

considerations regarding these topics. Expert panel members were then asked to review a final draft of the guidelines that included the new statements that had been formulated following the first round of responses, including the formatting changes and the recommendations regarding information on exoskeleton use and foot fractures. All members of the expert panel approved the final guidelines. Members of the OTA Evidence-Based Quality Value and Safety (EBQVS) Committee also reviewed and unanimously endorsed these guidelines. In addition, the OTA Board of Directors approved these guidelines.

This CPG, while based on what the panel considered to be the best available evidence, consisted largely of expert opinion, so future updates may be necessary. Moreover, many of the guidelines related to surgical procedures were informed by the literature and practice related to the able-bodied population with lower extremity long-bone fractures because of a dearth of high-quality evidence in this area specific to persons with an SCI. It is recommended that future research studies address the risks and benefits of operative versus nonoperative treatment of acute lower extremity fractures and optimal operative and nonoperative treatment strategies for these fractures in persons with an SCI. It is recognized that, given the relatively few patients with an SCI, such studies would need to be multi-institutional and most likely international.

Moreover, the critical importance of prevention of these fractures is recognized, and, for a full discussion of the role of osteoporosis medications in the prevention of fractures in persons with an SCI, the reader is referred to the Paralyzed Veterans of America (PVA) Consortium for Spinal Cord Medicine Clinical Practice Guidelines: Bone Health and Osteoporosis Management in Persons with Spinal Cord Injury²⁸.

Source of Funding

This material is based upon work supported by the Department of Veterans Affairs, Veterans Health Administration, Office of Research and Development (VA IIR 15-294: Best Practices for Management of Fractures in Spinal Cord Injuries and Disorders) and the OTA, who provided financial and logistic support for the Delphi process.

Summary of Recommendations

Section I: Acute Fracture Treatment

1.1 Recommendation

We recommend that patients with an SCI who sustain a lower extremity fracture be provided with education regarding the risks and benefits of operative and nonoperative management. We recommend that shared decision-making between patient and provider be conducted when making a decision regarding definitive fracture management.

Grade: 1D

1.2 Recommendation

We recommend that consultation with an orthopaedic surgeon and engagement of appropriate multidisciplinary teams, as

clinically indicated, should be done as soon as possible when a lower extremity fracture is identified.

Grade: 1D

1.3 Recommendation

We recommend operative management for open lower extremity fractures. These fractures should be treated with irrigation and debridement, with appropriate antibiotic coverage and wound closure as soon as possible to reduce complications related to infection, and surgical stabilization should be considered. We recommend operative management for any lower extremity fracture that the orthopaedic surgeon determines will not reliably heal in a position that will restore the patient to their pre-fracture functional status.

Grade: 1C

Clinical Considerations: Operative management of these fractures with appropriate antibiotic coverage should be performed as soon as feasible when the patient is medically stable. Treatments should take into account the severity of the open fracture and should follow EBQVS Committee recommendations.

1.4 Recommendation

We recommend that factors to consider in decision-making relative to fracture treatment are the risks and benefits of operative versus nonoperative approaches for the individual patient, the premorbid level of function, patient preferences, and the impact of fracture management strategies on vocation, avocation, independence, and the use of current and future mobility technologies.

Grade: 1C

1.5 Recommendation

If operative management is chosen, we recommend the following, in conjunction with physical therapy.

- *Hip*
 - Femoral neck (intracapsular)
 - Nondisplaced: Internal fixation.
 - Displaced: Arthroplasty or resection. Resection can be considered but raises risk of proximal femoral migration and subsequent pressure injury and sitting imbalance.
 - Intertrochanteric: Internal fixation with intramedullary nail (IMN) fixation.
 - Subtrochanteric: Internal fixation with a long IMN, with fixation into the femoral head.
- *Femur*
 - Proximal and mid-shaft: Internal fixation spanning the entire femur, with fixation into the femoral head. Consideration for supplemental fixation as needed.
 - Distal: Internal fixation (plate or IMN, or plate and IMN in combination).
- *Tibia/Fibula*
 - Proximal/mid-shaft: Internal fixation or external fixation (consideration for a circular fixator).