

RESULTS OF A EUROPEAN DOSE SURVEY FOR MAMMOGRAPHY

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In order to comply with European regulations, every screening unit for mammography should regularly be the subject of a patient dose study. In Belgium this must happen every three years. The doses that are found must be compared to an appropriate diagnostic reference level (DRL) which indicates the border between normal and bad practice for a typical procedure in a typical patient. Complementary to this investigation are technical dose measurements on a representative phantom during the yearly quality check. We have extended our regional survey to include also data of our Sentinel partners. For the first time, both film-screen and digital mammography systems are studied. To gather the necessary data, we have sent an announcement to all mammography centres that are part of our quality assurance network and to our European partners in the Sentinel project. A dedicated questionnaire and a data input file were available on our website. The first part addresses the medical physicist (to complete tube output, filtration, ...). The second part is intended for radiographers and asks for exposure factors of 50 screening patients and the system choices for various slabs of PMMA. For some digital mammography systems, dose data could be automatically retrieved from the DICOM header of the images.

The digitally collected data could be imported immediately in a new version of our quality assurance software QAMPR. The patient dose distribution and the local DRL derived from these data are thus extra parameters of a mammography unit.

This study will include the first digital systems that are just being approved for screening in Belgium. This project is necessarily still in a work-in-progress stage. Together with data of the digital systems of our Sentinel partners, we will get preliminary results regarding the relationship between the doses used for digital and conventional mammography.

With a large fraction of mammography units (like most digital units) operating with other anode/filter combinations than Mo/Mo, we hope to reconfirm earlier findings that predict a correlation between patient dose and phantom dose measurements. More specifically we will determine whether a centre which exceeds the DRL calculated for the exposure of a PMMA phantom also exceeds the clinical DRL with a certainty of better than 95%.

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