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## ADDITIONAL ABSTRACTS

## ET005

### Scattered Radiation and Exposure Dose Mapping of Micturating Cystourethrogram and Barium Swallow in the Fluoroscopy Room: A Phantom Study

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**Introduction:** Scatter radiation is inevitable in fluoroscopy procedures, particularly interventional fluoroscopy procedures. Proper awareness of positioning within the fluoroscopy room is crucial to minimizing radiation exposure. This study aims to map the distribution of scattered radiation and determine exposure levels during pediatric Micturating Cystourethrogram (MCUG) and Barium Swallow procedures at the Radiology Department of Hospital Sultan Abdul Halim (HSAH). **Methods:** Scattered radiation levels were measured using survey meters placed around a water phantom. Measurements were taken at eight angles (0°, 45°, 90°, 135°, 180°, 225°, 270°, and 315°) and two distances (0.5 m and 1.0 m) from the phantom. The height of the fluoroscopy table was kept constant. A total of 48 positions were assessed, with each measurement repeated three times to determine the mean and standard deviation of scatter doses. The data was placed into the initial sketch of the distances and angles of the survey meter accordingly. **Results:** Statistical analysis revealed that both the angle and distance of the survey meter significantly influenced scatter radiation levels ($p < 0.05$). There is no significance between the two variables, indicating their independent effects on scatter radiation dose. The lowest radiation levels were recorded at the 315° angle and 1.0 m distance from the phantom, suggesting this position is safest for staff during both procedures. **Conclusions:** Scatter radiation levels vary based on position in the fluoroscopy room. Mapping dose distribution helps identify safer zones, guiding staff to minimize radiation exposure during MCUG and Barium Swallow procedures**.**

**Keywords:** scattered radiation, mapping dose, fluoroscopy, micturating cystourethrogram, barium swallow