MED SQUARE

JFR PARIS 13-16 OCT. 2017

The new features of the DACS

RADIATION DOSE MONITOR (RDM)

AUTOMATIC DOSE REPORT

- Automatic and customized report sent directly to the person concerned
- Two different reports (in compliance with the 2013/59/Euratom directive):

a. Statistical Report modalities and/or procedures

- Percent of conformity per Dosimetry Type
- Dose range per Dosimetry Type
- Alerts Distribution
- Dosimetry Evolution per Dosimetry type
- Dose comparison per patient BMI

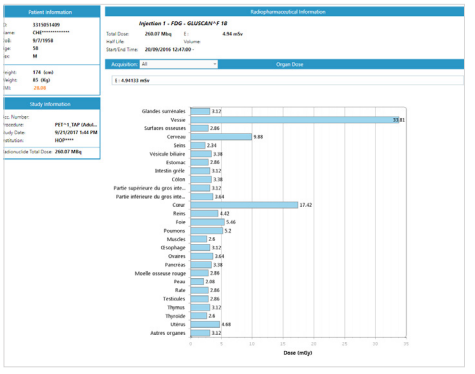
b. Patient Report

- Patients general demographics
- Alerts – patient level
- Alerts – study level
- Statistics – patient care (justification, reassignation, etc.)

ORGAN DOSE

NUCLEAR MEDECINE

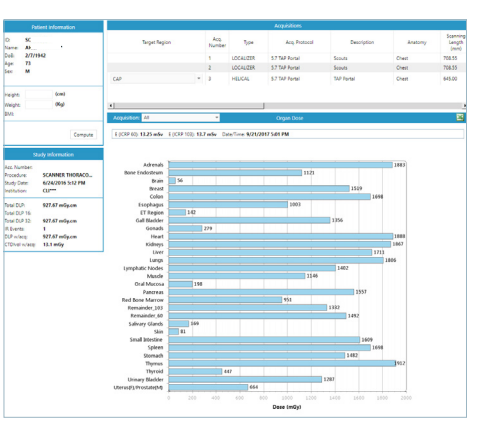
- Calculation of the effective dose based on the ICRP-106 and ICRP-128, including management of pediatrics
- Calculation based on the radiopharmaceutical
- Multiple injection support (e.g., Exercise testing: at rest and after effort)



SCANNER

Partnership with Virtual Phantoms for the integration of the organ dose module into the DACS RDM solution

- Monte Carlo algorithm calculation of mean doses delivered to organs by type of activity using existing dose data (DLP, CTDI, etc.)
- Estimation of the dose received by the fetus from the different stages of gestation of the pregnant woman
- Several parameters are considered: weight, height, age, pregnancy stages of the pregnant woman, etc.
- Calculation in accordance with ICRP-103 recommendations



EFFECTIVE DOSE

NUCLEAR MEDECINE

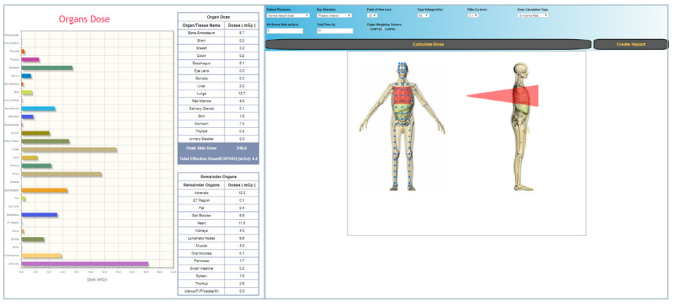
- Calculation of the effective dose based on the ICRP-106 and ICRP-128, including management of pediatrics
- Calculation based on the radiopharmaceutical
- Multiple injection support (e.g., Exercise testing: at rest and after effort)

SCANNER

- Calculation by acquisition of the effective dose
- Calculation based on the ICRP-103 and ICRP-60

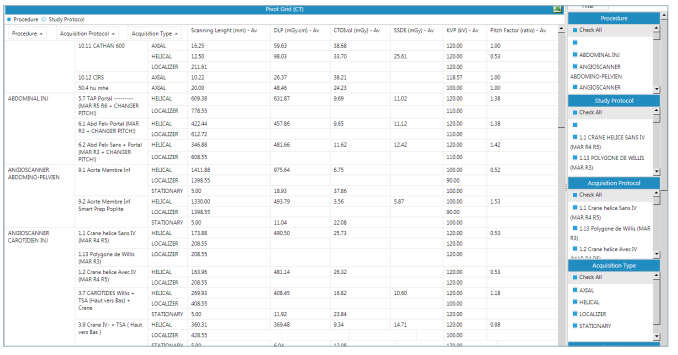
SIMULATION TOOLS

- Organ dose and effective dose in scanner
- Organ dose, effective dose and Peak Skin Dose in interventional imaging



PIVOT TABLE

- Creation of dynamic pivot tables, based on the different categories of the RDM solution, which can be created in a few clicks:
  - Age
  - Procedures
  - Acquisition Protocols
  - Acquisition Types
  - Anatomical Regions
  - Institutions
  - Stations
  - Etc.
- Ability to have synthetic tables, which facilitate the interpretation and relevance of the dose data
- Ability to analyze and perform quick statistics
- Export dose data in 1 click in Excel format



LATEST NEWS AT JFR 2017

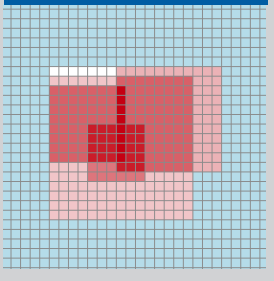
- Peak Skin Dose (PSD) study: publication of the first results
- Four hospitals of the AP-HP group are currently conducting a study to validate the new feature of skin dose mapping. The RDM solution will hence be compared with experimental measurements using Gafchromic® films – first performed on anthropomorphic phantom, and then on patients in routine clinical conditions.The following experts have validated this study:
  - Jad FARAH, medical physicist, University Hospital of Le Kremlin-Bicêtre
  - Bouchra HABIB-GERYES, medical physicist, University Hospital of Necker Enfants-Malades
  - Lama HADID-BEURRIER, medical physicists, Hospital of Lariboisière
  - Marie-Joséphine WARYN, medical physicist, Hospital Jean-Verdier

First results of the Peak Skin Dose (PSD) study

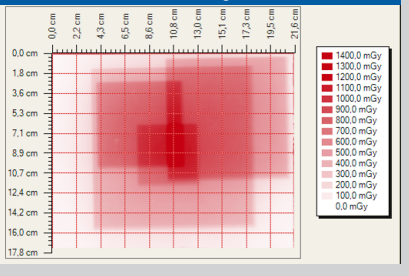
On average, there is less than 10% difference between RDM's solution and the measurements using Gafchromic® films. These results will be presented by Bouchra HABIB-GERYES, medical physicist, University Hospital of Necker Enfants-Malades during JFR 2017.

CALCULATION OF THE PEAK SKIN DOSE (PSD)

With RDM



With measurements using Gafchromic® films



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