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Technologists Poster Session 4

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A software for automatic calculation of EAMN paediatric dosage card

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Introduction: Jacobs *et al*. proposed the use of three tracer-dependent dosage cards for paediatric nuclear medicine (Optimised tracer-dependent dosage cards to obtain weight-independent effective doses. Eur J Nucl Med Mol Imaging 2005;32:581-8). Based upon this work, the EANM dosimetry and paediatrics committees introduced a condensed and revised version of this dosage card (Eur J Nucl Med Mol Imaging 2007;34:796-798) for major nuclear medicine paediatric diagnostic procedures, replacing the previous card by Piepsz *et al*. and including a set of minimum activities. The disadvantage of this approach is an increased complexity concerning the activity calculations. **Objective**: To overcome the complexity of the new EAMN paediatric dosage card by developing a software, where the user could enter the patient weight and the radiopharmaceutical for automatic calculation of paediatric dosage of radiopharmaceuticals, according to EAMN 2007 paediatric dosage card. **Materials and methods**: Briefly, the new EAMN dosage card calculates the administered activity by multiplying a baseline activity by different multiples for the three clusters A, B and C (the recommended radiopharmaceutical class): $A[MBq]_{Administered}$ = Baseline Activity × Multiple; where A [MBq]Administered denotes the activity to be administered (in MBq), and Baseline Activity and Multiple are weight- and radiopharmaceutical-dependent factors to be used for the calculation of the activity to administered. The baseline activity equals the activity to be administered to a child weighing 3 kg. If the resulting calculated activity is smaller than the minimal recommended activity, the minimum activity should be administered. For developing a software incorporating the features of this new EANM paediatric dosage card we have used Visual Basic 6.0. **Results**: We have developed a new software to calculate paediatric dosage of radiopharmaceuticals according to latest EAMN paediatric dosage card, with an easy-to-use interface that makes the calculation complexity completely hidden for the user, saving you the time that you previously spent on these laborious calculations and reducing the risk of error. This software is freely available at http://serfa.radiofarmacia.org/?m=4. **Conclusion**: As a result of this new software, the user will get the activity to be administered easily according the latest EAMN paediatric dosage recommendation. In addition, the introduction of minimum activities guarantees a minimum standard of image quality throughout Europe, thus avoiding a variety of administered activities in children of the same weight in different countries, which was the case when using the previous EANM dosage card.

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