The 12 Programme Outcomes and Themes

DEGREE OUTCOME

Edinburgh medical graduates will be caring, competent, ethical and reflective doctors who make the care of patients their first concern. They will be excellent communicators, able to work well with others, prepared for increasingly complex and uncertain situations, equipped for ongoing personal development, and trained for high professional achievement and leadership.

PROGRAMME OUTCOMES (1 – 4)*: The Doctor as a Scholar and Scientist*

1. Biomedical Sciences (BMS)

The Edinburgh medical graduate will be able to:

apply to medical practice the biomedical scientific principles, method and knowledge relating to relevant sciences including anatomy, biochemistry, cell biology, genetics, immunology, microbiology, molecular biology, nutrition, pathology and physiology.

2. Psychological Aspects of Medicine (PAM)

The Edinburgh medical graduate will be able to:

recognise and assess important psychological and behavioural aspects of health, illness and disease; and respond appropriately to these aspects, using strategies such as explanation, advice and reassurance to address them.

3. Social Sciences and Public Health (SSPH)

The Edinburgh medical graduate will be able to:

implement, at a clinical level, knowledge of how to understand the experience of illness and illness behaviour; to prevent disease, prolong life and promote health through the organised efforts of society; and demonstrate understanding of how to analyse a population's health problems, establish the causes and effects of these problems and assist appropriately in implementing effective solutions.

4. Evidence-Based Medicine and Research (EBM&R)

The Edinburgh medical graduate will be able to:

use the best available medical evidence, found through a systematic search and appraisal of the relevant information sources, to inform their clinical decisions; and develop new knowledge or personal understanding through the application of basic research methods and skills.

PROGRAMME OUTCOMES (5 - 10): *The Doctor as a Practitioner*

5. The Consultation (TC)

The Edinburgh medical graduate will be able to:

undertake an effective and efficient consultation that is sensitive to the needs of the patient.

6. Presentation, Diagnosis and Management (PDM)

The Edinburgh medical graduate will be able to:

describe the modes of presentation and natural history of diseases, recognise and interpret the signs and symptoms with which people present to doctors, construct a differential diagnosis, and choose appropriate methods to investigate, treat and care for patients in a multi-professional setting.

7. Clinical Communication (CC)

The Edinburgh medical graduate will be able to:

communicate clearly, sensitively and effectively with patients and their relatives, and with colleagues from the medical and other professions.

8. Emergency Care, Clinical And Resuscitation Skills (ECCARS)

The Edinburgh medical graduate will be able to:

recognise and systematically assess acutely unwell patients and institute immediate management, including first aid and resuscitation, and perform a range of clinical skills and procedures safely and effectively.

9. Clinical Pharmacology And Therapeutics (CPT)

The Edinburgh medical graduate will be able to:

describe how drugs act and apply this knowledge to clinical practice to prescribe clearly and accurately, to match appropriate drugs to the clinical context, to review the appropriateness of medication and to evaluate the potential benefits and risks.

10. Medical Informatics (MI)

The Edinburgh medical graduate will be able to:

use computers, computing, information and information technology effectively in a medical context; and work effectively within the legal and professional constraints that relate to person-identifiable information.

PROGRAMME OUTCOMES (11 and 12): *The Doctor as a Professional*

11. Medical Ethics, Legal And Professional Responsibilities (MELPR)

The Edinburgh medical graduate will be able to:

practise medicine within an ethical framework, with insight and compassion, according to the legal requirements and professional expectations of medical practice in the UK.

12. Personal Professional Development (PPD)

The Edinburgh medical graduate will be able to:

take a reflective and self-directed approach to the ongoing study and practice of medicine, work effectively in a team, and develop others' learning in order to enhance safe patient care, maximise effectiveness and enjoy career satisfaction.

1. *Biomedical Sciences (BMS)*

Theme Head: Position Vacant

Programme Learning Outcome:

The Edinburgh medical graduate will be able to apply to medical practice the biomedical scientific principles, method and knowledge relating to relevant sciences including anatomy, biochemistry, cell biology, genetics, immunology, microbiology, molecular biology, nutrition, pathology and physiology.

Theme Description:

The doctor as a scholar and a scientist is one of the main outcomes of undergraduate medical teaching aimed to ensure high quality of tomorrow's doctors (see 'Tomorrow's Doctors', GMC 2009). The Biomedical Sciences (BMS) theme is one of the programme themes tasked with addressing this outcome by applying to undergraduate medical teaching the knowledge, scientific principles and method relating to biomedical sciences (anatomy, biochemistry, cell biology, genetics, immunology, microbiology/virology, molecular biology, nutrition, pathology, and physiology).

In order to achieve its goals, the BMS theme runs through the whole of the University of Edinburgh's MBChB curriculum in an integrated manner with other programme themes. The aim is to put in place from the very beginning of the undergraduate medical course the necessary knowledge of biomedical sciences underpinning high quality clinical practice and safe patient management. Whilst the basic foundations are embedded in the first two years of the undergraduate medical curriculum, the theme strives to ensure that tomorrow's doctors acquire the necessary skills to translate that knowledge into clinical practice by revisiting biomedical principles and scientific method throughout the course of study and provide medical students with opportunities to gain further insight into fundamental and applied research (for example, through Student Selected Components).

The overall aim of the BMS theme is to equip tomorrow's doctors with the biomedical scientific knowledge and skills required to deliver excellent patient care based on critical thinking around current and future best evidence and research.

2. *Psychological Aspects of Medicine (PAM)*

Theme Heads:

Dr Roger Smyth

Tel 0131 242 1398 Email: roger.smyth@luht.scot.nhs.uk

Dr Neelom Sharma

Tel 0131 536 8907 Email: Neelom.sharma@ed.ac.uk

Programme Learning Outcome:

The Edinburgh medical graduate will be able to recognise and assess important psychological and behavioural aspects of health, illness and disease, and respond appropriately to these aspects, using strategies such as explanation, advice and reassurance to address them.

Theme Description:

The Psychological Aspects of Medicine vertical theme increases awareness of the role psychological factors play in the development, presentation, management, and outcomes of disease. This knowledge base is valuable for all doctors in all specialities. The Psychological Aspects of Medicine programme theme aims to equip Edinburgh medical graduates with both theoretical and practical knowledge of this important aspect of clinical care.

On the theoretical side there is the need to understand how disease processes interact with individual psychological factors and affect disease presentation, compliance with treatment and eventual outcome. On the practical side the student is encouraged to develop knowledge of cognitive assessment, the law relating to capacity and consent (and the mental disorders which might affect this), the physical health consequences of drug and alcohol problems, the range of mental disorders associated with physical illness and its treatment, and the appropriate use of psychotropic medication and psychological treatments.

This is how **PAM** teaching is developed in the curriculum

Year 1

- Concepts of health, illness and disease.
- Ethics and mental health.
- Adjustment to life events: Talking with Families, Aging, disability, terminal illness, death.
- Different ways of expressing psychological distress: the role of sociodemographics, personality, culture and other factors.
- The psychology of health promotion.
- The therapeutic role of doctor-patient interactions, alternative therapies and the placebo effect.
- PBL (cases including psychological health concepts).

Year 2

- The neuroscience behind normal and abnormal human behaviour.
- Alcohol problems, considered from individual, familial, societal perspectives.
- Psychological impact of genetic illnesses, including genetic screening and counselling.
- Psychological comorbidity in physical illness, exemplified by diabetes mellitus, renal, and liver disease.
- Neuroendocrinology: the effects of hormones and metabolic abnormalities on mood and behaviour.
- PBL (cases including Head Injury).

Year 3

- Specific psychologically-influenced syndromes in cardiovascular (e.g. functional chest pain), GI (e.g. IBS), respiratory (e.g. panic disorder), locomotor (e.g. fibromyalgia) modules.
- Adjustment to chronic illness (e.g. inflammatory bowel disease, congenital heart disease).
- Year 3 psychiatry: introduction to mental illness, and its effects on physical health.
- OSCE: the clinical interaction of physical and psychological illness.

Year 4

- Psychiatry: knowledge and experience of managing mental illness.
- GP: diagnosis and management of depression, anxiety, somatoform disorders. Psychological support. Referral options (e.g. counselling).
- Obstetrics and Gynaecology: pelvic pain, psychological changes (normal and abnormal) in the puerperium.
- Neurology: functional syndromes, behavioural effects of neurological illness (e.g. stroke, MS).
- Portfolio Overview Essay.
- SSC4.

Year 5

- GP: As Year 4.
- Medicine of the Elderly: aging, disability, effects of cognitive impairment on individuals and carers, death.
- General Medicine and Surgery: Delirium and iatrogenic psychological complications. Acute management plans incorporating psychological aspects. Liaison psychiatry service.
- Child Life and Health: Developmental disorders, and their effects on children and families. Developmental stages.
- Elective.

3. *Social Sciences and Public Health (SSPH)*

Theme Head:

Professor Harry Campbell

Tel: 0131 650 3218 Email: Harry.Campbell@ed.ac.uk

Deputy Theme Head:

Dr Jeni Harden

Tel: 0131 650 6991 Email: Jeni.Harden@ed.ac.uk

Programme Learning Outcome: The Edinburgh medical graduate will be able to implement, at a clinical level, knowledge of how to understand the experience of illness and illness behaviour; to prevent disease, prolong life and promote health through the organised efforts of society; and demonstrate understanding of how to analyse a population's health problems, establish the causes and effects of these problems and assist appropriately in implementing effective solutions.

Theme Description

This theme addresses learning outcomes relating to the social and public health dimensions of medicine.

Social scientific concepts provide a means to understand the varied responses of individuals, groups and societies to illness and disease; to reflect on and better understand the relationship between doctors and patients; and to appreciate the significance of social factors that contribute to health, illness and the success of treatment and prevention, including issues relating to health inequalities and the lifecourse.

Public health is "the science and art of preventing disease, prolonging life and promoting health through the organised efforts of society". The science of public health is concerned with making a diagnosis of a population's health problems, establishing the causes and effects of these problems, and determining effective interventions, often with a focus on prevention. The art of public health is to create and use opportunities to implement effective solutions to population health and healthcare problems.

This is how **SSPH** teaching is developed in the curriculum

Year 1
• Health, Ethics and Society module provides students with a solid foundation for understanding of key social science and public health concepts and provides opportunities for students to reflect on their relevance for medical practice. Students undertake two community practicals, Talking with Families; Health Needs of Older People. • PBL: social and public health aspects of real clinical problems.
Year 2
• PBL: social and public health aspects of clinical problems. • SSC 2. • There is a short course on epidemiology and statistical principles as they apply to clinical topics such as diagnosis, treatment, prognosis, screening.
Year 3
• The public health teaching in the two programme theme weeks builds on previous teaching to demonstrate the relevance of public health principles and perspectives in clinical contexts. Students have opportunities to reflect on and apply this learning in a clinical case session in Week1, and a workshop in Week 2 which draws on their own clinical experience in Year 3.
Year 4
• Portfolio Overview Essay. • SSC4a.
Year 5
• Elective.

4. *Evidence-Based Medicine and Research (EBM&R)*

Theme Heads:

Dr. David Swann (EBM) Email: D.G.Swann@ed.ac.uk

Dr. Simon Riley (Research) Email: Simon.C.Riley@ed.ac.uk

Deputy Head: Ms. Sheila Fisken Email: Sheila.Fisken@ed.ac.uk

Programme Learning Outcome: The Edinburgh medical graduate will be able to use the best available medical evidence, found through a systematic search and appraisal of the relevant information sources, to inform clinical decisions; and develop new knowledge or personal understanding through the application of basic research methods and skills.

Evidence-Based Medicine & Research (EBM&R) is the conscientious, explicit and judicious use of current best evidence in making decisions about the care of individual patients. Its practice integrates clinical expertise with research findings. Key aspects are the accuracy of diagnostic tests, the power of prognostic markers, and the efficacy and safety of medical treatments, rehabilitation, and prevention.

Students will acquire skills to practise evidence-based medicine and research

- Ask an answerable question
- Search the literature
- Critically appraise research findings
- Apply the evidence to patient care
- Evaluate changes in clinical practice

Assessment of EBM&R is performed during SSC projects, intercalated degrees (https://www.eemec.med.ed.ac.uk/pages/intercalated-bmedsciences), portfolio case reports, overview essays and the portfolio viva.

Research outputs from student SSC research projects, with students as named co-authors, are linked here:

- Published papers arising from SSC4a projects
  https://www.eemec.med.ed.ac.uk/pages/full/1187
- Abstracts and presentations arising from SSC4a projects
  https://www.eemec.med.ed.ac.uk/pages/full/1186

Research outputs from other student research projects, including Intercalated Honours, with students as named co-authors, are linked here:

- Published papers arising from Honours projects
  https://www.eemec.med.ed.ac.uk/pages/published-papers-arising-from-honours-projects
- Abstracts and presentations arising from Honours projects
  https://www.eemec.med.ed.ac.uk/pages/published-papers-arising-from-honours-projects

This is how **EBM&R** teaching is developed in the curriculum

Year 1

- Introduction to EBM.
- Introduction to Library resources (e-journals, ebooks and databases such as Medline and Cochrane).
- Information Skills for Medicine (finding, appraising, evaluating and managing health information.)
- Problem-Based Learning group work:
    - Ask question
    - Find information
    - Assess quality and relevance.
- Student Selected Component (SSC1): Develop a simple research question and project; collect, interpret and present data in context of existing knowledge

Year 2

- Public Health: Epidemiology, statistics & using a critical appraisal framework on published papers.
- PBL group work.
- Student Selected Component (SSC2a): Group work on a chosen research topic, literature searching using Medline, critiquing journal articles by using a critical appraisal framework, assessing quality of web pages and other information, producing a wiki.

BMedSci

(Hons) Optional:
Develop critical appraisal skills and apply EBM&R approach to a theme and Honours programme of the student's own interest and choice, including performing a substantial Honours research project.

Year 3

Study Day:

- Clinical trial design, critiquing workshop.
- Advanced literature searching, using clinical scenarios.
- Systematic approach to literature reviews.

Portfolio Entries:

- Case reports provide opportunity for developing clinical questions, literature searching, critiquing published papers including clinical trials and discussing how findings relate to patient care.
- Attachments to various specialties provide ideal opportunities for students to answer clinical questions arising from meeting patients.

Year 4

- Student Selected Component 4a (SSC4a): Individual research and clinical audit projects, developing and applying skills of the approach to EBM&R.
- Portfolio Entries: Case reports (see Year 3).
- Overview essay allow students to further explore how clinical practice relates to its evidence base.
- The student should continue to develop EBM skills, being able to answer clinical questions, critically appraise topics, use systematic reviews and guidelines.

Year 5

- Recognising the importance of guidelines and procedures throughout clinical attachments in preparation for practice.
- Portfolio Entries: Case reports and overview essay - (see Years 3 & 4).
- Using 'point of care' information resources such as UptoDate and Best Practice.
- By this stage, the student should have developed skills, so that EBM is appreciated as an essential tool for the expert clinician.

5. *The Consultation (TC)*

Theme Head (Years 1, 2 & 5):

Dr Donald Thomson Email Donald.Thomson@ed.ac.uk

Theme Head (Years 3 & 4):

Professor Richard Knight Email R.Knight@ed.ac.uk

Programme Learning Outcome: The Edinburgh medical graduate will be able to undertake an effective and efficient consultation that is sensitive to the needs of the patient.

Theme Description:

The consultation, where doctor meets with patient, is the central activity of all clinical medicine. Over the next 5 years students should progressively acquire competence in the skills required to complete the 8 core consultation tasks.

consultation tasks & skills	
diagnostic	• history taking
	• physical examination
	• diagnostic summary
	• investigation
therapeutic	• management
	• explanation & advice
	• reassurance & support
administrative	• record the consultation

Competence in The Consultation requires an appropriate level of knowledge of Presentations, Diagnosis and Management (Theme 6) and the skills of Clinical Communication (Theme 7). Indeed by graduation competence will require the seamless integration of this knowledge and skills.

In the early years teaching focuses on the individual behavioural and clinical components of The Consultation. In the later years both teaching and experience will bring together these components within a broad range of clinical settings, both general and specialised. In each Year the progressive acquisition of competence will be measured in in-course assessment and end of year clinical examinations. Assessment of competence will culminate in Year 5 Finals prior to progression to Foundation Year professional practice.

This is how **TC** teaching is developed in the curriculum:

Year 1
• Patients' ideas, concerns & expectations and doctor-patient relationship. • Early experience of talking with patients professionally in the community.
Year 2
• Systems based tutorials taught in the community. • Basic history taking & physical examination, explanation & advice, reassurance & support.
Year 3
• Further systems based teaching and experience in the hospital environment.
Year 4
• Specialist history taking & examination (integrated with knowledge of disease presentations, diagnosis & management) in both hospital & community settings.
Year 5
• Acquisition and assessment of consultation skills in preparation for clinical practice.

6. *Presentation Diagnosis and Management (PDM)*

Theme Head:

Dr Andrew Elder Email atelder@gmail.com

Programme Learning Outcome:

The Edinburgh medical graduate will be able to:

describe the modes of presentation and natural history of diseases, recognise and interpret the signs and symptoms with which people present to doctors, construct a differential diagnosis, and choose appropriate methods to investigate, treat and care for patients in a multi-professional setting.

Theme description:

This theme contains competences central to the good clinical care of patients, whatever their presenting or underlying problems.

- Knowledge of the clinical features, modes of presentation and natural history of diseases underpins the ability to construct a differential diagnosis and clinical problem list and complements the competences acquired in the *Clinical Communication* and *The Consultation* themes.
- Knowledge of the investigations available to refine diagnosis following clinical assessment, and the ability to select and interpret investigations and understand their limitations, are essential to safe and efficient patient care.
- Knowledge of drug therapy, and non-pharmacologic therapy, including therapeutic procedures, and the ability to select the most appropriate therapy for an individual patient is central to patient centred care. Extensive detail regarding drug therapy and prescribing is covered in the complementary *Pharmacology and Therapeutics* theme.

Teaching and Assessment

Elements of this theme are taught and encountered in all years of the course, and increase to become a key component of the later years (3-5), in both lecture and clinical attachment based teaching.

Assessment of the knowledge and skills required to demonstrate competence in the learning outcomes of this theme (see below) occurs predominantly in the later years of the course (3-5) via a combination of in-course module based assessments and end of year examinations, culminating in the Year 5 Preparation for Practice examinations.

Detailed Learning Outcomes

• Interpret and explain individual findings from the history, physical examination, clinical observations and mental state examination, taking account of the patient's perspective and relevant psychological, spiritual, religious, social and cultural factors.
• Collate and interpret the findings from the history, physical examination, and clinical observations to create an initial problem list.
• Formulate a differential diagnosis for each of the problems on this list and demonstrate understanding of the causes of diagnostic error and the need to review and revise the differential diagnosis and problem list as further information becomes available.
• Describe/explain the advantages and disadvantages of different investigative approaches to common clinical presentations and select an appropriate strategy for individual patients.
• Formulate, explain, and negotiate a plan of investigation based upon the clinical findings and best evidence, with the patient's full understanding and informed consent, and respecting each patient's right to refuse investigation.
• List the common causes of abnormal investigations, appreciate the significance of abnormal or normal investigations in the context of core clinical presentations, and recognise common patterns of abnormality in core investigations.
• Synthesise the information derived from investigations with that derived from the clinical assessment to create a refined problem list and differential diagnosis for each active problem and demonstrate understanding of the causes of diagnostic error.
• Collate all available clinical evidence in a manner that can be coherently shared with clinical colleagues, and that permits the graduate, either alone or in consultation with seniors, to take clinical decisions, even in situations of uncertainty.
• Select appropriate methods to treat or prevent common diseases, symptom complexes or presentations demonstrating an understanding of the scientific basis and evidence base for their use.
• Formulate, explain, and negotiate a plan of management - including discharge from care when appropriate - based upon the clinical findings, results of investigation and best evidence, with the patient's full understanding and informed consent, and respecting each patient's right to refuse some or all treatments.
• Select appropriate methods to treat or prevent dependence or other presentations of self-harm, and demonstrate an understanding of the scientific basis and evidence base for their use.
• Describe and recognise common presentations that may suggest abuse of children or vulnerable adults and describe the actions that must be taken to safeguard their welfare.
• Describe/explain and recognise the common problems that occur for patients and their families at the end of life, select appropriate methods to treat or prevent common symptom complexes demonstrating an understanding of the scientific basis and evidence base for their use, and the legal framework of the management of death.

7. *Clinical Communication (CC)*

Theme Head:

Dr Kirsty Boyd

Tel: 0131 242 1990 Email: Kirsty.Boyd@ed.ac.uk

Deputy Head:

Bryan Allan

Tel 0131 242 6417 Email: Bryan.Allan@ed.ac.uk

Programme Learning Outcome: The Edinburgh medical graduate will be able to communicate clearly, sensitively and effectively with patients and their relatives, and with colleagues from the medical and other professions.

Theme description:

How we communicate as doctors has never been more important. Effective communication is an essential part of patient assessment, diagnosis and management, and for multi-disciplinary team work. As they gain more experience, students become increasingly competent in key medical roles including obtaining a clear history, giving information that the patient and their relatives can understand and remember, breaking bad news, promoting concordance and self-management, and discussing treatment options so that the patient, their family and professionals reached shared decisions. Our students will become doctors who communicate in ways that enhance patient and carer experiences of healthcare, and who respond to patient goals and preferences. They will build effective relationships with patients and families, overcome any barriers to communication, manage expectations and respond professionally to any complaints, and contribute to successful multi-professional teams. Doctors who communicate sensitively and effectively benefit too - they have greater job satisfaction and less job related stress. Medical students already communicate well in general but must use the multiple opportunities they will be offered in every year of the programme to develop and practise the evidence-based approaches to effective communication they will require in their future clinical practice.

Communication teaching forms part of every clinical module and is supported by specific CC theme teaching in the form of interactive demonstrations and small group workshops. Students are expected to make full use of the Clinical Communication section on EEMeC. The grid below highlights some of the teaching described as detailed learning outcomes in the module/ year study guides. Students will demonstrate their ability to achieve the CC curriculum learning outcomes through written assessments such as reflective case reports and portfolio entries, online assessments such as OSCA, and in OSCE interviews. The teaching and learning will address learning outcomes from overlapping Programme Themes in relevant clinical contexts.

This is how **CC** teaching is developed in the curriculum:

Year 1 and 2

• Communicating as a health professional.
• Building good relationships with patients of all ages and their families; and with other students and professionals.
• Key communication skills & strategies:
  o Listening & responding to concerns
  o History taking in clinical practice
  o Giving information & explanation.
• Offering support & planning treatment/care.
• Patient records & confidentiality.
• Introduction to communication theory in the consultation.

Year 3 to 5
• Building an effective history in more complex situations. • Giving complex information, discussing options, shared decision-making. • Breaking bad news & handling strong emotions; anger, distress, denial, collusion. • Motivational interviewing for behaviour change. • Addressing sensory impairment, speech loss, language barriers. • Mental illness and cognitive impairment. • Consent, handovers, complaints. • Multi-disciplinary teamwork. • Evidence-based communication in medicine.

8. *Emergency Care, Clinical and Resuscitation Skills (ECCARS)*

Theme Head:

Dr Janet Skinner

Tel: 0131 242 6651 Email: Janet.skinner@ed.ac.uk

Deputy Theme Head:

Dr Ellis Simon Email: Ellis.Simon@luht.scot.nhs.uk

Deputy Head for Resuscitation:

Mrs Val Mcdowall

Tel: 0131 242 6420 Email: Val.mcdowall@ed.ac.uk

Clinical Skills Facilitators: Mrs Barbara Findlay
Mrs Janette Jamieson
Mrs Lisa MacInnes
Ms Lorraine Close
Mrs Kate Leech

Programme Learning Outcome: The Edinburgh medical graduate will be able to recognise and systematically assess acutely unwell patients and institute immediate medical management, including first aid and resuscitation; and perform a range of clinical skills and procedures safely and effectively.

Theme description:

Emergency Care, Clinical and Resuscitation Skills (ECCARS) are vital skills that are required to function competently as a junior doctor and in subsequent medical practice. Most of these skills are taught as part of a structured programme over the five years in the Clinical Skills Centre where the simulated environment allows them to be practised in a safe way, without risking harm to patients. The theme builds up from simple skills, such as checking a blood pressure in the early years, to more complex skills, such as functioning as part of an emergency team in the later years. Transferring skills from the simulated environment into clinical practice is extremely important and students benefit hugely from the clinical skills 'apprenticeship' that they experience in the rich clinical environments of the programme.

Assessment: Attendance at all ECCARS teaching is mandatory and students will not be able to progress through the programme unless they do so. Competence in ECCARS will be assessed in years 2, 3, 4 and 5 examinations. Certain key skills will require to be assessed in the workplace and students can record these and keep a log of skills that they perform in their online log book.

This is how **ECCARS** teaching is developed in the curriculum:

Year 1

- Vital signs
- Hand washing
- Cleanliness Champions
- BLS

Year 2

- Venepuncture.
- Blood glucose testing and administration of insulin.
- Nutritional assessment.
- Urinalysis.
- Cleanliness Champions.
- Breast examination.
- BLS.
- Airway.

Year 3

- IV cannulation.
- IV fluids.
- PR examination.
- Respiratory Function.
- Moving & Handling.
- Cleanliness Champions.
- IAR (initial assessment & recognition).

Year 4

- Arterial blood gases.
- Venous Blood Cultures.
- Ophthalmoscopy.
- Otoscopy.
- Cervical smear & pelvic examination.
- Urethral catherisation.
- IAR (initial assessment and resuscitation).
- Acute care simulation.

Year 5

- IV/SC/IM therapies.
- Suturing & wound care.
- Immediate Life Support.
- Patient safety (Scottish Simulation Centre).
- Paediatric BLS and emergency care.

9. *Clinical Pharmacology and Therapeutics (CPT)*

Theme Head:

Professor Simon Maxwell Email S.Maxwell@ed.ac.uk

Programme Learning Outcome: describe how drugs act and apply this knowledge to prescribe clearly and accurately, to match appropriate drugs to the clinical context, to review the appropriateness of medication and to evaluate the potential benefits and risks.

Theme Description:

Medicines form the most important intervention provided by the National Health Service for curing and preventing disease. As a doctor you will be legally entitled to prescribe and direct the use of thousands of 'prescription-only' medicines to members of the public. When medicines are prescribed for the appropriate indication at the correct dosage, the potential to do good is very great. However, it is also worth remembering that a significant number of illnesses, admissions to hospital and occasionally deaths are directly or indirectly related to the drugs prescribed by doctors. For these reasons your future role as a prescriber will carry with it a very important responsibility. Patients expect their doctors to ensure that they receive the drug treatments that will benefit them and that they are not needlessly exposed to the risks posed by drugs that will not benefit them. The overall aim of the CPT outcome theme is to enable you to discharge your responsibilities as a prescriber successfully and with confidence.

The CPT theme is conveniently divided into **four main areas** delivered over five years:

Principles of Clinical Pharmacology. This includes basic principles of pharmacology, clinical pharmacology and toxicology that underpin rational prescribing in all areas of therapeutics. Year 1 to 3 topics include pharmacodynamics, pharmacokinetics, individual variation in drug response, adherence, compliance and concordance, monitoring the effects of drugs, adverse drug reactions, drug interactions, medication errors, developing, regulating and marketing drugs, medicines management, evidence-based medicine, legal and ethical aspects of prescribing, prescribing for patients with special requirements, rational prescribing, clinical toxicology, complementary and alternative medicines, and drug misuse.

Drugs. This includes knowledge of commonly used drugs (including mechanism of action, indications for use, appropriate route of administration, contraindications and adverse effects) that could support rational prescribing decisions and would be sufficient to provide appropriate information to patients. This material will be covered mainly in the systems-based modules in Years 1 and 2 will set individual drugs and drug classes in context, highlighting the similarities and contrasts with other drugs.

Therapeutics. This includes the management of common acute and chronic therapeutic problems. This material will be covered mainly in the clinically-based modules in Years 3 to 5 and will provide an overall picture of how different drugs are used, either alone or in combination to treat common clinical problems.

Prescribing Skills. This includes a range of common skills related to the safe and effective use of medicines. Year 3 to 5 topics include writing a legal prescription using a range of documentation, calculating drug doses, reviewing prescriptions written by others, taking a medication history, communicating prescribing decisions with patients and other professionals, administering drugs, reporting adverse drug reactions and medication errors, and obtaining information to support rational prescribing decisions.

The CPT theme will be assessed in all years within integrated assessments at the end of modules and semesters. There will be an increasing emphasis on therapeutics and prescribing in the Year 4 and 5 assessments culminating in the Safety in Practice and Prescribing (SIPP) examination and the national *Prescribing Safety Assessment* (www.prescribe.ac.uk).

This is how **CPT** teaching is developed in the curriculum:

Year 1
• Clinical pharmacology introductory week. • Principles of Clinical Pharmacology (Introduction to CPT, Drugs in healthcare and society, Pharmacodynamics, Pharmacokinetics. • Drugs (SNS, PNS, NMJ). • Cardiovascular, Respiratory, Bones and Joints – Drugs.
Year 2
• Neuroscience, Gastroenterology & Liver – Drugs. • Epidemiology & Statistics. • Principles of Clinical Pharmacology. • Developing, regulating and marketing drugs. • Clinical Genetics, Renal, Endocrinology – Drugs. • Virtual Clinic -Principles of Clinical Pharmacology.
Year 3
• Outcome theme week. • Principles of Clinical Pharmacology (Individual variation in drug response, adherence and concordance, therapeutic drug monitoring, adverse drug reactions, drug interactions, medication errors, medicines management, evidence-based medicine, legal and ethical aspects). • Prescribing Skills. • Cardiovascular, Respiratory, Gastroenterology, Locomotor system – Therapeutics.
Year 4
• General practice -Principles of Clinical Pharmacology. • Prescribing Skills. • Neurology, Psychiatry –Therapeutics. • Senses -Drugs, Therapeutics. • Haematology, Oncology, Palliative care, Breast disease, Renal and Urology, Obstertrics & Gynaecology - Drugs, Therapeutics.
Year 5
• Medicine, Surgery, Child life and health, Geriatric medicine, General practice. • Therapeutics. • Prescribing Skills.

10. *Medical Informatics (MI)*

Theme Head:

Dr Richard Phelps

Tel. 0131 242 9164 Email Richard.Phelps@ed.ac.uk

Programme Learning Outcome: The Edinburgh medical graduate will be able to use computers, computing, information and information technology effectively in a medical context; and work effectively within the legal and professional constraints that relate to person-identifiable information.

Theme Description:

It is already the case that most clinical information is held in computer systems rather than on paper, and it is certain that computing will be an increasing part of health care and health care research. Therefore medical graduates must be able to work with computers not only in the office sense (email, various sorts of document, accessing and searching data, web browsing), but also where computers are used to process electronic patient records and even to direct the management of patients. It is vital that doctors understand the risks as well as appreciating the value that comes with the continuing expansion of computer systems into health care, and in particular, are able to work effectively with clinical information within the frameworks laid out in law and in professional guidance.

Medical Informatics' core objective is to equip students to work with clinical information in electronic forms, both for primary and secondary (research) applications, with focus on the particular issues that relate to person-identifiable information rather than generic computer skills that most students will already have. It also aims to acquaint students with the enormous potential of informatics to improve health care, for example through joined-up systems and combining data sets, two of many areas where informatics is likely to exert profound influences in the near future.

This is how **MI** teaching is developed in the curriculum:

Year 1 and 2
• Self-certification of basic computing competencies- opportunities for additional training. • Introduction to the scope of health informatics and emerging technologies. • Multiple opportunities to create documents of many varieties (years 1-5).
Year 3 to 5
• Patient information: definitions, coding systems, confidentiality, data protection. • Multiple opportunities to observe applications of IT in various clinical contexts. • Critical reflection on use of IT in healthcare. • Opportunity to access and use the Lothian Electronic Patient Record during ward attachments and Clinical Assistantships. • Opportunity to conduct patient record related research within SSCs.

11. *Medical Ethics, Legal and Professional Responsibilities (MELPR)*

Theme Head:

Dr Lydie Fialova Email: Lydie.Fialova@ed.ac.uk

Honorary Associate Theme Head:

Professor Kenneth Boyd Email: K.Boyd@ed.ac.uk

Programme Learning Outcome: The Edinburgh medical graduate will be able to practise medicine within an ethical framework, with insight and compassion, according to the legal requirements and professional expectations of medical practice in the UK.

Theme Description:

This theme covers the ethical and professional responsibilities pertinent to the practice of medicine in contemporary society, and introduces legal framework governing the provision of healthcare. There is an ethical dimension to every clinical decision about treatment and care of the patients and the aim of this theme is to provide students with conceptual tools to frame decision making in clinical practice, and understanding of the complex implications of medical interventions on the life of individuals and society.

A formal teaching programme covers topics in Health, Ethics and Society module (year 1) and several additional sessions throughout the curriculum. This programme is complemented by clinician-led teaching during hospital and GP attachments to ensure the understanding of the ethical aspects of treatment, care and decision making in medicine, and aid in the professional growth and relationship with patients.

Assessment: In the Health, Ethics and Society module there are examination questions on ethical reasoning and on legal and professional responsibilities, and an overview essay on the ethical and social aspects of medical practice. Additionally, the content of teaching is also an aspect of formal, informal and formative as well as summative assessment throughout the curriculum, including OSCEs, OSCAs and Portfolio Assessments.

This is how **MELPR** teaching is developed in the curriculum:

Year 1 and 2

- Ethical Reasoning.
- Professional Conduct and Legal Responsibilities.
- Consent, Capacity and Confidentiality.
- Relationships with Patients and Professionalism.
- Duty of Care.
- Respect and Trust.
- Medical errors.
- Beginning of Life.
- Prenatal care.
- Termination of Pregnancy.
- Neonatology; Medical Decisions Regarding Children and Young Adults; Cultural and Religious Issues in Medicine.
- Stigmatization.
- Disability and Chronic Illness.
- Ethical Issues in Mental Health Care.
- Futility and Withdrawal of Treatment.
- End of Life Care.
- Euthanasia; Medical Research and Ethics; Ethics of Resource Allocation.

Year 3 to 5

Ethics and Law related to:

- Medical Research.
- Genetics.
- Reproductive Medicine.
- Termination of Pregnancy.
- Prenatal Care.
- Neonatal Care.
- Treatment and Care of Children and Young Adults.
- Chronic Illness; Mental Health.
- Treatment and Care of Older Patients.
- Advance Directives.
- Resuscitation.
- Death by Brain Criteria.
- Palliative Care.
- Decision Making in the Context of Treatment Withdrawal.
- Euthanasia.
- Duties and Responsibilities Related to Deaths in Hospitals.
- Tissues and Transplantation.
- Prioritisation of Care.
- Conflicts of Interest in Medicine.

12. *Personal Professional Development (PPD)*

Theme Head:

Dr Margaret Cullen

Email Margaret.Cullen@ed.ac.uk

Deputy Head: Sarah Doyle

Email Sarah.Doyle@ed.ac.uk

Programme Learning Outcome: The Edinburgh medical graduate will be able to take a reflective and self-directed approach to the on-going study and practice of medicine, work effectively in a team and develop others' learning in order to enhance safe patient care, maximise effectiveness and enjoy career satisfaction.

Theme Description:

The Personal Professional Development (PPD) theme aims to help the student to grow personally and professionally:

- As an individual with the required **Personal and Professional Attributes** to learn and practice medicine and the ability to **Manage their Medical Career**
- In relationships with others in **Multiprofessional Teamworking** and as a **Teacher and Tutor**
- As part of a complex healthcare system promoting **Patient Safety and Continuous Quality Improvement**

PPD seeks to maximise the student's self-awareness, usefulness and personal satisfaction throughout their professional life by encouraging life-long learning and reflective practice.

Assessment: PPD is assessed throughout the curriculum including in PBL sessions, SSCs, during clinical attachments and with the MBChB Portfolio and viva. To facilitate self-reflection the student will also keep an electronic Professional Development Portfolio (ePDP), which they discuss with their Personal Tutor each year.

Learning Opportunities: PPD is addressed throughout the curriculum with specific learning opportunities identified each year including:

This is how **PPD** is developed in the curriculum

Year 1	
Attributes	• Self-assessment of skills and reflection. • Learning in medicine, academic writing & plagiarism. • Coping at University & monitoring stress.
Careers.	• Health needs and care provision in TwF and HNOP.
Teaching	• Sharing knowledge in PBL, SSC1 &TwF. • PAL student role. Peer feedback.
Teamworking	• Teamworking and Peer appraisal in PBL.
Patient Safety	• Principles of consent & confidentiality and research ethics.
Year 2	
Attributes	• Assessment of strengths & weaknesses. • Professionalism in ICP. • Procrastination & Time management. • Managing personal health and well-being.
Careers	• Primary Health care environment in ICP.
Teaching	• Giving advice and education to patients in ICP.
Teamworking	• Teamwork in primary care.
Patient Safety	• Principles of patient centeredness in the consultation and invasive procedures.
Year 3	
Attributes	• Professionalism in the clinical setting. • Organising skills in SSC3. • Personal safety on clinical attachments.
Careers	• Intro FP and ST. • Hospital specialties.
Teaching	• PAL student role. • Giving oral presentations.
Teamworking	• SSC3 Analysing working in a team.
Patient Safety	• Human factors and risk in medicine. • Cleanliness champions.
Year 4	
Attributes	• Professionalism in the clinical setting. • Self-directed learning skills for portfolio cases & overview essay. • Making Professional Judgements.
Careers	• Careers Fair and FP application process.
Teaching	• SSC4b PAL tutor role, reflective report, peer assessment and feedback.
Teamworking	• Attending multidisciplinary team meetings.
Patient Safety.	• SSC4 audit.
Year 5	
Attributes	• Professionalism in the clinical setting. • Reflective Practice in Portfolio assessments. • Elective planning and achieving personal goals. • Managing the transition to FY1.
Careers	• FP application workshops.
Teaching	• Practising giving advice to patients. • Peer teaching.
Teamworking	• Working with other healthcare providers.
Patient Safety	• Simulator visit : critical clinical scenarios & learning from errors –SEA.