RESULTS: All osteomyelitis patients achieved resolution of infection and had stable wrists. The scaphoid bone was most often infected (4), lunate (2), trapezium (2) and multiple bones (1). All osteomyelitis patients at last follow-up had stiffness but comparable to comminuted carpal fracture patients. Four patients had pain requiring management by the pain clinic, two patients were completely asymptomatic and three were lost to follow-up. Two patients with lunate resections underwent late proximal row carpectomy.

CONCLUSION: 1) Carpal bone osteomyelitis infection of hand is becoming a significant problem with rising IV drug abuse. 2) Carpal bone infections can be treated with a high degree of antimicrobial success using, aggressive ostectomy, irrigating NPWT, coupled with stabilization. Lunate resection often requires proximal row carpectomy. 3) Carpal osteomyelitis treatment can salvage the wrist and hand, but pain and stiffness is a usual outcome in this challenging population.

The Landscape of Hand Surgery Research in Global Health: A Unified Approach to Better Care

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PURPOSE: Since the inception of the Lancet Commission for Global Surgery and the Touching Hands Project, there is escalating interest in international outreach in hand surgery.1,2 Linking evidence-based research with international outreach in resource-limited settings can optimize outcomes in hand surgery.1,3 To date there has been no literature review of hand surgery and global health. This study aims to summarize common themes and gaps in global health-focused hand surgery research so volunteers worldwide can build into the research priorities of local centres.

METHODS/MATERIALS: A PRISMA guided scoping review was conducted using PubMed, Embase, African Journal Online (AJOL), the Indian Journal of Plastic Surgery (IJPS), Scholar’s Portal, and the American Journal of Hand Surgery. Search terms included: hand injury, congenital, trauma, burn, infection; “AND” global health, international outreach, poverty, low-middle income country, socioeconomic, and poverty. All peer-reviewed studies conducted until January 1, 2018 were included. A grounded theory approach was then applied, by which themes were updated as the study progressed. Common themes and gaps were summarized. Publications were plotted on an online world map using the platform BatchGeo.

RESULTS: Two independent investigators reviewed 853 articles, with 37 articles included. Hand trauma (n=9, 24%), and emphasis on physiotherapy (n=7, 18%), were the most common themes. Congenital anomalies, infections, tumours and socioeconomic pre-disposition followed after (n=4,11%). Common sources of hand trauma were occupation, followed by road accidents and injuries at home. All four hand infection articles focused on tropical diabetic hand syndrome. Targeting prevention (n=7, 18%), developing a hand injury registry (n=4, 11%), and cultivating opportunities for hand surgery education (n=4, 11%) were needs commonly identified in research. The majority of the literature was retrospective (n=8), case report/series or opinion pieces (n=7, 18%). Four papers had international collaborators, of which three were prospective and one was qualitative. India published the most (n=11, 30%) followed by Nigeria (n=5, 14%). Publications from higher-income countries (n=11, 30%) produced literature reviews or reports from personal experience. Limitations include specific focus on North American databases, AJOL and IJPS, as well as exclusion of non-English speaking studies (n=2) and or studies inaccessible due to cost (n=9).

CONCLUSION: Research is scattered across multiple databases, inaccessible by additional cost, or non-English speaking regions. There is a need to implement and evaluate trauma prevention strategies in the workplace and to develop a hand injury registry. International research collaboration can lead to higher level evidence. Research plotted on a multi-lingual online world map offers a unified approach for worldwide research collaboration to meet the research priorities of low-resource areas.

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Empiric tPA: A Salvage Therapy for Severe Frostbite of the Upper Extremity

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**PURPOSE:** Severe frostbite of the upper extremity is a devastating disease process. Historically, this has been managed expectantly with a digit amputation rate of 50%.

Over the last 10 years, strategies have emerged to improve frostbite care including the use of thrombolytic therapy. Unfortunately, these protocols are often delayed by the use of angiography and nuclear medicine bone scans. We sought to determine the utility and digit salvage rate of empiric thrombolytic therapy for severe frostbite of the upper extremity.

**MATERIALS AND METHODS:** We reviewed patients who presented with frostbite of the upper extremity to the Burn Institute at Akron Children’s Hospital. Six patients were identified who received empiric thrombolytic therapy immediately after rewarming. Regimen includes intravenous tPA bolus and infusion after rewarming followed by 2 weeks of therapeutic low molecular weight heparin (enoxaparin). All patients were evaluated at outpatient for a minimum of 6 weeks to determine the need for amputation. We collected digit involvement, patient demographics, complications from tPA, and the need for digit amputation. We utilized a historic group of expectantly managed frostbite patients as a control group. ANOVA and fisher’s exact test were used for all analysis.

**RESULTS:** All 6 patients successfully completed the thrombolytic protocol. There were no significant differences between the tPA group and our historic group. A total of 60 digits were involved with severe frostbite (grade III or IV frostbite) in the tPA cohort. Of the 60 digits involved, 46 digits were salvaged at 6 week follow up. The tPA group had a significantly higher digit salvage rate than our expectant control group (50% vs 77% p<0.01). There were no life threatening complications from tPA including intracranial hemorrhage or transfusion. One patient did spontaneously bleed from small abrasions that required intervention, but the patient was able to complete the tPA protocol.

**CONCLUSION:** Our experience shows that there is a potential for high success rate of digit salvage when empiric tPA is used. In an appropriately selected group with severe frostbite, additional imaging or angiography has the potential to delay patient care. If eligible, we recommend the use of tPA at presentation without the use of pretreatment nuclear medicine imaging or angiography.

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Association between initial Angulation and Outcome in Closed Mallet Finger Treated Conservatively

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**BACKGROUND:** Mallet finger (MF) has a greater incidence in middle-age men. The current consensus for non-complicated closed Mallet finger is conservative treatment. The standardized immobilization period is between 6 and 8 weeks. The Crawford classification (CC) divides outcomes in four stages: excellent, good, average and poor. According to Altan, seventy two percent of the patients managed conservatively had an excellent result according to the CC.

**OBJECTIVE:** Our aim was to establish the frequency of patients achieving an excellent result with Mallet finger treated conservatively in a Tertiary-level Hospital in Mexico City.

**MATERIALS AND METHODS:** The study was observational, prospective, descriptive and analytical. Patients