Describe the organisation, management and regulation of healthcare provision; the structures, functions and priorities of the NHS; and the roles of, and relationships between, the agencies and services involved in protecting and promoting individual and population health

Apply the principles of quality assurance, clinical governance and risk management to medical practice

Describe responsibilities within the current systems for raising concerns about safety and quality

CARDIOVASCULAR EXAMINATION

Make general observations about the appearance of the patient in relation to the cardiovascular system.

Identify clubbing and list the relevant causes in relation to the cardiovascular system including endocarditis and cyanotic congenital heart disease.

Examine the major peripheral pulses including listening for bruits over the carotid, femoral and renal arteries.

Describe abnormalities of the pulse rate, rhythm, volume and character caused by cardiovascular disease, including the causes of an irregular pulse, small or large volume pulse, slowrising and collapsing pulse.

Measure blood pressure using an appropriate sized cuff. Describe the Korotkov sounds.

Assess the internal jugular pressure and demonstrate hepatojugular reflux.

Localise the apex beat and comment on its position in relation to surface landmarks.

Elicit a right ventricular heave, aortic and mitral thrills and describe their significance.

Demonstrate cardiac auscultation including positioning the patient in the 'endexpired, leaned forward' position and the left lateral position to detect aortic regurgitation and mitral stenosis respectively.

Demonstrate the presence of pitting ankle oedema.

Present a concise summary of the results of a cardiovascular examination.

RESPIRATORY EXAMINATION

Make general observations about the appearance of the patient in relation to the respiratory system, including mechanical/anatomical observations such as chest wall deformity or kyphoscoliosis as well as cough or stridor.

Count the respiratory rate and note any abnormalities including the use of accessory muscles of respiration, inspiratory recession and pursed lips breathing.

List the causes of clubbing relevant to the respiratory system including bronchiectasis, lung abscess, lung cancer and fibrosing alveolitis.

Examine the trachea to determine its position in relation to the midline.

Examine the expansion of the upper and lower lobes of the lungs.

Percuss the chest wall and correctly identify areas of resonance or dullness.

Discuss the causes of a dull percussion note on auscultation on different areas of the chest.

Demonstrate correct auscultation technique and describe the common abnormalities of breath sounds including bronchial breathing, crackles and wheeze and pleural rub.

Demonstrate the appropriate use of tactile vocal fremitus over an area of dullness to distinguish fluid from consolidation.

Demonstrate the signs of respiratory failure including central cyanosis, a large volume pulse, confusion and a flapping tremor.

Measure a patient's peak expiratory flow rate (PEFR).

Present a concise summary of the findings of a respiratory system examination.

ABDOMINAL EXAMINATION

Make general observations about a patient in relation to the gastrointestinal system.

Correctly demonstrate the signs of chronic liver disease including palmar erythema, leukonychia, clubbing, bruising, spider naevi, parotid enlargement, gynaecomastia, testicular atrophy and peripheral oedema.

Describe the appearance of the abdomen in relation to scars, distension or visible masses.

Palpate all areas of the abdomen lightly and more deeply whilst not hurting the patient.

Systematically examine for enlargement of the liver, spleen and kidneys.

Systematically examine for an abdominal aortic aneurysm.

Demonstrate ascites using the technique of shifting dullness.

Correctly examine hernial orifices.

Correctly examine external genitalia.

Auscultate the abdomen and describe abnormalities of bowel sounds.

Be aware of the importance of digital rectal examination in abdominal examination.

Present a concise summary of the findings of abdominal examination.

CRANIAL NERVE EXAMINATION

Make general observations in relation to cranial nerve abnormalities.

Describe/demonstrate how to examine the sense of smell.

Examine visual acuity using a Snellen chart.

Demonstrate pupillary reflexes and describe common abnormalities.

Examine visual fields by confrontation, describe common abnormalities including homonymous and bitemporal hemianopias and list the common causes.

Perform fundoscopy using an ophthalmoscope and describe common appearances of diabetes, hypertension and papilloedema.

Examine eye movements and describe features of 3rd, 4th and 6th nerve palsies.

Demonstrate and describe nystagmus, and give a list of causes

Examine the motor and sensory divisions of the 5th nerve.

Elicit a corneal reflex.

Outline the differences between an upper and lower motor neurone 7th nerve lesion.

Demonstrate simple tests of hearing including Rinne's and Weber's tests.

Elicit a gag reflexdescribe the cause of uvular deviation and outline the underlying cranial nerve innervation.

Examine the 11th and 12th nerves.

Demonstrate competence to communicate with people with physical and complex disability, including those with impaired speech.

Classify abnormalities of speech including dysphasia (expressive/receptive/nominal), dysarthria and dysphonia.

Summarise the findings following examination of the cranial nerves.

PERIPHERAL NERVOUS SYSTEM EXAMINATION

Make general observations in relation to the limbs including abnormalities of posture/gait, weakness, wasting, and fasciculation..

Describe and classify tremor including a postural tremor, rest tremor, intention tremor and a flapping tremor (asterixis).

Examine limb tone and describe common abnormalities.

Systematically examine the major muscle groups of the upper and lower limb.

Elicit deep tendon reflexes and the plantar response and correctly classify upper and lower motor neurone lesions according to the findings.

Demonstrate how to 'reinforce' a tendon reflex.

Demonstrate ankle clonus and describe its significance.

Outline the clinical features associated with parietal lobe disease including dysgraphia, apraxia and sensory inattention.

Elicit signs of cerebellar disease including an intention tremor, dysdiadochokinesia, ataxia and nystagmus.

Describe dermatomes, myotomes and the root values of the deep tendon reflexes.

Describe the features of common 'entrapment' syndromes including carpal tunnel syndrome, ulnar nerve and common peroneal nerve (foot drop).

Examine different modalities of sensation and describedistribution of common types of sensory loss including peripheral neuropathy and spinal cord lesions.

Demonstrate Romberg's sign and list the causes.

Summarise the findings following neurological examination of the limbs.

MUSCULOSKELETAL EXAMINATION

Make general observations about the appearance of the patient in relation to the MSK system, including abnormal swelling, deformity, muscle wasting, and abnormal body habitus and proportions.

Undertake a GALS (Gait, Arms, Leg, Spine) screening examination.

Describe the main phases of gait and characterise an abnormal gait (antalgic, Trendelenberg, spastic, Parkinsonian) in terms of phase of gait and abnormal locomotor characteristics.

Identify and assess disability and handicap/disadvantage in any patient using the REPAIR screen (Review of pathology & impairment; Environment; Activities; Important other people, Risk & prevention).

Summarise and record the findings of the GALS and REPAIR screens.

Identify and characterise, through enquiry and regional examination, the symptoms and signs of arthropathy (ie. joint inflammation and/or damage) at the sternoclavicular joint, acromioclavicular joint, shoulder, elbow, wrist, hand, hip, sacroiliac joint, knee, ankle/hindfoot, midfoot and forefoot. These signs include increased heat, softtissue swelling, effusion, stress pain, jointline tenderness, crepitus, bony swelling, restricted movement, deformity and instability.

Identify through inspection, palpation, resisted active movements and stress tests, common periarticular lesions (bursitis, tendinitis, tenosynovitis, enthesopathy)

Differentiate by patient enquiry and examination common mechanical neck/back pain ( root entrapment), inflammatory back pain (eg. spondylitis), destructive back pain (malignancy, sepsis) and pain from vertebral fracture.

Determine a hyperalgesic response to palpation at 8 tender sites (lower cervical, lower lumbar, 2nd/3rd costochondral, midsupraspinatus, trapezius skinfold rolling, lateral elbow, gluteal, medial fat pad of knee) for diagnosis of fibromyalgia.

Determine hypermobility syndrome using a modified 9point Beighton score.

Present a precise summary of the findings of a musculoskeletal examination.

RECORD KEEPING

Record a comprehensive history and examination using a structured format.

Based on the information obtained from a concise clerking and examination, design a management plan which would take account of diet, frequency of measuring vital signs, fluids to be given including IV fluids, investigations, therapeutic interventions

Be aware of the importance of updating the medical notes daily, including the date and time of each entry as a record of a patient's hospital care.

Understand the process of drug prescribing including the use of generic drug names, legible entries, accurate dosing etc. Demonstrate awareness of common drug interactions and of the importance of the British National Formulary in guiding prescribing practice.

Describe the documentation required when a patient is discharged from hospital including completion of the PRIDE card and discharge summary.

Prepare a brief discharge summary for the medical records.

Describe the process of certification of death of a patient including the clinical observations made to confirm death and how these are recorded in the medical notes.

Demonstrate an understanding of the legal aspects of the medical record by writing appropriate entries, which reflect sound judgement and note only those elements relevant to the patient's clinical progress.

EVIDENCE-BASED MEDICINE

Define evidence based clinical practice and the actions involved in its execution

Describe the sources of variation in clinical measurement including regression to the mean and the importance of observer variation.

Discuss the different approaches to defining abnormality and the arguments for and against them

Define sensitivity, specificity, predictive value and likelihood ratio, and discuss their interrelationships, the effect of changes in disease prevalence, and the effects of combining tests in series or in parallel

Define relative risk, absolute risk, attributable risk fraction and population attributable risk.

Describe the sources of bias that can arise in studies of disease prevalence, incidence and prognosis.

Define and discuss explanatory/management trial, different trial designs, randomisation and its effects, types of blinding, intention to treat versus per protocol analyses, and Type I and Type II errors.

Describe the different types of bias that can influence trial results and their interpretation, and the problems of small trials and publication bias.

Describe the benefits, and outline the steps involved, in a systematic review and metaanalysis.

Define placebo, nocebo and contextual responses to treatment and describe possible mechanisms that explain these effects

Discuss the relevance of contextual responses in clinical practice and ways of optimising thes effects for patient benefit.

Define screening and distinguish between mass proactive screening and opportunistic case finding.

Describe the circumstances in which preliminary consideration of screening would be reasonable and how screening should then be evaluated.

Describe how lead time bias, duration bias and selection bias affect the assessment of screening

Discuss examples of the major screening programmes currently operating in the UK.

Describe the main components of the health needs assessment process.

Discuss the various ways of measuring ill health

Describe how population characteristics may be measured and the effects of these on local outcome measures.

Define clinical audit and describe its purpose and what it involves (the audit loop).

Describe the common measures of health care used (structure process, outcome and quality measures).

Define the terms costbenefit analysis, costeffectiveness analysis, cost utility analysis, QALY, efficiency and effectiveness.

Discuss the difference between wants, demands and needs for health care.

Calculate from suitable data the sensitivity, specificity, predictive value and likelihood ratio of a test.

Critically appraise a published clinical trial and determine whether the results are valid and whether you should incorporate them into your clinical practice.

Identify aspects of a particular service that could be assessed for audit purposes.

ACCIDENT AND EMERGENCY

TRAUMA

Identify the correct sequence of priorities of emergency medical care to be followed in assessing the multiply injured patient including Primary survey, Parallel resuscitation, Secondary survey, The use of nearpatient testing, The role of xray and CT imaging

Describe the common causation, types, assessment and management of the following types of injury Head, Chest, Abdomen and pelvis, Limbs, Spine

Describe the common causation, types, assessment and management of more minor injuries including Bony injury to the upper and lower limbs, Soft tissue injury to the upper and lower limbs, Injuries to the ankle, knee, hip, wrist, elbow and shoulder

Describe the initial assessment and management of a patient with multiple injuries, using the correct sequence of priorities; explain the management techniques for primary treatment and stabilisation.

Discuss the basic principles of emergency treatment of haemorrhagic shock; outline steps to be taken in fluid therapy of victims of haemorrhagic shock.

Identify each of the following common life threatening chest injuries (ATOMFC) and discuss their pathophysiology Airways injuries, Tension pneumothorax, Open pneumothorax, Massive haemothorax, Flail chest, Cardiac tamponade

Describe the following potentially life threatening injuries and outline their initial management pulmonary contusion, aortic disruption, tracheobronchial disruption, oesophageal disruption, diaphragmatic disruption, myocardial contusion

Outline diagnostic and supportive therapeutic actions for abdominal trauma including the indications and contraindications for FAST (focused assessment with sonography for trauma) or diagnostic peritoneal lavage.

Discuss the general management and initial investigation of the unconscious traumatised patient

Describe the pathology of head injury, classifying into focal and diffuse. Describe the delayed complications that can follow head injury, classifying into focal and diffuse, and outline the basic principles of rehabilitation in those with cognitive impairment

Describe the Glasgow coma scale and discuss its value in neurological assessment.

Describe the main causes, pathophysiological mechanisms and effects of increased intracranial pressure.

Outline the therapeutic interventions that, when initiated in the early phases of management, can help to reverse or delay undesirable effects of raised intracranial pressure.

Specify the principles of acute management of the patient with spine or spinal cord injury.

Given a patient with spine or spinal cord injury, describe how to stabilise the injury.

Specify the principles of rehabilitation of a patient with spinal cord injury.

Identify the various types of limb injuries and list the priorities of assessment and management of each.

Discuss the principles of limb immobilisation.

Describe the clinical features and management of acute soft tissue injuries including neck, wrist/hand, knee and ankle sprains, and animal and human bites; and specify the indications for tetanus prophylaxis.

Discuss the aetiology, presentation and emergency management of a compartment syndrome.

Outline the general principles of management on the transportation or transfer of the trauma patient.

Conduct an initial assessment and management survey on a patient with multiple injuries, using the correct sequence of priorities and explanation of the management techniques for primary treatment and stabilisation.

Conduct a neurological examination and determine the Glasgow Coma Scale on a patient with head trauma.

Demonstrate the ability to immobilise the spine on a patient with a back injury.

Demonstrate the ability to immobilise a fractured limb.

Interpret the CXR in a patient with severe closed chest trauma.

Interpret the pelvis and cervical spine radiographs in a trauma patient.

Observe the performance of a FAST scan or a diagnostic peritoneal lavage in a trauma patient and understand the interpretation of the results.

SKILLS IN EMERGECNY MEDICINE

Conduct an initial assessment and management survey on a patient with multiple injuries, using the correct sequence of priorities and explanation of the management techniques for primary treatment and stabilisation.

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BURNS

List and differentiate the categories of burn injury; thermal, chemical, electrical, cold, irradiation.

Describe the pathophysiology of each burn category.

Classify the depth of burn injury.

Describe and apply the rule of nines.

List the causes, symptoms and signs of inhalation injury.

Outline the fluid resuscitation of burns patients, including composition, volume and timing of fluid.

List the other management steps in the initial 24 hours following a burn injury, including general support, wound management and antibiotics.

Discuss the management of a burns patient after the first 24 hours including fluids, wound management, metabolic needs and rehabilitation.

Discuss the methods used to prepare a full thickness burn for grafting and the factors relevant to the successful take if the graft on the wound surface.

Identify patients who require specialised burns centre management.

Define the maximum extent to which a patient can be burned and still be managed on an outpatient basis.

Describe a type of burn of < 10 that would require hospitalisation.

Given the area of the burn and its depth, calculate the fluid resuscitation requirements for the first 24 hours.

Describe the necessary steps in the outpatient management of a patient with a small burn.

EMERGENCY MEDICINE

Describe the immediate assessment and management of acute presentations of Cardiac arrest and life threatening arrhythmias

Describe the immediate assessment and management of acute presentations of the unconscious patient

Describe the immediate assessment and management of Myocardial infarction and acute coronary syndrome

Describe the immediate assessment and management of acute presentations of The breathless patient including asthma, COPD and pulmonary oedema

Describe the immediate assessment and management of acute presentations of Cerebrovascular accident

Describe the immediate assessment and management of acute presentations of Diabetic complications hypoglycaemia, hyperglycaemia, DKA and HHS

Describe the immediate assessment and management of acute presentations of Generalised and focal seizures

Describe the immediate assessment and management of acute presentations of severe sepsis

Describe the immediate assessment and management of acute presentations of Anaphylaxis

PSYCHIATRY AND MENTAL HEALTH

Discuss the backgrounds to and presentation of patients who self harm

Describe the main aspects of a mental state examination in the setting of acute self harm

Describe the general approach to the management of patients who have taken an overdose (including main agents of overdose and antidotes etc)

SURGICAL EMERGENCIES

Discuss the differential diagnosis of patients presenting with abdominal pain and the acute abdomen

Describe the assessment and management of patients presenting with testicular pain

Discuss the approach to patients with vascular emergencies including abdominal aortic aneurysm, aortic dissection and limbthreatening ischaemia

Describe the common acute conditions and emergencies that present to the emergency department in the following areas ENT epistaxis, earache, foreign bodies, difficulty swallowing; Ophthalmology foreign body, painful eye, altered vision; Maxillofacial facial injuries, tooth pain

WORKING IN EMERGENCY CARE

Describe the relationship of the Accident & Emergency Department to the inpatient specialties and to external agencies (GP, Ambulance Service, Social Services, Community Mental Health Services etc)

Describe the roles of the different staff groups within the emergency department

Describe the different patient flows through an emergency department and how patients are assessed and prioritised

Describe the role of blood investigations, imaging etc in decisionmaking in the emergency setting

Discuss the role of the A&E and acute admissions ward

Describe common A&E interventions e.g suturing, plaster application, wound care, removal of foreign body etc. and where possible participate under supervision

ANAESTHETICS

PRE-OPERATIVE ASSESSMENT

Discuss the principles of general, regional and local anaesthesia.

Describe the role of the anaesthetist in the theatre team; labour suite; the pain team; the critical care (ITU/HDU/outreach) team; the cardiac arrest and trauma team

Describe the effects of general and spinal anaesthesia on normal cardiac and respiratory physiology.

Describe the common and major risks associated with general and spinal anaesthesia

Describe the indications for common preoperative tests and their potential impact on perioperative care including Full blood count, Urea and electrolytes, Liver function tests, Coagulation tests, Chest Xray, ECG and Echocardiography, Lung function tests

Describe the ASA classification and methods used to classify urgency of operation.

Specify appropriate starvation times for food and clear fluids

Describe the principles of management of the diabetic patient presenting for surgery

ANALGESIA

Define pain

Describe the adverse effects of pain

Describe the WHO pain ladder

Describe indications, contraindications, complications, routes and doses for commonly used drugs for acute pain Paracetamol, Nonsteroidal antiinflammatory drugs, Weak and strong opioids, Local anaesthetics

Describe the principles, risk and benefits of patient controlled analgesia (PCAS)

Describe the principles, risk and benefits of epidural analgesia

Describe methods of nondrug analgesia (eg heat/cold, TENS, splinting)

PERI-OPERATIVE CARE

Describe causes of postoperative nausea and vomiting (PONV)

Describe indications, contraindications and doses for commonly used drugs for PONV antihistamines (e.g. cyclizine), 5HT3 antagonists (e.g. ondansetron), Dopamine antagonists (e.g. droperidol), Dexamethasone

Describe the principles of intravenous fluid therapy in the postoperative period.

Describe the indications for oxygen therapy in the postoperative period

Describe the methods of providing increased inspired oxygen.

Describe the benefits and limitations of pulse oximetry.

Recognize and manage a patient with an obstructed airway (also covered in critical illness attachment) Undertake appropriate head / neck positioning, sizes and insert an appropriate oropharyngeal (Guedel) airway

Safely setup an intravenous fluid (MACCS in critical illness attachment)

Recognize and manage a patient with suspected anaphylaxis

SKILLS IN RESUSCITATION

The student will complete a life support course during their final year. Refer to www.resus.org for current guidelines.

Maintain an airway

Obtain venous access

Perform Basic Life support and cardiopulmonary resuscitation

Recognise the critically ill patient

Recognise triggers for admission to ITU

CRITICAL ILLNESS

RECOGNITION OF THE CRITICALLY ILL PATIENT

Describe the concept of the Early Warning System score and the use of this tool to trigger senior review and / or admission of the patient to the augmented care areas (HDU/ITU).

Identify risk factors for critical illness such as mechanisms of injury, commorbidities, past medical and surgical history.

Describe the use and limitations of risk scoring systems for common critical illnesses such as GI bleeding, pancreatitis, trauma.

Take an appropriate history and use method of examination appropriate to a critically ill patient (ABCDE).

Make accurate observations of clinical phenomena and appropriate critical analysis of clinical data including patterns of deterioration as documented on observation charts

Define the various grades of shock and their effects on the major organ systems brain; heart; kidneys; gut; blood; lungs.

Justify the selection of appropriate investigations for common clinical cases, explain the fundamental principles underlying such investigative techniques

Interpret the results of such investigations, including imaging and the results of diagnostic procedures.

Recognize the presentation of the unconscious patient (presenting to ED or as an inpatient)

Recognize Patients presenting with shock, distinguishing between hypovolaemia, sepsis, cardiogenic shock and anaphylaxis

Recognize suspected severe sepsis

Recognize acute severe renal injury

Recognize acute respiratory failure

Recognize acute left ventricular failure

Recognize severe / multiple trauma

Recognize acute traumatic brain injury

Recognize suspected bacterial meningitis

Recognize acute severe asthma

Recognize acute severe exacerbation of COPD

Recognize postoperative bleeding

Recognize major gastrointestinal haemorrhage

Recognize diabetic emergencies (DKA; Hypoglycaemia)

Recognise clinical features in patients at risk or cardiorespiratory arrest (ILS)

Perform a physical examination appropriate to a critically ill patient

Take venous blood samples

Obtain an arterial blood sample and interpret arterial blood gas results.

Justify the use of and interpret the following monitoring in the critically ill full blood count, blood glucose, U&E, coagulation tests, blood cultures

Justify the use of and interpret urinalysis in the critically ill

Justify the use of and interpret the following imaging in the critically ill chest Xray, trauma series xrays, CT head

MANAGEMENT OF THE CRITICALLY ILL PATIENT

Synthesise a full assessment of the patient's problems and define the likely diagnosis or diagnoses (based on conditions listed under topic outcome Recognition of the critically ill patient).

Make clinical judgements and decisions, based on the available evidence, in conjunction with colleagues and as appropriate for your level of training and experience. This may include situations of uncertainty.

Formulate a plan for investigation, treatment, management and discharge, according to established principles and best evidence, in partnership with the patient, their carers, and other health professionals as appropriate.

Describe the importance of appropriately timed reassessment of the patient (FROM SIM OUTCOMES)

Describe the reasons for patients admission to ITU / HDU

Describe situations when it is inappropriate to refer a patient to ITU / HDU.

Describe the role of clinical guidelines and care bundles in the management of the critically ill NICE and AAGBI Head injury; sepsis bundle; diabetic emergencies; major haemorrhage

Understand the importance of, and the need to keep to, measures to prevent the spread of infection, and apply the principles of infection prevention and control.

Maintain an airway (also covered by anaesthesia objectives within surgical attachment)

Obtain venous access

Perform Basic Life Support and cardiopulmonary resuscitation

Conduct an initial assessment and management survey on a patient with multiple injuries, using the correct sequence of priorities and explanation of the management techniques for primary treatment and stabilisation.

Conduct a neurological examination and determine the Glasgow Coma Scale in a patient with head trauma

Safely prescribe and administer the following in a variety of critical illness situations oxygen, Intravenous fluids, Analgesia (intravenous titration of strong opioids).

Safely prescribe and administer Emergency antimicrobial therapy in a variety of critical illness situations meningitis, community and hospital acquired pneumonia, urinary sepsis, abdominal sepsis.

Formulate an initial management plan with timely reevaluation for the critically ill patient based on clinical guidelines and published evidence

Describe how to call for the cardiac arrest team

Demonstrate effective CPR with appropriate airway adjuncts

Recognise heart rhythms at cardiac arrest that require or do not require defibrillation

Demonstrate safe defibrillation with an automated and/or manual defibrillator

Describe the potentially reversible causes of cardiac arrest and their immediate management

Describe the indications, doses and actions of the principal drugs used during management of a cardiac arrest

Describe appropriate post resuscitation care

COMMUNICATION WITHIN AND BETWEEN TEAMS

Describe the importance of accurate and concise communication within and between professionals caring for the critically ill

Describe the rationale of tools such as SBAR for communication

Demonstrate ability to build team capacity and positive working relationships and undertake various team roles including leadership and the ability to accept leadership by others.

Demonstrate the use of communication tools / techniques to support effective communication between healthcare professional and within teams.

Make an appropriate referral for escalation of care.

Communicate and document a management plan for a stable patient

Demonstrate a strategy for appropriately challenging decisions made by other members of the multiprofessional team.

THE ROLE OF THE MDT IN CRITICAL CARE

Describe the benefits and limitations of Trauma teams; Resuscitation teams; Critical care outreach; Physiotherapists in critical illness

Discuss the impact of effective and ineffective teamworking on patient safety

Observe the following teams Trauma team; Resuscitation team; Critical care outreach

Simulate team behaviours and reflect on individual contribution

ETHICS IN CRITICAL ILLNESS

Discuss issues of consent in patients with impaired capacity

Discuss how ethical principles are involved in decisions to escalate or limit treatment (Patient and family wishes, Quality of life, Futility)

Recognise the rights and the equal value of all people and how opportunities for some people may be restricted by others' perceptions including Alcohol, Drug misuse or selfneglect

Demonstrate familiarity with the GMC's ethical guidance and standards including Good Medical Practice, the 'Duties of a doctor registered with the GMC' and supplementary ethical guidance which describe what is expected of all doctors registered with the GMC in the context of Critical Illness (Respect patients dignity and privacy, Recognise the limits of your professional competence, Ensure that your personal beliefs do not prejudice your patients care)

Observe members of the multiprofessional team breaking bad news to patients and / or their relatives

Demonstrate ability to respect patients dignity and privacy during assessment and management

ENDOCRINOLOGY AND DIABETES

DIABETES MELLITUS

Describe the diagnostic criteria for diabetes mellitus and glucose intolerance.

Classify major types of diabetes mellitus and describe clinical features suggesting Type 1 diabetes.

Outline the secondary causes of diabetes.

Compare and contrast the typical presentations of Type 1 and Type 2 diabetes.

Describe the principles of the dietary treatment.

Describe the methods of evaluating diabetic control.

Describe the principles of insulin therapy. Classify the different types of oral hypoglycaemic drugs used in Type II diabetes and outline their indications and contraindications.

Prescribe insulin therapy for a patient with diabetes who is an inpatient having routine medical or surgical care

Describe the essential components of the annual review in diabetes care.

DIABETES (METABOLIC COMPLICATIONS)

List the two major hyperglycaemic complications of diabetes diabetic ketoacidosis (DKA) and hyperosmolar nonketotic (HONK) diabetic coma. Outline the metabolic pathways that underlie diabetic ketoacidosis and outline the common reasons for the development of DKA.

Describe the typical symptoms of hypoglycaemia and outline the difference between autonomic and neuroglycopaenic symptoms. Outline the major counterregulatory hormone responses to hypoglycaemia and describe why hypoglycaemia may develop.

Discuss the management principles underlying the treatment of DKA (fluid, insulin and potassium replacement) and HONK.

Describe the treatment of hypoglycaemia.

DIABETES (MICRO AND MACROVASCULAR COMPLICATIONS)

Discuss the microvascular complications of diabetes affecting the eyes, kidney and nerves and outline their relationship to diabetic control and disease duration. Describe the features of diabetic sensorimotor neuropathy and associated risks. Describe the musculoskeletal conditions associated with diabetes

Describe the appearances of background retinopathy, proliferative retinopathy and maculopathy and recognise the appearance these and cataract on direct ophthalmoscopy. Outline the treatment of proliferative retinopathy and maculopathy

Outline the pathology of renal complications of diabetes mellitus

Outline the natural history of diabetic nephropathy emphasising the importance of blood pressure control.

Outline the treatment of painful diabetic neuropathy.

Describe the clinical presentation and natural history of other neurological complications including ocular nerve palsies, diabetic amyotrophy, foot drop, impotence and autonomic neuropathy

Discuss the macrovascular complications of diabetes; compare and contrast the distribution and severity of macrovascular disease in patients with and without diabetes (see also the section on Vascular Medicine and Surgery).

Discuss additional cardiovascular risk factors in diabetic patients and outline their assessment and management.

HYPERTHYROIDISM

Describe the classical symptoms of hyperthyroidism and the typical examination findings. Classify the causes of hyperthyroidism and outline the pathological features of Graves' disease, toxic adenoma and toxic multinodular goiter

Discuss medical therapy for hyperthyroidism. Discuss the indications for surgical treatment and the risks of postoperative complications. Discuss the indications for and complications of radioactive iodine therapy.

HYPOTHYROIDISM

Describe the classical symptoms, examination findings and treatment of hypothyroidism. Classify the causes of hypothyroidism and outline the pathological features of Hashimoto's thyroiditis.

Describe the morphology and pathological consequences of a nodular goitre.

THYROID CANCER

Classify thyroid cancer and outline the clinical presentation, diagnosis and principles of treatment

Outline the investigation and management of a patient presenting with a thyroid nodule/swelling

PITUITARY DISEASE

Describe the local symptoms that result from a large pituitary adenoma and outline the clinical consequences of pituitary adenoma producing prolactin, growth hormone or ACTH. Classify pituitary adenomas according to size and function

Outline other causes of hypothalamicpituitary disturbance.

Describe the laboratory assessment of pituitary function and outline the radiological techniques used to investigate pituitary disease

Outline the treatment and treatment options of a prolactinoma, including the use of dopamine agonists as first line therapy.

ADRENAL DISEASE

Discuss the possible clinical presentation of a phaeochromocytoma and list the syndromes of which it is a component.

List the major clinical and biochemical features of Cushing's disease, Addison's disease, Conn's syndrome and congenital adrenal hyperplasia.

Outline the common methods for imaging the adrenal glands including ultrasound, CT, and isotope scanning and outline the role of surgery in adrenal disorders.

Describe the need for steroid cover in a patient undergoing adrenal surgery and in patients with inadequate endogenous steroid reserve.

HYPERCALCAEMIA/PARATHYROID DISEASE

Discuss the normal control of serum calcium and outline the actions of PTH, vitamin D and calcitonin.

List the causes of a raised serum calcium concentration including hyperparathyroidism and malignancy.

Describe the classification and pathology of parathyroid disorders.

Discuss the clinical presentation, laboratory features and complications of primary hyperparathyroidism. Outline the important clinical associations of hyperparathyroidism.

Describe the investigation and early clinical management of a patient presenting with acute hypercalcaemia.

HYPOCALCAEMIA

List the causes of acute and chronic hypocalcaemia

Describe the symptoms and signs, investigation and treatment of hypocalcaemia.

ENDOCRINOLOGY AND DIABETES – GENERAL SKILLS

Measure capillary blood glucose using a reflectance meter and test strip.

Perform accurate urinalysis for glucose, protein and ketones using standard test strips.

Interpret blood gases showing a metabolic acidosis due to DKA

Interpret a Glucose Tolerance Test

Interpret thyroid function test results to determine whether the abnormal function results from disease of the thyroid or pituitary gland.

Interpret thyroid autoantibody test results.

Interpret endocrine test results to determine whether there is pituitary or end organ failure

Interpret the results of a Synacthen test and a dexamethasone suppression test

Interpret laboratory data (Ca, phosphate, alkaline phosphatase, PTH and serum albumin) to make a diagnosis in a patient with hypercalcaemia.

HAEMATOLOGY

ANAEMIA

List typical symptoms of a patient with anaemia.

Classify anaemia in terms of red cell indices and list common causes of each type of anaemia.

Discuss the common causes of confirm iron deficiency anaemia.

Discuss appropriate investigations to confirm that a patient has iron deficiency

Outline appropriate investigations for a patient with confirmed iron deficiency anaemia.

Outline the physiological absorption of vitamin B12 and folate.

Describe the pathophysiology and diagnosis of B12/folate deficiency causing a macrocytic anaemia

Outline the clinical features and laboratory diagnosis of sickle cell anaemia.

Outline the clinical management of sickle cell crisis and the importance of sickle cell

Outline the clinical features and laboratory diagnosis of thalassaemia

Screening prior to surgery.

Describe the laboratory features of haemolysis. Outline the causes of haemolytic anaemia and their treatment.

Outline the laboratory features of microangiopathic anaemia and list the common causes.

Outline the features and causes of inherited red cell membrane defects and of red cell enzymopathies.

THE WHITE CELL

Interpret a blood count showing a leucocytosis and list common causes for neutrophilia and neutropaenia, lymphocytosis and lymphopaenia.

Describe the clinical features of acute leukaemia and discuss the laboratory diagnosis.

Distinguish between myeloid and lymphoid cell lineages in the classification of acute leukaemia; highlight differences between childhood and adultonset leukaemia.

Outline the general principles of treatment of acute leukaemias

Describe the clinical features and laboratory diagnosis of chronic myeloid leukaemia and outline the principles of management.

Describe the clinical features and laboratory diagnosis of chronic lymphatic leukaemia and outline the principles of treatment

Describe the clinical features and laboratory diagnosis of multiple myeloma. Outline the associated laboratory abnormalities including changes in blood viscosity, renal function and serum calcium

Describe the clinical features of lymphoma. Classify lymphomas into Hodgkin's and NonHodgkin's disease and to high and low grade groups. Outline the principles of treatment.

THE PLATELET

Discuss the role of platelets in the pathophysiology of vascular disease including vascular thrombosis and platelet emboli

Describe the mechanism of action of aspirin and outline its role in cardiovascular disease prevention.

Outline the clinical features, investigation and treatment of immune thrombocytopaenia

HAEMOSTASIS

Describe the laboratory tests to assess the clotting system and recognise and interpret patterns of abnormality.

Outline a plan of investigation for a patient complaining of easy bruising.

Describe the role of the liver in normal clotting, including the role of vitamin K in the synthesis of some clotting factors

Discuss the clinical features, diagnosis and management of clotting factor deficiencies including haemophilia and Christmas disease

Discuss the pharmacokinetics and clinical use of warfarin including laboratory tests used to monitor clinical effect.

Outline the clinical management of overanticoagulation with warfarin.

Discuss the pharmacokinetics and clinical use of heparin including laboratory tests used in monitoring heparin therapy. Outline the clinical management of overanticoagulation with heparin.

Discuss the clinical use of thrombolysis, including monitoring and complications.

Outline the clinical indications for screening for thrombophilia and how this is done.

Outline the clinical features, investigation and treatment of immune thrombocytopaenia

Outline the clinical features of disseminated intravascular coagulation including laboratory tests used in diagnosis

TRANSFUSION

Describe the ABO blood group and outline its significance in blood transfusion.

Describe the principles of cross matching blood.

List the blood products available for transfusion and outline the rationale for using fresh frozen plasma, cryoprecipitate and platelets

Outline the principles of treatment of massive blood loss (see also Gastrointestinal haemorrhage objectives).

Outline the management of a transfusion reaction.

Describe the procedures that should be followed in taking a sample of blood from a patient and submitting it for cross matching and transfusion

Describe the procedures that should be followed when prescribing blood or blood products for transfusion

MISCELLANEOUS HAEMATOLOGY

Outline the clinical features of myelofibrosis, polycythaemia rubra vera and essential thrombocythaemia

Outline the clinical features of aplastic anaemia and describe the laboratory diagnosis and principles of treatment.

Describe the management of the splenectomised patient.

SKILLS IN HAEMATOLOGY

Interpret a full blood count

Interpret ESR

Interpret tests of blood clotting

Prescribe anticoagulant therapy, interpret tests of clotting, and adjust therapy

Complete a haematology laboratory request form to include all patient details and relevant clinical information

Complete a transfusion request form (NB students cannot complete this as a real task but must simulate this)

IMMUNOLOGY

Describe the main clinical features, immunopathology, investigation and principles of management of the following conditions asthma, eczma, anaphylaxis, urticaria and angioedema; organspecific autoimmune disease including autoimmune thyroid disease, insulindependent diabetes mellitus, pernicious anaemia, Addisons disease, autoimmune liver disease and bullous skin diseases; Lymphoproliferative disorders including myeloma; Connective tissue disease including systemic lupus erythematosus and scleroderma vasculitis, glomerulonephritis and coeliac disease

Describe the indications for and interpretation of the following investigations Creactive protein, serum immunoglobulins, serum and urine electrophoresis, complement levels, autoantibodies (including autoimmune screen), total and specific IgE levels, lymphocyte phenotyping, skin prick and patch testing

Outline the principles, benefits and risks of immunisation.

Describe the ways in which the immune system may be manipulated therapeutically

List the organs that are commonly transplanted and outline the main indications for transplantation.

Outline the main immunological barrier to successful transplantation and how this may be overcome by tissue typing and immunosuppressive therapy

Complete an immunology laboratory request card to include all patient details and relevant clinical information, including current therapy

Interpret immunology laboratory reports.

MEDICAL AND SURGICAL GASTROENTEROLOGY

NUTRITIONAL ASSESSMENT

List the daily requirements of fat, protein and carbohydrate utilised by the body. Knowing a patient's weight and level of stress, calculate the daily requirements for calories, protein and carbohydrates.

List at least four parameters obtained from a patient's medical history that might indicate the presence of malnutrition. List appropriate anthropomorphic measurements.

List the objective parameters that reflect a patient's nutritional state and their drawbacks.

List the water soluble and fatsoluble vitamins

UNDERNUTRITION AND NUTRITIONAL SUPPORT

List the indications for insertion and removal of a nasogastric tube and describe alternative methods of gastric intubation.

List the incidence and complications of undernutrition.

List the indications for enteral and parenteral nutritional support; for each condition, identify the appropriate route for administering support. Contrast the risks and benefits of enteral and parenteral nutritional support. List the trace elements that must be replaced in a patient on longterm parenteral nutrition.

List the metabolic complications of total parenteral nutrition.

Describe the complications that may be associated with the passage of a nasogastric tube; discuss their recognition and management.

Discuss the ethical issues associated with artificial nutritional support.

OBESITY

Specify the definition, approximate prevalence and the risk factors for obesity

Discuss the clinical and social complications of obesity and specify the management strategies for obesity, including surgical options

Outline the input from different healthcare professionals required in the treatment of obesity

OESOPHAGUS

List the anatomical and physiological factors predisposing to gastrooesophageal disease.

Define hiatus hernia with regard to anatomical type (sliding and paraoesophageal).

Name three typical symptoms of gastrooesophageal reflux disease (GORD). Describe the investigations used to confirm a diagnosis of GORD.

Discuss general measures and medical therapy. Outline the surgical measures used to treat GORD.

Outline the possible longterm complications of GORD. .

DYSPHAGIA

List the common causes and discuss investigations of dysphagia.

List the symptoms suggestive of oesophageal malignancy. Describe the pathology and natural history of oesophageal malignancy.

List the treatment options for an oesophageal malignancy. Discuss staging and assessment of fitness for operation for oesophageal malignancy.

Outline the pathology, presentation and management of achalasia

PEPTIC ULCER DISEASE

List the main causes, symptoms and investigation of peptic ulcer disease.

Discuss differences between gastric and duodenal ulcer.

Describe the relationship between H.pylori, smoking and nonsteroidal antiinflammatory drugs and peptic ulcer disease and the mechanisms by which they cause peptic ulceration.

Outline a regimen for H. pylori eradication and discuss its implications for ulcer recurrence.

Discuss the symptomatic management of peptic ulcer disease. List the complications of peptic ulcer disease and describe subsequent treatment.

Outline broadly how and why the indications for peptic ulcer disease have changed over time.

GASTROINTESTINAL HAEMORRHAGE

Specify the symptoms and common causes of acute upper gastrointestinal bleeding.

List the common causes of acute lower gastrointestinal bleeding.

List the commonest presentations of chronic GI blood loss.

Discuss the initial management of a patient with gastrointestinal haemorrhage.

List the criteria for surgical intervention.

GASTRIC NEOPLASMS

List risk factors for the symptoms suggestive of and investigations for gastric cancers.

Describe the epidemiology, classification, morphology and natural history of gastric cancers.

Outline the general principles of curative and palliative surgical procedures for gastric cancers and discuss the role of adjuvant and palliative therapy

Quantify the prognosis for gastric cancer

GORD

List the symptoms of GORD

Describe and interpret relevant investigations to confirm the presence of GORD

Outline indications for surgery in this condition.

THE ACUTE ABDOMEN

Define the acute abdomen.

Identify the symptoms and signs of common causes of the acute abdomen.

Discuss differential diagnosis, relating these to the pathology of the conditions leading to the acute abdomen. .

Select appropriate investigations to aid diagnosis of the acute abdomen and interpret these

Outline initial management of the acute abdomen and identify the patient needing urgent resuscitation and operative intervention on the basis of their clinical presentation

ACUTE APPENDICITIS

List the symptoms and signs of acute appendicitis.

Formulate a differential diagnosis and outline appropriate investigations.

List the common situations in which appendicitis is difficult to diagnose or manage.

List the complications of a perforated appendix.

List and discuss the common complications following appendicectomy and explain how each can be prevented.

List causes of a mass in the right iliac fossa and outline the assessment, investigation and management.

MECKEL’S DIVERTICULUM

Describe the nature of a Meckels diverticulum and its possible pathological effects.

Describe the variable clinical presentations of a patient with a Meckel's diverticulum.

INTESTINAL OBSTRUCTION

Describe the symptoms and signs in a patient with intestinal obstruction.

List the common causes and the associated pathology of intestinal obstruction.

Discuss the complications of small bowel obstruction and their recognition

List the appropriate laboratory and Xray tests to be employed in a patient with suspected small intestinal obstruction.

Differentiate between mechanical small bowel obstruction and paralytic ileus.

List the symptoms and signs suggestive of strangulation.

Compare and contrast a large bowel obstruction and a small bowel obstruction.

Outline a plan of treatment in a patient with small bowel obstruction including a consideration of fluid and electrolyte therapy, antibiotic therapy, intestinal intubation and operative therapy.

MALABSORPTION

Describe the clinical presentation of malabsorption and outline appropriate investigations.

Outline the pathology of malabsorption of key nutrients and consequent presentation and management for each.

IRRITABLE BOWEL SYNDROME (IBS)

Describe symptoms that may suggest a diagnosis of IBS.

Outline current theories regarding the pathophysiology of IBS.

Discuss possible investigations and outline therapeutic approaches.

INFLAMMATORY BOWEL DISEASE

Describe the morphology and pathological consequences of Crohn's disease and ulcerative colitis. Describe common presenting symptoms.

Discuss the investigation of a patient with suspected inflammatory bowel disease.

Describe the medical therapy available. Discuss complications of Crohn's disease and ulcerative colitis and indications for surgery.

List the extracolonic manifestations of inflammatory bowel disease and discuss the response to each to surgery.

Outline the risk of colonic malignancy in inflammatory bowel disease

DIVERTICULAR DISEASE

Outline the theories on the aetiology of diverticulosis of the colon including age, diet and vascular anatomy of the colon.

Describe the morphology and pathological consequences of diverticulosis of the colon.

Describe the clinical features, symptoms and signs of diverticulitis.

Outline the complications of diverticulosis.

Describe the management of asymptomatic diverticulae of the colon.

Discuss the presentation, differential diagnosis, investigations and management of complications of colonic diverticulae including diverticulitis, perforation, bleeding, stricture, abscess and fistula.

Discuss indications for elective and emergency surgery.

CARCINOMA OF COLON, RECTUM AND ANUS

Describe the aetiology, morphology and pathology of carcinoma of the large bowel. Describe the natural history of carcinomas affecting the large bowel. Describe Dukes and TNM staging systems.

Discuss the frequency of each according to location of the carcinoma, particularly with rectal and carcinoma of the caecum. Identify the pathological differences between colorectal and anal cancer.

Identify the common symptoms and signs of carcinoma of the colon, rectum and anus. List the clinical features that would raise suspicion of a carcinoma and indicate urgent patient referral.

Discuss appropriate laboratory tests, radiological studies and endoscopic investigations to investigate a patient with a suspected colonic or rectal carcinoma.

Outline the treatment of carcinoma of the colon, rectum and anus and define appropriate resection levels according to lymphatic drainage.

Describe the role of the Cancer multidisciplinary team (MDT) meeting in clinical decisionmaking.

Outline the management of carcinoma of the anus and contrast it to management of colorectal carcinoma.

Discuss follow up recurrence and metachronous tumours.

Outline management of an obstructing colonic cancer.

LARGE BOWEL OBSTRUCTION

List the symptoms and signs of large bowel obstruction.

Discuss the diagnostic aids available for the diagnosis of large bowel obstruction.

List the causes of intestinal obstruction in children and outline the diagnostic tests most appropriate for each list the frequency of each cause of intestinal obstruction.

Outline a diagnostic plan to identify aetiological factors of faecal impaction.

HAEMORRHOIDS

Discuss the anatomy of haemorrhoids.

Describe the role of the anal sphincters in maintaining faecal continence.

State the aetiological factors of haemorrhoids.

Describe the symptoms and complications of haemorrhoids.

Discuss the differential diagnosis of rectal bleeding.

Describe the physical examination of a patient with haemorrhoids, including proctosigmoidoscopy.

Outline the principles of management of patients with symptomatic haemorrhoids including investigation and differential diagnosis appropriate to patient factors including history and age.

Describe symptoms and signs of perianal haematoma and outline management

PERIANAL INFECTION

Discuss the role of anal crypts in perianal infection.

Outline the symptoms of patients with perianal infections.

Describe the various types of perianal infections.

Describe the physical examination of patients with perianal infections.

Define fistula in ano.

Outline the principles of management of patients with perianal infections including management of fistula in ano.

FISSURE IN ANO

Define anal fissure.

Describe the symptoms and physical examination of patients with fissure in ano.

Discuss current theories of the aetiology of anal fissure and describe the principles of management.

ACUTE AND CHRONIC HEPATITIS

Describe the infective causes of acute hepatitis.

Describe the features of liver damage resulting from drug therapy and paracetamol overdose.

Describe the causes of chronic hepatitis.

Describe the morphology and pathological consequences of acute and chronic hepatitis.

Discuss the diagnosis and investigation of a patient with jaundice.

Outline the clinical presentation of acute and chronic hepatitis including relevant features in the medical history.

Outline the treatment options for hepatitis due to autoimmunity, hepatitis B or C and paracetamol overdose.

Outline the indications for and discuss the contraindications of liver biopsy in hepatitis.

LIVER NEOPLASMS, ABSCESSES AND CYSTS

Compare and contrast the pathology and natural histories of liver neoplasia, abscesses and cysts.

Describe the symptoms and signs associated with liver abscess. List the investigations that differentiate neoplasia, abscesses and cysts and outline their treatment options.

Describe the aetiology and pathology of primary and secondary liver neoplasms.

CHRONIC LIVER DISEASE

Define cirrhosis in pathological terms.

Describe the morphology and pathological consequences of cirrhosis.

Describe the investigation of a patient with suspected cirrhosis.

Discuss how to establish the diagnosis of the cause of cirrhosis.

Outline the pathophysiology underlying the clinical features of cirrhosis.

Describe the clinical features of complications of cirrhosis and portal hypertension and outline their management.

PORTAL HYPERTENSION

Describe portal venous anatomy.

Define portal hypertension and classify its causes.

Describe the clinical manifestations of portal hypertension.

Outline the treatment methods available for bleeding oesophageal varices

THE SPLEEN

List the common causes of splenomegaly including portal hypertension, lymphoreticular disease and chronic infection.

Outline the haematological abnormalities correctable by splenectomy.

Discuss the potential causes of splenic rupture.

Discuss the potential adverse consequences associated with splenectomy and recommendations for preventing overwhelming postsplenectomy sepsis

OBSTRUCTIVE JAUNDICE

Classify intrahepatic and extrahepatic causes of obstructive jaundice and outline underlying pathology.

Describe the clinical features of obstructive jaundice and outline their pathophysiology.

Describe the laboratory and radiological investigation of a patient presenting with obstructive jaundice.

Describe the aetiology, morphology and pathological consequences of cholelithiasis (see under BILIARY DISEASE for more detail).

Describe the clinical presentation, morphology and pathological consequences of carcinoma of the pancreas (see under PANCREAS for more detail).

Discuss the methods relieving common bile duct obstruction.

ACUTE AND CHRONIC GALLBLADDER DISEASE, CARCINOMA OF THE BILIARY TRACT

List the common types of gallstones and describe their pathophysiology

Describe the symptoms and signs of biliary colic and contrast with acute cholecystitis.

Describe the natural history of asymptomatic gallstones. List the common tests used in the diagnosis of gallstones.

Discuss the management of gallbladder disease.

Describe the symptoms and signs and management of bile duct stones.

Define the following Murphy's sign, Courvoisier's sign, Ttube (including purpose and circumstances of use), gallstone ileus.

List the complications of gallstones and describe the history, physical examination and laboratory findings for each (see also OBSTRUCTIVE JAUNDICE)

Outline the medical management of a patient with biliary colic and acute cholecystitis including appropriate antibiotic regimen.

Outline carcinoma of the gallbladder, bile duct and ampulla of Vater with regard to presenting symptoms and survival.

DIAGNOSTIC STUDIES IN BILIARY TRACT DISEASE

Contrast changes in liver function tests in obstructive and hepatocellular jaundice.

List the most common bacteria cultured in acute cholecystitis.

Outline the place of radiological and endoscopic investigation in the diagnosis of obstructive jaundice and in staging of pancreatic cancer.

Describe the indications for, and risks of, ultrasound scanning, transhepatic cholangiography and endoscopic retrograde cholangiopancreatography (ERCP).

PANCREATITIS

Describe the clinical presentation of acute pancreatitis.

Describe the aetiology and pathology of pancreatitis.

Classify pancreatitis on the basis of the severity of organ injury.

Discuss the management of acute pancreatitis and potential early complications of acute pancreatitis.

Outline the investigation of suspected acute pancreatitis, emphasising the timing, interpretation and reliability of currently available tests.

Discuss the criteria used to predict the prognosis for acute pancreatitis.

Outline the metabolic complications of pancreatitis.

PANCREATIC PSEUDOCYSTS

Define pseudocyst and discuss mechanisms of their formation.

List and discuss the symptoms and signs and natural history of an untreated pseudocyst.

Discuss the indications for and sequence of investigations for suspected pseodocyst.

Describe the treatment of pancreatic pseudocyst.

PANCREATIC NEOPLASMS

Describe the symptoms and signs of pancreatic cancer depending on location of the tumour within the gland. Outline investigations indicated.

List common pancreatic neoplasms; describe the pathology of each with reference to cell type and function.

Discuss nonsurgical management, indications for surgery and list common operations.

Discuss the prognosis of pancreatic neoplasms with regard to histology

HERNIAE

Define hernia and the descriptive terms reducible, incarcerated, obstructed, strangulated and sliding.

Outline the principles of management of patients with hernia.

INGUINAL HERNIA

Define indirect and direct inguinal hernia. List the factors that predispose to the development of inguinal hernia.

Discuss the relative frequency of indirect, direct and femoral hernia in children, women, young men and elderly men. Perform a physical examination of patients with inguinal hernia and describe signs of incarceration, obstruction and strangulation.

Outline the principles of management of reducible inguinal hernia in patients with obstructed or strangulated inguinal hernia.

FEMORAL HERNIA

Define femoral hernia.

Define incarcerated, obstructed, strangulated femoral hernia and Richter's hernia.

Describe the symptoms and signs of patients with femoral hernia. Perform the physical examination of patients with femoral hernia.

UMBILICAL HERNIA

Define an umbilical hernia and relate it to the embryological origin of the umbilicus. List the factors that predispose to the development of umbilical and paraumbilical hernia.

Describe the symptoms of patients with umbilical hernia. Perform a physical examination of patients with umbilical hernia, differentiating reducible and nonreducible hernia; recognise the signs of strangulation.

Outline the principles on management of patients with umbilical hernia, including distinguishing those needing operative repair from those who do not.

INSCISIONAL HERNIA

Discuss the incidence of incisional hernia according to risk factors of patient comorbidity and previous surgery.

Describe the symptoms of patients with incisional hernia.

Describe the potential complications of incisional hernia including bowel obstruction and strangulation.

Perform a physical examination of patients with incisional hernia and assess the risk of obstruction or strangulation.

Outline the risk factors for recurrence after repair, including the size of the defect, obesity and chronic cough.

EPIGASTRIC HERNIA

List common presenting features, including epigastric pain and/or a lump in the epigastrium.

Distinguish on examination between an epigastric hernia and a divarication of the rectus abdominus muscle, and describe why one requires surgical treatment whereas the other doesnt.

ABDOMINAL AND GASTROINTESTINAL EXAMINATION SKILLS

Perform an examination of the abdomen and gastrointestinal system (including rectal examination) Detect abnormalities and make interpretations.

Interpret relevant laboratory investigations including abdominal xray and liver function tests

Interpret, as relevant, plain abdominal xrays, specific barium studies and cross sectional imaging to diagnose hiatus hermia, oesphageal cancer, achalasia, peptic ulceration, gastric cancer, air under the diaphragm, small bowel dilatation, intestinal obstruction, inflammatory bowel disease,

Prescribe fluids in a patient with intestinal obstruction

Interpret liver function tests, virology and immunology reports and radiological investigations to suggest a likely cause of jaundice or hepatitis.

Demonstrate an understanding of the use of subhepatic drains and Ttubes in biliary surgery and indications and conditions for their removal

Witness upper gastrointestinal endoscopy (OGD). So that a full explanation can be given to patients in the context of taking consent.

MICROBIOLOGY AND INFECTIOUS DISEASES

Describe the basic principles of prevention of infection in hospitals (isolation, cohort nursing) and in the community (notification of infectious diseases, vaccination and other prophylactic measures).

Outline the features of specific pathogens that contribute to their pathogenicity (eg. exo and endotoxins) and their propensity to spread.

Outline the antimalarial spectra and modes of action of commonly used antimicrobial agents.

Take a blood culture using appropriate aseptic technique.

Take a swab using appropriate aseptic technique

Interpret microbiology laboratory reports including serology.

Complete a microbiology laboratory request card to include all patient details and relevant clinical information, including about any antimicrobial therapy.

MUSCULOSKELETAL AND MDD

MANAGEMENT OF MSK DISEASE

Describe the indications, nature and benefits of core nonpharmacological interventions in people with MSK disease.

Describe the method of action, indications, contraindications, benefits and sideeffects of oral, parenteral, intraarticular and periarticular corticosteroid.

Outline the method of action, major indications, contraindications, benefits and sideeffects and monitoring of drugs used to modify inflammatory disease (including methotrexate, sulphasalazine, hydroxychoroquine and biologic agents such as antiTNF.

Outline the general indications, contraindications, benefits and complications of soft tissue and joint surgery (including soft tissue release, tendon repairs and transfers, synovectomy, osteotomy, excision arthroplasty, joint replacement arthroplasty, arthrodesis)

Describe the terminology of the International Classification of functioning, disability and health (ICF) and relate this to REPAIR

Discuss how the social and physical environment can influence disability.

Discuss the role social services and housing departments can play in improving participation in people with disabilities and to know when to refer to social services and housing departments.

Describe the underlying principles of rehabilitation of a patient with disability and list the key methods of working that achieve successful rehabilitation

Define assistive technology, outline the principles of orthoses, wheelchairs, mobility aids and aids for daily living, and outline how to refer for assistive technology and how to obtain multidisciplinary advice regarding assistive technology.

Outline the principles of rehabilitation following lower limb amputation.

Outline coping strategies for patients with chronic MSK pain.

Describe the benefits of nutripharmaceuticals and alternative medicines.

Describe the factors that relate to patient adherence to a management plan.

REGIONAL PERI-ARTICULAR PAIN

Describe the typical presentation, risk factors and outcome of a patient with a common periarticular overusage/strain injury (enthesopathy, tendinitis, tenosynovitis, muscle strain, bursitis)

Describe the specific symptoms and signs and outline an appropriate management plan for a patient presenting with common periarticular syndromes, including epicondylitis; de Quervains tenosynovitis; rotator cuff lesions, subacromial bursitis and impingement; greater trochanter pain syndrome; pre and infra patellar bursitis; Achilles tendinitis and enthesopathy; plantar fasciitis and subcalcaneal bursitis

Describe an appropriate differential diagnosis and plan of investigation of a patient presenting with multiple regional pain

NECK AND BACK PAIN

Classify causes of neck and back pain, including common mechanical, inflammatory, destructive and crush fracture; discuss the contrasting features in the history and examination between the different causes; and specify the major red flags that should lead to investigation for serious pathology.

Describe the symptoms that may result from spondylolisthesis, spondylolysis and canal stenosis.

Outline an appropriate management plan for chronic back pain and for patients with root entrapment.

FIBROMYALGIA

Describe the symptoms and signs and specify criteria for diagnosis of fibromyalgia.

Outline appropriate screening investigations for comorbid treatable conditions.

Outline the prevalence and recognised associations of fibromyalgia, including other functional pain syndromes and psychosocial distress.

Outline the abnormalities of sleep and pain physiology associated with fibromyalgia.

Discuss an appropriate management and rehabilitation plan for a patient with fibromyalgia on the model of Medically Unexplained Symptoms.

JOINT PAIN

Describe the typical presenting symptoms and signs of a patient presenting with joint inflammation and/or joint damage and construct an appropriate differential diagnosis and plan of investigation for a patient presenting with acute monoarthritis, chronic monoarthritis, acute or chronic oligoarthritis and inflammatory polyarthritis

OSTEOARTHRITIS

Describe the symptoms and signs of osteoarthritis and specify the relative prevalence of knee, hip and hand osteoarthritis.

Describe the main risk factors for development and progression of knee, hip and hand osteoarthritis and classify osteoarthritis according to presence of nodes, number of sites involved and presence of associated calcium crystal deposition.

Discuss the correlation between symptoms, disability and structural change of osteoarthritis and specify the major associations of pain.

Describe the pathology and the associated radiographic features of osteoarthritis.

Outline an appropriate management (medical, surgical, rehabilitation) plan for a patient with knee, hip or hand osteoarthritis.

Specify the indications for large joint replacement surgery, outline the procedure for hip and knee total joint replacement and list the complications (and approximate incidence) of hip and knee joint replacement.

CRYSTAL ASSOCIATED ARTHRITIS

Specify the risk factors and target sites for development of gout, calcium pyrophosphate crystal deposition, and calcific periarthritis.

Describe the symptoms, signs, differential diagnosis and appropriate investigation of a patient with acute crystal synovitis (gout, acute calcium pyrophosphate crystal arthritis),; chronic tophaceous gout, and; acute calcific periarthritis.

Outline the pathogenesis and associated radiographic changes of crystalassociated disease.

Outline an appropriate management plan for acute crystalassociated synovitis or periarthritis.

Specify the indications, mechanism of action and sideeffects of uratelowering therapy specify the objectives and monitoring of such treatment.

RHEUMATOID ARTHRITIS

Describe the symptoms, signs and pattern of joint involvement in rheumatoid arthritis and outline appropriate investigations for diagnosis and assessment of rheumatoid arthritis.

Outline the pathology and associated radiographic changes of rheumatoid arthritis.

Describe the clinical features relating to extraarticular rheumatoid disease including vasculitis, Sjogrens syndrome, scleritis, nodulosis, fibrosing alveolitis, pericarditis, peripheral neuropathy, entrapment neuropathy and amyloidosis.

Describe the clinical presentation and assessment of a patient with atlantoaxial subluxation due to rheumatoid arthritis.

Outline an appropriate management plan for a patient with rheumatoid arthritis, including the different options for early and late disease.

SERO-NEGATIVE SPONDYLOARTHRITIS

Discuss the overlapping clinical, pathological and genetic features of the seronegative spondyloarthritides (ankylosing spondylitis, reactive arthritis, psoriatic arthritis and arthropathy associated with inflammatory bowel disease).

Describe the symptoms, signs, pattern of joint involvement, and associated extraarticular features that may occur in patients with seronegative spondyloarthritis.

Describe the pathology and associated radiographic changes of seronegative spondarthritis.

Describe the clinical features relating to associated extraarticular disease in this group including anterior uveitis, mucosal surface inflammation (conjunctivitis, buccal ulceration, urethritis, prostatitis bowel ulceration) pustular skin lesions, nail dystrophy, aortic root fibrosis (aortic incompetence, conduction defects), erythema nodosum.

Outline an appropriate management plan for a patient with seronegative spondarthritis

INFECTION OF LOCOMOTOR TISSUES

Specify the risk factors and common target sites for bacterial infection of joints and bones, and specify the common organisms involved.

Describe the symptoms, signs and appropriate differential diagnosis of a patient with acute or chronic joint or bone sepsis.

Specify the immediate investigation and management of a patient with acute septic arthritis.

Describe the pathology and associated radiographic changes of locomotor sepsis.

Describe the symptoms, signs and investigation of a patient with viral arthropathy.

BONE DISEASE

Define osteoporosis, describe its clinical consequences, and specify the risk factors for its development.

Describe appropriate investigations to confirm and assess osteoporosis.

Outline an appropriate management plan for a person who (1) is at risk of developing osteoporosis, or (2) has established osteoporosis, taking into account the different options according to sex and age.

Define osteomalacia and specify the risk factors for its development.

Outline the clinical presentation, investigation and treatment of a patient presenting with osteomalacia.

Outline the histology and pathogenesis of Pagets disease of bone and list its clinical consequences.

Outline the investigation and treatment of a patient presenting with Pagets disease.

Describe the pathogenesis of (primary) osteonecrosis and specify the risk factors and target sites for its development.

Describe the typical clinical presentation, differential diagnosis and appropriate investigation of a patient with osteonecrosis, and outline a management plan.

FRACTURES

Specify a classification system of fractures based on causation, site, fracture pattern and involvement of adjacent soft tissues.

Specify the risk factors for fracture and outline the mechanisms of fracture repair.

Describe the possible acute and longterm complications of fracture, including severe blood loss, infection, vascular injury, nerve injury, compartment syndromes, articular involvement, failure of normal repair, and algodystrophy.

Describe the relative prevalence, clinical features, associations and complications, investigation, management, rehabilitation and outcome of common adult fractures including Colles fracture, Scaphoid fracture, Femoral neck fracture, Vertebral fracture, Tibial fracture, Ankle fracture

MUSCULOSKELETAL MALIGNANCY

Describe the symptoms, signs, differential diagnosis and investigation of a patient presenting with bone pain due to metastases or multiple myeloma.

Outline the management of a patient with bone pain from bone metastases or myeloma.

Outline the classification, morphology and pathological consequences of primary tumours of bone and soft tissue and describe their clinical presentation

MULTISYSTEM CONNECTIVE TISSUE DISORDERS

Outline the clinical features, underlying pathology and outcomes of systemic lupus erythematosus (SLE) with respect to skin, MSK, renal, heart, lung and CNS involvement.

Outline the investigation and management of a patient presenting with SLE.

Define the antiphospholipid syndrome, describe its main presentations, and outline the investigation and management of this disorder

Describe the clinical features, underlying pathology, and prognosis of diffuse systemic and limited systemic sclerosis.

Describe the clinical features, underlying pathology and prognosis of Sjogrens Syndrome and outline its investigation and management.

Describe the clinical features that require consideration of Idiopathic Inflammatory Myopathies (IIM polymyositis, dermatomyositis, inclusion body myositis) and outline the investigation and management principles for IIM.

Describe the clinical features, investigation and management of Polymyalgia Rheumatica and Giant Cell Arteritis.

Describe the clinical features that require consideration of systemic vasculitis and outline the investigation and management principles for systemic vasculitis.

MISCELLANEOUS MSK DISORDERS

Outline the clinical features, investigation and management of a patient presenting acutely with joint dislocation (shoulder, elbow, finger, hip, knee, ankle).

Specify the causes and describe the clinical and radiographic features of a neuropathic (Charcot) joint.

Describe the clinical features and outline the management of complex regional pain (algodystrophy).

MSK SYSTEM – SKILLS

Perform an examination of the musculoskeletal system to identify and assess presence of joint abnormality (osteoarthritis, inflammatory arthritis, internal derangement), muscle disease and common periarticular syndromes.

Describe the main phases of gait and characterise an abnormal gait in terms of phase of gait and abnormal locomotor characteristics.

Differentiate by patient enquiry and examination common mechanical neck/back pain ( root entrapment), inflammatory back pain, destructive back pain and pain from vertebral fracture.

Identify and assess disability and handicap/disadvantage using the REPAIR screen (Review of pathology & impairment; Environment; Activities; Important other people; Risk and prevention).

Determine a hyperalgesic response to palpation at key tender sites for diagnosis of fibromyalgia.

Determine hypermobility syndrome using a modified 9point Beighton score.

Interpret relevant investigations including synovial fluid analysis, the full blood count, ESR, CRP, autoantibodies (rheumatoid factor, antinuclear antibody), serum uric acid, bone biochemistry, plain radiographs and bone DEXA scan.

Perform a Schirmer tear test.

Apply a broad arm sling, a semirigid cervical collar, and a limb gutter splint.

Apply a plaster of Paris cast to immobilize a limb fracture.

NEUROLOGY

BASIC NEUROANATOMY AND NEUROPHYSIOLOGY

Label the constituent portions of the cerebral cortex, (frontal, parietal, temporal, occipital.)

Draw and label the circle of Willis and its branches

List the cranial nerve nuclei in each constituent part of the brainstem (midbrain, pons, medulla)

Describe the syndromes that would arise from a lesion in; Cerebral hemisphere; Brainstem; Cerebellum; Basal ganglia

Name the location of the causative lesion in; Homonymous hemianopia; Homonymous quadrantanopia; Bitemporal hemianopia; Monocular visual field defect

Describe the location of Brocas and Wernickes areas and explain their function in language

List the causes of dysarthria

Explain the difference between a bulbar and pseudobulbar palsy

List the causes of Horner Syndrome

Describe the clinical difference between upper and lower motor neuron facial weakness

Draw and label a cross section of the spinal cord, with specific reference to spinothalamic pathways, corticospinal tracts and dorsal columns

Describe the clinical syndrome that would arise from; Cord transaction at C3 and at T10; Cord hemisection; Posterior cord lesion

Describe the clinical difference between upper and lower motor neuron limb weakness, with specific reference to findings on inspection, tone, deep tendon reflexes and pattern of weakness

Describe the clinical syndrome that would arise from S1 root lesion; C5 root lesion; Median nerve compression at the carpal tunnel; Ulnar nerve palsy; Peripheral neuropathy; Neuromuscular junction disorders; myopathy

LUMBAR PUNCTURE

Name the main anatomical landmark(s) used in guiding a lumbar puncture, and the coincident level in the spine.

Describe the two different positions a patient may adopt to undergo a lumbar puncture, and advantages of each with respect to ease of success and measuring opening pressure

List the potential complications of a lumbar puncture

List the contraindications to a lumbar puncture

List the acute clinical situations where a lumbar puncture would be indicated.

Explain the term CSF xanthochromia.

Explain the significance of CSF xanthochromia in a sudden onset headache.

List the CSF findings that accompany multiple sclerosis

IMAGING – CT AND MRI

Outline clinical situations where a CT scan of the head is indicated

Explain how the results of a CT scan of the head would influence the management of an acute stroke

Explain the advantages of MRI over CT scan of the head

List the important contraindications to an MRI scan

STATUS EPILEPTICUS

Define status epilepticus and describe initial investigations and components of Management, including airway protection; use of anticonvulsants

SPINAL AND ROOT EMERGENCIES

Describe the clinical presentation of; Acute compression of the cauda equine; Acute lesion of the thoracic cord; L5/S1 root impingement due to disc prolapsed

Describe the management of a suspected cord syndrome

NEUROMUSCULAR EMERGENCIES

Describe the clinical signs which point to neuromuscular ventilatory compromise

Name the bedside respiratory test of most use in monitoring neuromuscular ventilatory function

Describe the findings on arterial blood gas which reflect type II respiratory failure

HEAD INJURIES

After the assessment of airway, breathing, circulation, describe the assessment of a patient with head injury

List the features which reflect severe head injury

EXTRADURAL HAEMORRHAGE

Describe the clinical presentation of an extradural haemorrhage

Describe the acute investigation and management of a suspected extradural haemorrhage

Explain how an extradural haemorrhage arises, including the artery involved.

BASE OF SKULL FRACTURE

Describe the clinical signs present in a fracture of the base of the skull

List the complications of a fracture of the base of the skull

ACUTE HYDROCEPHALUS

Describe the clinical presentation of an acute hydrocephalus

List 3 patient groups most at risk of developing an acute hydrocephalus.

Describe the immediate investigation and management of suspected acute hydrocephalus

MANAGEMENT OF THE SEMI-CONSCIOUS PATIENT

Provide a differential diagnosis of a semi/unconscious patient

Describe the scoring system of the GCS, including the individual grades of each of the three domains

Apply the GCS in the assessment and monitoring of a semiconscious patient

Describe the clinical examination on a semiconscious/unconscious patient, with specific reference to the initial assessment of ABC, and subsequent neurological and cardiological examinations

Describe the investigation of a semi/unconscious patient.

Describe the immediate management of an unconscious patient, including the protection of the patients airway and maintenance of the patients circulatory pressure.

CEREBROVASCULAR DISEASE

Explain the following terms, with specific reference to time course; Stroke; Transient Ischaemic Attack; Amaurosis Fugax

List the irreversible and reversible risk factors leading toward the development of ischemic stroke

Describe the risk factors, clinical presenting features and pathological causes and consequences of ischaemic and haemorrhagic stroke.

List the clinical differences between a stroke which arises from anterior circulation territory and one which arises from posterior circulation territory

Explain the Bamford classification of stroke, describing the prognostic difference between each stroke type.

Describe the acute management of stroke, with particular attention to Examination; Investigations; Consideration or initiation of Antiplatelet therapy, Anticoagulation, Thrombolysis, Blood pressure control, Statin therapy

List Immediate non pharmacological measures in management of stroke such as assessment of swallow, rehabilitative and nursing care.

Outline measures undertaken in secondary stroke prevention

Outline methods of evaluating and managing patients with carotid stenosis

Outline medical and surgical management for TIA.

Outline the commonest causes of disability in people with impaired mobility.

VENOUS SINUS THROMBOSIS

List the risk factors for the development of venous sinus thromboses

Outline the clinical presentation of venous sinus thrombosis and how it differs from the presentation of arterial stroke

SUBARACHNOID HAEMORRHAGE

Describe the clinical presentation of a subarachnoid haemorrhage, with specific reference to features in the history and examination including the rate of onset of symptoms, and signs arising from the event

Describe the vascular abnormalities which may predispose a patient to developing a subarachnoid haemorrhage.

Explain how one may investigate a suspected subarachnoid haemorrhage within the acute setting.

Describe the acute management of the subarachnoid haemorrhage, including referral to the appropriate specialty, and management of electrolytes, glucose and blood pressure.

List the potential complications of a subarachnoid haemorrhage.

SUBDURAL HAEMORRHAGE

List the predisposing factors which make a patient vulnerable to developing subdural haemorrhage

Describe the clinical presentation of a chronic subdural haemorrhage

Describe the CT scan appearance of a subdural haemorrhage, and how it would change with time.

Describe the management of a patient once a subdural haemorrhage is detected, with specific reference to whos advice should be sought.

INTRACEREBRAL HAEMORRHAGE

List the structural lesions and predisposing factors which may predispose toward Deep intracerebral haemorrhage and Lobar cerebral haemorrhage

Describe the clinical presentation of intracerbral haemorrhage, initial investigations and immediate patient management

HEADACHE

Outline the features and management of headaches disorders including Tension Headaches, medication overuse headache, migraine and cluster headaches

Describe features of the clinical presentation of a headache that might raise concern about a more sinister pathology, listing, in each case the relevant differentials and appropriate investigations including headache of Subarachnoid haemorrhage (see stroke/ cerebrovascular disease), Meningitis/Encephalitis (see CNS infection), and Raised Intracranial Pressure

TEMPORAL ARTERITIS

Describe the pertinent epidemiological features of temporal arteritis, including age at presentation and association with other inflammatory conditions

Describe the pathological process involved in temporal arteritis

Describe the clinical features of a headache arising from temporal arteritis

List the clinical investigations employed to confirm a clinical suspicion of temporal arteritis

Describe the management of temporal arteritis

Outline the main complication that arises from untreated or missed temporal arteritis

RAISED INTRA-CRANIAL PRESSURE

List the main causes of raised intracranial pressure

List the features in a headache which reflect a raised intracranial pressure (with reference to variation with posture, coughing, visual symptoms and diurnal variation)

List the pertinent examination findings in raised intracranial pressure

List the potential complications of Acutely raised intracrianial pressure and Chronically raised intracranial pressure

NEURO-ONCOLOGY

Describe the clinical presentation of an intracerebral space occupying neoplastic lesion

Explain the term paraneoplastic syndrome, and describe two paraneoplastic syndromes involving the nervous system

List the three most common adult primary brain tumours and outline their prognosis

List the common somatic tumours which metastasise to the brain

HYDROCEPHALUS

Acute hydrocephalus (see neurological emergencies)

Describe the clinical triad reflective of normal pressure hydrocephalus

CNS INFECTION

Outline the clinical presentation of bacterial meningitis and describe the appearance of the typical rash of meningococcal septicaemia

Describe the common bacterial and viral organisms causing meningitis in adult life

Outline the clinical features of encephalitis and list the common causes

Describe the clinical presentation of an epidural spinal abscess

Describe the pathological changes and complications seen in purulent leptomeningitis, lymphocytic meningitis and granulomatous meningitis.

Discuss the aetiology, diagnosis and management of herpes simplex encephalitis.

List the risk factors which may predispose a patient to TB or fungal meningitis.

Discuss the investigation of a patient with suspected meningitis including indications and contraindications for lumbar puncture. Descrbe the normal CSF constituents and CSF dynamics.

Compare the CSF findings in bacterial, fungal and viral meningitis/encephalitis

Discuss an appropriate antibiotic regimen for treatment of bacterial meningitis

Suggest additional agents which may be added in Suspected viral meningoencephalitis

Outline the longterm complications of bacterial meningitis

EPILEPSY AND LOSS OF CONSCIOUSNESS

Describe the classical features of a generalised seizure.

Outline the clinical types of syncope

Outline the features that distinguish seizures from syncope

Outline a classification of epilepsy and describe the differential diagnosis of epilepsy

Outline the immediate 'first aid' treatment of a patient having a generalised seizure plus the drugs used to control an acute seizure

Describe an appropriate investigation plan for a patient with recurrent syncope

Outline the commonly used antiepileptic drugs.

Describe the current laws dictating epilepsy and driving.

MULTIPLE SCLEROSIS

Describe the pathological lesions of multiple sclerosis, the common sites of involvement in the nervous system and outline the pathogenesis of the disease.

Describe the epidemiological features of MS, with specific reference to gender, age of onset and geographic distribution

List the different clinical patterns of MS and describe the different courses that MS can take. Describe commonly encountered clinical features of MS relapses

List the investigations used in ascertaining a diagnosis in MS. Outline the diagnostic utility of magnetic resonance imaging (MRI), evoked potentials and CSF examination

List the differential diagnoses of MS

Describe the investigation and management of an acute MS relapse

Outline the principles of treatment of immunosuppression; symptomatic management and rehabilitation of spasticity, bladder problems, pain, sensory symptoms, weakness, fatigue and depression

Outline the disease modifying therapies available in MS, and their effect on relapse rate and long term disability.

PARKINSON AND OTHER EXTRA-PYRAMIDAL PATHOLOGY

Describe and recognize the clinical triad of parkinsonism

Outline the pathological basis of classical Parkinsons disease and describe the common clinical features

List nonmotor features of Parkinson disease, with specific reference to disorders of sleep, mood and cognition

Outline less common causes of Parkinsonism including drugs and the Parkinsonplus syndromes

Outline commonly used drugs to treat Parkinson's disease and their common adverse effects

DEMENTIA

Provide a definition of dementia

List the main clinical features of dementia including memory loss and global intellectual deterioration and relate these to different lobes of the cerebral hemisphere.

Classify dementia according to cause

Describe the difference between dementia and delirium

List the potentially treatable causes of cognitive decline. Outline an investigation plan to exclude a treatable cause of dementia

Perform and interpret a minimental state examination on a patient

Describe the management of dementia, with particular reference to the multidisciplinary approach and (where appropriate) control of risk factors

Describe the pharmacological management of Alzheimer disease

MOTOR NEURON DISEASE

Describe the clinical presentation of MND

Describe the 2 commonest manifestations of MND leading to death

NEUROPATHY

List the common causes of peripheral nerve damage and classify peripheral neuropathy into demyelinating and axonal types

Outline the main clinical patterns of peripheral nerve damage, and describe typical findings on examination.

Discuss the diagnosis of the likely cause of peripheral neuropathy using relevant aspects of history, examination, electrophysiological and laboratory investigation.

Discuss the clinical presentation, diagnosis and management of GuillainBarre syndrome.

Discuss the clinical features and management of shingles

NEUROMUSCULAR JUNCTION DISORDERS

Describe the clinical presentation of myasthenia gravis and outline the immunological basis of disease

MYOPATHIES

Describe the nature of primary diseases of muscle

Outline the pathology and causation of the main muscular diseases

Outline basic investigations that may be performed in the investigation of a suspected myopathy.

Outline the assessment investigation and differential diagnosis of a patient with muscle weakness distinguishing between neurogenic and myopathic causes

Outline the management of a patient with impaired motor function.

NEUROLOGY SKILLS

Perform an examination of the cranial nerves, detect and interpret abnormalities

Perform an examination of the peripheral nervous system detect and interpret abnormalities

Examine the scalp and temporal arteries of a patient with headache

Assess a patients level of consciousness using Glasgow Coma Scale

Complete a neurological assessment to determine the brain region affected by a stroke

Demonstrate assessment of the swallowing reflex.

Perform a minimental test score to determine intellectual function.

Perform simple bedside tests to examine memory and cognitive function

Interpret results from CSF laboratory investigations

PALLIATIVE MEDICINE

Define supportive palliative care and specialist palliative care. Describe the role and contributions of the individual members of the multidisciplinary team. Describe services commonly available in the UK.

Discuss the importance of communication skills in palliative care.

Discuss the various psychological responses of patients and their relatives to illness and bereavement. Reflect upon their own and other professionals attitudes and responses to death and dying.

Discuss the aetiology of pain in patients with cancer. Discuss an approach to relieving cancer pain that takes into account diagnosis, different types of pain and range of treatments available, monitoring response and psychological factors that influence pain.

Demonstrate appropriate communication skills that facilitate a therapeutic relationship for both the patient and themselves.

Take a pain history, including the use of a pain chart and pain scores.

Apply the World Health Organisation analgesic stepladder.

PRIMARY CARE

THE STUDENT AS A SCHOLAR

Describe the main health promotion and disease prevention activities in primary care

Formulate an appropriate management plan for the common conditions seen in primary care

Discuss the main requirements for effective palliative care in primary care

State and apply the principles of chronic disease management to one of the following Coronary Heart Disease, Congestive Cardiac Failure, Hypertension, Stroke/TIA, Asthma/COPD, Epilepsy, Mental health (recurrent depression), Neurodegenerative diseases such as Parkinsons and Alzheimers disease.

Describe the structure of NHS and the different methods in which primary care is delivered

Apply the principles of public health in primary care

STUDENT AS A PRACTITIONER

Carry out a consultation with a patient and formulate a management plan using a consultation model Taking an appropriate history and examination Identifying why the patient attended Identifying the most likely diagnosis Formulating a relevant primary care management plan Providing an understandable explanation to the patients Making an adequate record and completing the administration associated with the consultation (e.g. referral letters, prescription)

Communicate effectively with patients and colleagues, especially in challenging circumstances, such as breaking bad news, dealing with aggressive patients

Support patients in caring for themselves in the context of minor and chronic illness

Contribute to care of patients and their families at the end of life

Use information effectively in a medical context, including effective written communication and effective use of computer and other information systems

Carry out practical procedures appropriate to primary care safely and effectively

STUDENT AS A PROFESSIONAL

Analyse ethical problems that present in primary care and justify the decisions that are made in terms of the ethical principles and Good Medical Practice

Apply principles of continuing professional development devise your own learning objectives for the attachment, based on your current learning needs and previous knowledge and experience

Analyse and reflect on their own and others consultation skills

Demonstrate understanding and respect for the roles and relationships between members of the Primary health care team e.g. the practice nurse, health visitor, district nurse, midwife and practice administrative staff in the context of working as a multiprofessional team

Demonstrate understanding and apply the principle of clinical governance to improve patient care

Respond constructively to the outcomes of appraisals and assessments

Outline the training required to become a GP and the range of possible career options in general practice

The student should continue to behave according to ethical and legal principles. By the end of the attachment the student should be able to demonstrate A caring and responsible professional attitude; Respect for patients and health care staff; Integrity and honesty (probity); Interest and enthusiasm

RADIOLOGY

Demonstrate some practical knowledge of routine radiological procedures and how images are generated by xray, ultrasound, computed tomography (CT) and magnetic resonance imaging (MRI).

THE CHEST XRAY

Describe demographics including labelling, markers and annotation

Describe technical factors including rotation, inflation, projection (AP/PA, lateral), adequacy of field of view

Describe the heart (size, shape contour)

Demonstrate assessment of the hila and mediastinum

Demonstrate systematic assessment of the lung parenchyma

Review areas including the skeleton

Describe the methods of interpretation by which disease processes can be localised on the chest Xray to include Parenchymal, Pleural, Mediastina, Vascular, Thoracic cage/Skeletal, Extrathoracic, Softtissues

Recognise and describe the radiological appearances of Cardiac failure

Recognise and describe the radiological appearances of lobar collapse

Recognise and describe the radiological appearances of bronchiectasis

Recognise and describe the radiological appearances of consolidation (including pathophysiology)

Recognise and describe the radiological appearances of COPD

Recognise and describe the radiological appearances of interstitial lung disease

Recognise and describe the radiological appearances of space occupying single or multiple masses (including differential)

Recognise and describe the radiological appearances of pleural effusion

Recognise and describe the radiological appearances of pneumothorax

Recognise and describe the radiological appearances of empyema

Recognise and describe the radiological appearances of mediastinal masses

Recognise and describe the radiological appearances of thromboembolic disease

Recognise and describe the radiological appearances of lesions in the thoracic cage

Recognise and describe the radiological appearances of extrathoracic lesions in softtissues, recognise mastectomy and softtissue masses

Discuss the most appropriate further investigation following an abnormality seen on chest Xray

THE ABDOMINAL XRAY

Describe the techniques relevant for obtaining abdominal xrays on a patient including position AXR supine / erect CXR erect AX decubitus and contrast generation

Discuss the localisation of disease processes as identified by the plain abdominal xray including Intraperitoneal, Retroperitoneal, Hollow viscus (stomach, small bowel, large bowel, gallbladder bile ducts, bladder, ureters) Solid organs (liver, spleen, kidneys, adrenals, pancreas, ovarian, uterine, prostate), Vascular (aorta branches, IVC tributaries, portal venous system), Skeletal, Abdominal wall

Recognise and describe the radiological appearances of Intraperitoneal free gas, free fluid

Recognise and describe the radiological appearances of retroperitoneal mass lesions

Recognise and describe the radiological appearances of the normal stomach

Recognise and describe the radiological appearances of small bowel obstruction

Recognise and describe the radiological appearances of large bowel obstruction

Recognise and describe the radiological appearances of gall bladder, bile ducts, calculi

Recognise and describe the radiological appearances of bladder, ureters, calculi

Recognise and describe the radiological appearances of liver enlargement

Recognise and describe the radiological appearances of spleen enlargement

Recognise and describe the radiological appearances of kidneys enlargement, calculi

Recognise and describe the radiological appearances of adrenals calcification

Recognise and describe the radiological appearances of pancreas calcification

Recognise and describe the radiological appearances of ovarian calcification

Recognise and describe the radiological appearances of uterine calcification

Recognise and describe the radiological appearances of prostate calcification

Recognise and describe the radiological appearances of Vascular structures (aorta branches, calcification, dilatation, IVC tributariesm portal venous system

Recognise and describe the radiological appearances of skeletal abnormalities

Recognise and describe the radiological appearances of abdominal wall lesions

Discuss the most appropriate further investigation following the abdominal Xray

ROUTINE RADIOLOGICAL PROCEDURES

Describe the indications/contraindications of radiation exposure/ radiation protection theory, preparation, consent, how performed, patient stress, degree of invasion experienced by the patient.

Describe the indications/contraindications of aftercare of commonly used radiological techniques including post biopsy observation

Describe the indications/contraindications of chest imaging CXR, CT chest

Describe the indications/contraindications of abdomen imaging (AXR, US, CT barium studiesswallow/meal/small bowel study/enema)

Describe the indications/contraindications of IVU

Describe the indications/contraindications of ERCP

Describe the indications/contraindications of angiogram

Describe the indications/contraindications of venogram

Describe the indications/contraindications of neurological radiology (head CT MRI)

RENAL MEDICINE

RENAL FAILURE

Describe the normal functions of the kidneys. Classify renal failure into prerenal, renal and postrenal causes, outlining the pathology of the common diseases that may cause each type.

ACUTE RENAL FAILURE

Describe the clinical features of ARF and the concept and causes of Acute Kidney Injury (AKI) leading to ARF

Discuss the associated electrolyte abnormalities and describe the management of life threatening hyperkalaemia.

Describe the assessment of a patient with renal failure including fluid balance

Outline the investigation of a patient with acute renal failure. Outline the principles of treatment. Outline the indications for referral for a specialist opinion/renal replacement therapy.

CHRONIC KIDNEY DISEASE

Describe the clinical features associated with chronic renal failure.

Discuss the possible physical signs and investigation of a patient with chronic renal failure.

List and outline the pathology of the common causes of chronic renal failure.

Describe the assessment of CKD using estimated glomerular filtration rate (eGFR) and the five stages of CKD.

Describe the morphology and pathological consequences of pyelonephritis, interstitial nephritis, polycystic kidney disease, hypertensive renal damage and obstructive uropathy to the kidney.

Discuss the effect of chronic renal failure on blood and bone based on disturbance of normal renal function. Outline the treatment options and discuss the indications for dialysis. Outline the options for anaemia management and the principles of managing renal bone disease

Outline the different forms of renal replacement therapy.

Describe the effect of declining renal function on drug clearance and discuss the need to adjust doses according to British National Formulary (BNF) guidelines.

NEPHROTIC SYNDROME

Define the nephrotic syndrome and describe its relationship to conditions causing abnormal proteinuria

List the three main primary renal causes and outline briefly the key pathological features.

List secondary causes and outline investigations necessary to confirm the diagnosis

Outline the investigation necessary to confirm the diagnosis.

Outline the treatment including the need for diuretics and a lowsalt diet.

GLOMERULONEPHRITIS

Describe the clinical presentation of glomerulonephritis.

Outline the main pathological processes affecting the glomerulus.

Outline the investigation necessary to confirm the diagnosis and outline the treatment options including the role of immunosuppressive therapy for some forms of GN.

UPPER URINARY TRACT INFECTION

Describe the pathological features and complications of acute and chronic pyelonephritis

Describe the symptoms and signs of urinary tract infection including the factors that may predispose to urinary tract infection.

Describe the investigation of a patient with a suspected infection

Discuss the general treatment measures and suitable antibiotic regimens for treatment.

OBSTRUCTIVE AND NEOPLASTIC CONDITIONS OF THE URINARY TRACT

Describe the causes, symptoms and signs of acute and chronic ureteric obstruction and discuss their management.

Discuss the aetiology and presentation of calculi in the kidney and ureter. Describe how renal stones are treated including use of nonoperative methods of treatment.

Describe the presenting clinical features of renal cell carcinoma, Wilm's tumour, transitional cell carcinoma or the renal pelvis and renal cysts. Outline the natural history of each together with the main options used in management.

THE BLADDER AND PROSTATE

Discuss the management of trauma to the bladder (both accidental and surgical).

Describe the diagnosis and management of bladder calculi.

Describe the pathology, clinical presenting features, diagnosis, management and followup of transitional cell carcinoma of the bladder.

Discuss outlet obstruction of the bladder and list the main causes including mechanical and neurological causes.

Describe the clinical presenting features, diagnosis and management of benign prostatic hyperplasia and outline possible complications.

Discuss the diagnosis of bladder infection outlining the importance of confirming significant bacteriuria (>100,000 organisms/ml) and the importance of white cells in the urine.

Discuss the management of bladder infections.

Discuss the clinical presenting features, staging, pathology, natural history and clinical management of carcinoma of the prostate including a description of hormonal manipulation.

THE URETHRA, PENIS AND SCROTUM

Discuss the clinical presenting features, diagnosis and management of urethritis and the urethral syndrome. Discuss clinical implications for those causes which can be sexually transmitted..

Outline the management of trauma to the urethra.

Describe the aetiology, clinical presenting features and management of a urethral stricture.

Describe the pathology, presentation and management of phimosis, paraphimosis; priapism; Peyronie's disease; carcinoma of the penis; varicocoele, hydrocoele, epididymal cyst

Outline the cause of nondescent and maldescent of the testis, the risks of this condition and its management.

Discuss the pathology, clinical presenting features, diagnosis and management of torsion of the testis and epididymoorchitis.

Outline the pathological classification of the common tumours of the testis and their biological behaviour. Outline the investigation and management of seminoma and teratoma of the testis.

Outline the causes of male erectile dysfunction, list screening investigations, and list the available treatments

KIDNEY TRANSPLANTATION

Outline the indications for transplantation in patients with chronic renal failure.

Outline the complications of this procedure and the need for immunosuppressive therapy following surgery.

Outline the moral and ethical issues associated with renal transplantation.

RESPIRATORY MEDICINE

ASTHMA

Define the classical features of asthma and outline common precipitants

Discuss the importance of identifying occupational asthma.

Classify asthma and discuss the characteristics of a typical patient who is likely to present with each type.

Describe the morphology and pathological consequences of asthma.

Describe the clinical features of acute asthma and the blood gas abnormalities associated with acute severe asthma.

List and recognise clinical indices of asthma severity.

Describe the stepped approach to treatment of an acute asthma attack and create a management plan for a patient presenting with acute asthma

Describe the mechanisms of actions of the main drugs used to treat asthma

COPD

Define the term chronic obstructive pulmonary disease (COPD) and describe the pathology underlying COPD, list recognised risk factors

Describe the typical history of a patient with COPD including complications and clinical features of acute presentations

Describe a management plan for patients with stable COPD and those who present with an acute complication of COPD

Describe and interpret relevant investigations in a patient with suspected COPD

Discuss smoking cessation methods

Discuss the importance of monitored oxygen therapy in treatment and the indications for assisted ventilation, outlining how this is undertaken.

BRONCHIECTASIS

Describe the typical history of a patient with bronchiectasis and describe how it differs from COPD

List recognised risk factors and outline the morphology and pathological consequences of bronchiectasis

Outline the investigations of a patient with suspected bronchiectasis and discuss treatment with postural drainage and physiotherapy and antibiotics for infective exacerbation.

CYSTIC FIBROSIS

Describe the clinical presentation of a patient with cystic fibrosis with respect to disease of the lung and pancreas; and describe its inheritance.

Describe pathological changes in the lungs and the natural history of disease in a typical patient

Outline the nonrespiratory manifestations of cystic fibrosis

List the usual organisms causing lung infection.

Describe the main principles of treatment including physiotherapy, antibiotics, pancreatic enzymes DNAse, and lung transplantation.

PNEUMONIA

Describe the typical presentation of a patient with a communityacquired pneumonia and the features that identify severe pneumonia. Describe the role of CURB65 as a risk prediction tool. List the common pathogens causing communityacquired and hospitalacquired pneumonia and outline predisposing factors

Describe the pathology of acute lobar pneumonia and bronchopneumonia.

Describe the investigation of a patient presenting with a communityacquired pneumonia and interpret investigations

Describe the complications of pneumonia including systemic sepsis,, lung abscess and empyema.

Create a treatment plan including specification of observations, general supportive measures, appropriate antibiotic regimens, analgesia and physiotherapy.

Outline clinical management during recovery, emphasising the need for radiological followup until the consolidation has cleared.

TUBERCULOSIS

Describe the process of infection by the tubercle bacillus together with the route of spread and discuss the presentation of postprimary tuberculosis from reactivation of infection. Outline common predisposing factors and outline the principles of treatment of confirmed cases and the principles of contact tracing

Outline the investigation of a patient with suspected TB

List the common sites of nonpulmonary TB infection and outline the pathological features

Describe in broad outline treatment changes between 1930 and 1970 and the implications of this for current treatment.

Describe the global picture of TB, its relation to the AIDS epidemic and the causes and consequences of multidrug resistant tuberculosis

PNEUMOTHORAX

Describe its typical clinical presentation and the recognised risk factors together with the underlying pathology and investigations.

Distinguish between simple and tension pneumothorax including features that aid in recognition of critically ill patients presenting with a tension pneumothorax

Describe treatment options including chest aspiration or intercostal underwater chest drain

Outline the indications for surgical pleurectomy and pleurodesis

Describe the emergency treatment of a tension pneumothorax

LUNG CANCER

Outline the major pathological classification of lung cancers and their prognosis

Outline the epidemiology of lung cancer in developed countries.

Describe the common clinical presentation and risk factors

List relevant investigation for lung cancer and interpret results

Outline local metastatic manifestations of lung cancer and describe systemic nonmetastatic manifestations.

Outline the treatment options for a patient with confirmed lung cancer.

PLEURAL EFFUSION

Classify causes of a pleural effusion including infective, neoplastic, metabolic, and cardiac causes.

Describe the typical examination features of a pleural effusion and describe the aetiology and clinical features of an empyema.

Obtain a relevant history from a patient with a pleural effusion.

Discuss the investigation of a unilateral pleural effusion

Discuss the management of pleural effusion and empyema.

FIBROSING ALVEOLITIS

Describe the clinical and pathological features of interstitial lung disease. Outline the common causes and list the differential diagnosis in patients who present with established pulmonary interstitial fibrosis

Outline the investigations and treatment options for a patient with suspected interstitial lung disease

EXTRINSIC ALLERGIC ALVEOLITIS

Outline the nature of the allergic reaction underlying EAA and how this is used to establish the diagnosis.

Describe the typical clinical presentation and list common causes.

Outline the pathological consequences of repeated allergen exposure.

Outline the treatment options and monitoring of treatment response

OCCUPATIONAL LUNG DISEASE

Describe the clinical features of the main conditions associated with asbestos inhalation.

Describe the natural history of pleural plaques, mesothelioma and asbestosis

Discuss the effect of inhalation of coal dust on lung function and its relation to pneumoconiosis.

Describe the pathology of simple and complicated coal workers pneumoconiosis.

Demonstrate awareness that patients exposed to coal and asbestos can obtain industrial compensation

Demonstrate awareness that that asthma can be due to occupational factors (see Asthma).

OBSTRUCTIVE SLEEP APNOEA

Outline the clinical presentation of a patient with OSA, describe the use of sleep studies in its investigation and outline the principles of treatment.

RESPIRATORY FAILURE

Distinguish type2 from type1 respiratory failure and describe the implications of having a high arterial pCO2.

Distinguish between acute and chronic type II respiratory failure and respiratory and metabolic causes of acidosis.

Describe the causes of ventilatory failure and outline the effect of chest wall and spinal deformity on respiratory function.

Outline the conditions that may cause ventillatory failure due to neuromuscular disease.

Outline the treatment for acute ventilatory failure

RESPIRATORY SYSTEM – GENERAL SKILLS

Perform an examination of the respiratory system, including mechanical/anatomical observations

Request and interpret relevant basic investigations including chest xray, blood gases and spirometry

Interpret more advanced investigations

Show a patient how to use a metered dose inhaler, dry powder inhaler and spacer device.

Attend a bronchoscopy in order to be able to explain the procedure to a patient

Demonstrate how a ventimask works

Provide basic smoking cessation counselling and advice on nicotine replacement therapy

Describe the key communication skills that underpin how a diagnosis of lung cancer should be given to a patient.

Observe or assist in inserting a chest drain

SURGICAL ATTACHMENT

THEATRE ROUTINE

Demonstrate an understanding of operating theatre routine through adherence to the prescribed rules of conduct and dress.

Demonstrate the proper technique for surgical scrubbing, gowning and gloving in the operating room, assisted and unassisted.

Demonstrate knowledge of aseptic technique and discuss the microbiological principles involved.

Identify areas that are considered part of the sterile operative field.

Demonstrate the ability to function as an assistant in the operating theatre.

Define the classifications of operative procedures with reference to their potential for infectious complications (clean, potentially contaminated, contaminated and dirty); discuss the importance of this classification system.

PRE-OPERATIVE EVALUATION

Describe the optimal preoperative evaluation of a patient including clear documentation to include important identifying data about the patient; diagnosis and proposed operative procedure; a brief outline of the cardiac and respiratory examination; a list of existing potentially complicating medical factors; an outline of the results of relevant laboratory or diagnostic procedures; indication of informed consent by the patient; indication that the patient has been advised of the nature of the procedure; expected benefits and possible risks; anticipates need for high dependency or intensive care postoperation; understands the principles of discharge planning

OPERATIVE AND POST-OPERATIVE RECORDS

Demonstrate an understanding of a surgical procedure by documenting brief operative notes (detail in hard copy)

Describe the immediate postoperative care of the surgical patient by documenting a concise management plan (detail in hard copy)

Describe the typical arrangements for a cancer centre MDT meeting and attend a cancer centre MDT meeting for at least two tumour sites

MISCELLANEOUS SKILLS

Describe and perform the proper technique for intramuscular and intravenous injections; discuss potential complications of the procedure.

Describe the indications for proctoscopy and sigmoidoscopy.

Describe the indications for tube thoracotomy and list the necessary steps in performing this procedure.

List the indications and contraindications for peritoneal lavage; describe the characteristics of a positive or negative lavage in a patient who has sustained trauma.

Describe the use of FAST (focused assessment with sonography for trauma) in trauma.

Indicate the sites for central venous access.

Under supervision, perform a simple incision and drainage of a soft tissue abscess of the skin or a perianal area.

Perform the routine care of an 'ostomy' including cleaning, preparing the site and applying an appropriate external appliance.

URETHRAL CATHETERISATION

Demonstrate the ability to insert a urethral catheter in a male and female patient.

List the indications and contraindications for the passage of a urethral catheter

By performing the requisite tasks and outlining them in written orders, demonstrate knowledge of the daily catheter care and maintenance necessary for preventing stricture formation and retrograde infection.

List the alternatives for bladder drainage when urethral catheterisation is contraindicated including suprapubic catheterisation or ultrasound guided drainage.

List and recognise the complications associated with urethral catheterisation including but not necessarily limited to urethral tear, false passage, retrograde infection and stricture formation; indicate the steps necessary to minimise these risks.

Demonstrate proper technique for sampling urine (for routine urinalysis and culture) through a catheter or spontaneously voided specimen.

WOUND DRAINS

Discuss the differences between closed suction and open drains.

Outline the indications for drain placement, advancement and removal.

Discuss the potential complications associated with wound drains and outline the steps taken to prevent them.

Describe the appropriate care and management of a surgical drain.

Advance and remove surgical drains, including would drains, sump drains, nasogastric tubes and urethral catheters under supervision

VASCULAR CATHETERISATION

Outline the indications for the insertion of central venous catheters, SwanGanz catheters and arterial catheters.

Describe the indications for arterial catheterisation and describe the necessary evaluation of a patient's circulatory status prior to catheterisation (eg Allens test).

List the complications associated with vascular catheterisation and discuss the emergency management of each.

Describe the routine care of central venous lines.

Demonstrate the ability to insert intravenous catheters (Venflons and butterflies).

Assist in the insertion of a central venous or SwanGanz catheter.

BLOOD SAMPLING

Perform venepuncture for blood sampling.

Demonstrate the ability to sample arterial blood by performing arterial puncture.

Interpret blood gas analyser results from a patient with metabolic acidosis; metabolic alkalosis; respiratory acidosis; respiratory alkalosis

Describe, identify and manage complications secondary to venepuncture or arterial puncture.

WOUNDS AND WOUND HEALING

Demonstrate the ability to use aseptic techniques.

Examine a postoperative wound to determine whether infection is present.

Demonstrate an understanding of the principles of wound closure by performing sterile preparation and draping of the wounded area.; administration of an appropriate local anaesthetic agent; reapproximation of the skin edge with suture, clips, staples or adhesive strips as appropriate; coverage of the wound with a dressing and bandage when appropriate

Assess a wound for signs of infection, attending to local heat, erythema and excessive pain and outline the management of an infected surgical wound.

Tie a twohanded knot in suture and demonstrate an instrument tie.

Remove skin sutures, skin clips or staples without trauma.

Excise a simple skin lesion and reapproximate the skin edges.

Recognise the various phases of wound healing by evaluating the surgical and traumatic wound.

Recognise the appearance of a wound that has healed by epithelialisation.

Identify normal granulation tissue in a wound and describe its significance in terms of epithelialisation and defence against contamination.

Recognise infected granulation tissue and discuss its clinical significance.

Recognise and differentiate wounds that have resulted in loss of tissue and those that have not.

Recognise and differentiate traumatic wounds that can be safely closed primarily and those that cannot.

Describe the important components of abdominal wound closure to avoid dehiscence and herniation.

Describe the functions of a dressing and demonstrate them on actual wounds including assurance of cleanliness; environmental control; reduction of oedema; elimination of space.; tissue immobilisation; minimisation of scar formation; enhancement of epithelialisation

Describe the special considerations necessary for dressing and bandaging wounds citing circumstances where it is necessary to protect the wound from the patient.

Identify the development of inflammatory changes in a wound and around a suture.

FLUIDS AND ELECTROLYTES

Prescribe routine postoperative fluids.

Prescribe maintenance IV fluids.

Prescribe IV fluids for a patient with pancreatic fistula; gastric fistula; small bowel fistula; biliary fistula

Demonstrate through discussion understanding of the importance of the 'aqueous environment' in body composition, the distribution of fluids and electrolytes in the body compartments, and the role of the kidney in regulating fluid and electrolyte balance.

List the physiological limits of normal blood gases.

List the electrolyte values in serum

Given a patient's weight, calculate the extracellular, intracellular and intravascular volume.

Calculate sensible and insensible fluid and electrolyte losses in routine postoperative care.

Calculate sensible and insensible fluid and electrolyte losses in a febrile patient (Temp 40C).

List the main endogenous factors that affect renal control of sodium and water excretion.

Write postoperative fluid orders for an unstressed, uncomplicated 70kg patient who has had a gastric procedure.

List the symptoms and physical findings of dehydration.

List the electrolyte composition of the following solutions Normal saline (0.9); Ringers lactate; 5 dextrose in water; Dextrose saline (0.18); Albumin solution

Describe the common fluid and electrolyte and acid base abnormalities in patients with the following problems excessive gastric losses; high volume pancreatic fistula; jejunal fistula; ileal fistula; bile fistula; diarrhoea; closed head injury; hypovolaemic shock due to GI blood loss or major trauma

Describe the commonly observed serum and urinary electrolytes and osmolality in patients with the following conditions acute renal tubular necrosis; dehydration; inappropriate ADH secretion; diabetes insipidus; congestive cardiac failure.

SHOCK

Define shock.

List the types of shock and the causes for each type of shock.

Contrast the effects of each category of shock on the heart, kidney, brain, lung, gut, immune system.

List the clinical findings that characterise each kind of shock.

Name and briefly describe the monitoring techniques that help in the diagnosis and management of shock.

For each type of shock outline the general principles of fluid, pharmacological and surgical management as appropriate.

Given a patient with shock, interpret the cardiac output, central venous pressure, left atrial (wedge) pressure, blood pressure pulse and urine output and, using these values determine the category of shock.

Recognise and initiate appropriate treatment for the following hypoxia, oliguria, hypotension

In an exsanguinating patient who has received a massive blood transfusion, identify the acute aetiological factors that may be responsible for the bleeding disorder.

SURGICAL BLEEDING DISORDERS

List the major congenital and acquired bleeding disorders and outline their definitive treatment.

List questions that would identify potential bleeding disorders when taking a medical history.

List physical findings that may suggest the presence of a bleeding disorder.

List the laboratory tests that would be helpful in the diagnosis of disorders listed in 1.

Name the common surgical conditions leading to disseminated intravascular coagulation (DIC).

SURGICAL INFECTION AND ANTIBIOTICS

List the factors that contribute to infection following a surgical procedure.

Discuss the different types of skin disinfectants used in theatres and surgical wards.

List the types of surgical infections.

Discuss the principles underlying the use of prophylactic antibiotics in surgery.

Describe the diagnostic features and treatment of common skin infections

Describe common hand infections and discuss the treatment of each.

Describe the clinical features and treatment of anaerobic and synergistic gangrene

List the causes of postoperative fever and discuss the diagnostic steps for evaluation

Describe the indications and methods for providing routine and reverse isolation.

Describe the basis on which antibiotics are chosen for varying infections.

Describe the diagnostic evaluation of an intraabdominal abscess.

Describe the steps in the drainage and culture of a superficial subcutaneous abscess.

BREAST

Identify and describe the major types of breast lump (fibroadenoma, fibroadenosis, cyst, carcinoma). Outline the natural history of benign and malignant breast neoplasms. Present a classification of the main types of carcinoma of the breast.

Describe the aetiology, morphology and pathological consequences of carcinoma of the breast.

List the risk factors for carcinoma of the breast.

Describe the diagnosis of a breast lump, including cytology, mammography and biopsy (trucut and open).

Describe the treatment of fibroadenoma, fibroadenosis and cyst.

Describe the clinical staging of breast carcinoma.

List and discuss the treatment options for breast cancer.

Describe the rationale for adjuvant chemotherapy, radiotherapy and hormonal therapy in the treatment of breast cancer.

Outline the current results (survival and recurrence rates) of treated breast cancer according to clinical stage.

Outline a diagnosis and therapy plan for nipple discharge and a breast mass.

Define a treatment plan for local recurrence and metastatic breast cancer.

In a patient with breast carcinoma, clinically stage the disease.

OVERDOSE/TOXICOLOGY

Outline the general principles in the assessment and treatment of a patient who has taken an overdose.

Describe the clinical features, investigation and treatment of alcohol intoxication.

Describe the clinical features, investigation and treatment of paracetamol overdose including the importance of monitoring of hepatic and renal function.

Describe the clinical features and management principles of other overdoses that present commonly to the Emergency Department, including tricyclic antidepressants, benzodiazepines, opiates, cocaine and aspirin.

List the antidotes available to treat specific poisons, eg nacetylcysteine for paracetamol, naloxone for opiates, flumazenil for benzodiazepines, glucagons for betablockers, sodium bicarbonate for tricyclic antidepressants

Describe the function of the National Poisons Information Services

Describe the features suggesting a high risk of suicide in a patients presenting with self harm or overdose.

VASCULAR MEDICINE AND SURGERY

HYPERTENSION

Outline the difficulties of defining hypertension and outline the levels of blood pressure defined as normal, borderline or raised including the need to confirm with a minimum of three measurements.

Describe the features of 'accelerated phase' or 'malignant' hypertension, discuss differential diagnosis of hypertension and causes of secondary hypertension. Describe pathological consequences of hypertension as they affect the cardiovascular, cerebrovascular and renal systems.

Discuss common investigations to exclude a secondary cause of hypertension and outline the common groups of drugs used to treat hypertension including indications, contraindications, side effects and rational combinations of drugs

HYPERLIPIDAEMIA

Outline epidemiological links between cholesterol and cardiovascular risk.

Discuss the evidence and indications for using lipidlowering drugs in the prevention of cardiovascular disease, together with their side effects

ANEURYSMS

Describe the common sites and relative incidence of atherosclerotic arterial aneurysms; list the symptoms, signs and differential diagnosis of a ruptured abdominal aortic aneurysm and outline an emergency management plan

Discuss the methods available for treating abdominal and thoracic aortic aneurysms and discuss the indications, contraindications and risk factors for surgery in patients with an abdominal aortic aneurysm

Describe the presentation, complications and treatment of popliteal aneurysm.

Describe the pathophysiology of arterial dissection and outline clinical presentation, medical and surgical treatment, complications and causes of death.

Differentiate true and false aneurysm

CHRONIC PERIPHERAL ARTERIAL OCCLUSIVE DISEASE

List the clinical manifestations of chronic peripheral arterial occlusive disease and describe its investigation and management.

Differentiate symptoms of ischaemic rest pain and neuropathy as a cause of foot pain and contrast gangrene in diabetic and nondiabetic patients.

Describe the pathophysiology of intermittent claudication; differentiate claudication from other causes of leg pain.

List criteria to help differentiate leg ulcers.

Describe the radiological and surgical treatment choices for patients with occlusive arterial disease according to affected vessel.

Describe the symptoms, signs, investigations, differential diagnosis and treatment of chronic mesenteric vascular occlusive disease

Describe the clinical presentation, investigation and management of renal artery stenosis.

List the surgically or radiologically curable causes of hypertension.

ACUTE ARTERIAL OCCLUSIVE DISEASE

Describe the causes, symptoms, signs and initial management of acute arterial occlusion. Differentiate symptoms and signs of acute arterial from acute venous occlusion. Differentiate embolic and thrombotic occlusion. Describe the natural history of treated and untreated acute arterial occlusion.

Contrast the indications for surgical and medical treatment of acute arterial occlusion.

AMPUTATION

List the types of amputation of the lower limb and contrast their rehabilitation potential

List the indications for amputation and discuss the selection of amputation site.

Outline the rehabilitation of a patient with a below or aboveknee amputation.

VASOSPASTIC DISORDERS

List the underlying diseases or disorders associated with vasospastic changes in the extremities.

Specify and explain the defining clinical characteristics of Raynauds disease or phenomenon.

List the clinical and investigational features that may distinguish primary from secondary Raynauds disease.

List the laboratory investigations used to assess vasospastic disorders and describe the medical and surgical approaches.

Describe anatomical mechanisms responsible for producing thoracic outlet compression syndromes and list the investigations for thoracic outlet syndrome. Describe the surgical principles for its correction.

VASCULAR TRAUMA

In a patient with recent trauma, outline the physical findings and diagnostic plan for suspected arterial injury together with indications for radiological investigation in the extremities.

Differentiate the pathophysiology, findings and treatment in common types of arterial injury.

VENOUS DISEASE

Outline normal venous physiology and describe the roles of superficial, deep and perforating veins and venous valves.

Recognise varicose veins and describe their anatomical distribution and potential complications.

Describe the use of different investigations in diagnosing venous disease and be aware that the Trendelenburg test is no longer a recognised method.

Outline the management of a venous ulcer.

Outline the management of varicose veins including indications for surgery.

Describe the treatments available to patients with venous disease

LYMPHATIC DISORDERS

Define lymphoedema.

Differentiate primary from secondary lymphoedema and explain the pathophysiology and treatment of lymphoedema

DIAGNOSTIC RADIOLOGY IN VASCULAR DISEASE

Describe the indications for Magnetic resonance angiography, Duplex ultrasound, CT angiography and invasive investigations of the arterial and venous system and list the common insertion sites for arterial catheter studies.

List the risks and complications of angiographic studies and describe their management.

Define and discuss transluminal angioplasty as used in coronary, visceral and peripheral vascular arterial beds. List the indications for pulmonary arteriography.

SKILLS IN VASCULAR MEDICINE AND SURGERY

Measure blood pressure using a correct cuff size and interpretation of the Korotkov sounds.

Discuss a diagnosis of hypertension with a patient in lay terms.

Interpret an ECG.

Test a urine sample for blood and protein using a standard test strip

Demonstrate the site for palpation of all peripheral pulses and determine whether they are present or absent

Given a patient with ischaemic rest pain in a foot, demonstrate the physical findings, including dependent rubor, pallor on elevation and delayed capillary refill.

Measure the anklebrachial pressure index and interpret the results.

Demonstrate the use of unidirectional Hand Held Doppler to auscultate the pedal arteries; Measure the systolic blood pressure in the arm and ankle ; Demonstrate reflux at the saphenofemoral junction

Describe the technique used to puncture the femoral artery for a blood sample including the necessary equipment and potential complications.