CURRICULUM FOR RHEUMATOLOGY

MD in RHEUMATOLOGY

A four-year training program in clinical rheumatology

Submitted by:
Dr. Ashar Ekhlaq Ahmed
MBBS, FRCP (UK), MRCP (UK) (Rheum),
SCE Rheumatology (UK), CCT (UK) G(I)M & Rheumatology.
Associate Professor of Medicine
Consultant Rheumatologist & Physician
ZIAUDDIN UNIVERSITY
4/B, Shahrah-e-Ghalib, Block-6, Karachi-75600, PAKISTAN.

Table of Contents

1. Introduction

Rheumatology deals with the specialist medical care of people with musculoskeletal (MSK) disorders including inflammatory arthritis and autoimmune rheumatic diseases. The purpose of the rheumatology specialty training curriculum is to produce doctors with the generic professional and specialty specific capabilities needed to manage patients presenting with inflammatory arthritis, rheumatological emergencies, complex connective tissue diseases and multiple co-morbidities. Such doctors will be qualified to practice as specialist consultant rheumatologists, entrusted to deliver services for people with MSK disorders within acute, in-patient, out-patient, or community settings. The curriculum for rheumatology has been developed with input from trainees, consultants actively involved in delivering teaching and training across Pakistan.

Rheumatologists provide acute and long-term care to patients with inflammatory arthritis, complex rare autoimmune diseases such as vasculitis and systemic lupus erythematosus, regional musculoskeletal disorders, and metabolic bone disease such as osteoporosis. Rheumatologists work as part of a multidisciplinary team, which includes nurse specialists, physiotherapists, podiatrists, occupational therapists, pharmacists, and appropriate diagnostic support services. In addition, they frequently share care with organ-specific specialists (e.g., renal physicians) for patients with multi-system autoimmune disease, and orthopaedic consultants for damaging bone and joint disease. Due to the nature of rheumatological diseases however, there is inevitably an interface with acute and general internal medicine required for those presenting with emergencies due to their disease or complications of treatments. Some presentations will need to be seen urgently e.g., organ threatening autoimmune disease.

Over the past decade, the complexity of rheumatological practice has increased. The advent of new biologic and small molecule drugs, the development of more intensive treatment regimens and increasing personalised medicine has improved outcomes but also increased workload. Similarly, polypharmacy and multi-morbidity are challenges faced in rheumatology as elsewhere. This curriculum addresses these issues.

1.1 Training structure

Our training model consists of a 4-year period of dual training leading to the award of MD in Rheumatology. The first two years will be spent in general medicine with rheumatology exposure in out-patients and the latter two will be in rheumatology along with sub-speciality rotations and electives. For candidates already in possession of FCPS in General Medicine, the programme duration will be reduced to 2 years of intensive training in Rheumatology only without any General Internal Medicine service commitment.

1.2 Entry Requirements

Applicants for MD in Rheumatology Programme should have a basic degree in Medicine from a PMDC recognized institution and a one-year house job in a PMDC recognized institute.

1.3 Selection process

There will be competitive entry into the training programme. Candidates will submit their applications in the form of a CV accompanied by a covering letter and personal statement which will be the basis of shortlisting. Following shortlisting, interviews will be conducted which will lead to the selection of the candidates.

1.4 Location of training programme

The proposed course will be conducted at Ziauddin University hospital Karachi. This institution is well-reputed for its high standards of patient care and education of Postgraduate Medical Students in different specialties, many of these programmes are already recognized by the Pakistan Medical and Dental Council.

1.5 Training Record (Academic portfolio)

A contemporaneous written record of training will be maintained by the trainee, to be countersigned by the relevant trainer and trainee at regular intervals; it will remain the property of the trainee and must be produced at the annual assessment. It contains details of training requirements and competences to be achieved within the context of the broad curriculum outlined below.

2. Purpose

2.1 Purpose of the curriculum

This curriculum will ensure that the trainee develops the full range of generic professional capabilities and underlying knowledge and skills. It will ensure that the trainee develops the full range of specialty specific core capabilities in rheumatology, with the underlying professional knowledge and skills.

The objectives of the curriculum are:

• To set out a range of specific professional capabilities that encompass all knowledge, skills and activities needed to practise rheumatology and internal medicine at consultant level.
• To set expected standards of knowledge and performance of various professional skills and activities at each stage.
• To suggest indicative training times and experiences needed to achieve the required standards. Rheumatology.

Doctors in training will learn in a variety of settings using a range of methods, including workplace based experiential learning, formal postgraduate teaching, and simulation-based education. Training will require participation in specialty specific clinics, management of rheumatology inpatients including day-cases and ward referrals as well as involvement in the acute medical take. The scope of rheumatology practice encompasses a wide range of

diseases, affecting a range of organ systems, as well as age ranges. Rheumatologists undertake accurate diagnostic assessment of both inflammatory and non-inflammatory musculoskeletal conditions. Inflammatory long-term conditions are managed in outpatient rheumatology services. Rheumatologists manage complex drug-regimes and multi-morbidity in conjunction with primary care and other hospital-based specialists. Rheumatologists are also experts in the management of multi-system inflammatory disorders many of which can cause acute serious illness. Hence rheumatology practice has close links with acute care providers and will contribute to managing emergencies. They support the acute medical take by providing in-reach consultation. There is increasing recognition of childhood rheumatological disorders, many of which continue into adulthood, and adult rheumatology practice therefore is responsible for the management of transition and adolescent care of long-term conditions. High quality rheumatology care is provided by an extended multidisciplinary team as in many areas of medicine, and excellent communication and team leadership qualities are practised. Ultrasound is increasingly utilised as part of daily practice and many rheumatologists are competent at using musculoskeletal ultrasound. The scope of most rheumatology practice is broad, though some rheumatologists will have special interests such as complex connective tissue diseases, rare metabolic and inherited bone disorders, musculoskeletal ultrasound or adolescent rheumatology.

2.2 High level learning outcomes – capabilities in practice (CiPs)

The Rheumatology capabilities in practice (CiPs) describe the professional tasks or work within the scope of Rheumatology. Each CiP has a set of descriptors associated with that activity or task. Descriptors are intended to help trainees and trainers recognise the minimum level of knowledge, skills and behaviours which should be demonstrated for an entrustment decision to be made.

By the completion of training and award of an MD, the doctors must demonstrate that they are capable of unsupervised practice in all CiPs. The CiPs have been mapped to the curriculum domains and subsections to reflect the professional generic capabilities required to undertake the clinical tasks. Satisfactory sign off requires demonstration that, for each of the CiPs, the performance of the doctor in training meets or exceeds the minimum expected level for completion of training, as defined in the curriculum.

The Rheumatology CiPs comprise six specialty CiPs and six generic CiPs shared across all physician specialties.

Learning outcomes – capabilities in practice (CiPs)
Generic CiPs

1. Able to successfully function within a Tertiary care organisational and management systems. 2. Able to deal with ethical and legal issues related to clinical practice 3. Communicate effectively and be able to share decision making, while maintaining appropriate situational awareness, professional behaviour, and professional judgement 4. Be focused on patient safety and deliver effective quality improvement in patient care 5. Be capable of carrying out research and managing data appropriately 6. Acting as a clinical teacher and clinical supervisor
Rheumatology CiPs
1. Managing common rheumatologic disorders across multiple care settings 2. Managing rheumatologic emergencies 3. Managing complex rheumatologic disorders across multiple care settings 4. Managing transitional care, chronic pain, metabolic bone disease and rarer rheumatological disorders 5. Competent in all practical procedures for rheumatological conditions as defined by the curriculum 6. Managing and leading a musculoskeletal multidisciplinary team and coordination of care with other specialties

3. Content of Learning

The curriculum is spiral and topics and themes will be revisited to expand understanding and expertise. The level of entrustment for capabilities in practice (CiPs) will increase as an individual progresses from needing direct supervision to being entrusted to act unsupervised.

3.1 Capabilities in practice

CiPs describe the professional tasks or work within the scope of the specialty and internal medicine. Each CiP has a set of descriptors associated with that activity or task. Descriptors are intended to help trainees and trainers recognise the knowledge, skills and attitudes which should be demonstrated. Doctors in training may use these capabilities to provide evidence of how their performance meets or exceeds the minimum expected level of performance for their

year of training. The descriptors are not a comprehensive list and there are many more examples that would provide equally valid evidence of performance. Many of the CiP descriptors refer to patient-centred care and shared decision making. This is to emphasise the importance of patients being at the centre of decisions about their own treatment and care, by exploring care or treatment options and their risks and benefits and discussing choices available. Additionally, the clinical CiPs repeatedly refer to the need to demonstrate professional behaviour regarding patients, carers, colleagues and others. Good doctors work in partnership with patients and respect their rights to privacy and dignity. They treat each patient as an individual. They do their best to make sure all patients receive good care and treatment that will support them to live as well as possible, whatever their illness or disability.

Once a trainee has achieved level 4 sign off for a CiP it will not be necessary to repeat assessment of that CiP if capability is maintained (in line with standard professional conduct). This section of the curriculum details the six generic CiPs and six specialty CiPs for Rheumatology. The expected levels of performance, mapping to relevant GPCs and the evidence that may be used to make an entrustment decision are given for each CiP. The list of evidence for each CiP is not prescriptive and other types of evidence may be equally valid for that CiP.

3.2 Generic capabilities in practice

The six generic CiPs cover the universal requirements of all specialties. Satisfactory sign off will indicate that there are no concerns. It will not be necessary to assign a level of supervision for these non-clinical CiPs. For each generic CiP there is a set of descriptors of the observable skills and behaviours which would demonstrate that a trainee has met the minimum level expected. The descriptors are not a comprehensive list and there may be more examples that would provide equally valid evidence of performance.

KEY

MSF	Multi-source feedback	Mini CEX	Mini Clinical Evaluation Exercise
CBD	Case based discussion	MCR	Multiple Consultant Report
DOPS	Direct observation of procedural skills	PS	Patient Survey

Generic capabilities in practice (CiPs)

1. Able to successfully function within Tertiary care organisational and management systems.	
Descriptors	• Aware of and adheres to the PMC professional requirements • Aware of public health issues including population health, social detriments of health and global health perspectives • Demonstrates effective clinical leadership • Demonstrates promotion of an open and transparent culture • Keeps practice up to date through learning and teaching • Demonstrates engagement in career planning • Demonstrates capabilities in dealing with complexity and uncertainty • Aware of the role of and processes for operational structures within the organisational setup. • Aware of the need to use resources wisely
Evidence to inform decisions	• MCR • MSF • Active role in governance structures • Active role in hospital committees • Supervisor report
2. Able to deal with ethical and legal issues related to clinical practice	
Descriptors	· Behaves in accordance with ethical and legal requirements · Demonstrates ability to offer apology or explanation when appropriate · Demonstrates ability to lead the clinical team in ensuring that medical legal factors are considered openly and consistently

Evidence to inform decisions	• MCR • MSF • CbD • DOPS • Mini-CEX • Supervisor report
3. Communicate effectively and be able to share decision making, while maintaining appropriate situational awareness, professional behaviour, and professional judgement	
Descriptors	· Communicates clearly with patients and carers in a variety of settings · Communicates effectively with clinical and other professional colleagues · Identifies and manages barriers to communication (eg cognitive impairment, speech and hearing problems, capacity issues) · Demonstrates effective consultation skills including effective verbal and nonverbal interpersonal skills · Shares decision making by informing the patient, prioritising the patient's wishes, and respecting the patient's beliefs, concerns and expectations · Applies management and team working skills appropriately, including influencing, negotiating, re-assessing priorities and effectively managing complex, dynamic situations
Evidence to inform decisions	· MCR · MSF · PS · Supervisor report
4. Be focused on patient safety and deliver effective quality improvement in patient care	

Descriptors	· Makes patient safety a priority in clinical practice · Demonstrates commitment to learning from patient safety investigations and complaints · Shares good practice appropriately · Contributes to and delivers quality improvement · Recognises and works within limit of personal competence · Avoids organising unnecessary investigations or prescribing poorly evidenced treatments
Evidence to inform decisions	· MCR · MSF · PS · End of placement reports
5. Be capable of carrying out research and managing data appropriately	
Descriptors	• Manages clinical information/data appropriately • Understands principles of research and academic writing • Demonstrates ability to carry out critical appraisal of the literature • Understands the role of evidence in clinical practice • Demonstrates appropriate knowledge of research methods, including qualitative and quantitative approaches in scientific enquiry • Demonstrates appropriate knowledge of research principles and concepts and the translation of research into practice • Follows guidelines on ethical conduct in research and consent for research

	• Understands public health epidemiology and global health patterns
Evidence to inform decisions	• MCR • MSF • Certificates of courses on research methodology (or other related) • Evidence of literature search and critical appraisal of research • Use of clinical guidelines • Quality improvement and audit • Evidence of research activity • Publications • Supervisor report
6. Acting as a clinical teacher and clinical supervisor	
Descriptors	• Delivers effective teaching and training to medical students, junior doctors and other health care professionals • Delivers effective feedback with action plan • Able to supervise less experienced trainees in their clinical assessment and management of patients • Able to supervise less experienced trainees in carrying out appropriate practical procedures
Evidence to inform decisions	• MCR • MSF • TO • Relevant training course • End of placement reports

3.3 Specialty capabilities in practice

The specialty CiPs describe the clinical tasks or activities which are essential to the practice of Rheumatology. Satisfactory sign off will require educational supervisors to make entrustment decisions on the level of supervision required for each CiP and if this is satisfactory for the stage of training, the trainee can progress.

KEY

MSF	Multi-source feedback	Mini CEX	Mini Clinical Evaluation Exercise
CBD	Case based discussion	MCR	Multiple Consultant Report
DOPS	Direct observation of procedural skills	PS	Patient Survey

The six Rheumatology specialty CiPs describe the clinical tasks or activities which are essential to the practice of Rheumatology. Satisfactory sign off will require educational supervisors to make entrustment decisions on the level of supervision required for each CiP and if this is satisfactory for the stage of training, the trainee can progress. More detail is provided in the programme of assessment section of the curriculum.

Specialty CiPs – Rheumatology	
1. Managing common rheumatologic disorders across multiple care settings	
Descriptors	• demonstrates appropriate behaviour regarding patients • demonstrates appropriate behaviors regarding clinical and other professional colleagues • demonstrates effective consultation skills including challenging circumstances • accurate diagnosis and appropriate comprehensive management of patients referred to an outpatient clinic including appropriate use of investigations • appropriate management of comorbidities in an outpatient clinic including appropriate use of investigations and evidence-based prescribing • demonstrates effective communication with colleagues in other disciplines
Evidence to inform decisions	• MCR • CbD • Mini-CEX • Rheumatology exam • Patient Survey (PS) • Supervisor's report
2. Managing rheumatologic emergencies	

Descriptors	• demonstrates effective consultation skills including challenging circumstances • demonstrates effective clinical leadership and prioritisation • accurate diagnosis and appropriate continuing management of rheumatologic emergencies in patients admitted to hospital in the emergency department or intensive care setting including appropriate use of investigations and evidence-based prescribing • demonstrates ability to liaise with the rheumatology multidisciplinary team and other specialty teams as appropriate
Evidence to inform decisions	• MCR • CbD • Mini-CEX • Rheumatology exam • Patient Survey (PS) • Supervisor's report
3. Managing complex rheumatologic disorders across multiple care settings	
Descriptors	• accurate diagnosis of complex /rare rheumatologic problems in patients presenting in an outpatient or inpatient setting • appropriate management of complex/rare rheumatologic problems in patients presenting in an outpatient or inpatient setting including appropriate use of investigations and evidence-based prescribing • demonstrates effective communication working across boundaries in multiple care settings
Evidence to inform decisions	• MCR • CbD • Mini-CEX • Rheumatology exam • Patient Survey (PS) • Supervisor's report
4. Managing transitional care, chronic pain, metabolic bone disease and rarer rheumatological disorders	

Descriptors	• accurate diagnosis of adolescent rheumatologic/chronic pain/metabolic bone and rarer rheumatologic problems in patients presenting in an outpatient setting • appropriate management of adolescent rheumatologic/chronic pain/metabolic bone and rarer rheumatologic problems in patients presenting in an outpatient or inpatient setting including appropriate use of investigations and evidence-based prescribing • demonstrates awareness of transition of care of adolescents with inflammatory arthritis • appropriate liaison with specialty services when required
Evidence to inform decisions	• MCR • CbD • Mini-CEX • Rheumatology exam • Patient Survey (PS) • Supervisor's report
5. Competent in all practical procedures for rheumatological conditions as defined by the curriculum	
Descriptors	• Able to outline the indications and contraindications for the procedures and take consent • Evidence of aseptic technique and safe use of steroids and local anaesthetic drugs • Evidence of safe learning in a joint injection course or simulation or supervised procedures clinically • Aspirate and inject joints competently using appropriate techniques • Recognise macroscopic appearance of normal and abnormal synovial fluid
Evidence to inform decisions	• DOPS • MCR • Supervisor's report
6. Managing and leading a musculoskeletal multidisciplinary team and coordination of care with other specialties	

Descriptors	● demonstrates behaviour appropriately regarding clinical and other professional colleagues ● demonstrates effective consultation skills including challenging circumstances ● demonstrated effective communication skills with all members of the multidisciplinary team ● demonstrates effective clinical leadership ● demonstrates ability to work well in a multidisciplinary team, in all relevant roles ● demonstrates appropriate liaison with specialty teams when required ● recognises when to refer patients to members of the multidisciplinary team and other specialists ● participation in MDT/ X-ray meetings ● effective handover of patients ● provides appropriate supervision and support to colleagues
Evidence to inform decisions	● MSF ● MCR ● Supervisor's report

3.4 Presentations and conditions

The table below details the key presentations and conditions of Rheumatology. Each of these should be regarded as a clinical context in which trainees should be able to demonstrate CiPs. In this spiral curriculum, trainees will expand and develop the knowledge, skills and attitudes around managing patients with these conditions and presentations. The patient should always be at the centre of knowledge, learning and care. Trainees must demonstrate core bedside skills, including information gathering through history and physical examination and information sharing with patients, families and colleagues. Treatment care and strategy covers how a doctor selects drug treatments or interventions for a patient. It includes discussions and decisions as to whether care is focused mainly on curative intent or whether the main focus is on symptomatic relief. It also covers broader aspects of care, including involvement of other professionals or services. Particular presentations, conditions and issues are listed either because they are common or serious (having high morbidity, mortality and/or serious implications for treatment or public health). For each condition/presentation, trainees will need to be familiar with such aspects as aetiology, epidemiology, clinical features, investigation, management and prognosis. Our approach is to provide general guidance and not exhaustive detail, which would inevitably become out of date.

Clinical Area	Presentations	Conditions / Issues
Inflammatory Arthritis	• Monoarthritis • Oligoarthritis • Polyarthritis	• Septic arthritis • Gout / Pseudogout • Chronic infectious arthritis (Mycobacterial, Lyme) • Viral arthritis (Parvovirus, Hepatitis, HIV) • Reactive arthritis • Pigmented villonodular synovitis • Psoriatic arthritis • Rheumatoid arthritis • Unclassified inflammatory arthritis • Arthritis with immunodeficiency • Sarcoidosis (Löfgren's) • Palindromic arthritis
Spondyloarthropathy	• Inflammatory back pain • Oligoarthritis • Enthesitis • Dactylitis	• Axial spondyloarthropathy (radiographic / non-radiographic) • Peripheral AxSpA • IBD-associated arthropathy • Reactive arthritis • Undifferentiated SpA • Whipple's disease • SAPHO syndrome
Connective Tissue Diseases	• Facial / discoid rash • Renal disorders • Raynaud's / scleroderma • Haematological disorders • Neurological syndromes • Thrombophilia • Sicca syndrome • Salivary/lacrimal swelling • Lymphadenopathy • Muscle weakness ± rash • Serositis	• SLE • Cutaneous lupus • SLE nephritis • Sjögren's syndrome • Systemic sclerosis • Eosinophilic fasciitis • Inflammatory myopathies • Overlap syndromes • Antiphospholipid syndrome
Vasculitis	• Pulmonary-renal syndrome • Multiorgan illness • Rash + arthritis/nephritis/lung disease • Uveitis • Scleritis • Sensorineural deafness • External ear disease	• ANCA-associated vasculitis • GPA / EGPA / MPA • Polyarteritis nodosa • Behçet's disease • Takayasu arteritis • Giant cell arteritis • Leukocytoclastic vasculitis • IgA vasculitis • Cryoglobulinemia • Relapsing polychondritis

Autoinflammatory Disorders	• Pyrexia of unknown origin • Fever + rash • Fever with multiorgan dysfunction • Serositis	• Periodic fever syndromes • Familial Mediterranean fever • Adult-onset Still's disease • Macrophage activation syndrome / HLH • Amyloidosis • Sweet's syndrome
Multisystem Disease – Others	• Lymphadenopathy • Granulomatous disease • Retroperitoneal fibrosis • Immunodeficiency • Inflammatory eye disease	• Sarcoidosis • Castleman's disease / Histiocytic syndromes • IgG4-related disease • Uveitis • Scleritis
Bone Diseases	• Osteoporosis • Osteomalacia • Pathological / stress / insufficiency fractures • Bone pain • Ca/PO_4/ALP abnormalities • Incidental radiographic findings	• Postmenopausal osteoporosis • Male osteoporosis • Paget's disease • Osteonecrosis • Atypical femoral fractures • Transient regional osteoporosis • Adult hypophosphatasia • Osteogenesis imperfecta • Fibrous dysplasia • FGF23-mediated osteomalacia
Endocrine & Metabolic Disorders	• Diabetic complications • Thyroid complications • Calcinosis	• Diabetic stiff hand • Thyroid acropachy • Haemochromatosis arthropathy • Alkaptonuria • Neuropathic arthropathy • Hyperparathyroidism
Neoplastic Disorders	• Soft tissue swelling • Bone/soft tissue imaging abnormalities • Cancer therapy syndromes • Paraneoplastic syndromes	• Sarcomas • Primary bone tumours • Hypertrophic pulmonary osteoarthropathy • GVHD • Aromatase inhibitor–associated disorder • Checkpoint inhibitor–associated disorder
Spinal MSK Pain Disorders	• Neck pain • Back pain • Sciatica	• Osteoarthritis • Disc disease • Foraminal stenosis • Radiculopathy • Myelopathy • Cauda equina syndrome • DISH

Regional Soft Tissue Disorders	• Rotator cuff disease • Enthesopathies • Bursitis • Entrapment neuropathies • Occupational / sports problems	• Osteoarthritis • Adhesive capsulitis • Calcific tendinitis • Epicondylitis • Plantar fasciitis • Knee / elbow bursitis • Carpal tunnel syndrome • Greater trochanteric pain syndrome
Pain Syndromes	• Widespread generalized pain • Non-specific limb pain • Chest wall pain	• Complex regional pain syndrome • Fibromyalgia • Somatoform disorders
Paediatric & Adolescent Rheumatology	• Inflammatory arthritis • Connective tissue disorders • Childhood pain syndromes	• JIA (subtypes) • Juvenile vs adult CTD differences • Macrophage activation syndrome • Transitional care • Uveitis • Joint hypermobility spectrum disorders • Marfan syndrome • Osgood-Schlatter disease • Perthes disease • Chronic non-bacterial osteomyelitis
Other Clinical Syndromes	• Rheumatologic problems in pregnancy • Physical symptoms unexplained by organic disease	—

3.5 Practical procedures

There are a number of procedural skills in which a trainee must become proficient. Trainees must be able to outline the indications for these procedures and recognise the importance of valid consent, aseptic technique, safe use of analgesia and local anaesthetics, minimisation of patient discomfort, and requesting help when appropriate. For all practical procedures the trainee must be able to recognise complications and respond appropriately if they arise, including calling for help from colleagues in other specialties when necessary. Trainees should receive training in procedural skills in a clinical skills lab if required. Assessment of procedural skills will be made using the direct observation of procedural skills (DOPS) tool. The table below sets out the minimum competency level expected for each of the practical procedures. When a trainee has been signed off as being able to perform a procedure independently, they are not required to have any further assessment (DOPS) of that procedure, unless they or their educational supervisor think that this is.

Procedure	1st Year	2nd Year	3rd Year	4th Year
Mandatory				
Large joint – knee, shoulder injection/aspiration	Competent to perform unsupervised	Maintain	Maintain	Maintain
Medium joints – elbows, ankles, and wrists injection/aspiration	Able to perform under supervision	Competent to perform unsupervised	Maintain	Maintain
Small joint injections	Able to perform under supervision	Able to perform under supervision	Competent to perform unsupervised	Maintain
Soft tissue injections	Able to perform under supervision	Able to perform under supervision	Competent to perform unsupervised	Maintain
Recommended				
Polarising microscopy of synovial fluid for crystals	Observe in lab	Observe in lab	Observe in lab	Observe in lab
Ultrasound-guided joint or soft tissue injections	Optional	Optional	Optional	Optional
Fluoroscopy-guided injections	Optional	Optional	Optional	Optional

4. Learning and Teaching

Progression through the programme will be determined by the Annual Review of Competency Progression (ARCP) process. The sequence of training should ensure appropriate progression in experience and responsibility. The training to be provided at each training site is defined to ensure that, during the programme, the curriculum requirements are met. Trainees will have an appropriate clinical supervisor and a named educational supervisor. The clinical supervisor and educational supervisor may be the same person. The degree of responsibility taken by the trainee will increase as competency increases. There should be appropriate levels of clinical supervision throughout training, with increasing clinical independence and responsibility.

Clinical supervisors and others contributing to assessment will provide formative feedback to the trainee on their performance throughout the training year. This feedback will include a global

rating to indicate to the trainee and their educational supervisor how they are progressing at that stage of training. To support this, workplace based assessments and multiple consultant reports will include global assessment anchor statements. The educational supervisor (ES) will review the evidence in the portfolio including workplace based assessments and feedback received from clinical supervisors (via the Multiple Consultant Report) and record their judgement on the trainee's performance in the ES report, with commentary. Trainees will need to be meeting expectations for the stage of training as a minimum to be judged satisfactory to progress to the next training year.

4.1 Learning and teaching methods

The curriculum will be delivered through a variety of learning experiences and will achieve the capabilities described in the syllabus through a variety of learning methods. There will be a balance of different modes of learning from formal teaching programmes to experiential learning 'on the job'. The proportion of time allocated to different learning methods may vary depending on the nature of the attachment within a rotation. This section identifies the types of situations in which a trainee will learn.

Work-based experiential learning - The content of work-based experiential learning is decided by the local faculty for education but includes active participation in:

Specialty clinics

The educational objectives of attending clinics are:

- To understand the management of chronic diseases
- Be able to assess a patient in a defined time-frame
- To propose an investigation and management plan in a setting different from the acute medical situation
- To review and amend existing investigation plans
- To communicate with the patient and where necessary relatives and other health care professionals.

Trainees should see a range of new and follow-up patients and present their findings to their clinical supervisor. The number of patients that a trainee should see in each clinic is not defined, neither is the time that should be spent in the clinic, but as a guide this should be a minimum of two hours. Clinic experience should be used as an opportunity to undertake supervised learning events and reflection.

Reviewing patients with consultants

It is important that trainees have an opportunity to present at least a proportion of the patients whom they have assessed to their consultant for senior review to obtain immediate feedback

into their performance (that may be supplemented by an appropriate WBA such as a mini-CEX or CBD).

Every patient seen, on the ward or in outpatients, provides a learning opportunity, which will be enhanced by following the patient through the course of their illness. The experience of the evolution of patients' problems over time is a critical part of both the diagnostic process as well as management. Patients seen should provide the basis for critical reading and reflection on clinical problems.

Multi-disciplinary team meetings

There are many situations where clinical problems are discussed with clinicians in other disciplines. These provide excellent opportunities for observation of clinical reasoning. Trainees have supervised responsibility for the care of inpatients. This includes day-to-day review of clinical conditions, note keeping, and the initial management of the acutely ill patient with referral to and liaison with clinical colleagues as necessary. The degree of responsibility taken by the trainee will increase as competency increases. There should be appropriate levels of clinical supervision throughout training, with increasing clinical independence and responsibility.

Formal postgraduate teaching

The content of these sessions are determined by the local faculty of medical education and will be based on the curriculum. There are many opportunities throughout the year for formal teaching in the local postgraduate teaching sessions and at regional, national and international meetings. Suggested activities include:

- a programme of formal weekly medical CPD meetings (such as grand rounds).
- case presentations
- research, audit and quality improvement projects
- lectures and small group teaching
- clinical skills demonstrations and teaching
- critical appraisal and evidence based medicine and journal clubs
- joint specialty meetings
- attendance at national and international conferences.

5. Research

A period of supervised research of good quality is an integral part of post-graduate training in Rheumatology. A relevant research period would consist of 6 months after the approval of synopsis. The research methodology and details of writing synopsis and Dissertation will be according to standard guidelines. Thesis will be presented to the Board of studies, or a committee appointed by it for assessment and final approval. The candidate shall conduct research in the final year of training and will only be eligible to sit in the examination after approval of the thesis.

6. Assessment

Assessment of trainees will be based upon the standard format of annual review, including the Periodic Assessments (PA). The award of the MD in Rheumatology will be based on satisfactory completion of the entire series of annual assessments. A final examination will be conducted as per rules and format set by the Ziauddin University under guidance from the PMC.

The academic portfolio will be compulsory and evaluation by examiners will be considered final. This evaluation will be based on the marks obtained by the candidate in the theory, clinicals and viva examinations.
Supervisors and examiners will be those practicing in Rheumatology or those Physicians with major interest in Rheumatology as authorized/certified by the CPSP.

6.1 Evidence of progress

The following methods of assessment will provide evidence of progress in the integrated programme of assessment.

Summative assessment

- Direct Observation of Procedural Skills (DOPS) – summative

Formative assessment

- Case-Based Discussions (CbD)
- mini-Clinical Evaluation Exercise (mini-CEX)
- Direct Observation of Procedural Skills (DOPS) – formative
- Multi-Source Feedback (MSF)
- Patient Survey (PS)
- Teaching Observation (TO)

Supervisor reports

- Multiple Consultant Report (MCR)
- Educational Supervisor Report (ESR)

These methods are described briefly below.

Case-based Discussion (CbD)

The CbD assesses the performance of a trainee in their management of a patient to provide an indication of competence in areas such as clinical reasoning, decision-making and application of medical knowledge in relation to patient care. It also serves as a method to document conversations about, and presentations of, cases by trainees. The CbD should focus on a

written record (such as written case notes, out-patient letter, and discharge summary). A typical encounter might be when presenting newly referred patients in the out-patient department.

Mini-Clinical Evaluation Exercise (mini-CEX)

This tool evaluates a clinical encounter with a patient to provide an indication of competence in skills essential for good clinical care such as history taking, examination and clinical reasoning. The trainee receives immediate feedback to aid learning. The mini-CEX can be used at any time and in any setting when there is a trainee and patient interaction and an assessor is available.

Direct Observation of Procedural Skills (DOPS)

A DOPS is an assessment tool designed to evaluate the performance of a trainee in undertaking a practical procedure, against a structured checklist. The trainee receives immediate feedback to identify strengths and areas for development. DOPS can be undertaken as many times as the trainee and their supervisor feel is necessary (formative). A trainee can be regarded as competent to perform a procedure independently after they are signed off as such by an appropriate assessor (summative).

Multi-source feedback (MSF)

This tool is a method of assessing generic skills such as communication, leadership, team working, reliability etc, across the domains of Good Medical Practice. This provides systematic collection and feedback of performance data on a trainee, derived from a number of colleagues. ‘Raters’ are individuals with whom the trainee works, and includes doctors, administrative staff, and other allied professionals. Raters should be agreed with the educational supervisor at the start of the training year. The trainee will not see the individual responses by raters. Feedback is given to the trainee by the Educational Supervisor.

Patient Survey (PS)

A trainee’s interaction with patients should be continually observed and assessed. The Patient Survey provides a tool to assess a trainee during a consultation period. The Patient Survey assesses the trainee’s performance in areas such as interpersonal skills, communication skills and professionalism.

Teaching Observation (TO)

The TO form is designed to provide structured, formative feedback to trainees on their competence at teaching. The TO can be based on any instance of formalised teaching by the trainee which has been observed by the assessor. The process should be trainee-led (identifying appropriate teaching sessions and assessors).

Supervisors reports

a) Multiple Consultant Report (MCR)

The MCR captures the views of consultant supervisors based on observation on a trainee's performance in practice. The MCR feedback and comments received give valuable insight into how well the trainee is performing, highlighting areas of excellence and areas of support required. MCR feedback will be available to the trainee and contribute to the educational supervisor's report.

b) Educational supervisors report (ESR)

The Educational Supervisor (ES) will periodically—at least annually—record a longitudinal, global report of a trainee's progress. This report may draw on multiple sources of assessment, including workplace observations or reflections on behaviour by individuals with appropriate expertise.

The Educational Supervisor Report (ESR) will include:

- The ES's summative judgement of the trainee's overall performance
- Entrustment decisions for the learning outcomes (CiPs)

The ESR can also incorporate commentary or reports from longitudinal observations, such as:

- Supervisor reports (MCRs)
- Formative assessments demonstrating progress over time

7. Personal Appraisal

Personal appraisal conducted at suitable intervals during each year would ensure that personal goals and educational needs are being met.

Depending on the caliber and progress of the trainee a half yearly review might be sufficient, for others more frequent review might be needed.

8. FINAL EXAMINATION

Final Examination will consist of the following:

- A best of 5 paper consisting of 100 questions.

Candidates passing the above exam will have to appear for:

- TOACS (Task Oriented Assessment of Clinical Skills)

- A long case with detailed discussion about differential diagnosis, lab investigations, and treatment with recent advances and prognosis to assess the in-depth knowledge of the candidate.

- Short cases to assess clinical examination methods and ability to pick correct findings