

## **Understanding the Need for Hand and Upper Extremity Surgery in Sub-Saharan Africa: A Survey of Providers**

*Kiran Agarwal-Harding, MD; Lahin Malik Amlani, BS; Takahisa Ogawa, MD, MPH; Malick Diallo, MD; Kushal Patel, MD; Hatim G.A. Hamad; Linda Chokotho, MD; Ndeye Fatou Coulibaly, PhD; Chaitanya S. Mudgal, MD  
Harvard Global Orthopaedics Collaborative, Boston, Massachusetts, UNITED STATES*

**Purpose:** Hand and upper extremity pathology cause significant morbidity worldwide, but in sub-Saharan Africa (SSA), burden of disease and availability of appropriate care remains unknown. We sought to characterize disease burden and barriers to care for hand/upper extremity pathology in SSA.

**Methods:** From 6 June 2020 to 17 March 2021, we surveyed providers of musculoskeletal care in SSA regarding the provision of care and the most common acute and chronic hand/upper extremity pathologies seen by respondents. Surveys were distributed through professional networks across SSA. We categorized responses by each respondent's country income level and geographic region and examined the frequency with which various barriers to care and acute/chronic pathologies were reported, and their variation by income level/geographic region.

**Results:** We received 193 responses from 39 countries in SSA. 88% of respondents reported that general orthopaedic surgeons/orthopaedic traumatologists primarily manage upper extremity pathology. Lack of adequate and timely diagnosis was reported by 142 (74%), late referral for treatment was reported by 149 (77%), and inadequate physical/occupational therapy and rehabilitation was reported by 149 respondents (77%). The most commonly reported acute pathologies were adult and pediatric radius/ulna fractures/dislocations, adult metacarpal/phalangeal fractures/dislocations, soft-tissue injuries (including burns), and pediatric elbow fractures/dislocations. The most commonly reported chronic pathologies were tendinitis/tenosynovitis, chronic infections/osteomyelitis, neuropathies, posttraumatic stiff hand, and radius/ulna mal/nonunions. Neglected trauma, including chronic elbow injuries and burn contractures, was frequently reported, especially in low-income countries (LICs).

**Conclusion:** Trauma care should be strengthened through training of general orthopaedic surgeons in hand/upper extremity surgery throughout SSA. Especially in LICs, particular training emphasis should be placed on management of mal/nonunions, osteomyelitis, acute and chronic elbow injuries, and burn contractures. These findings should inform development of core competencies in hand surgery for providers managing musculoskeletal pathology in SSA, and guide capacity building activities on the continent.