

## Abstract

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Postoperative recovery protocols with shorter lengths of stay are associated with lower surgical complication rates among patients undergoing radical prostatectomy and partial nephrectomy

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### Objectives:

We tested the hypothesis that the standard length of stay (sLOS) for postoperative recovery protocols is associated with surgical complications.

### Methods:

The study cohort included patients undergoing elective radical prostatectomy (RP) and partial nephrectomy (PN), 2003-2015, in the Premier Healthcare Database, a United States all-payor hospital-based database. We focused on RP and PN because of the relative homogeneity regarding procedure complexity, tumor burden, and patient performance condition. We defined sLOS, for each hospital and procedure, by calculating the median hospital stay (days) for patients without any surgical complications. Using multivariable analyses for each procedure, we applied hospital-specific sLOS to patients, both with and without complications, to determine the association between the sLOS and the following outcomes: 90-day high rate of 1) any complications (>20% Clavien 1-5), 2) major complications (>5% Clavien 3-5) and 3) readmission (>10%). Sensitivity analysis was performed by limiting the cohort to patients from high volume hospitals (top 50% of annual case volume).

### Results:

For RP, there were 137,638 patients with an overall median LOS of 2 days (IQR 1-3 days) and, for PN, there were 23,937 patients with an overall median LOS of 3 days (IQR 2-4 days). The adjusted analyses revealed that hospitals with a reduced sLOS had fewer surgical complications: each additional day in the hospital increased the odds for a 90-day high rate of any complications (RP: OR=1.66,  $p<0.001$ ; PN: OR=1.15,  $p=0.001$ ) and major complications (RP: OR=1.31,  $p<0.001$ ; PN: OR=1.13,  $p=0.005$ ). There was no association between sLOS and 90-day readmission. These results were robust in the sensitivity analysis analyzing only high-volume hospitals.

### Conclusions:

Shorter sLOS for elective RP and PN is associated with fewer postoperative complications and no difference in readmission. These findings suggest adopting recovery protocols that minimize hospital stay improves health outcomes.

### References:

