SUBJECT REVIEW REPORT

DEPARTMENT OF PHARMACOLOGY

FACULTY OF MEDICINE
UNIVERSITY OF PERADENIYA

30th January to 01st February 2007

Review Team :
Prof. (Ms.) Anoja Fernando, University of Ruhuna
Prof. R. L. Jayakody, University of Colombo
Prof. (Ms.) Rohini de A. Seneviratne, University of Colombo

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1. SUBJECT REVIEW PROCESS

The Quality Assurance and Accreditation (QAA) framework currently implemented in the university system in Sri Lanka, envisages reviewing all subjects, programmes and institutions in the public universities. To achieve this objective, the QAA Council of the University Grants Commission (UGC), Sri Lanka, appointed a team of senior academics from the Universities of Colombo and Ruhuna to undertake a subject review in the Department of Pharmacology (DP) of the Faculty of Medicine, University of Peradeniya.

The Review Team comprised of:

Professor Anoja Fernando (Review Chair, Senior Professor of Pharmacology, University of Ruhuna)
Professor RL Jayakody (Professor of Pharmacology, University of Colombo)
Professor Rohini de A Seneviratne (Professor, Department of Community Medicine, University of Colombo)

Purpose and Aims of the Review

The subject review aimed to evaluate the quality of the teaching programme offered by the DP of the Faculty of Medicine, University of Peradeniya. The review was carried out by the above team from 30th January to 1st February 2007. The agenda followed by the Review Team is given in Annex 1.

The process used for the review was a perusal of the Self Evaluation Report (SER) forwarded by the Head of the DP and acquisition of additional information through discussion of issues, and gathering and analysis of evidence and the comparison of these findings with the information given in the SER. The aim was to use all evidence to make a judgment on the quality of the eight review aspects listed below, as given in the Quality Assurance Handbook for Sri Lankan Universities, published by the Committee of Vice Chancellors and Directors (CVCD) and the UGC in July 2002:

1. Curriculum Design, Content and Review
2. Teaching, Learning and Assessment Methods
3. Quality of Students, including Student Progress and Achievements
4. Extent and Use of Student Feedback (Qualitative and Quantitative)
5. Postgraduate Studies
6. Peer Observation
7. Skills Development
8. Academic Guidance and Counseling

The observation and recommendations of the Review Team, and the judgments on the 8 aspects are expected to be useful to the DP and to the Faculty to improve the quality of the programme in Pharmacology.

The Faculty is in the process of changing its MBBS curriculum presently. The students in the first and second years of study are following the new curriculum, while the more senior batches are following the old curriculum. The Pharmacology teaching programme reviewed is the one conducted for the students in the old curriculum in the third year. The reviewers are of the view that their recommendations should be taken into consideration in the organization and implementation of the new curriculum.

Peer Review Process

The review processes adopted by the Team were:

1. Meetings with the Vice Chancellor; Dean, Head of DP; academic and non academic staff of the DP; Senior Student Counselors in the Faculty and the University; undergraduate students and the Senior Assistant Librarian of the Faculty of Medicine.
   The list of persons met during the visit is given in Annex 2.
2. Observation of teaching/learning sessions – The Review Team observed the delivery of a lecture, student presentations of their research projects and conduct of *viva voce* examinations of the research project. The first two activities were specially arranged for the Review Team while the *viva voce* examination was part of the regular assessment of the students.
3. Inspection of academic and support facilities including the lecture halls, tutorial rooms, departmental library, laboratory, and faculty learning support facilities such as the library, e-library and the technical resource centre.
4. Perusal of documents provided by the DP such as the student handbook, curriculum documents, time tables, minutes of departmental meetings, handouts, examination papers, samples of answer scripts, research reports of the students, etc.

This report is forwarded to the QAA Council for submission to the Dean, Medicine and the Head of the DP, University of Peradeniya for consideration.

2. BRIEF HISTORY OF THE UNIVERSITY, FACULTY AND THE DEPARTMENT

Brief History of the University

University of Peradeniya has its origins in the University of Ceylon established in Colombo on 1st July 1942. It shifted to Peradeniya on 6th October 1952. In 1978, the University of Peradeniya became an independent entity. It is now one of the largest universities in the country, consisting of seven faculties (Agriculture, Arts, Dental Sciences, Engineering, Medicine, Science, and Veterinary Medicine and Animal Science) and two postgraduate institutes (Agriculture and Science). About 1800 undergraduates enter the university annually and make up an undergraduate student population of 6600, and the total number of registered postgraduate students is around 1200.

The Faculty of Medicine

The Peradeniya Medical School was established in 1961 and the first batch of 103 students was admitted in January 1962. The Peradeniya Medical School and Dental School were converted to an independent Medical and Dental Faculty in 1967. The School of Veterinary Science became a part of the Faculty in 1970. In 1980 this School of Veterinary Medicine and Animal Science got separated to form a new Faculty. The Dental School became a separate Faculty in 1986. The Teaching Hospital, Peradeniya, the most significant addition to the Faculty of Medicine in the recent years, was opened in June 1980. According to the year 2000 Handbook of the Faculty, it has 15 academic Departments and 7 Units.

The Department of Pharmacology

The DP is one of the initial departments of the Medical Faculty at its inception in 1967. The DP contributes to the MBBS degree programme. The undergraduates are required to qualify the second MBBS prior to being allowed to follow the Pharmacology course. The Pharmacology teaching programme for students of the old curriculum is in the 3rd year of the MBBS programme, in the 5th, 6th and 7th terms of the medical course**.** There were 182 students from the AL 2002 intake following the Pharmacology programme at the time of this review. The new curriculum students are in their 2nd year and there are no teaching inputs

from the DP presently into the new curriculum. The programme under review is the last one of the old curriculum, and this is being replaced by the new curriculum from the next academic year onwards.

According to the SER, like other medical faculties in Sri Lanka the Peradeniya Medical Faculty also has had a 5-term course in Pharmacology at its inception. However the duration of the course has been reduced to three terms many years ago and the reasons for this change are not clear. A request made by the DP approximately 8 years ago to increase the duration of the Pharmacology course to 5 to 6 terms was turned down by the Dean's Advisory Committee. The view of the Advisory Committee was that extending the course will be a burden on the students at the 3rd MBBS Part 2 Examination.

The DP has cadre provision for one Chair (Professor of Pharmacology) and 5 academic posts. At present 2 senior lecturer and 2 lecturer posts have been filled. The Chair has been vacant for about 16 years and is currently advertised. Another senior lecturer/lecturer post too is currently advertised. At present, one senior lecturer is on sabbatical leave and two probationary lecturers are on study leave. Since May 2006 only one permanent senior lecturer, who is functioning as the Head of the DP is available. She is assisted by one visiting lecturer and 6 temporary lecturers (one post-intern and 5 pre-intern) in delivering the academic programme. This single permanent staff member has to attend to the teaching activities, administration, and other activities of the department as well as those related to national, professional and other programmes. The DP also provides undergraduate teaching in clinical pharmacology to 3rd BDS undergraduates of the Faculty of Dental Sciences of the University of Peradeniya.

The academic staff of the DP are involved in the MD programmes of Medicine, Psychiatry, and MS in Surgery, Obstetrics & Gynecology, Anaesthesia and the M.Sc. programme in Zoology of the Faculty of Science.

In the non academics staff category, a technical officer, and a labourer post are vacant.

3. AIMS AND LEARNING OUTCOMES

After submission of the SER further information on peer observation, skills development, academic guidance and counseling (addendums 1, 2 and 3) and a document titled Introductory course for pre 3rd MBBS students; Objectives of the Pharmacology Teaching Programme (addendum 4) was made available to the review team at the time of the review.

A *verbatim* extract of this section given in the SER is reproduced below.

3.1. Aims

By the end of the course students should have

- inculcated a rational and scientific basis for use of drugs
- developed critical and evaluative approaches to the literature of pharmacology and information on drugs
- acquired the confidence to discuss use of drugs in different clinical situations
- developed self-learning abilities
- an inquiring mind in relation to current trends in pharmacology
- an appreciation of research methodology in pharmacology and ability to make public presentations

3.2. Learning Outcomes

Broad Objectives

By the end of the course the students should be able to

- appreciate the clinical advantages of formulating medicines from drugs
- describe basic mechanisms of drug action and factors affecting pharmacodynamics
- understand the principles of pharmacokinetics, their clinical significance and the factors influencing them
- list the indications, contraindications, interactions and adverse reactions of commonly used drugs
- indicate the use of appropriate drugs for particular diseases with consideration of efficacy, safety (cost effectiveness & risk benefit), and cost for individual needs and mass therapy
- be familiar with the use of generic names and the implications of the use of brand names of drugs
- describe the basis of drug dependence and its management
- describe how drugs are prescribed in special situations such as pregnancy, lactation, infancy, old age, co-morbidities and organ dysfunction
- integrate pharmacological with non-pharmacological therapies
- state the principles underlying the concept of Essential Drugs
- evaluate critically information on drugs and drug promotions
- write a model prescription
- illustrate the importance of patient compliance
- carry out a research project in Pharmacology
- learn about drug handling in hospitals
- be familiar with the procedure of drug development and drug regulation in Sri Lanka

Strategy

By the end of the course the students should have

- become familiar with the literature of pharmacology and therapeutics, sources of information and methods of information retrieval had opportunity to (by attending lectures, clinical work including pharmacology assignment) acquire concern for the well being of patients receiving drugs,
- become familiar with the facts, concepts and conflicts associated with current therapy develop a critical attitude to information relating to drug promotions
- develop an economic awareness in relation to therapy
- attended tutorials

- carried out a research project in Pharmacology and participated in seminars and pharmacology debate
- should have carried out an assignment in pharmacology and become knowledgeable on the use of commonly prescribed drugs

Specific Objectives

Students should be able to

GENERAL PHARMACOLOGY

Introduction

- define the following terms: Drug, Pharmacology, Therapeutics, Clinical Pharmacology, Pharmacokinetics, Pharmacodynamics, "Medicines"

Drug Discovery and Development

- list the sources of drugs and describe the different stages of drug development

PHARMACODYNAMICS

- list the mechanisms by which drugs exert chemical influences at cellular level to produce a pharmacological response.
- define the receptor; drug binding sites; ligand; agonist; antagonist; partial agonist; inverse agonist; receptor affinity; receptor occupancy; spare receptors; efficacy; potency
- classify receptors based on their structure, function
- briefly explain the signaling mechanisms by which receptor activation is coupled to cellular effector systems
- describe reversible/irreversible antagonism; competitive/non competitive antagonist; physiological antagonisms; tolerance, tachyphylaxis; placebo and placebo effect
- draw the concentration-effect curves for the relationship of the effect against (full) agonist concentration; logarithm of agonist concentration; log-partial agonist concentration; log full agonist concentration in the presence of a fixed dose + increasing doses of competitive reversible antagonist; log full agonist concentration in the presence of a competitive irreversible antagonist; log full agonist concentration in the presence of a partial agonist
- give examples for drugs that act by inhibiting/activating enzymes; blocking/opening ion channels; interfering with carrier molecules

PHARMACOKINETICS

- describe the mechanisms of transport of drug molecules across the cell membrane and the factors that influence such mechanisms.
- list different routes of administration of drugs
- list the different types of dosage forms/special drug delivery systems (e.g. Metered Dose Inhalar, Enteric coated formulation, spansules)
- describe the advantages and disadvantages of the routes drug dosage forms

- list the different compartments of the body into which drugs are distributed
- describe the factors which influence the distribution of drugs into different compartments.
- explain the concept of redistribution of drugs.
- explain the concept of barriers across tissues for transport of drugs
- describe the biotransformation of drugs in the body
- list the common drugs which induce/inhibit the cytochrome P 450 enzyme system
- describe the mechanisms of renal excretion of drugs
- define bioavailability; dosage regimen; bioequivalence; first pass effect; area under the concentrate-time curve (AUC); (apparent) volume of distribution; clearance; half life; steady state concentration; loading dose; maintenance dose; dosage regimen
- explain the principles of calculating the bioavailability, volume of distribution, clearance, loading dose & maintenance dose.
- draw the concentration-time curves for single iv bolus injection; intermittent iv bolus injection; continuous iv infusion; single oral administration; intermittent oral administration; modified release formulations; explain first order kinetics and zero order kinetics; explain the concept of subtherapeutic/therapeutic/supratherapeutic plasma drug concentrations; explain the clinical significance of pharmacokinetic principles.

ADVERSE DRUG REACTION (ADR) AND DRUG TOXICITY

- define adverse drug reactions
- describe the mechanisms by which ADR are caused and explain how these reactions could be minimised/prevented
- define therapeutic index
- describe the different mechanisms by which drugs may cause cell damage and cell death
- describe the mechanisms of Mutagenesis; Carcinogenicity; Teratogenicity;
- list drugs that are potentially Hepatotoxic; Nephrotoxic; Carcinogenic; Teratogenic
- describe the mechanism of hepatotoxicity caused by paracetamol; nephrotoxicity caused by anti-inflammatory drugs

ANTIMICROBIALS

- define an "antimicrobial agent"
- explain the basis of using antimicrobial agents in human infection
- classify antimicrobial agents based on their chemical structure/mechanism of action with examples under the headings: antibacterial agents; antifungal agents; antiprotozoal agents; antiviral agents; antihelminthics
- describe mechanism of action, pharmacokinetics, clinical uses, adverse reactions, interactions and limitations of antibacterial agents e.g. betalactams, macrolides; antifungal agents; antiprotozoal agents; antiviral agents; antihelminthics

- define chemoprophylaxis and explain the basis of chemoprophylaxis of infections
- describe the drug therapy of acute attack of malaria in endemic and non-endemic areas (including chloroquine-resistant malaria); severe complicated malaria; malaria in pregnancy; malaria in G6PD deficiency; chemoprophylaxis of malaria; acute pyogenic meningitis; acute respiratory tract infections; urinary tract infections; tuberculosis

AUTOCOIDS

- define a hormone; a neurotransmitter; an autocoid (local hormone)
- list chemical substances acting as autocoids and mention the cells that produce them.
- explain the physiological/pathological effects of autocoids.
- list the drugs which modify the effects of autocoids.
- describe the biosynthetic pathway of eicosanoids (Prostanoids & Leucotrines) and mention the sites of action of drugs.
- describe the pathophysiology of migraine and explain the mechanism of action of drugs used in the treatment of migraine in relation to pathophysiology.
- describe the drug treatment of anaphylaxis in relation to its pathophysiology.

NON-STEROIDAL ANTI-INFLAMMATORY DRUGS (NSAIDs) AND DISEASE MODIFYING ANTI-RHEUMATIC DRUGS (DMARDs)

- describe the biosynthetic pathway of prostaglandins.
- describe the physiological / pathological roles of Cyclo-oxygenase-1 (COX- 1) and COX- 2 enzymes.
- describe the pharmacokinetics, important adverse reactions, and drug interactions of NSAIDs. (Including COX – 2 inhibitors).
- list indications for NSAIDs.
- list commonly used DMARDs.
- describe the pharmacokinetics and the adverse reactions of DMARDs.
- explain the pharmacological basis of the drug treatment of gout (acute attacks and long term control)

OPIOID ANALGESICS

- know the physiology of, nociception, modulation of pain response to pain; different types of pain and different methods of evaluation of pain to understand the series of lectures on pain control.
- list names of drugs that are morphine analogues; synthetic derivatives; pure opioid agonists; partial agonists; antagonists
- describe the mechanism of action and the pharmacological effects (both beneficial and harmful effects) of commonly used opioids.
- describe the mechanisms by which opioids induce tolerance and dependence.

- describe the basis of drug treatment of opioid dependence.
- describe the pharmacokinetics of morphine; pethidine; codeine; methadone; naloxone; tramodol
- describe the recommended doses and routes of administration of morphine and pethidine
- describe the clinical uses of naltrexone and naloxone.

DRUGS ACTING ON CENTRAL NERVOUS SYSTEM

- recall the steps involved in the neurotransmission mediated by chemical-neurotransmitters in the CNS
- list the important neurotransmitters in the CNS
- explain the electrophysiological basis of resting membrane potential; action potential; excitatory post-synaptic potentials; inhibitory post-synaptic potentials
- identify possible mechanisms by which drugs can modify the neuronal function in CNS

Anxiolytic/hypnotic drugs

- define an anxiolytic; a hypnotic
- list different classes of commonly used anxiolytic/hypnotic drugs with examples
- describe the mechanism of action, pharmacological effects, pharmacokinetics, adverse reactions of the drugs.
- list indications and important drug interactions of benzodiazepines
- explain the clinical significance of pharmacokinetics of benzodiazepines
- describe the toxic effects (acute overdose) of benzodiazepines and basis of the use of an antidote.
- describe the problems encountered with the continued use of benzodiazepine drugs and the measures that can be taken to minimize them.

Antiepileptic drugs

- define the terms seizure and epilepsy
- recall the classification of epileptic seizures
- describe the mechanism of action, pharmacokinetics, adverse reactions, toxic effects, important drug interactions of commonly used antiepileptic drugs
- explain the clinical significance of the variability of pharmacokinetics of phenytoin
- list the appropriate anti-epileptic drugs for the treatment of different types of seizures.
- describe the drug treatment of status epilepticus.
- explain the basis of the safe use of antiepileptic drugs during pregnancy.

Antidepressants

- recall the biochemical basis of depressive illness.
- classify the antidepressant drugs based on their mechanism of action.
- describe the mechanism of action, pharmacokinetics, adverse drug reactions, and important drug/food interactions of antidepressants.
- list the other uses of antidepressants.
- list the features of antidepressant drug overdose.

Antipsychotic drugs

- recall the biochemical basis of psychotic illnesses.
- classify the antipsychotic drugs (with examples).
- describe the mechanism of action, pharmacokinetics, and adverse drug reactions of antipsychotic drugs.
- list the clinical uses of antipsychotic drugs.

GENERAL ANAESTHETICS

- define sleep, amnesia, analgesia, general anaesthesia
- describe the depth of anaesthesia in relation to loss/stimulation of physiological reflexes.
- list different phases/planes of general anaesthesia.
- name commonly used drugs in induction and maintenance of general anaesthesia.
- describe the mechanism of action, pharmacokinetics, pharmacological effects, and drug interactions of different anaesthetic drugs.
- describe how anaesthetic drugs are stored.
- name the muscle relaxants commonly used during general anaesthesia.
- describe the mechanism of action of the muscle relaxants and how the effects are reversed.
- list the drugs used in the recovery phase of anaesthesia.
- describe anaesthetic drug related problems that may be observed in the immediate recovery phase.
- compare the pharmacological effects of thiopentone sodium with ketamine.

DRUGS ACTING ON THE PERIPHERAL NERVOUS SYSTEM

PNS - Peripheral Nervous System
ANS - Autonomic Nervous System
A.ch - Acetyl choline
NA - Noradrenaline
NMJ - Neuro- muscular junction
ADR - Adverse Drug Reaction
LA - Local Anaesthetics

Drugs acting on cholinergic & adrenergic transmission

- recall the basic anatomy and physiology of the PNS (Includes ANS, efferent system innervating the skeletal muscles Somatic + visceral afferent systems, enteric nervous system)
- explain main processes/steps involved in transmission of Ach and NA. at the nerve endings
- name drugs and their site of action which influence the above processes/steps
- list different types of cholinergic and adrenergic receptors (including the receptor subtypes)
- describe/list main location, 2^{nd} messenger signaling mechanisms, function, agonists, antagonists of the above mentioned receptors. (including receptor subtypes)
- list clinically useful cholinergic and anti-cholinergic drugs
- list their adverse drug reactions
- describe the clinical uses of anti-cholinesterases
- list drugs/agents that block the NMJ
- describe depolarizing and non depolarizing NM block
- describe how NM block is reversed
- name clinically useful selective/non selective adrenoceptor agonists/antagonists and their ADR state clinical conditions for which each drug mentioned is used.
- list adrenergic neurone blocking drugs
- describe the drug management of organophosphate poisoning; glaucoma; myasthenia gravis

Drugs acting on conduction of electrical impulses

- recall how an action potential is generated and propagated.
- classify local anaesthetics
- describe the pharmacokinetics and pharmacodynamics of LA and factors that influence above properties.
- list the risks & benefits of using vasoconstrictors with LA
- list important toxic effects of LA

DRUGS USED IN BRONCHIAL ASTHMA

- describe the pathophysiology of bronchial asthma; the inflammatory processes of immediate and late phases; bronchial hyper-responsiveness
- list and explain the MOA of drugs that relieve bronchospasm; prevent the early and late phase reactions of inflammation with respect to the drugs mentioned, describe the pharmacological effects on respiratory and other systems; the limitations in clinical use; the different dosage forms (available for patients in the public and the private sector health systems).

- list the drug treatment of Acute severe bronchial asthma; Mild bronchial asthma; Severe chronic bronchial asthma

DRUGS ACTING ON CARDIO-VASCULAR SYSTEM (CVS)

- recall the physiology of myocardial action potential, myocardial contractility, blood pressure regulation and haemostasis
- recall the normal lipid metabolism & it's regulation
- recall the pathogenesis of atherosclerosis
- describe briefly the pathophysiology of coronary artery disease; hypertension; cardiac failure
- describe briefly the mechanism of cardiac arrhythmias
- describe the mechanism of action, pharmacokinetics, clinical uses (with limitations), ADR and drug interactions of organic nitrates; β-adrenoceptor antagonists; diuretics; centrally acting α_2 agonists; α adrenoceptor antagonists; ACE inhibitors; Angiotensin-II receptor antagonists; Calcium Channel Blockers; direct acting vasodilators; lipid lowering drugs; anticoagulants; antiplatelet drugs; fibrinolytic drugs
- classify anti-arrhythmic drugs based on their mechanism of action giving examples

DRUGS USED IN DISORDERS OF THE GASTRO-INTESTINAL SYSTEM

- recall the physiology of gastric acid secretion and gastro-intestinal motility.
- recall the pathophysiology of acid-peptic disease and vomiting.
- describe the mechanism of action, pharmacokinetics, clinical uses, adverse reactions and interactions of antacids; H_2 receptor antagonists; proton-pump inhibitors; cytoprotective agents; gastric prokinetic agents (metoclopramide, domperidone, cisapride); anti-emetics; anti-spasmodics
- explain the basis on which antiemetics are selected in different clinical situations.
- list the commonly used laxatives and explain their mechanism of action
- list commonly used anti-diarrhoeal agents and describe their clinical uses and limitations
- describe the drug management of hepatic encephalopathy; *Helicobacter pylori* eradication

ALCOHOL

- define a unit of ethanol
- describe the short term & long term effects of ethanol on different organ systems and fetal development
- describe pharmacokinetics of ethanol
- describe the patho-physiology of ethanol dependence & tolerance
- describe clinical features & drug therapy of ethanol dependence

DRUGS USED IN DIABETES MELLITUS

- describe briefly the pathophysiology of different types of diabetes & complications of diabetes
- recall the physiology of insulin in relation to synthesis secretion & degradation; mechanism of action; effects on target issues
- describe with respect to insulin commercially available different formulations of insulin; administration ; storage
- list the different classes of oral drugs that are clinically useful in the treatment of diabetes
- with respect to the drugs describe mechanism of action; important pharmacokinetics; adverse drug reactions, drug interactions & contraindications
- describe the drug management of diabetes in pregnancy; diabetic ketoacidosis; diabetes during peri-operative period; poor control of blood sugar in a patient on oral hypoglycaemics; hypoglycemia

ADRENAL STEROIDS

- list the steroid hormones secreted by the adrenal cortex
- describe the mechanism of action and pharmacokinetics of steroids
- describe the following effects of glucocorticoids physiological; anti-inflammatory; immunosuppressive
- compare the potency and duration of action of commonly used drugs with regard to their anti-inflammatory and sodium retaining effects
- list clinical uses of steroids
- list adverse reactions of steroids
- describe the precautions that could be taken to minimise the adverse effects of long-term steroid therapy.

THYROID HORMONES

- describe the synthesis, storage, secretion and regulation of thyroid hormones.
- describe the mechanism of action & physiological effects of thyroid hormones.
- describe the mechanism of action, pharmacokinetics, clinical uses, adverse reactions of drugs used in the treatment of hyperthyroidism.

DRUGS ACTING ON THE REPRODUCTIVE SYSTEM

- describe the hormonal changes that occur during the menstrual cycle.
- describe the effects of oestrogens/progestogens in female sexual development.
- list the effects of oestrogens/progestogens in the musculo-skeletal system, digestive system, CVS and CNS.
- list different types of oestrogen preparations available and their pharmacokinetic differences.

- list the clinical uses of oestrogens and progestogens, and their combination therapy.
- list the advantages and disadvantages of hormonal contraception
- list the benefits and risks of post menopausal oestrogen therapy
- describe the mode of action and clinical uses and ADR of tamoxifen; clomiphene citrate; mifepristone (prostaglandins); danazole
- describe the clinical uses and misuses of anabolic steroids and their ADR.
- list the different classes of drugs used in the treatment of carcinoma of prostrate.

DRUG TREATMENT OF IRON DEFICIENCY ANAEMIA

- describe the physiology of Iron absorption, transport and excretion.
- state the daily Iron requirement in an average person.
- list the indications for oral and parenteral Iron therapy.
- list the different preparations and formulations used in the treatment of Iron deficiency Anaemia and discuss the differences in each of them.
- list the adverse drug reactions, Precautions and drug interactions With respect to iron therapy.
- describe the methods of monitoring of therapy.
- discuss Iron overdose and treatment methods

RATIONAL DRUG USE

Students are expected to read the Research Project carried out by seniors on relevant topics related to Rational Drug Use.

- list the factors that could influence prescription writing of drugs in the public sector; in the private sector
- define what a prescription is.
- name the different components of a prescription and state the clinical importance of each.
- list common errors of prescription writing.
- describe how drugs should be dispensed by the pharmacist.
- list common ways by which drugs are misused by patients.
- list the drugs commonly misused and describe the consequence of misuse of drugs.

PHARMACY PRACTICE

- broadly define what the Drugs Devices & Cosmetics Act is.
- explain the reasons for classifying marketed drugs under different ‘Schedules’ in the Act.
- give examples for each different schedule.
- briefly explain how drugs are registered in Sri Lanka.

- explain what Rational Pharmacy Practice is.
- explain what is Rational Dispensing of Drugs
- list the methods by which quality of a drug available in a pharmacy could be assessed.
- explain what NDQAL is and the purpose of having the same.
- list how a patient can obtain maximum benefits while purchasing drugs from a pharmacy.
- explain what is meant by fraudulent/counterfeit drugs.
- briefly describe what SPC, SPMC and Raajya Osusalas are.
- explain what a prescriber could do on identifying poor quality medical products purchased by a patient.

LECTURE BY THE PDHS ON DRUG MANAGEMENT IN A HEALTH INSTITUTE
(for the 3rd MBBS students – Pharmacology)

- briefly describe what a National Drug Policy is.
- briefly describe what is meant by 'wise drug selection' for a health institute.
- briefly describe effective management of drugs in a health institute. (Procurement, distribution, storage, prevention of wastage of drugs, steps to be taken for drugs near expiry date and those drugs that have expired)
- list the indicators for monitoring drug use in a health institute.

PHARMACOLOGY RESEARCH PROJECTS & SEMINARS

Student Project

(Each project will be allocated to a group of students studying in Pharmacology. All the students of the group are expected participate actively in designing the project, carrying out the project and writing of the project. Questions related to the project may be asked by the examiners at the end of the course 3rd MBBS Part-I oral examination. It is advised that the students meet the allocated advisor at regular intervals. The best project will be awarded a prize.)

- identify a research question under the given theme.
- lay down clear objectives before carrying out the project.
- describe the relevance of the study to the discipline of pharmacology or to the practicing clinician.
- 'quote' references of similar studies carried out in Sri Lanka or other countries.
- describe a rational methodology and collect appropriate data to achieve the objectives.
- analyze the data appropriately
- discuss the results in a Sri Lankan context and compare the results with those quoted in other studies.
- arrive at conclusions and answer the research question.
- identify the short comings and limitations of the project.

- submit the project report printed or hand written on or before the stipulated date.

Seminar

(The seminar will be held in the 2nd term of the Pharmacology course. One student of each group is expected to present results of the research project allocated to the group. The presenter may identify himself/herself at the beginning of the commencement of the research project. He/She should have a thorough knowledge of the project and should have the ability to present the results clearly to an audience and carry out a lively discussion.)

- have a clear and thorough knowledge of the subject that is to be presented
- the acetates/slides should be prepared so that the words written are very clear; message to the audience is very clear and there should not be any spelling mistakes; there are only a few lines per slide. May include graphs wherever necessary; there are no duplicates of information; the objectives, results, analysis and conclusions are very clear.
- be able to carry out a lively discussion at the end.

4. FINDINGS OF THE REVIEW TEAM

4.1. Curriculum Design, Content and Review

The 3rd year students follow a traditional Pharmacology teaching programme. Detailed learning objectives are given to students at the beginning of the programme for all the activities of the programme in the form of a handout. The programme in general is designed to achieve the stated aims and is of an appropriate academic level. During discussions both the Head of the DP and the students highlighted the need to have therapeutics lectures. Attempts made by the DP in the past to introduce therapeutics to the curriculum have failed. The Review Team is of the view that the contents of the programme could be improved by including therapeutics which is best delivered in an integrated manner with the relevant clinical subjects.

Theoretical aspects are taught during 60 lecture hours, and during 30 hours of tutorials, seminars etc. where students have the opportunity to discuss application and the relevance of the theoretical aspects learnt. During the assignment carried out in the clinical setting students observe record and become familiar with drug use in a tertiary care clinical setting. The research project is a positive feature which provides opportunities to develop rational and scientific basis for use of drugs, evaluate literature and use appropriate research methods, communication skills by writing a research report, and carrying out presentations. These opportunities may not be available to all students since the research project is carried out in groups of 10-14 and can be improved by reducing the group size. The DP also contributes in a small way to the teaching of neurology in the Physiology programme...

Flexibility and student choice are addressed both in the student assignment and the research project. Perusal of the research report showed that there was room for improvement both in design and presentation. Although there is cadre provision (6 permanent staff) the DP is presently severely short of staff. Currently there is only one permanent academic staff member in the DP who with the support of temporary lecturers and one qualified visiting lecturer attends to the academic and administrative aspects. The commitment of the Head of the DP and the visiting lecturer is to be appreciated. The issue of staff shortage must be corrected early if the quality of the academic programme is to be further improved.

The Review Team notes with concern that the post of Professor of Pharmacology is vacant for the past decade and a half or more. Such a prolonged vacancy leads to loss of academic leadership and direction and would adversely affect the quality of the academic programme. It was also noted that most of the inputs to the programme are coming from the limited staff of the DP and that an interdepartmental, multidisciplinary input is lacking.

The Pharmacology curriculum has been reviewed 4 times in past and new areas have been introduced. Among the new additions, the research component (added in 1995) and the assignment (added in 1999/2000) are positive features. However, the Faculty does not have an effective mechanism presently to evaluate changes implemented in the old curriculum. At times *the* changes to the curriculum are made by the Head of the DP without consultation/approval of the Dean or the Curriculum Committee. It was pointed out that the Curriculum Committee was mainly making policy decisions. The new Curriculum Co-ordinating Committee has addressed this deficiency.

For example, due to the shortage of staff the DP has replaced the research project with a literature review for the current third year students, who expressed their dissatisfaction about this change. This further highlights the need to have adequate staff to effectively implement the curriculum.

The judgment for this aspect is GOOD.

4.2. Teaching, Learning and Assessment Methods

The teaching/learning activities mainly include lectures and tutorials. The assignment carried out in the clinical setting which is meant to be supervised by the hospital consultants; a research project implemented by groups of students followed by a seminar where students present the findings of the research projects; and the debate, provide opportunities for more student centered, independent learning and to interact with their peers. The pharmacology programme contributes to the achievement of the Faculty objectives, directly to objectives 2 and 4 and indirectly to others.

The lectures are regularly held from 1 to 2.30 pm and this time slot is not conducive to maintain the attention of students. During the discussions the students stated that the duration of lectures was too long (90 minutes) and the time slot (post-lunch and after a tiring morning of clinical work and traveling) was not the best.

The student feedback on the tutorials was positive. However, the group sizes were large (40 students approximately and sometimes exceeding this) and cannot be considered as true small group tutorials with their expected benefits. Due to the staff shortage untrained junior staff take tutorials and this was not in the best interest of the students. In some tutorials too many topics were included. The tutorial sessions need to be increased with adequate time to discuss each topic. Presently the tutorials are held only in the 3rd term and the students suggested that tutorials be held preferably from the beginning of the pharmacology programmes to achieve integration with the different topics and subjects taught.

The learning support services were provided through the library and the computer laboratory (e-library). The students are also given a list of recommended text books at the beginning of the course. All recommended books are available. It was noted that the number of copies of new editions of standard textbooks available for long term loan is inadequate and their number needs to be increased. Presently the library closes around 6.00 pm. In the past the library had been kept open until 8.00 pm and the students requested that the library be kept open until 8.00 pm, at least closer to the examination period. An effectively functioning

Faculty Library Committee with student representation will help to improve the services and the facilities provided by the library.

The e-library which is a recent addition has given opportunities for students to develop their IT skills and undertake e-learning. This is a positive feature.

The students are informed of the assessment system at the beginning of the course. The end of course pharmacology examination of the 3rd MBBS Part-I examination consists of a theory component (25% of the total marks) and single response MCQs (25%) and a *viva voce* examination (10%). At the repeat examination 40% of the marks are allocated for the theory paper, 40% for the MCQ paper and 20% for the oral examination. The in-course assessment is based on 4 components: i.e. a single response MCQ paper (10%) and ii. a structured essay question paper (10%); iii. the student assignment is assessed by using a structured short answer question paper of 1 hour (10%); iv. the research project is assessed (10%) at a *viva voce* examination by examiners who does not take part in supervising the research projects. The practice of a single examiner undertaking *viva voce* examinations of research projects is a poor practice. At least 2 examiners are recommended.

The scrutiny of essay type examination papers by a Board from two other disciplines and independent double marking of answer scripts are positive features. However, the subject matter of the questions are not scrutinized by this Board. The wording of questions could be improved further to eliminate ambiguity (example, December 2000 Pharmacology Paper 2, question 2). The multiple choice questions are discussed at departmental level, but are not scrutinized by a panel appointed by the faculty. Scrutiny by such a panel would contribute to improve the questions and eliminate ambiguity (example, September 2001, question 1).

The item analysis of the MCQ questions which has been carried out does not appear to be sustained. It is recommended that item analysis be carried out and only those meeting a required standard are banked. The questions, on the whole, test at recall level with very few testing higher order cognition skills.

Inclusion of external examiners from other universities and from the Department of Health Services at the *viva voce* component of the terminal examination is a good practice. The DP should strive to get an external examiner's report whenever their services are obtained. Assessment of generic skills is not observed in the curriculum and it is recommended that steps are taken by the DP to identify and provide learning opportunities for development of generic skills and also assess those using appropriate methods.

The Review Team is of the view that the academic programme does no put the students under undue stress or burden. This was also confirmed by the students.

The judgment for this aspect IS SATISFACTORY.

4.3. Quality of Students, including Student Progress and Achievements

In the old curriculum, the students enter the third year programme in Pharmacology after passing the 2nd MBBS, which is a barrier examination. They complete the 3-term Pharmacology course and appear for the Third MBBS Part I examination, at which Pharmacology is tested. The progress of the students in Pharmacology in the past few years is shown in Table 1.

Table 1: Student Progress in Pharmacology

Examination	Batch	Total no. of candidates	No. of passes	No. of failures	No. awarded distinctions (%)
September 2001	1997/98	181	156(86%)	25	-
September 2002	1998/99	186	176(95%)	10	5 (3%)
June 2003	1999/2000	171	129(75%)	42	2 (1%)
January 2004	2000/2001	177	134(76%)	43	2 (1%)
August 2004	2001/2002	173	170(98%)	3	6 (3%)
August 2005	2002/2003	171	167(97%)	5	4 (2%)

The proportion of students passing in Pharmacology has been very high for the last 2 batches. Similarly, those awarded Distinctions in Pharmacology have increased compared to the previous years. These figures are indicative of satisfactory student progress and achievement in the programme conducted by the DP. The best research project is also awarded a cash prize.

Several research reports were made available to the team. There was much room for improvement. It was also noted that some student research projects have been presented in scientific meetings and led to publications.

The students expressed satisfaction with the programme and about their level of achievement in Pharmacology.

The judgment for this aspect is GOOD.

4.4. Extent and Use of Student Feedback (Qualitative and Quantitative)

There is evidence that student feedback has been used in the past to affect changes to the programme. For example, in 1995 the student assignment was introduced based on such feedback. The format of the MCQs has also been changed from a multiple true/false type to a best answer type following student feedback. Students (2 members) are given representation in the Faculty Board giving opportunity for them to voice their concerns.

Feedback is regularly obtained at the end of the pharmacology programme for each batch of students on all components of the course, including the teaching quality of individual lecturers. This is commendable.

The students were not satisfied with the poor response of the DP to their feedback to make changes, for example, the timing of lectures, the request for tutorials in the first 2 terms, introduction of therapeutics and extending the course to the fourth year.

The judgment for this aspect is SATISFACTORY.

4.5. Postgraduate Studies

The academic staff have participated in postgraduate teaching activities. However, because of the shortage of staff including the prolonged vacancy of the Chair, the department has not had any postgraduate students for the past several years. This deficiency has to be rectified.

The judgment for this aspect is UNSATISFACTORY.

4.6. Peer Observation

Peer observation where an academic staff member sits during a teaching activity and gives constructive feedback is not taking place for the Department academic staff. This is done for the visiting staff only. The DP should establish a regular system of peer observation and feedback. The facilities and expertise of the MEU could be used to achieve this goal.

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The judgment for this aspect is UNSATISFACTORY.

4.7. Skills Development

The undergraduate programme has incorporated activities which promote development of cognitive skills (mainly at recall, comprehension and application level, with limited synthesis and evaluation skills) during the large-group based research project and the student assignment. Opportunities are provided to acquire skills in self learning during the student assignment. Specific generic skills such as communication (both oral and written), IT and critical thinking are encouraged during the research project. However their impact is reduced since these activities are carried out in very large groups. It was noted that opportunities are provided to develop skills in the use of asthma devices, critical evaluation of drug information and prescription writing. However, the time allocation for these activities should be increased and carried out under supervision using standardized checklists and protocols. The department should consider including skills development for administration of insulin.

The recent addition of an e-learning library is a positive feature contributing to acquisition of IT, information retrieval and self learning skills.

The quality of the research projects needs to be improved with multidisciplinary inputs, and research project be carried out by small groups (2 to 4 students per group) under supervision. This year (2006) the research project could not be implemented as planned and only a literature search was done. This was mainly due to the shortage of teachers. Thus the shortage of staff is affecting the quality of the programme.

The judgment for this aspect is SATISFACTORY.

4.8. Academic Guidance and Counseling

Specific academic guidance in an organized manner at department level is not available. The academic staff members have provided guidance to student as and when requested depending on their availability. However, students expressed the view that there was difficulty in meeting the teachers. This may be due to the shortage of staff. It was noted that the area of guidance on academic matters could be improved

There is a system of counseling which is operating at University level which is also available in the Faculty. The Faculty has appointed academic staff as counselors under this system. The 2 faculty counselors we met said that they had a brief training. They are also appointed only for a year. This system focuses more on addressing difficulties of a general nature, such as problems arising from relationships with students etc. During the meeting with the students they indicated that they were unaware who the Faculty counselors are and this would have prevented them seeking assistance.

The DP should consider appointing designated academics who would function as academic counselors. These counselors should intimate to the students 1 or 2 regular time slots a week during which times they are going to be available in the Department to meet the students.

The judgment for this aspect is SATISFACTORY.

5. CONCLUSIONS

1. Curriculum Design, Content and Review

Strengths/Good Practices

- Considering that the present Pharmacology programme is spanning only 3 terms it is designed to achieve the stated aims and learning outcomes, and is of an appropriate academic level.
- The pharmacology programme contributes directly and indirectly to the achievement of Faculty objectives.
- Several teaching/learning and assessment methods are used, and opportunities are provided to study in different settings.
- Flexibility and student choice is addressed by having a student assignment and a research project.
- The Pharmacology curriculum has been reviewed 4 times in the past and new areas have been introduced.

Weaknesses

- The duration of the Pharmacology course is restricted to 3 terms of work only. There is a gap of more than 4 terms after completion of Pharmacology before the students get a proper re-exposure to the applications of this science. Therapeutics lectures are not conducted.
- Some learning experiences are not available to all the students.
- The mechanisms in place to monitor the old curriculum are not functioning optimally.

2. Teaching, Learning and Assessment Methods

Strengths/Good Practices

- The academic programme does not put the students under undue stress or burden. This was also confirmed by the students.
- The students are given adequate written information about the academic programme, assessment methods and the recommended reading material.
- Detailed learning objectives are provided for all the teaching/learning activities.
- Opportunities are provided for student centered and independent learning and to interact with their peers. The medical library and the e-library provide adequate facilities and encourages independent learning and acquisition of IT skills.
- The student feedback on the tutorials was positive.
- Inclusion of best answer type MCQs.

- The scrutiny of essay type examination papers by a Board from two other disciplines and independent double marking of answer scripts are positive features.
- Inclusion of external examiners from other universities and from the Department of Health Services at the *viva voce* component of the terminal examination is good practice.

Weaknesses

- The 90 minute duration of lectures is too long and these are regularly held between 1.00 to 2.30pm. This post-lunch session after a tiring morning of clinical work and traveling was not the best for student learning.
- The number of students per tutorial group and research project group is unacceptably large.
- Untrained junior staff are taking tutorials. The number of tutorials is inadequate and tutorials are conducted only in the 3rd term. Tutorial topics are overcrowded.
- The present Faculty Library Committee is not functioning properly. The number of copies of new editions of standard textbooks available for long term loan is inadequate.
- Presently, a single examiner is undertaking the *viva voce* examinations of the research project. This is poor practice.
- The extent of scrutiny of essay and MCQ papers for the contents and the wording is inadequate. The item analysis of MCQ questions is not sustained.
- The questions, on the whole, test at recall level with very few testing higher order cognition skills. Assessment of specific skills is inadequate and assessment of generic skills is not being carried out.
- Not getting feedback from external examiners regularly whenever their services are obtained.

3. Quality of Students, including Student Progress and Achievements

Strengths/Good Practices

- The students expressed satisfaction with the programme and about their level of achievement in Pharmacology.
- The percentage of students passing Pharmacology has been consistently high. The pass rates and the number of students getting distinctions has shown an upward trend over the last 2 years**.** This is indicative of satisfactory student progress and achievement in the programme.
- The best research project is awarded a cash prize.
- Some student research projects have been presented in scientific meetings and led to publications.

Weaknesses

- The quality of the student assignments and the research projects could be improved.
- Aspect of supervision of students is inadequate.

4. Extent and Use of Student Feedback

Strengths/Good Practices

- Student feedback is obtained on all aspects of the academic programme, including information about individual lecturers, at the end of the course.
- Changes have been made in the past after consideration of such feedback.
- Two student members are given representation in the Faculty Board giving opportunity for them to voice their concerns.

Weaknesses

- The students were not satisfied with the poor response of the DP to their feedback to make changes, for example, the timing of lectures, the request for tutorials in the first 2 terms, introduction of therapeutics and extending the course to the fourth year.

5. Postgraduate Studies.

Strengths/Good Practices

- The academic staff have participated in postgraduate teaching activities.

Weaknesses

- The DP has not been able to enroll any postgraduate students for past several years.
- There is lack of a research culture.
- Lack of equipment to do research.

6. Peer Observation

Strengths/Good Practices

- There is some peer review of the teaching done by the visiting staff of the Ministry of Health

Weaknesses

- Peer observation was not practiced for the academic staff of the DP to assess their quality of teaching.

7. Skills Development

Strengths/Good Practices

- The academic programme is structured in such a way as to provide opportunities for the students to observe and undertake different skills in addition to subject-specific knowledge.
- Research project and student assignment provide opportunities for development of transferable skills and communication skills.
- The e-Library is providing opportunities to acquire IT skills, information retrieval skills, self learning and other skills

Weaknesses

- Skills development is carried out in large groups.

- The time allocation is inadequate for some of the skills development activities and the degree of supervision is inadequate.

8. Academic Guidance and Counseling

Strengths/Good Practices

- The University of Peradeniya has a system of student counseling in place and these counselors participate in the Faculty counseling activities.
- The Faculty has a system of staff counselors.
- When the students were able to meet the academic staff of the DP they handled them sympathetically and very often gave solutions to their problems and difficulties.

Weaknesses

- The Faculty counselors change annually. The students were not aware of the counselors.
- The counselors have received minimal training.
- There was no system of academic counseling in place in the DP.
- The students had experienced difficulty in getting at the academic staff of the DP.

Based on the observations made during the study visit by the Review Team, the eight aspects were judged as follows:

Aspect Reviewed	Judgment Given
Curriculum Design, Content and Review	Good
Teaching, Learning and Assessment Methods	Satisfactory
Quality of Students, Including Student Progress and Achievements	Good
Extent and Use of Student Feedback	Satisfactory
Postgraduate studies	Unsatisfactory
Peer Observation	Unsatisfactory
Skills Development	Satisfactory
Academic Guidance and Counseling	Satisfactory

6. RECOMMENDATIONS

1. In the present academic programme after completing Pharmacology in the 3rd MBBS Part 1 examination there is a gap of several terms before the student gets a proper re-exposure to applications of pharmacology and therapeutics. The Review Team is of the view that this gap is too long and adversely affects student learning, especially considering that the students are now well advanced in the MBBS programme. The design of the curriculum, especially in the 4th and 5th years could be changed to provide a continued structured multidisciplinary programme. Such a programme has to be delivered using appropriate teaching learning methods and settings to develop the

expected knowledge, attitudes and skills. The curriculum content could be improved by including therapeutics. It is recommended that the above deficiencies in the old curriculum be rectified in the new programme that is now being put in place.

2. It is the view of the Review Team that the current academic staff are insufficient to deliver the academic programme satisfactorily. The academic and other development activities of the DP are adversely affected by the shortage of staff and the prolonged vacancy of the Chair of Professor of Pharmacology. The Review Team is recommending to:
   (i) fill the vacancy of the Chair of Professor of Pharmacology as early as possible.
   (ii) the DP to make a realistic and objectives assessment of its cadre requirements with due consideration of the inputs into the new curriculum.
   (iii) the DP and the Faculty to have a firm policy on granting long leave. In this context the DP may have to agree on a minimum number of staff that must be present to deliver the Pharmacology programme satisfactorily.
3. While awaiting addressing of recommendation No. 2 above, it is recommended that the DP investigate ways and means of getting the services of the staff of other departments and the extended faculty to supplement its staff. The number of students for a tutorial group should be reduced to about 20 and those in a research project to about 2 to 4.
4. It is recommended that both permanent and temporary staff of the DP are given appropriate training prior to them being given teaching commitments. The services of the MEU should be obtained in this exercise. It is also recommended that the DP and the Faculty take a policy decision on the issue of using untrained staff in teaching activities.
5. The Faculty Library Committee need to be reactivated and student participation is recommended. Issues pertaining to opening and closing hours of the library and other issues could be satisfactorily addressed in that forum. The Library Committee affairs may be discussed as a regular agenda item in the Faculty Board.
6. It is recommended that the DP discuss findings of student feedback as a regular agenda item in the appropriate committees and genuine attempts should be made to makes changes where necessary. The feedback loop needs to be completed by intimating to the student body about the decisions taken on their feedback.
7. The DP may consider establishing a regular system of peer observation and feedback. The facilities and expertise of the MEU could be used to achieve this goal. Training of staff to undertake peer observation and to give feedback is necessary
8. The DP may consider establishing a method of providing academic counseling, and the student body needs to be informed about it. The Faculty should have an effective method of informing the students about the student counselors. A student handbook which is updated annually should be made available to the relevant students. The Faculty may wish to consider setting up a separate unit for counseling of students. All the different counseling services that are offered by the University, Faculty and the DP should be made known to the students in several ways.
9. There is a need to develop a postgraduate programme. The DP staff could discuss this at Faculty level and try to make some linkages.

7. ANNEXES

ANNEX 1. PROGRAMME FOR THE REVIEW VISIT

Day 1: Tuesday, 30.01.2007

8.15 - 9.00am	Private Meeting of Review Panel with QAA Council Representatives
9.00 - 9.15am	Discuss the Agenda for the Visit
9.30 - 10.30am	Meeting(s) with the Vice Chancellor/Chairman, Director Internal QA Unit /Dean / Head of the Department /Head, Faculty QA Cell
10.30 - 11.30am	Department Presentation of the Self Evaluation Report
11.30 - 12.30 pm	Discussion
12.30 - 1.30 pm	Lunch
1.30 - 2.30 pm	Meeting with staff for Academic Guidance & Counseling
2.30 - 3.15 pm	Meeting with the Department Academic Staff
3.15 - 4.00 pm	Meeting with the Department Non-Academic staff
4.00 - 5.00 pm	Meeting with Undergraduate Students
5.00 - 5.30 pm	Brief meeting of reviewers

Day 2: Wednesday, 31.01.2007

8.00 - 9.00 am	Meeting with the senior students
9.00 - 9.30 am	Observation of Department Facilities (Working Tea)
9.30 - 10.30 am	Observation of Faculty Facilities (Library, Lecture Theatre, E-Library, Canteen Etc.)
10.30 - 12 noon	Observation of Documents
12 noon- 1.00 pm	Lunch
1.00 – 2.30 pm	Observation of student presentations / project viva voce examination / observing teaching session
2.30 – 4.00 pm	Observation of Documents
4.00 – 5.00 pm	Meeting of Reviewers

Day 3: Thursday, 1.02.2007

9.00 - 13.00 am	Observation of documents
10.30 - 11.00 am	Meeting of reviewers (Tea)
11.00 – 11.30 am	Meeting with Vice Chancellor/Director, Academic Affairs/Head and the Academic Staff for Reporting
11.30 am - 12.30pm	Report Writing
12.30 pm	Lunch

Annex 2. LIST OF PERSONS MET BY THE REVIEW TEAM DURING THE VISIT

1. Vice Chancellor, University of Peradeniya

2. Dean, Faculty of Medicine, University of Peradeniya

3. Director, Internal QA Unit and of Academic Affairs

   Representative of Faculty QA Cell

4. Members of the Department of Pharmacology

   Head of Department
   Visiting Lecturer
   Temporary Lecturers – 6

5. Senior Assistant Librarian, Faculty of Medicine

6. Groups of students from 3rd year and 5th (final) year of study

7. Non academic staff members
   Technical Officers 2
   Clerk
   Stenographer
   Labourer

8. Senior Student Counselors: 1 from the University
   2 from the Faculty