

AAOS Guidelines on Elective Surgery During the COVID-19 Pandemic: March 31

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In these uncertain times, we all need to be considerate of the population. AAOS' guidelines on elective surgery during the COVID-19 pandemic should be applied judiciously depending on your location, where your area/institution happens to be situated relative to the curve of the disease, and the availability, or scarcity, of your resources, including personal protective equipment (PPE), intensive care unit (ICU) beds, respirators, and personnel.

The Centers for Medicare & Medicaid Services (CMS) and the American College of Surgeons (ACS) have provided a rough framework for the analysis of elective surgery in the face of disease and limited resources. Board of Specialty Societies member Todd Schmidt, MD, of Georgia, has graciously shared a flow diagram of decision making that has been in use at his hospital system. AAOS Board of Directors member James R. Ficke, MD, FAAOS, of Johns Hopkins, has also shared the method his facility is using to try to preserve PPE and personnel during the crisis (see appendix 1–4).

In the early stages of local COVID-19 infection, there may be no shortage of equipment and personnel. Under these circumstances, some localities have conducted “business as usual.” This approach is short sighted in view of the current rapidly evolving conditions in both New York and New Orleans, where, in a matter of days, these resources were rapidly consumed and depleted, leading to actual shortages of PPE. At this time, no one can be certain if the same scenarios will occur elsewhere or to what degree. Prudent use of critical resources should be paramount, with overall patient welfare and safety guiding the decision-making process. This is a long-term process, and far-sighted thinking with severe restrictions as the default practice (see Dr. Ficke's guidelines in appendix 4) may be needed before equipment and personnel are depleted.

It is the AAOS position that every locality should be making their own decisions based on the availability of resources and personnel. In these situations, a panel that includes the head of the hospital (or the designee), chief of the ICU, chief of anesthesia, and chief of orthopaedic surgery should form a committee to review any prospective surgery. Where feasible, input from the state department of health should be solicited.

General definitions of what constitutes the necessity for surgery are offered herein as an additional guide to our surgeons. Also included are several links that may helpful, including [ACS's COVID-19 guidelines for triage of orthopaedic patients](#), [CMS's adult elective surgery and procedures recommendations](#), a treatment algorithm currently in use by the Georgia Surgeons in the Piedmont Healthcare System, a *Journal of Bone & Joint Surgery* article on early experiences from Singapore that outlines their method of surgical triage, and [an AAOS letter from AAOS Past President Kristy L. Weber, MD, FAAOS](#), to Vice President Mike Pence from March 26, regarding AAOS and the COVID-19 pandemic.

Elective surgery

Patients for whom surgery is deemed “elective” are those with chronic problems whose surgery can certainly be delayed without significant harm to the patient or eventual outcome. Although an argument can be made for the need for surgery in some individuals due to pain or functional impairment, the determining principle is that delaying treatment will not significantly alter the eventual outcome. Such surgeries include total joint replacements, spine fusion, chronic joint conditions (e.g., atraumatic, chronic rotator cuff tears; posterior cruciate ligament injuries; and degenerative meniscal tears) and other conditions that although painful will not be altered by delay in treatment (e.g., elbow tendonitis and carpal tunnel surgery).

Urgent, somewhat elective, surgery (tier 2)

As the virus becomes more prevalent, some outpatient surgery may be considered, pending availability of resources. Surgery for injuries such as anterior cruciate ligament tears, locked or bucket handle meniscus, acute traumatic rotator cuff tears, biceps injuries, and intra-articular displaced distal radius fractures (indeed, most fractures best managed by operative intervention such as femur or tibia fractures) should still be performed. If possible, these procedures should be done in the outpatient setting to minimize utilization of resources.

As same-day testing for COVID-19 with reporting within one hour becomes readily available, we believe this improved diagnostic capability will greatly ease the anxiety of the staff in managing this patient population, understanding the risk of false negative results. It may be that, as was done in Singapore, separation of teams and facilities into those that deal only with COVID-19–positive patients and those that deal with only COVID-19–negative patients might be a consideration for patient safety.

Urgent only

As the virus becomes more prevalent and resources become of more paramount importance, the option for surgery becomes much more limited. In addition, the availability of ICU beds, ventilators, and PPE should be considered. Under urgent-only conditions, injuries in which immediate surgical intervention would prevent significant impairment of function should be considered, including fracture dislocations, pilon fractures, distal biceps ruptures, etc., as well as fractures where failure to repair the injury would result in increased morbidity (e.g., intertrochanteric fractures, pelvic fractures, femur fracture, etc.). This category of injuries would typically not include humerus or tibia fractures but would include both bone forearm fractures.

Emergency only (see appendix 4 from Dr. Ficke)

In this situation, the hospital and ICU are full and a critical shortage of resources is the prevailing circumstance. Surgery cannot be safely performed without considerable expenditure of scarce resources. In this situation, only true life- or limb-threatening injuries should be taken to surgery with the goal of minimizing the need for ventilator support, even if this is outside the usual standard of care (e.g., use of spinals for surgery).