

**Management of Complex Orthopaedic Trauma:
Is the Balance Shifting Away from Level I Trauma Centers?**

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Purpose: Recent years have shown an increase in the amount of fellowship-trained orthopaedic trauma surgeons. Many of these surgeons practice in Level II and III hospitals. The benefit of Level I centers to patient care is well recognized. However, we hypothesized that in the past decade the treatment of complex trauma and fracture care has shifted from Level I trauma centers to community Level II and III centers, reflecting, perhaps, the increase in fracture management expertise in these centers.

Methods: Data from the National Trauma Data Bank (NTDB) collected between 2002-2012 was analyzed. Level I, II, and III trauma center admission rates for complex fractures were recorded. A total of 250,912 fractures were included in the analysis.

Results: Between 2002 and 2012 Level I hospitals trended to treat less femoral neck fractures, femoral, and tibia shaft fractures, open fractures, and pelvis and acetabulum fractures. This trend was smaller for open, calcaneus, and talus fractures. Rate of complications for non-Level I trauma centers has decreased since 2002. Compared to 2002, in 2012 complication rates at non-Level I trauma centers decreased by 40% for pelvis and acetabulum fractures, 22% for femur fractures, 80% for tibia fractures, and 76% for femoral neck fractures in patients <50 years old. The percent of cases treated in non-Level I centers in 2012 versus 2002 is shown in the figure.

Conclusion: The trauma systems that are shaping in recent years are showing a shift of treatment of some complex fractures from Level I to Level II and III centers. This trend may influence the optimal training environment for residents, and the optimal practice environment for orthopaedic traumatologists.

