Module C

Clinical Placement
Orientation Guide

UQUMED Academic
Year (2019-2018)-(1440-1439)

2
Year
Study Guide
Curriculum Committee

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UQUMED Year 4 Module C:
Neurological, Kidneys and Urinary Tract, Hematological, and Infectious diseases presentations

Guide Aim:

This guide of Year 4 Module C Clinical Placement is designed as an orientation package for supervising clinical teams at affiliated hospitals and clinical facilities. It provides structure and outline of Module C training. This enables partners of supervising clinical teams and trainers to contribute to constructively to students' learning experiences.

Outline of Year 4 of UQUMED MBBS

Introduction

Year 4 (Clinical Practice-1) of UQUMED MBBS programs based on the theme of "**Integrated Clinical Care**". Workplace-based learning is the backbone of Year 4 and moving towards more workplace-based learning can be a challenging transition for medical students. To achieve this, much of the learning will take place in healthcare settings to ensure UQU medical students have exposure to patients with a wide range of healthcare needs including primary care and community care presentations, chronic disease management, acute illness presentations, and pre/peri and post-operative care. Year 4 is also a time when students will be both looking backwards: to their past learning, and understanding how theory and understanding of health and disease links to practice; and forwards: using the learning in this year as a key part of the journey to become competent interns.

Aim of Year 4:

Year 4 (Clinical Practice-1) aims to:

- Learn from healthcare experiences.
- Become skilled at interviewing and examining patients with a range of problems across the range of healthcare settings.

- Understand the integrated approach to diagnosing and managing patients' problems.
- Understand the healthcare system and how patients access care.
- Learn how to document information about patients and their care.

Structure of Year 4:

The main structure of Year 4 consists of four **Horizontal Modules**. In addition, the longitudinal **Vertical Modules** integrated with the horizontal modules throughout the year and extend into the later years of the program.

- **Module A:** "Foundations of Clinical Practice" is an introduction and orientation module designed to assist in the transition into to workplace-based learning. This module also introduces students to the structure of the year, learning opportunities, how to maximize workplace-based learning, and evaluation of formative assessment opportunities.
- **Module B**: Cardiac, Respiratory, Endocrine and Diabetes presentations. This is based on Workplace-based learning approach.
- **Module C**: Neurological, Kidneys and urinary tract, Hematological and Infectious presentations. This is based on Workplace-based learning approach.
- **Module D:** Gastrointestinal and Hepatobiliary presentations, Fundamentals of General Surgery. This is based on Workplace-based learning approach.

The longitudinal eight **Vertical Modules** of "*Pathological Sciences, Anatomy and Imaging, Use of Medicine, Clinical Skills, Research and Evidences, Family Health, Professional Development, and Hajj & Umrah*" are ongoing throughout the year and extend into the later years of the program.

The structure of the program couples leaning with formative assessment and constructive feedback. Students must maintain and complete Workplace-Based-Assessment tasks and practical procedures card as part of the comprehensive portfolio. They are expected to be autonomous and self-directed learners. Summative assessments include end of the terms exams and final comprehensive written and clinical exams.

Clinical Placement:

Clinical Placement

"Any arrangement in which a medical student is present in an environment that provides healthcare or related services to patients or the public. Placements can take place in primary, secondary or community healthcare or social care settings. Students can be actively involved in patient care or they can be observing health or social care processes".
General Medical Council, UK

Clinical placements are the skeleton of year 4 UQUMED curriculum. Learning will be achieved by placing year 4 students in a range of different clinical settings including inpatients, outpatients departments, and primary care centers.

Students Clinical Privileges

While on clinical placement, Year 4 students are expected to:

- Take history and perform physical examination.
- Use separate clerking notes to practice clinical documentation and this should not be part of patient's medical records and should not be stamped with patient's ID.
- Access to paper-based and electronic medical records as "read only".
- Never write in patients' medical records.
- Perform certain clinical procedures under supervision such as IV cannulation and phlebotomy.
- Participate in hospital's teaching activities.

Module C Clinical Placement

- Module C clinical placements are conducted in Neurology, Nephrology, Urology, and General Internal Medicine wards and ID/Hematology outpatient clinics in 5-6 different hospitals as well as primary healthcare centers.
- Students' clinical placement week is a four-day week. This includes academic half-day: a UQUMED faculty staff will arrange a structured clinical teaching (grand round, bedside teaching, case-based learning, …etc) and one day for primary health care placement.
- Each week the fifth day will be spend in the Faculty for Vertical Modules teaching.

During Neurology placements: (1 week)

- Students are expected to spend time in inpatients floor, neurology outpatient clinics, Electrophysiology unit, and Epilepsy unit (as appropriate).

During Nephrology placements: (1 week)

- Students are expected to spend time in inpatients floor, outpatient clinics, inpatients consultation, and Dialysis units (where available).

During Urology placements: (1 week)

- Students are expected to spend time in urology outpatient clinics, inpatients floor, and operating room (as appropriate). They are also expected to work with the urology consult team, when feasible.

During General Internal Medicine (GIM) placements: (3 weeks)

- Students are expected to spend time in GIM inpatients floor, GIM, ID, and Hematology outpatient clinics, inpatients hematology and ID consultation (where available).

Module C Core Clinical Presentations

Abnormal movements	Genital lumps
Acute confusion	Headache
Bruising	Leg swelling and pain
Disturbances of micturition	Loss of consciousness
Double vision	Speech difficulties
Fever	Tired all the time
Fits	Weakness
Flank pain	

Module C Core Neurology Diseases

Weakness (Transient ischemic attack TIA, Hemorrhagic /Ischemic Stroke)

By the end of Module C, students should be able to:

1. Obtain an accurate and comprehensive medical history of TIA and stroke, focusing on neurological history and risk factors.
2. Perform a complete systematic and neurological physical examination to localize where the neurological lesion is.
3. Differentiate between upper and lower motor neuron findings on physical examination.
4. Identify types of acute stroke.
5. Identify causes and risk factors of acute stroke.
6. Choose the most appropriate investigations to diagnose TIA or acute stroke.
7. Interpret imaging (CT brain) blood tests (lipid profile, blood glucose, and coagulation profile).
8. Formulate and prioritize a differential diagnosis of patient with acute motor weakness.
9. Develop an evidence-based management plan for TIA, Ischemic, and hemorrhagic stroke.
10. Outline the management of acute ischemic stroke presenting in and outside the window of thrombolysis.
11. Appropriately prioritize referral/consultation to Neurology service.
12. Demonstrate the appropriate skills for patient's education.

Guillain Barre Syndrome (GBS)/ Myasthenia Gravies (MG)

By the end of Module C, students should be able to:

1. Obtain an accurate and comprehensive medical history for GBS and MG.
2. Perform a complete systematic and neurological physical examination.
3. Identify neurological physical signs of GBS and MG.
4. Construct a diagnostic approach for peripheral neuropathy.
5. Construct a diagnostic approach for neuromuscular junction disorders.
6. Identify the complications of GBS and MG.
7. Choose the most appropriate investigations to diagnose peripheral neuropathy and neuromuscular junction disorders (nerve conduction study and blood tests).
8. Formulate and prioritize a differential diagnosis of acute peripheral neuropathy and neuromuscular junction disorders.
9. Develop an evidence-based management plan for GBS and MG.
10. Appropriately prioritize referral/consultation to Neurology service.
11. Demonstrate the appropriate skills for patient's education.

Multiple Sclerosis (MS)

By the end of Module C, students should be able to:

1. Obtain an accurate and comprehensive medical history for MS.
2. Perform a complete systematic and neurological physical examination.
3. List differential diagnosis for central demyelinating disorders.
4. Describe clinical features and criteria for categorizing multiple sclerosis (MS).
5. Recognize the possible complications of MS.
6. Choose the most appropriate investigations to diagnose MS (cerebrospinal fluid CSF analysis-imaging).
7. Interpret cerebrospinal fluid.
8. Develop an evidence-based management plan for MS (acute and chronic disease modifying therapy).
9. Appropriately prioritize referral to Neurology service.
10. Demonstrate the appropriate skills for patient's education.

Seizure/ Epilepsy

By the end of Module C, students should be able to:

1. Obtain an accurate and comprehensive medical history for seizure/epilepsy (rule out secondary causes).
2. Perform a complete systematic and neurological physical examination.
3. Develop a differential diagnosis of seizure disorder.
4. Identify the different types and causes of seizure /epilepsy.
5. Describe the complications of seizure and epilepsy.
6. Choose the most appropriate investigations to evaluate seizure (blood tests, imaging, and EEG).
7. Interpret the related-blood tests.
8. Formulate and prioritize a differential diagnosis for seizure disorders.
9. Develop an evidence-based management plan for patient with seizure or epilepsy taking into consideration the advantages/disadvantages of each treatment modality and patient's preference.
10. Appropriately prioritize referral to Neurology service.
11. Demonstrate the appropriate skills for patient's education.

Headache (primary/ secondary)

By the end of Module C, students should be able to:

1. Obtain an accurate and comprehensive medical history of headache.
2. Perform a complete systematic and neurological physical examination.
3. Distinguish between primary and secondary headache.
4. Describe the different types of primary headaches.
5. Identify the red flag clinical features of headache.
6. Describe the clinical presentation of secondary headaches, focusing on (subarachnoid hemorrhage and temporal arteritis).
7. Choose the most appropriate investigations to evaluate patients with headache (blood, imaging and lumbar puncture/ cerebrospinal fluid) based on the available clinical data.
8. Interpret blood tests, CT-scan and CSF (cerebrospinal fluid) results.
9. Formulate and prioritize a differential diagnosis for headache.
10. Develop an evidence-based management plan for primary headache.
11. Outline the general management plan for subarachnoid hemorrhage and temporal arteritis.
12. Appropriately prioritize referral to Neurology Clinic.

Central nervous system (CNS) infections

By the end of Module C, students should be able to:

1. Obtain an accurate and comprehensive medical history for CNS infections, focusing on neurological symptoms and possible risk factors.
2. Perform a complete systematic and neurological physical examination.
3. Illustrate signs of meningeal irritation.
4. Identify the risk factors of CNS infection.
5. Identify the different causative organisms of CNS infections.
6. Describe the complications of CNS infection.
7. Choose the most appropriate investigations to evaluate CNS infections (blood, imaging and lumbar puncture/cerebrospinal fluid) based on the available clinical data.
8. Interpret blood tests, CT-scan and CSF (cerebrospinal fluid) results.
9. Formulate and prioritize a differential diagnosis for CNS infections.
10. Develop an evidence-based management plan for CNS infections.
11. Appropriately prioritize referral/consultation to Neurology service.
12. Demonstrate the appropriate skills for patient's education.

Loss of consciousness (LOC) / Acute confusion (Delirium)

By the end of Module C, students should be able to:

1. Obtain an accurate and comprehensive medical history, focusing on symptoms of possible causes of for loss of consciousness and acute confusion.
2. Perform a complete systematic and neurological physical examination looking for the cause of for loss of consciousness and acute confusion.
3. Perform mini-mental state examination.
4. Formulate and prioritize a differential diagnosis for loss of consciousness and acute confusion.
5. Choose the most appropriate investigations to evaluate a patient with loss of consciousness / acute confusion (blood, urine, and imaging).
6. Interpret (CBC, electrolytes, blood sugar, urine and blood culture).
7. Develop an evidence-based management plan for loss of consciousness and acute confusion.
8. Recognize the social and environmental risk factors contributing to acute confusion in elderly.
9. Appropriately prioritize referral to Neurology service.
10. Demonstrate the appropriate skills for patient's education.

Movement Disorder (Tremor/ Parkinsonism/ Cerebellar diseases)

By the end of Module C, students should be able to:

1. Obtain an accurate and comprehensive medical history of abnormal movements.
2. Perform a focused neurological physical examination to identify the signs of cerebellar and Parkinson disease.
3. Choose the most appropriate investigations to evaluate abnormal movements (blood, imaging) based on the available clinical data.
4. Interpret the above-mentioned tests.
5. Formulate and prioritize a differential diagnosis of tremor and Parkinsonism.
6. Develop an evidence-based management plan for tremor and Parkinsonism.
7. Appropriately prioritize referral to Neurology Clinic.
8. Demonstrate the appropriate skills for patient's education.

Module C Core Nephrology Diseases

Acute and chronic kidney disease

By the end of Module C, students should be able to:

1. Obtain an accurate and comprehensive medical history of acute kidney injury and chronic kidney disease.
2. Perform a complete systematic physical examination for chronic kidney disease complications.
3. Identify the causes of acute kidney injury.
4. Identify the causes of chronic kidney diseases.
5. Differentiate clinically between acute kidney injury and chronic kidney disease.
6. Choose the most appropriate investigations to diagnose acute kidney injury and chronic kidney disease (blood, urine, and imaging) based on the available clinical data.
7. Interpret blood tests (CBC, renal function, electrolytes), and urine tests.
8. Formulate and prioritize a differential diagnosis for the causes of acute kidney injury and chronic kidney disease.
9. Develop an evidence-based pharmacological and non-pharmacological management plan for acute kidney injury and chronic kidney disease.
10. Recognize the indications for renal replacement therapy (RRT).
11. Recognize the different types of renal replacement therapy (RRT).
12. Appropriately prioritize referral for Nephrology service.
13. Demonstrate the appropriate skills for patient's education.

Glomerular diseases

By the end of Module C, students should be able to:

1. Obtain an accurate and comprehensive medical history for a patient with nephrotic and nephritic syndrome.
2. Perform a complete systematic physical examination to assess for secondary causes of glomerular diseases (infectious vs non-infectious).
3. Define nephrotic and nephritic syndrome.
4. Classify the different causes of glomerular diseases (nephritic and nephrotic syndrome).
5. Choose the most appropriate investigations to diagnose glomerular diseases (blood, urine, kidney biopsy, imaging) based on the available clinical data.
6. Interpret blood tests for (renal function, serology, autoimmune markers) and urine for (microscopy, albumin and protein excretion) in glomerular diseases.
7. Formulate and prioritize a differential diagnosis for nephrotic and nephritic syndrome.
8. Identify the red flag clinical features and major complications of acute onset glomerular diseases.
9. Develop an evidence-based management plan for nephrotic and nephritic syndrome depending on the cause of glomerular disease.
10. Appropriately prioritize referral for Nephrology service.
11. Demonstrate the appropriate skills for patient's education.

Electrolytes (sodium, potassium) Imbalance

By the end of Module C, students should be able to:

1. Obtain an accurate and comprehensive medical history from a patient with electrolytes imbalance.
2. Perform a complete systematic physical examination, focusing on vital signs, volume status, and possible underlying causes.
3. Identify the clinical features of hypo/hypernatremia and hypo/hyperkalemia.
4. Define SIADH (syndrome of inappropriate ADH secretion) and its diagnostic criteria.
5. Describe Diabetes Insipidus.
6. Outline diabetes insipidus types, and pathophysiology.
7. Choose the most appropriate investigations to diagnose electrolyte imbalance (serum osmolality, serum electrolytes, urine electrolytes and osmolality, ECG) based

on the available clinical data.
8. Interpret serum electrolyte and osmolality, urine electrolytes and osmolality.
9. Construct a diagnostic approach to hypo/hypernatremia and hypo/hyperkalemia.
10. Develop an evidence-based management plan for hypo/hypernatremia and hypo/hyperkalemia and their underlying cause.
11. Appropriately prioritize referral to the appropriate services.
12. Demonstrate the appropriate skills for patient's education.

Module C Core Urology Diseases

Hematuria

By the end of Module C, students should be able to:

1. Obtain an accurate and comprehensive medical history of hematuria.
2. Perform physical examination for evaluation of hematuria, including assessment of the costovertebral angles and suprapubic region.
3. Identify the causes of hematuria.
4. Describe the pathophysiological mechanisms of the hematuria causes.
5. Explain the various definitions involving hematuria (e.g. gross, microscopic, terminal, initial, total).
6. Choose the most appropriate laboratory investigations, imaging and specialized tests in order to diagnose and evaluate the severity of hematuria.
7. Select the most appropriate measures to treat ongoing hematuria.
8. Develop an evidence-based management plan of hematuria, based on the underlying cause.
9. Demonstrate the essential skills for patient's education.

Urolithiasis

By the end of Module C, students should be able to:

1. Obtain an accurate and comprehensive medical history of urolithiasis.
2. Obtain an accurate and comprehensive medical history of ureteric or renal colic.
3. Perform physical examination for the evaluation of urolithiasis, including assessment of the costovertebral angles.
4. Identify risk factors for urolithiasis.
5. Recognize the various types of renal stones.
6. Identify sites of ureteric stone hang up.

7. Choose the most appropriate laboratory investigations, imaging and specialized tests in order to diagnose, classify, and assess urolithiasis.
8. Interpret the results of above-mentioned investigations.
9. Develop an evidence-based management plan, based on the clinical presentation, stone size, composition and location.
10. Compare different stones' treatment methods.
11. Identify the clinical indications for management interventions and reasons for hospital admissions for urolthiasis.
12. Choose strategies to prevent stone recurrence.
13. Demonstrate the essential skills for patient's education.

Scrotal pathology

By the end of Module C, students should be able to:

1. Obtain an accurate and comprehensive medical history of scrotal swelling/pain.
2. Communicate appropriately with patients who need a scrotal examination.
3. Fully perform and interpret the findings of scrotal examination, including transillumination.
4. Describe the pathophysiology of scrotal swelling.
5. List causes of scrotal swelling.
6. Describe the pathophysiology of scrotal pain.
7. List the causes of scrotal pain.
8. Choose the most appropriate investigations, imaging and specialized tests to evaluate scrotal swelling/pain.
9. Develop an evidence-based management plan, based on the diagnosis of scrotal swelling/pain.
10. Demonstrate the essential skills for patient's education.

Urinary tract infections UTI

By the end of Module C, students should be able to:

1. Obtain an accurate history of urinary tract infections.
2. Perform physical examination to evaluate urinary tract infections, including assessment of the costovertebral angles.
3. Select the most appropriate urine collection method for urine analysis and culture.
4. Identify the common microbiological causes of urinary tract infections.

5. Recognize the risk factors of urinary tract infections.
6. Define the various types of urinary tract infections UTIs and related conditions (Cystitis, pyelonephritis, asymptomatic bacteriuria, emphysematous pyelonephritis).
7. Classify urinary tract infections UTIs into Isolated, unresolved or recurrent (reinfection or persistence).
8. Choose the most appropriate laboratory investigations and imaging in order to diagnose and classify urinary tract infections.
9. Interpret the results of above-mentioned investigations.
10. Develop an evidence-based management plan, based on the underlying cause of urinary tract infections.
11. Choose the most appropriate strategies to prevent urinary tract infections.
12. Demonstrate the essential skills for patient's education.

Lower Urinary Tract Symptoms (LUTS)

By the end of Module C, students should be able to:

1. Obtain an accurate and comprehensive medical history of patient with LUTS.
2. Perform physical examination for the evaluation of LUTS.
3. Communicate appropriately with patients who need a digital rectal examination.
4. Perform and interpret the findings of digital rectal examination.
5. Identify the difference between lower urinary tract symptoms (LUTS), benign prostatic hyperplasia (BPH), overactive bladder (OAB) and bladder outlet obstruction (BOO).
6. Identify the urological causes of decreased urine output.
7. List causes of LUTS.
8. List the potential complications of BPH.
9. Choose the most appropriate investigations and imaging tests in order to assess and identify the causes of LUTS.
10. Utilize special tests (e.g. urodynamics and cystoscopy) in the evaluation of LUTS.
11. Develop an evidence-based management plan, based on the cause of LUTS.
12. Choose the most appropriate investigations and imaging tests in order to assess and identify the urological causes of decreased urine output and interpret their findings.
13. Develop an evidence-based management plan, based on the cause of decreased urine output.
14. Create a short- and long-term management plan of urinary retention.
15. Select appropriate urinary catheters.
16. Prepare and insert a urethral catheter in both genders.
17. Demonstrate the essential skills for patient's education.

Sexual/Erectile Dysfunction ED

By the end of Module C, students should be able to:

1. Obtain a comprehensive medical history of erectile dysfunction.
2. Obtain a complete sexual history.
3. Perform a comprehensive physical examination for the evaluation of erectile dysfunction.
4. Communicate appropriately with patients who need a genital examination.
5. Perform and interpret the findings of a genital examination
6. Define erectile dysfunction.
7. Describe the various forms of male sexual dysfunction.
8. Identify the risk factors of erectile dysfunction.
9. Recognize erectile dysfunction as a risk factor for coronary artery disease.
10. Differentiate between psychogenic and organic erectile dysfunction.
11. Choose the appropriate investigations, imaging and specialized tests to assess erectile dysfunction.
12. Interpret the results of above-mentioned investigations.
13. Develop an evidence-based management plan for erectile dysfunction, based on a goal-directed approach.

Module C Core Hematology Diseases

Anemia

By the end of Module C, students should be able to:

1. Obtain a comprehensive medical history of anemia, focusing on anemia symptoms and the possible underlying cause.
2. Illustrates signs of Iron deficiency anemia and pernicious anemia.
3. Perform a general physical examination for anemia with special emphasis on liver, spleen and lymph nodes examination.
4. Identify the major causes of iron deficiency, B12 and folate deficiency.
5. Recognize the rare causes of anemia (multiple myeloma, myelofibrosis).
6. Identify red flag symptoms and signs that require further investigations (e.g. anti-transglutaminase antibodies Anti TTG Ab, or Colonoscopy).
7. Choose the most appropriate investigations to diagnose different types of anemia (blood and bone marrow).
8. Interpret blood tests (complete blood count CBC, differential count, peripheral blood film, red cell indices, ferritin, serum iron profile, vitamin B12, Folate, direct antiglobulin test (DAT), methymalonic acid, homocysteine, and serum protein electrophoresis).
9. Formulate and prioritize a differential diagnosis for anemia.
10. Construct a diagnostic approach to different types of anemia.
11. Develop an evidence-based management plan for iron deficiency anemia, B12 or Folate deficiency.
12. Appropriately prioritize referral to Hematology Clinic.
13. Demonstrate the appropriate skills for patients' education.

Microangiopathic hemolytic anemia (MAHA)

By the end of Module C, students should be able to:

1. Obtain a complete and comprehensive medical history of MAHA focusing on infectious, neurological, thrombosis and bleeding symptoms
2. Perform a general physical examination with special emphasis on liver, spleen and lymph nodes examination.
3. Describe the Microangiopathic hemolytic anemia (MAHA) and its causes**.**
4. Describe the pathophysiology of thrombotic thrombocytopenic purpura (TTP), Hemolytic Uremic syndrome (HUS) and disseminated intravascular coagulation (DIC).
5. Differentiate between thrombotic thrombocytopenic purpura (TTP), Hemolytic Uremic syndrome (HUS) and disseminated intravascular coagulation (DIC).
6. Choose the most appropriate investigations to diagnose MAHA (blood tests) based on the available clinical data.
7. Interpret blood tests (complete blood counts CBC with differential, peripheral blood film, coagulation profile, fibrinogen, hemolytic work up, Direct antiglobulin test DAT, ADAMST13, complement level.)
8. Formulate and prioritize a differential diagnosis for MAHA.
9. Develop an evidence-based management plan for MAHA.
10. Outline the basic management options for thrombotic thrombocytopenic purpura (TTP), Hemolytic Uremic syndrome (HUS) and disseminated intravascular coagulation (DIC).
11. Appropriately prioritize referral to Hematology Service.
12. Demonstrate the appropriate skills for patient's education.

Hemolysis and Hemolytic anemia (HA)

By the end of Module C, students should be able to:

1- Obtain a complete and comprehensive medical history of anemia, focusing on B symptoms, infectious symptoms, drug history and blood transfusion.
2- Perform a general physical examination with special emphasis on liver, spleen and lymph nodes examination.
3- Demonstrate clinical signs of hemolysis.
4- Choose the most appropriate investigations to diagnose haemolytic anemia (blood tests) based on the available clinical data.
5- Interpret blood tests (CBC with differential, peripheral blood film, coagulation profile, fibrinogen, haemolytic work up, Direct antiglobulin test DAT).
6- Formulate and prioritize a differential diagnosis for hemolytic anemia.
7- Construct the diagnostic approach to warm and cold autoimmune hemolytic anemia.
8- Develop an evidence-based management plan for hemolytic anemias.
9- Appropriately prioritize referral to Hematology Clinic/service.
10- Demonstrate the appropriate skills for patient's education.

Hemoglobinopathis (Sickle cell disease (SCD) & Thalassemia)

By the end of Module C, students should be able to:

1- Obtain a complete and comprehensive medical history; focus on anemia symptoms, family history and pedigree.
2- Perform a general physical examination with special emphasis on anemia, SCA and thalassemia signs.
3- Perform liver and spleen examination.
4- Outline the clinical pictures of SCD and thalassemia.
5- Identify the complications of thalassemia.
6- Describe the acute complications of SCD (acute chest syndrome and stroke) and outline their management.
7- Identify the chronic complications of SCD.
8- Recognize the types of crises in SCD and their management.
9- Choose the most appropriate investigations to diagnose hemoglobinopathies (blood tests) based on the available clinical data.
10- Interpret blood tests (CBC with differential, peripheral blood film, hemolytic work up, hemoglobin electrophoresis, sickling test).

11- Develop an evidence-based long-term management plan for sickle cell disease and thalassemia.
12- Develop an evidence-based management plan for sickle cell disease crisis.
13- List the indications of exchange transfusion in SCD.
14- Appropriately prioritize referral to Hematology Clinic.
15- Demonstrate the appropriate skills for patient's education.

Inherited bleeding disorders: Hemophilia A, Hemophilia B, Von Willebrand disease (vWD)

By the end of Module C, students should be able to:

1. Obtain an accurate and comprehensive medical history of bleeding with emphasis on sites of bleeding, bleeding challenges, family history and pedigree.
2. Perform a physical examination, looking for signs of bleeding.
3. Describe the clinical features of hemophilia.
4. Outline the diagnostic tests of hemophilia.
5. Outline the treatment plan in hemophilia.
6. Identify the possible complications of hemophilia.
7. Describe the clinical picture and the diagnosis of vWD.
8. List types of vWD.
9. Distinguish between fresh frozen plasma (FFP), Cryoprecipitate, Factor VIII concentrate and von Willebrand factor (vWF) concentrates.
10. Choose the most appropriate investigations to diagnose inherited bleeding disorders (blood tests) based on the available clinical data.
11. Interpret blood tests (CBC with differential, coagulation profile, mixing studies, coagulation factors and vWF assay).

Approach to Thrombocytopenia

By the end of Module C, students should be able to:

1. Obtain a complete and comprehensive medical history of bleeding, focusing on sites of bleeding, bleeding challenges, family history and pedigree.
2. Perform a general physical examination with emphasis on liver, spleen and lymph node examination.
3. Describe thrombocytopenia and immune thrombocytopenia (ITP).
4. Recognize the causes of thrombocytopenia.
5. Choose the most appropriate investigations to diagnose thrombocytopenia (blood tests and bone marrow) based on the available clinical data.
6. Interpret blood tests (CBC with differential, peripheral blood film, coagulation profile, fibrinogen, hemolytic work up, hepatitis and HIV screen, autoimmune screen)
7. Formulate and prioritize a differential diagnosis for thrombocytopenia.
8. Develop an evidence-based management plan for immune thrombocytopenia (ITP) taking into consideration the advantage and side effects of each modality.
9. Identify the indications for bone marrow biopsy in immune thrombocytopenia (ITP).
10. Appropriately prioritize referral to Hematology Clinic.
11. Demonstrate the appropriate skills for patient education.

High Blood Counts (leukocytosis, erythrocytosis, thrombocytosis)

By the end of Module C, students should be able to:

1. Obtain a complete and comprehensive medical history focusing on B symptoms, hypervicosity and infectious symptoms.
2. Perform a general physical examination emphasizing on liver, spleen and lymph node examination.
3. Formulate and prioritize a differential diagnosis of leukocytosis, erythrocytosis and thrombocytosis.
4. Distinguish between benign and malignant causes of high blood counts.
5. Describe leukemoid reaction.
6. Outline the different clinical presentations of acute and chronic leukemia, polycythemia rubra vera, essential thrombocytosis.
7. Identify the clinical red flags associated with malignant high blood counts.

8. Choose appropriate investigations to diagnose elevated blood counts (blood, bone marrow, and imaging) based on the available clinical data.
9. Interpret blood tests (CBC with differential, peripheral blood film, erythropoietin level, JAK2 test)
10. Appropriately prioritize referral to Hematology Clinic.
11. Demonstrate the appropriate skills for patient education.
12. List the complications associated with leukemia, polycythemia vera and essential thrombocytosis.

Transfusion Medicine

By the end of Module C, students should be able to:

1. List blood components provided by blood banks and indications of transfusion for the different products.
2. Describe common transfusion reactions and outline their basic management.
3. Identify the possible risks of blood transfusion.
4. Recognize the presence of national and institutional guidelines for blood transfusion and transfusion reactions.
5. Choose the most appropriate investigations to diagnose transfusion reaction (blood tests) based on the available clinical data.
6. Interpret blood tests (CBC with differential, peripheral blood film, coagulation profile, fibrinogen, hemolytic work up, Direct antiglobulin test DAT, blood cultures).
7. Formulate and prioritize a differential diagnosis for the different presentations of transfusion reactions (fever, SOB, hemolysis).
8. Develop an evidence-based management plan for the common transfusion reactions.
9. Demonstrate the appropriate skills for patient education.

Module C Core Infectious Diseases

Pyrexia of Unknown Origin PUO

By the end of Module C, students should be able to:

1. Obtain a comprehensive medical history of patients with PUO, focusing on travel, drug history, animal exposure, and constitutional symptoms.
2. Perform complete systematic physical examination for patient with PUO.
3. Define pyrexia of unknown origin (PUO).
4. Construct a diagnostic approach for patient with PUO.
5. Formulate and prioritize a differential diagnosis for PUO.
6. Choose the appropriate laboratory/imaging tests to evaluate patient with PUO.
7. Interpret the blood tests (CBC, serology, autoimmune markers, and cultures).
8. Develop an evidence-based management plan for PUO.
9. Appropriately prioritize the referral to specialized clinics.
10. Demonstrate the appropriate skills for patient's education.

HIV and Opportunistic Infections

By the end of Module C, students should be able to:

1. Obtain a comprehensive medical history of patients with possible HIV focusing on HIV risk factors.
2. Obtain a comprehensive medical history to evaluate HIV patients.
3. Perform complete systematic physical examination for HIV patients.
4. Describe the different clinical presentations for HIV.
5. Identify the screening and confirmatory tests for HIV.
6. Recognize the different HIV related-complications and opportunistic infections.
7. Describe the basic pharmacology of medications used in HIV.
8. Choose the appropriate laboratory tests to screen/confirm HIV diagnosis.
9. Choose the appropriate laboratory tests and imaging studies to evaluate HIV patients.
10. Interpret blood tests related to HIV diagnosis and evaluation.
11. Formulate and prioritize a differential diagnosis for HIV-related complications.
12. Develop an evidence-based management plan for HIV patients.
13. Appropriately prioritize referral to ID clinic/service.
14. Demonstrate the appropriate skills for patient's education

Emerging infections (MERS-CoV, dengue fever, Influenza)

By the end of Module C, students should be able to:

1. Obtain a comprehensive medical history of patients with possible emerging infections, focusing on travel history, sick contacts, and comorbidities.
2. Perform complete systematic physical examination for patient with possible emerging infections.
3. Recognize risk factors for acquiring MERS-Cov, Dengue, and Influenza.
4. Describe clinical presentation of MERS-CoV, Dengue, and Influenza.
5. Develop diagnostic approach for MERS-CoV, Dengue, and Influenza.
6. Choose the appropriate laboratory/imaging tests to evaluate patient with possible MERS-CoV, Dengue, and Influenza.
7. Formulate and prioritize a differential diagnosis for symptoms related to MERS-CoV, Dengue, and Influenza.
8. Develop an evidence-based management plan for MERS-CoV, Dengue, and Influenza.
9. Appropriately prioritize referral to ID service.
10. Demonstrate the appropriate skills for patient's education.
11. Describe the preventative/infection control measures to decrease rate of transmission of these emerging infections.

Endemic Infections (Malaria and Brucellosis)

By the end of Module C, students should be able to:

1. Obtain a comprehensive medical history of patients with possible malaria or brucellosis, focus on travel history, sick contacts, comorbidities, animal exposure, and mosquito bites.
2. Perform complete systematic physical examination for patient with possible malaria or brucellosis.
3. Describe the different clinical presentations of malaria and brucellosis.
4. Recognize complications of malaria and brucellosis.
5. Describe the measures to prevent malaria and brucellosis infections.
6. Choose the appropriate laboratory/imaging tests to evaluate patient with possible brucellosis/malaria.
7. Interpret diagnostic blood tests of malaria and brucellosis.
8. Formulate and prioritize a differential diagnosis for possible malaria and brucellosis.
9. Develop an evidence-based management plan for brucellosis and malaria.
10. Appropriately prioritize referral to ID service.
11. Demonstrate the appropriate skills for patient's education.

Traveler's Diarrhea

By the end of Module C, students should be able to:

1. Obtain a comprehensive medical history of patients with TD, focusing on travel history, the onset and duration of symptoms, food and drink history.
2. Perform complete systematic physical examination for patient with TD, focusing on vitals and signs of dehydration.
3. Develop diagnostic approach to patients with traveller's diarrhea (TD).
4. Identify the causative organisms of traveller's diarrhea TD.
5. Describe the different strategies to prevent traveller's diarrhea TD.
6. Choose the appropriate laboratory tests to evaluate patient with TD.
7. Interpret blood tests and stool tests.
8. Develop an evidence-based management plan for TD.
9. Appropriately prioritize referral to ID/GI services.
10. Demonstrate the appropriate skills for patient's education.

Year 4 Portfolio Items for Module C:

Task	Required numbers	Evaluation	Evaluator
Mini-CEX	2	Completion*	Senior resident / Consultant
CBD	1	Competence**	Faculty staff
Clerking (Documentation)	3	Competence/completion	Senior resident / Specialist/ Consultant
EBP (evidence based prescription)	1	Completion	Senior resident / Consultant/ Faculty staff
Procedure card	1	Performance/completion	Senior resident / Consultant/ nurse depending on procedure
CBC interpretation	5	Completion	Senior resident / Specialist/ Consultant/ Faculty staff
CSF analysis	2	Competence	Senior resident / Specialist/ Consultant/ Faculty staff
Renal function test	3	Completion	Senior resident / Specialist/ Consultant/ Faculty staff
Urine analysis	3	Completion	Senior resident / Specialist/ Consultant/ Faculty staff
CT brain	3	Competence	Senior resident / Specialist/ Consultant/ Faculty staff
VTE project	1	Competence	Senior resident / Specialist/ Consultant/ Faculty staff
Radiology department visit (2-3 hr)	1	Performance/completion	Radiology Senior resident / Specialist/ Consultant

* **Completion**: student is evaluated based on completion/performance of the task

** **Competency:** student is evaluated based on his/her ability to achieve the expected standard

- Mini-CEX: mini-clinical evaluation exercise
- CBD: Case-based discussion
- EBP: Evidence-based prescription
- CBC: Complete blood counts
- CSF: Cerebrospinal fluid
- CT brain: Computed tomography of brain
- VTE project: Venous thromboembolism prophylaxis project
- Radiology visit: A 2-3 hour visit to the radiology department reviewing chest imaging studies (x-rays and CT-scan) and their interpretations with a senior radiology resident, specialist or consultant.

Appendixes: Evaluation Forms

Form 1:

Clinical Evaluation Exercise (Mini-CEX)

The Clinical Evaluation Exercise (mini-CEX) assesses clinical skills (history taking or physical examination), attitudes and behaviors in a clinical setting. It is part of the workplace-based assessment component of the E-portfolio.

How mini-CEX works

The mini-CEX provides a 10- to 20- minute snapshot of how you interact with real patients in the inpatients, outpatients or ER care settings. You are expected to perform at least one mini-CEX per clinical rotation.

Preparing for mini-CEX

Each mini-CEX should represent a clinical problem. You should arrange with your team senior resident (R3 or R4), specialist, or consultant the time for evaluation.

Using mini-CEX feedback

The assessor will give you an immediate feedback verbally and in writing. You will be required to develop a learning plan based on the received feedback.

After completing mini-CEX

You are expected to upload a minimum of two mini-CEX forms to your E-portfolio by the end of the module.

Mini-Clinical Evaluation Exercise (CEX)

Assessor name: _____ **Assessor position:** _____

MED Student: _____ **Year** (pleases circle): **4 5 6**

Date: _____ **Module:** _____

Patient's problem/Dx: _____

Setting: ☐Outpatient ☐Inpatient ☐ER ☐Other_____

Complexity: ☐Low ☐Moderate ☐High

Focus: ☐History ☐Physical examination

	Below expectations for year of study	*Borderline for year of study*	*Meets expectations for year of study*	*Above expectations for year of study*	Not observed/ Unable to comment
History taking	☐	☐	☐	☐	☐
Physical examination	☐	☐	☐	☐	☐
Communication skills/professionalism	☐	☐	☐	☐	☐
Clinical judgment	☐	☐	☐	☐	☐
Organization/efficacy	☐	☐	☐	☐	☐
Overall clinical competence	☐	☐	☐	☐	☐

Anything especially good?	Areas for development and specific action points for improvement?

Assessor name: **Assessor Signature:** **Date:**		**Student Signature:** **Date:**	

Form 2:

Case-based Discussion (CBD)

A Case-based Discussion (CBD) concerns a patient case: using data identified and recorded by the student on a real patient. It involves a comprehensive review of a patient's clinical situation based on a discussion between the student and the assessor away from the patient. It is not a mini presentation of a condition or illness. The student is given feedback from the assessor across a range of areas relating to clinical record keeping, clinical assessment, management and clinical reasoning. It is part of the workplace-based assessment component of the E-portfolio.

How CBD works

A CBD takes place face-to-face over approximately 30 minutes in total (20 minutes for CBD and 10 minutes for constructive feedback). The discussion will cover history taking, physical examination, and your diagnostic and management approach. You are expected to perform one CBD during the module.

Preparing for CBD

You should document a patient's clinical situation in a record mimicking the patient's hospital medical record (a template will be provided). Then, you should schedule an appointment for the CBD with your assessor (a faculty member) before the end of the module.

Using CBD feedback

The assessor will give you an immediate feedback. You will be required to develop a learning plan based on the received feedback.

After completing CBD

You are expected to upload the CBD evaluation form to your E-portfolio by the end of the module.

Case-based Discussion (CBD)

Assessor name: _____ **Assessor position:** _____

MED Student: _____ **Year** (pleases circle): **4 5 6**

Date: _____ **Module:** _____

Patient's problem/Dx: _____

Setting: ☐Outpatient ☐Inpatient ☐ER ☐Other_____

Complexity: ☐Low ☐Moderate ☐High

	Below expectations for year of study	Borderline for year of study	Meets expectations for year of study on	Above expectations for year of study	Not observed/ Unable to comment
Documentation	☐	☐	☐	☐	☐
Case presentation skills	☐	☐	☐	☐	☐
Diagnostic approach					
Problem list	☐	☐	☐	☐	☐
Differential diagnoses list	☐	☐	☐	☐	☐
Initial investigations	☐	☐	☐	☐	☐
Management plan	☐	☐	☐	☐	☐
Organization/efficacy	☐	☐	☐	☐	☐
Overall clinical competence	☐	☐	☐	☐	☐

Anything especially good?	Areas for development and specific action points for improvement?

Assessor name: **Assessor Signature:** **Date:**		**Student Signature:** **Date:**	

Form 3:

Module C Data Interpretation Card

Name:	
University #:	

1. CBC interpretation

Supervisor Name					
Date					

2. Cerebrospinal fluid CSF interpretation

Competency*	☐Yes ☐No	☐Yes ☐No
Supervisor Name		
Date		

**Students show competent understanding in data interpretation*

3. Renal function test interpretation

Supervisor Name			
Date			

4. Urine analysis interpretation

Supervisor Name			
Date			

5. CT brain reading

Competency*	☐Yes ☐No	☐Yes ☐No	☐Yes ☐No
Supervisor Name			
Date			

**Students show competent understanding in data interpretation*

6. Radiology Department Visit

Supervisor Name	
Date	
Reviewed cases:	1. 2. 3. 4. 5. 6.

Form 4:

Evidence-Based Practice (EBP)

Rx	**Evidence-Based Practice (EBP)** **Educational Prescription**
Ward: **Hospital:**	**Learner names:** **Learner's ID:**

4-part Clinical Question (PICO)

Target disorder: *(patient or population or problem)*

Intervention: *(new alternative – drug, physiotherapy, surgery, radiotherapy, procedure)*

Comparison (+/-): *(old or standard treatment or surgical procedure, etc)*

Outcome: *(What you are interested in? such as survival, symptoms reduction, quality of life, reduced sick-listed time, side effect, relapses, etc)*

Summary:	**Summary and presentation cover:** • **Search strategy brief** • **Quotation of the evidence or Guideline** • **Level of the evidence and strength of recommendation** • **Impact of evidence or its outcome** • **Can it be applied to your patient? What is your opinion?**

Overall performance:

☐ Satisfactory ☐ Not satisfactory

Tutor's feedback:

Tutor name:	**Tutor signature:**

Note:

- ***Take full history and examination, and record the lab results.***
- ***To be completed and then submitted online by week 9 of each module. Before submission, this form MUST be evaluated by the assessor.***

Form 5:

Year 4 Procedures Card

9. Completed venous thromboembolism (VTE) under supervision

	1	2
Surname		
Date		

10. Cranial nerve examination (supervised and patient consent obtained)

	1	2
Surname		
Date		

11. Neurological Examination (supervised and patient consent obtained)

Upper limb

	1	2
Surname		
Date		

Lower limb

	1	2
Surname		
Date		

Students must follow the absences reporting process for any teaching sessions they miss due to illness/extenuating circumstances. Any request for exceptional leave must be made before the date(s) required. Information about absence reporting and exceptional leave can be found on both the Medical school website and the Year 4 Moodle page.

Explanations for any uncompleted items on card: Attach extra sheet if needed

Year 4 (2018-2019)

Name:
University #:

Record of Completed Procedures Card

Guidance:

Over the course of the year you are required to keep a record of selected key clinical procedures. It is essential to your clinical development that you become familiar with the procedures and have performed them, under supervision of any member of the clinical staff, in real clinical situations the required number of times.

A **completed** record card is a necessary part of your in course assessment and may highlight areas where you need additional support.

Please bring this card to:

- **All module sign off meetings with your educational supervisor**
- **Submit it to the Year 4 administrative lead at the end of the year for evaluation**

Level of competence required:
By the end of the year we wish students to become competent in all procedures listed in the document, to at least the level of being able to perform them unaided but under supervision in a clinical setting.

Clinical Assessors:
In order to help the Medical School keep a record of students clinical activity we would be grateful if you could confirm each time you observe the student **SUCCESSFULLY** completing the skill. (Please print your name and date the procedure)

PART 1 - To be observed under the supervision of clinical skills staff in the simulated setting of the skills centre and signed by staff when successfully completed

Clinical Skill	Name of clinical skills staff	Date
Venepuncture		
Arterial blood sampling		
Cannulation		
Urinary catheterization		
Simulated suturing		
Basic Airway Management		
Nasogastric tube insertion		
Wound care		

PART 2—to be performed by yourself under supervision in a clinical setting during the year and signed by a member of the clinical staff (e.g. wards, clinics etc)

1. Phlebotomy under supervision

	1	2	3	4	5
Surname					
Date					

2. Cannulation under supervision

	1	2	3	4	5
Surname					
Date					

3. Arterial Blood Gas
(minimum of 1 to be completed)

	1	2
Surname		
Date		

4. ECG recording
(including lead placement)

	1	2
Surname		
Date		

5. Assisting in the operating theatre
(including scrubbing, gloving and gowning)

	1	2
Surname		
Date		

6. PR examination
(supervised and patient consent obtained – min of 1 to be completed))

	1	2
Surname		
Date		

7. Hernia examination.
(supervised and patient consent obtained)

	1	2
Surname		
Date		

8. Scrotal examination
(supervised and patient consent obtained)

	1	2
Surname		
Date		

Form 6:

Venous Thromboembolism (VTE) project

Venous thromboembolism (VTE) project aims to rasie the medical students awarness about the impact of VTE on hospitalized patients and the high mortality. It will be a part of the workplace-based assessment component of the E-portfolio.

How VTE project works

VTE project involves a comprehensive review of a patient's clinical situation and assessment of his/her risk factors for VTE as well as the risks of bleeding. Then based on the patient's VTE risk, a decision should be made about the appropriate VTE prophylaxis.

Using VTE project feedback

The educational supervisor will give you an immediate feedback during module sign-off meeting. You have to develop a learning plan based on the received feedback.

After completing VTE project

You are expected to upload the form to your E-portfolio by the end of each horizontal module.

Venous Thromboembolism (VTE) project

Student Name:_____ **Module**_____

Gender:	☐**Male** ☐**Female**	**Venue:**	☐ Hospital ward ☐ Outpatient clinic ☐ Other .....
Age:		**Date studied:**	

Diagnosis:	

Medical history, including. drug history, personal and family history of previous VTE:

Current treatment episode:

Risk assessment 1. State risk factors:	Prescribed DVT prophylaxis regimen with dates (consider both pharmacological and mechanical)
2. State risks of bleeding:	Was the prescribed DVT prophylaxis for this patient appropriate? Y/N *If not, what would you have done differently?*
3. What do you consider to be the patient's risk of VTE? (Low or high risk) and why?	Have any doses been missed? Y/N If yes, explain.

Case discussed with: ☐ **Consultant** ☐ **Other clinician** ☐ **Pharmacist**

Assessor name: **Assessor Signature:** **Date:**		**Student Signature:** **Date:**

* *Each project must be signed off by your educational supervisor.*