



Fact File

The Royal College of Pathologists of Australasia

Pathology – the Basis of Medicine 2013

Medicine is Pathology 

Pathology – the Basis of Medicine

Pathology is the branch of medicine which is involved in understanding the cause and processes of disease. It does this by looking at changes in the tissues of the body and in blood and other body fluids. Some of these changes show the causes, while others reflect the severity of the disease and are used to follow the effects of treatment.

Pathologists are specialist medical practitioners working in the field of pathology. Their role is to carry out tests on various tissues including blood, body secretions and samples of tissue taken at surgery or as a part of a medical examination, in order to understand what is causing an illness.

Some pathologists see patients and may be involved directly in the delivery of care.

At the present time, pathology has seven different areas of activity. These relate either to the methods used or the types of disease which they investigate. These are:

- Anatomical Pathology
- Chemical Pathology
- Forensic Pathology
- Genetics
- Haematology
- Immunopathology
- Microbiology
- General Pathology

Without Pathology and Pathologists, medicine cannot function. There are numerous challenges facing Pathology including a huge workforce shortage for both Pathologists and Scientists. This shortage is being exacerbated by a number of factors. First amongst them is that there are insufficient training positions funded to address the shortages. There are many individual graduates wanting to train in Pathology and laboratories willing to train them. It is the funding that is lacking. This, combined with an ageing workforce, is of major concern. There are also other factors to consider.

Issues driving the growth in pathology/pathologist workloads

These include:

• Population based issues:

- Ageing population with increasing pathology.
- Prolonged survival of patients with previously untreatable diseases, with the ongoing requirement of monitoring disease status and response to treatment.
- Growing population of patients of different ethnicity with diverse genetic disorders and cultural needs.

• **New developments in medicine:**

- Technological advances will impact on the utilisation of pathology services in two ways; boosting practitioner productivity and broadening the types, and sophistication, of procedures and treatments that are available to the public.
- Genetic testing for early diagnosis or disease prevention.
- Genetic testing driving treatment options, e.g., pharmacogenetics, proteogenomics - creating 'personalised' health care through the investigation of an individual patient's own genetic makeup, either at the level of the gene or the protein generated, to ensure that preventative and therapeutic modalities can be tailor-made to the individual, rather than standardised.
- Increased numbers of transplant procedures.
- Increased numbers of biopsies in general, in part due to the clinical emphasis on early diagnosis.

• **New developments in pathology:**

- Increased numbers of specimens generated by screening programs.

• **Government induced effectors:**

- Increased community-based screening programs.

Possible ramifications of inaction on the crisis include:

A lack of anatomical pathologists:

- Adverse impact on the timeliness, quality and accuracy of diagnosis for a range of diseases, including all cancers.

A lack of haematologists:

- Adverse impact on safe processing of blood transfusions, potentially impacting ability to conduct surgery.

A lack of chemical pathologists:

- Adverse impact on ability to diagnose heart attacks.
- Adverse impact on ability to monitor diabetes, possibly resulting in early deaths, or serious complications such as kidney failure and blindness.

A lack of microbiologists:

- Adverse impact on ability to diagnose or prescribe treatment for infectious diseases such as meningococcal disease.

A lack of immunopathologists:

- Adverse impact on testing and monitoring of HIV Aids patients.
- Inability to titrate the drugs required for treatment.

A lack of geneticists:

- Adverse impact on ability to conduct prenatal screening for serious congenital and hereditary diseases, leading to an increase in numbers of children being born with major diseases.

A lack of forensic pathologists:

- Postponed autopsies, delayed burials.
- Adverse impact on the ability to conduct criminal investigations.

A lack of general and specialised pathologists:

- Adverse impact on availability to provide clinical advice and support to medical specialists.

A breakdown of pathology services would eventually lead to the paralysis of the entire health system, relegating hospitals to little more than emergency first aid centres, with no ability to undertake critical diagnostic functions.