

# Orthopaedic trauma care: initial global approaches to management during a pandemic

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## Abstract

The coronavirus disease 2019 (COVID-19) has significantly affected the treatment of patients with surgical conditions, including those with acute and chronic musculoskeletal issues. While different global regions experienced different levels of COVID-19 activity and had different resources with which to deal with the pandemic, there were many consistent approaches to injury care and musculoskeletal trauma management. Understanding these approaches is necessary to improve current and future strategies to taking care of orthopaedic trauma patients in an infectious disease outbreak. This supplement focuses on approaches to musculoskeletal trauma care during the first months of the COVID-19 pandemic in 19 countries from 6 continents. This work represents a collaborative work of member societies of the International Orthopaedic Trauma Association (IOTA), an international association of orthopaedic societies dedicated to the promotion of musculoskeletal trauma care through advancements in patient care, research, and education. The information in these reports will aid efforts to understand and ultimately better address musculoskeletal trauma care worldwide during the first waves of the pandemic.

**Keywords:** coronavirus, COVID-19, international, musculoskeletal, surgery, trauma

The coronavirus disease 2019 (COVID-19), caused by the novel severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2), has resulted in a devastating global pandemic.<sup>[1]</sup> SARS-CoV-2 is the third coronavirus that has spread globally to cause severe disease in humans.<sup>[2]</sup> COVID-19 initially arose in Wuhan, China, after being diagnosed in a group of patients with pneumonia of an unknown cause.<sup>[3]</sup> This highly contagious disease is transmitted through respiratory droplets, causes a wide array of symptoms (ranging from respiratory to hematologic), and affects patients to different degrees (varying from no symptoms to critical multi-organ failure).<sup>[4]</sup> Patients with existing comorbidities, which include hypertension, diabetes, chronic disease, and malignancy, as well as the elderly are particularly at risk for more severe illness and adverse outcomes.<sup>[5]</sup> As of July 1, 2020, COVID-19 had affected over 10 million people from more than 200 countries, resulting in approximately 508,000 deaths.<sup>[1]</sup> The World Health

Organization declared coronavirus a global pandemic on March 11, 2020.<sup>[6]</sup>

Although a disease treated medically, COVID-19 significantly affected the treatment of patients with surgical conditions, including those with acute and chronic musculoskeletal issues.<sup>[7]</sup> Elective surgeries were cancelled, concentrating critical personnel, hospital beds, equipment, and personal protective equipment to address the disease outbreaks.<sup>[8]</sup> Further, unnecessary exposures to patients and health care personnel were limited to protect these groups and prevent further spread of the disease. The rates of serious surgical complications in patients with COVID-19 were found to be exceptionally high,<sup>[9]</sup> including in those patients treated for fractures.<sup>[10]</sup> Efforts to identify and isolate individuals infected with the virus were largely limited by a lack of testing capacity. Hospitals developed systems to isolate patients suspected or confirmed to have COVID-19, triage fracture patient acuity, limit external traffic through the hospital, and protect health care personnel from exposures, including in nonelective surgical cases.<sup>[11]</sup> Similarly, governments and organizations implemented strategies to limit the spread of infection, including encouraging masking, hand washing, and social distancing, as well as issuing stay-at-home orders, travel restrictions, and self-quarantine policies.<sup>[12]</sup> This limitation of movement was associated with reports of decreases in trauma and fracture incidence.<sup>[13–15]</sup>

Different regions and countries saw different concentrations of COVID-19 activity at varied times. Further, countries had different levels of resources with which to deal with the pandemic. While these differences might have led to varied approaches, instead, there were many similarities in responses to injury care and musculoskeletal trauma management.<sup>[8,16]</sup> These similarities included approaches to hospital surge planning, preservation of resources (minimizing use of essential items), protection of patients and workforce (postponement of nonurgent surgery, splitting and shifting provider teams, screening, PPE usage, extensive testing as possible, contact tracing, decreasing of in-hospital, and clinic traffic), development of alternative clinical

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care approaches (telemedicine and shift to outpatient care), and education (computer-based patient care and academic society conferences and travel restrictions). Many of these comparable approaches were the direct result of learning from experience; not only from within the walls of individual health care facilities, but also through regional, national, and international communications.

There has been and continues to be a need to fully understand the initial approaches to musculoskeletal trauma care. As of the time of writing this review (August 2020), the pandemic continues to spike across the world, and understanding common and unique approaches has value. The orthopaedic surgery community continue to need to adapt to address the challenges at hand, abandoning less useful strategies for more effective ones. Like those lessons we have learned from outbreaks, the lessons learned during this pandemic will better prepare us for future ones.<sup>[17]</sup> This supplement focuses on the initial approaches to musculoskeletal trauma care during the first months of the COVID-19 pandemic in 19 countries from 6 continents. This work represents a collaborative work of member societies of the International Orthopaedic Trauma Association (IOTA), an international association of orthopaedic societies dedicated to the promotion of musculoskeletal trauma care through advancements in patient care, research, and education. The information in these reports will aid efforts to document and better understand musculoskeletal trauma care during the first waves of the pandemic.

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