I. INTRODUCTION
Fluoroscopy is central to diagnostic and therapeutic procedures in Urology. Strategies to reduce exposure often focus on limiting fluoroscopy time and beam quality, however, patient positioning and orientation of the team may also play a role.

II. OBJECTIVE
The objective of this study was to compare the radiation exposure to the surgical team during supine and prone positions with common C-arm configurations.

III. METHODS
Bench top experiment was conducted using:
- Siemens C-arm (OEC 9900 Elite)
- Anthropomorphic model (80kg human torso)
- 180cc ionization chamber (RadCal Accu Gold Touch)

Direct measurement of radiation scatter (mR/min) at the level of (i) EYES and (ii) GONADS, using beam quality settings (i) LOW and (ii) HIGH DOSE were measured for each member of the surgical team:
- Anesthesiologist
- Radiation technologist
- Scrub nurse
- Urologist

C-arm positions included:
- (i) AP, (ii) 15° oblique, (iii) AP with torso in 150° decubitus,
- (iv) lateral with torso in 150° decubitus

Dose reduction interventions (during lateral orientation)
1. C-Arm OVER the patient, or UNDER the table
2. Urologist opposite to image intensifier or on the same side

IV. RESULTS
Surgeons receive the highest radiation exposure during PCNL.

Lateral C-Arm orientation represented the greatest exposure with an average dose increase by 6.49 to 21.13 times compared to oblique and AP configuration, respectively.

Dose Reduction Strategies:
- Positioning team opposite to the image intensifier reduced exposure by 3.1 to 3.6 times.
- Rotating C-arm over the table, compared to under the table during lateral orientation, reduced exposure by 1.5 times.

V. CONCLUSIONS
Radiation is of increasing concern and current guidelines do not recommend physical strategies for dose reduction.

This study highlights the ability for a surgical team to drastically alter radiation exposure by considering position as part of the contributing factors.

Knowing relative exposure increases may empower surgeons to alter their set up and surgical technique to accomplish similar tasks while minimizing scatter during prone and supine PCNL.