DICOM Correction Item

Correction Number	CP-530

Log Summary: Clarifications to PET IOD	

Type of Modification	Name of Standard
Enhancement	PS 3.3 2004

Rationale for Correction
Working Group 3 has determined that there are ambiguities in the PET IOD that have lead to compatibility issues between various real world implementations. This CP is intended to rectify these problems. 1) In the existing PET IOD there is a radiopharmaceutical start time, but no corresponding start date. This can cause confusion when the procedure spans the date change at midnight. Addition of new attributes for the radiopharmaceutical start and stop date is proposed. 2) Both the NM and PET IODs include the same Radionuclide Total Dose attribute. However, in the NM IOD it is specified in MBq, but in the PET IOD it is specified in Bq. Several implementations have missed this distinction. To help clarify this, a note is added to call attention to the difference. 3) The explanation in PS3.3, section C.8.9.1.1.3 Units, implies that the units apply to the stored pixel value (SV) data in Pixel Data (7FE0,0010). This is not correct, and other definitions in the PET IOD, such as those for Rescale Slope (0028,1053) and Rescale Intercept (0028,1052), make it clear that the units are meant to apply to pixel values after conversion. The text in section C.8.9.1.1.3 is modified to clarify this. The existing Radiopharmaceutical Start and Stop Time attributes are not retired, since they are already in widespread use in the installed base, but a note is added to explain the preference for use of the new attributes.

Sections of documents affected
PS 3.3 Sections PS 3.6 Sections 6

Correction Wording:

> **Add the following line to PS3.3, section C.8.9.2 PET Isotope Module**

Table C.8-61 - PET ISOTOPE MODULE ATTRIBUTES

Attribute Name	Tag	Type	Attribute Description
…	…	…	…
>Radiopharmaceutical Start Time	(0018,1072)	3	Time of start of administration. The actual time of radiopharmaceutical administration to the patient for imaging purposes, using the same time base as Series Time (0008,0031). **The use of this Attribute is deprecated in favor of Radiopharmaceutical Start Datetime (0018,1078).** **Note: The use of a time alone can cause confusion when the procedure spans midnight.**
> Radiopharmaceutical Start Datetime	**(0018,1078)**	**3**	**Date and time of start of administration. The actual date and time of radiopharmaceutical administration to the patient for imaging purposes, using the same time base as Series Time (0008,0031).**
>Radiopharmaceutical Stop Time	(0018,1073)	3	Time of end of administration. The actual ending time of radiopharmaceutical administration to the patient for imaging purposes, using the same time base as Series Time (0008,0031). **The use of this Attribute is deprecated in favor of Radiopharmaceutical Stop Datetime (0018,1079).** **Note: The use of a time alone can cause confusion when the procedure spans midnight.**
> Radiopharmaceutical Stop Datetime	**(0018,1079)**	**3**	**Date and time of end of administration. The actual ending date and time of radiopharmaceutical administration to the patient for imaging purposes, using the same time base as Series Time (0008,0031).**
> Radionuclide Total Dose	(0018,1074)	3	The radiopharmaceutical does administered to the patient measured in Becquerels (Bq) at the Radiopharmaceutical Start Time (0018,1072). **Note: In other IODs, such as the NM IOD, this same attribute is specified in MegaBecquerels**

			(MBq).
…	…	…	…

Modify PS3.3, section C.8.9.1.1.3 Units

C.8.9.1.1.3   Units

The ~~pixel value~~ units of the **pixel values obtained after conversion from the stored pixel values (SV)** (Pixel Data (7FE0,0010)**) to pixel value units (U), as defined by Rescale Intercept (0028,1052) and Rescale Slope (0028,1053).** Defined Terms:

Add the following attributes to Part 3.6, Section 6

Tag	Name	VR	VM
....	....	....	....
(0018,1078)	**Radiopharmaceutical Start Datetime**	**DT**	**1**
(0018,1079)	**Radiopharmaceutical Stop Datetime**	**DT**	**1**