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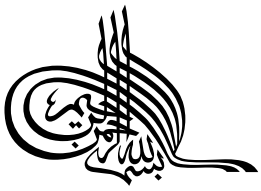
الهيئة السورية للإختصاصات الطبية
Syrian Board of Medical Specialties
SBOMS

برنامج تدريب المجلس العلمي لإختصاص أمراض المفاصل

إعداد
المجلس العلمي لاختصاص أمراض المفاصل



المنهج التعليمي في أمراض المفاصل

تمت مراجعته و اعتماده من قبل
أعضاء المجلس العلمي لأمراض المفاصل
د. زين عقاد
د. أسماء دباس
د. عمر سهيل
د. خليل نجار

حقوق الطبع والنشر والتعديلات

الايميل الرسمي: info@sboms.org

موقع الويب: www.sboms.org

PROGRAM STRUCTURE

1. Program Entry Requirements

The requirements for joining the Rheumatology specialist are as follows:

1. Certification in Internal Medicine or its equivalent or complete 3 year training in internal medicine.
2. Signing of an agreement to abide by the rules and regulations of the training program andthe SBOMS.
3. Successfully passing an interview.
4. Registration with the SBOMS

2. Program Durations

- The duration of the Rheumatology specialist is two (2) academic years, starting the beginning of the month ofJanuary.

1. Program structure for first-year Residents (F1)

The first year is split into 13 blocks, with each block consisting of four weeks. The trainee will spend ten blocks doing clinical rotations in general rheumatology, which will cover outpatient service, inpatient care and consultation, as well as emergency referrals. Another block will be spent as a rotation in radiology, aimed to help the candidate master the reading of conventional radiology, computed tomography, magnetic resonance, and ultrasound scans of the musculoskeletal system. Yet another block is split evenly between physiotherapy and orthopedic surgery rotations. There is an in-training evaluation report (ITER) at the end of each rotation, based on which it is decided whether or not the candidate may proceed to the next rotation

2. Program structure for second-year Residents (F2)

The second-year Residents (F2) are given more responsibilities and independence in decision- making and caring for patients with rheumatic diseases, whether on an outpatient or inpatient basis. This includes consultations and procedures performed with the support of senior rheumatology staff. The candidates are expected to spend nine blocks on core rotations in rheumatology (management of outpatients and inpatients, as well as consultations). Another block is spent on rotation in orthopedic surgery. For pediatric rheumatology no rotation was put in the curriculum but the resident must be familiar of common rheumatic disease in childhood in the adult rotaion. The candidate must successfully complete the ITER for each rotation in order to be eligible for completion of the training program.

3. Program Rotations

Overview of the rotation blocks (first plus second year)

- **Adult Rheumatology**
  Throughout the training program, the Residents are required to spend 21 blocks providing inpatient, outpatient, and day care services at different host centers. In each host center, theResidents must be part of the on-call schedule.

- **Pediatric Rheumatology**
  The Residents should become familiar with common rheumatic diseases in pediatric and adolescent patients during the Adult Rheumatology Because no pediatric specialist now northwest of Syria .

- **Physiotherapy**
  The Resident must spend 4 weeks in each section. This rotation is to be performed at a certified center.

- **Radiology**
  Residents spend one rotation (4 weeks) in a radiology department, becoming familiar with the basic principles of radiology (including ultrasound, magnetic resonance imaging, and plain X-ray) of the musculoskeletal system.

- **Orthopedic surgery**
  Residents spend one rotation (4 weeks) in a Orthopedic surgery department, becoming familiar with the main surgical indication of the rheumatologic conditions and make some common procedures

Structure of the Rheumatology Training Program

Rheumatology rotations for first-year Residents (F1)

Block 1	Block 2	Block 3	Block 4	Block 5	Block 6	Block 7	Block 8	Block 9	Block 10	Block 11	Block 12	Block 13
ARhe	**ARhe**	**ARhe**	**ARhe**	**ARhe**	**ARhe**	**Py**	**ARhe**	**ARhe**	**Rad**	**ARhe**	**ARhe**	**Ortho**

Rheumatology rotations for second-year Residents (F2)

Block 1	Block 2	Block 3	Block 4	Block 5	Block 6	Block 7	Block 8	Block 9	Block 10	Block 11	Block 12	Block 13
ARhe	**ARhe**	**ARhe**	**ARhe**	**ARhe**	**ARhe**	**ARhe**	**Ortho**	**ARhe**	**ARhe**	**ARhe**	**ARhe**	**ARhe**

ARhe=Adult Rheumatology
Py =Physiotherapy
Rad=Radiology
Ortho=orthopedic surgery

LEARNING AND COMPETENCIES

Introduction to Learning Outcomes and Competency-Based Education

Training should be guided by well-defined "*learning objectives*" that are driven by targeted "*learning outcomes*" of a particular program to serve specific specialty needs. Learning outcomes are supposed to reflect the professional "*competencies*" that are aimed to be"*entrusted*" by trainees upon graduation. This will ensure that graduates will meet the expected demands of the healthcare system in relation to their particular specialty. *Competency-based education* (CBE) is an approach of "*adult-learning*" that is based on achieving *pre-defined*, *fine- grained, and well-paced* learning objectives that are driven from complex professional competencies.

Professional competencies related to healthcare are usually complex and entertain a mixture of multiple learning domains (knowledge, skills, and attitude). CBE is expected to change the traditional way of postgraduate education. For instance, time of training, though is a precious resource, should not be looked to as a proxy for *competence* (e.g. time of rotation in certainhospital areas is not the primary marker of competence achievement). Furthermore, CBE emphasizes the critical role of informed judgment of learner's competency progress, which isbased on a staged and formative assessment that is driven from multiple workplace-based observations.

On completion of the rheumatology training program, trainees will be able to function as consultants with corecompetencies in Rheumatology, as per the SBOMS regulations, which require the physician tobe able to perform assessment, investigation, management, and rehabilitation of patients with acute and chronic rheumatic disorders.

the rheumatologist applying medical knowledge, clinical skills, and professional values to provide high-quality, safe, patient-centered care. The level of care provided by the rheumatologist should reflect up-to-date knowledge and practice according to the latest guidelines and recommendations issued by international rheumatology societies.

Goals of care

- Prioritize issues to be addressed in a patient encounter.
- Establish the goals of care in collaboration with the patients and their families. Specific goals include slowing disease progression, treating symptoms, achieving cure, improving function,and palliation.
- Establish a patient-centred management plan.
- Implement a patient-centred care plan that supports ongoing care, follow-up on investigations, evaluation of response to treatment, and further consultation.

Key competencies

The graduates of residentship training programs in rheumatology are able to:

1. provide optimal, ethical, and patient-centered medical care within the scope of service defined for their position.
2. Establish and maintain clinical knowledge, skills, and attitude appropriate for the practice of rheumatology.
3. Perform a complete and adequate assessment of patients.
4. Use preventive and therapeutic intervention effectively
5. Recognize the limit of their own expertise and seek appropriate consultation from other health professionals.
6. Adequately prescribe therapeutics for rheumatic diseases
7. Demonstrate proficient and appropriate use of procedural skills.

Enabling competencies

The graduates of residentship training programs in rheumatology are able to:

1. provide optimal, ethical, and patient-centered medical care within the scope of service defined for their position
   - 1.1. Perform consultation including:
     - 1.1.1. Well-prepared, complete patient presentation
     - 1.1.2. Well-documented, appropriately timed assessment
     - 1.1.3. Preparation of recommendations in written or verbal form in response to a request from another health care professional
   - 1.2. Demonstrate effective application to all competencies relevant to theirpractice.
   - 1.3. Prioritize professional duties when they have to deal with multiple problems at thesame time.
   - 1.4. Demonstrate medical expertise in issues other than patient care, such as educating the patients and advising governments.
2. Establish and maintain clinical knowledge, skills, and attitude appropriate for the practice of rheumatology
   - 2.1. Apply knowledge of clinical, socio-behavioral, and fundamental biomedical sciences relevant to rheumatology.
     - 2.1.1. Basic sciences
       - 2.1.1.1. Anatomy and physiology Anatomy and physiology Anatomy andphysiology
         - Basic physiology and anatomy (gross and microscopic), as well as biology of musculoskeletal tissues: for each tissue, understand the embryology, development, biochemistry, and metabolism, structure, function, and classification.
         - Joints and ligaments: diarthrodial joints, intervertebral discs, synovium, cartilage
         - Mechanisms of joint deformities and structural abnormalities in rheumatic disease
         - Connective tissue cells and components: fibroblasts, collagens, proteoglycans, elastin, matrix glycoproteins
         - Bone development, structure, turnover, and remodeling; the role of osteoclasts, osteoblasts, osteocytes; hormonal and cytokine regulation
         - Muscles and tendons
         - Blood vessels and the endothelium

2.1.1.2. Genetic contributions to rheumatic disease

- Human leukocyte antigen (HLA) genes
  - Non-HLA genes
  - Single nucleotide polymorphisms.

2.1.1.3. Immunology

Immune and inflammatory responses relevant to the pathogenesis of rheumatologic diseases, and the therapeutic strategies used for their management:

2.1.1.3.1. Anatomy and cellular elements of the immune system immune system

- Lymphoid organs: gross and microscopic anatomyand function
- Specific cells: for each cell type, understand the ontogeny, structure, phenotype, function, and activation markers/receptors
- Monocytes and macrophages
- Lymphocytes: T cells, B cells (naive, memory, activated, regulatory, and innate natural killer cells), null cells
- Neutrophils and eosinophils
- Other cells: dendritic cells, mast cells, platelets, endothelial cells, and fibroblasts

2.1.1.3.2. Immune and inflammatory mechanisms

- Antigens: types, structure, processing, presentation, and elimination
- Superantigens: types, binding sites, and effect on theimmune system
- Major histocompatibility complex: structure, function, nomenclature and immunogenetics
- B-cell receptors/immunoglobulins: structure, function, antigen binding, signaling, genetic basis, effector function
- T-cell receptors: structure, function, antigen binding, signaling, genetic basis

- Receptor-ligand interactions: adhesion molecules,
- complement receptors, Fc receptors, and signaltransduction
- Complement/Kinin systems: structure, function, andregulation
- Intracellular signal transduction
- The inflammasome, neutrophil extracellular traps(NETs), NETosis
- Acute-phase reactants and enzymatic defenses

2.1.1.3.3. Cellular interactions and immunomodulation

- Cellular activation and regulation: for each cell type, understand the mechanisms of activation and suppression of function.
- Understand the broad principles regarding the origin, structure, effect, site of action, metabolism, and regulation of cytokines
- inflammatory mediators: origin, structure, effect, site of action, metabolism, and regulation

2.1.1.3.4. Immune responses

- Immunoglobulin E-mediated: acute and late-phasereactions
- Immunoglobulin-mediated: opsonization, complement fixation, and antibody-dependent cellular cytotoxicity
- Immune complex-mediated: physiochemical properties and clearance of immune complexes
- Cell-mediated: cells and effector mechanisms in cellular cytotoxicity and granuloma formation
- Mucosal immunity: interactions between gut-associated lymphoid tissue and secretory immunoglobulin A (IgA)
- Immune complex-mediated pathologic immune responses : physicochemical properties and clearance of immune complexes, graft-versus-host response, abnormal apoptosis
- Other pathologic immune responses: natural killers, lymphokine-activated killers, graft-versus-hostreaction

2.1.1.3.5. Immunoregulation

- Tolerance: clonal selection, deletion, and anergy; antigen paralysis
- Cell-cell interactions: collaboration and suppression; understand the collaboration among immune cells responsible for the control of immune response
- Idiotype networks: inhibition and stimulation
- Cytokines
- Chemokines

2.1.1.4. Metabolism of crystalline diseases

- Purines: biochemistry, synthesis, and regulation
- Uric acid: origin, elimination, and physicochemical properties
- Relationship between immunodeficiency and enzyme deficiencyin the purine salvage pathway: adenosine deaminase (ADA),purine nucleoside phosphorylase (PNP)-2
- Crystal-induced inflammation: calcium crystal formation and metabolism
- Genetic abnormalities associated with increased risk of crystal formation

2.1.1.5. Neurobiology of pain

- Peripheral nociceptive pathways, afferent nerves
- Central processing of nociceptive information
- Bio-psychosocial model of pain

2.1.1.6. In-depth knowledge of the following aspects for each relevant condition forming the object of adult and pediatric rheumatology

- Natural history
- Epidemiology
- Pathogenesis
- Clinical presentation (typical and atypical) and diagnosis
- Classification criteria
- Complications

2.1.2. Core clinical rotation in Adult Rheumatology

2.1.2.1. Systemic connective tissue diseases

- Rheumatoid arthritis
- Lupus erythematosus (systemic, discoid, and drug-induced)
- Scleroderma (localized syndromes, systemicsclerosis, chemically/drug-induced)
- Sjögren's syndrome
- Polymyositis and dermatomyositis
- Overlap syndromes including mixed connective tissue disease
- Polymyalgia rheumatica
- Adult-onset Still's disease
- Relapsing polychondritis
- Relapsing panniculitis
- Erythema nodosum
- Primary antiphospholipid antibody syndrome
- Undifferentiated connective tissue disease
- Periodic arthritis
- Eosinophilic fasciitis, eosinophilic myalgic syndrome

2.1.2.2. Seronegative spondyloarthropathies:

- Ankylosing spondylitis
- Reiter's syndrome
- Psoriatic arthritis
- Inflammatory bowel disease-associated arthritis
- Arthritis associated with acne and other skin diseases, SAPHO syndrome (combination of synovitis, acne, pustulosis, hyperostosis, and osteitis)
- Undifferentiated spondyloarthropathies

2.1.2.3. Vasculitides

- Giant-cell arteritis
- Takayasu's arteritis
- Polyarteritis nodosa
- ANCA-associated vasculitis:
- Granulomatosis with polyangiitis (GPA; also known as Wegener'sgranulomatosis)
- Eosinophilic granulomatosis with polyangiitis (EGPA; also known as Churg-Strauss syndrome)
- Microscopic polyangiitis (MPA)
- Behçet's disease
- IgA vasculitis (Henoch-Schonlein purpura)
- Hypersensitivity and small-vessel vasculitis
- Cryoglobulinemia
- Hypocomplementemic urticarial vasculitis
- Isolated cutaneous vasculitis
- Primary angiitis of the central nervous system
- Isolated aortitis
- Undifferentiated vasculitis
- Cogan's syndrome
- Anti-glomerular basement membrane disease
- Vasculitis associated with systemic disorders, infections, drugs, or malignancies; polyangiitis overlap syndrome combined with necrotizing vasculitis

2.1.2.4. Infectious and reactive arthritides

2.1.2.4.1. Infectious arthritides

- Bacterial (nongonococcal and gonococcal) arthritis, especially associated with mycobacterial tuberculosis or brucellosis

- Spirochetal arthritis (associated with syphilis or Lyme's disease)
- Viral arthritis (following infection with human immunodeficiency virus [HIV], hepatitis B virus, parvovirus, or another virus)
- Fungal arthritis
- Parasitic arthritis
- Whipple's disease

2.1.2.4.2. Reactive arthritides
- Acute rheumatic fever
- Post-immunization arthritis
- Arthritis associated with subacutebacterialendocarditis
- Intestinal bypass arthritis
- Post-dysenteric arthritides
- Other colitis-associated arthropathies

2.1.2.5. Metabolic disorders: crystal-associated diseases
- Monosodium urate monohydrate deposition disease (gout)
- Diseases associated with the deposition of calcium pyrophosphate dihydrate, basic calcium phosphate (hydroxyapatite), and calcium oxalate

2.1.2.6. Rheumatic syndromes associated with other clinical conditions
- Associated with endocrine diseases (diabetes mellitus, acromegaly, hyperparathyroidism, hypoparathyroidism, hyperthyroidism, hypothyroidism, Cushing's disease
- Associated with hematological disorders (hemophilia, hemoglobinopathies, angioimmunoblastic lymphadenopathy)

2.1.2.7. Bone and cartilage disorders

2.1.2.7.1. Osteoarthritis:
- Primary and secondary osteoarthritis
- Chondromalacia patellae

2.1.2.7.2. Metabolic bone diseases
- Osteoporosis
- Osteomalacia, bone disease related to renal disease
- Paget's disease of bone
- Avascular necrosis of bone (idiopathic, secondary causes), osteochondritis dissecans
- Other: transient osteoporosis, hypertrophic osteoarthropathy, diffuse idiopathic skeletal hyperostosis

2.1.2.8. Hereditary, congenital, and inborn errors of metabolism associated with rheumatic syndromes

2.1.2.8.1. Disorders of connective tissue:
- Marfan's syndrome
- Osteogenesis imperfecta
- Ehlers-Danlos syndromes
- Pseudoxanthoma elasticum
- Hypermobility syndrome

2.1.2.8.2. Mucopolysaccharidoses

2.1.2.8.3. Osteochondrodysplasias
- Multiple epiphyseal dysplasia
- Spondyloepiphyseal dysplasia

2.1.2.8.4. Inborn errors of metabolism affecting the connectivetissue:
- Homocystinuria
- Ochronosis

2.1.2.8.5. Storage disorders
- Gaucher's disease
- Fabry's disease
- Farber's lipogranulomatosis

2.1.2.8.6. Immunodeficiencies

- IgA deficiency
- Complement component deficiency
- Severe combined immunodeficiency (SCID), ADA deficiency, PNP deficiency

2.1.2.8.7. Autoinflammatory syndromes
- Familial Mediterranean fever
- Hyperimmunoglobulinemia D syndrome (HIDS)
- Tumor necrosis factor receptor-associated periodicsyndromes (TRAPS)
- Periodic fever, aphthous stomatitis, pharyngitis,cervical adenitis (PFAPA) syndrome
- Blau syndrome
- Behçet's syndrome
- Schnitzler syndrome
- Systemic juvenile idiopathic arthritis (SJIA)
- Cryopyrin-associated periodic syndrome (CAPS),including Muckle-Wells syndrome
- Other
  - Hemochromatosis
  - Hyperlipidemic arthropathy
  - Myositis ossificans progressiva
  - Wilson's disease

2.1.2.9. Nonarticular and regional musculoskeletal disorders
- Fibromyalgia
- Spinal stenosis
- Intervertebral disc disease and radiculopathies
- Cervical pain syndromes
- Coccydynia
- Osteitis condensans ilii
- Osteitis pubis
- Spondylolisthesis/spondyolysis, discitis
- Bursitis
- Tendinitis
- Enthesitis occurring around individual joints
- Other disorders occurring at specific joints
  - **Shoulder:** rotator cuff tear, subacromial bursitis, adhesive capsulitis, impingement syndrome
  - **Wrist:** ganglion cyst, De Quervain's tenosynovitis, trigger finger (stenosing tenosynovitis), Dupuytren's contracture
  - **Knee:** synovial plica syndrome, internal derangements,popliteal cyst
  - **Foot/Ankle:** plantar fasciitis, Achilles tendinitis, Morton'sneuroma
  - **Other:** temporomandibular joint syndromes, costochondritis
- Biomechanical/anatomic abnormalities associated with regional pain syndromes: scoliosis, kyphosis, genu valgum, genu varum, leg length discrepancy, foot deformities
- Rheumatic syndromes associated with overuse injury (occupational, sports, recreational, performing arts)
- Issues forming the object of sports medicine (injuries, strains, sprains, nutrition, medication issues)
- Entrapment neuropathies: thoracic outlet syndrome, upper/lower extremity entrapments
- Other: peripheral neuropathies (polyneuropathy, small fiber neuropathy)
- Mononeuritis multiplex
- Complex regional pain syndrome (formerly, reflex sympathetic dystrophy), erythromelalgia

2.1.2.10. Neoplasms and tumor-like lesions2.1.2.10.1. Benign

- Joint tumors: loose bodies, fatty and vascular lesions, synovial osteochondromatosis, pigmentedvillonodular synovitis, ganglion cysts
- Tendon sheath tumors: fibroma, giant-cell tumor, nodular tenosynovitis
- Bone tumors: osteoid osteoma, others2.1.2.10.2. Malignant
- Primary tumors: synovial sarcoma, others
- Secondary tumors: leukemia, myeloma, metastatic
- Malignancy-associated rheumatic syndromes: carcinomatous polyarthritis, palmoplantar fasciitis, Sweet's syndrome

2.1.2.11. Muscle diseases

2.1.2.11.1 Inflammatory

- Polymyositis
- Dermatomyositis
- Inclusion body myositis
- Myositis with connective tissue disease
- Immune-mediated necrotizing myositis
- Other (ocular/orbital myositis, focal/nodular myositis, eosinophilic myositis, granulomatous myositis)

2.1.2.11.2. Metabolic

- Primary
  - Glycogen storage diseases
  - Lipid metabolic disorders
  - Myoadenylate deaminase deficiency
  - Mitochondrial myopathies
- Secondary to nutritional, endocrine, or electrolyte disorders, as well as to intoxications or drug-induced reactions

2.1.2.11.3. Muscular dystrophies

2.1.2.11.4. Myasthenia gravis

2.1.2.12. Rheumatic diseases in special populations (geriatric population, pregnant women, dialysis patients, transplant patients)

2.1.2.13. Miscellaneous rheumatic disorders

- Amyloidosis: primary, secondary, hereditary
- Raynaud's disease
- Sarcoidosis
- Immunoglobulin G4 disease
- Charcot joint
- Remitting seronegative symmetrical synovitis with pitting edema
- Multicentric reticulohistiocytosis
- Plant thorn synovitis
- Intermittent arthritides: palindromic rheumatism, intermittent hydrarthrosis
- Arthritic and rheumatic syndromes associated with scurvy, pancreatic disease, chronic active hepatitis, primary biliary cirrhosis, drugs, and environmental agents

2.1.2.14. Laboratory Diagnostic Investigations

- The trainee should demonstrate basic understanding ofthe laboratory tests used in rheumatology.
  - Understand the underlying principles and interpretation of results of synovial fluid analysis
  - Demonstrate knowledge and competency regarding the indication of laboratory tests.
  - Demonstrate knowledge and competency in the interpretation of results from laboratory tests to establish appropriate differential diagnosis of arheumatologic disease
  - Understand the basic techniques used for different laboratory tests
- The trainee should be able to understand the results oflaboratory and diagnostic tests including evaluation of: Erythrocyte sedimentation rate
  - C-reactive protein and acute phase reactant levels

- Rheumatoid factor (RF) and anti-cyclic citrullinated peptide (anti-CCP) antibody levels
- ANA, anti-dsDNA, anti-Smith, anti-SSA, anti-SSB, anti-U1RNP, anti-centromere, anti-histone, anti- ribosomal P, anti-topoisomerase 1, and anti-RNA polymerase III antibody levels, as well as the lupus erythematosus cell test
- Myositis-specific (anti-Jo-1 and other anti-synthetase; anti-Mi-2, anti-SRP, anti-HMGCR [200/100], anti- TIF1-gamma [p155/140], anti-MJ [NXP-2], anti-CADM-140 [MDA-5], anti-SAE) and myositis- associated (anti-U1RNP, anti-Ku, anti-PM-Scl) antibody levels
- The levels of other disease-associated auto- antibodies such as anti-mitochondrial, anti-smoothmuscle, and anti-neuronal antibodies
- Anti-neutrophil cytoplasmic antibody (anti-proteinase 3, anti-myeloperoxidase) levels
- The levels of anti-phospholipid antibodies including rapid plasma regain (RPR), lupus anticoagulant, anti- cardiolipin antibody, and anti-beta-2-glycoprotein I antibody
- The levels of anti-red blood cell antibodies (using Coombs testing), anti-platelet antibodies, and anti- granulocyte antibodies
- Complement activity (CH50) and components of the complement cascade
- Serum immunoglobulin levels (using serum protein electrophoresis and immunofixation electrophoresis)
- HLA gene alleles (using HLA typing)
- Presence of streptococcal antibodies such as antistreptolysin O (ASO)
- Presence of antibodies for the Lyme disease agent, HIV, hepatitis B virus, hepatitis C virus, parvovirus, chikungunya virus, and other infectious agents (usingserologic and polymerase chain reaction tests)
- Uric acid levels in the serum and urine
- Iron levels including ferritin
- Lymphocyte subsets and function (using flow cytometry analysis)
- Specific genetic abnormalities
- Diagnostic imaging findings; the resident should possess a basic understanding of the underlying principles and technical considerations
- Synovial fluid characteristics
- Absolute and differential cell counts
- Presence of crystals
- Viscosity and outcome of staining with specialstains
- Culture growth and sensitivity outcomes

2.1.3.1 Rotation in Pediatric Rheumatology

Many rheumatic diseases such as systemic lupus erythematous (SLE) and scleroderma share the same clinical presentation in pediatric and adult patients, while other diseases are mainly described in the pediatric age group. The resident should be able to recognize these diseases and maintain up-to-date clinical knowledgeabout this spectrum of conditions.

2.1.3.1.1. Rheumatic diseases that occur in children with different presentation than that in adults

- Juvenile idiopathic arthritis (JIA)
  - Systemic onset
  - Oligoarticular
  - Polyarthritis (rheumatoid factor-positive ornegative)
  - Enthesitis-related
  - Psoriatic arthritis
  - Undifferentiated arthritis
  - Juvenile spondyloarthritis
- Juvenile dermatomyositis

- Kawasaki disease
- IgA vasculitis (formerly, Henoch-Schonlein purpura)
- Acute rheumatic fever
- Neonatal lupus syndrome
- Autoinflammatory syndromes
  - familial Mediterranean fever (FMF)
  - Hyperimmunoglobulinemia D syndrome (HIDS)
  - Tumor necrosis factor receptor-associatedperiodic syndromes (TRAPS)
  - Periodic fever, aphthous stomatitis, pharyngitis, cervical adenitis (PFAPA) syndrome
  - Deficiency of interleukin-1 receptor agonist (DIRA)
  - Mageed syndrome
  - Chronic recurrent multifocal osteomyelitis(CRMO)
  - Pyogenic sterile arthritis pyoderma gangrenosum and acne syndrome (PAPA)
  - Schnitzler syndrome
  - Blau syndrome (NOD2/CARD15)
  - Chronic atypical neutrophilic dermatosis with lipodystrophy and elevated temperature (CANDLE) syndrome
  - Behçet's syndrome
  - Systemic juvenile idiopathic arthritis (SJIA)
  - Cryopyrin-associated periodic syndrome (CAPS)including
    - Muckle-Wells syndrome
    - Familial cold autoinflammatory syndrome
    - Neonatal-onset multisystem inflammatory diseases (NOMID)

2.1.3.1.2. Non-rheumatic disorders in children that can mimicrheumatic diseases:

- Infectious or post-infectious syndromes
  - Septic arthritis and osteomyelitis
  - Transient (toxic) synovitis of the hip
  - Post-infectious arthritis and arthralgia
  - Post-viral myositis
- Orthopedic conditions
  - Legg-Calve-Perthes disease and other avascularnecrosis syndromes
  - Slipped capital femoral epiphysis
  - Spondylolysis and spondylolisthesis
  - Patellofemoral syndrome
- Non-rheumatic pain
  - Benign limb pain of childhood ("growing pains")
  - Benign hypermobility syndrome
- Neoplasms
  - Leukemia
  - Lymphoma
  - Primary bone tumors (especially osteosarcomaand Ewing's sarcoma)
  - Tumors metastaticto bone (especiallyneuroblastoma)
- Bone and cartilage dysplasias, and inheriteddisorders of metabolism
  - Marfan syndrome
  - Osteogenesis imperfecta
  - Ehlers-Danlos syndrome
  - Pseudoxanthoma elasticum
  - Hypermobility syndrome

2.1.3.1.3. Non-articular rheumatism

- Fibromyalgia
- Pain amplification syndromes
- Complex regional pain syndrome

2.1.3.1.4. Special considerations regarding rheumatic diseases and their treatment during in childhood
- Disease effects on growth
  - Accelerated or decelerated growth of limbs ordigits affected by arthritis
  - Altered growth of the mandible in arthritis of the temporo-mandibular joint
  - Short stature and failure to thrive
- Regular surveillance for uveitis in JIA
- Drugs
  - Food and Drug Administration-approved drugs for childhood rheumatic diseases
  - Pediatric dosing and special considerations interms of pharmacokinetics and drug metabolism
- Child-specific side effects of chronic glucocorticoidtreatment
  - Growth retardation
  - Delay of puberty
- Physical and occupational therapy
  - Exercises
  - Splinting
- Psychosocial and developmental issues
  - Peer and sibling interaction
  - Family adjustment
  - School accommodations for disability
  - School and recreational activities
- Transitioning to adulthood accompanied by a transition from pediatric to adult rheumatology care

2.1.3.1.5. Major sequelae and life-threatening complications of rheumatic diseases occurring primarily in children
- Systemic-onset JIA
  - Hemophagocytic lymphohistiocytosis, macrophage activation syndrome
  - Cardiac tamponade
- Pauciarticular JIA
  - Chronic uveitis
- Juvenile dermatomyositis
  - Gastrointestinal vasculitis
  - Calcinosis
  - Joint contractures
- Kawasaki disease
  - Aneurysms of the coronary and other arteries
- IgA vasculitis (formerly known as Henoch-Schonleinpurpura)
  - Gastrointestinal intussusception
  - Intestinal infarction
  - Chronic nephritis
- Neonatal lupus syndrome
  - Congenital heart block
  - Thrombocytopenia

2.1.3.2. Rotation in Physiotherapy and Rehabilitation

2.1.3.2.1. Physiotherapy and rehabilitation represent essential strategies in the treatment of rheumatologic disorders. During the training program, the resident should gather enough experience with physiotherapy and rehabilitationso as to be able to make the best use of such services.

2.1.3.2.2. Effective rehabilitation and pain control are generally achieved using multidisciplinary approaches. It is very important for the rheumatologist to:
- Know when a certain method of treatment can be provided by the

physiotherapist

- Make appropriate use of referral to rehabilitation specialists, physiotherapists, and pain clinics
- Perform appropriate assessment of the patient and prescribe the appropriate rehabilitation management.
- Perform a regular follow-up assessment of the patientto prevent disability
- Aim to minimize pain by using the most suitablemethods in each case

2.1.3.2.3. The residents should be aware of the latest methods of rehabilitation and physiotherapy, as well as to understand the principles, mechanism of action, indications, precautions, contraindications, potential side effects, and costs associated with each method. Common rehabilitation and physiotherapy methodsinclude:

- Exercise
- Rest and splinting
- Thermal modalities
  - Ultrasound
  - Phoresis
  - Spa therapy
  - Icing
- Acupuncture and dry needling
- Sub-acute soft tissue injury treatment
- Scapular stabilization exercises
- Closed kinetic chain exercises
- Active foot posture correction exercises
- Biomechanical analysis
- Orthotics
- Soft tissue massage
- Brace or support
- Electrotherapy and local modalities
- Heat packs
- Joint mobilization techniques
- Kinesiology taping
- Physiotherapy Instrument Mobilization (PIM)
- Stretching exercises
- Supportive taping & strapping
- Transcutaneous electrical nerve stimulation (TENS)
- Yoga
- Use of adaptive equipment and assistive devices
- Use of special footwear and orthotics

2.1.3.3. Rotation in Radiographic Imaging

The resident should be able to identify the most suitable radiological investigation and should understand the indications, principles, and results of different radiological modalities. Specifically, the resident should be able to:

- List the indications, as well as be acquainted with the advantagesand disadvantages of each radiographic method used to image the musculoskeletal system
- Recognize normal from abnormal appearance of various musculoskeletal structures on plain radiographs, computed tomography, magnetic resonance imaging, and nuclear scans
- Describe and identify the radiographic characteristics of rheumatoid arthritis, psoriatic arthritis, ankylosing spondylitis, osteoarthritis, gout, calcium pyrophosphate deposition disease, and myositis.
- Demonstrate understanding and competency in the assessment of radiographs of normal and diseased joints, bones, periarticularstructures, and prosthetic joints
- Employ clinical knowledge to identify real clinico-radiographiccorrelations
- Review the musculoskeletal radiographs of patients seen in the clinic or hospital,

correlate the radiologic findings with clinical history and/or laboratory examination results, and inform clinical decision making

- Establish good competency in radionuclide scanning techniques: joint and bone scans, parotid scans, salivary flow studies, bone densitometry
- Adequately review and interpret joint radiographs
- Achieve a solid understanding and interpretation of musculoskeletal radiological findings of the following tests:
  - Plain radiography of bones and joints
  - Computed tomography
  - Magnetic resonance imaging
  - Arteriography, magnetic resonance angiography, computed tomography angiography
  - Ultrasonography
  - Radionuclide scanning of bones, joints, periarticular structures, and vascular structures.
  - Bone densitometry

3. Perform a complete and adequate assessment of patients

The resident should identify and effectively explore issues to be addressed in a patient encounter, including the specific context of each case and the patient's preferences. For this purpose, the resident will:

3.1. Perform a suitable review of systems to obtain a history that is relevant, comprehensive, and accurate; assess the functional status of the patient.

3.2. Perform a focused physical examination that is relevant and accurate, including careful examination of all joints (peripheral and axial) and identification of any extra- articular manifestations of rheumatic diseases.

3.3. Assess disease activity.

3.4. Assess tissue damage and deformity.

3.5. Perform an assessment of function and quality of life.

3.6. Interpret the findings and suggest a sensible diagnosis.

3.7. Establish a therapeutic management plan.

3.8. Select medically appropriate investigative methods in an evidence-based, resource-effective, and ethical manner

3.9. Demonstrate knowledge of the scientific basis, indications/contraindications, limitations, and clinical interpretation of the findings of:

- Specialized immunological and serologic investigations
- Joint aspiration and synovial fluid analysis
- Tissue biopsies
- Electromyography and nerve conduction studies
- Diagnostic imaging of joint and musculoskeletal diseases

3.10. Demonstrate effective clinical problem solving and judgment to address patient problems, including interpreting available data and integrating information to generate differential diagnoses and management plans.

4. Use preventive and therapeutic interventions effectively

4.1. Implement a therapeutic management plan in collaboration with the patient and their family

4.2. Demonstrate appropriate and timely application of preventive and therapeutic interventions relevant to the practice of rheumatology

- Non-pharmacological therapy
- Pharmacologic and biologic therapy, including plasma exchange and intravenous immunoglobulin (IVIg) therapy
- Joint and soft tissue injections
- Complementary medicine

4.3. Obtain appropriate informed consent for the necessary therapies

4.4. Ensure patients receive appropriate end-of-life care

4.5. Demonstrate support of the patient and family, as appropriate

5. Seek appropriate consultation from other health professionals

The residents shall recognize the important contributions of the multidisciplinary team members in the care of patients with arthritis-related conditions. Such a team includes, but is not limited to, nurses, physiotherapists, occupational therapists, social workers, dieticians, and pharmacists. The residents are expected to:

- Demonstrate awareness of the limits of their own expertise
- Proceed with effective, appropriate, and timely consultation of another health professional, as needed for optimal patient care
- Arrange appropriate follow-up care services to patients and their families or caregivers.

6. Adequately prescribe therapeutics for rheumatic diseases

6.1. Implement a therapeutic management plan in collaboration with the patient and their family

6.2. Demonstrate appropriate and timely application of preventive and therapeutic interventions relevant to the practice of rheumatology

- Non-pharmacological therapy
- Pharmacologic and biologic therapy, including plasma exchange and intravenous immunoglobulin (IVIg) therapy
- Joint and soft tissue injections
- Complementary medicine

6.3. Obtain appropriate informed consent for therapies

6.4. Ensure patients receive appropriate end-of-life care

6.5. Demonstrate support of the patient and family as appropriate

The resident should have detailed knowledge about all medication used in rheumatology, including the following:

6.6. Pharmacology

For each medication, the dosing, pharmacokinetics, metabolism, mechanisms of action, side effects, drug interactions, compliance issues, costs, and indications for use in specific patient populations (e.g., chronic kidney disease); this includes specifications for fertile, lactating, and pregnant women, as well as for fertile men, across all age groups

6.6.1 Nonsteroidal anti-inflammatory drugs

6.6.2. Glucocorticoids: topical, intra-articular, systemic

6.6.3. Systemic anti-rheumatic drugs

- Disease-modifying antirheumatic drugs (DMARDs), small molecules
  - Anti-malarials
  - Sulfasalazine
  - Methotrexate
  - Leflunomide
  - Azathioprine
  - Cyclophosphamide
  - Mycophenolate
  - Calcineurin inhibitors
  - JAK kinase inhibitors
  - Phosphodiesterase inhibitors
- Biologic agents:
  - Interleukin inhibitors (1, 6, 12, 17, 23)
  - Tumor necrosis factor inhibitors
  - T-cell co-stimulatory inhibitors
  - Anti-B cell therapies
- Historically used agents such as gold compounds

6.6.4. Urate lowering therapy

- Xanthine oxidase inhibitors
  - Allopurinol
  - Febuxostat

- Uricosuric drugs
  - Probenecid
- Uricase agents
  - Pegylated uricase
  - Rasburicase

6.6.5. Bone disorder medications
- Bisphosphonates
  - Alendronate
  - Risedronate
  - Ibandronate
  - Zoledronic acid
- Anabolic agents
  - Teriparatide
- RANKL inhibitors
  - Denosumab
- Hormonal therapy
  - Estrogen
  - Selective estrogen receptor modulators
  - Calcitonin
- Calcium and vitamin D

6.6.6. Vasodilators
- Calcium channel blockers
- Topical nitrates
- Prostacyclin analogs
- Endothelin receptor antagonists
- Phosphodiesterase inhibitors
- Guanylate cyclase agonist

6.6.7. Antibiotic therapy for septic joints

6.6.8. Opioid and non-opioid analgesics

6.6.9. Colchicine

6.6.10. Agents used for pain modulation
- Anti-depressants
- Anti-convulsants
- Pregabalin
- Muscle relaxants

6.6.11. Anti-cholinergics and non-pharmacologic agents used for the treatment ofsicca symptoms

6.6.12. Vaccines

6.6.13. Intravenous immunoglobulin (IVIg) therapy

6.6.14. Plasma exchange

6.7. Complementary and alternative medical practice
- Diet counselling
- Nutritional supplements
- Acupuncture
- Chiropractic
- Physiotherapy
- Acupuncture and dry needling
- Sub-acute soft tissue injury treatment
- Scapular stabilization exercises
- Closed kinetic chain exercises
- Active foot posture correction exercises
- Biomechanical analysis
- Orthotics
- Soft tissue massage
- Brace or support
- Electrotherapy and local modalities

- Heat packs
- Joint mobilization techniques
- Kinesiology taping
- Physiotherapy Instrument Mobilization (PIM)
- Stretching exercises
- Supportive taping and strapping
- Transcutaneous electrical nerve stimulation (TENS)
- Yoga

7. Demonstrate proficient and appropriate use of procedural skills, both diagnostic andtherapeutic

7.1. Demonstrate effective, appropriate, and timely performance of diagnostic and therapeutic procedures in the field of rheumatology, including joint and soft tissue aspiration and/or injections and synovial fluid analysis, as well as accurate use of polarized microscopy for crystal analysis, as needed. The main procedures used in rheumatology are arthrocentesis and injection. Thus, the residents are expected to become proficient in such procedures.

7.1.1. For those training in Adult Rheumatology, arthrocentesis and injection of the following:
- Shoulders, elbows, wrists and metacarpophalangeal joints
- Knees, ankles, and metatarsophalangeal joints
- Soft tissue
- Flexor tendon sheaths – e.g., bicipital, palmar
- Plantar fascia, medial and lateral epicondyle
- Bursae – e.g., subacromial, trochanteric, anserine

7.1.2. For those training in Pediatric Rheumatology, arthrocentesis and injection ofthe following in children and adolescents:
- Shoulders, elbows, wrists, and metacarpophalangeal joints
- Knees, ankles, and metatarsophalangeal joints
- Flexor tendon sheaths
- Bursae

7.1.3. Demonstrate knowledge of the indications and contraindications for sedation and analgesia as required for patients undergoing rheumatologic procedures.

7.1.4 Demonstrate knowledge of the indications and appropriate use of imaging guidance in arthrocentesis and injection.

7.2. Obtain appropriate informed consent for the necessary procedures.

7.3. Document and disseminate information related to the procedures performed and theiroutcome.

7.4. Ensure adequate follow-up is arranged for all procedures performed

7.5. Surgical and perioperative management

7.5.1. For each procedure, the resident should demonstrate a working knowledge of indications, pre-operative evaluation, medication adjustments, contraindications, complications, postoperative management, and expected outcome.
- Bone biopsy
- Arthroscopy
- Synovectomy of tendons and joints
- Entrapment neuropathy release
- Osteotomies: hip, knee
- Arthrodesis
- Spine surgery for radiculopathy or stenosis
- Reconstructive surgery of the hand and foot
- Total joint replacement

7.5.2. Specific surgical management problems
- Patients with rheumatoid arthritis
- Infected joint: arthroscopy vs. arthrotomy
- Infected prosthetic joint
- Patients with ankylosing spondylitis
- Pediatric patients with rheumatic disease
- Prevention and treatment of deep venous thrombosis
- Management of peri-operative anti-rheumatic medication

Academic Activities

General Principles

The inpatient and outpatient experience is the main training ground of the resident program. All trainees acquire experience in treating a wide range of musculoskeletal conditions, as the host centers handle different types of cases. Thus, the trainees will gain experience in the management of the entire range of rheumatological diseases.

The learning pathway in this resident program is continuous and employs different modes of teaching and learning, including interactive, didactic, and self-learning processes, depending on the type of service performed by the residents at a given time. Teaching and learning activities are structured and programmatic, with a heavy focus on self-directed learning. Every week, 3–4 hours will be reserved for formal training. The Core Education Program (CEP) includes formal teaching and learning activities classified as universal topics, core specialty topics, and trainee- selected topics. At least **3** hours **per week** should be allocated to the CEP. The CEP will be supplemented by practice-based learning activities such as:

- ✓ Morning reports every day
- ✓ case presentations every month
- ✓ Morbidity and mortality reviews every 3 month
- ✓ Journal clubs every month
- ✓ Hospital grand rounds weekly
- ✓ Half-Day Educational Activity every week
- ✓ MSK physicalexamination every week
- ✓ Practice procedures and injection technique every week
- ✓ MCQ session every month

Didactic centralized components of the curriculum (practice-based learning)

Weekly grand round

The grand round is an essential component of the training program. The roundshould be held in a weekly manner. The activity should take 3 to 4 hours and be divided in two parts. The first part of the round should include presentation of patients admitted to the inpatient rheumatology department, as well as difficult or educational cases seen by the consultation team to be discussed thoroughly with the rheumatology staff in order to achieve optimal patient care; this first part of the roundaims to maximize educational benefits, as well as to ensure that the trainees have fully achieved the competencies while managing the patients. The second part of the round should include a topic presentation related to the patients discussed in previous rounds and to new advances in the field of rheumatology, including recent papers published in the relevant literature.Occasionally, guest speakers are invited to present a topic of interest. The guest speaker is always an experienced senior staff member, potentially from a different internal medicine discipline.

The objectives of the grand rounds are as follows:

- Increase the physicians' medical knowledge and skills, which ultimately translatesinto improving patient care
- Understand and apply current practice guidelines in the field of rheumatology
- Become aware of the latest advances and research in the field of rheumatology
- Identify and explain areas of controversy in the field of rheumatology

Case presentation

Case presentation is conducted monthly or weekly by an assigned resident, under the supervision of a consultant. The cases presented are those that involve interesting findings, unusual presentation, or difficult diagnosis or management.

The objectives of case presentation are as follows:

- Present a comprehensive rheumatic history and physical examination report, with details pertinent to the patient's specific problem
- Formulate a list of all relevant problems identified in the patient's history and during physical examination
- Develop an appropriate differential diagnosis for each problem
- Formulate a diagnosis and treatment plan for each problem
- Present a follow-up case in a focused, problem-based manner that includes pertinent new findings as well as diagnostic and treatment plans
- Demonstrate a commitment to improving case presentation skills by regularly seeking feedback regarding the presentations
- Record and present data accurately and objectively

Journal clubs, critical appraisal, and evidence-based medicine

The journal club meeting is conducted periodically every four weeks. The program director chooses a new article from a reputed journal and forwards it to one of the residents at least 2 weeks prior to the scheduled meeting. The objectives of the journal club are as follows:

- Promoting continuing professional development
- Remaining abreast of current literature
- Disseminating information and promoting debate on good practices
- Ensuring that professional practice is evidence based
- Learning and practicing critical appraisal skills
- Providing an enjoyable educational and social environment

Joint specialty meetings (radiology, pathology, and other relevant fields)

Joint specialty meetings involving radiologists, pathologists, or other specialists are conducted once per four weeks and may include professionals from subspecialties such as gastroenterology and pulmonary medicine.

The objectives of the joint specialty meeting are as follows:

- Provide the knowledge, technical skills, and experience necessary forresidents to interpret and correlate pathological changes with clinical findings, laboratory data, and radiologic findings
- Promote effective communication and sharing of expertise with peers and colleagues
- Promote the development of investigative skills to improve the residents' understanding of pathological processes in individual patients and in general patient populations
- Promote the acquisition of knowledge and provide support in laboratory direction and management, to encourage residents to assume a leadership role in the education of other physicians and allied health professionals

Morbidity and mortality conferences

Mortality and morbidity conferences are conducted at least once every 12 weeks. The program director and department chairperson assign a trainee to prepare and present the cases to all department members, the attending consultant, and related staff. By law, the contents of the proceedings are to remain confidential.

The objectives of mortality and morbidity conferences are as follows:

- To identify areas of improvement for clinicians involved in case management, with the ultimate goal of improving patient care
- To prevent errors that lead to complications
- To modify behavior and judgment based on previous experience

Session for the practice of musculoskeletal physical examination and techniques of joint aspiration and injection

Residents of all levels should be able to perform all types of musculoskeletal physical examinations and rheumatology treatment procedures (typically, joint aspirations and injections) with full confidence. A weekly **one-hour session** should be reserved for the resident to perform a pre-arranged set of joint examinations and related techniques, under the supervision of a consultant.

The objectives of the session for the practice of musculoskeletal physical examination techniques for joint aspiration and injection are as follows:

- To familiarize residents with skills required for adequate physical examination of joints
- To help the residents master a quick musculoskeletal screening examination in a busy practice
- To allow the residents to train with performing diagnostic and therapeutic joint procedures (aspirations and injections)
- To make the residents aware of the difficulties associated with each procedure, as well as of how to overcome such difficulties

Daily morning meetings

Rheumatology Residentship Trainees, are required to attend the morning meeting on General Internal Medicine. It is not uncommon for a rheumatology case to be discussed during such meetings. Thus, the resident will be able to participate in the case management, as well as contribute to the education of attending medical staff.

The morning report is a universal component of internal medicine training. Though there is a wide variation in format, attendance, and timing, all residents share the common goal of case presentation for the purposes of educating resident physicians, monitoring patient care, and reviewing management decisions and their outcomes. The morning report is conducted from Sunday to Thursday and lasts **45–60 min.** The team that have been on call the previous night briefly present and discuss all admitted patients with the audience, with an emphasis on history, clinical findings, differential diagnoses, acute management, and future plans. The chief resident or morning report moderator decides the format or theme of the meeting. The meeting should include discussion of short and long cases, data interpretation, and a topic presentation lasting **5 min**.

The objectives of the morning meetings are as follows:

- To educate all attending residents, monitor patient care, and review management decisions and their outcomes
- To develop the residents' competence with the concise presentation of relevant details regarding admitted patients with rheumatic diseases, in a scientific and informative fashion
- To help the residents learn and gain confidence in discussing rheumatology-related issues, especially when presenting long cases in a systematic fashion
- To assist the residents in developing appropriate differential diagnoses and suitable management plans in relation to rheumatic diseases
- To allow the residents to practice giving a very brief topic presentation on rheumatic diseases of interest

Half-day educational activity (HDEA)

HDEA is organized directly by the Rheumatology Scientific Committee. The HDEA is a mandatory activity during which all residents will be released from their clinical duties including elective and selective rotations. This activity is centered on topics and skills that are vital for training the residents to master their basic and clinical knowledge. The HDEA is held twice a month at a specific location and time (e.g., every other Monday of every month, from 1 to 5 PM). Members of the scientific committee organize the schedule and approve the content of the HDEAs .

Objectives

- To identify the most common rheumatological diseases and approaches
- To enable trainees to acquire up-to-date knowledge, exchange information, and share their experience with colleagues and trainers
- To incorporate the rheumatological approach into clinical problem management
- To acquire skills important for the rheumatologist (e.g., problem solving, team work, counselling skills, negotiation skills, presentation skills)
- To alleviate the residents' stress and allow them to socialize with their colleagues of various levels

Guidelines

- Main theme presentations (60–80% of the sessions) given by consultants with vast experience. These themes should be presented in line with the problem-solving approach used in rheumatology, with evidence-based information whenever possible.
- HDEA content should be planned in full conformance with the curriculum requirements.

Regulations

The HDEA is a mandatory component of the residentship program, meant to complement the clinical experience that residents gain during their clinical work. Substantial effort should be spent into making the HDEA sessions interesting and relevant.

- For each session, there will be one trainer responsible for conducting and organizing the whole session.
- The entire group should contribute to preparing the session and participate actively during the HDEA.
- Details regarding the HDEA schedule throughout the entire year should be made available no later than at the beginning of the academic year
- Educational activities should include different educational methods and strategies, but passive teaching approaches such as lecturing should be avoided. Useful methods include, but are not restricted to, the following: problem solving, case discussion, interactive mini lectures, group discussion, role play, tutorials, workshops, and assignments.
- In all educational sessions, emphasis should be placed on important issues of ethics, evidence-based

medicine, practice management, disease prevention, health promotion, proper communication skills, and professionalism. It is important to adhere to the training program mission

Trainee attendance

- Attendance should be recorded, and a copy of the attendance record will be kept for report and documentation.
- Each trainee expects to attend most of HDEA sessions. In the first three months of the academic year, trainees with poor attendance shall receive a reminder or warning letter for unjustified absences. Trainees who continue to show poor attendance with no acceptable reason will be sent a second warning letter. Further action will be taken in this regard according to the SBOMS rules and regulations.

Rheumatology HDEA blueprint

I. Topic reviews

Topic reviews are lecture series concerning systematic approaches to treat common rheumatic conditions. These lecture series are repeated annually. The objectives of the topic reviews are as follows:

- Illustrate diagnostic and therapeutic skills
- Provide access to relevant information that can be applied directly in clinical practice
- Promote the practice contemporary, evidence-based, and cost-effective medicine
- Warn against unnecessary or harmful investigations or therapeutic procedures

II. Clinical skills

During the HDEA sessions, clinical skills will typically be practiced in the form of simulations in small groups. This includes taking history and conducting physical examinations. However, lectures and video demonstrations can be added to academic HDEAs prior to the simulation exercise.

The objectives of the clinical skills session are as follows:

- Help the trainees master basic physical examination skills and become able to perform focused examinations and interpret the findings
- Encourage the trainees to exhibit professional behavior such as demonstrating respect for patients, colleagues, faculty members, and others in all settings

III. Communication skills

The competencies deemed essential for residents to serve as communicators help establish rapport and trust, formulate a diagnosis, deliver information, achieve mutual understanding, and facilitate the development of a shared care plan. Poor communication can lead to undesirable results; thus, effective communication is critical for optimal patient outcomes. Physicians should employ patient-centered communication regarding the therapeutic plan and the decision making process, as well as to promote effective dynamic interactions with patients, families, caregivers, resident professionals, and other important individuals. During the HDEA sessions, communication skills lectures concerning common situations are regularly delivered by experienced staff members. Such lecture sessions are repeated annually.

The objectives of the communication skills session are to help the trainees:

- Develop patient-centered communication through shared decision-making and effective dynamic interactions with patients, families, other professionals, and other important individuals
- Counsel and educate patients and their family on the role of early diagnosis and prophylaxis
- Master skills of basic interviewing and demonstrate competence in some advanced interviewing

skills
- Exhibit professional behavior, including demonstrating respect for patients, colleagues, faculty, and others in all settings
- Apply ethical knowledge in clinical care
- Understand the process of informed healthcare decision making

IV. Medical ethics

Ethical issues are frequently encountered during clinical practice, and discussing medico- legal aspects of care with experts is of paramount importance for better and safer training and practice. A senior staff member will raise a particular medico-legal issue to be discussed interactively with residents during the HDEAs.

The objectives of this activity are to help the trainees:

- Recognize the humanistic and ethical aspects of a career in rheumatology
- Examine and affirm personal, professional, and moral commitments
- Establish a foundation of philosophical, social, and legal knowledge
- Gain skills to apply insight, knowledge, and reasoning to clinical care

V. Research and evidence-based practice

The SBOMS promotes and supports research conducted by trainees. The presentation and dissemination of the work produced occurs during formal resident research days held annually at various centers. These projects are not necessarily required to result in publications in impacted journals or in presentations at national or international conferences. However, residents with outstanding projects that have resulted in publishable results are supported and mentored in this direction. The objectives of the research aspect of the Rheumatology residentship program are to help residents:

- Become familiar with the generation and dissemination of research via oral presentations, poster presentations, and abstract preparation; attend core academic teaching sessions applicable to research, including ethics, study design, abstract writing, and presentation skills
- Gain competence in conducting literature reviews and data synthesis, analysis, and interpretation

Rotational (work-based) components of the curriculum

1- **Inpatient service:** Residents assigned to the inpatient service are responsible for patients admitted to the rheumatology department. The residents are in charge of elective admissions such as the admission of patients with systemic lupus erythematous (SLE) having proteinuria for renal biopsy. Residents in the general rheumatology rotation should be solely responsible for rheumatology patients admitted through the emergency room to a general department (e.g., patients with active rheumatoid arthritis. However, if the admission is to the intensive care unit (e.g., SLE patients with pulmonary hemorrhage), the resident will be the leading physician in the intensive care unit treating team, giving expert advice an performing daily rounds as needed. The duties of junior and senior residents involve daily rounds with residents from other departments and with interns, under the supervision of a rheumatology consultant. Residents are expected to participate in the education of patients and health care staff. Residents should perform bedside teaching activities and discuss common rheumatic diseases with other health care staff at least three times weekly. If needed, residents may perform diagnostic or therapeutic procedures in the field of rheumatology, under the consultant's supervision.

The objectives of inpatient service rounds are as follows:

- Assessment of the medical history and physical examination findings
- Generating differential diagnoses

- Reviewing admission notes, discharge summaries, and medical reports
- Developing evidence-based treatment plans
- Interpreting laboratory investigation results (e.g., from imaging, echocardiography, and blood tests)
- Consulting with professionals of other disciplines
- Communicating, including discussing risk factors and prevention, withpatients and their families
- Patient discharge and follow-up planning

2- **Day care service (short stay unit):** Many rheumatology services are provided in the short stay unit. Patients scheduled to the day care will be admitted to receive infusions of multiple biologic agents such as rituximab and infliximab, immunosuppressive agents such as cyclophosphamide, and osteoporosis treatment agents such as zolendronic acid and pamindronic acid. Occasionally, patients will be admitted to the short stay unit to undergo simple procedures that do not require admission to the general ward, such as for planning renal biopsy in patients with lupus nephritis. Residents must be aware that adding day care service to their responsibilities during the general rheumatology rotation represents an important part of training. Residents assigned to day care service will increase their experience with performing procedures and handling complications of the procedures or reactions to medications, should they occur. The residents are expected to evaluate the admitted patients before proceeding with the treatment plan.

The objectives of day care rounds are as follows:

- Assess the disease activity status and treatment response of the patientvisiting the unit
- Learn the common indications and mode of administration for anti- rheumatic medications commonly given in the short stay unit, as well as how to anticipate and manage common complications associated with these medications
- Elicit clinical signs for residents

3- **consultation service:** Residents on-call for consultation service will be responsible for receiving and following up consults from all around the hospital, which includes the emergency, intensive care unit, obstetrics and gynecology, surgery, and internal medicine departments during the working hours and overnight, including the weekends. On-call residents are expected to help in the approach of patients who require an expert opinion from a rheumatologist, as well as to perform the necessary procedures if needed, under the supervision of the on-call rheumatology consultant.

The objectives of consultation service are as follows:

- Supervise and discuss the implementation of proposed management plans
- Supervise residents' skills in taking history and conducting physical examinations
- Assist residents in interpreting the results of laboratory investigations and in performing bedside diagnostic and therapeutic procedures

4- **outpatient service:** The outpatient service constitutes the core of rheumatology practice. The outpatient clinic handles a variety of cases, ranging from simple, to difficult, to highly complicated. The residents will take part in the entire process, starting with new referrals to the rheumatology service, taking full history, performing physical examination, ordering the necessary investigations (laboratory or radiological investigations), establishing diagnosis, and initiating treatment. Moreover, the residents will be able to plan the future clinic visits of patients with rheumatological diseases, assess the activity of the disease, evaluate treatment response, monitoring forcomplications, and take appropriate action should such occur. Since rheumatology is a demanding outpatient service requiring substantial effort to build up clinical knowledge and skills, The resident performs all activities under the supervision of certified rheumatology

consultants who provide teaching and supervision.
Consultants in the host clinics should provide the residents with full support, supervision, and training.

The objectives of outpatient service are as follows:

- Conduct patient follow-up under the supervision of the attending consultant
- Discuss management plans, including investigations, treatment, and referral to other departments, with the consultant
- Discuss the need for specialized procedures with the consultant
- Elicit clinical signs for other residents
- Interpret and discuss laboratory results with other residents
- Assess the performance of residents in terms of communication skills, focusedhistory taking, and physical examination

Core Rheumatology Topics

- The format of core specialty topics is encouraged to be in interactive, case-based discussion format with pre-learning materials.
- Whenever applicable, core specialty topics should include workshops, team-based learning (TBL) and simulation to develop skills in core procedures.
- Regional supervisory committees in coordination with academic and training affairs, program directors, and chief resident should work together to ensure planning and implementation of academic activities as indicated in the curriculum.
- There should be an active involvement of the trainee in the development and delivery of the topics under faculty supervision; the involvement might be in the form of: delivery, content development, research…etc.

The most common topic

1. **Rheumatoid arthritis**
2. **Systemic lupus erythematosus:**
3. **Anti-phospholipid antibodysyndrome**
4. **Systemic sclerosis**: including clinicalsubtypes and mimickers
5. **Raynaud's phenomenon**
6. **Inflammatory muscle disease:**
   - Polymyositis
   - Dermatomyositis
   - malignancy-associated myositis
   - juvenile dermatomyositis
   - sporadic inclusion body myositis
   - myositis associated with other connective tissuediseases (CTDs)
7. **mixed CTDs, overlapsyndromes, undifferentiated CTD**
8. **Axial spondyloarthritis:**

ankylosingspondylitis
psoriatic arthritis
arthritis associated with, reactive arthritis.

9. **Vsculitides:**
   - giant-cell arteritis and polymyalgia rheumatica
   - Takayasu's arteritis
   - polyarteritis nodosa
   - ANCA- associated vasculitis such as granulomatosis with polyangiitis (GPA, formerly Wegener's granulomatosis), eosinophilic granulomatosis with polyangiitis (EGPA, formerly Churg- Strauss syndrome) and microscopic polyangiitis
   - anti-glomerular basement membrane disease
   - cryoglobulinemia
   - immunoglobulin A vasculitis (formerly, Henoch-Schönlein purpura), hypocomplementemic urticarial vasculitis
   - Behçet's disease
   - Cogan's syndrome
   - cutaneous leukocytoclastic angiitis
   - primary central nervous systemvasculitis
   - isolated aortitis
   - vasculitis associated with systemic disorders, infections, drugs, malignancies; polyangiitis overlap syndrome combinedwith necrotizing vasculitis
10. **Infectious arthritides:**
    - common infectious arthritides in Syria such bacterial mycobacterial, viral (HIV, hepatitis B virus, hepatitis C virus, parvovirus, chikungunya virus, dengue), fungal, parasitic, Whipple's disease
    - the antimicrobial agents usedto treat such disease

11. **Other arthritides**: acute rheumatic fever, arthritis associated with subacutebacterial endocarditis, intestinal bypass arthritis, post-dysenteric arthritides, post-immunization arthritis, other colitis-associated arthropathies
12. **Crystal-associated diseases:**
    - monosodium urate monohydrate deposition (gout)
    - calcium pyrophosphate dihydrate depositiondisease
    - basic calcium phosphate (hydroxyapatite) deposition
    - calciumoxalate deposition
13. **common Rheumatic syndromes associatedwith endocrine diseases** (diabetesmellitus, acromegaly, parathyroid disease, thyroid disease, Cushing disease)
14. **common Rheumatic syndromes associated with hematological diseases** (hemophilia, hemoglobinopathies, angioimmunoblastic lymphadenopathyor lymphoma, multiple myeloma, hemophagocytic lymphohistiocytosis, macrophage activation syndrome
15. **Rheumatic diseases in patients withrenal diseases** (renal osteodystrophy)
16. **Bone and cartilage disorders**

- Osteoarthritis - primary andsecondary osteoarthritis.
- Metabolic bone disease: low bone mass, osteoporosis, osteomalacia, bonedisease related to renal disease
- Paget's disease of bone.
- Avascular necrosis of bone:idiopathic, secondary causes, osteochondritis dissecans
- Other: transient osteoporosis, hypertrophic osteoarthropathy, diffuseidiopathic skeletal hyperostosis

17. **Disorders of connective tissue**: Marfan syndrome, osteogenesis imperfecta, Ehlers-Danlos syndrome, pseudoxanthoma elasticum, hypermobility syndrome
18. **Mucopolysaccharidoses**
19. **Osteochondrodysplasias:** multipleepiphyseal dysplasia, spondyloepiphyseal dysplasia
20. I**nborn errors of metabolism affecting the connective tissue**: homocystinuria, ochronosis
21. **Storage disorders:** Gaucher'sdisease, Fabry's disease,
22. **Immunodeficiency:** IgA deficiency,complement component deficiency, SCID and ADA deficiency, PNP deficiency, other
23. **Autoinflammatory syndromes:**
    - familialMediterranean fever
    - hyperimmunoglobulinemia D syndrome
    - tumor necrosis factor receptor- associated periodic syndromes (TRAPS);
    - periodic fever, aphthous stomatitis, pharyngitis, cervical adenitis (PFAPA) syndrome,
    - Blau syndrome
    - , Schnitzler syndrome,
    - systemic juvenile idiopathic arthritis (SJIA)
    - cryopyrin-associated periodic syndrome (CAPS) including Muckle-Wells syndrome and familial cold autoinflammatory syndrome
24. **Non-articular musculoskeletal disorders**

- Fibromyalgia
- Myofascial pain syndromes
- Axial syndromes: low back pain, spinal stenosis, intervertebral disc disease and radiculopathies, cervical pain syndromes, coccydynia, osteitis condensans ilii, osteitis pubis, spondylolisthesis/spondylolysis, discitis

25. **Regional musculoskeletal disorders:**
    - shoulder-rotator cuff tear
    - subacromial bursitis
    - adhesive capsulitis
    - impingement syndrome;
    - ganglion cysts
    - De Quervain'stenosynovitis
    - trigger fingers (stenosingtenosynovitis)
    - Dupuytren's contractures
    - synovial plicasyndrome

- internal derangements
- popliteal cyst
- plantar fasciitis
- Achilles tendinitis
- Morton's neuroma
- temporomandibular joint syndromes
- costochondritis

26. Biomechanical/anatomic abnormalities associated with regional pain syndromes: scoliosis, kyphosis, genu valgum, genu varum, leg lengthdiscrepancy, foot deformities

27. Rheumatic syndromes associated with overuse injury (occupational, sports, recreational, performing arts)

28. sports medicine injuries (strains, sprains, nutrition, medication issues)

29. Entrapment neuropathies: thoracicoutlet syndrome, upper extremity entrapments, lower extremity entrapments

30. peripheral neuropathies (polyneuropathy, mononeuritis multiplex)

31. complex regional pain syndrome (formerly, reflex sympathetic dystrophy),erythromelalgia

32. common pediatric rheumatological disease

33. rheumatic manifestation in sarcoidosis

34. Rheumatic diseases duringpregnancy

- Assess the disease activity status of variousrheumatological diseases that occur during pregnancy
- Recognize the safety profile of variouspharmacological agents

35. Radiological and imaging modalities: plain radiographs, computed tomography, magnetic resonance imaging, ultrasound, nuclear imaging

- Recognize the different radiological modalitiesneeded in rheumatology
- Understand the basics of principles of thesemodalities and how to interpret the findings

36. Laboratory evaluation: autoimmuneand serologic workup

- Understand the methods used for performingthe autoimmune and serologic workup
- Recognize the microscopic patterns whenstaining for different autoantibodies
- Recognize the microscopic patterns of crystalsdeposition in joints

37. Rehabilitation modalities: physical therapy, occupational therapy, orthotics

1. Recognize the different rehabilitationmodalities used in rheumatology
2. Understand the indication and contraindicationof such modalities in rheumatological patients

38. Therapeutics in rheumatology (mechanism, efficacy, safety, associated complications)

A. NSAIDs
B. Glucocorticoids, systemic andinjectable
C. Conventional DMARDs
D. Biologic DMARDs (TNFi, non-TNFi, small molecule agents)
E. Bone strengthening agents
F. Hypouricemic agents

39. Immunology review: basics and clinically oriented analysis

40. Ultrasonography in rheumatology: using ultrasound to evaluate normal and diseased joints and to guide intraarticular injections

Procedures List

Procedures list is divided into two categories:

1. **Category I: Foundational Core Specialty Procedures**
   These are the specialty foundational procedures that are required to be learned and practiced under supervision during the training. Expected completion for Category I procedures should be during junior level of training.

2. **Category II: Mastery level procedures**
   These are core specialty procedures that trainees are expected to be competent performing unsupervised at the end of training.

The minimum number of procedures (Three different procedures every 4-week block) tobe performed before certified being competent and the minimum number of five for common procedures needed to maintain competency.

Workshops and courses

1. **Musculoskeletal Ultrasound (Basics &Advanced)**
   - Duration, 1 to 2 days
   - Identify uses of ultrasound in themanagement of rheumatologicaldiseases
   - Hand-on training on normal anddiseased joints
   - Ultrasound-guided joint injections,joint aspirations
2. **Basic Joint Injection Workshop**
   - Full-day course
   - Hands-on training on joint injection(blind and ultrasound-guided) andaspiration
3. **Evidence-Based Medicine Course**
   - Full-day course
   - Focused on the fundamentals of evidence-based medicine
   - Emphasis on the basics of clinicalresearch

Academic Activities	Time	Main responsible	Place of activity
Morning reports	every day 8-9 AM	The resident	Hospital
Hospital grand rounds and Joint Meeting	Weekly according to the hospital	The resident	Hospital zoom
Half-Day Educational Activity every week	Every week 8-10 PM	The resident& The supervisor (Week by week)	Hospital
MSK physical examination	every week 8-2 AM	The supervisor	Hospital
Practice procedures and injection technique	every week 8-2 AM	The supervisor	Hospital
case presentations	every month 8-10 PM	The resident	Zoom
Morbidity and mortality reviews	every 3 month 8-10 PM	The resident	Zoom
Journal clubs	every 3 month 8-10 PM	The resident	Zoom
MCQ session	every month	The resident	Zoom

ASSESSMENT OF LEARNING

Purpose of Assessment

Assessment plays a vital role in the success of postgraduate training. Assessment will guide trainees and trainers to achieve the targeted learning objectives. On the other hand, reliable and valid assessment will provide excellent means for training improvement as it will inform the following aspects: curriculum development, teaching methods, and quality of learning environment. The SBOMS has adopted multiple validated mechanisms for assessing and evaluating the trainees. The assessment process is meticulous and standardized, to ensure that, by the time they graduate, the trainees are equipped with adequate knowledge, skills, ethical principles, education, and conduct. Assessment can serve the following purposes:

Purpose of continuous assessment and evaluation in the SBOMS

a. Improving learning skills
b. Optimizing the qualities of the trainees
c. Early detection of any difficulties the trainees may have, so that such difficulties may becorrected
d. Evaluation of the training program and of the faculty staff involved
e. Ensuring the full commitment of the faculty staff and of the trainee to the specialty
f. Deciding whether or not the trainee may proceed to the next level of training a and mayapply for the final board examination

For the sake of organization, assessment will be further classified into two main categories: Formative and Summative.

Formative Assessment

General Principles

Trainees, as an adult learner, should strive for feedback throughout their journey of competency from "novice" to "mastery" levels. *Formative assessment* (also referred to as continuous assessment) is the component of assessment that is distributed throughout the academic year aiming primarily to provide trainees with effective feedback. Input from the overall formative assessment tools will be utilized at the end of the year to make the decision of promoting each individual trainee from current-to-subsequent training level. formative assessment will have the following features:

a. Multisource: minimum four tools.
b. Comprehensive: covering all learning domains (knowledge, skills, and attitude).
c. Relevant: focusing on workplace-based observations.
d. Competency-milestone oriented: reflecting trainee's expected competencies that matchestrainee's developmental level.

Trainees should play an active role seeking feedback during their training. On the other hand, trainers are expected to provide timely and formative assessment.

***Formative* continuous evaluation throughout the first and second year**

To check whether the competencies are met, the Residents' performance will be evaluated the end of each rotation. The evaluation will be performed jointly by relevant staff members, who assess the following competencies:

- Performance of the trainee in routine medical activities
- Performance regarding participation in academic activities
- Performance during a 10–15-min period of direct observation for the purpose of assessment, during which the trainee is interacting with a patient. Trainers are required to perform at least three such assessments per clinical rotation, preferably near the end of the rotation. Trainers should provide timely and specific feedback to the Residents after each assessment of the trainee-patient encounter, framed according to the Mini Clinical Evaluation Exercise (mini-CEX) and the Case-Based Discussion (CBD) form.
- Skill of the trainee when performing diagnostic and therapeutic procedures. Timely and specific feedback should be provided by the trainer to the trainee following each procedure, framed according to the Direct Observation of Procedural Skills (DOPS) form.
- The Mini-CEX, CBD, and DOPS results are collected every three months in a dedicated form filled in by the mentors.
- competencies for each role are evaluated by means of the ITER form, which must bear the signatures of at least two consultants and be submitted to the program director no later than within two weeks of the end of each rotation. The program director discusses the evaluations with the Residents as necessary. The evaluation form must be submitted to the SBOMS Regional Scientific Committee within four weeks of the end of the rotation.The evaluation of competencies evaluation is based on whether or not the trainee fulfills the minimum clinical skills for performing the procedures, as determined by the program.
- **Structured Academic Activates (SAA)** is an academic task that should be documented on an annual basis. The SAA includes data on attendance and participation in HDEAs, grand rounds, case presentations (evaluated using the CBD form) and journal club meetings.
- **Procedures log book** is a clinical assignment that should be documented on an electronic tracking system logbook on a regular basis.

Formative Assessment Tools

Trainee should show competency in each assessment tool in order to be promoted to the subsequent training level.

Learning Domain	Formative Assessment Tools
Knowledge	1. Structured Academic Activates 2. Case Based Discussion (CBD)
Skills	1. Log Book 2. DOPS: Direct Observation for Procedural Skills 3. Mini-CEX: mini-Clinical Evaluation Exercise
Attitude	ITER: In-Training Evaluation Report

Summative Assessment

General Principles

Summative assessment is the component of assessment that aims primarily to make informed decisions on trainees' competency. In comparison to the formative one, *summative assessment* does not aim to provide constructive feedback. For further details on this section please refer to general bylaws and executive policy of assessment (available online: www.SBOMS.org). In order to be eligible to set for the final exams, a trainee should be granted "*Certification of Training- Completion*".

Promotional clinical examination

Near the end of the first academic year (around the month of November), each junior fellow (F1) will have to undergo OSPE and OSCE with at least 6–8 stations. These examinations are organized by the Rheumatology Scientific Committee. The Residents must pass these assessments, as well as additional assessments, in order to be promoted to the next academic level (F2).

Blueprint of promotion OSCE exam is shown in the following table:

Example of clinical promotion exam Blueprint

NO	Program Component	No of stations	Domains of clinical competence							
			Communication		Examination	cognitive			procedures	
			HT	OCS	PE	Invs	Tx	IATF	TP	DP
1	Inflammatory arthritis&Sjogren									
2	CTD&APS									
3	Spondyloarthopathy									
4	pregancy and rheumatic diseases									
5	Emergency rheumatology									
6	Infection and rheumatology									
7	Rheumatic medications side effects									
8	Surgery and rheumatic diseases									
9	Bone disease									
10	Technique									
11	Other									
12	Vasculitis									
	total	6-8								

Communication: HT=Focused History Taking, OCS=other communication skills. Physical Examination: PE = Physical examination, Practical Procedures: DP=DiagnosticProcedure, TP=Therapeutic Procedure, IATF=Identification of Abnormal Test Finding, Invs= investigations, TX=Treatment

Promotional Written examination

This examination is solely for first-year Residents (F1) and takes place near the end of the first academic year. Successful completion of this important assessment is mandatory for the fellow to be promoted to the next level (F2).

Blueprint of promotion written exam is shown in the following table:

Section	Basic & pathophysiology	Clinical presentation	Investigation diagnosis	Management	% of Exam
Rheumatoid Arthritis	2%	4%	4%	5%	**15%**
SLE & APS	1%	4%	3%	4%	**12%**
Vasculitides		3%	4%	4%	**11%**
Infections and Related Arthritides		3%	2%	2%	**7%**
Spondyloarthiritis	1%	3%	3%	3%	**10%**
Crystal-induced Arthropathies	1%	3%	1%	2%	**7%**
Osteoarthritis and Related Disorders	1%	2%	2%	2%	**7%**
Regional Pain Syndromes		4%	2%	4%	**10%**
Metabolic Bone Disease	1%	1%	1%	1%	**4%**
Miscel. topics, ethics& communication	1%	3%	2%	2%	**8%**
Other Rheumatic and Connective Tissue Diseases		3%	2%	3%	**8%**
basic science	1%				**1%**
Total	**9%**	**33%**	**26%**	**32%**	**100%**

Final evaluation at the end of the second year

Final In-Training Evaluation Reports (FITER) and Comprehensive Competency Report (CCR)

The Rheumatology Scientific Committee confirms the successful completion of the clinical requirements (based on the fellow's One 45 logbook). Additionally, the program directors prepare a FITER/CCR (Appendix X) for each fellow at the end of the final academic year of the Residentship (F2).

Certification of Training-Completion

In order to be eligible to set for final specialty examinations, each trainee is required to obtain "*Certification of Training-Completion"*. Based on the training bylaws and executive policy (please refer to www.SBOMS.org) trainees will be granted "Certification of Training-Completion" once the following criteria is fulfilled:

a. Successful completion of all training rotations.
b. Completion of training requirements as outlined by scientific council/committee of specialty (e.g. logbook, research, others).
c. Clearance from SBOMS training affairs, that ensure compliance with tuitions payment and completion of universal topics.

"Certification of Training-Completion" will be issued and approved by the local supervisory committee or its equivalent according to SBOMS policies.

A certificate acknowledging training completion will only be issued to the fellow upon successful fulfillment of all program requirements. Candidates passing all components of the final Rheumatology examination are awarded the "Saudi Board of Rheumatology" certificate.

Final Specialty Examinations

Final specialty examination is the summative assessment component that grant trainees thespecialty's certification. It has two elements:

a) Final written exam: in order to be eligible for this exam, trainees are required to have"Certification of Training-Completion".
b) Final clinical/practical exam: Trainees will be required to pass the final written exam inorder to be eligible to set for the final clinical/practical exam.

Rheumatology Board Examination

The final Saudi Rheumatology Board Examination contains a written and a clinical part.

A. Written examination

This examination assesses the fellow's knowledge of theoretical and basic science (including recent advances) and problem-solving abilities in matters associated with the field of rheumatology. The examination is delivered in MCQ format and held once a year (typically, in the month of March). The number of examination items, eligibility criteria, and passing scores are established in accordance with the training and examination rules and regulations established by the SBOMS Commission. Examination blueprints are Passing the written examination is mandatory for proceeding to the clinical examination.

B. Clinical examination

This examination assesses a broad range of high-level clinical skills including data gathering, patient management, communication, and counseling. The examination is held once a year (typically, in the month of January), and preferably consists of an OSCE, which may include data interpretation tasks, and an SOE, which may include patient management problems. Eligibility criteria and passing scores are established in accordance with the training and examination rules and regulations established by the SBOMS Commission.

Training level	Assessment tool (formative and summative)	Content	Required to pass %
F1	ITER (Mini-CEX, DOPS, CBD)	All rotations	**≥ 60%**
	Structured Academic Activates & Procedures Log book	Lectures CBD HDEA attendance Log book	
	Promotional OSPE & OSCE	Clinical and practical cases	
	Promotional written exam	MCQs	
F2	ITER (Mini-CEX, DOPS, CBD)	All rotations	
	Academic task & Procedures Log book	Lectures , CBD , HDEA attendance Log book	
Final Board Certification Examination	Board written exam	MCQs	**≥ 60%**
	Board clinical exam	SOE & OSCE	**≥ 60%**

Suggested learning resources

1. **Textbooks**
   - Gary Firestein, Ralph Budd, Sherine E Gabriel, Iain B McInnes, James O'Dell. Kelley and Firestein's Textbook of Rheumatology, 10th Edition. Amsterdam: Elsevier; 2016
   - Johannes W.J. Bijlsma, Eric Hachulla (Editors). EULAR Textbook on Rheumatic Diseases, 2nd Edition. London: BMJ Books; 2015
   - https://www.uptodate.com/contents/table-of-contents/rheumatology

2. **Scientific journals**
   - Arthritis & Rheumatology
   - Annals of the Rheumatic Diseases

Guidelines for the Mentor

Trainee Support and Mentoring Guidelines

A Mentor is a designated faculty member tasked with the supervision of professional development of Residents under his or her responsibility. Mentoring is the process by which Mentors provide support to the Fellow (i.e., the Mentee).

Needs of the Fellow

Post-graduate Residentship training is a formal academic program for Residents to develop their full potential as future specialists. This is potentially the last substantial training program before the candidates become independent specialists. However, unlike the undergraduate program, which has a well-defined structure, Residentship training is inherently less organized. Residents are expected to be present in clinical settings delivering patient care. They are rotated through multiple sites and sub-specialties. This structure of the Residentship program, while necessary to ensure adequate clinical exposure, does not provide an opportunity to create a long-term professional relationship with a faculty member. Residents may feel lost without proper guidance. Moreover, in the absence of a long-term longitudinal relationship, it is extremely difficult to identify struggling Residents. Finally, the new curriculum involves a more substantial work-based continuous assessment of clinical skills and professional attributes. Residents are expected to maintain a logbook, undergo mini-CEX and DOPS assessments, and meticulously chart their clinical experiences. This requires a robust and structured monitoring system, with clearaccountability and well-defined responsibilities.

Nature of the Fellow-Mentor Relationship

Mentorship is a formal yet friendly relationship, and can be seen as a partnership between the Mentor and Fellow (i.e., the Mentee). Residents are expected to take the mentoring opportunity seriously and help the Mentor to achieve the required outcomes. The Mentor should receive a copy of any adversarial report by other faculty members concerning the Mentee.

Goals of Mentoring

A. Guiding Residents towards personal and professional development through continuous monitoring of their progress
B. Early identification of struggling Residents, as well as of high achievers
C. Early detection of Residents who are at risk of suffering emotional and psychological disturbances
D. Providing career guidance

Roles and Responsibilities of the Mentor

The primary role of the Mentor is to nurture a long-term professional relationship with the assigned Residents. The mentor is expected to provide an "academic home" for the Residents so that they can feel comfortable in sharing their experiences, expressing their concerns, and clarifying issues in a non-threatening environment. The Mentor is expected to keep sensitive information concerning the Residents strictly confidential, but to make appropriate and early referrals to the Program Director or Head of the Department if she/he identifies a problem that requires expertise or resources beyond the Mentor's capacity. Examples of such a referral might include:

- Serious academic problems
- Progressive deterioration of academic performance
- Potential mental or psychological issues
- Personal problems that interfere with academic duties
- Professional misconduct, etc.

However, the following are **NOT** expected responsibilities of a mentor:

- Providing extra tutorials, lectures, or clinical sessions
- Providing counselling for serious mental and psychological problems
- Becoming involved in the Residents' personal matters
- Providing financial or other material support

Who Can Be a Mentor?

Any faculty member of consultant grade and above within the Residentship program can be a Mentor. No special training is required. The number of Residents per Mentor should not exceed six. As much as possible, the Residents assigned to the same Mentor should come from all years of training, which will create an opportunity for the senior Residents to work as guides for the junior Residents.

Frequency and Duration of Engagement

The recommended minimum frequency for meetings is once every 3-4 month. Each meeting may take 30 min to 1 hour. It is also expected that, once assigned, the Mentor should preferably continue with the same Fellow for the entire duration of the training program.

Topics to Be Addressed During the Mentor-Fellow Meetings

The following are suggested tasks to be completed during the meetings:

1. Discuss the overall clinical experience of the Residents, with particular attention to any concerns raised.
2. Review the logbook or portfolio with the Residents in order to determine whether the Fellow ison target to meeting the training goals.
3. Revisit earlier concerns or unresolved issues, if any.
4. Explore any non-academic factors seriously interfering with training.
5. Document excerpts of the interactions recorded in the logbook.
6. Mandatory reporting to the Program Director or Head of the Department should the Fellow have any of the following issues:
    - Absence from three consecutive scheduled meetings, without any valid reasons
    - Unprofessional behavior
    - Consistent underperformance in spite of counseling
    - Serious psychological, emotional, or health problems that may potentially cause unsafepatient care
    - Any other serious concerns the Mentor may have