AbstractID: 8758 Title: Entrance Skin Dose Using Dose-Area Product Measurements: Application To A Cardiac Catheterization Laboratory.

A new method to determine the entrance skin dose (ESD) from dose-area product (DAP) measurements is presented. Measurements of the ESD and DAP are performed at different kVp and mAs value for different field sizes. The results are used to derive calibration curves in the range of 50-120 kVp giving the ESD/DAP as a function of DAP/mAs. This is done to eliminate the field size parameter in a subsequent attempt to convert the DAP reading into ESD. The calibration curves are independent of the mAs and are found to be best fitted with a sum of two exponential decays. The average calibration curve is hen used in an investigation of 31 patients undergoing a cardiac catheterization procedure to determine the ESD from the DAP reading. It is found that the maximum ESD (ESD_{max}) is a good approximation of the ESD. Being independent of mAs and field size and varying linearly with the raw DAP reading, ESD_{max} has the potential to be very useful in fluoroscopically guided procedures.