**COMMON PRESENTATIONS AND CONDITIONS**

Basic Trainees will require a sufficient depth of knowledge of these presentations and conditions.

- **Anaemias:**
  - haemoglobinopathy (sickle cell disease)
  - haemolytic (autoimmune)
  - nutritional (iron, folate and vitamin B12)
  - thalassaemia (alpha and beta)

- **Bleeding disorders:**
  - disseminated intravascular coagulation
  - haemophilia (factor VIII & IX deficiency)

- **Bone marrow failure:**
  - treatment-induced bone marrow suppression
  - pancytopenia as a presenting feature of:
    - aplastic anaemia
    - leukaemias

- **Brain tumour:**
  - low grade glioma
  - medulloblastoma

- **Fever with neutropenia**

- **Haemolytic disease of the newborn**

- **Late effects of cancer treatment:**
  - cardiomyopathy
  - hearing impairment
  - hormone deficiencies
  - infertility
  - neurocognitive impairment
  - pulmonary fibrosis
  - renal impairment

- **Leukaemias:**
  - acute lymphatic leukaemia (precursor B and T-cell)
  - myeloid leukaemia, acute

- **Lymphomas:**
  - B-cell non-Hodgkin leukaemia
  - Hodgkin lymphoma

- **Lymphadenopathy**

- **Mediastinal mass:**
  - airway obstruction
  - pericardial effusion and tamponade
  - superior vena cava obstruction

- **Mucositis secondary to cancer treatment**

- **Solid tumours:**
  - Ewing sarcoma (ES)

For all common presentations, Basic Trainees will need to know how to:

**Synthesise**
- incorporate epidemiology, pathophysiology and clinical science
- recognise the clinical presentation
- take a relevant clinical history
- conduct an appropriate examination
- establish a differential diagnosis
- plan and arrange appropriate investigations

**Manage**
- provide initial, evidence-based management
- discuss the principles of ongoing management
- apply quality use of medicines
- recognise potential complications of the disease and its management, and initiate preventative strategies
- refer appropriately

**Consider other factors**
- identify broader considerations and their impact on diagnosis and management
**LESS COMMON OR MORE COMPLEX PRESENTATIONS AND CONDITIONS**

Basic Trainees will need to have an awareness of, and an understanding of appropriate resources that should be used to help manage patients with these presentations and conditions.

- **Anaemias:**
  - aplastic
  - chronic disease
  - glucose-6-phosphate dehydrogenase deficiency (G6PD)
  - lead toxicity
  - transient erythroblastopenia of childhood

- **Bleeding disorders:**
  - platelet function disorders
  - von Willebrand disease

- **Bone marrow failure syndromes:**
  - Fanconi anaemia

- **Brain tumours:**
  - brainstem glioma
  - craniopharyngioma
  - ependymoma
  - high grade glioma

- **Cancer pain management**

- **Cancer predisposition syndromes:**
  - Beckwith-Wiedemann syndrome (BWS)
  - hereditary retinoblastoma
  - Li-Fraumeni syndrome (LFS)
  - neurofibromatosis
  - trisomy 21

- **Disseminated intravascular coagulopathy**

- **Haematological manifestations of systemic and chronic disease:**
  - haemolytic anaemia of the newborn
    - cancer
    - non-cancer
    - haematological
    - immunological disorders
    - genetic disorders

- **Iron overload:**
  - haemochromatosis
  - transfusion induced

- **Leukaemias:**
  - mature B-cell acute lymphoblastic

**For all less common and more complex presentations, Basic Trainees will need to know how to:**

**Synthesise**
- incorporate epidemiology, pathophysiology and clinical science
- recognise the clinical presentation
- take a relevant clinical history
- conduct an appropriate examination
- establish a provisional diagnosis
- plan and arrange appropriate initial investigations

**Manage**
- initiate therapy in consultation
- discuss broad therapeutic options
- recognise potential complications
- refer appropriately

**Consider other factors**
- identify broader considerations and their impact on diagnosis and management
leukaemia
  » Philadelphia positive acute lymphoblastic leukaemia (Ph+ALL)

- Leucocyte disorders
- Lymphomas:
  » T-cell lymphoblastic lymphoma
- Neutropenia:
  » congenital
  » cyclic
  » transient
- Red cell structural disorders:
  » hereditary spherocytosis
- Solid tumours:
  » germ cell tumour (non-central nervous system)
  » hepatoblastoma
  » retinoblastoma
  » rhabdomyosarcoma
- Spinal cord compression
- Splenic disorders:
  » asplenia
  » hypersplenism
  » hyposplenism
- Thrombosis:
  » cerebral venous sinus
  » deep venous
  » inherited clotting predisposition
  » intravascular device related

**EPIDEMIOLOGY, PATHOPHYSIOLOGY AND CLINICAL SCIENCE**

Basic Trainees will be able to describe the principles of the foundational sciences.

- Coagulation physiology
- Cytotoxic drug mechanism of action and toxicity:
  » cisplatin
  » cyclophosphamide
  » dactinomycin
  » daunorubicin
  » doxorubicin
  » etoposide
  » ifosfamide
  » vincristine
- Genetics diseases of abnormal haemoglobin:
  » sickle cell disease
  » thalassaemias
- Growth factors:
  » erythropoietin
  » filgrastim
- Haematopoiesis physiology
- Haemoglobin physiology including antenatal
- Iron, folate, and vitamin B12 intake and metabolism
- Oncogenesis:
  » normal cell replication
INVESTIGATIONS AND PROCEDURES
Basic Trainees will know how to select and interpret the results of these investigations and procedures.

- Anticoagulant therapy (adjust therapy to achieve target ranges and monitor therapy)
- Blood product transfusion:
  - immunoglobulin
  - platelets
  - red blood cells
- Bone marrow aspirate and trephine (report)
- Blood count (report)
- Coagulation profile (report)
- Haemoglobin electrophoresis (report)
- Iron studies (report)
- Imaging for cancer diagnosis and staging:
  - CT scan and magnetic resonance imaging (MRI) scans (recognise significant abnormalities such as large tumours on images)
  - positron emission tomography (PET) and bone scan (report interpretation)
  - chest X-ray (recognise mediastinal mass and airway compromise)
- Minimal residual disease (MRD) measurement for acute lymphoblastic leukaemia risk stratification (positive or negative reports only)
- Tumour markers:
  - alpha-fetoprotein (AFP)
  - catecholamines
  - human chorionic gonadotrophin (hCG)

IMPORTANT SPECIFIC ISSUES
Basic Trainees will be able to identify important specialty-specific issues and their impact on diagnosis and management.

- Educational and social impacts of cancer therapy
- Immunosuppression
- Mental health aspects of congenital bleeding disorders and chronic transfusion dependence
- The role of MIBC scintigraphy in the staging and response assessment of paediatric neuroblastoma
- Principles of transplantation

LEARNING METHODS
Suggested opportunities, activities, and resources to assist with learning.

- Clinical experience with Haematology and Oncology patients in a range of settings
- Membership of the Royal College of Paediatrics and Child Health Mastercourse [www.rcpch.ac.uk/MRCPCH-mastercourse](http://www.rcpch.ac.uk/MRCPCH-mastercourse)