CHANGING FROM IMAGE INTENSIFIER TO FLAT DETECTOR TECHNOLOGY - PRACTICAL EXPERIENCE FROM THE NATIONAL INTERVENTIONAL CARDIOLOGY CENTRE IN LUXEMBOURG

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The National Interventional Cardiology Institute of Luxembourg (INCCI) has moved in 2003 from the Image Intensifier towards the Flat Detector technology. A new image receptor chain is promising a better image quality as well as dose reduction during the interventional techniques. A small-scale internal audit has been used in order to evaluate the impact of the use of flat panel detectors in the clinical routine of interventional cardiology. The areas involved were:

- The clinical protocols used by the interventional cardiologists during their clinical practice
- The acceptance and constancy checking of the system
- The evaluation of patient doses. Patient KAP values were collected for three of the most commonly used interventional procedures, for the period before and after the installation of the flat panel detector.

Through this work it was concluded that the clinical protocols used with the Flat Detector system have not been adapted to any special requirements. The interventional cardiologists continue to work on the same clinical protocols as before. The initial characterisation of the Flat Detector system as well as its constancy throughout time is still evaluated via the same protocols as for the Image Intensifier systems, due to lack of specialised protocols. The collection and comparison of the patient's Kerma Area Product values, for the three examinations studied, showed a net reduction for the Flat Detector system as compared to the Image Intensifier one. The initial set-up of the system as well as the default values installed by the service engineer provoked this reduction of dose since fluoroscopy modes and radiation curves were programmed to be by default as low as reasonably possible. New technical evaluation protocols are still needed in order to test the performance of the new imaging chain. Added to that, the continuing education of the personnel as well as the valuable help of a specialised service engineer can assure the conception of good image quality interventional practice as well as the radioprotection of patient and medical staff.

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