

Annals of the Rheumatic Diseases

NOW AND THEN

Guidelines for rheumatology undergraduate core curriculum

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Aims of Guidelines

- (1) To provide a document for rheumatology teachers that outlines the priorities and educational areas that need to be considered when developing an undergraduate rheumatology course.
- (2) To suggest minimal standards for an undergraduate programme in rheumatology throughout Europe.

Introduction

Any teaching programme may be divided into three major components: curriculum, teaching method, and assessment. The starting point, however, in terms of programme design, is the curriculum. This needs to clearly define the skills, attitudes and knowledge (that is, the alteration in behaviour) that the student will acquire by undertaking the programme. Once the curriculum is in place, and is known by both teachers and students, the most efficient teaching methods to accomplish the curriculum can be devised, as can the appropriate methods of assessment. All three basic components should interrelate and be modified in the light of regular audit, and in response to changes in medical knowledge and practice.

The EULAR Standing Committee on Education and Training has proposed the following core curriculum for "rheumatology" for use in medical schools in Europe. The aims of a rheumatology undergraduate curriculum for Europe^{1,2} and for the United Kingdom³ have previously been published. Such aims describe the general content and direction of learning, but are too general to give any real guide to the level of competence required by undergraduates. The following curriculum, however,

presents a precis of the general aims, but then states the curriculum in terms of a core set of specific learning objectives. It is hoped that this will complement the published general aims and help to better define the true level of skills and competencies appropriate for undergraduate teaching.

Developing an educational programme is a dynamic process. Rather than a didactic list, the current guidelines are intended as a catalyst and focus for discussion within medical schools. Adaptation to suit the individual organisation of each school is expected. Active participation in defining the learning objectives is a vital part of any undergraduate programme: it is an important formative process for teachers, and facilitates ownership and commitment. The EULAR Committee would very much welcome feedback in terms of the content and construction of this proposed core set, and expects to continually audit, modify, and republish the recommended curriculum over the coming years.

The following general points are worthy of emphasis:

- (1) Only the minimum core competencies that relate directly to the musculoskeletal system are listed. These are the attributes that every qualifying doctor should possess. Other competencies can be added to expand this core set. Such additions may reflect: (a) local population or medical practice requirements that differ between countries; (b) greater emphasis and curriculum time apportioned to "rheumatology" in certain institutions; or (c) local interests and expertise of individual teachers. The Committee, however, advises

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- against excessive expansion of the knowledge component because factual overload is a common criticism of current medical school curriculums.
- (2) The level of attainment of the qualifying doctor has been considered in the setting of continuing medical education and training. This core curriculum is the important basic foundation upon which further postgraduate learning can successfully be based. Clinical skills and knowledge of frequently encountered conditions require major emphasis, in line with the WHO "Health For All" strategy.
 - (3) Many components of this curriculum overlap with other aspects of medical education. Coordination and integration between disciplines (for example, general medicine, orthopaedics, primary care, rehabilitation) is desirable to ensure efficient teaching and reinforcement of learning in other modules.
 - (4) Many teaching systems exist. This curriculum only attempts to delineate learning objectives, that is content, not method or timing, within a programme. In some institutions part of this content may be delivered by staff other than rheumatologists.
 - (5) Many facets relating to the understanding and management of rheumatic diseases provide suitable models for pathophysiological mechanisms and patient care that have lessons for undergraduates beyond the scope of rheumatology as a specialty subject. Such generic skills, attitudes and competencies have not been specified within this core set. The set, however, should prove to be in keeping with, and help fulfil, the global aims and objectives of the medical school curriculum.

The Core Curriculum

GENERAL AIMS

The major emphasis of an undergraduate "rheumatology" course should be on clinical skills and competencies relating to the musculoskeletal system. At the end of the course students should be able to assess, by appropriate history and examination in a problem orientated approach, an adult patient with locomotor symptoms in terms of:

- descriptive abnormality/impairment
- disability and handicap
- state a limited differential diagnosis
- state relevant investigations
- outline an appropriate management (medical, surgical, rehabilitation) plan

LEARNING OBJECTIVES

A Competencies in clinical assessment and diagnosis

- to identify, for example using the GALS (Gait, Arms, Legs Spine) screen,⁴ normality and regional abnormality (tenderness, swelling, deformity, muscle wasting, weakness, abnormal attitude, abnormal movement, functional impairment) of the musculoskeletal system.

- to identify and assess disability and handicap/disadvantage in any patient, for example using a PILS (Prevention, Independence, Lifestyle and Social Resources) screen.
- to (1) describe the main phases of normal gait and the principal muscle groups involved, and (2) characterise an abnormal gait in terms of phase of gait and abnormal locomotor characteristics.
- to identify and characterise, through enquiry and regional examination, the symptoms and signs of arthropathy (joint inflammation and/or damage) and common periarticular lesions (bursitis, tendinitis, tenosynovitis, enthesopathy) at the shoulder, elbow, wrist/hand, hip, knee and ankle/foot, and the symptoms and signs of bony lesions (malignancy, sepsis, osteonecrosis) within the skeleton.
- to differentiate by patient enquiry, examination and limited investigation, common mechanical neck/back pain (\pm root entrapment), inflammatory back pain (for example, spondylitis) and destructive back pain (malignancy, sepsis)
- to construct an appropriate differential diagnosis and plan of investigation for a patient presenting with:
 - (1) acute monoarthritis
 - (2) chronic monoarthritis
 - (3) acute or chronic oligoarthritis
 - (4) inflammatory polyarthritis
 - (5) multiple regional non-arthropathic pain
- to specify and detect the sensory and motor consequences of peripheral nerve entrapment/injury of the median, ulnar, radial, and common peroneal nerves

B Knowledge of main characteristics and principles of management and rehabilitation of specific conditions

- to (1) specify the symptoms, signs and predisposing factors, and (2) outline the investigation and management of septic arthritis and bone infection.
- to (1) specify the symptoms and signs, and (2) outline the investigation and principles of management of a patient with large joint osteoarthritis, chronic inflammatory arthritis (rheumatoid, seronegative spondyloarthropathy), soft tissue lesion/enthesopathy, common mechanical neck/back pain, fibromyalgia, polymyalgia rheumatica, crystal associated arthritis (urate, pyrophosphate), and lupus.
- to (1) specify the symptoms, signs and immediate complications, and (2) outline the investigation and management of common adult fractures (including Colles, scaphoid, femoral neck, vertebral, tibial, ankle).
- to specify the clinical presentations, appropriate investigation and management of osteoporosis and osteomalacia.
- to outline the clinical features and principles of management of paediatric locomotor conditions including common injuries, common fractures (wrist/forearm, elbow, femoral shaft) and chronic paediatric conditions

often requiring orthopaedic management (hip conditions, club foot, scoliosis, cerebral palsy).

- to outline the clinical features, investigation, acute management and subsequent rehabilitation of a patient presenting acutely with: joint dislocation (shoulder, elbow, finger), spinal injury and spinal cord compression.
- to specify the indications, benefits and complications of large joint (hip, knee) replacement surgery.
- to outline the principles of rehabilitation after lower limb amputation.

C Core knowledge, supporting diagnosis and management

- to identify all bones and joints within the articulated human skeleton; to specify the major muscle groups, and their root innervation, that move the large and medium sized non-axial joints and be able to demonstrate their integrity by resisted active movements.
- to outline the basic physiology and pathology relating to aging, injury (including mechanical, metabolic, inflammatory and immune mediated disease) and repair of musculoskeletal tissues (bone, cartilage, synovium, muscle, entheses).
- to outline the relative prevalence, major associations (age, sex, genetic, constitutional, environmental, occupational) and expected prognosis/outcome of neck and back pain, mechanical soft tissue lesions, osteoarthritis, osteoporosis, common fractures, rheumatoid arthritis, seronegative spondarthropathies, crystal associated arthritis (urate, pyrophosphate), fibromyalgia, polymyalgia rheumatica and connective tissue diseases.
- to interpret results of the full blood count, erythrocyte sedimentation rate, C reactive protein, autoimmune screen (rheumatoid

factor, ANA), serum biochemistry and synovial fluid analysis with respect to diagnosis and assessment of locomotor disease; to define, and outline the mechanism of, the acute phase response.

- to characterise and identify the principal radiographic features of osteoarthritis, rheumatoid arthritis, and fracture, and to demonstrate a systematic approach to the interpretation of radiographic investigations.
- to outline the strategies available (including education, drug therapy, physical treatments, relaxation, self efficacy, psychosocial interventions) for the management, including rehabilitation, of acute and chronic musculoskeletal disorders (listed above) and for chronic musculoskeletal pain.
- to outline the major indications, side effects, drug interactions and contraindications of drugs used in the management of locomotor disease (analgesics, non-steroidal anti-inflammatory drugs, corticosteroids, allopurinol, slow acting and cytotoxic drugs).
- to list and characterise commonly required equipment for disabled people, including orthoses, mobility aids and aids for daily living.
- to specify strategies for the primary prevention of locomotor trauma and fractures, osteoporosis, osteoarthritis, osteoarticular sepsis, mechanical soft tissue lesions, and neck and back pain.

- 1 Bjelle A. EULAR and WHO issue undergraduate curriculum guidelines to enhance clinical competence in rheumatology throughout Europe. *PANLAR Bull* 1991;6:6-11.
- 2 *Guidelines on educational rheumatology programmes for medical students*. WHO EURO, 1992.
- 3 Doherty M, Dawes P. Guidelines on undergraduate curriculum in the UK. *Br J Rheumatol* 1992;31:409-12.
- 4 Doherty M, Dacre J, Dieppe P, Snaith M. The 'GALS' locomotor screen. *Ann Rheum Dis* 1992;51:1165-9.