



Royal College of  
General Practitioners

# **THE APPLIED KNOWLEDGE TEST CONTENT GUIDE August 2014**

This replaces the October 2012 version

**AKT CONTENT GUIDE**  
**August 2014**

**CONTENTS**

<b>1.</b>	<b>Introduction</b>	<b>p.3</b>
<b>2.</b>	<b>Section 1 - Clinical Medicine</b>	<b>p.6</b>
	➤ <b>Cardiovascular problems</b>	<b>p.9</b>
	➤ <b>Digestive problems including nutrition</b>	<b>p.11</b>
	➤ <b>Ear, nose and throat and facial problems</b>	<b>p.14</b>
	➤ <b>Eye problems</b>	<b>p.16</b>
	➤ <b>Genetics</b>	<b>p.18</b>
	➤ <b>Haematology problems</b>	<b>p.19</b>
	➤ <b>Immunology problems</b>	<b>p.21</b>
	➤ <b>Infectious diseases</b>	<b>p.22</b>
	➤ <b>Intellectual and learning disabilities</b>	<b>p.23</b>
	➤ <b>Mental health problems</b>	<b>p.24</b>
	➤ <b>Alcohol and substance misuse problems</b>	<b>p.25</b>
	➤ <b>Metabolic and endocrine problems</b>	<b>p.26</b>
	➤ <b>Musculo-skeletal problems including trauma</b>	<b>p.28</b>
	➤ <b>Neurological problems</b>	<b>p.30</b>
	➤ <b>Palliative and end-of-life care</b>	<b>p.32</b>
	➤ <b>Pharmaco-therapeutics</b>	<b>p.33</b>
	➤ <b>Renal problems</b>	<b>p.35</b>
	➤ <b>Respiratory problems</b>	<b>p.36</b>
	➤ <b>Sexual health overlapping with</b>	<b>p.37</b>
	○ <b>Men's health</b>	<b>p.39</b>
	○ <b>Women's health</b>	<b>p.40</b>
	➤ <b>Skin problems</b>	<b>p.43</b>
	➤ <b>Children and young people</b>	<b>p.45</b>
<b>3.</b>	<b>Section 2 – Research, statistics and epidemiology</b>	<b>p.47</b>
<b>4.</b>	<b>Section 3 – Administration, ethical and regulatory frameworks</b>	<b>p 51</b>

**AKT CONTENT GUIDE**  
**August 2014**

## **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 detailed summary of the knowledge base that is likely to be tested in the Applied Knowledge Test (AKT) and is provided as an aid to candidates and educators when preparing for the AKT.
- Whilst this guide may look daunting, it **CANNOT** be considered as a complete list of general practice topics. For advice on preparing for the AKT see <http://www.rcgp.org.uk/gp-training-and-exams/mrcgp-exam-overview/mrcgp-applied-knowledge-test-akt.aspx>

### **Content Guide and RCGP Curriculum**

- The Content Guide is a resource to complement the [RCGP Curriculum](#) (current version updated to October 2014), 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.

### **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

# AKT CONTENT GUIDE

## August 2014

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 and 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 training curriculum and in assessment methodology and policy.

The RCGP therefore intends to update it as required and 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 applying knowledge in real-life clinical settings and 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 and Northern Ireland). This is particularly relevant to questions within the Administration and Regulatory Framework section. Any variation in clinical guidelines between the devolved nations is taken into account during the question writing process. For example, the AKT will NOT test knowledge of a guideline that applies in one Home Country which conflicts with that in another. However, the

## **AKT CONTENT GUIDE**

### **August 2014**

underlying principles that inform most guidelines are commonly applicable across all four Home Countries.

#### **Feedback**

This is the second version of the Content Guide, which first featured as an addition to the learning resources for the MRCGP in October 2012.

We welcome feedback on its usefulness.

Please send any comments to [exams@rcgp.org.uk](mailto:exams@rcgp.org.uk)

# AKT CONTENT GUIDE

## August 2014

### 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:

- Appropriate and relevant investigations
- Diagnostic features and differential diagnoses
- Interpretation of test results
- Management including self-care, initial, emergency and continuing care, chronic disease monitoring
- Patient information and education including self-care
- Prognosis
- Recognition of 'alarm' or 'red flag' features
- Recognition of normal variations throughout life
- Risk factors
- 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

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 such as lethargy, fever and dizziness relate to several body systems 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

## AKT CONTENT GUIDE

### August 2014

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  
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])  
Memory problems, cognitive impairment  
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

# AKT CONTENT GUIDE

## August 2014

### **KNOWLEDGE OF EMERGENCIES IN GENERAL PRACTICE**

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

### **Curriculum Links across all the topic areas of the Content Guide**

[3.01 Healthy people: promoting health and preventing disease](#)

[3.03 Care of acutely ill people](#)

[3.05 Care of older adults](#)

# AKT CONTENT GUIDE

## August 2014

### 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, dizziness and collapse including non-cardiovascular causes

##### Investigations

- 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, D-dimer
- Secondary care interventions such as coronary angiography and stents, perfusion scanning, CT scans
- Specific cardiac investigations including ambulatory BP monitoring, ECG, exercise ECG, 24 hour and event monitoring ECGs, echocardiography

##### Specific conditions

- 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
- Anticoagulation relevant to cardiovascular diseases such as AF, myocardial ischaemia, peripheral vascular disease, stroke, including heparin, thrombolysis indications, oral anticoagulation
- Arrhythmias including conduction defects such as atrial fibrillation and flutter, heart block, supraventricular tachycardia, ventricular rhythm abnormalities
- Cardiomyopathies - primary and acquired, including dilated, hypertrophic obstructive
- 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, Raynaud's disease, varicose veins, venous and arterial ulcers including interpretation of ABPI.
- Congenital heart disease such as coarctation of the aorta, VSD, ASD, PDA and presentation of these both in children and adults
- Coronary heart disease including complications such as mural thrombus, ventricular aneurysm, rhythm disturbance
- Drug-induced heart disease e.g. secondary to cancer treatment with chemotherapy/radiotherapy, recreational drugs
- Heart failure - acute and chronic including left ventricular dysfunction, right heart failure, cor pulmonale
- Hypertension – essential and secondary, malignant

## AKT CONTENT GUIDE

### August 2014

- Infections such as viral myocarditis, infective endocarditis, pericarditis, rheumatic fever and complications
- Knowledge of pacemakers relevant to primary care such as complications and malfunction
- Pulmonary hypertension; primary and secondary to underlying causes such as fibrotic lung disease, recurrent pulmonary emboli
- Risk factors for coronary heart disease and other thromboembolic diseases such as lipid disorders, diabetes, hypertension. Screening and risk modification such as smoking cessation
- Valvular problems such as mitral, tricuspid, pulmonary and aortic stenosis and regurgitation

#### Curriculum Links

3.12 [Cardiovascular health](#)

# AKT CONTENT GUIDE

## August 2014

### 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

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

#### 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
- Hernias – inguinal, femoral, diaphragmatic, hiatus, incisional

# AKT CONTENT GUIDE

## August 2014

- **Upper GI conditions**
  - 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
  - Oesophageal conditions including achalasia, malignancy, benign stricture, Barrett's oesophagus, globus
  
- **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*
  - Gastrointestinal malignancies including oesophageal, gastric, pancreatic, colorectal, carcinoid, lymphoma
  - 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, perianal haematoma, ischio-rectal abscesses, prolapse, polyps, malignancy
  
- **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
  - Cirrhosis and its causes such as alcohol, non-alcoholic steatohepatitis /fatty liver and autoimmune diseases such as primary biliary cirrhosis, chronic active hepatitis,  $\alpha$ -1 antitrypsin deficiency, Wilson's disease, haemolysis
  - Gallbladder disease such as gallstones, cholecystitis, biliary colic, empyema, malignancy
  - Liver infections such as viral hepatitis, leptospirosis, hydatid disease
  - Liver malignancy – primary and metastatic
  - Liver toxins including drugs such as paracetamol, chemicals and alcohol
  - Pancreatic diseases including acute pancreatitis, chronic pancreatitis, malabsorption, malignancy including islet cell tumours
  - Secondary effects of liver diseases such as ascites, portal hypertension, hepatic failure
  
- **Nutrition**
  - Complications and management of stomas
  - Dietary management of disease or inadequate intake
  - Disorders of weight; obesity and weight loss including non-nutritional causes such as thyroid disease and other endocrine conditions
  - Nutritional problems such as vitamin and mineral deficiencies, supplementary nutrition such as dietary, PEG and parenteral feeding

# AKT CONTENT GUIDE

## August 2014

### Curriculum Links

3.13 [Digestive health](#)

# AKT CONTENT GUIDE

## August 2014

### EAR, NOSE AND THROAT AND FACIAL PROBLEMS

#### Symptoms and signs

- Cough
- Deafness and the differentiation of types of hearing loss
- Dental symptoms relevant to general medical practice
- Disturbance of smell and taste
- Earache and discharge
- Epistaxis
- Facial dysfunction – sensory and motor
- Facial pain
- Hoarseness
- Neck lumps
- 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
- Tinnitus
- Vertigo and dizziness, falls

#### Investigations

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

#### Specific conditions

- Aesthetic and reconstructive surgery and botulinum toxin therapies as may be encountered in GP
- Congenital abnormalities e.g. cleft palate/lip, absent pinna, neck lumps
- Cranial nerve disorders such as Ramsay-Hunt syndrome, Bell's palsy, trigeminal neuralgia, ototoxicity secondary to drugs
- Dental problems presenting in general medical practice such as abscesses; dental disease due to underlying medical causes such as anorexia, xerostomia, drug-induced
- 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
- 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 polychondritis
- Emergency treatments such as tracheotomy
- Head and neck malignancies including laryngeal, nasopharyngeal, sinuses, salivary glands, tongue, lips and oral cavity, tonsillar including lymphomas, unidentified malignancies presenting with lymphadenopathy

## AKT CONTENT GUIDE

### August 2014

- Hearing aids and cochlear implants, tinnitus maskers
- Hearing problems including deafness such as occupational, presbycusis, otosclerosis, tinnitus and associated speech or language disorders
- Nasal problems including perennial and allergic rhinitis, adverse drug effect, polyps and other causes of nasal obstruction, epistaxis, trauma, foreign bodies, septal deviation, trauma
- 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
- Sinus problems including acute and chronic infection, polyps, allergic rhinosinusitis, barotrauma
- Throat problems such as infections, globus, pharyngeal pouch
- Tracheotomy management in primary care
- 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
- 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

#### Referral

- Referral criteria for common ENT conditions
- Understanding of common investigations/treatment pathways in secondary care

#### Curriculum Links

3.15 [Care of people with ENT oral and facial problems](#)

# AKT CONTENT GUIDE

## August 2014

### 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, corneal staining

#### Specific conditions

- Cataracts – congenital, acquired such as drug induced
- Colour blindness
- Congenital, neonatal and childhood eye problems, such as prematurity, congenital cataract, vitamin A deficiency
- Conjunctivitis including infection including bacterial, viral, parasitic and chlamydial causes, and allergic causes
- Contact lens use including infections such as acanthamoeba, corneal damage
- Disorders of tears and tear ducts such as dacryocystitis, sicca syndrome, epiphora, dry eyes
- Disorders of the pupil such as Horner's syndrome, Holmes-Adie
- Episcleritis, corneal or dendritic ulcers, pterygium, pinguecula, corneal injury and erosions
- Eye trauma including penetrating trauma, corneal abrasions, chemical burns, contusions, hyphaema
- Eyelid problems such as blepharitis, ectropion, entropion, chalazion, Meibomian cysts
- Genetic eye problems such as retinoblastoma, retinitis pigmentosa
- Glaucoma – acute, closed angle and chronic open angle
- Keratitis including association with other diseases such as rosacea, thyroid disease
- Keratoconus
- Loss of vision or visual disturbance; differential diagnoses and appropriate management including timescale of urgency
- Macular degeneration – age-related (wet and dry), drusen
- Malignancy such as retinoblastoma, lymphoma, melanoma
- Ophthalmic herpes zoster
- Ophthalmic manifestations of infections such as syphilis, TB, toxocariasis, toxoplasmosis
- Optic neuropathy
- Orbital infections such as cellulitis, tumours

## AKT CONTENT GUIDE

### August 2014

- Red eye – differential diagnoses and appropriate management including timescale of urgency
- Refractive error including myopia, hypermetropia, astigmatism
- Retinal problems including:
  - atrophy
  - detachment
  - haemorrhage, exudates, blood vessel changes associated with systemic diseases, such as hypertension, diabetes, haematological diseases thromboses or emboli
  - tumours such as melanoma, neuroblastoma
  - vascular lesions
- Squint – childhood and acquired due to nerve palsy, amblyopia, blepharospasm
- Subconjunctival haemorrhage
- Systemic diseases with associated eye symptoms/signs, such as hypertension, diabetes, raised intracranial pressure, multiple sclerosis
- Thyroid eye disease
- Uveitis including knowledge of underlying associations e.g. inflammatory bowel disease, connective tissue diseases
- Vitreous detachment

#### Curriculum Links

3.16 [Care of people with eye problems](#)

# AKT CONTENT GUIDE

## August 2014

### GENETICS

- Chromosomal disorders such as Down's syndrome, trisomy 18, Turner's syndrome, Klinefelter's syndrome
- Ethics of genetic testing (see Administration, Legal and Ethical)
- Familial cancer syndromes and associated tests e.g. BRAC analysis
- 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
- Knowledge of risk of inheritance through generations, genograms
- Polygenic disease such as familial hypercholesterolaemia

### Curriculum Links

3.02 [Genetics in primary care](#)

# AKT CONTENT GUIDE

## August 2014

### 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

- Blood grouping such as rhesus status including antenatal blood disorders; safe transfusion practice
- 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
- Other relevant primary care investigations e.g. x-ray s, paraprotein urine testing in myeloma
- Relevant secondary care investigations such as bone marrow, bone scans

#### Specific conditions

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

## **AKT CONTENT GUIDE**

### **August 2014**

- Purpura – recognition and causes such as drug-induced, Henoch-Schönlein
- Splenectomy including functional asplenia
- Splenomegaly including underlying causes, hypersplenism, complications such as rupture and sequestration
- Thrombocytopenia and its causes such as idiopathic thrombocytopenic purpura, drug-induced

# AKT CONTENT GUIDE

## August 2014

### IMMUNOLOGY PROBLEMS

#### Symptoms and signs

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

#### Investigations

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

#### Specific conditions

- Anaphylaxis – recognition and management including doses of adrenaline and resuscitation
- Immune deficiency states – inherited, primary and acquired such as HIV, chemotherapy
- 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 – knowledge of routine primary childhood immunisation schedules, contraindications and adverse reactions
- 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
- Occupational allergies such as latex allergy, contact allergies such as hair dye, metals, plants, preservatives
- Skin manifestations of immune disease such as urticaria, atopic eczema, erythema multiforme
- Types of allergic reactions – immediate, delayed, possible mechanisms

# AKT CONTENT GUIDE

## August 2014

### INFECTIOUS DISEASES

These inevitably overlap with many of the systems lists. Some infections such as meningitis appear in other sections (children and young people, neurology and knowledge of medical emergencies) and TB appears in several different systems (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

#### Specific Infections and their management

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

# AKT CONTENT GUIDE

## August 2014

### INTELLECTUAL and LEARNING DISABILITIES

- Associated mental health problems: increased prevalence and different presentations such as early dementia, depression; specific associations e.g. autism spectrum disorder and ADHD
- 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
- 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
- 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
- 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
- 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
- Protection of vulnerable adults, ethics of caring for people with intellectual disabilities

#### Curriculum Links

3.11 [Care of people with intellectual disability](#)

# AKT CONTENT GUIDE

## August 2014

### 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
- Monitoring of treatments such as lithium, clozapine
- Relevant physical investigations such as blood tests and relevant neurological investigations

#### Specific conditions

- Abuse including child, sexual, elder, domestic violence, emotional including non-accidental injury
- 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
- Anxiety including generalised anxiety and panic disorders, phobias, obsessive compulsive disorder, situational anxiety and adjustment reactions
- Behaviour problems such as attention deficit /hyperactivity disorder, enuresis, encopresis, school refusal
- Cultural and societal aspects of mental health including work, spiritual and religious beliefs and practices
- Deliberate self harm including overdoses. Suicidal thought disorders
- Eating disorders including morbid obesity, anorexia and bulimia nervosa, body dysmorphia
- Electroconvulsive therapy – indications and side effects
- 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
- Mental health disorders due to illicit drug use
- 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
- Medically unexplained physical symptoms, including somatisation, conversion and dissociative disorders
- Organic reactions– (acute and chronic) such as delirium with underlying causes such as infection, adverse reactions to drugs
- Personality disorders including borderline, antisocial, narcissistic
- Post-traumatic stress disorder
- Pregnancy associated disorders such as antenatal and postnatal depression, puerperal psychosis

## AKT CONTENT GUIDE

### August 2014

- Psychological problems including psycho-social problems and those associated with particular life stages such as childhood, adolescence and older people
- Relationship with substance misuse and dependence including alcohol and drugs of misuse and other habit disorders such as gambling
- Self help and psychological therapies such as cognitive behavioural therapy, eye movement desensitisation and reprogramming, counselling, psychotherapy, psychoanalysis, aversion, flooding and desensitisation therapies
- Severe behavioural disturbance including psychotic disorders such as schizophrenia, acute paranoia and acute mania
- Sleep disorders including insomnia, sleep walking

#### Curriculum Links

3.10 [Care of people with mental health problems](#)

#### ALCOHOL AND SUBSTANCE MISUSE PROBLEMS

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

#### Curriculum Links

3.14 [Care of people who misuse drugs and alcohol](#)

# AKT CONTENT GUIDE

## August 2014

### 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

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

#### Specific conditions

- Adrenal diseases including Addison's disease, Cushing's' syndrome and disease, pheochromocytoma, hyperaldosteronism, primary and secondary malignancy, ACTH secreting tumours, congenital adrenal hyperplasia
- Adverse metabolic effects of prescribed drugs e.g. hypokalaemia with diuretics
- Carcinoid syndrome, multiple neuroendocrine neoplasia
- Causes of hyperprolactinaemia such as drug-induced, chronic renal failure, bronchogenic carcinoma, hypothyroidism
- 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
- Disorders of calcium metabolism – hypoparathyroidism, hyperparathyroidism, osteomalacia and vitamin D disorders, association with chronic kidney disease, malignancy such as bony metastases and myeloma
- 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
- Haemochromatosis – primary and secondary, and other disorders of iron metabolism
- Hyperlipidaemias – familial and acquired
- Hyperuricaemia – primary and secondary including haematological causes, drug-induced
- Hypothalamic causes of hormonal disturbances including hyperprolactinaemia, drug-induced

## **AKT CONTENT GUIDE**

### **August 2014**

- Inherited metabolic diseases e.g. phenylketonuria, glycogen storage diseases
- Metabolic causes of unconsciousness e.g. hypoglycaemia, diabetic ketoacidosis, hyponatraemia, hypothyroidism, adrenal crisis
- Pituitary diseases including acromegaly, primary and secondary hypopituitarism, diabetes insipidus
- Poisoning including by food, drugs (prescribed, over the counter or non-medicinal) or other chemicals whether deliberately or unintentionally ingested, inhaled or absorbed
- Psychogenic polydipsia
- Replacement and therapeutic steroid therapy
- Thyroid diseases including goitre, hypothyroidism, hyperthyroidism , benign and malignant tumours, thyroid eye disease, thyroiditis, neonatal hyper- and hypo-thyroidism

#### **Curriculum Links**

3.17 [Care of people with metabolic problems](#)

# AKT CONTENT GUIDE

## August 2014

### 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

- Avascular necrosis
- Bone cancers including metastatic, Ewings' and soft-tissue sarcoma
- Cervical spinal disorders including cervical spondylosis, torticollis and 'whiplash' injuries, vertebral fracture and long term consequences
- Congenital/inherited diseases such as osteogenesis imperfecta, Marfan's syndrome, Ehlers-Danlos syndrome, Gaucher's disease, hypermobility syndromes
- Crystal arthropathies such as gout, pyrophosphate arthropathy
- External and internal injuries of the chest, abdomen or pelvis: recognition and principles of management
- Fractures, dislocations, haematoma, sprains, strains and other significant soft-tissue trauma: recognition and principles of management
- Hand disorders such as trigger finger, Dupuytren's contracture, carpal tunnel syndrome, ulnar nerve compression foot disorders such as plantar fasciitis, digital neuroma
- Infection such as septic arthritis, osteomyelitis
- Inflammatory arthritides and connective tissue diseases such as: rheumatoid arthritis, seronegative arthritis such as psoriatic arthropathy, ankylosing spondylitis, reactive arthritis, viral arthropathy.; connective tissue disorders such as systemic lupus erythematosus, scleroderma, systemic sclerosis
- 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
- Skeletal problems including disorders of calcium homeostasis (overlapping with metabolic/endocrine disorders) such as osteomalacia, rickets, Paget's disease
- Soft tissue disorders such as bursitis, epicondylitis, Achilles tendon problems
- 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
- Trauma including fractures and primary care management of injuries/ first-aid

## AKT CONTENT GUIDE

### August 2014

- Wounds (including surgical) and lacerations: management and principles of care

#### Curriculum Links

3.20 [Care of people with musculoskeletal problems](#)

# AKT CONTENT GUIDE

## August 2014

### 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
- Restless legs
- 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

- Acute confusional states or coma with underlying causes such as metabolic, infective, drug-induced
- Autonomic neuropathies such as diabetic, drug induced, metabolic, multi-system atrophy
- Cerebellar disorders including tumours, demyelination such as multiple sclerosis and inherited such as Friedrich's ataxia
- Chronic fatigue syndrome
- Complex regional pain syndrome
- Cranial nerve disease such as Bell's palsy, trigeminal neuralgia, bulbar palsy
- Dementia such as Alzheimer's, vascular, Lewy body, Pick's disease, normal pressure hydrocephalus, other causes of memory loss and confusion
- Epilepsy including generalised and focal seizures, febrile convulsions and other causes of seizures such as hypoglycaemia, alcohol and drugs
- 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
- Headaches including tension, migraine, cluster, raised intracranial pressure including idiopathic intracranial hypertension
- Infections such as meningitis, encephalitis, arachnoiditis
- Inherited neurological diseases such as Huntington's disease, Charcot- Marie-Tooth, myotonic dystrophy, neurofibromatosis

## AKT CONTENT GUIDE

### August 2014

- Intracranial haemorrhage including subarachnoid, subdural and extradural and thrombosis such as sinus thromboses, congenital aneurysms
- Motor neurone disease including progressive bulbar palsy and muscular atrophy
- 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
- Muscle disorders such as muscular dystrophy, myasthenia gravis and associated syndromes
- Parkinson's disease and Parkinsonism secondary to other causes such as drugs
- Sensory and/or motor disturbances (peripheral nerve problems) including mono- and poly-neuropathies such as nerve compression and palsies, Guillain-Barré syndrome
- Speech disorders including stroke, cerebellar disease, cerebral palsy, motor neurone disease
- Spinal cord disorders such as root and cord compression, cauda equina syndrome, spinal stenosis, syringomyelia
- 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
- Stroke including transient ischaemic attacks, with underlying causes such as cardiac arrhythmias, arterial disease, thrombophilia
- Tumours of the brain and peripheral nervous system such as meningiomas, glioblastomas, astrocytomas, neurofibromatosis, secondary metastases

#### Curriculum Links

3.18 [Care of people with neurological problems](#)

# AKT CONTENT GUIDE

## August 2014

### 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:

- Approaches to supporting carers and bereavement, including awareness of different religious and cultural beliefs and practices
- 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
- 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
- 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)

#### Curriculum Links

3.09 [End of life care](#)

# AKT CONTENT GUIDE

## August 2014

### 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 including:

- Appendices on interactions and special considerations such as prescribing in pregnancy and breast-feeding, renal and hepatic failure, borderline substances
- Palliative care, computer prescribing, controlled drugs, safe prescribing including children (as detailed in BNFC)
- 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
- Calculation of drug dosages
- Complexity of prescribing in co-morbidities and the balance of risk and benefit
- Compliance/concordance including knowledge of why patients may not take their medication and methods to enhance concordance
- Drug contraindications, adverse effects, iatrogenic disorders and potential interactions
- Drug storage and disposal
- Factors affecting drug dosage, including renal or hepatic disease; pregnancy and breast feeding; drug requirements, and monitoring
- Generic and branded prescribing
- Issues arising in the use of complementary and alternative therapies and potential risks and interactions with conventional drugs
- Mechanisms to reduce antibiotic prescribing such as delayed prescriptions
- Methods of explaining risks to patients including the use of decision aids
- Monitoring of prescribed drugs e.g. DMARDS, warfarin, lithium and shared –care prescribing such as methylphenidate
- Multiple drug interactions common in primary care prescribing
- Patient group directives, roles of practice nurses
- Potential risks and benefits of prescribing unlicensed drugs
- Reporting mechanisms for adverse drug reactions or medical device failures to the relevant regulatory authority such as MHRA
- Responsibility for prescribing including non-medical prescribers, doctors in training and across the secondary-primary care boundary
- Risks and benefits of (OTC) over the counter medications and interactions with prescribed drugs
- Role of drug representatives and drug promotion regulations – ethical considerations, codes of conduct, conflicts of interest

## AKT CONTENT GUIDE

### August 2014

- Role of the pharmacist in medication reviews and supporting safe prescribing
- Safe vaccination prescribing and regimes
- Safety procedures involved in prescribing controlled drugs including knowledge of the legal requirements for prescribing, storage and disposal

#### **Prescribing for children**

The use of unlicensed drugs 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**

2.02 [Patient safety and quality of care](#)

# AKT CONTENT GUIDE

## August 2014

### 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, ureteroscopy, urodynamic studies and flow rate studies

#### Specific conditions

- Acute kidney injury including diagnosis, causes such as 'drug-induced' and primary care management
- Catheters – types, indications, management. Use in paraplegic patients, self catheterisation
- Chronic kidney disease including underlying causes such as glomerulonephritis, connective tissue diseases, diabetes, hypertension. Monitoring and referral criteria
- Haematuria of any cause including infection, glomerulonephritis, nephritic syndrome, malignancy, stones
- Inherited kidney diseases such as polycystic kidney disease
- 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
- Prescribing in renal disease as per BNF guidance: principles of dose adjustment in renal impairment
- 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
- Renal colic including knowledge of secondary care management such as stents and lithotripsy
- Renovascular disease such as renal artery stenosis, diabetes
- Transplantation and primary care management
- Urinary tract infections in children and in adults
- Urinary tract obstruction and structural abnormalities (strictures, posterior urethral valves, duplex systems) calculus
- Urological malignancy such as renal, ureteric and bladder

# AKT CONTENT GUIDE

## August 2014

### RESPIRATORY PROBLEMS

#### Symptoms and signs

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

#### Investigations

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

#### Specific conditions

- Asthma – acute and chronic in children and adults
- Bronchiectasis
- Chronic obstructive pulmonary disease
- Connective tissue diseases affecting the lung, such as rheumatoid arthritis, SLE, sarcoidosis
- Cough including haemoptysis, and non-respiratory causes such as GORD
- Cystic fibrosis
- Emphysema including  $\alpha_1$ -antitrypsin deficiency,
- Immunosuppression affecting the respiratory system including opportunistic infections such as TB, fungal, parasitic
- Indications for the use of oxygen in emergency, acute and chronic management including domiciliary oxygen and use in palliative care
- Lower respiratory tract infections, e.g. bronchiolitis, bronchitis, pertussis and pneumonia (of any cause), atypical pneumonias including Legionnaire's disease, tuberculosis
- Lung fibrosis and associated causes including adverse drug reactions
- Occupational respiratory diseases such as the pneumoconioses, asthma, extrinsic allergic alveolitis, asbestos related disease
- Pleural effusion causes including infection, connective tissue diseases, malignancies
- Pneumothorax including simple and tension
- Pulmonary embolism
- Respiratory failure and methods of ventilation such as CPAP for sleep apnoea
- 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

# AKT CONTENT GUIDE

## August 2014

- Upper respiratory tract infections including tonsillitis, peri-tonsillar abscess, epiglottitis, laryngitis and tracheitis

### Curriculum Links

3.19 [Respiratory health](#)

## 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

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

### Specific conditions

- Contraception
  - male including condoms and spermicides, vasectomy counselling and complications
  - female
    - emergency contraception
    - hormonal - combined oral/patch/ring contraception, progesterone- only methods such as oral, intrauterine system, depot injection, implant non-hormonal methods such as female condoms, diaphragms, natural cycle control, non-hormonal IUCDs, sterilisation counselling
- Erectile dysfunction including organic causes such as diabetes, vascular disease, neurological disease, drug-induced, psychological causes
- 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);
- Issues of sexual identity and sexual orientation such as transgender, gender reassignment, men and women who have sex with men and/or women
- 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
- Sexual problems including loss of libido, anorgasmia

## **AKT CONTENT GUIDE**

### **August 2014**

- Sexually transmitted diseases including safe sex and contact tracing – including hepatitis B & C, HIV, chlamydia, gonorrhoea, syphilis, lymphogranuloma venereum, genital warts, genital herpes simplex
- Termination of pregnancy – indications, methodology, complications, legal and ethical aspects

#### **Curriculum Links**

3.08 [Sexual health](#)

# AKT CONTENT GUIDE

## August 2014

### 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

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

#### Curriculum Links

3.07 [Men's health](#)

# AKT CONTENT GUIDE

## August 2014

### 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

- Investigations for gynaecological malignancy e.g. colposcopy, blood tests such as CA125, transvaginal ultrasound
- Investigations for recurrent miscarriage
- 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
- Mammography and breast ultrasound
- Pregnancy investigations including urinary and serum  $\beta$ -HCG and testing for congenital abnormalities:
  - blood tests such as triple tests, immunity testing
  - chorionic villus sampling, amniocentesis
  - infection screening such as syphilis, HIV, rubella
  - routine ultrasound
- Screening and prevention programmes such as cervical screening including HPV, HPV vaccination programme, screening mammography, breast awareness

#### 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
- **Menopause**
  - Menopause including premature menopause, perimenopause, types of hormone replacement therapy, atrophic vaginitis, postmenopausal bleeding.
  - Non-gynaecological symptoms such as skin changes, psychological symptoms

# AKT CONTENT GUIDE

## August 2014

- **Pelvic problems**

- Chronic pelvic pain, dyspareunia, sexual dysfunction, psychosexual problems
- Infection including STI such as pelvic inflammatory disease (overlap with Sexual Health)
- Ovarian cysts, endometriosis, malignancy including adenocarcinoma and teratoma
- Polycystic ovary syndrome : gynaecological and associated metabolic disorders such as insulin resistance and hirsutism
- Urinary problems such as prolapse, overactive bladder syndrome, stress and/or urge incontinence
- Uterine prolapse

- **Pregnancy**

- Antenatal complications such as
  - bleeding including miscarriage, ectopic pregnancy, placenta praevia, placental abruption
  - haematological problems such as haemolytic disease including rhesus incompatibility and prophylaxis, haemoglobinopathies such as sickle cell disease and thalassaemia, thromboembolism
  - infections such as rubella, cytomegalovirus, group B streptococcus, chickenpox, parvovirus, listeriosis, herpes simplex, hepatitis
  - metabolic problems such hyperemesis, obesity, gestational and pre-existing diabetes, thyroid disorders, causes of jaundice in pregnancy including cholestatic, hepatitis, drugs
  - multiple pregnancies and associated complications
  - neurological problems such as epilepsy and associated drug treatment, migraine, thrombosis
  - pre-eclampsia and eclampsia
  - urinary tract infections
- 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
- Postnatal problems including retained products, uterine infection, postnatal depression and psychosis, breastfeeding problems
- Problems of labour including premature, late, breech, obstructed deliveries, Caesarean sections and associated complications
- Recurrent miscarriage risk
- 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
- Menstrual problems

## AKT CONTENT GUIDE

### August 2014

- 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
  - Premenstrual syndrome
  - Uterine fibroids and adenomyosis
- 
- **Vulval and vaginal problems**
    - Discharge, including infections such as bacterial vaginosis, candidiasis, genital warts; and 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

3.06 [Women's health](#)

# AKT CONTENT GUIDE

## August 2014

### SKIN PROBLEMS

#### Symptoms and signs

- Birthmarks
- Blisters
- Dry skin and scaling
- Erythema
- Hair loss and hirsutism
- Hyperhidrosis
- 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 rosacea, rhinophyma, perioral dermatitis
- Acne vulgaris including indications and side effects of isotretinoin, hidradenitis suppurativa
- Blistering diseases including pemphigoid, pemphigus, porphyria
- Drug-related skin eruptions such as Stevens-Johnson syndrome, toxic epidermal necrolysis
- Eczema: infantile, childhood, atopic, seborrhoeic, contact allergic, irritant, (including occupational), discoid
- Hair disorders including alopecia, hirsutism, fungal infection, infestations including lice
- 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)
- Lichen planus, granuloma annulare, lichen sclerosus, morphea
- Light sensitive disorders such as polymorphic light eruption, porphyria, drug reactions
- Light treatments such as UVB, PUVA
- Pityriasis rosea
- Pruritus either generalised or localized – underlying non-dermatological causes such as thyroid disease and iron-deficiency
- Psoriasis; guttate, plaque, flexural, scalp, nails, pustular and erythrodermic. Associated morbidity; physical such as cardiovascular disease and psychological such as depression
- Psychiatric associations of skin disease such as dermatitis artefacta, depression
- Recurrent suppurative conditions such as hidradenitis

## AKT CONTENT GUIDE

### August 2014

- 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
- 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
- Ulcers – distinguishing arterial and varicose, vasculitic, malignant
- Urticaria, angio-oedema and allergic skin reactions including adverse drug reactions
- Vitiligo, hyperpigmentation such as acanthosis nigricans
- Wounds including burns and scalds, scar formation and complications

#### Curriculum Links

3.21 [Care of people with skin problems](#)

# AKT CONTENT GUIDE

## August 2014

### 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:

- Normal developmental milestones and assessment of development delay including language, gross and fine motor and social development
- Normal growth including interpretation of growth charts
- Normal maturation including puberty
- 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, plagiocephaly

#### 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:

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

#### Investigations

- Appropriate investigations for specific diseases e.g. asthma, urinary tract infection
- 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

#### Specific conditions

- 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 infections including exanthemata such as mumps, measles, rubella, chickenpox, herpes simplex, parvovirus, Coxsackie, Kawasaki's, other infections listed in Skin disorders

## AKT CONTENT GUIDE

### August 2014

- Childhood malignancies such as retinoblastoma, neuroblastoma, nephroblastoma, leukaemias, sarcoma, brain tumours
- Chromosomal disorders such as Down's syndrome, Fragile X, Klinefelter's syndrome, trisomy 18, Turner's syndrome
- Congenital abnormalities such as:
  - CVS – congenital heart disease (cyanotic and non-cyanotic), coarctation of the aorta, situs inversus
  - endocrine such as hypothyroidism, congenital adrenal hyperplasia
  - gut abnormalities e.g. imperforate anus, tracheo-oesophageal fistula, Hirschsprung's disease, volvulus, pyloric stenosis, diaphragmatic hernia, gastroschisis
  - musculoskeletal such as talipes equinovarus, absent or reduced limb development, hip dysplasia
  - neurological abnormalities such as cerebral palsy, microcephaly, plagiocephaly, hydrocephalus
  - renal – structural abnormalities such as duplex kidneys, urethral valves
  - sensory impairment such as sight e.g. congenital cataract, hearing e.g. inherited sensorineural deafness
- Diagnosis and management of diseases relating to children such as asthma, diabetes, epilepsy, respiratory infections such as pneumonia, bronchiolitis, croup
- Failure to thrive and underlying causes such as cystic fibrosis, coeliac disease, chronic infection, parenting difficulties
- GI diseases relevant to children such as appendicitis, Meckel's diverticulum, intussusception, malabsorption such as coeliac disease, lactose intolerance, cystic fibrosis
- Immunisation in children – routine primary schedule and other immunisations
- Learning disabilities in children such as autism, dyspraxia, Asperger's syndrome
- Musculo-skeletal problems relevant to children such as inflammatory arthritides (infective, autoimmune), osteochondritis, Osgood-Schlatter's, Perthes' disease, slipped epiphysis, injuries such as greenstick fractures, pulled elbow
- Neonatal:
  - congenital abnormalities as above
  - feeding problems (breast and bottle feeding), gastro-oesophageal reflux, hypoglycaemia
  - jaundice (e.g. breastfeeding, haemolytic and haemorrhagic disease of the newborn, biliary atresia)
  - respiratory problems such as respiratory distress syndrome, sleep apnoea
  - skin disorders such as birthmarks, urticaria, milia
- 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, haemolytic uraemic syndrome
- Safeguarding children – recognition of non-accidental injury including physical, emotional and sexual abuse, and appropriate actions
- Sex identity and intersex, appearance of genitals including fused labia, hypospadias, clitoral hypertrophy

#### Curriculum Links

3.04 [Care of children and young people](#)

# AKT CONTENT GUIDE

## August 2014

### **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**

- 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
- 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
- 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

#### **Statistical terminology**

- Knowledge of basic statistical terminology including the following:

Absolute risk reduction (ARR)	Meta-analysis
Association	Mode
Bayesian probability	Negative predictive value (NPV)
Bias	Nondirective interview
Blinding	Null hypothesis
Case control	Number needed to harm (NNH)
Case fatality	Number needed to treat (NNT)
Cohort	Odds & Odds Ratio
Confidence intervals	Positive predictive value (PPV)
Confounding	Prevalence

## AKT CONTENT GUIDE August 2014

Correlation	Probability
Crossover	p-values
Cross-sectional	QALY (quality adjusted life year)
DALY (disability adjusted life year)	Randomised controlled trial (RCT)
Data types (categorical, ordinal, continuous)	Range
Delphi	Relative risk reduction (RR)
Discrimination	Reliability
Distributions (normal and non-parametric)	Risk ratio
Ethnography	Risk reduction (RR)
Event rate	Sampling
Focus group	Sensitivity
Generalisability	Specificity
Grounded theory	Standard deviation (SD)
Hazard Ratio	Standardised mortality rates and ratios
Incidence	Systematic review
Inclusion/exclusion criteria	Trends
Inductive reasoning	Triangulation
Likelihood ratios	Type 1 and 2 errors
Mean	Validity
Median	

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

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

**Graphical representations** and interpretation:

# AKT CONTENT GUIDE

## August 2014

- 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:

- number needed to harm (NNH), number needed to treat (NNT)
- odds, odds ratio (OR)
- predictive value - negative predictive value (NPV), positive predictive value (PPV)
- 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)
- specificity, sensitivity,

### **Implications of research results** and conclusions

- including types of bias, 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 an 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**

- 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
- Knowing the conditions which constitute the main reasons for patients consulting in UK primary care
- Knowledge of decisions or interventions made in the interests of a community or population of patients such as immunisation
- 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
- Risk of disease in population groups
- The qualitative measurements of health such as QALY
- Working knowledge of population-based preventive strategies including immunisation, health screening and population screening

### **Screening**

## AKT CONTENT GUIDE

### August 2014

- Knowledge of risks and benefits of screening programmes and information available to patients to aid decision making
- 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

#### **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**

2.01 [The GP consultation in practice](#)

3.01 [Healthy people: promoting health and preventing disease](#)

# AKT CONTENT GUIDE

## August 2014

### **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 including requests for treatment on religious grounds
- 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**

- Death and cremation certificates including regulations on completing certificates, when to refer to the Coroner/Procurator Fiscal

## AKT CONTENT GUIDE

### August 2014

- Everyday routine paperwork and regulations a GP may encounter – principles not details
- Insurance certificates including for life insurance, critical illness insurance (Personal Medical Attendant's reports), travel insurance
- Notification of infectious diseases (see Infectious Disease)
- 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

- Driving regulations – fitness to drive and DVLA regulations
- Equality and diversity including disability registration, rights and access, discrimination law including race, gender, disability, age, sexual orientation
- Medical indemnity applied to primary and secondary care including medical negligence
- 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, decontamination/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
- Relationship to Public Health colleagues and roles of each with areas of overlap, addressing health inequalities
- Voluntary sector involvement in patient education, provision of services, social enterprises

# AKT CONTENT GUIDE

## August 2014

### Practice Management

See Acts and regulations relevant for medical practice as above

- Awareness of UK health priorities and regional and local variations
- Contract requirements such as Quality and Outcome Frameworks, enhanced services (local and national)
- Eligibility for NHS care
- 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 disease)
- Information governance including Caldicott guardians, management of data, confidentiality
- 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
- 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, formularies and prescribing reports
- 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
- QoF principles including exception reporting
- 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
- 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 Statistics) 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

## AKT CONTENT GUIDE

### August 2014

- 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/root cause analysis - knowledge of the principles, and interpreting and reporting the results

#### Risk management

- Basic principles of human error and risk assessment
- 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
- The application of risk assessment tools

#### Curriculum Links

2.02 [Patient safety and quality of care](#)

2.03 [The GP in the wider professional environment](#)

2.04 [Enhancing professional knowledge](#)