

Records of radiation exposure with fluoroscopic guided interventional (FGI) exposures commonly include fluoroscopy duration, KAP, cumulative AK at the RP but may or may not include fluoroscopic exposure location information. Newer equipment use DICOM Radiation Dose SR (RDSR) which if coupled with simulation tools can re-create an entire exposure history to calculate patient skin dose distributions and locate the regions of peak skin dose (PSD). A software tool will be described that automatically captures RDSR data to a database. A separate physicist screen (web enabled or laptop) provides prompts to set up a new or upgraded FGI lab. This task would be similar to acceptance testing a complex imaging device. This activity permits corrections for vendor specified AK at the RP, inclusion of backscatter factors, table and pad attenuation, specifying distance from the x-ray tube, field size corrections, patient positioning (supine or prone, left or right sided, head or feet first), table movement, patient location on the table and field shape. Other fields that address QA are set by the physicist and include the list of authorized users, email alerts and action levels. A separate technologist web screen is used for each patient to choose a correct simulated patient size, positioning on the table and the individuals performing the procedure. At the end of the procedure the technologist receives a record of skin dose mapping, including an Alert if the reference values are exceeded. As the data are stored in the DICOM Tracker database, a number of QA tools can be applied including the ability monitor individual types of procedures and fluoroscopists comparative values. For legacy FGI equipment (having some, but not all of the required DICOM fields) it is possible to estimate PSD by making assumptions about the proportion of fluoroscopic exposure relative to acquisitions (digital spots and cine).