Appendix

Collection of Baseline Demographic Data and Injury Characteristics

Patient-specific variables were identified from the TRACS database and included age, sex, race, medical comorbidities, history of recent tobacco use, Injury Severity Score (ISS), blood transfusion, and open fractures. The total number of medical comorbidities for each patient was calculated and included coronary artery disease, hypertension, chronic obstructive pulmonary disease, rheumatoid arthritis, and alcohol abuse. The American Society of Anesthesiologists (ASA) classification[29], a validated measure of intraoperative and immediate postoperative risk based on the severity of patient comorbidities, was collected from the operative anesthetic care record. The ISS was calculated, as defined by Baker et al.[30], as the sum of the squares of the highest AIS score in each of the most severely injured body regions. Open fractures were documented according to the classification system described by Gustilo et al.[31], and the classifications were determined by review of the initial operative report describing the degree of injury and the open wound.

Perioperative Antibiotic Administration Protocol

During the study period, institutional infection prevention protocols required that prophylactic antibiotics—consisting of a first-generation cephalosporin, or clindamycin for penicillin-sensitive patients—begin within thirty minutes of the surgical incision and be discontinued within twenty-four hours postoperatively for all closed fractures. Institutional protocol required a routine “time-out” be performed prior to all surgical procedures in order to verify that preoperative antibiotics had been administered. Additionally, on induction of anesthesia, the computerized anesthetic record displayed an automated “pop-up box” as a prompt that inquires if antibiotics will be given in order for the anesthesia team to verify with the surgical team that preoperative antibiotics are warranted. Adherence to this protocol has been tracked at our institution and exceeds 97%. Patients with an open fracture received a first-generation cephalosporin or vancomycin, with the addition of ceftriaxone or Levaquin (levofloxacin) for open Type-III fractures, on admission to the emergency department. Open fractures were thoroughly irrigated and debrided of devitalized tissue in the operating room within twenty-four hours of admission. Subsequently, irrigation and debridement was repeated at the discretion of the treating surgeon until a clean soft-tissue bed was obtained. Antibiotics were discontinued twenty-four hours after definitive wound closure in patients with an open fracture. Tetanus prophylaxis was administered in the emergency department, as necessary.