MB ChB Phase II

Learning Outcomes

Academic Year 2018/19

Student name:
Phase II Learning Outcomes

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Introduction

Overview
This document aims to give further guidance to what you should currently be learning for the latter part of Phase II (Year 2). It pulls together advice that has already been issued (such as the advanced cases 1 learning outcomes, the case list, the investigations list, the drugs list and the various presentations) and aims to make better sense of how to use these sources to plan your learning now and your revision before the summative assessment.

The Warwick MBChB curriculum consists of blocks (such as AC1 or CCE1) and themes (such as social and population perspective). Each phase of the course and therefore each phase examination will contain outcomes relating to particular blocks but also to the themes. Where possible, these are integrated in terms of both learning and assessment especially as theme outcomes are often met during clinical exposure rather than in specific sessions relating to the theme. However all the learning outcomes relates to the GMC Outcomes for graduates 2018, the components of which are listed below.

Outcomes for graduates (2018)
- Outcomes 1: Professional values and behaviours
  - Professional and ethical responsibilities
  - Patient safety and quality improvement
  - Dealing with complexity and uncertainty
  - Safeguarding vulnerable patients
  - Team working

- Outcomes 2: Professional skills
  - Communication and interpersonal skills
  - Diagnosis and medical management
  - Using information effectively and safely

- Outcomes 3: Professional knowledge
  - Applying biomedical scientific principles
  - Applying psychosocial principles
  - Health promotion and illness prevention
  - The health service: understanding and working in the NHS
  - Clinical research and scholarship

Assessment
Overall, you should expect the balance of the summative assessment to be in approximate proportion to learning time in the Phase. Therefore, just over a quarter will be material met in AC1, with a further quarter being based on your clinical experience, Trust learning and case based learning in each of the three elements of CCE. Medical learning is not modular, and material met in Phase I will be included when it relates to and provides the basis for learning you have undertaken in Year 2.
Advanced Cases 1 (AC1) Learning Outcomes

Introduction
This 12 week block is the start of your second year (Phase II) of the MBChB course. Throughout Phase II you will build on your learning from Phase I, and during AC1 you will be developing your skills in history taking, examination and most importantly the life-long skill of learning from patients, in preparation for your Core Clinical Education placements that form the remainder of Phase II

Week 1: Arrhythmia and Hypertension
- Recognise the symptoms and signs and explain the relevant underlying scientific process of developing arrhythmias such as atrial fibrillation
- Begin to form basic investigation and management plans for patients with atrial fibrillation and other common or important cardiac conditions
- Describe the risks associated with atrial fibrillation; evaluate the benefits and risks for patients starting anticoagulation medication for atrial fibrillation and communicate this risk effectively with patients
- Recognise the symptoms and signs and explain the relevant underlying scientific process of hypertension, the epidemiology and associated risks of hypertension and how to apply the principles of primary, secondary and tertiary prevention of disease
- Begin to form basic investigation and management plans for patients with hypertension

Week 2: Chronic Conditions (such as Heart Failure and Mental Health)
- Recognise the symptoms and signs and explain the relevant underlying scientific process of developing chronic multisystem disease such as heart failure
- Begin to form appropriate basic investigation and management plans for patients with heart failure
- Explain the relationship between psychological and chronic physical conditions
- Recognise and describe the symptoms and signs of depression and be able to perform a mental state examination
- Begin to form basic management plans for patients with depression including appropriate investigations and assessments as well as demonstrate an understanding of how to assess the needs and support required for people with mental health conditions

Week 3: Frailty and Confusion
- Explain how normal human structure, function and physiological process differs in the older age group
- Describe the symptoms and signs and explain the relevant underlying scientific process of developing confusion
- Be able to perform a cognitive stage examination and understand the importance of assessing the mental capacity of a patient
- Begin to form appropriate basic investigation and management plans for patients with confusion
- Demonstrate the ability to work collaboratively with other health and care professionals / organisations when working with patients, particularly those with multiple morbidities, frailty and long term physical and mental conditions
**Week 4: Vulnerable patients and Infections**

- Understand the complex medical needs, goals and priorities of vulnerable patients and the factors that can affect health and wellbeing including the environmental, social, behavioural and cultural factors which influence health and disease
- Begin to demonstrate the ability to work collaboratively with other health and care professionals / organisations when working with patients, particularly vulnerable groups of patients
- Recognise the symptoms and signs and explain the relevant underlying scientific process of multisystem infectious disease
- Begin to form basic investigation and management plans for patients with multisystem infectious diseases by applying the principles and knowledge relating to immunology and microbiology
- Apply the basic principles of communicable disease control in hospital and community settings, including disease surveillance

**Week 5: Virology and infections**

- Recognise and describe symptoms and signs and explain the relevant underlying scientific process of viral infectious diseases and of infections affecting the immune system
- Apply the principles and knowledge relating to immunology and microbiology to care of those with viral infections
- Begin to form basic investigation and management plans for patients fever of unknown origin including appropriate investigations
- Begin to form basic investigation and management plans for patients with infectious viral diseases
- Demonstrate how to communicate sensitively and effectively with patients especially when discussing issues that may be sensitive for the patient such as alcohol, smoking, diet, weight and sexual behaviour

**Week 6: Autoimmune disease**

- Recognise and describe the symptoms and signs and explain the relevant underlying scientific process of autoimmune disease
- Begin to form basic investigation and management plans for patients, applying the principles and knowledge relating to cell biology and immunology to care of those with allergies or autoimmune disease
- Begin to demonstrate the ability to work collaboratively with other health and care professionals and organisations when working with patients with complex multisystem disease
- Recognise the complex medical needs, goals and priorities of patients and the factors that can affect health and wellbeing in those with complex multisystem diseases

**Week 7: Adolescence and diabetes**

- Recognise and describe symptoms and signs and explain the relevant underlying scientific process of endocrine disease including diabetes
- Begin to form basic investigation and management plans for patients with endocrine disease
• Recognise the complex medical needs, goals and priorities of patients and the factors that can affect health and wellbeing in young people with chronic conditions
• Explain the sociological aspects of behavioural change and treatment concordance and compliance such as in adolescents, and apply these as part of person-centred decision making
• Demonstrate how to communicate sensitively and effectively with patients especially when communicating with children and young people and people who lack insight into their illness or are ambivalent about treatment

**Week 8: Genetics**

• Recognise and describe symptoms and signs and explain the relevant underlying scientific process of the more common genetic conditions in children such as Cystic Fibrosis, Haemophilia, Down’s syndrome, and Duchenne Muscular Dystrophy
• Begin to form basic investigation and management plans for children with genetic conditions
• Demonstrate working collaboratively with patients, their relatives, carers or other advocates, in planning their care, negotiating and sharing information appropriately and supporting patient self-care
• Apply the principles and knowledge relating to genetics and genomics to care of those with genetic disorders
• Summarise the current ethical dilemmas including those involving genetics in medical science and healthcare practice

**Week 9: Cancer**

• Recognise the symptoms and signs of cancer and explain the relevant underlying scientific process including principles and knowledge relating to anatomy, biochemistry, cell biology, pathology and genetics applying and integrating this into patient care
• Begin to form basic management and investigation plans for patients with common, important and chronic illnesses, such as cancer, taking into consideration the patients’ preferences, social needs, multiple morbidities, frailty and long term physical and mental conditions
• Demonstrate working collaboratively with patients, their relatives, carers or other advocates, in planning their care, negotiating and sharing information appropriately and supporting patient self-care
• Recognise how treatment and care can place an additional burden on patients and make decisions to reduce this burden where appropriate, particularly where patients have multiple conditions or are approaching the end of life
• Describe how health care professionals can communicate sensitively and effectively with patients especially when sharing news about a patient’s condition that may be emotionally challenging for the patient and those close to them
Introduction

The 30 weeks of Core Clinical Education has an overall aim of transitioning students from mainly classroom based activities with some clinical experience to clinical students who can thrive in an active clinical environment and access clinical learning effectively. We understand that dealing with the breadth of possible clinical learning experiences can seem daunting. To deal with this, please remember the overall ethos of CCE (see below). Guidance and outcomes for CCE in general and specific outcomes for CCE1, 2, 3 and their individual presentations list follow this. However, this division between CCE1, 2 and 3 is slightly artificial in the clinical environment, as students will come across various presentations during each CCE block.

Overall Ethos

To become competent and confident at

- History taking
- Examination
- Constructing differential diagnoses
- Planning investigations
- Basic Management
- Communicating with patients and with teams in relation to common and important conditions.

Guidance

Your teaching will have focussed on classic presentations in terms of the history and examination findings of common and important conditions. You do need to be aware that not all patients present classically but you are not expected to know all those atypical presentations, just the very common and important ones.

Your list of differential diagnoses should include causes which are common in clinical practice and the investigations you suggest, routinely available to those in GP and secondary care. You have a list of the relevant investigations.

Your management plans should include a basic knowledge of the modalities available (including psychological and social) and where a drug treatment is available, the class of medication and one or two specific examples. Your CCE handbook contains a guide to a holistic approach to management. You are also provided a drug list to complement the list for Phase I.

Remember the most important thing in medicine is diagnosis; if you begin by thinking about the differential diagnosis, this will guide your questioning, focus the examination and the choice of investigations.
Presentation List

You are provided with a presentation list to help you focus on a group of specific presentations and assessments will focus on these presentations. In terms of the ‘depth’ of learning for each presentation, you will meet the cases in a variety of settings – some in case based learning sessions, some in ‘planned’ clinical encounters and some you will seek out yourself in the clinical environment. You should follow the key principles:

**Epidemiology**
How common is this presentation? How important?

**Relevant basic science/knowledge**
What basic science do I need to revise in order to understand this presentation fully? (For example, in a case of COPD, it would be helpful to revise lung anatomy, the pathological effects of smoking on the bronchial tree and lung tissue, type 1 vs type 2 respiratory failure, arterial blood gas results, etc.)

**History and Examination**
What are the classical findings for this presentation? How do patients usually present? Are there any common and important ways that the presentation can be misleading?

**Differential diagnosis**
What are the likely/common causes? This is usually the first 2 to 4 on a list you would find in any of the standard texts e.g. Macleod's Clinical Examination or Kumar and Clark. What are the important causes you also need to think about?

**Investigations**
What are the first line investigations for this presentation? Which are most useful? Which will help you decide between your differential diagnoses?

**Management**
What are the key modalities of management? (advice, self care, drugs, surgical, etc.) What are the most important examples for the diagnosis you have made? Refer to the drug list but remember that management is about a lot more than drugs. What are the first line treatments?

**Prognosis**
What is the likely outcome of this case? What factors could alter this prognosis?
CCE Overarching Learning Outcomes

At the end of CCE students should be able to:

1. Take and record a patient's medical history, including family and social history, talking to relatives or other carers where appropriate
   a. Demonstrate the skills of a patient-centred interview in an active clinical environment
   b. Explain the immediate and long-term health-related consequences of a ‘poor’ consultation for the patient and clinician e.g. failure to adhere to advice, delay in seeking help in future, and negative anticipatory effects on subsequent consultation.

2. Present a comprehensive assessment of a patient's clinical problem in real clinical scenarios having obtained a full clinical history and performed relevant detailed clinical examination including the likely clinical diagnoses and important differential diagnoses.

3. Observe and reflect on the process of clinical decisions made by teams, particularly where the initial diagnosis is unclear, incorrect or the diagnosis changes
   a. Reflect on a series of clinical judgements and decisions in relation to exemplar clinical cases and how decisions were arrived at.

4. Outline the framework of obtaining consent, exploring ideas, concerns, expectations with due regard for respecting the autonomy of a patient. An appreciation that this applies to all clinical encounters apart from a few selected emergency situations.

5. Outline the microbiological principles in relation to surgical scrubbing
   a. Outline the etiquette of theatre behaviour in relation to safe surgical practice and specific infection control
   b. Demonstrate surgical scrubbing and donning of personal protective equipment (including hand antisepsis, surgical gowning, gloving and masking)
   c. Apply the principles of the epidemiology of infectious diseases in a hospital setting. Demonstrate adherence to hospital infection control measures.
CCE1 Learning Outcomes
During CCE1, the focus is on **history taking** and **examination**.

Achieving these learning outcomes can only be achieved by practicing history taking and examination on patients.

**At the end of CCE1 students should be able to:**
1. Demonstrate effective communication in real and simulated scenarios involving patients, carers and other professionals
   a. Identify and reflect on the communication style of peers

2. Carry out a competent history and examination of a real or simulated patient including the accurate observation and recording of signs and symptoms
   a. Demonstrate the skills of seeking questions and checking patient understanding in an active clinical environment
      i. Analyse how poor consultation/communication results from incongruent doctor-patient beliefs, expectations and experiences AND in a failure to recognise and respond appropriately to the incongruence
      ii. Demonstrate accepted methods of allowing patients to ask questions and discuss their views, concerns and preferences
   b. When asked to by a supervising clinician, accurately prepare and update clinical records from clinical cases seen in clinical practice. Not all students will get the chance to do this in CCE but students will have the opportunity as they progress through the course
      i. Describe ways in which a patient’s individuality can be maintained in written communications
      ii. Apply the principles of legislation, guidance and protocols surrounding the security and confidentiality of patient identifiable information and the access of such information by patients, their representatives or clinicians in common scenarios
   c. Take an occupational history and proceed to relevant clinical examination and necessary investigations as relevant to the occupational condition.
   d. Take a nutritional history and relate under/over nutrition to relevant clinical cases.
   e. Demonstrate gaining a relevant and focused drug history from real and simulated patients
      i. Identify common and important barriers in gaining a full medication history particularly in the young, the elderly and those on complex treatment regimes
      ii. List the key issues to identify in a standard drug history including drug names, dose, route and concordance
      iii. Make an accurate assessment of adherence to medication as part of a medical history
   f. Recognise and ensure accurate documentation of patient's level of functioning in activities of daily living and requirements for social support by informal or professional carers
   g. Assess the impact of alcohol consumption using an appropriate tool.
3. Demonstrate a structured approach to examining the well adult including observation, palpation and auscultation
   a. Demonstrate ability to communicate appropriately with patient while performing a physical examination; to explain what is going to be done; reassure during performance; continual observance of patient's non-verbal and verbal cues during examination.
   b. Relate key examination findings in common clinical cases to relevant clinical decisions

4. Accurately present the results of history taking and examination in a succinct but comprehensive way including when necessary the ability to prioritise the most clinically relevant data
   a. Present a series of clinical cases with varying degrees of complexity conveying the key relevant clinical information
   b. Present a series of clinical cases that demonstrate an integrated and efficient process for making an initial assessment of a patient's presentation

5. Summarise clinical observations for real and simulated patient cases
   a. Chart clinical data including patient symptoms into locally used approaches such as MEWS, ABCDE, Glasgow Coma Scale to gauge the severity of a clinical presentation
   b. List and describe key emergencies Foundation doctors need to respond to. Please note that management of these emergencies will be covered in Phase 3.

6. Provide a full list of additional differential diagnoses and co-morbidities for relevant core clinical cases and analyse the relevant likelihood and importance of each

7. Apply accepted practice in the recording of patients' notes derived from histories taken in the clinical environment of patients presenting with core presentations.
   a. List basic abbreviations and their meanings commonly used when recording medical histories
   b. Having taken a comprehensive clinical history and performed a full clinical examination, list possible clinical systems implicated and state possible diagnoses for the presenting complaint
Top Tips

Be pro-active, ask the junior doctors and nursing staff if there are suitable patients on the ward for you to talk to.

Try to see a variety of patients, use your whole faculty team for learning opportunities. However all patients are different, 10 patients with the same diagnosis will give different histories so don’t exclude patients because they have a condition you have seen before.

Observe and be observed by your clinical partner and give each other feedback; ask for specific feedback if you have a particular area you are working on. Ask patients for feedback. Talk to relatives.

Follow up patients during their hospital stay, go with them for investigations.

Sign up for bedside teaching sessions. In hospital or GP sessions it doesn’t matter if you get it wrong, you will get good constructive feedback on how to improve.

Ask junior doctors for extra Mini-CEX, OSLERs and CBDs. Time spent on the wards at this stage is much more productive than in the library.
CCE1 Presentations

Below is a list of common and important presentations you should cover by block throughout the course of CCE. The presentations are not an exhaustive list; it is to give you an idea of the common conditions that students are expected to come across in the clinical environment.

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<thead>
<tr>
<th>1. Abnormal blood sugar</th>
<th>14. Nasal obstruction / Nose bleed</th>
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<td>5. Antenatal care and screening</td>
<td>18. Oedema</td>
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<td>6. Change in bowel habit /Diarrhoea and vomiting</td>
<td>19. Physiology of pregnancy</td>
</tr>
<tr>
<td>7. Cough (+/- wheeze)</td>
<td>20. Pleuritic chest pain</td>
</tr>
<tr>
<td>9. Ear pain</td>
<td>22. Shock</td>
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<tr>
<td>11. Haemoptysis</td>
<td>24. Swollen painful leg</td>
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<tr>
<td>13. Hypertension</td>
<td>26. Weight loss (unexplained)</td>
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The key learning outcomes will be:
- To take an adequate history and understand relevant differentials
- Carry out necessary examinations and investigations
- To understand basic management plans for such conditions

1. Abnormal blood sugar

By the end of CCE1 students should be able to:
- Discuss key clinical features in the history and examination, which may indicate abnormal blood sugar (hyperglycaemia and hypoglycaemia)
- Describe the clinical effects of diabetes (insulin dependent and non-insulin dependent) and explain the underlying pathophysiology (including complications)
- Identify which questions in the history may be particularly significant in assessing diabetic control, compliance and complications
- Describe which areas of the examination may be particularly significant in identifying diabetic complications
- Describe what bedside, clinical, and laboratory investigations would be appropriate to investigate a patient with abnormal blood sugar
- Recognise the possibility of hypoglycemia and the circumstances in which it may occur
• Understand the broad principles of management (including dietary, lifestyle) of IDDM, NIDDM and hypoglycemia

2. Acute abdominal pain
By the end of CCE1 students should be able to:
• Identify common causes of abdominal pain (including appendicitis, gall stone disease, pancreatitis, peptic ulcer disease) and have an understanding of the demographics and risk factors associated with each cause
• Describe key questions from the history and findings from the examination which help differentiate between causes of acute abdominal pain
• Have an understanding of a ‘surgical sieve’ to help identify the cause of abdominal pain.
• Describe what bedside, clinical, laboratory and radiological investigations would be appropriate to investigate a patient with acute abdominal pain
• Understand the pathophysiology and basic management of the common causes.

3. Acute central chest pain
By the end of CCE1 students should be able to:
• Identify common causes of acute central chest pain (including angina pectoris, myocardial infarction, acute coronary syndrome, acute pericarditis) and have an understanding of the demographics and risk factors associated with each cause
• Take a focused history on chest pain to identify key features (including risk factors) and use these to formulate appropriate differential diagnoses
• Identify key findings on clinical examination in patients with chest pain and use these to further develop differential diagnoses
• Describe what bedside, clinical, laboratory and radiological investigations would be appropriate to investigate a patient with chest pain (e.g. ECG, Echocardiogram, serum troponin, coronary angiogram) and explain why
• Describe an overview of the principles of management of life threatening chest pain conditions

4. Acute upper respiratory symptoms / sore throat
By the end of CCE1 students should be able to:
• Identify the features of the history which help differentiate between common causes of this presentation (including acute sore throat, acute pharyngitis, acute tonsillitis, common cold, acute rhino-sinusitis, acute cough and acute bronchitis)
• Recognise the difficulty in distinguishing viral and bacterial causes of sore throat and consider the probability of glandular fever and peritonsillar abscess (quinsy)
• Identify red flags relating to respiratory symptoms
• Identify features of the examination which help differentiate between common causes of this presentation
• Identify the common and important differential diagnoses for upper respiratory symptoms and an understanding of the demographics and risk factors associated with each cause
• Describe what bedside, clinical, laboratory and radiological investigations would be appropriate to investigate upper respiratory symptoms if needed
• Understand how to manage a patient with upper respiratory symptoms/sore throat bearing in mind treatment is usually symptomatic but also taking into account the likely organisms.
5. Antenatal care and screening
By the end of CCE1 students should be able to:
- Understand pre-conceptual care, the use of folic acid preconception and the nutritional requirements / lifestyle changes in pregnancy
- Describe routine antenatal screening tests including urine (urinalysis), blood tests (FBC, Blood Group / Rhesus type, thalassaemia), infectious screen (HIV, Hepatitis B, Syphilis) and mid-trimester anomaly scan as well as their interpretation. Understand when additional screening tests are needed e.g. sickle cell disease screening in at risk group and eye screening in women with diabetes.
- Understand the importance of 1st and 2nd trimester screening tests for congenital abnormalities and the markers used.
- Understand genetic modes of inheritance and common structural abnormalities in the foetus resulting from abnormal development.
- Understand routine vaccination in pregnancy (e.g. influenza vaccine, combined diphtheria/tetanus/polio/pertussis vaccine) and when additional vaccination is required e.g. Hepatitis B in those at risk
- Take an obstetric history including past obstetric history and mode of delivery
- Examine the pregnant abdomen and auscultate the foetal heart
- Understand schedules of routine antenatal care, midwifery care for low risk women and the use of Anti-D.
- Understand the principles of risk assessment in pregnancy, the risks of drug treatment and the risks of substance abuse in pregnancy
- Demonstrate an awareness of the patient’s autonomy (e.g. informed maternal choice) and be aware of the legal rights of pregnant women

6. Change in bowel habit / Diarrhoea and vomiting
By the end of CCE1 students should be able to:
- Explain the pathophysiological mechanisms causing diarrhoea and vomiting
- Understand the Bristol Stool Chart
- Identify common causes of change in bowel habit, diarrhoea/vomiting within the GI tract (irritable bowel syndrome, inflammatory bowel disease, bowel cancer, malabsorption) and outside the GI tract.
- Describe key questions from the history and findings from the examination which help differentiate between the causes of diarrhoea, vomiting and change in bowel habit
- Describe red flags relating to GI tract pathologies
- Apply the principles of microbiological diagnosis to infectious diseases of the gastrointestinal tract and understand the common organisms causing infection syndromes in the gastrointestinal tract (viral, bacterial & parasitic)
- Describe what bedside, clinical, laboratory and radiological investigations would be appropriate to investigate a patient with GI tract symptoms
- Explain the principles of management of common causes of GI tract symptoms

7. Cough (+/- wheeze)
By the end of CCE1 students should be able to:
- Identify the common and important differential diagnoses for cough +/- wheeze (including asthma and COPD) and have an understanding of the demographics and risk factors associated with each cause
- Identify the features of the history, particularly social and occupational history, which help differentiate between common causes of this presentation
- Take a detailed smoking history
- Identify red flags relating to respiratory symptoms
• Identify features of the examination which help differentiate between common causes of this presentation
• Describe the bedside, clinical, laboratory and radiological investigations appropriate for investigating a patient with cough and wheeze and explain how these would support a definitive diagnosis
• Explain the approach to principles of management for common and important differential diagnoses (asthma, COPD)

8. Development in the healthy child
By the end of CCE1 students should be able to:
• Outline normal developmental domains and developmental milestones including vision, hearing, speech and walking.
• Understand the key features of the history (including social/safeguarding) and examination to assess normal development
• Recognise failure to thrive, its common causes and other reasons for developmental delay
• Describe the clinical, laboratory and radiological investigations that would be appropriate to investigate a child with developmental delay
• Understand the principles of management for important differential diagnoses of developmental delay.

9. Ear Pain
By the end of CCE1 students should be able to:
• Describe and classify common / important causes of earache and relate them to the anatomical location of the problem. Causes include local causes (most commonly otitis media, otitis externa, mastoiditis) and referred pain.
• Understand some of the causes of referred ear pain such as tonsillitis, dental abscess (via the auriculo-temporal branch of the trigeminal nerve), temporomandibular arthritis, Herpes / Ramsey Hunt syndrome (via the facial nerve), and carcinoma base of tongue (via the glossopharyngeal nerve)
• Identify features of the history and examination which help differentiate between common causes of ear pain taking note of red flags
• Outline appropriate investigations which may be used in patients with a painful ear
• Understand the pathophysiology and basic management of the common causes.

10. Fever
By the end of CCE1 students should be able to:
• Explain the physiology of thermoregulation
• Define fever, explain its pathophysiology and understand pyrexia of unknown origin
• Identify and classify common / important causes of fever and understand the demographics and risk factors associated with each cause
• Understand that fever occurs most commonly as part of the acute phase response to infection but other causes include connective tissue disorders (polymyalgia rheumatica, SLE, rheumatoid arthritis), drug reactions, and malignancies (haematological, solid tumours – renal, liver colon)
• Describe key features of the history and examination in patients with fever to support the development of appropriate differential diagnoses
• Describe what bedside, clinical, laboratory and radiological investigations would be appropriate to investigate a patient with fever and how these would support a definitive diagnosis
• Explain the approach to principles of management for common and important differential diagnoses
11. Haemoptysis
By the end of CCE1 students should be able to:
- Identify the common and important differential diagnoses for haemoptysis and have an understanding of the demographics and risk factors associated with each cause.
- Understand that haemoptysis usually arises due to infection of the medium sized airways in the setting of acute bronchitis (viral or bacterial bronchitis) or exacerbation of chronic bronchitis as well as in pulmonary tuberculosis.
- Identify red flags relating to respiratory symptoms
- Identify features of the history and examination, which help differentiate between causes of haemoptysis e.g. pink tinge frothy sputum of left ventricular failure, deep red flecks in bronchial carcinoma and pulmonary embolism, and the rusty colour sputum in pneumococcal pneumonia.
- Describe what bedside, clinical, laboratory and radiological investigations would be appropriate to investigate a patient with haemoptysis and explain how these would support a definitive diagnosis
- Explain the approach to principles of initial management of haemoptysis

12. Hearing loss
By the end of CCE1 students should be able to:
- Understand that hearing loss may be unilateral or bilateral and may develop slowly or occur suddenly.
- Describe the two main types of hearing loss: conductive and sensorineural
- Understand common causes of conductive (cerumen or earwax, foreign bodies, infection, otosclerosis, congenital abnormalities) and sensorineural (congenital, viral infection, ototoxic drugs) hearing loss
- Identify features of the history (including relevant associated symptoms such as tinnitus, vertigo and their significance) and identify features of the examination relevant to each of the common and important differential diagnoses
- Describe what bedside, clinical, and radiological tests would be appropriate to investigate hearing loss e.g. Rinne / Weber tests and interpretation of the findings
- Explain the types of audiometry and their indications
- Explain the principles of management for common and important differential diagnoses

13. Hypertension
By the end of CCE1 students should be able to:
- Define hypertension and describe how it should be diagnosed clinically
- Describe common / important causes of hypertension (including essential hypertension, renal disease, etc.) and understand the demographics and risk factors associated with each cause
- Describe key questions from the history and findings from the examination which help differentiate between various causes of hypertension
- Explain the consequences of hypertension to other organ systems and describe how these may be identified in clinical settings (including severity of the problem)
- Describe what bedside, clinical, laboratory and radiological investigations would be appropriate to investigate a patient with hypertension
- Explain the approach to principles of management in patients with hypertension including non-drug measures
14. Nasal conditions: nose bleed and nasal obstruction
By the end of CCE1 students should be able to:
- Describe common and important causes of nose bleed and nasal obstruction including nasal trauma, rupture of mucosa vessels in Little's area, allergic / non-allergic rhinitis, sinusitis, nasal polyps and deviated septum (in nasal obstruction).
- Identify features of the history and examination relevant to each of the common and important differential diagnoses
- Describe what investigations would be appropriate to investigate a patient with epistaxis and nasal obstruction
- Describe the first aid management of nose bleed and principles of further management of nose bleed
- Explain basic management of the common causes of nasal blockage.

15. Newborn screening and assessment
By the end of CCE1 students should be able to:
- Describe the screening tests carried out in the newborn including: physical examination heart, eyes, hips and testes (in males); hearing test; and blood spot test (sickle cell disease, cystic fibrosis, congenital hypothyroidism and inherited metabolic diseases)
- Understand how to carry out a routine examination of the newborn including measurement of height, weight and head circumference, plot these on the appropriate chart and interpret the results
- Identify conditions such as cyanosis, respiratory distress (grunting) and fits in the newborn
- Describe the clinical, laboratory and radiological investigations that would be appropriate to investigate a newborn baby
- Understand the principles of management of common conditions found in the newborn.

16. Normal labour
By the end of CCE1 students should be able to:
- Understand the anatomy of the pelvis and perineum including episiotomy cuts
- Understand the mechanisms of normal labour and delivery and show an awareness of multiprofessional working
- Understand management of the various stages of normal labour, maternal and fetal wellbeing monitoring including the use of the partogram
- Understand the various types of pain relief in labour, their use, limitations and / or side effects
- Describe the clinical and laboratory investigations that would be appropriate to investigate a patient in labour.
- Have an awareness of the principles for the choice of mode of delivery by the mother in partnership with healthcare professionals and the legal status of the foetus and the mother
- Fully participate in and ideally assist or conduct a normal vaginal delivery under supervision
17. Normal Puerperium and Breast feeding
By the end of CCE1 students should be able to:
- Understand the definition of puerperium as the time from the delivery of the placenta to the end of the 6th postnatal week.
- Demonstrate an understanding of the physiological changes during a normal postpartum period including uterine involution, changes in lochia, changes in plasma volume / red cell mass and lactation.
- Understand the importance of breastfeeding / awareness of breastfeeding initiatives as well as common breast problems such as nipple pain, nipple crack, breast engorgement, mastitis.
- Be able to formulate advice regarding postpartum contraception.
- Demonstrate an awareness of the roles of other healthcare professionals (e.g. midwives, health visitors, physiotherapists) during puerperium.

18. Oedema
By the end of CCE1 students should be able to:
- Understand the pathophysiology of oedema: increased hydrostatic pressure, decreased oncotic pressure / plasma protein and obstruction to lymphatic drainage.
- Describe and classify common / important causes of oedema: generalised oedema (cardiac failure, renal failure, hypoalbuminaemia, drugs, idiopathic cyclic oedema, pretibial myxoedema) and local oedema (DVT, chronic venous insufficiency, lymphoedema).
- Identify features of the history (including red flags) and examination relevant to each of the common and important differential diagnoses of oedema.
- Describe what bedside, clinical, laboratory and radiological investigations would be appropriate to investigate a patient with oedema.
- Understand the basic management of the common causes of oedema.

19. Physiology of pregnancy
By the end of CCE1 students should be able to:
- Understand the hormonal changes during pregnancy, sources of the hormones and their effects.
- Understand the physiological changes that happen during pregnancy including homeostatic changes, prothrombotic changes (e.g. coagulation factors, Protein C, S, etc.)
- Describe the changes in body systems / organs that accompany pregnancy including cardiovascular, renal, GI and immune systems.
- Understand the pathophysiology of common conditions related to the physiology of pregnancy e.g. hypertension, DM.
- Outline the developmental processes that occur during pregnancy including the feto-placental unit.

20. Pleuritic chest pain
By the end of CCE1 students should be able to:
- Describe the common and important differential diagnoses for pleuritic chest pain (pulmonary embolus, pneumonia, pneumothorax) and have an understanding of the demographics and risk factors associated with each cause.
- Identify features of the history and examination relevant to each of the common and important differential diagnoses of pleuritic chest pain.
- Identify red flags relating to respiratory symptoms.
- Describe what bedside, clinical, laboratory and radiological investigations would be appropriate to investigate a patient with pleuritic chest pain and explain how these would support a definitive diagnosis.
- Explain the principles of management for common and important differential diagnoses

### 21. Red eye

By the end of CCE1 students should be able to:
- Understand that red eye may result from trauma, infection, allergy or increased pressure in the eye.
- Identify features of the history and examination relevant to each of the common and important differential diagnoses (acute conjunctivitis, acute iritis, corneal abrasion, narrow angle glaucoma)
- Describe what bedside, clinical, and radiological investigations would be appropriate to investigate red eye
- Explain the principles of management for common and important differential diagnoses

### 22. Shock

By the end of CCE1 students should be able to:
- Define shock as a clinical syndrome characterised by inadequate systemic and tissue perfusion.
- Describe and classify common / important causes of shock including hypovolaemic (haemorrhage and other fluid losses), cardiogenic (MI, arrhythmias, etc.), obstructive (tension pneumothorax, cardiac tamponade), anaphylactic, and neurogenic shock.
- Identify features of the history and examination relevant to each of the common causes
- Describe what bedside, clinical, laboratory and radiological investigations would be appropriate to investigate a patient in shock
- Explain the principles of management of the different types of shock

### 23. Stroke

By the end of CCE1 students should be able to:
- Describe the causes and risk factors for stroke including hypertension, diabetes, hypercholesterolaemia, smoking, carotid stenosis and TIA
- Identify the common and important differentials for stroke including space occupying lesion and demyelination
- Identify features of the history and examination relevant to a stroke diagnosis and describe how they help discriminate stroke from important differentials
- Relate history and examination findings to the anatomy of the brain to identify the areas of the brain affected
- Describe what bedside, clinical, laboratory and radiological investigations would be appropriate to investigate a patient with suspected stroke
- Describe an overview of the principles of management of stroke

### 24. Swollen painful leg

By the end of CCE1 students should be able to:
- Understand that painful leg swelling may result from DVT, trauma, cellulitis, thrombophlebitis, compartment syndrome, and ruptured Baker’s cyst
- Identify features of the history and examination relevant to each of the common and important differential diagnoses (e.g. history of trauma / exercise in gastrocnemius muscle rupture, areas of erythema / redness in cellulitis and thrombophlebitis)
- Describe what bedside, clinical, and radiological investigations would be appropriate to investigate a swollen painful leg
• Explain the principles of management for common and important differential diagnoses

25. Visual loss
By the end of CCE1 students should be able to:
• Understand the principle anatomical components of the visual system and describe the anatomy and physiology of the orbit
• Understand that visual loss may be sudden (painful or painless) or gradual in nature.
• Describe features of the history and examination relevant to each of the common and important differential diagnoses (e.g. retinal detachment, optic neuritis, retinal haemorrhage, central retina vascular occlusion, attacks of acute narrow angle glaucoma)
• Describe what bedside, clinical, and radiological investigations would be appropriate to investigate visual loss
• Explain the principles of management for common and important differential diagnoses

26. Weight loss (unexplained)
By the end of CCE1 students should be able to:
• Define weight loss and identify whether unintentional or intentional
• Identify important epidemiological factors related to unintentional weight loss
• Understand the important factors when eliciting a history of weight loss, which may help develop appropriate differential diagnoses.
• Describe the clinical signs associated with weight loss and signs which may indicate its underlying cause
• Use the evidence identified in the history and examination to formulate differential diagnoses and explain the pathophysiology of the weight loss
• Describe what bedside, clinical, laboratory and radiological investigations would be appropriate to investigate a patient with unexplained weight loss
• Explain the principles of management for common and important differential diagnoses
At the end of CCE2 students should be able to:

1. Outline the process of formulating a plan of investigation / care and how to discuss this with a patient (and carers / family if appropriate). Demonstrates how to check patients understanding (and carers / family if appropriate).

2. Interpret the results of common investigations and clinical images in relation to disease severity and track patient progress in real clinical scenarios
   a. Present an interpretation of various sets of clinical results and clinical images from the subset of the clinical skills listed in Tomorrows Doctors and presented in the investigations list for CCE.
   b. Interpret the results of common investigations and clinical images in relation to refining a clinical diagnosis including understanding normality and potential life-threatening scenarios.

3. Demonstrate reaching relevant and useful conclusions about a patient's general health and progress during common illnesses or treatment using clinical data in real or simulated patients

4. Describe the selection of investigations used for the differential diagnosis of common and / or important conditions as specified in the presentations list.
   a. List the categories of investigations used for common and/or important conditions and explain the fundamental principles underlying the categories
   b. List the individual tests, which belong to the categories of investigations used for common and/or important conditions. Describe the risks and contraindications to the individual tests.

5. Describe patterns of test abnormality that are typical of common and important conditions.
   a. Describe the changes in values for a given test that constitute abnormality rather than intersubject or intrasubject variability.
   b. Describe patterns of test abnormality which though may not be frequent may lead to errors in assessing common and important conditions
   c. Demonstrate an ability to question when the result of a laboratory test may be erroneous considering a knowledge of an individual patient's clinical state.

6. Describe investigations in terms understandable by users of health services in supervised clinical environments such that the description might be used as the basis of informed consent
   a. Explain a plan of investigation formulated to resolve a differential diagnosis in terms understandable by a health service user.
**Top Tips**

Keep taking histories and examining as many patients as you can.

At the end discuss with your clinical partner what the differential diagnoses might be – even if you know the diagnosis you can still think of other possibilities. How would the history or examination differ with the other diagnoses?

Discuss what investigations you would do if you were the doctor seeing each patient for the first time.

Look at various test results – from patients’ records, from your GP placement and try to interpret them.

Follow patients for radiological investigations, endoscopies, etc. Could you describe to a patient what is going to happen during the test? Talk to patients about their experience of the test.

Use the investigations list as a guide
CCE2 Presentations

| 1. Abnormal menstruation       | 14. Hypercalcaemia         |
| 2. Acid-base abnormalities     | 15. Impact of chronic disability |
| 4. Anaemia                     | 17. Limb claudication       |
| 5. Breast lump                 | 18. Lump in the neck        |
| 6. Breathlessness (cardiac)    | 19. Lymphadenopathy         |
| 7. Central chest pain (chronic)| 20. Memory loss, chronic confusion and dementia |
| 9. Contraception               | 22. Obesity                |
| 10. Fatigue                    | 23. Renal failure           |
| 11. Febrile child              | 24. Proteinuria             |
| 12. Fluid and electrolyte abnormalities | 25. Substance abuse (including Alcohol) |
| 13. Hoarseness and voice change| 26. Upper limb disorders   |

The key learning outcomes will be:
- To take an adequate history and understand relevant differentials
- Carry out necessary examinations and investigations
- To understand basic management plans for such conditions

1. Abnormal menstruation

By the end of CCE2 students should be able to:
- Understand the physiology of the menstrual cycle
- Take a focused history on abnormal menstruation to identify key features and use these to formulate appropriate differential diagnoses (amenorrhoea, menorrhagia, metrorrhagia, dysfunctional uterine bleeding and postmenopausal bleeding).
- Discuss key clinical features in the history and examination which may help develop appropriate differential diagnoses for abnormal menstruation
- Understand common causes of abnormal menstruation and the underlying pathophysiology
- Describe what bedside, clinical, laboratory and radiological investigations would be appropriate to investigate a patient with abnormal menstruation and explain why (e.g. pelvic USS, endometrial biopsy, hormonal profile – TFTs, prolactin, FSH/LH)
- Understand the management plan for the common causes and the concerns which a patient might have

2. Acid-base abnormalities

By the end of CCE2 students should be able to:
- Understand the homeostatic control of pH
- Explain causes of respiratory alkalosis/acidosis and causes of metabolic alkalosis and acidosis
Discuss key clinical features in the history and examination which may help develop appropriate differential diagnoses for acidosis and alkalosis

Describe what bedside, clinical, laboratory and radiological investigations would be appropriate to investigate a patient with acid-base abnormalities including a step-wise approach to interpreting blood gas results

Understand the principles of management in patients with acid-base abnormalities

3. Acute Confusion / Delirium
By the end of CCE2 students should be able to:

- Understand confusion as global impairment of mental function and delirium as an abrupt decline in cognitive function that follows a fluctuating course
- Understand common causes of delirium/confusion such as alcohol, pain, drugs (opioids, benzodiazepines, antipsychotics), hypoxia/hypercapnia, metabolic (hypo/hyperglycaemia, hyponatremia, hypercalcemia), infection (CNS/Non-CNS) and intracranial.
- Discuss key clinical features in the history and examination which may help develop appropriate differential diagnoses for acute confusion and delirium
- Describe what bedside, clinical, laboratory and radiological investigations would be appropriate to investigate a patient with acute confusion / delirium (e.g. Confusion Assessment Method, Abbreviated Mental Test, Mini-Mental State Examination, metabolic screen, U&Es)
- Understand the management plan for the common causes of acute confusion and delirium

4. Anaemia
By the end of CCE2 students should be able to:

- Understand the normal requirements of erythropoiesis
- Describe common types of anaemia (iron deficiency, B12 and folate deficiency), the morphological patterns and their underlying causes
- Discuss key clinical features in the history and examination which may help develop appropriate differential diagnoses for anaemia
- Describe the clinical effects of anaemia and explain the pathophysiology behind them
- Describe what bedside, clinical, laboratory and radiological investigations would be appropriate to investigate a patient with anaemia (including interpretation of full blood count and secondary haematological investigations)
- Understand the principles of management in patients with common anaemias (iron deficiency, B12/folate deficiency)

5. Breast lump
By the end of CCE2 students should be able to:

- Explain the anatomy of the breast
- Describe the common causes of breast lumps including fibroadenoma, fibrocystic change, breast cancer, breast abscess, fat necrosis. Understand that other skin and subcutaneous lesions such as epidermoid cysts and lipomata may occur in the breast
- Discuss key clinical features in the history and examination which may help develop appropriate differential diagnoses for breast lumps
- Describe what bedside, clinical, laboratory and radiological investigations would be appropriate to investigate a patient with breast lump such as USS, mammography, fine needle aspiration, core biopsy (including their interpretation)
- Understand the screening programme for breast cancer (including extended programme)
• Explain the principles of management for the common and important differential diagnoses of breast lumps

6. Breathlessness (cardiac)
• Explain the pathophysiology of breathlessness as a mismatch between instructions for ventilation sent by the brainstem and the sensory feedback from the thorax.
• Describe the cardiac causes of acute breathlessness (acute cardiogenic pulmonary oedema, acute coronary syndrome, cardiac tamponade, arrhythmia, acute valvular heart disease) and chronic breathlessness (chronic heart failure, coronary artery disease, valvular heart disease, constrictive pericarditis and pericardial effusion).
• Discuss key clinical features in the history and examination which may help develop appropriate differential diagnoses for acute and chronic cardiac breathlessness and assessment of severity.
• Describe what bedside, clinical, laboratory and radiological investigations would be appropriate to investigate a patient with breathlessness of cardiac origin such as ABG, FBC, CXR, ECG, Echocardiogram (including their interpretation).
• Explain the principles of management for common and important differential diagnoses.

7. Central chest pain (chronic)
By the end of CCE2 students should be able to:
• Identify common causes of chronic chest pain (including angina pectoris, gastro-oesophageal reflux disease, musculoskeletal, anxiety / panic attacks) and have an understanding of the associated risk factors.
• Take a focused history on chest pain to identify key features (including risk factors) and use these to formulate appropriate differential diagnoses.
• Identify key findings on clinical examination in patients with chronic chest pain and use these to further develop differential diagnoses.
• Describe what bedside, clinical, laboratory and radiological investigations would be appropriate to investigate a patient with chronic central chest pain such as ECG, CXR, Upper GI endoscopy and their interpretation.
• Explain the principles of management for common and important differential diagnoses.

8. Cervical Screening / Abnormal Cervical Smear
By the end of CCE2 students should be able to:
• Understand the current cervical screening programme, the age group involved, frequency of screening and the use of liquid based cytology.
• Describe the role of Human Papilloma Virus (HPV) in the development of abnormal cervical pathology and high risk HPV (HPV16 and HPV18) link to cervical cancer.
• Understand the role of HPV vaccination in protecting against high risk HPV and the age group recommended for vaccination (12 -18 years).
• Identify key features in the history and examination findings that would be important in a patient with abnormal cervical smear.
• Understand how abnormal cervical smear is reported / referred: borderline nuclear abnormalities, mild, moderate and severe dyskaryosis and the principles of colposcopy.
9. Contraception
By the end of CCE2 students should be able to:
- Demonstrate a basic knowledge of reversible, irreversible and post-coital emergency contraception including the various methods, their mode of action, efficacy, contraindications and complications.
- Discuss the merits and disadvantages of the variety of contraceptive methods available to patients including: natural methods, barrier (male/female condom, diaphragm, caps), hormonal (combined and progesterone-only via oral, transdermal, subdermal, intramuscular routes), intrauterine contraception (copper or progestogen), sterilisation (male/female), post-coital emergency methods (progestogen, intrauterine contraceptive device).
- Understand the methods by which contraception can be achieved: gamete suppression, modulation of the cervical mucus, endometrial changes, prevention of implantation, and interruption of the communicating tubes
- Identify key features in the history and examination findings that would be important for consideration in the choice of contraception
- Understand why contraception is important on a national and global scale
- Understand the need to respect cultural and religious beliefs as well as sexual diversity

10. Fatigue
By the end of CCE2 students should be able to:
- Understand that fatigue is physical and/or mental exhaustion. It is common and non-specific, therefore identifying significant underlying disease can be difficult.
- Identify that acute fatigue is usually caused by self-limiting infections and transient life circumstances
- Understand that fatigue of longer duration could be due to: non-organic (psychological stress/overwork, depression, fibromyalgia, ME); medication (beta-blockers, benzodiazepines, corticosteroids); haematological (anaemia, lymphoma); endocrine (DM, hypothyroidism, adrenal insufficiency); infection (TB, HIV, infectious mononucleosis); sleep apnoea, CCF, and malignancy.
- Identify key features of the history and examination which help differentiate between causes of this presentation
- Understand that fatigue may act as a ‘proxy’ complaint for an issue that the patient is reluctant to raise directly e.g. problems with finances, employment, alcohol and sexual relationships.
- Describe the clinical, laboratory and radiological investigations that would be appropriate to investigate a patient with fatigue and explain how these would support a definitive diagnosis
- Understand the principles of management for important differential diagnoses of fatigue.

11. Fever in a child
By the end of CCE2 students should be able to:
- Understand that most febrile children have a brief self-limiting viral infection.
- Describe other important causes of fever in children (including otitis media, tonsillitis, pneumonia, UTI, septicaemia and meningitis)
- Identify key features of the history and examination which help differentiate between various causes of this presentation (including past medical history, illness of other family members, immunisation status, recent travel)
- Describe what bedside, clinical, and laboratory investigations would be appropriate to investigate a child with fever e.g. septic screen (including interpretation)
* Understand the immediate management plan of fever in a child

**12. Fluid and electrolyte abnormalities**

By the end of CCE2 students should be able to:

- Explain the physiology of normal fluid and electrolyte homeostasis
- Describe common causes of dehydration, fluid overload and their clinical features
- Describe common causes of electrolyte disturbance (hypo and hypernatraemia, hypo and hyperkalaemia), including excessive diuretic therapy, acute diarrhoea/vomiting, oliguric renal failure, cardiac failure, SIADH, drugs (anticonvulsants, antidepressants, psychotropics) their clinical features and approach to management
- Identify key features of the history and examination which help differentiate between causes of this presentation
- Describe what bedside, clinical, laboratory and radiological investigations would be appropriate to investigate a patient with fluid and electrolyte imbalance such as U&Es, plasma osmolality, CXR and CT brain (including their interpretation)
- Have a broad understanding of different types of intravenous fluids and their uses

**13. Hoarseness and voice change**

By the end of CCE2 students should be able to:

- Explain the anatomical location of the larynx in the neck
- Describe causes of hoarseness (including acute laryngitis, acid reflux, allergies, smoking, vocal overuse, thyroid problems, benign vocal cord cyst or polyps, recurrent laryngeal nerve injury) and identify the red flags for hoarseness (laryngeal cancer)
- Identify key features in the history and examination findings relating to hoarseness and voice change that would support the development of appropriate differential diagnoses
- Describe what bedside, clinical, and laboratory investigations would be appropriate to investigate a patient with hoarseness and voice change including their interpretation e.g. laryngoscopy, fibreoptic scope.
- Understand the principles of management for common and important differential diagnoses

**14. Hypercalcaemia**

By the end of CCE2 students should be able to:

- Understand the control of calcium metabolism including the role of PTH and Vitamin D
- Describe common causes of calcium disturbance (hypo and hypercalcemia), and their clinical features. Causes of hypercalcemia to consider include: severe dehydration; medication (diuretics, lithium); hyperparathyroidism; dietary supplements (calcium and Vitamin D); lung diseases (TB, sarcoidosis); and cancer (lung, breast, bony metastases, multiple myeloma). Causes of hypocalcaemia to consider include malabsorption, CRF, hypoparathyroidism
- Identify key features of the history and examination which help differentiate between causes of hypercalcemia
- Describe what bedside, clinical, laboratory and radiological investigations would be appropriate to investigate a patient with hypercalcemia such as serum calcium, Vitamin D, PTH, CXR, CT scan (including their interpretation)
- Understand the principles of management for common and important differential diagnoses
15. Impact of chronic disability
By the end of CCE2 students should be able to:
- Recognise the possibility of multiple sclerosis, Parkinson's disease, and motor neurone disease in patients presenting with neurological symptoms, and relate the major clinical findings to the underlying pathology
- Describe key features in the history and examination findings relating to chronic disability that would support the development of appropriate differential diagnoses
- Describe what bedside, clinical, and laboratory investigations would be appropriate to investigate a patient presenting with symptoms of these conditions (including their interpretation)
- Understand the principles of management of these conditions
- Understand the impact of chronic disability on patients' lives and recognise the role of occupational therapy, physiotherapy and the support services in the long-term care of the disabled

16. Jaundice
By the end of CCE2 students should be able to:
- Explain the pathophysiology associated with the development of jaundice
- Classify the causes of jaundice into pre-hepatic, hepatic and post-hepatic and identify common and important examples of each. Distinguish between infectious and mechanical causes of biliary obstruction.
- Describe key questions from the history and findings from the examination which help differentiate between causes of jaundice
- Describe what bedside, clinical, laboratory and radiological investigations would be appropriate to investigate a patient with jaundice (including interpretation). Should be able to identify the components included in LFTs and understand what each represents in terms of liver function and dysfunction.
- Be aware of additional tests used within the liver screen to further discriminate liver pathologies (hepatitis serology, iron studies, auto-antibodies, alpha1 antitrypsin, USS abdomen)
- Understand the principles of management for common and important differential diagnoses

17. Limb claudication
By the end of CCE2 students should be able to:
- Understand the arterial supply to the lower limb
- Discuss the epidemiology of peripheral arterial disease and risk factors associated with its development
- Describe the key findings from the history and examination characteristic of patients with peripheral arterial disease
- Describe what bedside, clinical, laboratory and radiological investigations would be appropriate to investigate a patient with peripheral arterial disease including how to perform an Ankle Brachial Pressure Index (ABPI) test using a Doppler, limb angiography, etc. and their interpretation
- Explain the approach to the principles of management of peripheral arterial disease

18. Lump in the neck
By the end of CCE2 students should be able to:
- Understand the anatomy of the neck, particularly relating to the thyroid gland, lymph nodes and other neck structures
- Identify common and important causes of neck lumps (cervical lymphadenopathy, thyroid enlargement, salivary gland disease, branchial cyst, cystic hygroma, thyroglossal cyst, epidermal cyst)
- Describe key features in the history and examination findings (including red flags) relating to neck lumps that would support the development of appropriate differential diagnoses
- Describe what bedside, clinical, laboratory and radiological investigations would be appropriate to investigate a patient with neck lump (including their interpretation)
- Understand the principles of management for common and important differential diagnoses

19. Lymphadenopathy
By the end of CCE2 students should be able to:
- Understand the lymphatic drainage system and the difference between generalised lymphadenopathy (presence of palpable lymph nodes in three or more chains) and localised lymphadenopathy
- Identify possible differential diagnoses for generalised lymphadenopathy including lymphoma, leukaemia, collagen vascular disorders, systemic bacterial, viral, and protozoal infection
- Describe key features in the history and examination findings relating to lymphadenopathy which would support the development of appropriate differential diagnoses
- Describe what bedside, clinical, laboratory and radiological investigations would be appropriate to investigate a patient with enlarged lymph nodes and distinguish between reactive and malignant causes of lymphadenopathy
- Understand the principles of management for common and important differential diagnoses

20. Memory loss, chronic confusion and dementia
By the end of CCE2 students should be able to:
- Understand dementia as a chronic progressive decline in cognitive function without disturbance of consciousness
- Identify common and important causes of dementia and chronic cognitive impairment (Alzheimer's, vascular disease), reversible causes (Vitamin B₁₂/ folate deficiency, hypothyroidism, normal pressure hydrocephalus, neurosyphilis, Wilson's disease) and other less common causes (multiple sclerosis, Korsakoff's psychosis, Huntington's disease)
- Identify key features in the history and examination findings relating to dementia and chronic confusion that supports the development of appropriate differential diagnoses
- Describe what bedside, clinical, laboratory and radiological investigations would be appropriate to investigate a patient with dementia and memory loss including 6CIT, CT scan brain, TFTs, serum B₁₂ and folate and their interpretation.
- Understand the principles of management for common and important differential diagnoses

21. Normal menopause
By the end of CCE2 students should be able to:
- Explain the hypothalamic-pituitary-gonadal (HPG) axis
- Understand the definition of menopause and recognise the symptoms associated with oestrogen deficiency
- Identify key features in the history and examination including recognition of the need for oestrogen replacement in the individual patient based on symptomatology and/or future risk of degenerative disorders
- Communicate the concept of disease prevention to the patient with special reference to cardiovascular disease and osteoporosis
• Describe what investigations would be appropriate to investigate a patient with menopausal symptoms such as oestrogen, FSH, LH (including their interpretation)
• Understand the principles of management of menopausal symptoms, the indications for different types of HRT and the advantages and disadvantages of hormone replacement therapy

22. Obesity
By the end of CCE2 students should be able to:
• Understand the definition of obesity, its pathophysiology and how BMI is calculated.
• Identify common and important causes of obesity including excess calorie intake, inadequate exercise, diseases (hypothyroidism, Cushing’s syndrome), drugs (anticonvulsants, antidepressants, antipsychotics, oral corticosteroids)
• Explain the risks associated with obesity including hypertension, hyperlipidaemia, NIDDM, gallbladder disease, sleep apnea, reduced life expectancy, oesophageal and renal cancer
• Identify key features in the history and examination findings relating to obesity that supports the development of appropriate differential diagnoses
• Describe what bedside, clinical, laboratory and radiological investigations would be appropriate to investigate a patient with obesity (including their interpretation)
• Explain and advise patients on the principles of management of obesity

23. Proteinuria
By the end of CCE2 students should be able to:
• Understand the physiology involved in excess protein excretion by the kidneys
• Identify common and important causes of proteinuria including renal (glomerulonephritis, diabetes, amyloidosis, SLE, infection), non-renal (fever, burns, severe hypertension, heart failure) and transient proteinuria (vigorous exercise, febrile illness, cold exposure)
• Identify key features in the history and examination findings relating to proteinuria that would support the development of appropriate differential diagnoses
• Describe what bedside, clinical, laboratory and radiological investigations would be appropriate to investigate a patient with proteinuria in relation to the underlying pathophysiology (including their interpretation)
• Understand the principles of management for common and important differential diagnoses

24. Renal failure
By the end of CCE2 students should be able to:
• Explain the physiology of the kidney and understand the differences between acute and chronic kidney disease
• Identify common and important causes of acute kidney injury (categorise into pre-renal, renal and post-renal) and important causes of chronic kidney disease (hypertension, diabetes)
• Identify key features in the history and examination relating to kidney disease that would support the development of appropriate differential diagnoses
• Describe what bedside, clinical, laboratory and radiological investigations would be appropriate to investigate a patient with kidney disease (including their interpretation)
• Describe the principles of management of acute and chronic kidney failure
25. Substance abuse (including Alcohol)

By the end of CCE2 students should be able to:

- Understand the issue of alcohol abuse /dependence, including epidemiology, biological risk factors and genetic susceptibility
- Outline the psychosocial perspectives and epidemiology of illegal drugs of abuse (cannabis, heroin, cocaine), their sources, symptoms of use, and clinical impact as well as the common “legal highs”
- Describe key features in the history (including the use of CAGE and FAST questionnaires for alcohol) and key features in the examination findings that would support the development of appropriate differential diagnoses of drug and alcohol abuse
- Explain to the patient the risks of alcohol abuse (gastritis, pancreatitis, chronic liver disease, seizures, hypertension) and drug abuse (infections – STDs, HIV, Hepatitis B&C, lung abscess; injury – thrombophlebitis, DVT; overdose – rhabdomyolysis/renal failure and respiratory failure) and brain abnormalities with alcohol and substance abuse
- Describe what bedside, clinical, laboratory and radiological investigations would be appropriate to investigate a patient with drug and alcohol abuse (including their interpretation)
- Understand the principles of management for substance / alcohol abuse and the support available including neurological intervention and prevention strategies

26. Upper limb disorders

By the end of CCE2 students should be able to:

- Explain the anatomy of the upper limb including the vascular and nerve supply
- Identify soft tissue, bony, nerve and vascular injuries including tendon injuries and nerve compression
- Identify common shoulder and elbow problems
- Take appropriate history from patients suffering from shoulder or elbow problems and competently examine the shoulder and elbow joints eliciting important findings which help differentiate between causes
- Describe what bedside, clinical, laboratory and radiological investigations would be appropriate to investigate a patient with an upper limb problem
- Describe the initial approach to the management of patients with shoulder and elbow problems
CCE3 Learning Outcomes

During CCE3 the focus is on developing basic management plans with patients

To do this effectively depends on having already

- Taken an effective history and examination, including ICE and biopsychosocial history (CCE1)
- Formed a sensible differential diagnosis (CCE2)
- Considered appropriate investigations (CCE2)

At the end of CCE3 students should be able to:

1. Formulate and present a management plan including treatment, symptomatic management and advice for a single diagnosis in a core clinical case and understand how this may be altered in cases where there are co-morbidities.
2. Select appropriate forms of management for common and important conditions in the presentation list
3. Explain in terms understandable by users of health services, the modes of action and risks of various forms of management for common diseases (including surgical, medical, radiotherapeutic, supportive, palliative) and the preventive approaches to common diseases.
4. State how to assess pain using the WHO ladder
   a. State the therapeutic steps available for effective analgesia, nausea and other common symptoms often managed by FY1 and FY2 doctors
   b. Assess past as well as current symptom control (particularly pain) and medication use to determine effectiveness of different approaches
5. Explain appropriate forms of lifestyle management for common and important diseases in terms understandable to health service users including when there is resistance to change.
   a. Select appropriate forms of lifestyle management for common and important diseases
   b. Identify skills that enhance behaviour change. Use reflective statements in clinical and simulated environments. Demonstrate the ability to conduct a “Brief Intervention” to encourage behaviour change.
Top Tips

Your management plans should take a holistic approach to the patient and their needs. Using a **bio-psycho-social approach** can be helpful in providing a structure. Another approach is to use a **problem list**. Consider different modalities of treatment: surgical, medical, radiotherapeutic, supportive, palliative and preventive.

You need to know the drugs on the Year 2 drugs list. You will usually be asked the **drug class**, of which you should be able to name an example, describe briefly the mechanism of action and a couple of common side effects. You do **NOT** need to know doses at this stage.

Management is not just about drugs. Think about other health professionals, social care, family and care-givers who might be involved.

Practice your brief interventions on patients you see. Communicating the plan with patients is key to concordance. Practice explaining to patients what their diagnosis is, what their investigations and treatment may involve.

This is a useful article on management from the **student BMJ**

Detailed knowledge of guidelines is not required. **NICE clinical knowledge summaries** provide a useful overview. You should know **red flags** which require urgent referral for common cancers.
The key learning outcomes will be:

- To take an adequate history and understand relevant differentials
- Carry out necessary examinations and investigations
- To understand basic management plans for such conditions

**By the end of CCE3 students should be able to:**

### 1. Abdominal distension

By the end of CCE3 students should be able to:

- Understand the physiology involved in abdominal distension and the mechanisms by which ascites may occur
- Identify common and important causes of abdominal distension (6 F’s): Fat (obesity); Flatus (obstruction, pseudo-obstruction); Faeces (obstruction); Fluid (ascites, distended bladder), Foetus; and Functional (bloating e.g. IBS)
- Identify key features of the history and examination findings which would support the development of appropriate differential diagnoses for abdominal distension
- Describe what bedside, clinical, laboratory and radiological investigations would be appropriate to investigate a patient with abdominal distension (including their interpretation)
- Understand the principles of management for common and important differential diagnoses

### 2. Acute joint pain and swelling

By the end of CCE3 students should be able to:

- Understand joint anatomy and that swelling may arise from periarticular structures (bursae, tendons, muscles) or the joint (synovitis, effusion) and may involve one or more joints
- Identify common and important causes of acute joint pain and swelling including periarticular conditions (bursitis, tendinopathies), septic arthritis, trauma (haemarthrosis), crystal arthropathy (gout, pseudo-gout), reactive arthritis, seronegative spondyloarthritides, and bone cancer / secondaries
- Identify key features of the history and examination findings which would support the development of appropriate differential diagnoses for acute joint pain and swelling
- Describe what bedside, clinical, laboratory and radiological investigations would be appropriate to investigate a patient with acute joint pain and swelling including Xray, USS, Bloods (WCC, ESR, CRP, ACPA), joint aspiration and their interpretation.
- Understand the principles of management for common and important differential diagnoses

### 3. Anxiety, phobias, OCD

By the end of CCE3 students should be able to:
- Understand the definitions of anxiety, phobias and OCD, epidemiology classifications and their manifestations
- Identify common and important causes of anxiety, phobias and OCD
- Identify key features of the history (including risk factors) and examination findings which would support the development of appropriate differential diagnoses for anxiety, phobias and OCD
- Describe what bedside, clinical, laboratory and radiological investigations would be appropriate to investigate a patient with anxiety, phobias and OCD (including their interpretation)
- Understand the principles of management for anxiety, phobias and OCD including the biopsychosocial model to manage generalised anxiety disorder

### 4. Back pain / Sciatica

By the end of CCE3 students should be able to:
- Understand the anatomy of the spine and the mechanisms by which back pain and radicular pain (sciatica) may occur
- Describe common and important causes of back pain including mechanical back pain, disc herniation, lumbar spine stenosis, vertebral trauma/fracture, spondyloarthritides (inflammatory), spinal tumour, spinal infection, spondylolisthesis and cauda equina syndrome
- Identify key features of the history (including red flags) and examination findings which would support the development of appropriate differential diagnoses for back pain and sciatica
- Describe what bedside, clinical, laboratory and radiological investigations would be appropriate to investigate a patient with back pain and sciatica including Spine X-ray / MRI, Bloods (WCC, ESR, CRP), and their interpretation.
- Understand the principles of management for common and important differential diagnoses including options for pain relief, physiotherapy, etc. in patients with backpain

### 5. Bleeding from the GI Tract

By the end of CCE3 students should be able to:
- Understand common causes of upper GI bleeding (peptic ulcer disease, gastritis/duodenitis, malignancy, Mallory-Weiss tear, oesophageal varices) and associated risk factors (e.g. NSAIDs and aspirin)
- Understand common causes of lower GI bleeding and associated risk factors (diverticular disease, colorectal cancer, haemorrhoids, perianal disease, inflammatory bowel disease)
• Describe key features of the history (including red flags) and examination findings which would support the development of appropriate differential diagnoses for upper and lower GI bleeding
• Describe what bedside, clinical, laboratory and radiological investigations would be appropriate to investigate a patient with upper and lower GI bleeding including upper GI endoscopy, colonoscopy, CT angiography, H.Pylori testing (and their interpretation)
• Explain the principles of management for common and important differential diagnoses

6. Bleeding tendency / Hypercoagulability
By the end of CCE3 students should be able to:
• Understand the clotting pathways and identify points in the pathways associated with common bleeding and hyper-coagulation disorders
• Explain the inheritance of common genetic bleeding (e.g. haemophilia) and hyper-coagulation disorders
• Describe key features of the history and examination findings which help differentiate between causes of bleeding or bruising
• Make an appropriate clinical assessment of a patient with suspected thrombo-embolic disease, (including risk factors) and the scoring system used to evaluate risk of thromboembolism (e.g. Wells score)
• Describe what bedside, clinical, laboratory and radiological investigations would be appropriate to investigate a patient with bleeding tendency (clotting screen, coagulation factor assay, VWF antigen) and those that would help identify an underlying cause for thrombo-embolism
• Explain the principles of management for common and important differential diagnoses of bleeding tendencies
• Understand at which point in the pathway common anti-coagulant drugs work; consider their risks, benefits and side effects

7. Breathlessness (non-cardiac)
By the end of CCE3 students should be able to:
• Explain the pathophysiology of breathlessness as a mismatch between instructions for ventilation sent by the brainstem and the sensory feedback from the thorax
• Describe the non-cardiac causes of acute breathlessness (epiglottitis, acute bronchitis, acute asthmatic attack, pneumonia, ARDS, pneumothorax, PE) and chronic breathlessness (asthma, COPD, pleural effusion, bronchiectasis, lung cancer, interstitial lung disease, cystic fibrosis)
• Discuss key clinical features in the history and examination which may help develop appropriate differential diagnoses for acute and chronic non-cardiac breathlessness and the assessment of severity
• Describe what bedside, clinical, laboratory and radiological investigations would be appropriate to investigate a patient with breathlessness of non-cardiac origin such as ABG, FBC, CXR, PEFR, Lung function test, ECG (including their interpretation)
• Explain the principles of management (drug and non-drug) for common respiratory conditions (asthma, COPD, pneumonia, pulmonary embolism)
8. Chronic abdominal pain
By the end of CCE3 students should be able to:

- Explain the innervation of the gut and abdominal organs
- Identify common and important causes of chronic abdominal pain (biliary colic, peptic ulcer disease, chronic pancreatitis, constipation, inflammatory bowel disease, chronic PID) as well as functional causes (non-ulcer dyspepsia, IBS)
- Describe key features of the history and examination findings which would support the development of appropriate differential diagnoses for chronic abdominal pain
- Describe what bedside, clinical, laboratory and radiological investigations would be appropriate to investigate a patient with chronic abdominal pain including endoscopy, LFT, USS, CT scan (and their interpretation)
- Understand the principles of management for common and important differential diagnoses

9. Chronic headache
By the end of CCE3 students should be able to:

- Understand common causes of chronic headache disorders (migraine, tension headache, cluster headache, trigeminal neuralgia, medication / analgesic headache, sinusitis)
- Describe key features of the history and presenting characteristics (including those identifying red flags) which would support the development of appropriate differential diagnoses for chronic headache
- Perform relevant examination (including neurological examination) and explain what findings would support different causes of chronic headache
- Describe what bedside, clinical, laboratory and radiological investigations would be appropriate to investigate a patient with chronic headache including CT brain, MRI and their interpretation
- Explain the initial management strategies for common and important differential diagnoses

10. Chronic joint pain / swelling (rheumatological disorders)
By the end of CCE3 students should be able to:

- Identify common and important causes of chronic joint pain and swelling including rheumatoid arthritis (RA), osteoarthritis (OA), seronegative spondyloarthritides (e.g. ankylosing spondylitis, psoriatic arthropathy), crystal arthropathy (chronic tophaceous gout), vasculitides (SLE), and systemic sclerosis
- Recognise rheumatoid arthritis and describe the immunological basis of rheumatoid arthritis
- Identify key features of the history and examination findings, which would support the development of appropriate differential diagnoses including the medical signs and multi-system manifestations of autoimmune processes (e.g. bowel, skin and eyes).
- Assess the severity of degenerative disease of the hip and knee
- Describe what bedside, clinical, laboratory and radiological investigations would be appropriate to investigate a patient with chronic joint pain and swelling including autoantibodies (rheumatoid factor, anti-nuclear antibodies), joint aspiration and also interpret the major radiological changes of OA (hip and knee), and of RA of the hand.
- Understand the principles of management including pain relief, drugs, physiotherapy occupational therapy, rehabilitation and surgery
11. Depression / Psychosis
By the end of CCE3 students should be able to:
- Understand that depression is a state of low mood and aversion to activity that can affect a person's thoughts, behaviour, feelings, and sense of well-being. It is a broad and heterogeneous diagnosis, which has depressed mood and/or loss of pleasure in most activities central to it.
- Understand that psychosis is a mental health problem that causes people to perceive or interpret things differently from those around them. This might involve hallucinations or delusions as well as disturbed, confused, disrupted patterns of thought and lack of insight
- Explain the derangements in neurotransmitters in psychiatric illness
- Identify key features of the history, particularly screening questions that help recognise people at risk of depression or psychosis and be aware of the social stigma of mental illness
- Understand the criteria for diagnosis using the DSM-5 or ICD-11 classification system
- Assess the risk to the individual and explore the severity of the disorder as determined by the number and severity of symptoms, as well as the degree of functional impairment.
- Describe what investigations would be useful to look for an organic cause for psychiatric problems
- Understand the approach to the principles of management available including medication, CBT, the social support and the long term effects of psychiatric illness on physical health

12. Dizziness and vertigo
By the end of CCE3 students should be able to:
- Explain vertigo as an illusory sensation of motion (usually spinning or rotatory)
- Describe common and important causes of vertigo (vestibular neuronitis, benign paroxysmal positional vertigo, Meniere’s disease, acoustic neuroma, drug ototoxicity, brainstem disorders) and dizziness (vasovagal attack, orthostatic hypotension, brady/tachyarrhythmia, hypoglycaemia, partial seizure, migraine variants, hyperventilation and anxiety)
- Identify the features of the history (including red flags) and examination relevant to each of the common differential diagnoses
- Describe what bedside, clinical, laboratory and radiological investigations would be appropriate to investigate a patient with dizziness and vertigo (including blood glucose, ECG, CT scan, MRI brain) and their interpretation
- Explain the principles of management for common and important differential diagnoses

13. Dysphagia
By the end of CCE3 students should be able to:
- Understand that swallowing difficulties may have neurological, muscular or structural causes
- Understand important causes of dysphagia and the associated risk factors: benign (e.g. gastro-oesophageal reflux, oesophageal web); malignant strictures; extrinsic compression; motility disorders (e.g. scleroderma, achalasia); myasthenia gravis; bulbar palsy
- Describe key features of the history (including red flags) and examination findings which would support the development of appropriate differential diagnoses for dysphagia
• Describe what bedside, clinical, laboratory and radiological investigations would be appropriate to investigate a patient with dysphagia including upper GI endoscopy, oesophageal manometry, barium swallow, CT head and neck (and their interpretation)
• Explain the approach to principles of management for common and important differential diagnoses

14. Dysuria and Haematuria
By the end of CCE3 students should be able to:
• Explain dysuria as pain during or immediately after passing urine (voiding pain) and haematuria as presence of blood in the urine – visible (macroscopic) or non-visible (microscopic)
• Describe common and important causes of dysuria (lower urinary tract infection, inflammation – cystitis, urethritis) and haematuria (infection, tumours – renal/ bladder cancers: stones – renal / ureteric; renal disease – Goodpasture’s syndrome, post-streptococcal glomerulonephritis; trauma – kidney / urethra; iatrogenic – catheterisation, prostate – BPH, cancer)
• Identify features of the history (including red flags) and examination relevant to each of the common differential diagnoses including the possibility of urine contamination from menstrual period and other causes of red urine (beetroot, rifampicin, clofazimine)
• Describe what bedside, clinical, laboratory and radiological investigations would be appropriate to investigate a patient with dysuria and haematuria (including MSU, cytology, USS KUB, cystoscopy, CT urogram) and their interpretation
• Explain the principles of management for common and important differential diagnoses

15. Genital discharge / Genital ulcers and warts
By the end of CCE3 students should be able to:
• Understand common and important causes of genital discharge (chlamydia, gonorrhoea, candida, bacterial vaginosis, trichomonas vaginalis) and genital ulcers (herpes, syphilis, reactive arthritis)
• Describe key features of the history (including genito-urinary / sexual history) and findings from the examination which help differentiate between causes
• Describe what bedside, clinical, laboratory and radiological investigations would be appropriate to investigate a patient with genital discharge and ulcer
• Describe the approach to management of patients with genital discharge or ulcer including contact tracing and ways of limiting the spread of infection

16. Groin / Scrotal swellings and pain
By the end of CCE3 students should be able to:
• Explain the anatomy and embryology of the inguinal canal and scrotum
• Identify common and important causes of groin swellings (hernias, lymph nodes), scrotal swelling (inguinal hernia, hydrocoele, varicocele, testicular tumours, epididymal cyst), scrotal pain (testicular torsion, epidyymo-orchitis, strangulated hernia) and their key clinical features
• Describe key features in the history and examination findings relating to groin and scrotal swellings that would support the development of appropriate differential diagnoses
• Describe what investigations would be appropriate to investigate a patient with groin / scrotal swelling and pain (e.g. scrotal USS)
• Understand the principles of management for common and important differential diagnoses
17. Heart murmurs
By the end of CCE3 students should be able to:
- Explain the anatomy / physiology of the heart and the mechanisms which can cause heart murmurs
- Appropriately categorise murmurs as systolic: ejection systolic murmurs (increased flow, innocent murmurs from fever, pregnancy, ASD, severe anaemia, aortic/pulmonary stenosis) and pansystolic murmurs (mitral / tricuspid regurgitation, VSD) or diastolic (aortic regurgitation, pulmonary regurgitation and mitral stenosis)
- Describe common and / or important underlying causes of heart murmurs including rheumatic heart disease, infective endocarditis, myocardial infarction with rupture of papillary muscles, valve prolapse, calcific degeneration, congenital bicuspid valve, congenital aortic stenosis, aortic dilatation from syphilis, ankylosing spondylitis and Marfan's syndrome.
- Identify the key features of the history and examination findings (including timing, duration, nature, intensity, location, radiation and severity) for each murmur
- Assess the risk, severity of symptoms and the degree of functional impairment to the individual
- Describe what bedside, clinical, laboratory and radiological investigations would be appropriate to investigate a patient with heart murmur (ECG, Echocardiogram, CXR) and their interpretation
- Explain the principles of management for common and important heart murmurs

18. Lower limb disorders
By the end of CCE3 students should be able to:
- Explain the anatomy of the lower limb including the vascular and nerve supply
- Identify soft tissue, bony, nerve and vascular injuries including tendon injuries and nerve compression
- identify common hip and knee conditions
- Take appropriate history from patients suffering from hip and knee problems and examine the hip and knee joints eliciting important findings which help differentiate between causes
- Describe what bedside, clinical, laboratory and radiological investigations would be appropriate to investigate a patient with lower limb problem
- Describe the initial approach to the management of patients with hip and knee problems

19. Neutropenic sepsis
By the end of CCE3 students should be able to:
- Understand the diagnostic criteria for neutropenic sepsis in patients at risk (e.g. anticancer treatment)
- Identify neutropenic sepsis as an acute medical emergency and undertake appropriate initial clinical assessment including history and examination
- Describe what initial investigations would be appropriate to investigate a patient with neutropenic sepsis (full blood count, kidney and liver function tests, C-reactive protein, lactate and blood culture) and their interpretation
- Explain immediate management of neutropenic sepsis and its complications including septic shock
20. Pain control (pharmacologic and non-pharmacologic)
By the end of CCE3 students should be able to:
- Explain the pathophysiology of pain, including pain pathways
- Describe the WHO pain ladder
- Describe non-pharmacological interventions for pain relief and explain their mechanisms of action
- Revise drug classes commonly used in the management of pain: their mechanisms of action and common side effects (paracetamol, non-steroidal anti-inflammatory drugs, opiates)
- Outline the principles of management of neuropathic pain
- Describe which analgesic approach would be most appropriate for common cases of pain

21. Palpitations
By the end of CCE3 students should be able to:
- Explain the anatomy / physiology of the heart and the mechanisms which can cause palpitations
- Describe common and/or important underlying causes of palpitations: Sinus tachycardia (anxiety/panic, anaemia, thyrotoxicosis, fever, drugs – Beta2 agonists, anticholinergics, amphetamines); Extrasystoles; SVT (Wolff-Parkinson-White syndrome), Atrial arrhythmias – atrial tachycardia/flutter/fibrillation (ischaemic heart disease, valvular heart disease, hypertension, alcohol excess); VT (previous MI, cardiomyopathy)
- Identify key features of the history (including risk factors) and examination in a patient with palpitations to generate appropriate differential diagnoses
- Describe what bedside, clinical, laboratory and radiological investigations would be appropriate to investigate a patient with palpitations to help confirm or refute differentials (ECG, FBC, TFT, Echocardiogram, Electrolytes – K+, Mg2+, Ca2+) and their interpretation
- Understand the principles of management for important causes of palpitations (SVT, AF, VT)

22. Pigmented skin lesion / Skin lumps
By the end of CCE3 students should be able to:
- Describe the anatomy of the skin and its three layers
- Describe skin lumps in terms of location and morphology – shape, pattern, colour / pigmentation
- Identify common benign skin lumps including warts (verruca), seborrhoeic warts, lipoma, ganglion cysts, keloids, dermatofibroma and naevi
- Describe the mechanisms by which ultra-violet light leads to the development of skin malignancies
- Understand pre-malignant and malignant skin conditions, including basal cell carcinoma, Bowen's disease (intra-epidermal carcinoma), squamous cell carcinoma and malignant melanoma
- Identify the key features of the history (including red flags) and examination in a patient with skin lump or pigmented lesion (Asymmetry, Border irregularity, Colour variation, Diameter, Evolving) to generate appropriate differentials
- Describe what bedside, clinical, laboratory and radiological investigations would be appropriate to investigate a patient with skin lump or pigmented lesion
- Explain the principles of management for the common and important differential diagnoses
23. Positive HIV serology
By the end of CCE3 students should be able to:

- Understand the incubation period for HIV infection and the timing of serological tests
- Sensitive explain when pre- and post-test HIV counselling is appropriate
- Explain why detecting and diagnosing HIV early in the course of infection is important: allows for early treatment that slows or stops progression to AIDS, modification of behaviour to prevent the spread of disease, and in a pregnant woman, treatment reduces the rate of transmission to her child
- Explain the immunological defects in AIDS and its manifestations (oral, glandular, skin, lungs)
- Understand the principles of management for HIV / AIDS

24. Pruritus, Acute and Chronic Rashes
By the end of CCE3 students should be able to:

- Understand causes of severe pruritus such as scabies, urticaria, eczema, insect bites, dermatitis herpetiformis, lichen planus and generalised itching (renal, liver, haematological)
- Describe a skin rash in a systematic way (site/distribution; morphology (shape, pattern); configuration (linear, grouped, annular) and duration of onset (acute or chronic)
- Describe causes of acute skin rashes including erythroderma, dermatitis (contact, atopic seborrheic), drug eruptions, toxic epidermal necrolysis, Stevens-Johnson syndrome, urticarial, infective (e.g. herpes, varicella, impetigo), and purpuric (meningococcal, septic emboli)
- Describe causes of chronic skin rashes including acne vulgaris, lichen planus, eczema, psoriasis, seborrhoeic wart, infective – fungal (tinea versicolor, Tricophyton – athletes foot), TB (lupus vulgaris), and vasculitis
- Identify the key features of the history (including occupational/other risk factors) and examination in a patient with pruritus or skin rash to generate appropriate differentials
- Describe what bedside, clinical, laboratory and radiological investigations would be appropriate to investigate a patient with pruritus and rash including FBC, LFT, RFT, patch testing, skin scraping for microscopy/culture and serology for autoimmune disease/eczema
- Describe the principles of management of common skin problems such as eczema and psoriasis

25. Skin infections and skin ulcers
By the end of CCE3 students should be able to:

- Understand the aetiology of and risk factors for the development of venous, arterial and neuropathic ulcers
- Identify risk factors for the development of pressure sores and how they can be prevented
- Recognise viral skin infections (e.g. viral warts, molluscum contagiosum, herpes simplex / zoster); bacterial infections (e.g. folliculitis, impetigo, streptococcal cellulitis) and fungal infections (e.g. candida, tinea and pityriasis versicolor)
- Describe key features of the history and examination in a patient with skin infection or ulcer that would support the development of appropriate differentials
- Describe what bedside, clinical, laboratory and radiological investigations would be appropriate to investigate skin infections and ulcers
- Describe the principles of management for the common types of skin infection and ulcer
26. Urinary retention

By the end of CCE3 students should be able to:

- Explain the mechanisms by which urinary retention occurs: obstruction of the urethra, weakened bladder muscle and innervation problem.
- Understand common and important causes of urinary retention including BPH, urethral stricture, medication (e.g. anticholinergics, tricyclic antidepressants, calcium channel blocker), damage to the nervous system (e.g. Parkinson’s, multiple sclerosis and Alzheimer’s disease). In women consider large cystocele, pregnancy, fibroid or ovarian cyst obstructing the urethra.
- Describe key questions from the history and findings from the examination which help differentiate between various causes.
- Describe what bedside, clinical, laboratory and radiological investigations would be appropriate to investigate a patient with urinary retention.
- Describe the initial approach to management of a patient with urinary retention.
Learning Outcomes for GP Days in CCE

1. Apply to medical practice biomedical scientific principles, method and knowledge

By the end of CCE students should be able to:
- Select appropriate forms of management for common diseases, and ways of preventing common diseases, and explain their modes of action and their risks from first principles
- Explain the modes of action and risks of forms of management for common diseases and ways of preventing common diseases including surgical, medical, radiotherapeutic, supportive, palliative and preventative approaches in terms understandable by users of health services.
- Explain a plan of management in terms understandable by a health service user.
- Select appropriate forms of management relating to typical presentations of common and important conditions bearing in mind clinical data and patient perspective.
- Demonstrate how to implement appropriate risk reduction strategies for common diseases in individual patients.
- Make accurate observations of clinical phenomena and appropriate critical analysis of clinical data
- Demonstrate reaching relevant and useful conclusions about a patient’s general health and progress during common illnesses or treatment using routine clinical data in real or simulated patients.
- Summarise clinical observations for real and simulated patient cases
- Synthesise the results of history taking and examination together with results of tests in order to generate a working diagnosis and request further tests if needed.
- Accurately present the results of history taking and examination in a succinct but comprehensive way including when necessary the ability to prioritise the most clinically relevant data.
- Carry out a competent history and examination of a real or simulated patient including the accurate observation and recording of signs and symptoms.

2. Apply psychological principles, method and knowledge to medical practice

By the end of CCE students should be able to:
- Discuss psychological concepts of health, illness and disease
- Formulate and manage the psychological components of a bio-psycho-social formulation for any individual patient’s physical or mental illness
- Relate how psychological factors affect the prognosis in long-term physical illness, stress and depression in real or simulated patient cases.

3. Apply social science principles, method and knowledge to medical practice

By the end of CCE students should be able to:
- Recognise the diversity of patient experiences (social and emotional aspects) and behaviour in relation to living with common health conditions
- Discuss sociological concepts of health, illness and disease
- Use knowledge of individual patients lay beliefs in management the planning
- Discuss lay beliefs with patients
- Elicit and distinguish lay beliefs when talking to simulated or real patients.
- Recognise the importance of listening to and understanding patients’ lay beliefs/knowledge and the shift towards the patient as ‘expert’
- Recognise how doctor-patient relationships are affected by social forces and change over time.
4. Carry out a consultation with a patient

By the end of CCE students should be able to:

- Take and record a patient's medical history, including family and social history, talking to relatives or other carers where appropriate
- Demonstrate the skills of a person-centred interview in an active clinical environment
- Practice history taking involving a third party in a controlled clinical environment
- Observe and review triadic consultations in routine clinical practice
- Elicit patient's questions, their understanding of their condition and treatment options, and their views, concerns, values and preferences
- Demonstrate the skills of seeking questions and checking patient understanding in an active clinical environment and in controlled clinical teaching environment
- Demonstrate a structured approach to examining patients in simulated and real clinical environments
- Apply appropriate strategies to complete necessary examination in those with sensory or mobility problems and in those who have impaired understanding
- Demonstrate ability to communicate appropriately with patient while performing a physical examination; to explain what is going to be done; reassure during performance; continual observance of patient's non-verbal and verbal cues during examination
- Demonstrate a structured approach to examining the child including observation, palpation and auscultation
- Provide explanation, advice, reassurance and support
- Demonstrate skills in providing explanation in language and at a pace appropriate to patient; checking understanding; awareness of importance of follow-up plan and provision of contact details for appropriate support

5. Diagnose and manage clinical presentations

By the end of CCE students should be able to:

- Interpret findings from the history, physical examination and mental-state examination, appreciating the importance of clinical, psychological, spiritual, religious, social and cultural factors
- Make an initial assessment of a patient's problems and differential diagnosis. Understand the processes by which doctors make and test differential diagnosis
- Present a series of clinical cases that demonstrate an integrated and efficient process for making an initial assessment of a patient's presentation
- Outline the hypothetico-deductive and pattern recognition methods of arriving at the likely clinical diagnoses with a consideration of important differential diagnoses with a particular emphasis on not missing potentially serious or life-threatening conditions
- Synthesise a full assessment of the patient's problems and define the likely diagnosis
- Present a comprehensive assessment of a patient’s clinical problem in real clinical scenarios having obtained a full clinical history and performed a relevant detailed clinical examination including the likely clinical diagnoses and important differential diagnoses
- Make clinical judgements and decisions, based on the available evidence, in conjunction with your supervisor and as appropriate for your level of training and experience. This may include situations of uncertainty
- Support patients in caring for themselves
- Demonstrate that a treatment plan has been explained to a patient with special emphasis on self-management. This would be to manage current conditions and
prevent future long term conditions and other co-morbidities where an evidence base exists.

**6. Communicate effectively with patients and colleagues in a medical context**

By the end of CCE students should be able to:
- Communicate clearly, sensitively and effectively with patients, their relatives or other carers, and colleagues from the medical and other professions, by listening, sharing and responding.
- Demonstrate the skills needed to conduct a triadic consultation e.g. with carers etc.
- Communicate appropriately in difficult circumstances, such as when breaking bad news, and when discussing sensitive issues, such as alcohol consumption, smoking or obesity.
- Demonstrate with a simulated patient or in a clinical setting a lifestyle/behaviour change/health promotion intervention
- Assess the impact of alcohol and drug consumption using appropriate frameworks such as CAGE and FRAME.

**7. Prescribe drugs safely, effectively and economically**

By the end of CCE students should be able to:
- Provide patients with appropriate information about their medicines.
- Demonstrate informing real or simulated patients about how to take their medicines including the use of common delivery devices such as inhalers
- Discuss the benefits and risks of drug therapy with patients with real or simulated patients
- Reach a shared decision with a real or simulated patient about his or her treatment taking into account clinical information, best evidence, and the wishes, values and preferences of the patient.
- Identify measures to improve poor adherence whether intentional or unintentional
- Make an accurate assessment of adherence to medication as part of a medical history

**8. Use information effectively in a medical context**

By the end of CCE students should be able to:
- Specify the data required for a specified research purpose and show how to collect, analyse, interpret and present it for a range of purposes including audit and service development

**9. Reflect, learn and teach others**

By the end of CCE students should be able to:
- Continually and systematically reflect on practice and, whenever necessary, translate that reflection into action, using improvement techniques and audit appropriately, for example, by critically appraising the prescribing of others
- Complete an appropriate element of a clinical audit

**10. Learn and work effectively within a multi-professional team**

By the end of CCE students should be able to:
- Understand and respect the roles and expertise of health and social care professionals in the context of working and learning as a multi-professional team
- Describe the basic roles of key health and social care professionals involved in a person's care in primary care and community settings (HV, DN, GP, practice nurse, social care worker).
11. Protect patients and improve care

By the end of CCE students should be able to:

- Understand and have experience of the principles and methods of improvement, including audit, adverse incident reporting and quality improvement, and how to use the results of audit to improve practice.
- Understand the use of the audit as a tool to monitor/improve performance in compliance with local and national guidelines.
- Develop a worked example of audit including recommendations for change in practice.
- Describe common approaches used in clinical practice to assure and improve quality - including audit and adverse incident reporting.
- Evaluate the success of an audit scenario.
- Complete an appropriate element of a clinical audit.
Learning Outcomes for Community Health (Non-GP)

CCE1 - Community
By the end of CCE1 students should be able to:

- Evaluate and apply epidemiological data in managing healthcare for the individual and the community
- Explain one framework for a health needs assessment
- Plan a health needs assessment for a population
- Find, understand and interpret routine information relating to health, ill health and health care in a specified population
- Apply knowledge of core models of health behaviours, and illness behaviours to identify skills that enhance behaviour change.
- Use reflective statements in clinical and simulated environments
- Gain the knowledge and skills to deliver brief interventions (smoking and alcohol)
- Practice skills to deliver brief interventions (smoking and alcohol)
- Become familiar with the organisation of the placement and relevant Trust policies
- Identify individual learning outcomes to be accomplished during the practice placement

CCE2 - Community
By the end of CCE2 students should be able to:

- Be able to define Clinical Audit and describe the Clinical Audit Cycle
- Outline the role of clinical audit in quality improvement
- Outline the importance of action planning in ensuring that audit recommendations are implemented
- Define learning disability and state how learning disability is diagnosed
- Outline the physical and mental health needs of patients with learning disability
- Identify the communication needs of patients with learning disability
- Identify issues of mental capacity and the socio-legal issues that may arise in relation to patients with learning disability
- Carry out an interview with a patient to find out about their experiences of living with his/her condition/impairment
- Outline the patient’s perspective on living with his/her condition/impairment
- Identify the patient’s views on the medical and other care s/he receives
- Identify the role of health and social care professionals involved with the care the patient
- Describe the psychological and social impacts on the patient and family/significant others
- Identify factors (+ve and –ve) impacting on the patient’s quality of life and social participation
- Describe the patient journey through the care delivery system, from identification of impairment/condition until now
- Demonstrate respect and non-judgemental attitudes to patients, peers and tutors
- Work effectively with peers
- Demonstrate knowledge of clinical guidelines or care pathways relevant to the patient (if applicable)
- Identify any treatment / care management issues and how these can be addressed
- Discuss the importance of teamwork and have an appreciation of skills of different disciplines and importance of transitions across organisational boundaries
Outlines and discusses the role of the wider multi-disciplinary team in relation to the care of patients with long-term conditions and those who are disabled
Identify a range of services available to patients with long-term conditions and those who are disabled

CCE3 - Community
By the end of CCE3 students should be able to:
- Define the following terms; palliative care; end of life care; life-limiting illness; terminal illness
- Identify the importance of patients’ priorities and preferences for the end of life
- Outline palliative care as a generic skill and the duty of all health care professionals, including junior doctors
- Describe integration of palliative care with active treatment; understand the scope of palliative care in relation to conditions other than cancer
- State the range of services available in end of life care
- Identify when specialist palliative care services should be involved.
- Show awareness of the different presentation, natural history and management of; cancer, dementia, progressive neurological, respiratory, cardiac, renal, chronic frailty and other life-limiting conditions.
- Identify a range of “dying trajectories” and the significance of transition points.
- Be able to recognise a dying patient and the need to refocus care provision.
- Identify the uncertainties in end of life care, particularly in non-malignant disease.
- Explain the concept of allowing “natural death”.
- Identify the key elements of the discharge planning process
- Identify key professionals involved in discharge planning
- Explain the importance of effective discharge planning in reducing readmission to hospital
- Identify some key professionals involved in the interdisciplinary care of patients discharged from hospital
- Explain the importance of safe, timely discharge planning and preventing discharge delay
- Explain the NHS Continuing Care process
- Carry out an interview with a patient to find out about their experiences of living with his/her condition/impairment
- Identify the patient’s views on the medical and other care he receives
- Identify the role of health and social care professionals involved with the care of the patient
- Demonstrate respect and non-judgemental attitudes to patients, peers and tutors
- Work effectively with peers
- Outline the patient’s perspective on living with his/her condition/impairment
- Describe the psychological and social impacts on the patient and family/significant others
- Identify factors (+ve and –ve) impacting on the patient’s quality of life and social participation
- Describe the patient journey through the care delivery system, from identification of impairment/condition until now
- Demonstrate knowledge of clinical guidelines or care pathways relevant to the patient (if applicable)
- Identify any treatment /care management issues and how these can be addressed
- Demonstrate respect and non-judgemental attitudes to patients, peers and tutors
• Discuss the importance of teamwork and have an appreciation of skills of different disciplines and importance of transitions across organisational boundaries
• Outlines and discusses the role of the wider multi-disciplinary team in relation to the care of patients with long-term and life-limiting conditions
• Identify a range of services available to patients with long-term and life-limiting conditions