

Nepal: The Current Landscape and Systemic Challenges of Orthopaedic Care

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Abstract

Orthopaedic services in Nepal have undergone notable development in recent decades, particularly in surgical capability and specialist training. However, substantial challenges persist in accessibility, workforce distribution, infrastructure, rehabilitation services, and data systems. With a rising burden of musculoskeletal disorders and trauma, there is an urgent need to transition from fragmented progress toward a more coherent and equitable national orthopaedic care framework. This editorial reviews the current state of orthopaedic services in Nepal, outlines key systemic barriers, and highlights priority areas for strengthening musculoskeletal care.

Growing Burden of Musculoskeletal Injury

Musculoskeletal injuries represent a significant and growing public health concern in Nepal. Road traffic injuries, particularly those related to motorcycle accidents and falls, remain the leading mechanisms of injury. Contributing factors include rugged terrain, unsafe road infrastructure, occupational hazards, and limited pre-hospital emergency care. According to the Global Burden of Disease Study, injury-related mortality accounts for approximately 9% of all deaths in Nepal [1]. Young and working-age adults are disproportionately affected by musculoskeletal trauma, leading to injury-related disability within the most economically productive segment of the population. This results in reduced workforce participation, loss of household income, and long-term socioeconomic consequences [1]. In rural Nepal, where agriculture and manual labor dominate employment, work-related musculoskeletal disorders are highly prevalent. In addition, individuals returning to Nepal after employment abroad in construction and industrial sectors frequently present with untreated or poorly managed musculoskeletal injuries. Nepal's ageing population further contributes to the burden through rising rates of osteoarthritis, fragility fractures, and osteoporosis [2].

Evolution of Orthopaedic Services in Nepal

Orthopaedic care in Nepal has advanced considerably with the establishment of major trauma centers and tertiary institutions in recent years. Centers in major cities, including Tribhuvan University Teaching Hospital, the National Trauma Center, Nepal Orthopaedic Hospital, and several provincial hospitals, now routinely perform complex trauma surgery, spinal surgery, arthroplasty, arthroscopy, hand surgery, musculoskeletal oncology, and foot and ankle procedures.

The introduction and expansion of formal orthopaedic residency and fellowship training programs have further strengthened local surgical expertise and reduced reliance on overseas training.

Despite these advances, access to orthopaedic care remains highly centralized. The majority of the population, particularly in rural and remote regions, continues to experience delayed or limited access to specialist services. In many district hospitals, orthopaedic care is restricted to splinting, basic fracture management, and minor procedures, often delivered by general practitioners rather than trained orthopaedic surgeons.

Persistent Systemic Barriers

Several structural challenges continue to limit the effectiveness and equity of orthopaedic care in Nepal:

Workforce maldistribution: Approximately 650 orthopaedic surgeons serve a population of nearly 30 million, one of the lowest ratios in South Asia, with most specialists concentrated in urban centers [2].

Inadequate infrastructure: Many district and provincial hospitals lack adequately equipped operating theatres, sterilization facilities, essential surgical instruments, and advanced imaging services. Underdeveloped ambulance and referral systems further delay presentation and worsen clinical outcomes [3].

Financial hardship: Orthopaedic surgery is among the most costly medical specialties. Although Nepal introduced a national health insurance scheme in 2016, coverage remains limited, and out-of-pocket expenditure is high, frequently resulting in treatment discontinuation and preventable disability [2].

Gaps in rehabilitation: Rehabilitation services remain limited, with physiotherapy and occupational therapy

largely confined to tertiary centers, adversely affecting functional recovery.

Data deficiency: The absence of comprehensive national data on trauma and musculoskeletal conditions limits effective health planning, resource allocation, and outcome evaluation.

Way Forward

Strengthening orthopaedic care in Nepal will require coordinated, multi-level interventions:

Human resources development: Incentive-based retention strategies, including rural allowances, housing support, and educational benefits for families, may encourage specialists to work in underserved areas. Prioritizing advanced training opportunities for surgeons serving in rural regions may further enhance workforce stability [2].

Infrastructure investment: Provincial and district hospitals should be equipped with functional operating theatres, reliable sterilization systems, essential implants and instruments, advanced imaging modalities, and adequately staffed postoperative wards [3].

Financial protection: Expanding health insurance coverage and improving reimbursement rates can reduce catastrophic health expenditure. Partnerships with non-governmental organizations and private providers may help extend affordable care to low-income populations [2].

Data and research capacity: Establishment of a national trauma and orthopaedic registry would enable accurate assessment of disease burden, identification of high-risk populations, and evidence-based policy development.

Community engagement: Public health campaigns, collaboration with local governments, and engagement with community organizations can promote injury prevention, early presentation, and social acceptance of disability [1].

Conclusion

Orthopaedic care in Nepal has evolved from a limited specialty into an integral component of national health service delivery. However, substantial disparities in access, workforce distribution, infrastructure, and rehabilitation persist. Without targeted investment and coordinated policy action, recent surgical and educational advances will remain unevenly distributed. Achieving equitable musculoskeletal health for the Nepalese population will require data-driven planning, sustained workforce development, and long-term commitment to accessible orthopaedic care beyond major urban centers.

References

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