AbstractID: 13167 Title: Implementation of a Quality Assurance Program for Interventional Radiography (IR): Methodology for Flagging Patient Cases based on Time and Dose Analysis

Purpose: Distributions of fluoroscopic time and air kerma for IR cases are analyzed to determine procedure averages and standard deviations as well as procedure dose outliers. Physicians and physicists establish time and dose threshold values that trigger a QA loop, with the aim of lowering the population dose average per procedure. **Method and Materials:** Procedure time and frontal and lateral air kerma (FAK, LAK) from flat-panel angiographic systems are recorded into a Cardiology Information Management System (CIMS) by radiology technologists. Caveats of the reporting include accurate transcription from the imaging system to the CIMS and the total dose includes fluoroscopy, cine runs, and any 3D/CT angiography. A quarterly report with procedure type, date, accession number, time, FAK, and LAK is sorted by procedure type with data excluded if more than five standard deviations above the respective means. These points are removed from analysis but flagged for QA to determine inaccuracy in reporting or a complication in procedure. An adjusted average and standard deviation of the time and dose is calculated and compared to previous quarters. Cases with time or dose greater than the established threshold values for their respective procedures are also flagged for QA review. The averages, standard deviations, and flagged data are presented at monthly QA meetings with the goal of providing continual evaluation of population doses per procedures. **Results:** QA time and dose threshold values are set per procedure type at the mean plus two standard deviations. The time and dose averages of arterial intervention, GI procedures, GU procedures and vascular access procedures are 12.8±8.5, 2.0±1.3, 5.2±4.4 and 2.1±1.7 minutes and 1.32±1.26, 0.022±0.015, 0.095±0.147, and 0.028±0.026 Gy, respectively. **Conclusion:** Ongoing knowledge of time and dose distributions for IR procedures allows QA teams to recognize procedure dose outliers and trends and therefore modify practice to ensure ALARA doses.