

Building a Workforce for Arthritis Care in West Africa: Innovative Training Programs and Collaborative Models

Zakaria Ali

Department of Pharmacy Kampala International University Uganda

Email:ali.zakaria@studwc.kiu.ac.ug

ABSTRACT

Arthritis and other rheumatic and musculoskeletal diseases (RMDs) contribute substantially to pain, disability, reduced productivity, and long-term health-system costs across West Africa. Yet rheumatology services remain severely under-resourced, with very few specialist rheumatologists relative to population need and limited capacity for multidisciplinary rehabilitation. This review synthesizes practical, workforce-focused solutions for West Africa, emphasizing (i) innovative training pathways (blended and competency-based specialist training; short-course upskilling for generalists; structured training for allied health professionals), and (ii) collaborative service-delivery models (hub-and-spoke networks, tele-rheumatology/telementoring, cross-country training consortia, and partnerships with continental/global professional bodies). Evidence and recent initiatives, including EULAR-supported online postgraduate education used in West African certification pathways and EULAR-AFLAR collaborations that expand access to online rheumatology courses, highlight scalable strategies that can grow workforce capacity without waiting for large increases in specialist numbers. We propose a pragmatic roadmap: define a minimum arthritis-care package deliverable at district/regional levels; expand task-sharing with trained non-specialist clinicians and rehabilitation professionals; formalize regional training and mentorship networks; and align policy, financing, and data systems to sustain workforce growth and equitable access.

Keywords: arthritis, rheumatology, workforce, West Africa, task-sharing, telemedicine, training, AFLAR, EULAR, collaborative care

INTRODUCTION

West Africa is confronting a growing, yet often under-acknowledged, burden of rheumatic and musculoskeletal diseases (RMDs), including inflammatory arthritis (e.g., rheumatoid arthritis), spondyloarthritis, crystal arthropathies, connective tissue diseases (e.g., systemic lupus erythematosus), and degenerative conditions such as osteoarthritis. These conditions are increasingly recognized as major contributors to chronic pain, functional limitation, work disability, psychosocial distress, and reduced quality of life [1]. In many settings, RMDs coexist with communicable and non-communicable diseases such as HIV, tuberculosis, sickle cell disease, diabetes, hypertension, obesity, and chronic kidney disease, creating complex multimorbidity that complicates diagnosis, treatment selection, and long-term follow-up [2].

At the same time, the demographic and epidemiologic transitions underway in West Africa are likely to amplify the burden of arthritis. Population growth, longer life expectancy, urbanization, sedentary lifestyles, and rising rates of metabolic risk factors are associated with more osteoarthritis and gout. Meanwhile, improved survival from infections and other chronic illnesses may increase the number of people living long enough to experience chronic inflammatory or autoimmune conditions and their complications [3]. Importantly, early diagnosis and timely initiation of appropriate therapy, particularly for inflammatory and autoimmune disease, can prevent irreversible

joint damage, disability, and extra-articular complications. However, these benefits depend on a functional health system that can recognize symptoms early, confirm diagnoses, initiate treatment safely, and maintain continuity of care [4].

Across Africa, the rheumatology workforce is frequently described as sparse, with some countries reportedly having very few—or no—rheumatologists. In West Africa, this scarcity interacts with other health-system limitations to create a “care cascade” problem: patients may not be recognized early at community or primary care level; those who are recognized may face long waits or travel costs to reach specialist services; and even when evaluated, diagnostic tools (autoantibody testing, imaging, synovial fluid analysis) and essential medicines may be inconsistent or unaffordable. Rehabilitation services such as physiotherapy, occupational therapy, assistive technologies, and patient education may be insufficiently integrated, despite being central to function-preserving arthritis care [5].

Crucially, the workforce challenge is not only a question of specialist numbers. It is a system-wide capacity constraint spanning undergraduate exposure (how much musculoskeletal medicine is taught), postgraduate training slots, mentorship and supervision, diagnostic infrastructure, medicine availability (including conventional DMARDs, biologics, and safe steroid-sparing strategies), pharmacovigilance and monitoring systems, allied health capacity, and durable follow-up pathways. The result is a fragmented landscape in which the quality and accessibility of arthritis care vary substantially by geography, income, and facility level [6]. Given these realities, workforce development for arthritis care in West Africa must be skills-based and team-based rather than “rheumatologist-only.” A functional arthritis care workforce includes rheumatologists, internists/family physicians, orthopedic surgeons, nurses, physiotherapists, occupational therapists, pharmacists, and community health workers supported by referral networks, shared-care protocols, and digital health tools that can strengthen triage, consultation, education, and monitoring. In this review, the term “arthritis care workforce” is deliberately broad to reflect the multidisciplinary nature of effective care and the need for task-sharing approaches that are realistic for resource-constrained settings [7].

Despite rising recognition that RMDs are common and disabling in West Africa, the capacity to diagnose and manage complex inflammatory and autoimmune disease remains limited. Patients frequently present late, after prolonged use of over-the-counter analgesics, repeated antibiotic courses, or traditional remedies, sometimes with established deformity, disability, or serious systemic complications. Primary and secondary-level clinicians may have limited training in differentiating inflammatory from mechanical joint disease, recognizing red flags (e.g., inflammatory back pain, prolonged morning stiffness, systemic symptoms), or initiating appropriate first-line therapies while awaiting specialist input [8]. Where rheumatologists are present, they are often concentrated in large urban tertiary facilities, creating inequities for rural and peri-urban populations. Additionally, the health system may not reliably support the essential components of arthritis care: diagnostic tests are not always available or affordable; imaging capacity may be constrained; medication supply chains can be inconsistent; and structured monitoring for treatment toxicity (e.g., for methotrexate) may be difficult to sustain. Rehabilitation and supportive services may be under-resourced or poorly integrated, resulting in missed opportunities to maintain function, reduce disability, and improve participation in daily life [9]. The absence of standardized referral pathways and shared-care models further contributes to delays, misdiagnosis, inappropriate prescribing (including harmful long-term steroid use), and poor continuity of care. In this context, there is a practical and urgent need to synthesize what is known about the current arthritis care workforce in West Africa, identify gaps across cadres and service levels, and highlight feasible strategies for strengthening skills, teamwork, and systems of care. Without such synthesis, interventions risk being piecemeal—focused on training a small number of specialists while neglecting the broader team and the enabling infrastructure required to translate training into better patient outcomes [10].

This study aims to critically appraise the current status of the arthritis care workforce in West Africa, identify key gaps, and map practical opportunities for strengthening multidisciplinary, skills-based, team-based models of care for rheumatic and musculoskeletal diseases (RMDs). It prioritizes approaches that improve timely diagnosis, prompt treatment initiation, and sustained long-term follow-up, including task-sharing across cadres, functional referral networks, and digital health support (e-referrals, teleconsultation, decision tools, and remote monitoring). The review is significant to patients and families because workforce strengthening can reduce diagnostic delays, enable safer and more effective treatment, and improve function and quality of life, with downstream benefits for household income, schooling, and social wellbeing given that RMDs often strike during economically productive years. For clinicians and allied health professionals, it offers a competency framework that clarifies what primary care teams should recognize and start, what secondary services should manage, and when specialist input is essential, shifting from “scarce specialist dependence” to “distributed capacity.” For policymakers, it informs workforce planning, curricula, and service organization, emphasizing that training must be paired with enabling systems (diagnostics,

essential medicines, rehabilitation, and continuity of care). Finally, it identifies priority research and implementation questions to guide scalable, equitable arthritis care across the region.

Burden and the West African workforce gap

Arthritis outcomes in West Africa are tightly linked to the size and distribution of the health workforce because arthritis care is inherently longitudinal rather than “one-off.” Patients need early recognition at primary care level, risk stratification, timely treatment initiation, regular monitoring for disease activity and drug toxicity, adherence support, comorbidity control (e.g., hypertension, diabetes, infections), rehabilitation services, and rapid flare management. When access to rheumatology expertise is scarce, patients often cycle through multiple providers, present late with established joint damage, and miss the window for disease-modifying therapy [11]. The downstream effects are predictable: preventable disability, reduced productivity and household income, higher out-of-pocket spending, and increased system costs from complications such as hospital admissions, surgery, and adverse events related to prolonged NSAID or steroid exposure. Recent literature underscores how severe the gap is, describing a continent-wide shortage of rheumatology specialists around 0.25 per 100,000 population across 44 African countries in a 2024 letter. Country examples such as Nigeria and Ghana repeatedly illustrate extremely low specialist-to-population ratios [12]. Where specialists do exist, they are typically clustered in a few tertiary centres, leaving large rural and peri-urban populations dependent on under-supported generalists and fragmented referral pathways.

Current training pathways and where they bottleneck

Current specialist training pathways in English-speaking West Africa show real progress, especially where structured e-learning has been embedded into formal credentialing. A notable example is rheumatology fellowship training in countries such as Nigeria, Ghana, Sierra Leone, and The Gambia, where trainees complete the 2-year EULAR online postgraduate course, and, in many settings, course completion is increasingly treated as a prerequisite for certification. This model strengthens theoretical grounding, standardizes content across sites, and partially offsets local shortages in subspecialty faculty [13]. Yet major bottlenecks continue to slow workforce growth and service quality: fellowship slots and trained supervisors remain too few; protected training time is constrained by heavy service demands; and funding for courses, examinations, and placements is often limited. In addition, several competency-critical service platforms remain underdeveloped, including musculoskeletal ultrasound training and equipment, immunology laboratory capacity, and safe infusion services. These gaps are compounded by restricted access to biologics and insufficient tools for treat-to-target monitoring, limiting translation of training into modern care. Beyond specialist training, a “missing middle” persists: underinvestment in rheumatology-relevant nurses, physiotherapy and occupational therapy, pharmacy counseling, and community rehabilitation, without which pain control, function, adherence, and self-management outcomes will remain suboptimal [14].

Innovative training programs that can scale in West Africa

Innovative training programs for rheumatology that can scale across West Africa should prioritize models that are cost-efficient, standardized, and mentorship-rich. A practical backbone is blended, “distributed” specialist education, structured online curricula paired with periodic in-person skills blocks and supervised clinics because it minimizes travel costs, harmonizes content across countries, and expands quickly. EULAR online postgraduate courses can be embedded within national/regional certification pathways, strengthened by EULAR–AFLAR collaborations that lower access barriers for African trainees [15]. To make this work, online learning should be tied to accredited fellowship requirements, with assessments aligned to local case mix (e.g., infection overlap, comorbidities, and medicine availability), plus support for data/airtime and protected learning time. In parallel, regional college-anchored fellowships (e.g., frameworks described under the West African College of Physicians and the Postgraduate Medical College of Nigeria) offer scalable benchmarks, cross-country examiner pools, and shared “training hubs” with rotating placements. Because mentorship is often the true bottleneck, “train-the-trainer” ladders can rapidly expand capacity via local champions, virtual case conferences, and visiting faculty skills weeks (ultrasound, injection clinics, DMARD monitoring). While specialist numbers grow, task-sharing can upskill generalists for first-line arthritis care (red flags, pattern recognition, safe NSAID/steroid use, gout treat-to-target, basic rehab). Finally, structured training for allied health professionals like physio, OT, nursing, and pharmacy enables multidisciplinary, safer long-term care [16].

Collaborative care models that expand access

Collaborative care models can expand rheumatology access in West Africa by reorganizing scarce expertise around networks, virtual support, and shared training. In a hub-and-spoke system, tertiary “hubs” provide diagnostics, infusion services, and specialist-led capacity building, while “spokes” (regional hospitals and district clinics) deliver

standardized first-line management and longitudinal follow-up [17]. Clear referral criteria and fast-track pathways for suspected inflammatory arthritis, harmonized protocols for gout, rheumatoid arthritis, lupus, back pain, and osteoarthritis, plus monthly joint virtual clinics enable co-management of complex cases without travel. Tele-rheumatology and ECHO-style telementoring fit the region's geography and clinician distribution, using weekly case-based learning and remote supervision of DMARD initiation/monitoring to build generalist and allied health professional confidence; global-health collaborations, including narratives of Nigerian returnees strengthening local training, show how partnerships can seed programs. A cross-country "commons" could formalize this through a West Africa Rheumatology Training Consortium linking ministries, teaching hospitals, and colleges to share competency frameworks, pooled faculty, cross-border rotations, and joint exams/accreditation, alongside shared procurement and quality standards for key tests (ESR/CRP, urate, imaging, TB screening, and RF/anti-CCP where available). Finally, "twinning" with diaspora and global societies can support curriculum mapping, faculty development, mentorship for registries/audits, and short visiting professorships, aligning with EULAR/AFLAR educational platforms [18].

Health-system enablers

Effective rheumatology training only translates into better care when the health system enables clinicians to act on new skills. Workforce planning should therefore be paired with reliable access to essential medicines, especially DMARDs such as methotrexate, hydroxychloroquine, and sulfasalazine, alongside gout therapies, plus basic laboratory monitoring (CBC, LFTs, creatinine) to support safe prescribing. Where biologics are used, pharmacovigilance, infection screening, and clear monitoring pathways become non-negotiable [19]. Financing should favor service integration rather than stand-alone models: NCD clinics can be expanded to include chronic pain and arthritis follow-up; HIV/TB platforms can be leveraged to standardize immunosuppression screening workflows; and rehabilitation should be embedded within primary care referral systems. Data systems can function as "workforce multipliers": even modest registries for RA, lupus, and gout can justify investment, quantify diagnostic delays, track retention and outcomes, and surface training gaps such as persistent steroid dependence. Building on these enablers, a 2026–2031 West Africa roadmap should define a Minimum Arthritis Care Package deliverable at district/regional level, scale blended learning (EULAR/AFLAR) with protected time and connectivity, expand fellowship capacity via distributed training hubs and trainer development, institutionalize tele-mentorship networks with regular case conferences and shared protocols, build multidisciplinary teams (nurses, physio/OT, pharmacy counseling), and align policy to retention through career pathways, recognition, and rural incentives [20].

Research and evaluation priorities

Research and evaluation should prioritize five linked areas to strengthen service delivery and quality of care. First, workforce mapping is needed to quantify cadre numbers, geographic distribution, and clinic volumes, identifying high-burden districts with critical staffing gaps and informing deployment, mentorship, and workload planning. Second, time-to-diagnosis and referral pathway studies should document patient journeys from first contact to definitive diagnosis, pinpointing delays, missed opportunities, and bottlenecks across community, primary, and higher-level facilities [21]. Third, implementation research on task-sharing should assess safety, fidelity, acceptability, and clinical outcomes when specific duties are shifted or shared across cadres, alongside supervision intensity and competency maintenance. Fourth, rigorous economic evaluation should compare the cost-effectiveness of a hub-and-spoke model supported by tele-mentorship versus tertiary-only care, incorporating direct medical costs, patient out-of-pocket spending, travel time, and downstream outcomes such as reduced complications and earlier treatment. Finally, gender equity and leadership development should be embedded as the workforce composition evolves, tracking promotion pathways, training access, retention, and supportive workplace policies, while testing interventions that build leadership skills and equitable representation in decision-making roles across the health system [22].

CONCLUSION

Research and evaluation should cohere around five mutually reinforcing priorities that, together, can measurably improve service delivery and quality of care. Workforce mapping will provide the denominator for action, cadre numbers, geographic maldistribution, clinic volumes, and workload so that deployment, mentorship, and resource allocation are targeted to high-burden districts with the largest gaps. Patient-centered time-to-diagnosis and referral pathway studies should then illuminate where delays occur across community, primary, and higher-level care, enabling redesign of pathways to reduce missed opportunities and bottlenecks. Implementation research on task-sharing is essential to ensure safety and effectiveness, documenting fidelity, acceptability, supervision needs, and competency maintenance while linking changes in roles to clinical outcomes. Complementary economic evaluations can guide scale-up by comparing hub-and-spoke tele-mentorship models against tertiary-only care,

capturing system costs, patient expenditures, travel time, and downstream benefits from earlier treatment. Finally, embedding gender equity and leadership development will sustain gains, strengthening retention and equitable decision-making as the workforce evolves.

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