and its role in infectious disease, allergies and organ transplants.

The Haematology department is concerned with the study of blood. Here, the Biomedical Scientists use special automated equipment to count blood cells, and make blood films of abnormal blood samples. This aids the diagnosis and treatment of diseases such as anaemia and leukaemia. The department also detects blood-clotting abnormalities and monitors the treatment of patients taking anticoagulants, eg warfarin.

The Blood Transfusion laboratory makes sure that there is enough blood available in the case of emergency, such as road traffic accidents and operations. Biomedical Scientists in blood transfusion identify blood groups for blood donation and ensure the correct group blood is matched to the patient due to receive the donation.
Tests carried out in Clinical Chemistry on blood and other biological materials help in the diagnosis of diseases, eg diabetes and cystic fibrosis. The Biomedical Scientists monitor how all major body organs, eg heart, lungs, kidneys, are functioning and so help the doctor decide what might be wrong, if anything, and what treatment to give. Screening tests for drugs of abuse are also performed.

In the Histology department small (biopsies) and large tissue samples are studied under the microscope to establish the cause of the illness. The tissue may have been obtained during surgery as an in-patient, from a minor operation as an out-patient or at post mortem. Diseases such as cancer are diagnosed in this way, by looking for abnormal features in tissue cells.

Cytology (the study of cells) is best known in the screening of cervical smears for pre-malignant changes within the cells taken from the neck of the womb. The cells are smeared onto a glass slide, stained and looked at under a microscope. Biomedical Scientists working in cytology not only look at smears but also examine cells taken from all over the body, eg breast lumps and sputum.

BIOMEDICAL SCIENTISTS

Modern pathology and biomedical laboratory work involves complex and diverse investigations requiring an in-depth scientific knowledge of anatomy, physiology and pathology. Biomedical Scientists must therefore be accurate and efficient as lives may depend on their skills. They are highly trained with degrees or equivalent qualifications and need to continually increase their knowledge as laboratory investigations and technology advance. In addition, those working in or for the National Health Service have to be Registered to ensure the protection of the public.

SO WHY DOES MY RESULT TAKE SO LONG?

To assure you that your pathology result is accurate, bugs need to be grown and identified, tissue samples have to be prepared, slides stained and examined, and fluids need to be tested - all this takes time.