



THE APPLIED KNOWLEDGE TEST CONTENT GUIDE

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THE APPLIED KNOWLEDGE TEST CONTENT GUIDE

- THIS IS A LEARNING RESOURCE FOR THE APPLIED KNOWLEDGE TEST (AKT)
- IT SHOULD BE USED IN CONJUNCTION WITH THE RCGP CURRICULUM
- IT CANNOT COVER EVERYTHING THAT MIGHT APPEAR IN THE AKT

Purpose

- The purpose of the Content Guide is to provide a summary of the knowledge base that is likely to be tested in the Applied Knowledge Test (AKT).
- It should **NOT** be considered an exhaustive and complete list of general practice topics, and is provided as an aid to candidates and educators when preparing for the AKT.
- Additionally, the Content Guide will help examiners as they construct a blueprint ('content matrix/test specification') to ensure that the AKT questions sample widely across the curriculum.

Content Guide and RCGP Curriculum

- The Content Guide is a resource to complement the RCGP Curriculum (current version 2012) (<http://www.rcgp.org.uk/gp-training-and-exams/gp-curriculum-overview.aspx>), which defines the areas of competence, essential features, strategies and resources of the GP specialty training programme. The curriculum also defines the learning outcomes required to achieve a Certificate of Completion of Specialty Training in General Practice.
- The Content Guide contains a list of topics that should be considered across the areas of competence described in the core curriculum statement, *Being a General Practitioner*:
 - Primary Care Management
 - Person-centred Care
 - Specific Problem-solving Skills
 - A Comprehensive Approach
 - Community Orientation
 - A Holistic Approach
- The RCGP Curriculum Introduction and User Guide (which is structured in a different way from the Content Guide) provides detail on how to approach learning in these areas. <http://www.rcgp.org.uk/gp-training-and-exams/gp-curriculum-overview/~media/Files/GP-training-and-exams/Curriculum-2012/RCGP-Curriculum-Introduction-and-User-Guide-2012.ashx>
- The core curriculum statement *Being a General Practitioner* provides the basis for the clinical examples which follow in the curriculum. <http://www.rcgp.org.uk/gp-training-and-exams/~media/Files/GP-training-and-exams/Curriculum-2012/RCGP-Curriculum-1-Being-a-GP.ashx>

Layout and Alignment with the curriculum

The Content Guide is based on body system classifications, and also contains lists of symptoms as well as conditions and diseases to prompt candidates to consider differential diagnoses for common presentations. However, patients in general practice often present with undifferentiated symptoms and complex disease combinations, so the list of symptoms should be considered as a totality rather than each one in isolation.

Candidates and educators will note that the Guide does not contain a section for every clinical example statement (e.g. Care of Older Adults, Care of Acutely Ill People). The background knowledge for these topics is covered within the systems and symptoms listed elsewhere in the Content Guide. Conversely, the Guide lists areas that are not given as clinical examples in the curriculum statements, where knowledge is nonetheless clearly required to meet the outcomes described in the core curriculum statement, *Being a General Practitioner*.

When considering a topic not specified within the clinical example statements of the curriculum, the core statement (*Being a General Practitioner*) and the contextual statements (*The GP Consultation in Practice, Patient Safety and Quality of Care, The GP in the Wider Professional Environment, Enhancing Professional Knowledge*) will guide interpretation of the level and breadth of knowledge required in the AKT.

Changing content

The Content Guide will inevitably evolve over time as the content and context of general practice develop. Moreover, it will reflect continuing developments in the RCGP curriculum and in assessment methodology and policy.

The RCGP therefore intends to update it on a regular basis **BUT** it is important to emphasise that it **DOES NOT** attempt to be a complete list of every topic that might be included in the AKT. Candidates should ensure that they refer to the version current at the time of taking the exam.

Topic importance

The Content Guide is a list of topics. There is no attempt to attach a weighting (or relative importance) to its various items, and the clinical sections are listed in alphabetical order. In the AKT, all questions have an equal score but consideration is given at the point of selecting the questions for each AKT to sample widely across the curriculum. There will be questions on conditions that are seen frequently in general practice (e.g. asthma) but also on rarer but important topics (e.g. meningitis) which every GP would be expected to recognise and know how to manage.

Level of detail

Candidates often wonder how much detail they need to know about a topic, and this is best understood by referring to the learning outcomes described in the curriculum. However, it is impossible to define learning outcomes for every condition and candidates should refer to the outcomes described in the core and contextual statements of the curriculum and consider the level of knowledge they would require working in day-to-day general practice. For example, this could include knowledge of the appropriateness of common hospital investigations that a patient may undergo but to which a GP may not have direct access e.g. MRI and CT scans.

Relevance to UK General Practice

The MRCGP is the licensing examination for the whole UK. There are differences in the structure and administration of the NHS in the four Home Countries (England, Scotland, Wales, Northern Ireland), and these differences are taken into account when the AKT questions are constructed. This is particularly relevant to questions within the Administration and Regulatory Framework section. Any variation in clinical guidelines between the devolved nations is accommodated during the question writing process.

Feedback

The Content Guide is a new addition to the learning resources for the MRCGP and we welcome feedback on its usefulness to candidates and educators.

Please send any comments to exams@rcgp.org.uk




HOW TO CONSIDER TOPICS ACROSS THE DOMAINS OF THE CURRICULUM






The two following examples (Asthma and Fitness to Drive) are a practical illustration of how the knowledge represented in this Content Guide might be applied to the areas of competence described in the core curriculum statement 'Being a General Practitioner'.


CLINICAL EXAMPLE – Asthma

In order to demonstrate these core areas of competence for the topic of asthma, you will require knowledge, skills and attitudes in the following areas:

The RCGP areas of competence






<p>As an example to help you understand how general practice knowledge can be applied to asthma, we have listed some of the items you should consider. These have been organised into the areas of competence described in the core curriculum statement:</p>	
<p> Primary care management This area of competence is about how you manage your contact with patients, dealing competently with any and all problems that are presented to you.</p>	<ul style="list-style-type: none"> • Knowledge of the natural history, aetiology and epidemiology of asthma • Knowledge of the diagnostic criteria for asthma and the features that differentiate it from other diseases • Specific clinical knowledge of asthma investigations and principles of management of acute and chronic asthma in adults and children • Comprehensive knowledge of drug treatments including contraindications, adverse reactions and drug interactions. Use of BNF for drug therapy including devices, monitoring approaches, drug combinations and dosages • Comprehensive familiarity with current guidance – BTS/SIGN guidelines • Team approach – the role of chronic disease management clinics, care plans and when to refer to secondary care
<p> Person-centred care This area of competence is about understanding and relating to the context of your patients as individuals, and developing the ability to work in partnership with them.</p>	<ul style="list-style-type: none"> • Approaches to communication of diagnosis and tailoring of treatment to personal circumstances • Exploration of health beliefs as to why asthma has developed
<p> Specific problem-solving skills This area of competence is about the context-specific aspects of general practice, dealing with early and undifferentiated illness and the skills you need to tolerate uncertainty, and marginalise danger, without medicalising normality.</p>	<ul style="list-style-type: none"> • Risk-based assessment approaches for asthma diagnosis and management • Approaches to the management of the full spectrum of asthma presentations including childhood, pregnancy, routine care and emergency management of asthma • Techniques for improving asthma management in patients with chaotic lifestyles or complex background issues • Knowledge of how safeguarding concerns may present as poorly controlled asthma in children





<p> A comprehensive approach</p> <p>This area of competence is about how you as a general practitioner must be able to manage co-morbidity, co-ordinating care of acute illness, chronic illness, health promotion and disease prevention in the general practice setting.</p>	<ul style="list-style-type: none"> • Impact of external factors on asthma such as smoking and pollution • Impact of smoking in pregnancy or in the home and the increased risk of asthma in children • Occupational asthma and the role of the GP as advocate for the patient and supporting return-to-work • Progression of disease and differentiation/co-existence of COPD • Co-morbidity with other chronic diseases where there may be conflict of medication (e.g. beta-blockers) • Atopic diseases such as eczema and hayfever and how these may affect overall management • Supporting self care, with knowledge of monitoring and treatment adjustment and when to seek medical help
<p> Community orientation</p> <p>This area of competence is concerned with the physical environment of your practice population, and the need to understand the interrelationship between health and social care, and the tensions that may exist between individual wants and needs and the needs of the wider community.</p>	<ul style="list-style-type: none"> • The role of health promotion campaigns in improving respiratory health • Different presentations and prevalence of asthma within different demographic and geographic groups and possible reasons for this • Role of community health workers such as physiotherapists, school nurses, pulmonary rehabilitation teams • Societal costs of asthma including ill-health and drug costs • Principles of cost-effective prescribing; auditing chronic disease management with reducing exacerbations and hospital admissions
<p> A holistic approach</p> <p>This area of competence is about your ability to understand and respect the values, culture, family structure and beliefs of your patients, and understand the ways in which these will affect the experience and management of illness and health.</p>	<ul style="list-style-type: none"> • Knowledge of how asthma might impact on life and identity, e.g. work/school/family/social life • The relationships between long-term conditions and mental health • The impact of patients' health beliefs and lifestyles on concordance • Media portrayal of allergic diseases and diagnosis
<h2 style="color: blue;">The essential features of you as a doctor</h2>	
<p>The three essential features (EFs) below are concerned with the features of you as a doctor which may influence your ability to apply the core competences in real life in the work setting.</p>	
<p> Contextual features</p> <p>This essential feature is about understanding your own context as a doctor and how it may influence the quality of your care. Important factors are the environment in which you work, including your working conditions, community, culture, financial and regulatory frameworks.</p>	<ul style="list-style-type: none"> • How the inclusion of asthma in the Quality and Outcomes Framework (QOF) may focus inappropriate amounts of resource at the expense of other diseases • How the use of nurses and chronic disease management clinics may deskill GPs or require new skills • How different management strategies by GPs within a practice may influence standards of care • How accessibility to GP appointments may influence asthma presentations and the ability of patients to self-care
<p> Attitudinal features</p> <p>This essential feature is about your professional capabilities, values, feelings and ethics and the impact</p>	<ul style="list-style-type: none"> • How asthma targets in the QOF may produce potential conflicts of interest for the doctor (e.g. with patient choice) • How downward cost pressures on prescribing and making referrals may affect decision making

<p>these may have on your patient care.</p>	<ul style="list-style-type: none"> • How personal feelings about smoking-related illnesses or patients with asthma who continue to smoke, may affect care
<p> Scientific features This essential feature is about the need to adopt a critical and evidence-based approach to your work, maintaining this through life-long learning and a commitment to quality improvement.</p>	<ul style="list-style-type: none"> • How evidence relating to asthma diagnosis and management is used to inform the doctor's clinical practice • How QOF standards, inclusion and exclusion criteria for asthma may affect practice • How knowledge of investigations and interpretation of results such as peak flow rates, spirometry, indications for x-ray is applied to clinical practice • How evidence for the use or avoidance of alternative and complementary therapies in asthma affects advice to patients • How audits and other tools can be used for evaluating asthma management including outcome measures (e.g. exacerbations requiring oral steroids, hospital admissions, deaths from asthma, etc)

ETHICAL EXAMPLE – Fitness to Drive

The RCGP areas of competence

<p>To help you understand how general practice knowledge can be applied to administration, ethical and regulatory frameworks, consider the following scenario of an elderly man with mild cognitive impairment whose family are concerned about his ability to drive. The items have been organised into the areas of competence described in the core curriculum statement.</p>	
<p> Primary care management</p> <p>This area of competence is about how you manage your contact with patients, dealing competently with any and all problems that are presented to you.</p>	<ul style="list-style-type: none"> • Knowledge of natural history, aetiology and epidemiology of cognitive impairment • Knowledge of appropriate investigations of possible early dementia • Interpretation of results such as screening tools, blood tests, indications for and results of intracranial imaging • Knowledge of appropriate therapeutic interventions for cognitive impairment, including drug and non-drug therapies • Referral routes to secondary care • Techniques for safety netting and arranging appropriate review
<p> Person-centred care</p> <p>This area of competence is about understanding and relating to the context of your patients as individuals, and developing the ability to work in partnership with them.</p>	<ul style="list-style-type: none"> • Ethical principles including those of patient autonomy in a wider social context • Approaches to the communication of risk • The role of the carer and patient in decisions about care plans
<p> Specific problem-solving skills</p> <p>This area of competence is about the context-specific aspects of general practice, dealing with early and undifferentiated illness and the skills you need to tolerate uncertainty, and marginalise danger, without medicalising normality.</p>	<ul style="list-style-type: none"> • Specific knowledge of the assessment of cognitive impairment and mental capacity and assessment of physical factors • Detailed familiarity with current guidance including DVLA regulations and GMC Good Medical Practice including the rules regarding confidentiality • Approaches to coping with risk and uncertainty in the early presentation of potential cognitive impairment
<p> A comprehensive approach</p> <p>This area of competence is about how you as a general practitioner must be able to manage co-morbidity, co-ordinating care of acute illness, chronic illness, health promotion and disease prevention in the general practice setting.</p>	<ul style="list-style-type: none"> • Social, physical and mental health reasons for potential cognitive impairment • Factors contributing to the progression or slowing of cognitive impairment • Relationship with other chronic diseases (e.g. Parkinson's disease, depression) • Role of therapeutics in management but also in the causation of cognitive impairment
<p> Community orientation</p> <p>This area of competence is concerned with the physical environment of your practice population, and the need to understand the interrelationship between health and social care, and the</p>	<ul style="list-style-type: none"> • Responsibility of the doctor to take action to protect the patient and general public • Role of community health workers such as social services, community mental health team, private care • Principles of safe and cost-effective prescribing especially in the context of multi-morbidity and old age

<p>tensions that may exist between individual wants and needs and the needs of the wider community.</p>	
<p> A holistic approach</p> <p>This area of competence is about your ability to understand and respect the values, culture, family structure and beliefs of your patients, and understand the ways in which these will affect the experience and management of illness and health.</p>	<ul style="list-style-type: none"> • Approaches to ensure respect for an individual patient’s right to make decisions whilst balancing the degree of insight an individual portrays • Exploration of the impact of cognitive impairment on the patient’s life, e.g. personal identity, independence, work, family and social life • The role of carers and the family in living with and caring for patients with cognitive impairment
<h2>The essential features of you as a doctor</h2>	
<p>The three essential features (EFs) below are concerned with the features of you as a doctor which may influence your ability to apply the core competences in real life in the work setting.</p>	
<p> Contextual features</p> <p>This essential feature is about understanding your own context as a doctor and how it may influence the quality of your care. Important factors are the environment in which you work, including your working conditions, community, culture, financial and regulatory frameworks.</p>	<ul style="list-style-type: none"> • How time constraints of dealing with patients with cognitive impairment may affect other areas of practice (e.g. extra home visits if the patient is no longer driving) • The relevant legislation that applies to patients with cognitive impairment • How good record keeping is especially important (e.g. whether advice re: driving is clearly recorded in the notes)
<p> Attitudinal features</p> <p>This essential feature is about your professional capabilities, values, feelings and ethics and the impact these may have on your patient care.</p>	<ul style="list-style-type: none"> • How coping with potential conflicts of interest might affect patients with cognitive impairment (e.g. between carer and patient) • How ethical principles can be applied to decision making • How concerns about safe independent living and ability to drive might affect the doctor-patient relationship • How personal feelings about people with cognitive impairment might affect the doctor’s decision-making
<p> Scientific features</p> <p>This essential feature is about the need to adopt a critical and evidence-based approach to your work, maintaining this through life-long learning and a commitment to quality improvement.</p>	<ul style="list-style-type: none"> • How emerging knowledge about cognitive impairment and its management can be applied and how auditing data can improve patient care

AKT CONTENT GUIDE

SECTION 1 - CLINICAL MEDICINE (80% of the questions)

For each problem or disease in the Content Guide, consider the following areas within the general context of primary care:

- The natural history of the untreated condition including whether acute or chronic
- The prevalence and incidence across all ages and any changes over time
- Typical and atypical presentations
- Recognition of normal variations throughout life
- Risk factors
- Diagnostic features and differential diagnosis
- Recognition of 'alarm' or 'red flag' features
- Appropriate and relevant investigations
- Interpretation of test results
- Management including self-care, initial, emergency and continuing care, chronic disease monitoring
- Patient information and education including self-care
- Prognosis

The problems and diseases are listed in groups of conditions classified by body system reflecting the current range of general practice workload in the United Kingdom. There is inevitably overlap between system classifications and areas such as child health.

AKT questions are constructed to reflect the **APPLICATION** of knowledge and so the Content Guide not only lists diseases, but also lists symptoms that require differential diagnosis. These are listed within the system sections for convenience. Many symptoms could relate to more than one body system so common presenting symptoms are gathered together at the start. For example, vomiting can have gastrointestinal, neurological, psychological, drug-induced, metabolic, or renal causes, or any combination of contributing causes.

COMMON PRESENTING SYMPTOMS & SIGNS

These items are presented alphabetically rather than in order of frequency or importance

Abdominal bloating/distension

Abdominal pain

Abnormal bleeding (excessive bruising, haemoptysis, haematemesis, haematuria, rectal bleeding)

Addictive behaviour (smoking, alcohol, drugs, gambling)

Anxiety and panic attacks

Appetite loss

Behavioural disturbance (confusion, delirium, aggression, violence)

Breast lumps and pain

Breathlessness

Chest pain

Collapse and unconsciousness, seizures

Constipation and diarrhoea

Cough, wheezing, stridor

Depression and low mood

Dizziness

Dyspepsia

Dysphagia

ENT symptoms (earache, hearing loss, vertigo, tinnitus)

Erectile dysfunction
Facial pain (including dental problems) and oral symptoms
Fever
Hair loss and excessive hair
Headache
Incontinence of urine and faeces
Jaundice and ascites
Joint pains, joint swelling
Lack of concentration and memory problems, cognitive impairment
Lethargy
Limb, back and neck pain
Loss of function (e.g. facial weakness, ptosis)
Lumps (e.g. skin, soft tissue, bone, muscle, lymphadenopathy, hernias, tumours [benign & malignant, primary and metastatic])
Menstrual disorders
Nausea and vomiting
Oedema
Palpitations
Pelvic pain
Pruritus
Psychotic symptoms (hallucinations, delusions, thought disorders)
Rashes
Sensory (e.g. numbness, paraesthesia, pain) and motor (e.g. weakness, stiffness, tremor, gait, co-ordination) symptoms
Skin lesions
Speech problems, hoarseness
Subfertility, pregnancy, sexual health behaviours (e.g. contraception)
Thirst and dry mouth, polydipsia
Tiredness and lethargy
Urinary frequency, dysuria, retention, nocturia
Vaginal discharge and abnormal bleeding patterns including in pregnancy
Visual symptoms (e.g. blurred or loss of vision, double vision, painful/painless red eye)
Weight gain and weight loss

KNOWLEDGE OF EMERGENCIES IN GENERAL PRACTICE

- Symptoms and signs of the acutely ill child
- Symptoms and signs of acute illness in adults including patients with intellectual disabilities, dementia, communication problems
- Features of severe or life-threatening injuries
- Features of serious illness requiring an immediate response (e.g. meningitis, respiratory compromise, circulatory shock, septic shock, anaphylaxis, etc.)
- Features of mental health emergencies and factors suggestive of a high risk of harm to self or others

Curriculum Links across all the topic areas of the Content Guide

<http://www.rcgp.org.uk/gp-training-and-exams/~media/Files/GP-training-and-exams/Curriculum-2012/RCGP-Curriculum-3-01-Healthy-People.ashx>

<http://www.rcgp.org.uk/gp-training-and-exams/~media/Files/GP-training-and-exams/Curriculum-2012/RCGP-Curriculum-3-03-Acutely-Ill-People.ashx>

<http://www.rcgp.org.uk/gp-training-and-exams/~media/Files/GP-training-and-exams/Curriculum-2012/RCGP-Curriculum-3-05-Older-Adults.ashx>

SYSTEM CLASSIFICATION

CARDIOVASCULAR PROBLEMS

Symptoms and signs

- Cardiac murmurs
- Chest pain (including factors suggestive of cardiac origin)
- Circulatory symptoms of ischaemia, thrombosis
- Dyspnoea
- Oedema – peripheral and central
- Palpitations and arrhythmias
- Syncope and collapse

Investigations

- Specific cardiac investigations including ambulatory BP monitoring, ECG, exercise ECG, 24 hour and event monitoring ECGs, echocardiography
- Knowledge and application of current risk assessment tools such as CHADS2 for atrial fibrillation, QRISK/ASSIGN/Framingham for CHD
- Relevant blood investigations such as cardiac enzymes, natriuretic peptides
- Secondary care interventions such as coronary angiography and stents, perfusion scanning, CT scans

Specific conditions

- Risk factors for coronary heart disease and other thromboembolic diseases such as lipid disorders, diabetes, hypertension. Screening and risk modification such as smoking cessation
- Acute cardiovascular problems including cardiac arrest, acute coronary syndrome, acute myocardial infarct, acute left ventricular failure, dissecting aneurysms, severe hypertension and life-threatening arrhythmias, cardiogenic shock, acute ischaemia of limbs and gut
- Coronary heart disease including complications such as mural thrombus, ventricular aneurysm, rhythm disturbance
- Heart failure - acute and chronic including left ventricular dysfunction, right heart failure, cor pulmonale
- Hypertension – essential and secondary, malignant
- Arrhythmias including conduction defects such as atrial fibrillation and flutter, heart block, supraventricular tachycardia, ventricular rhythm abnormalities
- Anticoagulation relevant to cardiovascular diseases such as AF, myocardial ischaemia, peripheral vascular disease, stroke, including heparin, thrombolysis, oral anticoagulation
- Valvular problems such as mitral, tricuspid, pulmonary and aortic stenosis and regurgitation
- Congenital heart disease such as coarctation of the aorta, VSD, ASD, PDA and presentation of these both in children and adults
- Circulation disorders including arterial problems such as peripheral vascular disease, vasculitis, aneurysms (cerebral, aortic and peripheral) and venous problems such as venous thromboembolism, pulmonary embolism, varicose veins, venous and arterial ulcers
- Pulmonary hypertension; primary and secondary to underlying causes such as fibrotic lung disease, recurrent pulmonary emboli
- Cardiomyopathies - primary and acquired, including dilated, hypertrophic obstructive
- Infections such as viral myocarditis, infective endocarditis, pericarditis, rheumatic fever and complications

- Knowledge of pacemakers relevant to primary care such as complications and malfunction
- Drug-induced heart disease e.g. secondary to cancer treatment with chemotherapy/radiotherapy, recreational drugs

Curriculum Links

<http://www.rcgp.org.uk/gp-training-and-exams/~media/Files/GP-training-and-exams/Curriculum-2012/RCGP-Curriculum-3-12-Cardiovascular-Health.ashx>

DIGESTIVE PROBLEMS INCLUDING NUTRITION

Symptoms and signs

- Abdominal masses and swellings including organ enlargement such as splenomegaly and hepatomegaly
- Abdominal pain including the differential diagnosis from non-gastrointestinal causes e.g. gynaecological or urological
- Ascites
- Chest pain
- Constipation, diarrhoea, change in bowel habit, tenesmus, faecal incontinence
- Cough
- Disturbance of smell and taste
- Dyspepsia, heartburn
- Dysphagia
- Haematemesis
- Hiccups
- Jaundice
- Mouth ulceration, leukoplakia, salivary problems
- Nausea and vomiting including non-gastrointestinal causes
- Obesity, weight gain, anorexia and weight loss
- Pruritus
- Rectal bleeding

Investigations

- Investigations such as endoscopy, ultrasound and other scans, interpretation of relevant tests such as those for *Helicobacter pylori* infection, coeliac disease
- Interpretation of stool culture results
- Tests of liver function including interpretation of immunological results, markers of malignancy e.g. CEA and AFP
- Screening programmes for colorectal cancer such as occult blood testing, sigmoidoscopy, colonoscopy
- Knowledge of secondary care interventions such as endoscopy, laparoscopic surgery, ERCP, radiological investigations including contrast and CT scans

Specific conditions

- Acute abdominal conditions such as appendicitis, acute obstruction and perforation, diverticulitis, Meckel's diverticulum, ischaemia, volvulus, intussusception, gastric and duodenal ulcer, pancreatitis, cholecystitis, biliary colic, empyema, renal colic
- Chronic abdominal conditions such as irritable bowel syndrome, inflammatory bowel disease, diverticular disease, coeliac disease
- **Upper GI conditions**
 - Oesophageal conditions including achalasia, malignancy, benign stricture, Barrett's oesophagus, globus
 - Gastrointestinal haemorrhage including oesophageal varices, Mallory-Weiss syndrome, telangiectasia, angiodysplasia, Peutz-Jeghers syndrome
 - Gastro-oesophageal reflux disease, non-ulcer dyspepsia, peptic ulcer disease, *H. pylori*, hiatus hernia

- **Lower GI conditions**
 - Constipation – primary and secondary to other systemic diseases such as hypothyroidism, drug-induced, hypercalcaemia
 - Diarrhoea
 - Gastrointestinal infection including toxins such as *C. difficile* and *E coli*, bacterial causes such as salmonella, campylobacter, amoebic dysentery, viral causes such as rotavirus, norovirus and parasitic causes such as *Giardia lamblia*
 - Inflammatory bowel disease such as Crohn’s disease, ulcerative colitis
 - Malabsorption including coeliac disease, lactose intolerance, secondary to pancreatic insufficiency such as chronic pancreatitis, cystic fibrosis, bacterial overgrowth
 - Rectal problems including anal fissure, haemorrhoids, prolapse, polyps, malignancy
 - Gastrointestinal malignancies including oesophageal, gastric, pancreatic, colorectal, carcinoid, lymphoma
- **Liver, gallbladder and pancreatic disease**
 - Assessment and investigation of abnormal liver function tests. Differential diagnosis of underlying causes such as fatty liver/non-alcoholic steatohepatitis, drug-induced, infection, cirrhosis, autoimmune disease
 - Liver infections such as viral hepatitis, leptospirosis, hydatid disease
 - Liver toxins including drugs such as paracetamol, chemicals and alcohol
 - Cirrhosis and its causes such as alcohol, non-alcoholic steatohepatitis/fatty liver and autoimmune diseases such as primary biliary cirrhosis, chronic active hepatitis, α -1 antitrypsin deficiency, Wilson’s disease, haemolysis
 - Secondary effects of liver diseases such as ascites, portal hypertension, hepatic failure
 - Liver malignancy – primary and metastatic
 - Gallbladder disease such as gallstones, cholecystitis, biliary colic, empyema, malignancy
 - Pancreatic diseases including acute pancreatitis, chronic pancreatitis, malabsorption, malignancy including islet cell tumours
- **Nutrition**
 - Nutritional problems such as vitamin and mineral deficiencies, supplementary nutrition such as dietary, PEG and parenteral feeding
 - Complications and management of stomas
 - Disorders of weight; obesity and weight loss including non-nutritional causes such as thyroid disease and other endocrine conditions
- Hernias – inguinal, femoral, diaphragmatic, hiatus, incisional

Curriculum Links

<http://www.rcgp.org.uk/gp-training-and-exams/~media/Files/GP-training-and-exams/Curriculum-2012/RCGP-Curriculum-3-13-Digestive-Health.ashx>

EAR, NOSE AND THROAT, ORAL AND FACIAL PROBLEMS

Symptoms and signs

- Cough
- Dental symptoms relevant to general medical practice
- Disturbance of smell and taste
- Earache and discharge
- Epistaxis
- Facial dysfunction – sensory and motor
- Facial pain
- Hearing problems and deafness, tinnitus
- Hoarseness
- Rhinitis and nasal obstruction
- Salivation problems including swelling and obstruction of glands, excessive and reduced salivation
- Sore throat and mouth
- Sore tongue and changes in taste
- Vertigo and dizziness, falls

Investigations

- Tests of hearing such as tympanometry, audiometry, tuning fork tests including Weber's and Rinne's, neonatal and childhood screening tests
- Relevant diagnostic and therapeutic clinical tests such as Hallpike and Epley manoeuvre
- Appropriate use of investigations such as CT and MRI scans, endoscopy, sleep studies
- Otoscopic appearances

Specific conditions

- Nasal problems including perennial and allergic rhinitis, adverse drug effect, polyps and other causes of nasal obstruction, epistaxis, trauma, foreign bodies, septal deviation, trauma
- Ear disorders – earache and discharge including otitis externa, otitis media with and without effusion, perforation of the ear drum, barotrauma, cholesteatoma, mastoiditis, disorders affecting the skin of the pinna such as infection, solar damage and malignancy and affecting the cartilage such as injuries and chondritis
- Oral problems including pain such as ulceration, lichen planus, infections such as gingivitis, herpes simplex, candidiasis, pre-malignant conditions such as leukoplakia, malignancies including tonsils, tongue, lips and buccal mucosa
- Throat problems such as infections, globus, pharyngeal pouch
- Disorders of the salivary glands such as infection (e.g. mumps), salivary duct stones, connective tissue diseases such as Sjögren's syndrome, tumours such as pleomorphic adenoma, lymphoma
- Dental problems presenting in general medical practice such as abscesses; dental disease due to underlying medical causes such as anorexia, xerostomia, drug-induced
- Sinus problems including acute and chronic infection, polyps, allergic rhinosinusitis, barotrauma
- Head and neck malignancies including laryngeal, nasopharyngeal, sinuses, salivary glands, tongue, lips and oral cavity, tonsillar including lymphomas, unidentified malignancies presenting with lymphadenopathy
- Hearing problems including deafness such as occupational, presbycusis, otosclerosis, tinnitus and associated speech or language disorders

- Hearing aids and cochlear implants, tinnitus maskers
- Vertigo – central e.g. brainstem stroke and peripheral e.g. benign paroxysmal positional vertigo, vestibular neuronitis, Ménière’s disease, acoustic neuroma. Factors differentiating vertigo from dizziness and light-headedness
- Cranial nerve disorders such as Ramsay-Hunt syndrome, Bell’s palsy, trigeminal neuralgia, ototoxicity secondary to drugs
- Vocal disorders such as hoarseness, dysphonia, aphonia and underlying causes such as vocal cord nodules, laryngeal nerve palsy. Associations with smoking, occupation and environmental factors
- Congenital abnormalities e.g. cleft palate/lip, absent pinna
- Aesthetic and reconstructive surgery and botulinum toxin therapies as may be encountered in GP
- Emergency treatments such as tracheotomy
- Tracheotomy management in primary care

Curriculum Links

<http://www.rcgp.org.uk/gp-training-and-exams/~media/Files/GP-training-and-exams/Curriculum-2012/RCGP-Curriculum-3-15-ENT-Oral-and-Facial-Problems.ashx>

EYE PROBLEMS

Symptoms and signs

- Colour blindness, changes in colour vision
- Diplopia, squint and amblyopia
- Discharge from the eye
- Dry eyes
- Entropion/ectropion
- Epiphora
- Eyelid swellings
- Orbital swellings
- Red eye - painful and painless
- Visual disturbance – complete/partial loss of vision, distorted vision, floaters, flashes
- Visual field disturbance

Investigations

- Interpretation of fundoscopy appearances, visual acuity results, visual field tests, tonometry, Amsler charts, tests of colour vision

Specific conditions

- Red eye – differential diagnoses and appropriate management including timescale of urgency
- Loss of vision or visual disturbance; differential diagnoses and appropriate management including timescale of urgency
- Refractive error including myopia, hypermetropia, astigmatism
- Disorders of the pupil such as Horner's syndrome, Holmes-Adie
- Congenital, neonatal and childhood eye problems, such as prematurity, congenital cataract, vitamin A deficiency
- Genetic eye problems such as retinoblastoma, retinitis pigmentosa
- Colour blindness
- Keratoconus
- Ophthalmic herpes zoster
- Orbital infections such as cellulitis, tumours
- Conjunctivitis including infection including bacterial, viral, parasitic and chlamydial causes, and allergic causes
- Uveitis including knowledge of underlying associations e.g. inflammatory bowel disease, connective tissue diseases
- Episcleritis, corneal or dendritic ulcers, pterygium, pinguecula, corneal injury and erosions
- Subconjunctival haemorrhage
- Contact lens use including infections such as acanthamoeba, corneal damage
- Keratitis including association with other diseases such as rosacea, thyroid disease
- Cataracts – congenital, acquired such as drug-induced
- Glaucoma – acute, closed angle and chronic open angle
- Ophthalmic manifestations of infections such as syphilis, TB, toxocariasis, toxoplasmosis
- Retinal problems including
 - detachment
 - vascular lesions
 - atrophy

- tumours such as melanoma, neuroblastoma
- associated with systemic diseases such as hypertension, diabetes, haematological diseases causing haemorrhage, exudates, blood vessel changes
- Malignancy such as retinoblastoma, lymphoma, melanoma
- Systemic diseases with associated eye symptoms/signs, such as hypertension, diabetes, raised intracranial pressure, multiple sclerosis
- Thyroid eye disease
- Eyelid problems such as blepharitis, ectropion, entropion, chalazion, Meibomian cysts
- Disorders of tears and tear ducts such as dacryocystitis, sicca syndrome, epiphora, dry eyes
- Squint – childhood and acquired due to nerve palsy, amblyopia, blepharospasm
- Macular degeneration – age-related (wet and dry), drusen
- Eye trauma including penetrating trauma, corneal abrasions, chemical burns, contusions

Curriculum Links

<http://www.rcgp.org.uk/gp-training-and-exams/~//media/Files/GP-training-and-exams/Curriculum-2012/RCGP-Curriculum-3-16-Eye-Problems.ashx>

GENETICS

- Genetic conditions encountered in primary care such as cystic fibrosis, haemoglobinopathies, haemophilia and related clotting disorders, muscular dystrophies, neurological conditions such as Huntington's, Fragile X
- Inheritance patterns of genetic disorders such as autosomal dominant, autosomal recessive, sex-linked inheritance
- Chromosomal disorders such as Down's syndrome, trisomy 18, Turner's syndrome, Klinefelter's syndrome
- Knowledge of risk of inheritance through generations, genograms
- Polygenic disease such as familial hypercholesterolaemia
- Ethics of genetic testing (see Administration, Ethical and Regulatory Frameworks)
- Familial cancer syndromes and associated tests e.g. BRAC analysis

Curriculum Links

<http://www.rcgp.org.uk/gp-training-and-exams/~media/Files/GP-training-and-exams/Curriculum-2012/RCGP-Curriculum-3-02-Genetics-In-Primary-Care.ashx>

HAEMATOLOGY PROBLEMS

Symptoms and signs

- Bruising, petechiae and purpura
- Gout associated with haematological malignancies and myelodysplasias
- Jaundice secondary to haemolysis
- Lymphadenopathy, splenomegaly and hepatomegaly
- Pallor and anaemia
- Recurrent infection
- Skin manifestations of haematological disease e.g. mycosis fungoides
- Systemic manifestations of haematological disease e.g. sickling crisis

Investigations

- Normal haematological parameters and interpretation of laboratory investigations such as full blood count, haematinics, monitoring of anticoagulants and investigation of coagulation disorders including thrombophilia and excessive bleeding, protein electrophoreses, immunoglobulins
- Blood grouping such as rhesus status including antenatal blood disorders; safe transfusion practice
- Other relevant primary care investigations e.g. x-rays, paraprotein urine testing in myeloma
- Relevant secondary care investigations such as bone marrow, bone scans

Specific conditions

- Haematological malignancies such as acute and chronic leukaemias, lymphomas including Hodgkin's, non-Hodgkin's lymphomas, gut and skin lymphomas, multiple myeloma
- Myeloproliferative disorders such as polycythaemia rubra vera, thrombocytosis
- Polycythaemia – primary and secondary such as to hypoxia, malignancy
- Myelodysplasia and aplastic anaemia
- Enlarged lymph nodes of any cause +/- splenomegaly including infection and malignancy both primary and secondary. Management of a single enlarged lymph node
- Lymphatic disorders such as primary lymphoedema
- Splenectomy including functional asplenia
- Splenomegaly including underlying causes, hypersplenism, complications such as rupture and sequestration
- Anaemia and its causes including iron, folate and vitamin B₁₂ deficiency, sideroblastic, haemolytic, chronic disease
- Haemoglobinopathies such as thalassaemia, sickle cell disease; antenatal screening
- Haemolytic diseases including management of rhesus negative women in pregnancy, autoimmune and transfusion haemolysis
- Clotting disorders including genetic causes such as haemophilia and von Willebrand's disease, infective causes such as meningococcal septicaemia and disseminated intravascular coagulation
- Thrombocytopenia and its causes such as idiopathic thrombocytopenic purpura, drug-induced
- Purpura – recognition and causes such as drug-induced, Henoch-Schönlein
- Anticoagulants – indications, initiation, management and reversal/withdrawal – including heparin, warfarin, dabigatran and similar new agents, including drug interactions and contra-indications
- Enzyme diseases such as G6PD deficiency
- Neutropaenia – primary and secondary including chemotherapy and drug-induced
- Common abnormalities of blood films and their management e.g. macrocytosis, microcytosis, spherocytosis, neutrophilia

IMMUNOLOGY PROBLEMS

Symptoms and signs

- Anaphylaxis
- Atopy – asthma, eczema and hayfever
- Drug reactions
- Food allergies and intolerances
- Recurrent infections
- Urticaria

Investigations

- Investigations such as immunoglobulin levels including IgG, IgM and IgE serology, complement, RAST tests, skin patch and prick testing, exclusion challenges

Specific conditions

- Immune deficiency states – inherited, primary and acquired such as HIV, chemotherapy
- Skin manifestations of immune disease such as urticaria, atopic eczema, erythema multiforme
- Anaphylaxis – recognition and management including doses of adrenaline and resuscitation
- Types of allergic reactions – immediate, delayed, possible mechanisms
- Occupational allergies such as latex allergy, contact allergies such as hair dye, metals, plants, preservatives
- Immunisation – knowledge of routine primary childhood immunisation schedules, contraindications and adverse reactions
- Immunisation – knowledge of antibody test results used in guiding management of specific situations such as chickenpox in pregnancy, rubella immunisation, hepatitis B and C
- Immunisation for occupational medicine such as healthcare workers and hepatitis B
- Knowledge of management of needle stick injuries and risk of hepatitis B and C, HIV
- Knowledge of transplantation medicine as applicable to primary care particularly in management of organ transplants such as heart, lung, liver, kidney, cornea. Indications for, and complications of transplantation e.g. immunosuppression and immunosuppressant drugs
- Mechanisms of drug allergies and interactions

INFECTIOUS DISEASES

This area inevitably overlaps with other topic lists and some infections such as TB appear in several different systems such as respiratory, gastrointestinal, musculoskeletal and neurological.

Investigations

- Knowledge of the use and interpretation of appropriate investigations such as: serological testing, sampling such as swabs, urine and stool culture, imaging such as CXR

Immunisation

- Immunisation including indications and contraindications referenced to the BNF and the Green Book
- Common infections seen in general practice, e.g. bacterial (e.g. staphylococcal, streptococcal), viral (e.g. childhood exanthema), fungal, parasitic, infestations (e.g. scabies, threadworm). Specific infections are mentioned in the relevant systems sections
- Travel medicine to include diseases which may be contracted in the UK and/or abroad but may present in UK primary care
 - Malaria including presentations and prophylaxis
 - GI infections such as amoebic dysentery, hydatid disease, schistosomiasis, leptospirosis, typhoid, hepatitis, brucellosis
 - Skin infections such as orf, animal ringworm, leishmaniasis, cutaneous larva migrans
 - Tick borne diseases
- Human Immunodeficiency Virus (HIV) including prevention and transmission and associated diseases such as *Pneumocystis jirovecii (carinii)*, *Cryptococcus spp.* cytomegalovirus,
- Tuberculosis
- Legionnaires disease
- Insect borne diseases such as Lyme disease, malaria
- Occupational infections and their management, e.g. needle stick infections
- Nosocomial infections: MRSA, *C. difficile*
- Pandemics, e.g. pandemic influenza
- Statutory Notification of diseases, contact tracing
- Role of Health Protection Agency or equivalent

INTELLECTUAL AND LEARNING DISABILITIES

- Common causes such as autistic spectrum disorder, dyspraxia; genetic causes such as Fragile X, Williams, Prader-Willi and Down's syndromes. Diagnosis through delayed or altered development
- Associated physical health disorders: unmet physical need such as visual and hearing problems. Use of annual health checks; common associations e.g. epilepsy, obesity, diabetes; specific associations e.g. Down's syndrome and hypothyroidism. Health promotion, sexual health, contraception, cardiovascular disease risks, smoking cessation
- Impact of learning disability on management and long term outcome of chronic disease both physical and mental e.g. diabetes, asthma, schizophrenia, bipolar disorder, epilepsy
- Methods of facilitating consultations such as use of advocates/carers with communication expertise
- Principles of management of behavioural problems in people with intellectual disability and possible underlying causes such as pain or illness
- Associated mental health problems: increased prevalence and different presentations such as early dementia, depression; specific associations e.g. autism spectrum disorder and ADHD
- Mental capacity assessment and associated legislation. Implications for treatment consent and screening programmes. Power of Attorney and its application in management. GMC guidance on consent and capacity, confidentiality
- Protection of vulnerable adults, ethics of caring for people with intellectual disabilities

Curriculum Links

<http://www.rcgp.org.uk/gp-training-and-exams/~media/Files/GP-training-and-exams/Curriculum-2012/RCGP-Curriculum-3-11-People-With-Intellectual-Disability.ashx>

MENTAL HEALTH PROBLEMS

Symptoms and signs

- Acute psychosis including hallucinations and delusions, thought disorders
- Addictive and dependent behaviour such as alcohol and drugs
- Affective disorders including depression and mania, suicidal behaviour
- Anxiety and panic attacks
- Delirium
- Obsessive compulsive behaviour

Investigations

- Assessment tools for mental health problems such as depression and postnatal depression screening scales, dementia screening, suicide risk assessment and risk of self-harm
- Relevant physical investigations such as blood tests and relevant neurological investigations
- Monitoring of treatments such as lithium, clozapine

Specific conditions

- Behaviour problems such as attention deficit hyperactivity disorder, enuresis, encopresis, school refusal
- Psychological problems including psycho-social problems and those associated with particular life stages such as childhood, adolescence and older people
- Pregnancy associated disorders such as antenatal and postnatal depression, puerperal psychosis
- Mood (affective) problems such as depression including features of a major depression such as psychotic and biological symptoms; bipolar disorder, assessment of suicidal risk; detection of masked depression
- Severe behavioural disturbance including psychotic disorders such as schizophrenia, acute paranoia and acute mania
- Somatisation disorder including medically unexplained problems
- Personality disorders including borderline, antisocial, narcissistic
- Eating disorders including morbid obesity, anorexia and bulimia nervosa, body dysmorphia
- Anxiety including generalised anxiety and panic disorders, phobias, obsessive compulsive disorder, situational anxiety and adjustment reactions
- Post-traumatic stress disorder
- Sleep disorders including insomnia, sleep walking
- Deliberate self harm including overdoses. Suicidal thought disorders
- Acute mental health problems including acute psychoses, acute organic reactions, the suicidal patient, psychological crises and the application of the Mental Health Act as applicable to all the UK Home countries
- Abuse including child, sexual, elder, domestic violence, emotional including non-accidental injury
- Mental health disorders associated with physical health disorders e.g. psychosis associated with steroid therapy, depression associated with Parkinson's disease, diabetes and other chronic diseases
- Organic reactions – (acute and chronic) such as delirium with underlying causes such as infection, adverse reactions to drugs
- Electroconvulsive therapy – indications and side effects

- Self help and psychological therapies such as cognitive behavioural therapy, eye movement desensitisation and reprogramming, counselling, psychotherapy, psychoanalysis, aversion, flooding and desensitisation therapies
- Cultural and societal aspects of mental health including work, spiritual and religious beliefs and practices
- Relationship with substance misuse and dependence including alcohol and drugs of misuse and other habit disorders such as gambling

Curriculum Links

<http://www.rcgp.org.uk/gp-training-and-exams/~media/Files/GP-training-and-exams/Curriculum-2012/RCGP-Curriculum-3-10-Mental-Health-Problems.ashx>

ALCOHOL AND SUBSTANCE MISUSE PROBLEMS

- Knowledge of the different forms of harmful alcohol and drug use and how this may present (e.g. excessive use, binges, risk-taking behaviours or dependency)
- Knowledge of the barriers to care for people who misuse alcohol or drugs
- Signs and symptoms of drug/alcohol misuse, as well as the signs and symptoms of withdrawal
- Evidence-based screening, brief interventions for alcohol misuse
- Effective primary care treatments for alcohol and substance misuse disorders
- Principles of harm reduction and health promotion for people who misuse drugs and alcohol
- Screening for blood-borne viruses and indications for immunisation
- The short-term and long-term sequelae of alcohol and drug misuse, including physical, mental and social harms and the impact on children, families and work life
- Knowledge of the dangers of drink/drug driving and the GP's responsibilities in relation to advising and reporting on this
- Role of wider primary healthcare team including pharmacists, specialist services, the voluntary and criminal justice sectors
- Knowledge of safeguarding procedures for children and vulnerable adults and how these must shape clinical decisions and behaviour
- Legal aspects relating to alcohol and substance misuse and opiate substitution prescribing

Curriculum Links

<http://www.rcgp.org.uk/gp-training-and-exams/~media/Files/GP-training-and-exams/Curriculum-2012/RCGP-Curriculum-3-14-Drug-and-Alcohol-Misuse.ashx>

METABOLIC AND ENDOCRINE PROBLEMS

Symptoms and signs

- Changes in reproductive and sexual function such as menstrual disorders, loss of libido, body hair changes and erectile dysfunction
- Collapse and coma
- Gastrointestinal symptoms such as nausea, vomiting, diarrhoea, constipation
- Headache and visual problems
- Joint pains and muscle problems
- Polydipsia and polyuria
- Pruritus
- Thirst
- Tiredness, lethargy
- Weight gain/weight loss

Investigations

- Normal biochemical parameters and interpretation of laboratory investigations such as renal, liver, thyroid, glucose, pancreatic, adrenal, pituitary, hypothalamic, ovarian and testicular function
- Imaging and tests of endocrine and metabolic dynamic function

Specific conditions

- Diabetes mellitus type 1, type 2, and rarer types such as MODY (maturity onset diabetes of the young). Disorders of glucose metabolism such as impaired fasting glucose, impaired glucose tolerance, insulin resistance, gestational diabetes, associated system disorders such as skin and eye manifestations, renal and neurological complications. Acute complications such as hypoglycaemia, diabetic ketoacidosis, non-ketotic hyperglycaemia
- Thyroid diseases including goitre, hypothyroidism, hyperthyroidism, benign and malignant tumours, thyroid eye disease, thyroiditis, neonatal hyper- and hypo-thyroidism
- Adrenal diseases including Addison's disease, Cushing's syndrome and disease, pheochromocytoma, hyperaldosteronism, primary and secondary malignancy, ACTH secreting tumours, congenital adrenal hyperplasia
- Replacement and therapeutic steroid therapy
- Carcinoid syndrome, multiple neuroendocrine neoplasia
- Pituitary diseases including acromegaly, primary and secondary hypopituitarism, diabetes insipidus
- Hypothalamic causes of hormonal disturbances including hyperprolactinaemia, drug-induced
- Causes of hyperprolactinaemia such as drug-induced, chronic renal failure, bronchogenic carcinoma, hypothyroidism
- Disorders of sex hormones such as hirsutism, virilism, gynaecomastia, impotence, androgen deficiency, androgen insensitivity syndrome
- Endocrine manifestations of non-endocrine diseases e.g. bronchogenic carcinoma with inappropriate ADH secretion
- Inherited metabolic diseases e.g. phenylketonuria, glycogen storage diseases
- Hyperuricaemia – primary and secondary including haematological causes, drug-induced
- Haemochromatosis – primary and secondary, and other disorders of iron metabolism
- Disorders of calcium metabolism – hypoparathyroidism, hyperparathyroidism, osteomalacia and vitamin D disorders, association with chronic kidney disease, malignancy such as bony metastases and myeloma

- Hyperlipidaemias – familial and acquired
- Metabolic causes of unconsciousness e.g. hypoglycaemia, diabetic ketoacidosis, hyponatraemia, hypothyroidism, adrenal crisis
- Poisoning including by food, drugs (prescribed, over the counter or non-medicinal) or other chemicals whether deliberately or unintentionally
- Adverse metabolic effects of prescribed drugs e.g. hypokalaemia with diuretics

Curriculum Links

<http://www.rcgp.org.uk/gp-training-and-exams/~media/Files/GP-training-and-exams/Curriculum-2012/RCGP-Curriculum-3-17-Metabolic-Problems.ashx>

MUSCULO-SKELETAL PROBLEMS INCLUDING TRAUMA

Symptoms and signs

- Associated symptoms with connective tissue diseases such as skin, eye, GI manifestations
- Falls
- Joint pain, stiffness, swelling, deformity, redness including individual joints such as back and neck, jaw, hip, knee, ankle, foot, shoulder, elbow, wrist, hand or generalised
- Lumps and deformities of bone, joint or soft tissue
- Muscle pain and weakness

Investigations

- X-rays, CT and MRI scans, DEXA scans, bone scans, ultrasound, biochemical and immunological indicators of musculo-skeletal problems, nerve conduction studies, tissue biopsy

Specific conditions

- Spinal disorders including mechanical back pain, disc lesions, malignancy – primary or metastatic, infection including osteomyelitis, osteoarthritis, spinal stenosis, osteochondritis, developmental disorders such as scoliosis and kyphosis, trauma including vertebral fracture and long term consequences
- Cervical spinal disorders including cervical spondylosis, torticollis and ‘whiplash’ injuries, vertebral fracture and long term consequences
- Infection such as septic arthritis, osteomyelitis
- Soft tissue disorders such as epicondylitis, Achilles tendon problems, hand disorders such as trigger finger, Dupuytren’s contracture, carpal tunnel syndrome, ulnar nerve compression, foot disorders such as plantar fasciitis, digital neuroma
- Muscle disorders such as polymyalgia rheumatica and giant cell arteritis, polymyositis and dermatomyositis, fibromyalgia, muscular dystrophies and myasthenia gravis
- Osteoarthritis including joint replacement surgery risks and complications
- Osteoporosis – primary and secondary
- Crystal arthropathies such as gout, pyrophosphate arthropathy
- Inflammatory arthritides and connective tissue diseases such as: rheumatoid arthritis, sero-negative arthritis such as psoriatic arthropathy, ankylosing spondylitis, reactive arthritis, viral arthropathy, connective tissue disorders such as systemic lupus erythematosus, scleroderma, systemic sclerosis
- Skeletal problems including disorders of calcium homeostasis (overlapping with metabolic/endocrine disorders) such as osteomalacia, rickets, Paget’s disease
- Congenital/inherited diseases such as osteogenesis imperfecta, Marfan’s syndrome, Ehlers-Danlos syndrome, Gaucher’s disease, hypermobility syndromes
- Trauma including fractures and primary care management of injuries/first-aid
- Wounds (including surgical) and lacerations: management and principles of care
- Fractures, dislocations, sprains, strains and other significant soft-tissue trauma: recognition and principles of management
- External and internal injuries of the chest, abdomen or pelvis: recognition and principles of management

Curriculum Links

<http://www.rcgp.org.uk/gp-training-and-exams/~media/Files/GP-training-and-exams/Curriculum-2012/RCGP-Curriculum-3-20-Musculoskeletal-Problems.ashx>

NEUROLOGICAL PROBLEMS

Symptoms and signs

- Cognitive impairment such as memory loss, delirium and dementia
- Disturbance of smell and taste
- Falls
- Features differentiating between upper and lower motor neurone function
- Headache
- Movement disorders such as athetosis, chorea, tremor
- Neuralgic and neuropathic pain
- Nystagmus
- Peripheral nerve and root symptoms and signs including dermatomes and reflexes
- Seizures, convulsions, collapse, dizziness
- Sensory and motor symptoms – weakness, spasticity, paraesthesia
- Speech and language deficits
- Visual problems such as diplopia, ptosis, pupillary abnormalities and visual field defects

Investigations

- Knowledge to interpret clinical findings such as reflexes, sensory and motor testing, tests of cranial nerve function, fundoscopy and visual assessment e.g. visual fields
- Relevant investigations such as CT, MRI scans, nerve conduction studies, lumbar puncture
- Tests of cognition and interpretation in relation to dementia and associated diseases

Specific conditions

- Headaches including tension, migraine, cluster, raised intracranial pressure including idiopathic intracranial hypertension
- Infections such as meningitis, encephalitis, arachnoiditis
- Intracranial haemorrhage including subarachnoid, subdural and extradural and thrombosis such as sinus thromboses, congenital aneurysms
- Stroke including transient ischaemic attacks, with underlying causes such as cardiac arrhythmias, arterial disease, thrombophilia
- Cerebellar disorders including tumours, demyelination such as multiple sclerosis and inherited such as Friedrich's ataxia
- Epilepsy including generalised and focal seizures, febrile convulsions and other causes of seizures such as hypoglycaemia, alcohol and drugs
- Speech disorders including stroke, cerebellar disease, cerebral palsy, motor neurone disease
- Sensory and/or motor disturbances (peripheral nerve problems) including mono- and poly-neuropathies such as nerve compression and palsies, Guillain-Barré syndrome
- Autonomic neuropathies such as diabetic, drug-induced, metabolic, multi-system atrophy
- Spinal cord disorders such as root and cord compression, cauda equina syndrome, spinal stenosis, syringomyelia
- Movement disorders including tremor and gait problems including athetosis, chorea, tardive dyskinesia, dystonia, tics. Underlying causes such as Sydenham's chorea, Huntington's disease, drug-induced, Parkinsonism
- Multiple sclerosis and other demyelinating disorders such as transverse myelitis
- Parkinson's disease and Parkinsonism secondary to other causes such as drugs
- Motor neurone disease including progressive bulbar palsy and muscular atrophy

- Inherited neurological diseases such as Huntington's disease, Charcot-Marie-Tooth, myotonic dystrophy, neurofibromatosis
- Tumours of the brain and peripheral nervous system such as meningiomas, glioblastomas, astrocytomas, neurofibromatosis, secondary metastases
- Acute confusional states or coma with underlying causes such as metabolic, infective, drug-induced
- Dementia such as Alzheimer's, vascular, Lewy body, Pick's disease, normal pressure hydrocephalus, other causes of memory loss and confusion
- Muscle disorders such as muscular dystrophy, myasthenia gravis and associated syndromes
- Chronic fatigue syndrome
- Head injuries with or without loss of consciousness, concussion and more serious cranial or intracranial injuries, and relevant long-term care with brain injuries including secondary epilepsy and behavioural problems
- Spinal injuries causing paralysis and relevant care of tetra- and paraplegic patients including bowel and bladder care, potential complications such as pressure sores, autonomic dysfunction, aids to daily living and mobility
- Cranial nerve disease such as Bell's palsy, trigeminal neuralgia, bulbar palsy

Curriculum Links

http://www.rcgp.org.uk/gp-training-and-exams/~/_media/Files/GP-training-and-exams/Curriculum-2012/RCGP-Curriculum-3-18-Neurological-Problems.ashx

PALLIATIVE AND END-OF-LIFE CARE

End-of-life care is often symptom based and therefore it will overlap with all the preceding system lists. Other areas to consider would include the following:

- Therapeutics (as detailed in the BNF) for palliative care for cancer and other long term conditions including symptomatic relief of pain; gastrointestinal symptoms (e.g. nausea and vomiting, oral symptoms such as ulceration, constipation, diarrhoea, hiccough); respiratory symptoms (e.g. breathlessness, excessive secretions, cough); cachexia, anorexia and fatigue; skin (e.g. itch) and psychological problems (e.g. insomnia, anxiety, depression, restlessness)
- Emergencies in palliative care such as severe pain, spinal cord compression, haemorrhage, hypercalcaemia, superior vena cava compression
- Ethical issues in palliative and end-of-life care using current GMC guidance: autonomy (consent, confidentiality, breaking bad news, 'best interests'), beneficence and non-maleficence (principle of 'double effect', withdrawing treatment), equity (ordinary vs. extraordinary means), euthanasia, advance care planning
- Current guidelines for best practice community care for terminally ill patients: Gold Standards Framework and integrated care pathways including holistic assessment and recognition of end-stage disease
- Approaches to supporting carers and bereavement, including awareness of different religious and cultural beliefs and practices

Curriculum Links

<http://www.rcgp.org.uk/gp-training-and-exams/~media/Files/GP-training-and-exams/Curriculum-2012/RCGP-Curriculum-3-09-End-Of-Life-Care.ashx>

PHARMACO-THERAPEUTICS

British National Formulary (BNF)

The BNF is the reference text for questions in the AKT on prescribing. Candidates should read each of the relevant BNF chapters in conjunction with each section of the Content Guide. This will include the British National Formulary for Children (BNFC). Candidates must ensure that they are using the current edition.

Candidates should also be familiar with the introductory chapters of the BNF

- Palliative care, computer prescribing, controlled drugs, safe prescribing including children (as detailed in BNFC)
- Appendices on interactions and special considerations such as prescribing in pregnancy and breastfeeding, renal and hepatic failure, borderline substances
- Prescribing guidelines such as antibiotics in infections

Other areas in which candidates may be required to demonstrate an adequate level of knowledge include:

- Application of the concept of clinical and cost-effective prescribing, especially with regard to patient safety
- Generic and branded prescribing
- Multiple drug interactions common in primary care prescribing
- Drug contraindications, adverse effects, iatrogenic disorders and potential interactions
- Complexity of prescribing in co-morbidities and the balance of risk and benefit
- Methods of explaining risks to patients including the use of decision aids
- Safety procedures involved in prescribing controlled drugs including knowledge of the legal requirements for prescribing, storage and disposal
- Factors affecting drug dosage, including renal or hepatic disease; pregnancy and breastfeeding; drug requirements, and monitoring
- Calculation of drug dosages
- Compliance/concordance including knowledge of why patients may not take their medication and methods to enhance concordance
- Potential risks and benefits of prescribing unlicensed drugs
- Risks and benefits of over the counter (OTC) medications and interactions with prescribed drugs
- Issues arising in the use of complementary and alternative therapies and potential risks and interactions with conventional drugs
- Monitoring of prescribed drugs e.g. DMARDS, warfarin, lithium
- Safe vaccination prescribing and regimes
- Drug storage and disposal
- Patient group directives, roles of practice nurses
- Responsibility for prescribing including non-medical prescribers, doctors in training and across the secondary-primary care boundary
- Role of the pharmacist in medication reviews and supporting safe prescribing
- Reporting mechanisms for adverse drug reactions or medical device failures to the relevant regulatory authority such as MHRA
- Role of drug representatives and drug promotion regulations – ethical considerations, codes of conduct, conflicts of interest

Prescribing for children

The use of drugs which are unlicensed is common in paediatric prescribing and requires particular care and consideration. The BNF for Children gives detailed information for acceptable prescribing for children and is considered the definitive guidance for this area. Candidates should ensure they are using the current edition.

Curriculum Links

<http://www.rcgp.org.uk/gp-training-and-exams/~//media/Files/GP-training-and-exams/Curriculum-2012/RCGP-Curriculum-2-02-Patient-Safety-and-Quality-Of-Care.ashx>

RENAL PROBLEMS

Symptoms and signs

- Abdominal masses
- Dysuria
- Haematuria
- Incontinence
- Loin and abdominal pain
- Oliguria, polyuria, frequency and nocturia
- Proteinuria
- Pruritus
- Thirst

Investigations

- Interpretation of results such as ultrasound of renal tract, urine analysis including culture and biochemistry, serum biochemical parameters such as calcium, parathyroid hormone, vitamin D metabolism, creatinine and eGFR
- Knowledge of secondary care investigations such as intravenous urograms, cystoscopy and ureteroscopy, urodynamic studies

Specific conditions

- Chronic kidney disease including underlying causes such as glomerulonephritis, connective tissue diseases, diabetes, hypertension. Monitoring and referral criteria
- Acute renal failure including diagnosis, underlying causes including drug-induced
- Proteinuria (including microalbuminuria) of any cause including nephrotic syndrome, glomerulonephritis, secondary to systemic diseases such as diabetes and hypertension, malignancy such as multiple myeloma, connective tissue diseases
- Haematuria of any cause including infection, glomerulonephritis, nephritic syndrome, malignancy, stones
- Urological malignancy such as renal, ureteric and bladder
- Urinary tract infections in children and in adults
- Inherited kidney diseases such as polycystic kidney disease
- Urinary tract obstruction and structural abnormalities (strictures, posterior urethral valves, duplex systems) calculus
- Renal colic including knowledge of secondary care management such as stents and lithotripsy
- Catheters – types, indications, management. Use in paraplegic patients, self catheterisation
- Renovascular disease such as renal artery stenosis, diabetes
- Knowledge of renal dialysis including peritoneal and haemodialysis including complications that may be encountered in primary care such as infection of catheter sites, fluid balance disturbance
- Transplantation and primary care management
- Prescribing in renal disease as per BNF guidance: principles of dose adjustment in renal impairment

RESPIRATORY PROBLEMS

Symptoms and signs

- Chest pain
- Clubbing
- Collapse
- Cough
- Cyanosis
- Dyspnoea – acute and chronic
- Haemoptysis
- Pleural effusion
- Stridor & hoarseness
- Wheezing

Investigations

- Interpretation of primary care investigations such as peak expiratory flow rates, spirometry, pulse oximetry, sputum culture
- Indications for chest x-rays and CT and MRI scans, bronchoscopy
- Disease scoring tools e.g. CURB for community acquired pneumonia

Specific conditions

- Upper respiratory tract infections including tonsillitis, peri-tonsillar abscess, epiglottitis, laryngitis and tracheitis
- Lower respiratory tract infections, e.g. bronchiolitis, bronchitis and pneumonia (of any cause), atypical pneumonias including Legionnaire's disease, tuberculosis
- Bronchiectasis
- Emphysema including α_1 -antitrypsin deficiency
- Cystic fibrosis
- Pneumothorax including simple and tension
- Pulmonary embolism
- Pleural effusion causes including infection, connective tissue diseases, malignancies
- Asthma – acute and chronic in children and adults
- Chronic obstructive pulmonary disease
- Cough including haemoptysis, and non-respiratory causes such as GORD
- Respiratory malignancies including laryngeal, bronchial and pleural such as mesothelioma. Primary and secondary lung malignancies, and related para-neoplastic syndromes
- Stridor and hoarseness – differential diagnosis including assessment of urgency for investigation and management
- Occupational respiratory diseases such as the pneumoconioses, asthma, extrinsic allergic alveolitis
- Connective tissue diseases affecting the lung, such as rheumatoid arthritis, SLE, sarcoidosis
- Lung fibrosis and associated causes including adverse drug reactions
- Immunosuppression affecting the respiratory system including opportunistic infections such as TB, fungal, parasitic
- Respiratory failure and methods of ventilation such as CPAP for sleep apnoea
- Indications for the use of oxygen in emergency, acute and chronic management including domiciliary oxygen and use in palliative care

Curriculum Links

<http://www.rcgp.org.uk/gp-training-and-exams/~media/Files/GP-training-and-exams/Curriculum-2012/RCGP-Curriculum-3-19-Respiratory-Health.ashx>

SEXUAL HEALTH – OVERLAPS WITH MEN AND WOMEN'S HEALTH

Symptoms and signs

- Dysuria
- Erectile dysfunction
- Genital ulcers
- Infestations
- Pelvic and abdominal pain
- Systemic manifestations of sexually transmitted infections (STI) such as reactive arthritis
- Vaginal and penile discharge

Investigations

- Investigations of STI including appropriate sampling – swabs, urine, blood
- Interpretation of results including timing of testing for blood-borne viruses

Specific conditions

- Contraception
 - male including condoms and spermicides, vasectomy
 - female
 - non-hormonal methods such as female condoms, diaphragms, natural cycle control, non-hormonal IUCDs, sterilisation
 - hormonal - combined oral/patch/ring contraception, progesterone-only methods such as oral, intrauterine system, depot injection, implant
 - post-coital contraception
- Termination of pregnancy – indications, methodology, complications, legal and ethical aspects
- Infertility and subfertility including both male e.g. impaired sperm production and delivery (drug-induced, cystic fibrosis) and female causes e.g. tubal occlusion (after infection or ectopic pregnancy), ovulatory disorders such as polycystic ovary syndrome, anovulation, genetic disorders (e.g. Turner's syndrome)
- Principles of assisted conception with knowledge of the menstrual cycle and associated investigations. Knowledge of drug therapies used in assisted conception that are delegated to primary care
- Sexual abuse (both adult and child) including indicators such as STI in children, skin disorders such as lichen sclerosus
- Sexually transmitted infections including safe sex and contact tracing – including hepatitis B & C, HIV, chlamydia, gonorrhoea, syphilis, lymphogranuloma venereum, genital warts, genital herpes simplex
- Sexual problems including loss of libido, anorgasmia
- Erectile dysfunction including organic causes such as diabetes, vascular disease, neurological disease, drug-induced, psychological causes
- Issues of sexual identity and sexual orientation such as transgender, gender reassignment, men and women who have sex with men and/or women

Curriculum Links

<http://www.rcgp.org.uk/gp-training-and-exams/~media/Files/GP-training-and-exams/Curriculum-2012/RCGP-Curriculum-3-08-Sexual-Health.ashx>

MEN'S HEALTH

Symptoms and signs

- Haematospermia
- Incontinence – faecal and urinary
- Prostatism including hesitancy, frequency, nocturia
- Scrotal pain and swelling
- Testicular pain and swelling
- Urinary retention

Investigations

- Assessment of symptoms including investigations such as urodynamics, semen analysis, ultrasound and appropriate use of tests such as PSA and urinalysis

Specific conditions

- Testicular problems including undescended and maldescended testes, orchitis, epididymitis, hydrocele, varicocele, sperm granuloma, torsion, testicular tumours such as teratoma, seminoma
- Prostatic problems such as acute and chronic prostatitis, benign prostatic hyperplasia, prostatic carcinoma
- Urinary problems including acute and chronic retention, bladder and renal calculi and bladder malignancy (overlap with Renal)
- Penile problems such as phimosis, paraphimosis, circumcision, malignancy, skin disorders, Peyronie's disease, priapism
- Breast disorders such as gynaecomastia and breast cancer
- Recognition and safe response to domestic violence affecting men

Curriculum Links

<http://www.rcgp.org.uk/gp-training-and-exams/~//media/Files/GP-training-and-exams/Curriculum-2012/RCGP-Curriculum-3-07-Mens-Health.ashx>

WOMEN'S HEALTH

Symptoms and signs

- Breast development and size
- Breast lumps
- Incontinence – faecal and urinary
- Mastalgia
- Menstrual problems such as amenorrhoea, polymenorrhoea, menorrhagia, dysmenorrhoea, intermenstrual bleeding, post-coital bleeding, premenstrual syndrome
- Nipple discharge
- Postmenopausal bleeding
- Vaginal discharge, lumps and prolapse
- Vulval pain, ulceration, pigmentation, leukoplakia, lesions

Investigations

- Screening and prevention programmes such as cervical screening including HPV, HPV vaccination programme, screening mammography, breast awareness
- Investigations within primary care such as hormonal levels, cervical smears, swabs, pelvic examinations, ultrasound – abdominal and pelvic, and secondary care such as laparoscopy and hysteroscopy, urodynamics
- Pregnancy investigations including urinary and serum β -HCG and testing for congenital abnormalities
 - routine ultrasound
 - chorionic villus sampling, amniocentesis
 - blood tests such as triple tests, immunity testing
 - infection screening such as syphilis, HIV, rubella
- Investigations for gynaecological malignancy e.g. colposcopy, blood tests such as CA125, transvaginal ultrasound
- Mammography and breast ultrasound

Specific conditions

- **Breast**
 - Breast problems including the range of normal size and variation, mastalgia, lumps including cysts, fibroadenoma, malignancy including DCIS, invasive ductal and lobular, Paget's disease of the nipple, secondary malignancy such as lymphoma
 - Breast reconstruction/implants
- **Pregnancy**
 - National guidelines on pre-conceptual care and normal antenatal care including routine checks, investigations and treatment such as supplements e.g. folic acid, vitamins, iron
 - Antenatal complications such as
 - bleeding including miscarriage, ectopic pregnancy, placenta praevia, placental abruption
 - metabolic problems such as hyperemesis, obesity, gestational and pre-existing diabetes, thyroid disorders, causes of jaundice in pregnancy including cholestatic, hepatitis, drugs
 - infections such as rubella, cytomegalovirus, group B streptococcus, chickenpox, parvovirus, listeriosis, herpes simplex, hepatitis

- neurological problems such as epilepsy and associated drug treatment, migraine, thrombosis
 - pre-eclampsia and eclampsia
 - haematological problems such as haemolytic disease including rhesus incompatibility and prophylaxis, haemoglobinopathies such as sickle cell disease and thalassaemia, thromboembolism
 - urinary tract infections
 - multiple pregnancies and associated complications
- Problems of labour including premature, late, breech, obstructed deliveries, Caesarean sections and associated complications
- Postnatal problems including retained products, uterine infection, postnatal depression and psychosis, breastfeeding problems
- Trophoblastic disease including hydatidiform moles and choriocarcinoma
- **Vaginal bleeding**
 - Abnormal vaginal bleeding including intermenstrual, dysfunctional uterine bleeding, post-coital or post-menopausal bleeding and causes such as drug-induced, endometrial hyperplasia, endometrial malignancy, cervical and endometrial polyps, cervical ectropion, cervical dysplasia and carcinoma
 - Premenstrual syndrome
 - Menstrual problems
 - pain such as endometriosis, primary and secondary dysmenorrhoea
 - bleeding such as menorrhagia, amenorrhoea and underlying causes such as drug-induced, weight related, pregnancy
 - irregular cycles such as anovulatory
 - Uterine fibroids and adenomyosis
- **Menopause**
 - Menopause including premature menopause, perimenopause, types of hormone replacement therapy, atrophic vaginitis, postmenopausal bleeding. Non-gynaecological symptoms such as skin changes, psychological symptoms
- **Ovarian problems**
 - Polycystic ovary syndrome: gynaecological and associated metabolic disorders such as insulin resistance and hirsutism
 - Ovarian cysts, endometriosis, malignancy including adenocarcinoma and teratoma
- Infection including STI such as pelvic inflammatory disease (overlap with Sexual Health)
- Uterine prolapse
- Chronic pelvic pain, dyspareunia, sexual dysfunction, psychosexual problems
- Urinary problems such as prolapse, overactive bladder syndrome, stress and/or urge incontinence
- **Vulval and vaginal problems**
 - Discharge, including infections such as bacterial vaginosis, candidiasis, genital warts
 - Pain with causes such as atrophic changes, dysaesthesia, vulvodynia
 - Malignancy including vulval intraepithelial neoplasia (VIN), melanoma
 - Skin diseases such as lichen sclerosus, psoriasis, intertrigo, pigmented lesions
- Female genital mutilation/cosmetic genital surgery
- Recognition and safe response to domestic violence affecting women

Curriculum Links

<http://www.rcgp.org.uk/gp-training-and-exams/~media/Files/GP-training-and-exams/Curriculum-2012/RCGP-Curriculum-3-06-Womens-Health.ashx>

SKIN PROBLEMS

Symptoms and signs

- Birthmarks
- Blisters
- Dry skin and scaling
- Erythema
- Hair loss and hirsutism
- Hyper- and hypo-pigmentation
- Nail dystrophies
- Pruritus
- Purpura, petechiae
- Pustules, boils
- Rashes and eruptions
- Scaly and itchy scalp
- Skin lesions – including dermal and subcutaneous lesions
- Ulceration including leg ulcers and pressure sores

Investigations

- Investigations such as skin and nail sampling, immunological tests including patch and prick testing, biopsy, photography and dermoscopy
- Relevant blood tests for underlying causes of skin conditions e.g. lupus, thyroid disease

Specific conditions

- Acne vulgaris including indications and side effects of isotretinoin, hidradenitis suppurativa
- Acne rosacea, rhinophyma, perioral dermatitis
- Eczema: infantile, childhood, atopic, seborrhoeic, contact allergic, irritant (including occupational), discoid
- Psoriasis; guttate, plaque, flexural, scalp, nails, pustular and erythrodermic. Associated morbidity; physical such as cardiovascular disease and psychological such as depression
- Infections; viral (e.g. warts, molluscum contagiosum, herpes simplex and zoster), bacterial (e.g. staphylococcal + MRSA, streptococcal), fungal (skin, nails), spirochaetal (Lyme disease, syphilis), TB, infestations (scabies, lice), travel-acquired (e.g. leishmaniasis)
- Pityriasis rosea
- Light sensitive disorders such as polymorphic light eruption, porphyria, drug reactions
- Skin tumours including benign lesions such as pigmented naevi, dermatofibroma, cysts and malignant lesions such as malignant melanoma, squamous cell carcinoma, basal cell carcinoma, mycosis fungoides, Kaposi's sarcoma, metastatic tumours. Lesions with malignant potential such as solar keratoses, Bowen's disease, cutaneous horns and keratoacanthoma
- Skin manifestations of internal disease including pyoderma gangrenosum, systemic lupus erythematosus (SLE) and discoid lupus erythematosus (DLE), necrobiosis lipoidica, erythema nodosum, erythema multiforme, dermatitis herpetiformis, dermatomyositis, vitamin and mineral deficiencies such as scurvy
- Vitiligo, hyperpigmentation such as acanthosis nigricans
- Lichen planus, granuloma annulare, lichen sclerosus, morphea
- Ulcers – distinguishing arterial and varicose, vasculitic, malignant
- Hair disorders including alopecia, hirsutism, fungal infection, infestations including lice

- Blistering diseases including pemphigoid, pemphigus, porphyria
- Pruritus either generalised or localised – underlying non-dermatological causes such as thyroid disease and iron-deficiency
- Psychiatric associations of skin disease such as dermatitis artefacta, depression
- Wounds including burns and scalds, scar formation and complications
- Urticaria and allergic skin reactions including adverse drug reactions
- Drug-related skin eruptions such as Stevens-Johnson syndrome, toxic epidermal necrolysis
- Light treatments such as UVB, PUVA

Curriculum Links

<http://www.rcgp.org.uk/gp-training-and-exams/~//media/Files/GP-training-and-exams/Curriculum-2012/RCGP-Curriculum-3-21-Skin-Problems.ashx>

CHILDREN AND YOUNG PEOPLE

Normality

A very important element of child health in general practice is the recognition of the range of normality in physical, psychological and behavioural development such as:

- Normality in the neonatal period including screening e.g. phenylketonuria, hypothyroidism, cystic fibrosis,
- Normality of physical development with normal variations e.g. orthopaedic such as genu valgus and varus
- Normal maturation including puberty
- Normal developmental milestones and assessment of development delay including language, gross and fine motor and social development
- Normal growth including interpretation of growth charts

Symptoms and signs

A key feature of knowledge about child health is the interpretation of symptoms and signs in different age ranges. For example, back pain or abdominal pain in childhood, adolescence and adulthood are likely to have different underlying causes and natural histories. This can have significant and potentially serious consequences if not fully recognised when considering differential diagnoses.

The relevant symptoms and signs are listed in each of the systems sections as well as more specific paediatric themes such as:

- Failure to thrive
- Behavioural problems
- Developmental problems
- Features of the acutely unwell child including fever, rashes, irritability, breathing and circulatory signs

Investigations

- Prenatal diagnosis including current screening available in UK for disorders such as Down's syndrome, spina bifida, structural defects such as congenital heart disease, renal tract abnormalities
- Appropriate investigations for specific diseases e.g. asthma, urinary tract infection

Specific conditions

- Neonatal:
 - jaundice (e.g. breastfeeding, haemolytic and haemorrhagic disease of the newborn, biliary atresia)
 - feeding problems (breast and bottle feeding), hypoglycaemia
 - skin disorders such as birthmarks, urticaria, milia
 - congenital abnormalities as below
- Failure to thrive and underlying causes such as cystic fibrosis, coeliac disease, chronic infection, parenting difficulties
- Diagnosis and management of systemic disease (listed elsewhere) in childhood such as asthma, diabetes, epilepsy, respiratory infections such as pneumonia, bronchiolitis, croup
- Musculo-skeletal problems relevant to children such as inflammatory arthritides (infective, autoimmune), osteochondritis, Perthes' disease, slipped epiphysis, injuries such as greenstick fractures, pulled elbow

- GI diseases relevant to children such as appendicitis, Meckel's diverticulum, intussusception, malabsorption such as coeliac disease, lactose intolerance, cystic fibrosis
- Neurological problems relevant to children including seizures such as febrile convulsions, epilepsy, degenerative neurological diseases such as Rett's syndrome
- Renal diseases relevant to children including recurrent urinary tract infections, structural anomalies such as posterior urethral valves
- Sex identity and intersex, appearance of genitals including fused labia, hypospadias, clitoral hypertrophy
- Congenital abnormalities such as:
 - CVS – congenital heart disease (cyanotic and non-cyanotic), coarctation of the aorta, situs inversus
 - renal – structural abnormalities such as duplex kidneys, urethral valves
 - gut abnormalities e.g. imperforate anus, tracheo-oesophageal fistula, Hirschsprung's disease, volvulus, pyloric stenosis, diaphragmatic hernia, gastroschisis
 - neurological abnormalities such as cerebral palsy, microcephaly, plagiocephaly, hydrocephalus
 - musculoskeletal such as talipes equinovarus, absent or reduced limb development, hip dysplasia
 - endocrine such as hypothyroidism, congenital adrenal hyperplasia
 - sensory impairment such as sight e.g. congenital cataract, hearing e.g. inherited sensorineural deafness
- Chromosomal disorders such as Down's syndrome, Fragile X, Klinefelter's syndrome, trisomy 18, Turner's syndrome
- Childhood infections including exanthemata such as mumps, measles, rubella, chickenpox, herpes simplex, parvovirus, Coxsackie, other infections listed in Skin disorders
- Learning disabilities in children such as autism, dyspraxia, Asperger's syndrome
- Immunisation in children – routine primary schedule and other immunisations
- Safeguarding children – recognition of non-accidental injury including physical, emotional and sexual abuse, and appropriate actions
- Acute paediatric emergencies such as febrile convulsions, anaphylaxis, epiglottitis, asthma, septicaemia, meningitis, surgical conditions
- Behavioural problems such as enuresis, encopresis, eating disorders, sleep disorders, tantrums
- Childhood malignancies such as retinoblastoma, neuroblastoma, nephroblastoma, leukaemias, sarcoma, brain tumours

Curriculum Links

<http://www.rcgp.org.uk/gp-training-and-exams/~media/Files/GP-training-and-exams/Curriculum-2012/RCGP-Curriculum-3-04-Children-and-Young-People.ashx>

SECTION 2 - RESEARCH, STATISTICS AND EPIDEMIOLOGY (10% of the questions)

This element of the AKT is designed to examine the candidate's ability to use evidence and data to underpin clinical decision making, and the possession of critical appraisal skills sufficient to recognise good evidence and adopt guidelines as appropriate.

Research design

- The most appropriate research design to examine the hypothesis proposed in prospective and retrospective studies:
 - the limitations and strengths of research methodologies
 - knowledge of the "hierarchy of evidence" ranging from case reports through case-control and cohort studies to randomised controlled trials and systematic reviews and meta-analyses
- The hierarchy of design and the advantages and disadvantages of study designs including:
 - systematic reviews and meta-analysis
 - experimental: randomised controlled double blind
 - quasi-experimental: non-randomised control group
 - observational: cohort (prospective, retrospective), case-control, cross-sectional
- Qualitative research and quantitative research:
 - Differences in forms of research and when each is appropriate
 - Techniques such as pilot studies, questionnaire design, field observations, interviews, focus groups and analysis of transcripts of narrative material, ethnography and observation, action research, case study; consensus methods such as Delphi or nominal groups

Statistical terminology

- Knowledge of basic statistical terminology including the following:

Sensitivity	Specificity
Incidence	Prevalence
Mode	Median
Mean	Range
Confidence intervals	p-values
Probability	Null hypothesis
Standard deviation (SD)	Reliability
Correlation	Discrimination
Positive predictive value (PPV)	Negative predictive value (NPV)
Risk reduction (RR)	Odds & Odds Ratio
Relative risk reduction (RR)	Absolute risk reduction (ARR)
Number needed to treat (NNT)	Number needed to harm (NNH)
Risk ratio	Hazard Ratio
Confounding	Bias
Type 1 and 2 errors	Event rate
Cohort	Case-control
Systematic review	Meta-analysis
Randomised controlled trial (RCT)	Blinding
Validity	Crossover
Cross-sectional	Sampling
Trends	Grounded theory

Delphi	Focus group
Association	Triangulation
Generalisability	Ethnography
Inductive reasoning	Nondirective interview
Inclusion/exclusion criteria	Data types (categorical, ordinal, continuous)
Standardised mortality rates and ratios	Distributions (normal and non-parametric)
QALY (quality adjusted life year)	DALY (disability adjusted life year)
Bayesian probability	

Basic inferential statistical concepts to enable clinical interpretation of results from common statistical tests used for parametric data.

- e.g. t-tests, analysis of variance, multiple regression and non-parametric data (e.g. chi squared, Mann-Whitney U)
 - Bayesian probability
- [Candidates would not be expected to be able to conduct these tests.]*

Graphical representations and interpretation:

- including simple (symmetrical, skewed) distributions, scatter diagrams, box plots, forest plots, funnel plots, statistical process control charts, Cates diagrams, decision aids

Evidence-based practice including simple calculations:

- specificity, sensitivity,
- risk - absolute risk (AR), absolute risk increase (ARI), absolute risk reduction (ARR), relative risk (RR), relative risk increase (RRI), relative risk reduction (RRR) hazard ratio (HR)
- predictive value - negative predictive value (NPV), positive predictive value (PPV)
- number needed to harm (NNH), number needed to treat (NNT)
- odds, odds ratio (OR)

Implications of research results and conclusions

- including reliability, validity and generalisability
- the extent to which results or conclusions of primary research may be applied in clinical practice, taking into account contemporary views and practice and a knowledge of cost-effectiveness evaluations

Research ethics and governance including ethical approval, conflicts of interest, research fraud, patient safety, consent and confidentiality

Guidelines

- Evaluation of guidelines including methodology, evidence-base, validity, applicability, authorship and sponsorship in order to guide the suitability of application to clinical practice.

Epidemiology concepts

- Knowledge of decisions or interventions made in the interests of a community or population of patients such as immunisation
- Knowing the conditions which constitute the main reasons for patients consulting in UK primary care
- Population statistics including incidence, prevalence, mortality ratios, death rates

- Recognising the impact of adverse environmental factors on health, including poverty, unemployment, poor housing, malnutrition, occupational hazards and pollution
- The qualitative measurements of health such as QALY
- Demographic and epidemiological issues and the health needs of special groups, and the way in which these factors modify people's use of the health care services
- Working knowledge of population-based preventive strategies including immunisation, health screening and population screening

Screening

- Principles of screening (Wilson's criteria) and applying the concepts of primary, secondary and tertiary prevention; application to current and intended programmes of screening and recall systems
- Knowledge of risks and benefits of screening programmes and information available to patients to aid decision making

Critical appraisal

- Critical appraisal of information given in written or graphical format such as trial results or abstracts, clinical governance data (audit, benchmarking, performance indicators) and data presented in medical journals

Curriculum Links

<http://www.rcgp.org.uk/gp-training-and-exams/~media/Files/GP-training-and-exams/Curriculum-2012/RCGP-Curriculum-2-01-GP-Consultation-In-Practice.ashx>

<http://www.rcgp.org.uk/gp-training-and-exams/~media/Files/GP-training-and-exams/Curriculum-2012/RCGP-Curriculum-3-01-Healthy-People.ashx>

SECTION 3 - ADMINISTRATION, ETHICAL AND REGULATORY FRAMEWORKS (10% of the questions)

This element of the AKT relates to working in general practice within the UK, and knowledge of the NHS and its relation to other institutions and regulators. It is important that GPs have a broad working knowledge of general practice administration, ethical and regulatory frameworks. The topics are those that a GP is likely to encounter in normal working practice although some may occur infrequently. Candidates would be well advised to ask their trainer to show and discuss these administrative tasks when they arise e.g. completion of insurance reports.

Ethics and Duties of a Doctor

General Medical Council

The candidate should be familiar with the General Medical Council's current guidance 'Good Medical Practice' and the supplementary documents. These are regularly updated and candidates should check that they are looking at the most recent guidance available on the GMC website.

Questions may include the following topics but this is not an exhaustive list:

- Beginning of life issues including termination, adoption, surrogacy, antenatal diagnosis of disease
- Capacity including Power of Attorney/Mental Capacity/advanced decisions to refuse treatment. Awareness of differences between the devolved nations
- Chaperones
- Children including capacity, safeguarding, confidentiality
- Confidentiality
- Consent and dissent
- End-of-life care including withholding and withdrawing life-prolonging treatments
- Ethics of genetic testing
- Medical management and working with colleagues
- Probity e.g. gifts, conflicts of interest, financial probity, effect of payment by results such as referral management and other targets
- Raising and acting on concerns about patient safety, whistleblowing
- Referral to other healthcare practitioners including self-referral
- Research ethics
- Safeguarding including children, elderly and vulnerable adults, domestic violence
- Welfare of practitioners such as health, conduct issues

Ethical Principles

This will include the knowledge and application of principles such as beneficence, non-maleficence, justice, autonomy

Certification

- Everyday routine paperwork and regulations a GP may encounter – principles not details
- AND
- Death and cremation certificates including regulations on completing certificates, when to refer to the Coroner/Procurator Fiscal
 - Insurance certificates including for life insurance, critical illness insurance (Personal Medical Attendant's reports), travel insurance
 - Notification of infectious diseases (see Infectious Diseases)
 - Powers of Attorney including welfare and financial, advanced decision making

- Private certificates/medicals – principles such as disclosure of information e.g. firearms, insurance cancellation, probation, adoption, critical illness cover, fitness to fly/travel
- Registration including visual impairment, disability
- Relevant benefits & allowances e.g. DS1500, maternity benefits
- Relevant regulations for Mental Capacity and Mental Health Acts
- Statements of Fitness to Work certificates and related sickness regulations such as Statutory Sick Pay, Employment Support Allowance, principles of returning to work
- Termination of pregnancy regulations

National Regulations, Contractual and Legal Frameworks

- Equality and diversity including disability rights and access, discrimination law including race, gender, disability, age, sexual orientation
- Driving regulations – fitness to drive and DVLA regulations
- Other Acts and regulations relevant to medical practice including;
 - Abortion law
 - Access to Medical Records – children, deceased, compensation, research, what to withhold
 - Children’s Act
 - Controlled drug regulations including register, prescribing, storing, destruction
 - Data protection – Caldicott principles, record keeping, lost records, sharing electronic records
 - Freedom of Information
 - Health and Safety at work regulations relevant to general practice including infection control, vaccine storage, spillage (COSHH regulations), safe practice and methods in the working environment relating to biological, chemical, physical or psychological hazards, which conform to health and safety legislation
 - Mental Capacity
 - Mental Health
 - Misuse of Drugs
 - NHS Complaints procedure and principles, litigation and medical negligence
 - NHS Prescription regulations
 - Performers List/Health Care Board regulations
 - Principles of commissioning
 - Principles of employment regulation as applied to partnerships and employed staff including appointment, discrimination, redundancy, dismissal
 - Registering births and deaths
 - Removing patients from a List
 - Various means by which GPs are contracted including GMS & PMS
 - Violence against NHS staff
- Voluntary sector involvement in patient education, provision of services, social enterprises
- Relationship to Public Health colleagues and roles of each with areas of overlap
- Medical indemnity applied to primary and secondary care including medical negligence

Practice Management

- See Acts and regulations relevant for medical practice as above
- AND
- Awareness of UK health priorities and regional and local variations
 - Contract requirements such as Quality and Outcome Frameworks, enhanced services (local and national)

- Employment law fundamentals applicable to general practice including staff appointment, performance and dismissal
- Financial aspects of medical practice – interpreting simple accounts, sources of income and expenditure
- Immunisation regulations (see Infectious Diseases)
- Information governance including Caldicott guardians, management of data, confidentiality
- Local public health needs assessment relevant to different populations with different demographics
- Major incident planning and the role of the GP
- Making full and appropriate use of available information technology to facilitate clinical practice, audit, chronic disease surveillance
- Medicines management including generic and branded prescribing, implications of drug switching for cost effectiveness
- Occupational health for staff including immunisation, ill health, infectious disease
- Patient Group Directives
- Patient Participation Groups
- Principles of partnership agreements and self-employment, employed doctors such as salaried doctor, locums and doctors in training contracts
- Record keeping - clear, accurate, legible and contemporaneous record keeping, amending records
- Simple management principles including management of change, decision making, risk assessment, negotiation, motivation skills
- Knowledge of the variety of general practice (e.g. single-handed, group practice, rural, inner-city, urban, academic, prison) and implications for service delivery such as interpreters, access to secondary care
- Workload issues including activities such as surgeries, clinics, telephone consultations, home visiting, minor surgery, teaching, outside commitments and out of hours (OOH) care, including data on consultation and referral rates

Clinical Governance

- Clinical audit –the principles and interpretation of results
- Critical appraisal skills (see Research, Statistics and Epidemiology) to facilitate audit and improve practice
- External quality assurance bodies e.g. Care Quality Commission or the equivalent in the devolved countries
- GPs as gatekeepers and commissioners – principles according to the different needs of a wide variety of patients irrespective of their age, gender, cultural, religious or ethnic background, sexual orientation or any other special needs
- Leadership – medical leadership competency framework
 - Licensing and revalidation
- Local Systems of Clinical Governance including
 - Methods such as MSF, 360° feedback, patient satisfaction surveys, learning logs, audits
- National – GMC, NICE, SIGN, NCAS, QOF
 - NHS Complaints system
 - Performance Indicators (prescribing, referral, chronic disease management) – the principles and interpretation of information
- Poor performance (NCAS, LMC, Deanery, GMC, primary care organisation, Occupational Health)
- Professional Development and NHS Appraisal

- Quality improvement principles, QIPP and audit cycles
 - Raising and acting on concerns about patient safety
- Role of public health linking with general practice e.g. in management of infections such as meningitis, influenza epidemic, food safety
 - Significant event analysis – knowledge of the principles, and interpreting and reporting the results

Risk management

- Basic principles of human error and risk assessment
- The application of risk assessment tools
- Methods of calculating, demonstrating and explaining risk to patients for informed decision making. Use of decision aids
- Obligations and mechanisms for notifying outside agencies, e.g. suspected adverse drug reactions in accordance with the relevant reporting scheme; safety of medicines and devices to the Medicines and Healthcare products Regulatory Agency (MHRA); notifiable diseases
- Radiological guidelines relevant to general practice e.g. indications for x-rays, safety in pregnancy

Curriculum Links

<http://www.rcgp.org.uk/gp-training-and-exams/~media/Files/GP-training-and-exams/Curriculum-2012/RCGP-Curriculum-2-02-Patient-Safety-and-Quality-Of-Care.ashx>

<http://www.rcgp.org.uk/gp-training-and-exams/~media/Files/GP-training-and-exams/Curriculum-2012/RCGP-Curriculum-2-03-GP-In-Wider-Professional-Environment.ashx>

<http://www.rcgp.org.uk/gp-training-and-exams/~media/Files/GP-training-and-exams/Curriculum-2012/RCGP-Curriculum-2-04-Enhancing-Professional-Knowledge.ashx>