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DICOM Correction Proposal

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|---------------------|-----------------|
| STATUS | Letter Ballot |
| Date of Last Update | 2024/08/24 |
| Person Assigned | Kevin O'Donnell |
| Submitter Name | Kevin O'Donnell |
| Submission Date | 2023/10/26 |

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| | |
|---|---------|
| Correction Number | CP-2370 |
| Log Summary: Orientation guidance for vertical CT gantries | |
| Name of Standard PS3.3, PS3.17 | |
| <p>Rationale for Correction:</p> <p>Most CT gantries have a bore with a horizontal axis and a patient table that moves horizontally in and out of the bore from one side. The usage of attributes relating to patient orientation and couch movement are well understood in this configuration.</p> <p>CT Gantry designs exist where the bore is vertical, the patient stands or is seated in the middle of the bore, and the gantry moves up and down to scan the patient. This CP provides guidance on the usage of related attributes in this configuration.</p> <p>It is desirable that images from vertical gantries be labeled appropriately when presented by naïve image displays that have not been specifically coded to consider such gantries.</p> <p>This CP adds the Enhanced Patient Orientation Module at the Image level.</p> <p>Note:</p> <p>Patient Position (0018,5100) exists at the Series level (in the General Series Module).</p> <p>In terms of the attributes in Table 10-15 and 10-15a,</p> <ul style="list-style-type: none">• Nuclear Medicine Image IOD and PET Image IOD include the NM/PET Patient Orientation Module at the Series level.• X-Ray 3D Angiographic Image IOD, X-Ray 3D Craniofacial Image IOD, Breast Projection X-Ray Image IOD, and Enhanced RT Image IOD include these attributes at the Image level.• A variety of other RT objects include these attributes at the image/instance level. <p>It is undesirable for the same attribute to exist at different levels in the information hierarchy, but that situation already exists. This CP follows the majority of the IODs.</p> | |
| Correction Wording: | |

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Modify attribute description in PS3.3 Table 10-15 as shown to match the attribute name and the referenced explanation.

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Table 10-15. Patient Orientation Macro Attributes

| Attribute Name | Tag | Type | Attribute Description |
|----------------|-----|------|-----------------------|
| ... | | | |

| Attribute Name | Tag | Type | Attribute Description |
|---|-------------|------|--|
| Patient Gantry Relationship Code Sequence | (0054,0414) | 3 | Description of the orientation of the Patient with respect to the gantryhead of the table . See Section C.8.4.6.1.3 for further explanation. Only a single Item is permitted in this Sequence. |

Modify PS3.3 A.1.4 tables (not shown) to reflect the IOD Module changes that follow

Add the Enhanced Patient Orientation Module to the CT Image IOD

A.3.3 CT Image IOD Module Table

...

Table A.3-1. CT Image IOD Modules

| IE | Module | Reference | Usage |
|-------|-------------------------------------|-------------------------|----------|
| ... | | | |
| Image | General Image | C.7.6.1 | M |
| | General Reference | C.12.4 | U |
| | Enhanced Patient Orientation | C.7.6.xx | U |
| | Image Plane | C.7.6.2 | M |
| | ... | | |

Add the Enhanced Patient Orientation Module to the Secondary Capture Image IOD

A.8.1.3 Secondary Capture Image IOD Module Table

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Table A.8-1. Secondary Capture Image IOD Modules

| IE | Module | Reference | Usage |
|-------|-------------------------------------|-------------------------|----------|
| ... | | | |
| Image | General Image | C.7.6.1 | M |
| | General Reference | C.12.4 | U |
| | Enhanced Patient Orientation | C.7.6.xx | U |
| | Image Plane | C.7.6.2 | M |
| | ... | | |

Add the Enhanced Patient Orientation Module to the Multi-frame Single Bit Secondary Capture Image IOD

A.8.2.3 Multi-frame Single Bit Secondary Capture Image IOD Module Table

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Table A.8-2. Multi-frame Single Bit Secondary Capture Image IOD Modules

| IE | Module | Reference | Usage |
|-----|--------|-----------|-------|
| ... | | | |

| | | | |
|-------|-------------------------------------|-------------------------|-----------------|
| Image | General Image | C.7.6.1 | M |
| | General Reference | C.12.4 | U |
| | Enhanced Patient Orientation | C.7.6.xx | <u>U</u> |
| | Image Pixel | C.7.6.3 | M |
| | ... | | |

Add the Enhanced Patient Orientation Module to the Multi-frame Grayscale Byte Secondary Capture Image IOD

A.8.3.3 Multi-frame Grayscale Byte Secondary Capture Image IOD Module Table

Table A.8-3. Multi-frame Grayscale Byte Secondary Capture Image IOD Modules

| IE | Module | Reference | Usage |
|-------|-------------------------------------|-------------------------|-----------------|
| ... | | | |
| Image | General Image | C.7.6.1 | M |
| | General Reference | C.12.4 | U |
| | Enhanced Patient Orientation | C.7.6.xx | <u>U</u> |
| | Image Pixel | C.7.6.3 | M |
| | ... | | |

Add the Enhanced Patient Orientation Module to the Multi-frame Grayscale Word Secondary Capture Image IOD

A.8.4.3 Multi-frame Grayscale Word Secondary Capture Image IOD Module Table

Table A.8-4. Multi-frame Grayscale Word Secondary Capture Image IOD Modules

| IE | Module | Reference | Usage |
|-------|-------------------------------------|-------------------------|-----------------|
| ... | | | |
| Image | General Image | C.7.6.1 | M |
| | General Reference | C.12.4 | U |
| | Enhanced Patient Orientation | C.7.6.xx | <u>U</u> |
| | Image Pixel | C.7.6.3 | M |
| | ... | | |

Add the Enhanced Patient Orientation Module to the Multi-frame True Color Secondary Capture Image IOD

A.8.5.3 Multi-frame True Color Secondary Capture Image IOD Module Table

Table A.8-5. Multi-frame True Color Secondary Capture Image IOD Modules

| IE | Module | Reference | Usage |
|-------|-------------------------------------|-------------------------|-----------------|
| ... | | | |
| Image | General Image | C.7.6.1 | M |
| | General Reference | C.12.4 | U |
| | Enhanced Patient Orientation | C.7.6.xx | <u>U</u> |

| | | | |
|--|-------------|---------|---|
| | Image Pixel | C.7.6.3 | M |
| | ... | | |

Add the Enhanced Patient Orientation Module to the Enhanced CT Image IOD

A.38.1.3 Enhanced CT Image IOD Module Table

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Table A.38-1. Enhanced CT Image IOD Modules

| IE | Module | Reference | Usage |
|-------|-------------------------------------|-----------------|--|
| ... | | | |
| Image | Image Pixel | C.7.6.3 | M |
| | Enhanced Patient Orientation | C.7.6.xx | U |
| | Enhanced Contrast/Bolus | C.7.6.4b | C – Required if contrast media was applied |
| | ... | | |

Add the Enhanced Patient Orientation Module to the MR Image IOD

A.4.3 MR Image IOD Module Table

...

Table A.4-1. MR Image IOD Modules

| IE | Module | Reference | Usage |
|-------|-------------------------------------|-------------------------|----------|
| ... | | | |
| Image | General Image | C.7.6.1 | M |
| | General Reference | C.12.4 | U |
| | Enhanced Patient Orientation | C.7.6.xx | U |
| | Image Plane | C.7.6.2 | M |
| | ... | | |

Add the Enhanced Patient Orientation Module to the Enhanced MR Image IOD

A.36.2.3 Enhanced MR Image IOD Module Table

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Table A.36-1. Enhanced MR Image IOD Modules

| IE | Module | Reference | Usage |
|-------|-------------------------------------|-----------------|--|
| ... | | | |
| Image | Image Pixel | C.7.6.3 | M |
| | Enhanced Patient Orientation | C.7.6.xx | U |
| | Enhanced Contrast/Bolus | C.7.6.4b | C – Required if contrast media was applied |
| | ... | | |

Add the Enhanced Patient Orientation Module to the MR Spectroscopy IOD

A.36.3.3 MR Spectroscopy IOD Module Table

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Table A.36-3. MR Spectroscopy IOD Modules

| IE | Module | Reference | Usage |
|-----------------|-------------------------------------|-----------------|--|
| ... | | | |
| MR Spectroscopy | Enhanced Patient Orientation | C.7.6.xx | U |
| | Enhanced Contrast/Bolus | C.7.6.4b | C – Required if contrast media was applied |
| | ... | | |

Add the Enhanced Patient Orientation Module to the Enhanced MR Color Image IOD

A.36.4.3 Enhanced MR Color Image IOD Module Table

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Table A.36-5. Enhanced MR Color Image IOD Modules

| IE | Module | Reference | Usage |
|-------|-------------------------------------|-----------------|--|
| ... | | | |
| Image | Image Pixel | C.7.6.3 | M |
| | Enhanced Patient Orientation | C.7.6.xx | U |
| | Enhanced Contrast/Bolus | C.7.6.4b | C – Required if contrast media was applied |
| | ... | | |

Add the Enhanced Patient Orientation Module to the Enhanced PET Image IOD

A.56.3 Enhanced PET Image IOD Module Table

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Table A.56-1. Enhanced PET Image IOD Modules

| IE | Module | Reference | Usage |
|-------|-------------------------------------|-----------------|----------|
| ... | | | |
| Image | Image Pixel | C.7.6.3 | M |
| | Enhanced Patient Orientation | C.7.6.xx | U |
| | Intervention | C.7.6.13 | U |
| | ... | | |

Add the Enhanced Patient Orientation Module to the Legacy Converted Enhanced CT Image IOD

A.70.3 Legacy Converted Enhanced CT Image IOD Module Table

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Table A.70-1. Legacy Converted Enhanced CT Image IOD Modules

| IE | Module | Reference | Usage |
|-------|-------------------------------------|-----------------|----------|
| ... | | | |
| Image | Image Pixel | C.7.6.3 | M |
| | Enhanced Patient Orientation | C.7.6.xx | U |

| | | | |
|--|----------------|---------|---|
| | Contrast/Bolus | C.7.6.4 | U |
| | ... | | |

Add the Enhanced Patient Orientation Module to the Legacy Converted Enhanced MR Image IOD

A.71.3 Legacy Converted Enhanced MR Image IOD Module Table

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Table A.71-1. Legacy Converted Enhanced MR Image IOD Modules

| IE | Module | Reference | Usage |
|-------|-------------------------------------|-----------------|----------|
| ... | | | |
| Image | Image Pixel | C.7.6.3 | M |
| | Enhanced Patient Orientation | C.7.6.xx | U |
| | Contrast/Bolus | C.7.6.4 | U |
| | ... | | |

Add the Enhanced Patient Orientation Module to the Legacy Converted Enhanced PET Image IOD

A.72.3 Legacy Converted Enhanced PET Image IOD Module Table

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Table A.72-1. Legacy Converted Enhanced PET Image IOD Modules

| IE | Module | Reference | Usage |
|-----------|-------------------------------------|-------------------------|----------|
| ... | | | |
| Equipment | General Equipment | C.7.5.1 | M |
| | Enhanced General Equipment | C.7.5.2 | M |
| Image | Image Pixel | C.7.6.3 | M |
| | Enhanced Patient Orientation | C.7.6.xx | U |
| | Intervention | C.7.6.13 | U |
| | ... | | |

The Enhanced Patient Orientation Module is not added to the Nuclear Medicine Image IOD or the Positron Emission Tomography Image IOD because they already include the NM/PET Patient Orientation Module (at the Series level).

https://dicom.nema.org/medical/dicom/current/output/chtml/part03/sect_C.8.4.6.html

The NM/PET Patient Orientation Module uses the attributes of Table 10-15, makes them all Type 2 or 2C and allows Code Meaning to be Type 3 in the referenced code sequences.

Modify [C.7.3.1.1.2](#) as shown

C.7.3.1.1.2 Patient Position

Patient Position (0018,5100) specifies the positioning of the patient relative to the imaging equipment space. This Attribute is intended for annotation purposes only. It does not provide an exact mathematical relationship of the patient to the imaging equipment. **The information in Patient Position (0018,5100) is more formally modeled in the Enhanced Patient Orientation Module. See C.7.6.xx for additional detail, guidance, and discussion of vertical gantry cases.**

105 When multiple subjects are present in the same image, and arranged with different positions, then the
106 Patient Position (0018,5100) in the General Series Module is nominal, does not apply to each subject, but
107 does define the relationship of the nominal Patient-Based Coordinate System to the machine.

108 Note: In conjunction with the Patient Position (0018,5100) in each Item of the Group of Patients Identification
109 Sequence (0010,0027), Patient Position (0018,5100) in the General Series Module may be helpful to
110 compute patient-relative spatial information for each subject from the Attributes of the Image Plane
111 Module.

112 When facing the front of the imaging equipment,

- 113 • **HF** Head First is defined as the patient's head being positioned toward the front of the imaging
114 equipment (i.e., head entering the front of the equipment).
- 115 • **FF** Feet First is defined as the patient's feet being positioned toward the front of the imaging
116 equipment (i.e., feet entering the front of the equipment).
- 117 • **LF** Left First is defined as the patient's left side being positioned towards the front of the imaging
118 equipment (i.e., patient's left side entering the front of the equipment).
- 119 • **RF** Right First is defined as the patient's right being positioned towards the front of the imaging
120 equipment (i.e., patient's right side entering the front of the equipment).
- 121 • **AF Anterior First is defined as the patient's anterior being positioned towards the front of**
122 **the imaging equipment (i.e., patient's anterior side entering the front of the equipment).**
- 123 • **PF Posterior First is defined as the patient's posterior being positioned towards the front**
124 **of the imaging equipment (i.e., patient's posterior side entering the front of the equipment).**
- 125 • **P** Prone is defined as the patient's face being positioned in a downward (gravity) direction.
- 126 • **S** Supine is defined as the patient's face being in an upward direction.
- 127 • **DR** Decubitus Right is defined as the patient's right side being in a downward direction.
- 128 • **DL** Decubitus Left is defined as the patient's left side being in a downward direction.
- 129 • **V Vertical is defined as the patient's feet being positioned in a downward (gravity)**
130 **direction.**
- 131 • **I Inverted is defined as the patient's head being positioned in a downward (gravity)**
132 **direction.**

133 Defined Terms:

134 HFP Head First-Prone
135 HFS Head First-Supine
136 HFDR Head First-Decubitus Right
137 HFDL Head First-Decubitus Left
138 **HFV Head First-Vertical**
139 **HFI Head First-Inverted**
140 FFDR Feet First-Decubitus Right
141 FFDL Feet First-Decubitus Left
142 FFP Feet First-Prone
143 FFS Feet First-Supine
144 **HFV Feet First-Vertical**
145 **HFI Feet First-Inverted**
146 LFP Left First-Prone
147 LFS Left First-Supine
148 **LFDR Left First-Decubitus Right**
149 **LFDL Left First-Decubitus Left**

RFP Right First-Prone
RFS Right First-Supine
RFDR Right First-Decubitus Right
RFDL Right First-Decubitus Left
AFDR Anterior First-Decubitus Right
AFDL Anterior First-Decubitus Left
AFP Anterior First-Prone
AFS Anterior First-Supine
PFDR Posterior First-Decubitus Right
PFDL Posterior First-Decubitus Left
PFP Posterior First-Prone
PFS Posterior First-Supine

Notes

1. For quadrupeds, separate concepts for ventral and dorsal are not introduced, rather it is expected that anterior and posterior will be considered synonymous as they are when applied to the trunk.
2. In earlier versions of the standard, imaging equipment that is aligned vertically with respect to gravity was not addressed. Doing so introduced additional prone, supine, and decubitus variants, as well as vertical and inverted concepts. Older implementations might not recognize or have appropriate behaviors for those Defined Terms. See C.7.6.xx for relevant examples.
- ~~2. There are no decubitus variants of left or right first, since for imaging equipment that is aligned horizontally with respect to gravity the patient cannot be both decubitus and have the left or right side towards the front of the imaging equipment.~~
- ~~3. There are no prone or supine variants of anterior or posterior first, since for imaging equipment that is aligned horizontally with respect to gravity the patient cannot be prone or supine and have the anterior or posterior side towards the front of the imaging equipment.~~

Add section to PS3.3 to create an Enhanced Patient Orientation Module

C.7.6.xx Enhanced Patient Orientation Module

Table C.7.6.xx-1 specifies the Attributes of the Enhanced Patient Orientation Module, which describe the patient orientation with respect to gravity and equipment.

Table C.7.6.xx-1. Enhanced Patient Orientation Module Attributes

| Attribute Name | Tag | Type | Attribute Description |
|---|-----|------|-----------------------|
| <i>Include Table 10-15a "Patient Orientation And Equipment Relationship Macro Attributes"</i> | | | |

C.7.6.xx.1 Guidance for Vertical Gantries

This section provides guidance on the population of position and orientation attributes in images that were acquired on a vertical gantry. A vertical gantry is defined as one where the axis of the bore is aligned in the direction of gravity (See Table X.Y-1), while a horizontal gantry (which is the most typical arrangement) has the axis of the bore aligned horizontally (i.e., orthogonal to gravity). If motion is required to cover the scan range, a vertical gantry might move up and/or down during scanning, or the patient support might move up and/or down.

Patient position and orientation can be considered in terms of several relationships; the image pixels with respect to the patient, the patient with respect to the gantry, and the patient with respect to gravity.

C.7.6.xx.1.1 Image pixels with respect to the patient

The position and orientation of the pixels with respect to the patient is independent of the gantry and is thus the same for both vertical and horizontal gantries. A mathematical description is provided in the Image Plane Module by Type 1 attributes for Image Position (Patient) (0020,0032) and Image Orientation (Patient) (0020,0037). See C.7.6.2.1.1.

198 The General Image Module includes the Type 2C attribute Patient Orientation (0020,0020) which
 199 provides a rough anatomical orientation. As stated in C.7.6.1.1.1, two letters indicate the direction from
 200 the first to last pixel in a row, and the direction from the first to last pixel in a column, respectively using
 201 letters for Anterior, Posterior, Left, Right, Head, and Feet.

202 **C.7.6.xx.1.2 Patient with respect to the gantry and gravity**

203 The Patient Position (0018,5100) and the Enhanced Patient Orientation Module Attributes:

- 204 • are intended for annotation, not for mathematical calculations. The patient orientation with respect
 205 to gravity can be useful to a clinician viewing the images and wanting to understand how gravity
 206 might be affecting the positioning of the organs.
- 207 • capture the relative orientation of the patient. The relative position (i.e., location) of the patient is
 208 not captured.
- 209 • relate the patient orientation to the scan axis of the gantry

210 The orientation of the patient with respect to the gantry is generally expressed in terms of the "front" of the
 211 gantry. To maintain consistency with the existing definitions, for the purposes of these attributes for a
 212 vertical gantry the "front" of the imaging equipment is considered to be the side containing the bore that is
 213 closest to the patient support (which may be the ground).

214 These attributes describe the orientation of the patient with respect to the scan axis of the gantry in terms
 215 of the patient when they are fully outside the imaging equipment on the front side of the imaging
 216 equipment. The use of terms like "head-first" does not describe the direction of scan progression, the slice
 217 order, nor the direction of relative patient motion (if any). The values only encode relative orientation. So,
 218 for a horizontal gantry, a value of Head First is still valid when the patient table is advanced fully into the
 219 gantry and the patient is scanned as the table comes back out, resulting in the head being temporally the
 220 last body part scanned. Correspondingly, for a vertical gantry, the value will almost always be Head First
 221 when scanning progresses either upwards or downwards, given that the front of the gantry is defined as
 222 the face closest to the patient support and the patient will almost always be seated or standing upright.

223 For horizontal gantries, the orientation of the patient with respect to gravity can also be used to infer the
 224 approximate patient "rotation" around the scan axis. The anatomical orientation of the image axes is
 225 captured in Image Position (Patient) (0020,0032) as described above.

226 For vertical gantries, the patient could readily face any direction while standing. The gantry may or may
 227 not be able to sense the such patient "rotation" around the scan axis. If not, the values in Image
 228 Orientation (Patient) (0020,0037) will likely depend on standardized acquisition procedures and/or
 229 technologist input to correctly encode orientation details, just as is done for patients on conventional
 230 horizontal scanners who are prone or decubitus.

231 **Enhanced Patient Orientation Module**

232 The Enhanced Patient Orientation Module describes the patient orientation with respect to gravity and to
 233 the equipment (i.e., the gantry) using three attributes invoked from the Patient Orientation And Equipment
 234 Relationship Macro. See examples in Table X.Y-1.

235 Patient Orientation Code Sequence (0054,0410) describes the rough orientation of the imaged part of the
 236 Patient with respect to gravity; vertical, horizontal, or in-between.

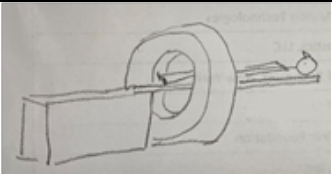
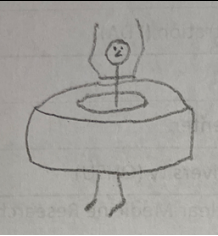
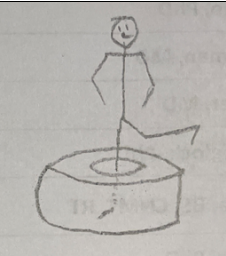
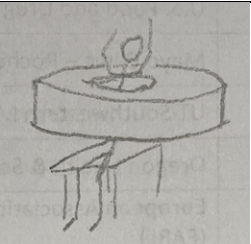
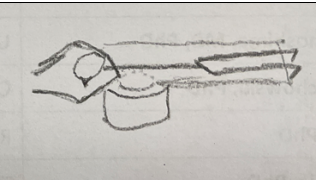
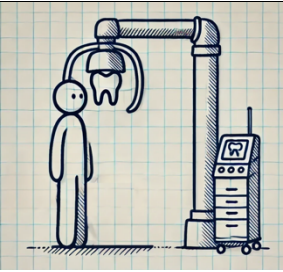
237 Note: (102539006, SCT, "semi-erect") refers to the imaged anatomy being partway between erect and
 238 recumbent, for example, inclined 45 degrees.

239 Patient Orientation Modifier Code Sequence (0054,0412) provides a more detailed description of the
 240 orientation and positioning of the patient.

241 Patient Equipment Relationship Code Sequence (3010,0030) describes the orientation of the Patient with
 242 respect to the imaging equipment.

243 **Table X.Y-1. Examples of Enhanced Patient Orientation Module Attribute Values**

| Graphic | Description | Patient Orientation | Patient Orientation | Patient Equipment | Patient Position |
|---------|-------------|---------------------|---------------------|-------------------|------------------|
|---------|-------------|---------------------|---------------------|-------------------|------------------|

| | | Code Sequence (0054,0410) | Modifier Code Sequence (0054,0412) | Relationship Code Sequence (3010,0030) | (0018,5100) |
|---|--------------------------|--------------------------------------|---|---|--------------------|
|  | Current Conventional CT | (102538003, SCT, "recumbent") | (40199007, SCT, "supine") | (102540008, SCT, "headfirst") | HFS |
|  | Standing CT of the Chest | (C86043, NCIt, "erect") | (10904000, SCT, "standing") | (102540008, SCT, "headfirst") | HFV |
|  | Standing CT of the Foot | (C86043, NCIt, "erect") | (10904000, SCT, "standing") | (102540008, SCT, "headfirst") | HFV |
|  | Seated CT of the Chest | (C86043, NCIt, "erect") | (33586001, SCT, "sitting") | (102540008, SCT, "headfirst") | HFV |
|  | Dedicated Breast CT | (102538003, SCT, "recumbent") | (1240000, SCT, "prone") | (126833, DCM, "anterior first") | AFP |
|  | Dental Cone beam | (C86043, NCIt, "erect") | (10904000, SCT, "standing") | (102540008, SCT, "headfirst") | HFV |

244

245

Patient Position (0018,5100)

246 The Series Module includes the Type 2C attribute Patient Position (0018,5100) which is intended to
 247 support annotation of the orientation of the patient with respect to the scan axis of the gantry and with
 248 respect to gravity. It does not describe the direction of scanning, slice order, or image orientation.

249 The information in the first two characters of the code string corresponds to the information in the Patient
 250 Equipment Relationship Code Sequence (3010,0030). See C.7.3.1.1.2 for a definition of the code string
 251 character values.

252 The information in the subsequent characters of the code string value corresponds to the information in
 253 the Patient Orientation Modifier Code Sequence (0054,0412), although only the most common situations
 254 are covered, and not all combinations of these characters with the preceding characters are considered
 255 valid. See C.7.3.1.1.2 for a definition of the code string character values.

256 C.7.6.xx.1.3 Other Relevant Attributes

257 Acquisition Context Sequence (0040,0555) permits inclusion of content items such as the following, some
 258 of which might be more common in a vertical gantry:

- 259 • (130324, DCM, "Functional condition present during acquisition") = (87731000, SCT, "Weight
 260 bearing")
- 261 • (130324, DCM, "Functional condition present during acquisition") = (367740008, SCT,
 262 "Suspension")
- 263 • (130324, DCM, "Functional condition present during acquisition") = (129411004, SCT, "Traction")

264

265 *Modify PS3.3 Table C.8-3 as shown.*

266 **Table C.8-3. CT Image Module Attributes**

| Attribute Name | Tag | Type | Attribute Description |
|-------------------------|-------------|------|--|
| ... | | | |
| Gantry/Detector Tilt | (0018,1120) | 3 | Nominal angle of tilt in degrees of the scanning gantry. Not intended for mathematical computations. |
| Table Height | (0018,1130) | 3 | The distance in mm of the top of the patient table to the center of rotation; below the center is positive. |
| Rotation Direction | (0018,1140) | 3 | Direction of rotation of the source when relevant, about nearest principal axis of equipment. |
| ... | | | |
| Table Speed | (0018,9309) | 3 | The distance in mm that the table moves in one second during the gathering of data that resulted in this image. <u>Table motion is relative to the gantry frame of reference, thus if the gantry is moving, the distance value represents the net motion. This attribute also applies to patient support equipment other than tables.</u> |
| Table Feed per Rotation | (0018,9310) | 3 | Motion of the table (in mm) during a complete revolution of the source around the gantry orbit. <u>Table motion is relative to the</u> |

| Attribute Name | Tag | Type | Attribute Description |
|---------------------|-------------|------|---|
| | | | <u>gantry frame of reference, thus if the gantry is moving, the feed value represents the net motion. This attribute also applies to patient support equipment other than tables.</u> |
| Spiral Pitch Factor | (0018,9311) | 3 | Ratio of the Table Feed per Rotation (0018,9310) to the Total Collimation Width (0018,9307). |
| ... | | | |

267

268 *Modify the following tables to apply the definition modifications shown for PS3.3 Table C.8-3 above:*

269 *Table C.8-120 in C.8.15.3.4 CT Table Dynamics Macro*

270 *Table C.8.22-18 in C.8.22.5.7 PET Table Dynamics Macro*

271 *Table C.34.10-1 in C.34.10 Performed CT Acquisition Module*

272 *Do not modify C.36.17 Tomotherapeutic Beam Module - Table C.36.17-1*

273

274 *Modify PS3.3 Table C.8-121 as shown.*

275

Table C.8-121. CT Position Macro Attributes

| Attribute Name | Tag | Type | Attribute Description |
|----------------------|-------------|------|---|
| CT Position Sequence | (0018,9326) | 1 | Contains the Attributes defining the CT geometry. Only a single Item shall be included in this Sequence. |
| >Table Position | (0018,9327) | 3 | Relative longitudinal position of acquisition location of this frame in mm from an implementation specific reference point. Shall be relative to the same reference point for all frames in this SOP Instance, but may be different from the reference point in other SOP Instances. Positions as the table (or other patient support) moves into the gantry (or as the gantry moves toward the patient support) viewed from the front are more negative. |
| ... | | | |

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