Faculty of Health Sciences at the University of Cape Town

ANAESTHESIA

• Cardiac anaesthesia
• Cardiac surgery
• Liver transplants
• Separation of conjoined twins
• Burns unit
• Multi-discipline Paediatric Intensive Care Unit

Supports following ICUs

• Respiratory intensive care unit
• Surgical intensive care unit

Centre for Pain Management

• Patients with chronic pain
• Acute pain service available for postoperative patients

CHILDHOOD AND ADOLESCENT HEALTH

• Full range of paediatric disciplines:
  • Paediatric medicine
  • Paediatric surgery
  • Paediatric nursing
  • Paediatric pathology
  • Paediatric radiology
  • Paediatric anaesthetics
  • Paediatric pulmonology

• Children’s public health
• Pathology
• Psychiatry in maternal and child health
• Child and adolescent psychiatry
• Child health unit
• Critical care and children’s heart disease
• Neonatology

Clinical Services:

• Ambulatory and emergency
• Allergy
• Community
• Dermatology
• Diabetes
• Endocrine
• Gastroenterology, hepatatology and nutrition
• Haematology / oncology
• Infectious diseases and immunology
• Nuclear medicine
• Poisons
• Rheumatology

CLINICAL LABORATORY SCIENCES

A. ANATOMICAL PATHOLOGY

• Diseases common in SA:
  • Tuberculosis • Cardiomyopathy • Foetal-alcohol syndrome
  • Various cancers:
    • Oesophageal • Gastric • Breast • Cervical • Colorectal and hepatocellular carcinomas • Childhood cancers
    • Renal and liver pathology
    • Neonatal pathology
    • Neuropathology
    • Immunohistochemistry
    • Electron microscopy

B. CHEMICAL PATHOLOGY

• Deals with metabolic disease
• Basic biochemistry
• Cell biology
• Molecular biology

C. FORENSIC MEDICINE AND TOXICOLOGY

• Violence against women and children
• Role of drugs and toxins in death
• Firearm injuries

D. HAEMATOLOGY

• Outpatient clinics
• Diagnostic and research laboratories

E. HUMAN GENETICS

• Primary health care in community outreach clinics
• Highly sophisticated quaternary services
• Heritable disorders which cause childhood handicap incl:
  • Blindness • Crippling • Profound deafness • Mental retardation
  • Clinical rotations in prenatal, paediatric and adult medical genetics incl exposure to:
    • Dysmorphology • Teratogenic disorders • Metabolic disorders • Neurogenetics • Cardiogenetics • Cancer genetics
  • Theoretic and practical education in genetic counselling and communication
  • Lab rotations in cytogenetics and molecular genetics

F. IMMUNOLOGY

• Immunology of infectious diseases
• Innate immunity and allergy
• Important advances in diseases e.g.
  • Tuberculosis • Bilharzia • African Trypanosomiasis • T-cell cytokine responses to allergens (immunotherapy) and mTB protein • Clinical trials in UCT Lung Institute conducted in areas of: o Antihistamines o Asthma o Eczema

G. MEDICAL BIOCHEMISTRY

• GnRH receptors, signalling, structure function and as target for development of therapeutics for treatment of reproductive cancers
• Role of cyclooxygenases and prostaglandins in cervical cancer and other uterine pathologies
• Identification of differentially regulated genes associated with the development of cervical cancer
• The role of the transcription factor AP-1 in oncogenesis
• Molecular mechanisms involved in the development and maintenance of oesophageal cancer
• Identification and characterisation of novel compounds that can be used in the treatment of cancer
• Angiotensin converting enzyme (ACE) Structure activity relationships and development of ACE inhibitors for treatment of hypertension, congestive heart failure, myocardial infarction and renal disease
• Application of functional proteomics for diagnostics, drug and vaccine development for infectious disease and cancers

H. MEDICAL VIROLOGY

• Referral laboratory for a large proportion of the regional virus identification
• Members are part of national and international programmes to:
  • Discover an effective vaccine against HIV • Developed candidate HIV vaccines that have been tested in clinical trials
  • Participates in the WHO human papillomavirus laboratory network (Labnet)
  • Collaborating partner in the WHO African AIDS Vaccine Collaborative Centre in Biomedical Research
  • Interest in working on development of novel diagnostic tools for some of the more neglected but still clinically relevant viral diseases that are common in Africa

I. MEDICAL MICROBIOLOGY

• Full range of microbiological diagnostic services including state-of-the-art molecular diagnostics
• Involved in research activities:
  • Basic science • Clinical and diagnostic trials
  • Defining the epidemiology and strain biology of major infectious diseases in Southern Africa
  • Important areas of research focus on:
• Tuberculosis • Bacterial antibiotic resistance • Nosocomial pathogens • Outbreak surveillance

• Developing and evaluating novel diagnostics which are applicable in low-resource settings

HEALTH AND REHABILITATION SCIENCES

A. COMMUNICATION SCIENCES AND DISORDERS

• Speech-language pathologists and audiologists work with people who have difficulty hearing, speaking and swallowing
• Speech-Language Pathology is the profession dealing with the management of communication disorders such as:

• Articulation • Voice • Fluency • Language and learning • Swallowing in children and adults

• Speech-language therapists work in addressing communication health
• Audiology is the profession dealing with the:

• Management of hearing • Hearing impairment • Deafness, noise measurement and control

• Audiologist diagnoses hearing loss and initiates rehabilitation to help the person cope with everyday communicative demands, including the selection and fitting of hearing aids, in adults and children; emotional, linguistic and cognitive functioning and to their home, work and social environment
• Rehabilitation also involves aural rehabilitation with adults and children, skills development and education of others
• Audiologists also measure and manage exposure to noise in the work environment to help prevent hearing loss

B. NURSING AND MIDWIFERY

• Committed to the development of competent, caring and autonomous professional nurses and midwives capable of creative and critical thought

C. OCCUPATIONAL THERAPY
• When one’s ability to do things for themselves is disrupted by illness or injury, occupational therapy (OT) helps to restore function and improve quality of life
• Therapists use real occupations to help people who have been ill, injured or disabled to recover their skills, or to develop new ones. This includes:

• Visiting and assisting clients at home and at work • Treating patients in clinics and hospitals • Assisting growth and development of disabled children at school • Promoting the integration of people with physical and mental health concerns

D. PHYSIOTHERAPY

• Physiotherapy is a client-centered profession that aims at optimizing quality of life. This includes:

• Promotion of a healthy life-style • Prevention of illness and injury for those at risk • Exercise therapy and electrotherapy to reduce pain • Promote healing and improve function

• Holistic approach to management includes counselling which empowers both client and caregiver to improve quality of life
• Service is offered to clients of all ages with conditions such as:

• Headaches • Bronchitis • Asthma • Cerebral palsy • Strokes • Fractured bones • Stiff joints • Sports injuries • Painful necks and backs

HUMAN BIOLOGY

A. APPLIED ANATOMY AND BIOLOGICAL ANTHROPOLOGY

• Biological anthropology tries to understand human variation and human evolution
• Topics such as:

• Comparative growth studies • Demography • Primate behaviour • Skeletal biology • Forensic anthropology

• Applied anatomy tries to understand human structure and function
• Topics such as:

• Clinical anatomy • Structural embryology • Growth and development • Comparative anatomy
B. BIOMEDICAL ENGINEERING AND MEDICAL IMAGING

1. Biomedical Engineering:
   • Medical imaging and signal processing
   • Biomechanics
   • Healthcare technology management
   • Rehabilitation engineering

2. Medical Imaging:
   • Conduct world-class research in medical imaging that specifically addresses the healthcare needs of Africa

C. CELL BIOLOGY

• Encompasses diverse approaches to understanding normal cellular processes and how they are altered in disease. This includes:

  • Study of melanocytes and melanoma
  • Neuronal development and regeneration
  • Stem cells
  • Identification of novel therapeutic approaches to treat diseases ranging from pigmented and neuronal disorders to cancer as well as vascular biology in ocular development and disease

D. MRC/UCT RESEARCH UNIT FOR EXERCISE SCIENCE AND SPORTS MEDICINE (ESSM)

• Research factors influencing physical performance and health and to disseminate knowledge and skills through education.
• Develop a novel understanding of integrated human function during exercise and to use this knowledge:

  • To promote health and well-being
  • To treat and prevent specific chronic diseases
  • To treat and prevent injuries and medical conditions associated with sport and exercise
  • To optimize exercise performance

• Courses offered:

  • Exercise Science (Hons)
  • Exercise Science (Biokinetics) (Hons)
  • Sport and Exercise Medicine (Masters)
  • Physiotherapy (Masters)
E. NEUROSCIENCE

- Neurodegenerative disorders (e.g. Parkinson's Disease)
- Attention Deficit Hyperactivity Disorder (ADHD)
- Neurophysiology and cellular architecture of the mammalian visual system
- Comparative aspects of neural development
- Regeneration and degeneration in lower and higher vertebrates

F. NUTRITION AND DIETETICS

- Train versatile, excellent nutrition scientists and professional dietitians with a special expertise in addressing the needs of Africa

G. PHYSIOLOGY

- Exercise and neurophysiology
- Main research fields of specialization in the department include:
  - Cardiovascular system and neuroscience research
  - Mostly animal models of human disorders
  - Effects of stress, aging and exercise on the brain.

MEDICINE

- Divisions and research units include:
  - Albertina & Walter Sisulu Institute of Ageing in Africa / Geriatric Medicine
  - Acute Tertiary Medicine
  - Allergology
  - Cardiology
  - Casualty
  - Clinical Skills
  - Clinical Haematology
  - Clinical Pharmacology
  - Endocrinology & Diabetic Medicine
  - Dermatology
  - Gastroenterology
  - Hatter Institute for Cardiology Research
  - Hepatology
  - Infectious Diseases
  - Lipidology
• Lung Infection and Immunity Unit
• Nephrology & Hypertension
• Respiratory Medicine
• Rheumatology
• UCT Lung Institute

A. ACUTE TERTIARY MEDICINE

• A team of physicians with interests and expertise in general medicine, skilled in handling undifferentiated problems, cares for patients

B. BIOETHICS CENTRE

• Centre offers a bioethics consultation service, as well as regular teaching and consultation sessions at all UCT-affiliated hospitals, including the Red Cross Children's Hospital

C. CARDIOLOGY

• Electrophysiology
• Evaluation for heart transplantation

D. CLINICAL PHARMACOLOGY

• Assays for drugs of abuse
• Therapeutic level monitoring for patients on a variety of regimens from anticonvulsants to immunosuppresants
• Assays on request utilising mass-spectrometry linked HPLC
• Division maintains several active research groupings. Primary interests include:
  • Identification of novel compounds from plants used medicinally by traditional healers • Clinical pharmacokinetics of anti-tuberculosis drugs • Clinical pharmacokinetics of antiretroviral drugs • Several aspects of study into anti-malarial drug action at the in vitro, in vivo and clinical levels

E. GASTROENTEROLOGY
• Hepatobiliary disease – surgical
• Colorectal disease – surgical
• Oesophageal disease - medical/surgical
• Inflammatory bowel disease - medical/surgical
• H.pylori-related disease – medical

F. GERIATRIC MEDICINE

• Division collaborates closely with other units in the Faculty of Health Sciences that have a specific focus on ageing, like Gerontology and Psychogeriatrics

G. HATTER HEART INSTITUTE

• Cardiac protection against ischaemia
• The molecular biology of cardiac hypertrophy
• Molecular, cellular and physiological basis of heart diseases

H. HEPATOLOGY

• Dedicated hepatological expertise
• Liver transplantation services
• Unique porphyria diagnostic and clinical service
• Clinical and laboratory-based research on liver disease and porphyria

I. INFECTIOUS DISEASES

• Inpatient and outpatient consulting service
• Provides dedicated HIV/AIDS clinics
• In clinical research, particularly in the fields of tuberculosis and HIV

J. LIPIDOLOGY

• Clinical services
• Clinical research
• Diagnostic investigation for dyslipidaemia
• Laboratory research

**K. NEPHROLOGY**

• Renal/porphyria laboratory
• Active transplant and dialysis service
• Renal transplants

**L. NEUROLOGY**

• Operates a general clinical neurological service. This includes:
  • In-patients • Out-patients • An acute stroke unit • Neurophysiology laboratory • Referral and emergency service
  • Specialised clinics for:
    • Stroke • Myasthenia gravis • Epilepsy • Neuro-genetic disorders • Dystonia

**M. RESPIRATORY MEDICINE**

• Multiple tertiary services with a considerable research output
• Outpatients’ Clinic and the Respiratory Intensive Care Units at Groote Schuur Hospital
• G F Jooste Hospital High Care Unit
• Brooklyn Chest and Brewelskloof Tuberculosis Hospitals
• Thoracic Surgery Clinics - providing the basis for a consolidated thoracic service, both medical and surgical

**OBSTETRICS AND GYNAECOLOGY**

**A. GENERAL GYNAECOLOGY**

**B. PENINSULA MATERNAL AND NEONATAL SERVICE (PMNS)**
• PMNS is a regional system of co-ordinated and tiered obstetric care based upon primary health care principles and associated with the delivery of basic midwifery services to women within their own communities

• Success of the PMNS as a system of health care is derived from several factors that include:

• Ability to provide a unitary system of care that recognises common protocols, a common process of patient administration and common lines of clinical authority
• Common ability to audit and intervene at all levels of management without restriction

C. REPRODUCTIVE MEDICINE

D. UROGYNAECOLOGY

• Represents an interface between gynaecology and urology, as physiological events or diseases affecting the genital tract may also affect the adjacent urinary system
• Following disorders:

• Congenital anomalies • Incontinence • Voiding difficulties • Urinary fistulae • Bladder neuropathy • Genital prolapse • Urgency and frequency • Urinary tract infection

E. GYNAECOLOGY ONCOLOGY

• Radiation Oncology
• Anatomical Pathology
• Colposcopy Clinic
• Gynaecology Oncology Pathology Meeting
• Combined Assessment Clinic
• Ovary Cancer Clinic
• Radiotherapy Clinic
• Vulval Clinic
• Molar Clinic
• Hysteroscopy clinic
• Gynaecological trials unit
• Gynaecological Cancer Group

F. MATERNAL FETAL MEDICINE
• Provides tertiary services to pregnant women referred from the various components of the PMNS
• Unit consists of a fetal medicine service and a number of clinics that cater for women with medical disorders in pregnancy
• Anaesthesiology
• Cardiology
• Neurology
• General medicine
• Paediatrics
• Nephrology

PSYCHIATRY AND MENTAL HEALTH

• Addiction psychiatry/psychology
• Child and adolescent psychiatry and mental health
• Community and public health psychiatry/psychology
• Consultation-liaison psychiatry/psychology
• Forensic psychiatry/psychology
• Infant psychiatry and mental health
• Inpatient psychiatry
• Intellectual disability psychiatry/psychology
• Neuropsychiatry/neuropsychology (including HIV psychiatry)
• Psychotherapy
• Women’s mental
• Mental health services and policy
• Social determinants of mental health
• Perinatal mental health
• Adolescent risk behaviour
• HIV/AIDS
• Schizophrenia
• Bipolar disorder
• Depression
• Anxiety disorders (including posttraumatic stress disorder)
• Foetal alcohol syndrome
• Violent crime
• Substance abuse

PUBLIC HEALTH AND FAMILY MEDICINE

• Health Economics Unit
• Centre for Occupational and Environmental Health Research
• Centre for Infectious Disease Epidemiology & Research
• Women's Health Research Unit
• Health and Human Rights Programme
• Health Policy and Health Systems

RADIATION ONCOLOGY

• Provide good quality, specialised care for patients with cancer
• Create an uplifting environment for patients, and all who contribute to their well-being
• Palliative treatment
• Surgery
• Radiation therapy
• Chemotherapy
• Hormonal therapy
• Biological therapy
• Best supportive care

SURGERY

• General Surgery
• Cardiothoracic Surgery
• Emergency Medicine
• Neurosurgery
• Ophthalmology
• Orthopaedic Surgery
• Otorhinolaryngology
• Plastic and Reconstructive Surgery
• Urology

A. GENERAL SURGERY

• Four surgical firms of:

• Colorectal Surgery • Hepatobiliary Surgery • Surgical Oncology • Vascular Surgery

• Trauma Unit
• Surgical Intensive Care Unit
• Transplant Unit
• Surgical Gastrointestinal Unit

B. OTORHINOLARYNGOLOGY

• Full spectrum of pathology at the levels of both the developed world and the developing world is experienced
• Comprehensive ENT service to state patients and to private patients