

Presenting Author: Eugenia Ayrian, MD  
Institution: University of Southern California  
Address: 1500 San Pablo St  
Los Angeles, CA 91206

Email: [eyarian@med.usc.edu](mailto:eyarian@med.usc.edu)

Contributing Authors: D. Arnaudov, MD  
J. Laney, MD  
P. Roffey, MD  
S. Sugeir, MD  
T. Tran, MD  
C. Varner, MD  
K. Vu, MD  
V. Zelman, MD  
J. Liu, MD

**Abstract Title: Reduction in ICU and Hospital Stay as a Result of a Structured Approach to Perioperative Care for Patients Undergoing Complicated Spine Surgery. Preliminary results.**

**Introduction:** In April 2015, a new perioperative protocol for patients undergoing complicated spine procedures was implemented. Combined Anesthesiology/Neurosurgery/orthopedic spine/ICU physicians biweekly meetings were established, the preoperative and intraoperative management protocol was implemented, and transfer of care to the ICU with protocol for postoperative management of patients in the ICU was structured. The establishment of perioperative pathways led to a decrease in ICU and hospital stays, and a decrease in the frequency of postoperative complications.

**Methods:** Patients have been selected to be a part of perioperative protocol according to following criteria: surgery involving more than 6 levels, surgical timeline more than 6 hours, predicted blood loss more than 2 liters, combined anterior and posterior approach, staged procedure, classified as high risk by the spine surgeon, patients with significant co-morbidities and are of advanced age.

**Results:** 45 charts were reviewed, 12 patients were treated before, and 33 were treated after protocol implementation. Considering the exclusion of one of the patients after protocol implementation, who developed an unusual complication of pseudomonas aspiration pneumonia and was held in ICU for 56 days and in the hospital for 85 days, the mean length of ICU stay after implementing the protocol decreased from 7.58 to 5.03 with an 85% confidence level. The mean length of Hospital stay was decreased from 16.83 to 11.56 with an 80% confidence level. The decrease of postoperative complications rate was also observed. The postoperative course was accompanied by complications in 7 patients out of 12 before protocol implementation, where after protocol implementation, only 5 patients out of 33 developed postoperative complications.

**Conclusions:** The implementation of structured, combined anesthesia/neurosurgery/ICU care led to decrease in ICU as well as total hospital stays, and a decrease in the frequency of postsurgical complications.