

AbstractID: 13040 Title: A Web-Based Radiopharmaceutical Dosimetry Calculator

Purpose: The growing interest in patient doses has led to more frequent requests for estimates of the dose imparted to patients by nuclear medicine procedures. A Web-based computer application has been developed to facilitate timely response to such requests and to enable easy access to dosage-specific dose estimates within our institution.

Method and Materials: This system consists of two programs written in the Java programming language. The first is a Java application that is a graphical editor to produce dosimetry data files formatted in the Extensible Markup Language (XML). The dosimetry data files for a wide variety of radiopharmaceuticals have been derived from ICRP 53, ICRP 80, and CR-6345 data tables, Russell's and Stabin's fetal dosimetry estimates, package inserts and OLINDA outputs. The second program is a Java applet that takes as input the administered activity and presents a table of doses to the organs specified in the dosimetry data file. The user may then produce a report with a variety of optional information, such as patient- or study-specific details, and save it as an HTML-formatted document for printing or as a comma-separated-value (CSV) formatted file for importing into a spreadsheet program. The Java applet may be served within a stand-alone Web page or embedded in a Web page such as one from an electronic procedure manual.

Results and Conclusion: This application enables the user to access the dose calculator from any Java-enabled Web browser in our institution and quickly and easily to produce radionuclide internal dosimetry estimates that are specific to a patient's administered activity.