Hysterosalpingography (HSG) is a radiological examination of the female reproductive system that comprises visualisation of the uterine cavity and the fallopian tubes including its patency. Optimisation of patient dose is particularly requested since it concerns relatively young women with a wish for pregnancy. Aim of this study was to evaluate patient dose during a change from a conventional screen-film unit (Siemens Pantoscop 3) to a digital unit (Philips Diagnost 76). On the conventional unit radiography tube voltage was set manually. On the digital unit two strategies for technique selection were evaluated; in automatic mode fluoroscopy and radiography parameters are all set automatically, in manual mode fluoroscopy parameters and radiography tube voltage were set manually. For all three situations dose area products (DAP) were measured. By means of Monte-Carlo calculations DAP was converted into organ dose and effective dose.

For the conventional unit mean DAP was 1.65 Gy.cm<sup>2</sup> (fluoroscopy 63%, n=73), for the digital unit 1.32 Gy.cm<sup>2</sup> (fluoroscopy 66%, n=19) and 0.59 Gy.cm<sup>2</sup> (fluoroscopy 43%, n=24) for automatic and manual mode respectively. Estimated effective doses are 1.0 mSv, 0.8 mSv and 0.4 mSv, with ovaries contributing for more than 60%.

Implementation of digital radiography for HSG resulted in a reduction of 20% for effective dose when automatic mode was used. Further dose-optimisation was achieved by manual selection of higher kVp and lower mA and resulted in an overall reduction of 60%. These low dose settings should be implemented in the automatic brightness and exposure control.