Purpose: To explore recent advances in available dose metrics and dose reduction features and their impacts during various fluoroscopy procedures.

Methods: Besides traditional dose metrics (cumulative dose, DAP, etc), recent methods such as real time dose mapping and dose calculation from DICOM information and their relevance to entrance skin exposure (ESE) are demonstrated. Dose reduction features and their potential effects on ESE are explored for different interventional procedures, including dose setting options, frame rate settings, wedges, software options and how these help reduce patient dose, etc. Real time dose monitoring techniques such as DoseAware are investigated. Dose alert such as flagging higher doses at about half of the Joint Commission sentinel event limit, Dose Index Registry and their impacts are discussed. Habit related practices, such as a physician leaning over patients, are highlighted, also taking foot off the fluoroscopy pedal when not needed, and best places to stand are illustrated. A practice improvement procedure involving measurement, analysis and improvement actions is instituted. We also discuss the impact of physician follow up letters to patients who might not have reached the JC Sentinel Event limits but may still have skin issues.

Results: In our institutes, these efforts have led to reduction of both patient dose and personnel exposure for interventional procedures. The recording of technical parameters and fluoroscopy dose by the staff has led to a better understanding of appropriate dose levels and technique settings for each procedure.

Conclusions: This article can serve as a refresher for radiological staff on how to protect patients and themselves from high doses, while providing the best care possible. It can also serve as criteria for health care providers to institute changes and make quality improvement in interventional practices.