

Digital Imaging and Communications in Medicine (DICOM)

Supplement 233

Patient Model Gender Enhancements

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1

Open Issues

2

Closed Issues

1	Should the conformance statement describe how sex/gender attributes are managed? Yes, in terms of any applicable configuration support, but not in terms of imposing any policy choices. The existing configuration description in Part 2 is sufficient.
2	Duplicate of 26
3	Should we add a gender CID into TID 1007 Subject Context, Patient? It has subject sex; does it also need a subject gender? We need to fix a conflict between description and CID. The gender harmony model includes a partial list of gender identities proposed in various jurisdictions. It is unlikely that there will be a unified single list with internationally agreed definitions. It is likely that for some jurisdictions there will be recommended lists of gender identities. Note: a gender CID has been created for the Patient's Gender (0010,xxxx). The TID can reference that. The issue with many local extensions should be a note on the CID to warn implementers to expect local extensions. Answer: Do not add a gender to TID 1007 Gender is not an identifier and is not clinically significant for imaging.
4	What should be done about CID 7457 Sex - Male Female or Both? Answer: NO changes. This is for small animals and groups of small animals where gender is not an issue. The current sex attributes are sufficient. See also comment on issue 23.
5	Does Part 18 need to change to incorporate Sex and Gender additions? Proposal: Do not change Part 18 requirements. The new fields are all optional. The Part 4 changes make the necessary changes to the Part 18 behavior, so Part 18 need not change.
6	Are there any SOP classes that deserve creating a new SOP class where the new attributes are type 2? Answer: NO. The new attributes are type 3 for all existing SOP classes.
7	How should HL7 FHIR codes be handled? The proposal is 1. Use the minimum interoperable list from HL7 Implementation Guide as the basis for creating CIDs to the extent possible. 2. Where this is not possible, invent something specific for DICOM. Some of attributes, such as Patient's Gender (0010,xxxx) will have significant local extensions based on national and local policies.

	<p>See also issue 30 about how to encode HL7 codes</p> <p>Answer: Write a separate CP (done)</p> <p>Answer: WG-06 March 2023: Create DICOM Codes. There are problems with the HL7 Coding method, and these are well beyond the scope of the Sex and Gender supplement to resolve. For now, rather than force the HL7 coding system issues to be resolved before we resolve Sup 233, create DICOM codes. When the HL7 code CP is complete we can re-visit these codes.</p>
8	<p>How should the comments on sex and gender attributes relate to the existing DICOM comments?</p> <p>Comments on the Scheduled Procedure Step (0040,0400) is explicitly indicated as something to be displayed to the operator.</p> <p>Requested Procedure Comments (0040,1400) is not so indicated.</p> <p>Answer: No changes are proposed beyond the inclusion of the comment attributes in the Patient Study Module.</p>
9	<p>Should Patient Comments (0010,4000) be moved from C.7.1.1.1 Patient Module to C.7.2.2 Patient Study Module?</p> <p>Answer: NO, never move existing attributes. But new attributes can be created in other modules. These may vary from study to study because they may reflect temporary, transient, or changed characteristics of the patient. That would make it more appropriate for comments on patient sex and gender that reflect changes.</p>
10	<p>What new attributes should be created to capture more specific sub-sets of genotypic and phenotypic parameters? Is this captured in an updated TID 1007? Should this be part of a later CP?</p> <p>Answer: No new attributes. Proper diagnosis is much more than just adding diagnostic codes. This is not a problem for DICOM to solve. The comments and references can provide specific extra information needed by the operator and staff. If links to other medical records are appropriate, they can be included there.</p>
11	<p>How should the present models in open literature, implementations, etc. be reflected into DICOM Standard?</p> <p>Copy bibliography in from HL7? Copy or reference various background information on HL7 Gender project site? (This stuff gets re-organized occasionally because it is a working group area, not a part of the standard that is subject to change control. Can we use DOI or something like it for more permanent references? Ask HL7 project team.)</p> <p>Answer: Put the HL7 bibliography into Part 17 Annex for reviewers, and then remove before letter ballot. Reviewers should consider the implication of this over time. This bibliography will gradually become out of date and need either regular updates or removal.</p>
12	<p>Do we provide instructions on what algorithm to pick for selecting sex or gender when the other is missing? What about other sex related instructions?</p>

	Answer: NO. It's not DICOM's responsibility or core competence.
13	<p>Based on HL7 Implementation Guide ballot resolutions the DICOM module will not include the Recorded Sex and Gender (RSG) attributes.</p> <p>The RSG attributes are useful for some patient related administrative activities, but not for ordering or other imaging related activities. They are useful for:</p> <ol style="list-style-type: none"> 1. Patient Identity confirmation 2. Billing activities 3. Patient reconciliation 4. Legal actions <p>If a need emerges for RSG attributes they can be added later by a CP.</p>
16	All Supplements that are in progress need to be updated somehow. This is not a comment issue. It's a TODO if there are any.
14	<p>Is this a supplement or a CP? <wg-06 question, November 2019 meeting> <revised August 2022></p> <p>Answer: Supplement 233</p>
18	<p>Should we update Part 16 TID 1007, CID 7455 (which is mostly diagnostic codes and non-extensible) and/or CID 7457 (which is M, F, and extensible) ?</p> <p>Answer: The SPCU Category Codes were added to CID 7455. CID 7457 is for animals and is not modified.</p>
19	<p>Include both sex and gender, in both image IODs and workflow IODs?</p> <p>Answer: YES. The Harmonized model is incorporated into the Patient Modules and any IOD that incorporates these is affected.</p>
21	<p>The new attributes are proposed as type 3 so that they do not trigger creation of new SOP classes. They are a better fit to type 2 if the concept "attempted but failed to get a value" needs to be encoded. Is there a way to finesse this issue? Is it a problem if that concept cannot be encoded? Should a code value for this be added to the definition?</p> <p>Answer: Leave them type 3.</p>
22	<p>Should PS 3.2 Conformance be changed?</p> <p>For example, Australia privacy regulations require a statement with justification for maintaining sex information in records. Will this be part of a conformance statement from DICOM, or put somewhere else by the vendor?</p> <p>Should this be covered by having a section in the DCS for other regulations that are also complied with, e.g., GDPR, DIN, and UL? Should this be part of Supplement 209? These privacy regulation responses could go in such a section.</p> <p>Answer: NO, not required by DICOM (Tracking all the different laws and their changes is not practical or reasonable.)</p> <p>Will conformance describe capability? MAYBE, up to the vendor, DICOM will be silent.</p>
23.	<p>Gender and other sexes for animals is not prohibited and not specifically addressed. Should this be addressed? (e.g., should freemartin be added to CID 7457?)</p> <p>Answer: No. As coded values the veterinary users can extend locally, or add coded values to SNOMED, or as DICOM codes. This is a separate issue and can be dealt with by CP if necessary.</p>

24	<p>How should pronoun usage be addressed in this Supplement?</p> <p>Answer: Only English pronoun usage is addressed in this Supplement. Pronoun usage issues are reasonably well understood for English, but not for other languages that use sex identifying pronouns. Some languages, e.g., Mandarin and Cantonese, do not traditionally use such pronouns, so it is a very different issue for them. Other languages have complex conjugation, declination, and other grammatical rules that apply to pronouns. This could be addressed in a separate CP when a specific language has defined appropriate rules for that language.</p> <p>One use case for providing pronouns is so that they can be used in patient instructions, comments, and related discussions. The acquired images and structured reports are much less likely to include pronouns, but they may need the capability.</p>
25	<p>What should be done about Sex at Birth? See also issue 13.</p> <p>Answer: Use SPCU effective dates. HL7 is recommending use of SPCU with an Effective Start DateTime (0010,xxx6) at birth, and possibly a second SPCU with a later Effective Start DateTime (0010,xxx6).</p>
26	<p>What VR should be used for Patient's Gender (0010,xxx1)?</p> <p>Answer: The Patient's Gender Identity (0010,xxx1) is encoded as a coded value. There is only a minimal set of coded values defined by SNOMED and HL7.</p> <p>There are many locally defined terms that are appropriate for gender identities. These may be official designations, local designations, or personal designations. These will be handled the same way other code system extensions are handled. The US and Canada have already defined code systems extensions for their jurisdictions.</p>
27	<p>Can we duplicate Patient Comments into Patient Study Module?</p> <p>Answer: NO</p> <p>There are other examples of the same attribute being present at the top level in multiple modules. In those cases the disambiguation of intent is either not needed or obvious. Can we do that with these comments? Can or should we do that for other attributes?</p>
28	<p>Are there problems with the same attribute in the Patient Module having different values in different studies? (Like Patient Weight, Patient Gender is subject to change.) This can be resolved by putting all the gender attributes in the Patient Study Module. Is that a problem?</p> <p>Answer: All the attributes that are allowed to change between studies have been put into the Patient Study Module. C-FIND implementations will need to adapt to this.</p>
29	<p>What should we do about Patient Sex (0010,0008)?</p> <p>Answer: HL7 is leaving it very ambiguously defined and noting that the definition is basically up to the local policy of the system creating the value. New value sets and codes with better definitions are used in the new attributes.</p> <p>DICOM usually takes the value from a hospital administrative system, so the same ambiguities will remain. It will often be populated by copying it from an HL7 message, making the HL7 (lack of) definition relevant.</p>
31	<p>Do any sex/gender based analytic results, e.g., BSA, need revision to the related TID?</p> <p>Proposal: TID 1007 Patient Context includes patient sex DCID 7455 and DCID 7455 has been updated which seems sufficient.</p>

32	<p>Should DICOM encode reasons like "refused to answer" received from FHIR? HL7 FHIR is using the various kinds of missing and unknown as a coding for some of the sex and gender terms. Would this difference be important for an operator working from the Modality Worklist information? Would this information in the image SOP be relevant to a radiologist making a report?</p> <p>Answer: The current text proposes these attributes as Type 3, so they may be missing, and missing does not convey any meaning regarding why they are missing.</p>
30	<p>How will DICOM refer to codes defined in FHIR? This is a question for both WG-06 and WG-20 to decide whether this is a suitable encoding and will function appropriately.</p> <p>See new CP, issue 7 (closed)</p>
33	<p>Does the CDA template work in HL7 result in any changes that are appropriate to DICOM TIDs?</p> <p>Answer: It appears that no changes will be needed. If subsequent analysis indicate that a change is needed, a separate CP will be used.</p>
34	<p>Technologist may be in a position to observe a discrepancy between the current medical record and "observed" information. Where and how is this communicated to other actors? Where and how is reconciliation performed?</p> <p>Considerations include:</p> <ul style="list-style-type: none"> - Authoritative sources of observations - Official systems of record - See also IHE (Integrating the Healthcare Enterprise) Scheduled Workflow 34.4.2.2 Use Case #2: Patient Update in which upstream systems (ADT / RIS) perform a patient update or merge. <p>Answer: This is outside the scope of DICOM. It belongs to IHE or some other organization.</p>
35	<p>What imaging activities are affected by a discrepant observation, and how should those be handled prior to reconciliation (e.g. protocol selection, post processing, report content)?</p> <p>Answer: No longer relevant with balloted HL7 implementation guide.</p>
36	<p>In the cross-community scenario:</p> <ol style="list-style-type: none"> 1. How to manage the case if one jurisdiction does not recognize the sex/gender attributes of another? 2. What impact will the patient name change have on the Master Patient Index weighting of search results? 3. Is this likely to require a manual merge of records? (see IHE ITI-30) <p>Answer: This is outside the scope of DICOM. It belongs to IHE or some other organization.</p>

37	<p>A mix of upgraded and non-upgraded systems may result in a scenario in which one system, does not recognize sex attributes of the other. Priors were likely generated by non-upgraded systems. Search reliability may be negatively impacted when there is discrepant information (patient situation change, attributes within records have changed).</p> <p>How is this handled? Is there a need for DICOM changes to address this issue?</p> <p>Answer: The new attributes are Type 3, and the Type 3 rules are sufficient cover this.</p>
38	<p>How does the workflow change in an encounter-based activity? Consider direct in-person clinical care vs tele health? Does this result in changes to DICOM or the DICOM-HL7 mappings?</p> <p>Answer: This is not affected by Sex and Gender model, and thus need not be answered.</p>
39	<p>How to deal with the non-communicative patient? Does this affect DICOM? (This could introduce the HL7 notion of null flavors.)</p> <p>Answer: The new attributes are all Type 3, and the existing Type 3 rules apply.</p>
40	<p>Some machine-based algorithms are tuned based on patient age and sex at birth for the application of established reference values. How should sex at birth be handled?</p> <p>Answer: The HL7 recommendation for sex at birth is to employ valid period of SPCU, and that is the proposal for DICOM. (Note: this is for situations where sex at birth is clinically relevant. It is not for administrative uses.)</p>
41	<p>Are the DICOM Attribute Confidentiality constraints appropriate?</p> <p>The actions in the Confidentiality profiles chosen for the new attributes were reviewed by the Austrian User Group and others.</p> <p>See issue 50</p>
42	<p>Should "name to use" be PN or LT VR?</p> <p>A patient may want to be referred to as "Anton Corbijn". DICOM PN does not specify which elements or subsets should be used for the name to use. Anton Corbijn's full name has the first name "Anton Johannes Gerrit" and the family name "Corbijn van Willenswaard". The desired name "Anton Corbijn" is not conveyed by the PN datatype. It is a subset of the first name plus a subset of the family name.</p> <p>In HL7 v2.8 the extended XPN had a 15th element "Called by" added as a text string element to convey this kind of name. FHIR uses a structure that is similar to XPN, so that both the text string form and the individual name components can be conveyed. HL7 v2.7 and earlier do not have the text string element. See HL7 v2.9 section 2A.3.90.15 Called By (ST) for more details.</p> <p>Answer: LT is chosen because PN does not specify which elements should be included, nor does it specify the order, and HL7v2 and FHIR have both chosen to use a text string.</p>
43	<p>In this HL7 Implementation Guide Use Case, a single ADT message is created to communicate the patient name change. Is the order of the repeating elements in PID-5 significant? Should there be one ADT message or two (i.e. one message to communicate the new name, a second message to flag the old name as "NOUSE")?</p> <p>Answer: This issue is related to the DICOM example in the HL7 Implementation Guide, and does not affect the DICOM standard or this supplement.</p>

44	<p>To what degree should the DICOM Patient Study support all the attributes and elements of the logical model? I.e., multiple historical values with dates for the various concepts.</p> <p>Answer: The RSG attribute is not proposed. The other attributes are included in the Patient Study Module and all of their elements and sub-attributes defined. All are optional.</p>
45	<p>Should we require an SPCU Category Code (0010,xxx9) be present? Should this be optional in the sequence item?</p> <p>Answer: The proposed structure deals with the issue of unknown SPCU (and all the related null flavors) by</p> <ol style="list-style-type: none">1. Defining only codes for known describable SPCUs, and2. Requiring a comment or URI reference for patients with no SPCU Category Code. (Comment and URI references are also permitted when an SPCU Category Code is present.)
48	<p>Does Sex Parameters for Clinical Use need to be added to templates that include Patient Sex?</p> <p>Answer: Only TID 1007 Subject Context, Patient is updated in this supplement.</p> <p>Alternative 1: Patient Sex in TID 1007 uses DCID 7455. DCID 7455 has been extended to include the additional codes for Sex Parameters for Clinical Use. Does this support for a single parameter eliminate the need to extend TID 1007 to support multiple parameters? (SPCU can be multi-valued, while Patient Sex in TID 1007 is single valued.)</p> <p>For example, TID 10033 Radiation Dose Estimate Methodology incorporates EV (128437, DCM, "Model Patient Sex"). Does this make the addition of Sex Parameters for Clinical Use unnecessary in that template?</p>

46	<p>Should the concept group CIDxxx1 Person Gender Identity used in Gender Identity Code Sequence (0010,xxx4) be referenced as BCID or DCID?</p> <p>Proposal: Use DCID</p> <p>BCID permits implementations to use a different code (likely from a national coding system) in place of a code with the same meaning in the CID. DCID prohibits this. See PS3.3 Table 5.6-1.</p> <p>The gender codes in CIDxxx1 is a very short list intended to act as a baseline. Local jurisdictions will define local gender categories and define codes for these categories.</p> <p>For example, the USCDI has chosen to add two new concepts specified in ONC's USCDI v2 Applicable Vocabulary Standards for Gender Identity:</p> <p style="padding-left: 40px;">Female-to-Male (FTM)/Transgender Male/Trans Man (SNOMED CT 407377005) Male-to-Female (MTF)/Transgender Female/Trans Woman (SNOMED CT 407376001)</p> <p>Canada and Australia have also identified additional gender identities for use in those countries.</p> <p>There will be legal or administrative requirements on the terminology imposed by some jurisdictions, but they will probably not contradict the CIDxxx1 list. They may prohibit other extensions.</p> <p>With a BCID there is no assurance that even a minimal set of codes will be internationally interoperable. Jurisdictions could choose some other coding system, i.e., not SNOMED, and require the use of that system.</p> <p>With a DCID most jurisdictions are likely to accept the codes selected by DICOM, HL7, and SNOMED for "Identifies as female gender" or "Identifies as male gender" as acceptable for local purposes. Some may accept "Identifies as nonbinary gender". Other local genders will be defined locally.</p>
49	<p>Should we allow N-SET for the new attributes?</p> <p>Answer: no</p> <p>As with all other patient details these are managed upstream from the modality. The modality does not have standard defined mechanisms to update them.</p>

47	<p>PS 3.4 definitions for behavior of C-FIND are different for Query/Retrieve (used for storage) (PS3.4 Section C), Basic Worklist Management (PS3.4 Section K), Relevant Patient Information Query (PS3.4 Section Q), Substance Administration Query P(S3.4 Section V), and Unified Procedure Step query (PS3.4 Section CC). The primary difference is that for C-FIND in Query/Retrieve, all optional keys in the Query Request are treated using rules that are similar to the Type 2 rules. In the other queries, each identified optional query attribute has a specified response behavior (Type 1, 1C, 2, or 3) that is specified as part of the Service definition.</p> <p>Proposal: This supplement does not attempt to fix this or clarify the standard in PS3.4. The tables are updated using the current specification for the service being updated. CP2426 will address this issue. It has nothing to do with sex and gender issues, and the solution needs a response from people with expertise in the DICOM query/retrieve specification and implementation.</p> <p>The updated tables for PS 3.4 section C will appear to be inconsistent with the other updated tables in PS 3.4 sections K, Q, V, and CC. The proposed behavior is be:</p> <ul style="list-style-type: none"> • For the Section C Storage Service Query all the new attributes are made optional keys. (Is this a functional problem? Are there specific attributes that must be useable as query keys, e.g., must be required? Or can these be left optional in the standard and subject to procurement and marketing decisions.) • For the other services (Sections K, Q, V, and CC) the sequences are optional to implement and optional to return. The required attribute of each sequence is made an optional query and type 1 return. The other attributes in each sequence are made an optional query and type 2 return. <p>The relevant sections in PS 3.4 are: C.2.2.1.3, C.4.1.1.3.2, K.2.2.1.1.2, Q.2.1.1.3.2, V.2.2.1.1.2, V.2.2.1.2, CC.2.8.1.3.2</p>
50	<p>Do we need to profile data modification behaviors for sex and gender?</p> <p>Issues may arise when systems try to reconcile data collected previously when the patient sex or gender differed from current data. The behavior may depend upon patient preferences, clinical considerations, database constraints, medical records update policies, EHR reconciliation, legal requirements, etc.</p> <p>Proposal: Sex and gender are sensitive data, similar to drug treatment, psychiatric records, etc. This is an important issue, but not part of the changes to convey sex and gender information. A separate workitem might be appropriate.</p>

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Scope and Field

5 This supplement extends DICOM to add and harmonize with the HL7 Gender Harmony logical model and
6 be consistent with the HL7 normative changes. This facilitates communication between DICOM and the
7 various HL7 systems. This adds gender, sex, and related fields and resolves problems with the
8 oversimplified single M/F coding. The supplement:

- 9 ■ Updates Patient Sex (0010,0040) description to match the HL-7 updated definition.

- 10 ■ Adds optional attributes to the Patient Study Module and to various C-FIND and normalized
11 services. These optional attributes match those in the HL7 logical model.
 - 12 ■ These optional attributes are defined starting with the definitions from FHIR and the HL7
13 Implementation Guide. There are also informative references to FHIR and the
14 Implementation Guide.
 - 15 ■ Update codes in CID for Sex and adds CIDs for gender identity, pronouns, sex parameters for
16 clinical use. The external codes in these CIDs are the same codes used in HL7 v2, CDA, and
17 FHIR. New codes are defined by DICOM to avoid some issues with referencing FHIR value set
18 values directly.

19 The supplement also provides examples of use of the optional attributes, and examples of some of the
20 workflow and implementation considerations. These are accompanied by links to the related portions of
21 HL7 v2, CDA, and FHIR published standards for examples.

22
23

24 The HL7 Gender Harmony Project's logical model
25 (https://confluence.hl7.org/download/attachments/91996069/HL7_GENDER_R1_I1_2021JAN.pdf)
26 describes the information needed in an electronic record to support proper care for gender and sex
27 diverse patients. This includes both clinical information and social information. Further explanatory
28 information can be found in the article "*Gender harmony: improved standards to support affirmative care
29 of gender-marginalized people through inclusive gender and sex representation*" in Journal of the
30 American Medical Informatics Association (JAMIA) (<https://doi.org/10.1093/jamia/ocab196>).

31 HL7 has published and balloted an Implementation Guide that applies to HL7v2, CDA, and FHIR. Each
32 of those standards uses different formats and encodings.

33 **Updated Part 3 normative reference to add these.**

34 2 Normative References

- 35 ■ HL7v2 adds segments, clarifies some existing elements like PID-8, and refers to the
36 Implementation Guide in normative sections (see
37 https://www.hl7.org/implement/standards/product_brief.cfm?product_id=516).
- 38 ■ CDA adds attributes, elements, and templates, clarifies some existing attributes, and refers to the
39 Implementation Guide in normative sections (see
40 https://www.hl7.org/implement/standards/product_brief.cfm?product_id=633).
- 41 ■ FHIR adds attributes, elements, codes, and extensions, clarifies some existing attributes, and
42 refers to the Implementation Guide in normative sections (see [https://hl7.org/xprod/ig/uv/gender-
43 harmony/](https://hl7.org/xprod/ig/uv/gender-harmony/))

44

45

Part 3

46 **Update Part 3, Table C.2-3. Patient Demographic Module Attributes**

47 **C.2.3 Patient Demographic Module**

48 Table C.2-3 defines the Attributes relevant to generally describing a Patient at a specific point in time,
49 e.g., at the time of admission.

50

Table C.2-3. Patient Demographic Module Attributes

Attribute Name	Tag	Attribute Description
Patient's Sex	(0010,0040)	Sex of the named Patient. Enumerated Values: M male F female O other <u>See also notes 1. and 2 in Table C.7-1. Patient Module Attributes.</u>
<u>Gender Identity Sequence</u>	<u>(0010,xxx)</u>	<u>An individual's personal sense of being a man, woman, boy, girl, nonbinary, or something else, ascertained by asking them what their identity is.</u> <u>One or more items are permitted in this Sequence.</u>
<u>>Gender Identity Code Sequence</u>	<u>(0010,xxx4)</u>	<u>A coded gender identity.</u> <u>See also section C.7.2.2.1.epsilon</u> <u>Only a single item shall be included in this Sequence.</u>
<u>>>Include Table 8.8-1 "Code Sequence Macro Attributes"</u>		<u>DCID CIDxxx1 Person Gender Identity</u>
<u>>Effective Start DateTime</u>	<u>(0010,xxx6)</u>	<u>The time at which the content of this sequence item begins to be applicable.</u> <u>See section C.7.2.2.1.zeta everywhere</u>
<u>>Effective Stop DateTime</u>	<u>(0010,xxx7)</u>	<u>The time at which the content of this sequence item ceases to be applicable.</u>
<u>>Gender Identity Comment</u>	<u>(0010,xxx8)</u>	<u>Comments on this gender identity, such as the context in which it should be used.</u>

Commented [RH1]: Apply everywhere

<u>Sex Parameters for Clinical Use Sequence</u>	<u>(0010,xxx2)</u>	<p><u>Guidance on how to apply settings or reference ranges that are derived from observable information such as an organ inventory, recent hormone lab tests, genetic testing, menstrual status, obstetric history, etc.</u></p> <p><u>See Section C.7.2.2.1.gamma</u></p> <p><u>One or more items are permitted in this Sequence.</u></p>
<u>>SPCU Category Code Sequence</u>	<u>(0010,xxx9)</u>	<p><u>The category of this Sex Parameter for Clinical Use (SPCU).</u></p> <p><u>Only a single item shall be included in this Sequence.</u></p>
<u>>>Include Table 8.8-1 "Code Sequence Macro Attributes"</u>		<u>DCID CIDxxx2 Category of Sex Parameters for Clinical Use</u>
<u>>Effective Start DateTime</u>	<u>(0010,xxx6)</u>	<u>The time at which the content of this sequence item begins to be applicable.</u>
<u>>Effective Stop DateTime</u>	<u>(0010,xxx7)</u>	<u>The time at which the content of this sequence item ceases to be applicable.</u>
<u>>SPCU Comment</u>	<u>(0010,xxx1)</u>	<u>Further description of clinical implications and reasons for the selected code.</u>
<u>>SPCU Reference</u>	<u>(0010,xx10)</u>	<u>Reference to a resource that explains or extends the SPCU Category Code.</u>
<u>Person Names to Use Sequence</u>	<u>(0010,xxx3)</u>	<p><u>The name(s) that should be used when addressing or referencing the person.</u></p> <p><u>One or more items are permitted in this Sequence.</u></p>
<u>>Name to Use</u>	<u>(0010,xx12)</u>	<p><u>A name that should be used when addressing or referencing the person</u></p> <p><u>This need not be an official name nor comply with any particular name structure.</u></p>
<u>>Effective Start DateTime</u>	<u>(0010,xxx6)</u>	<u>The time at which the content of this sequence item begins to be applicable.</u>
<u>>Effective Stop DateTime</u>	<u>(0010,xxx7)</u>	<u>The time at which the content of this sequence item ceases to be applicable.</u>
<u>>Name to Use Comment</u>	<u>(0010,xx13)</u>	<u>Further explanation of appropriate name usage</u>
<u>Third Person Pronoun Sequence</u>	<u>(0010,xx21)</u>	<p><u>Pronoun(s) specified by the patient to use when referring to the patient in speech, in clinical notes, and in written instructions to caregivers</u></p> <p><u>One or more items are permitted in this sequence.</u></p>

<u>>Pronoun Code Sequence</u>	<u>(0010,xx22)</u>	<u>A single code that specifies the set of third person pronouns to be used in reference to this patient.</u> <u>Only a single item shall be included in this Sequence.</u>
<u>>>Include Table 8.8-1 "Code Sequence Macro Attributes"</u>		<u>DCID CIDxxx4 Third Person Pronouns.</u>
<u>>Effective Start DateTime</u>	<u>(0010,xxx6)</u>	<u>The time at which the content of this sequence item begins to be applicable.</u>
<u>>Effective Stop DateTime</u>	<u>(0010,xxx7)</u>	<u>The time at which the content of this sequence item ceases to be applicable.</u>
<u>>Pronoun Comment</u>	<u>(0010,xx23)</u>	<u>Further explanation of pronoun usage</u>

51

Update Part 3, Table C.4-13. Performed Procedure Step Relationship Module Attributes

52

C.4.13 Performed Procedure Step Relationship

53

Table C.4-13 specifies the Attributes used to reference other SOP Classes and other Information Entities of the DICOM real-world model as defined in Section 7.3.1.6.

54

55

Table C.4-13. Performed Procedure Step Relationship Module Attributes

Attribute Name	Tag	Attribute Description
Patient's Sex	(0010,0040)	Sex of the named Patient. Enumerated Values: M male F female O other <u>See also notes 1, and 2 in Table C.7-1. Patient Module Attributes.</u>
<u>Gender Identity Sequence</u>	<u>(0010,xxxx)</u>	<u>An individual's personal sense of being a man, woman, boy, girl, nonbinary, or something else, ascertained by asking them what their identity is.</u> <u>One or more items are permitted in this Sequence.</u>
<u>>Gender Identity Code Sequence</u>	<u>(0010,xxx4)</u>	<u>A coded gender identity.</u> <u>See also section C.7.2.2.1.epsilon</u> <u>Only a single item shall be included in this Sequence.</u>
<u>>>Include Table 8.8-1 "Code Sequence Macro Attributes"</u>		<u>DCID CIDxxx1 Person Gender Identity</u>
<u>>Effective Start DateTime</u>	<u>(0010,xxx6)</u>	<u>The time at which the content of this sequence item begins to be applicable.</u>
<u>>Effective Stop DateTime</u>	<u>(0010,xxx7)</u>	<u>The time at which the content of this sequence item ceases to be applicable.</u>

56

<u>>Gender Identity Comment</u>	<u>(0010,xxx8)</u>	<u>Comments on this gender identity, such as the context in which it should be used.</u>
<u>Sex Parameters for Clinical Use Sequence</u>	<u>(0010,xxx2)</u>	<u>Guidance on how to apply settings or reference ranges that are derived from observable information such as an organ inventory, recent hormone lab tests, genetic testing, menstrual status, obstetric history, etc.</u> <u>See also section C.7.2.2.1.gamma</u> <u>One or more items are permitted in this Sequence.</u>
<u>>SPCU Category Code Sequence</u>	<u>(0010,xxx9)</u>	<u>The category of this Sex Parameter for Clinical Use (SPCU).</u> <u>Only a single item shall be included in this Sequence.</u>
<u>>>Include Table 8.8-1 "Code Sequence Macro Attributes"</u>		<u>DCID CIDxxx2 Sex Parameter for Clinical Use</u>
<u>>Effective Start DateTime</u>	<u>(0010,xxx6)</u>	<u>The time at which the content of this sequence item begins to be applicable.</u>
<u>>Effective Stop DateTime</u>	<u>(0010,xxx7)</u>	<u>The time at which the content of this sequence item ceases to be applicable.</u>
<u>>SPCU Comment</u>	<u>(0010,xxx1)</u>	<u>Further description of clinical implications and reasons for the selected code.</u>
<u>>SPCU Reference</u>	<u>(0010,xx10)</u>	<u>Reference to a resource that explains or extends the SPCU Category code.</u>
<u>Person Names to Use Sequence</u>	<u>(0010,xxx3)</u>	<u>The name(s) that should be used when addressing or referencing the person.</u> <u>One or more items are permitted in this Sequence.</u>
<u>>Name to Use</u>	<u>(0010,xx12)</u>	<u>A name that should be used when addressing or referencing the person</u> <u>This need not be an official name nor comply with any particular name structure.</u>
<u>>Effective Start DateTime</u>	<u>(0010,xxx6)</u>	<u>The time at which the content of this sequence item begins to be applicable.</u>
<u>>Effective Stop DateTime</u>	<u>(0010,xxx7)</u>	<u>The time at which the content of this sequence item ceases to be applicable.</u>
<u>>Name to Use Comment</u>	<u>(0010,xx13)</u>	<u>Further explanation of appropriate name usage</u>
<u>Third Person Pronoun Sequence</u>	<u>(0010,xx21)</u>	<u>Pronoun(s) specified by the patient to use when referring to the patient in speech, in clinical notes, and in written instructions to caregivers</u> <u>One or more items are permitted in this sequence.</u>

<u>>Pronoun Code Sequence</u>	<u>(0010,xx22)</u>	<u>A single code that specifies the set of third person pronouns to be used in reference to this patient.</u> <u>Only a single item shall be included in this Sequence.</u>
<u>>>Include Table 8.8-1 "Code Sequence Macro Attributes"</u>		<u>DCID CIDxxx4 Third Person Pronouns.</u>
<u>>Effective Start DateTime</u>	<u>(0010,xxx6)</u>	<u>The time at which the content of this sequence item begins to be applicable.</u>
<u>>Effective Stop DateTime</u>	<u>(0010,xxx7)</u>	<u>The time at which the content of this sequence item ceases to be applicable.</u>
<u>>Pronoun Comment</u>	<u>(0010,xx23)</u>	<u>Further explanation of pronoun usage</u>

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58
59

60 **Update Part 3, Table C.7-1 Patient Module Attributes**

Commented [RH2]: Resume review here on Thursday

61 **C.7.1 Common Patient IE Modules**

62 **C.7.1.1 Patient Module**

63 Table C.7-1 specifies the Attributes of the Patient that describe and identify the Patient who is the subject
64 of a Study. This Module contains Attributes of the Patient that are needed for interpretation of the
65 Composite Instances and are common for all Studies performed on the Patient. It contains Attributes that
66 are also included in the Patient Modules in Section C.2.

67
68

Table C.7-1. Patient Module Attributes

Attribute Name	Tag	Type	Attribute Description
Patient's Sex	(0010,0040)	2	Sex of the named Patient. Enumerated Values: M male F female O other <u>See notes 1 and 2.</u>
....			

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Notes: 1. The value of Patient's Sex (0010,0040) reflects the documentation policies of the local administration for the sex attributes of the patient. It is often populated based on the PID-8 field in an HL7v2 message, and thus follow the HL7v2 rules that defer the definition to the local administration.

2. The DICOM Information Model (see section 7.3.1.1) has a single patient entity that is used for all studies and series for that patient. As a result it doesn't support the value of Patient's Sex (0010,0040) being different for different studies, series, or images for that patient. This poses issues:

- 79 • when the patient sex changes.
- 80 • when patient records are transferred between different systems with different administrative
- 81 rules, since the specification of the meaning of “M”, “F”, and “O” has been deferred to the
- 82 local administration by HL7, and DICOM implementations have usually used the values
- 83 provided in HL7 orders as the basis for attribute values in the DICOM instances.
- 84 • when clinical trials need to define sex for clinical trial purposes.
- 85 • when different organizations that have different definitions share one image archive.
- 86 To better handle the above issues, there are other sex and gender related attributes that are in
- 87 the Patient Study Module (see section C.7.2.2) for which the single value constraint does not
- 88 apply because they are permitted to be different in different studies and the definitions allow
- 89 reference to terminology standards. These attributes can convey the history of patient sex and
- 90 gender. Although these attributes are optional, a DICOM implementation could use them
- 91 instead of Patient’s Sex (0010,0040) if this is compatible with local administration choices for
- 92 other systems. Another possibility is to make the Patient’s Sex (0010,0040) empty as an
- 93 indication that the attributes in the Patient Study should be used for that study.
- 94

95 **Add to Normative References Section 2.4 Health Level Seven (HL7)**

96

97 [HL Gender Harmony Model] The HL7 Informative Document: Gender Harmony - Modeling Sex
98 and Gender Representation, Release 1 provides additional background on sex and gender related
99 concepts used in this table (http://www.hl7.org/implement/standards/product_brief.cfm?product_id=564).

100 [HL7v2.9.2] HL7 Messaging Standard Version 2.9.1
101 (https://www.hl7.org/implement/standards/product_brief.cfm?product_id=649).

102 [HL7 CDA R2.0 Gender Harmony IG] HL7 CDA® R2 Implementation Guide: Gender Harmony -
103 Sex and Gender Representation, Edition 1 (see
104 https://www.hl7.org/implement/standards/product_brief.cfm?product_id=633)

105 [HL7 FHIR 5.1] FHIR (see <https://hl7.org/fhir/R5/patient.html#gender>)

106 [HL7 Gender Harmony IG] HL7 Cross Paradigm Implementation Guide: Gender Harmony - Sex
107 and Gender Representation, Edition 1 (see <https://hl7.org/xprod/ig/uv/gender-harmony/>)

108

109

110 **Update Part 3, Table C.7-4a Patient Study Module Attributes – add attributes**

111 **C.7.2.2 Patient Study Module**

112 Table C.7-4a defines Attributes that provide information about the Patient at the time the Study started.

113 Note: In the case of imaging a group of small animals simultaneously, the Attributes in this Module can only
114 have values that apply to the entire group.

115

116

117

118 **Table C.7-4a. Patient Study Module Attributes**

Attribute Name	Tag	Type	Attribute Description
...			

Put after Patient Size Code			
<u>Gender Identity Sequence</u>	<u>(0010,xxxx)</u>	<u>3</u>	<u>An individual's personal sense of being a man, woman, boy, girl, nonbinary, or something else, ascertained by asking them what their identity is.</u> <u>One or more items are permitted in this Sequence.</u>
<u>>Gender Identity Code Sequence</u>	<u>(0010,xxx4)</u>	<u>1</u>	<u>A coded gender identity.</u> <u>Only a single item shall be included in this Sequence.</u>
<u>>>Include Table 8.8-1 "Code Sequence Macro Attributes"</u>			<u>DCID CIDxxx1 Person Gender Identity</u>
<u>>Effective Start DateTime</u>	<u>(0010,xxx6)</u>	<u>3</u>	<u>The time at which the content of this sequence item begins to be applicable.</u> <u>See section C.7.2.2.1.zeta</u>
<u>>Effective Stop DateTime</u>	<u>(0010,xxx7)</u>	<u>3</u>	<u>The time at which the content of this sequence item ceases to be applicable.</u> <u>See section C.7.2.2.1.zeta</u>
<u>>Gender Identity Comment</u>	<u>(0010,xxx8)</u>	<u>3</u>	<u>Comments on this gender identity, such as the context in which it should be used.</u>
<u>Sex Parameters for Clinical Use Sequence</u>	<u>(0010,xxx2)</u>	<u>3</u>	<u>Guidance on how to apply settings or reference ranges that are derived from observable information such as an organ inventory, recent hormone lab tests, genetic testing, menstrual status, obstetric history, etc.</u> <u>See section C.7.2.2.1.gamma</u> <u>One or more items are permitted in this Sequence.</u>
<u>>SPCU Category Code Sequence</u>	<u>(0010,xxx9)</u>	<u>1</u>	<u>The category of this Sex Parameter for Clinical Use (SPCU).</u> <u>Only a single item shall be included in this Sequence.</u>
<u>>>Include Table 8.8-1 "Code Sequence Macro Attributes"</u>			<u>DCID CIDxxx2 Category of Sex Parameters for Clinical Use</u>
<u>>Effective Start DateTime</u>	<u>(0010,xxx6)</u>	<u>3</u>	<u>The time at which the content of this sequence item begins to be applicable.</u>
<u>>Effective Stop DateTime</u>	<u>(0010,xxx7)</u>	<u>3</u>	<u>The time at which the content of this sequence item ceases to be applicable.</u>
<u>>SPCU Comment</u>	<u>(0010,xxx1)</u>	<u>3</u>	<u>Further description of clinical implications and reasons for the SPCU Category code.</u>

<u>>SPCU Reference</u>	<u>(0010,xx10)</u>	<u>3</u>	<u>Reference to a resource that explains or extends the SPCU Category code.</u>
<u>Person Names to Use Sequence</u>	<u>(0010,xxx3)</u>	<u>3</u>	<u>The name(s) that should be used when addressing or referencing the person.</u> <u>One or more items are permitted in this Sequence.</u>
<u>>Name to Use</u>	<u>(0010,xx12)</u>	<u>1</u>	<u>A name that should be used when addressing or referencing the person.</u> <u>See C.7.2.2.1.delta.</u>
<u>>Effective Start DateTime</u>	<u>(0010,xxx6)</u>	<u>3</u>	<u>The time at which the content of this sequence item begins to be applicable.</u>
<u>>Effective Stop DateTime</u>	<u>(0010,xxx7)</u>	<u>3</u>	<u>The time at which the content of this sequence item ceases to be applicable.</u>
<u>>Name to Use Comment</u>	<u>(0010,xx13)</u>	<u>3</u>	<u>Further explanation of appropriate name usage</u>
<u>Third Person Pronoun Sequence</u>	<u>(0010,xx21)</u>	<u>3</u>	<u>Pronoun(s) specified by the patient to use when referring to the patient in speech, in clinical notes, and in written instructions to caregivers</u> <u>One or more items are permitted in this sequence.</u>
<u>>Pronoun Code Sequence</u>	<u>(0010,xx22)</u>	<u>1</u>	<u>A single code that specifies the set of third person pronouns to be used in reference to this patient.</u> <u>Only a single item shall be included in this Sequence.</u>
<u>>>Include Table 8.8-1 "Code Sequence Macro Attributes"</u>			<u>DCID CIDxxx4 Third Person Pronoun Sets.</u>
<u>>Effective Start DateTime</u>	<u>(0010,xxx6)</u>	<u>3</u>	<u>The time at which the content of this sequence item begins to be applicable.</u> <u>See C.7.2.2.1.zeta</u>
<u>>Effective Stop DateTime</u>	<u>(0010,xxx7)</u>	<u>3</u>	<u>The time at which the content of this sequence item ceases to be applicable.</u> <u>See C.7.2.2.1.zeta</u>
<u>>Pronoun Comment</u>	<u>(0010,xx23)</u>	<u>3</u>	<u>Further explanation of pronoun usage</u>
<u>...</u>			

119

120

Add sections to C.7.2.2 Patient Study Module

121

122 **C.7.2.2.1.alpha Sex and Gender related attributes**

123 This DICOM specification follows the logical model described in HL7 Informative Document: Gender
124 Harmony - Modeling Sex and Gender Representation, Release 1 [HL Gender Harmony Model]. Refer to
125 the HL7 document for more detailed descriptions of the concepts and codes and guidance on the
126 corresponding encodings in HL7v2 [HL7v2.9.2], CDA[HL7 CDA R2.0 Gender Harmony IG], and
127 FHIR[HL7 FHIR 5.1].

128 Note: The details captured in these sequences may or may not reflect the complete corresponding content of
129 the medical record for the patient. It is typical for the items here to be limited to information considered
130 relevant to the performance or interpretation of this study.

131

132 **C.7.2.2.1.beta Gender Identity Sequence (0010,xxxx)**

133 Gender Identity Sequence (0010,xxxx) describes the identity of the patient. This is important in many
134 social and cultural contexts. The meaning, criteria, and implications of specific gender identities is defined
135 by the local culture and society. The terms used to capture gender identity are expected to reflect the
136 variations found in different cultures and location, so local terminology is expected to extend this value
137 set.

138 If the patient (such as a fetus, infant, or uncommunicative new patient) is unable to express a gender
139 identity it may be missing. The sequence may be absent in cases where the patient do not want to specify
140 a value. Gender identity can be congruent or incongruent with one's Sex Parameters for Clinical Use
141 (SPCU). Patients may identify using different terms at different times for various reasons, or use multiple
142 identities in different contexts during the same time interval.

143 Given that the gender identity element supports representing multiple gender identities, individuals who
144 identify as having both Male and Female gender identities (or any other combination) at the same time in
145 different contexts, each gender identity can be modeled with the same effective period.

146 **C.7.2.2.1.gamma Sex Parameters for Clinical Use Sequence (0010, xxx2)**

147 The Sex Parameters for Clinical Use Sequence (0010,xxx2) (SPCU) is used in orders, observations, and
148 other clinical situations. The SPCU allows specific considerations to be provided for potential automated
149 uses and records. These may be reference ranges, procedure setup, diagnostic algorithm parameters,
150 etc. For example, the computation of glomerular filtration rate (GFR) based on blood chemistry may use
151 formulas that are different for "male" and "female".

152 There are many other situations involving tumors, resections, congenital conditions (e.g., ovotestes), and
153 transgender patients where SPCU can be used to provide information that is needed to perform a
154 procedure properly.

155 **C.7.2.2.1.delta Person Names to Use Sequence (0010,xxx3)**

156 The Person Names to Use Sequence (0010,xxx3) enables names that are chosen by the patient to be
157 used by care providers in patient-centered healthcare conversations. This information is usually provided
158 by the patient and may be different from their legal name. Some cultures have very long names and
159 expect those to be used only for mandatory legal situations. Also, rules and processes for legal name
160 changes vary. There is often a mismatch that can be prolonged in difficult situations, and Person Names
161 to Use Sequence (0010,xxx3) may be an expedient solution for the care environment.

162 If different names are to be used in different contexts, that can be explained in the Name to Use
163 Comment (0010,xx13).

164 Note: The Value Representation of this attribute is a long text string (LT) rather than a person name (PN) to
165 avoid any constraints on the structure of the name. The Name to Use (0010,xx12) need not be an
166 official name of any sort, nor does it need to comply with any standard naming structure.

167 **C.7.2.2.1.epsilon Third Person Pronoun Sequence (0010,xx21)**

168 Personal pronouns are words used instead of a noun or a noun phrase used to refer to people.
169 Understanding which pronoun(s) to use when referring to someone is important for providing affirming
170 health care. Avoiding incorrect pronoun use and patient misgendering is crucial in transgender and
171 gender-diverse care. It is important to reliably exchange personal pronouns that the individual has
172 specifically reported they want used. Local policy will determine how pronouns are chosen for infants and
173 other similar situations. Policy and local customs will determine what to use when this attribute is not
174 present, or when multiple sets are present.

175 Different pronouns may be used in one care setting than another care setting. The pronouns used in the
176 work environment may be different than those in the care setting.

177 **C.7.2.2.1.zeta Effective Start DateTime (0010,xxx6) and Effective Stop DateTime (0010,xxx7)**

178 Each sequence item may have an Effective Start DateTime (0010,xxx6) and Effective Stop DateTime
179 (0010,xxx7) specifying the time interval during which the content of the item applies. These attributes are
180 optional. They are included when they are expected to be relevant.

- 181 • If Effective Start DateTime (0010,xxx6) is missing, then the item content applies for all times
182 before Effective Stop DateTime (0010,xxx7).
- 183 • If Effective Stop DateTime (0010,xxx7) is missing, then the item content applies for all times after
184 Effective Start DateTime (0010,xxx6).
- 185 • If both are missing, the item content applies for all times past and future.

186 The start/stop datetime attributes can be particularly useful when there are multiple items in the
187 sequence. For example, a male at birth has a subsequent orchiectomy for testicular cancer. This could be
188 represented as an Sex Parameters for Clinical Use Sequence (0010,xxx2) item of "Male-typical
189 parameters" with an Effective Start DateTime (0010,xxx6) at birth date and an Effective Stop DateTime
190 (0010,xxx7) at about the date of orchiectomy, and a second item of "Neither male typical nor female
191 typical parameters" with an Effective Start DateTime (0010,xxx7) at about the date of orchiectomy and
192 Effective Stop DateTime (0010,xxx7) is missing.

193

194 **Update Part 3, Table C.30.4-1. Unified Procedure Step Relationship Module Attributes**

195 **C.30.4 Unified Procedure Step Relationship Module**

196 Table C.30.4-1 specifies the Attributes that describe the relationship of a Unified Procedure Step (UPS).

197

Table C.30.4-1. Unified Procedure Step Relationship Module Attributes

Attribute Name	Tag	Type	Attribute Description
Patient's Sex	(0010,0040)	2	Sex of the named Patient. Enumerated Values: M male F female O other <u>See also notes 1 and 2 in Table C.7-1. Patient Module Attributes.</u>

<u>Gender Identity Sequence</u>	<u>(0010,xxx)</u>	<u>3</u>	<u>An individual's personal sense of being a man, woman, boy, girl, nonbinary, or something else, ascertained by asking them what their identity is.</u> <u>One or more items are permitted in this Sequence.</u>
<u>>Gender Identity Code Sequence</u>	<u>(0010,xxx4)</u>	<u>1</u>	<u>A coded gender identity.</u> <u>See section C.7.2.2.1.epsilon</u> <u>Only a single item shall be included in this Sequence.</u>
<u>>>Include Table 8.8-1 "Code Sequence Macro Attributes"</u>			<u>DCID CIDxxx1 Person Gender Identity</u>
<u>>Effective Start DateTime</u>	<u>(0010,xxx6)</u>	<u>3</u>	<u>The time at which the content of this sequence item begins to be applicable.</u>
<u>>Effective Stop DateTime</u>	<u>(0010,xxx7)</u>	<u>3</u>	<u>The time at which the content of this sequence item ceases to be applicable.</u>
<u>>Gender Identity Comment</u>	<u>(0010,xxx8)</u>	<u>3</u>	<u>Comments on this gender identity, such as the context in which it should be used.</u>
<u>Sex Parameters for Clinical Use Sequence</u>	<u>(0010,xxx2)</u>	<u>3</u>	<u>Guidance on how to apply settings or reference ranges that are derived from observable information such as an organ inventory, recent hormone lab tests, genetic testing, menstrual status, obstetric history, etc.</u> <u>See section C.7.2.2.1.gamma</u> <u>One or more items are permitted in this Sequence.</u>
<u>>SPCU Category Code Sequence</u>	<u>(0010,xxx9)</u>	<u>1</u>	<u>The category of this Sex Parameter for Clinical Use (SPCU).</u> <u>Only a single item shall be included in this Sequence.</u>
<u>>>Include Table 8.8-1 "Code Sequence Macro Attributes"</u>			<u>DCID CIDxxx2 Category of Sex Parameters for Clinical Use</u>
<u>>Effective Start DateTime</u>	<u>(0010,xxx6)</u>	<u>3</u>	<u>The time at which the content of this sequence item begins to be applicable.</u>
<u>>Effective Stop DateTime</u>	<u>(0010,xxx7)</u>	<u>3</u>	<u>The time at which the content of this sequence item ceases to be applicable.</u>
<u>>SPCU Comment</u>	<u>(0010,xxx1)</u>	<u>3</u>	<u>Further description of clinical implications and reasons for the selected code.</u>

<u>>SPCU Reference</u>	<u>(0010,xx10)</u>	<u>3</u>	<u>Reference to a resource that explains or extends the SPCU Category code.</u>
<u>Person Names to Use Sequence</u>	<u>(0010,xxx3)</u>	<u>3</u>	<u>The name(s) that should be used when addressing or referencing the person.</u> <u>One or more items are permitted in this Sequence.</u>
<u>>Name to Use</u>	<u>(0010,xx12)</u>	<u>1</u>	<u>A name that should be used when addressing or referencing the person.</u> <u>See C.7.2.2.1.delta.</u>
<u>>Effective Start DateTime</u>	<u>(0010,xxx6)</u>	<u>3</u>	<u>The time at which the content of this sequence item begins to be applicable.</u>
<u>>Effective Stop DateTime</u>	<u>(0010,xxx7)</u>	<u>3</u>	<u>The time at which the content of this sequence item ceases to be applicable.</u>
<u>>Name to Use Comment</u>	<u>(0010,xx13)</u>	<u>3</u>	<u>Further explanation of appropriate name usage</u>
<u>Third Person Pronoun Sequence</u>	<u>(0010,xx21)</u>	<u>3</u>	<u>Pronoun(s) specified by the patient to use when referring to the patient in speech, in clinical notes, and in written instructions to caregivers</u> <u>One or more items are permitted in this sequence.</u>
<u>>Pronoun Code Sequence</u>	<u>(0010,xx22)</u>	<u>1</u>	<u>A single code that specifies the set of third person pronouns to be used in reference to this patient.</u> <u>Only a single item shall be included in this Sequence.</u>
<u>>>Include Table 8.8-1 "Code Sequence Macro Attributes"</u>			<u>DCID CIDxxx4 Third Person Pronouns.</u>
<u>>Effective Start DateTime</u>	<u>(0010,xxx6)</u>	<u>3</u>	<u>The time at which the content of this sequence item begins to be applicable.</u>
<u>>Effective Stop DateTime</u>	<u>(0010,xxx7)</u>	<u>3</u>	<u>The time at which the content of this sequence item ceases to be applicable.</u>
<u>>Pronoun Comment</u>	<u>(0010,xx23)</u>	<u>3</u>	<u>Further explanation of pronoun usage</u>
Referenced Patient Photo Sequence	(0010,1100)	3	A photo to confirm the identity of a patient. Only a single Item is permitted in this Sequence. See C.2.2.1.1.
...			

198

199

Part 4

200

201

Modify PS3.4 Section 5.4 as shown

5.4 Usage Specification

The building blocks of SOP Classes are Modules and DIMSE Services. The DIMSE Services associated with a SOP Class may be Mandatory (M) or Optional (U). The usage may be different for the SCU and SCP. The usage is specified as a pair of letters: the former indicating the SCU usage, the latter indicating the SCP usage.

5.4.1 Use of DIMSE Services

The meaning and behavior of the usage specification for DIMSE Services are:

- M/M** The SCU shall support the DIMSE Service but is not required to use it on an Association. The SCP shall support the DIMSE Service.
- U/M** The SCU may support and use the DIMSE Service. The SCP shall support the DIMSE Service.
- U/U** The SCU may support and use the DIMSE Service. The SCP may support the DIMSE Service. If the SCP does not support the DIMSE Service used by the SCU, it shall return a Failure status.

5.4.2 Use of Attributes in Normalized Services

Modules and their usage in Composite IODs are defined in PS3.3. Normalized IODs are also constructed from Modules but usage is specified on an Attribute basis in this Part of the DICOM Standard. The following usage specification applies to all Attributes of Normalized IODs unless superseded by a usage specification in a particular SOP Class Specification.

The term 'receive' means the following: the value shall be stored; under certain circumstances (e.g. coercion) the value returned may have changed.

5.4.2.1 DIMSE Service N-CREATE, N-SET, N-ACTION

The following Requirements apply when specifying the use of DIMSE services N-CREATE, N-SET, N-ACTION.

The convention used in the table below are as follows:

SCU Behavior

- Mandatory** The SCU shall provide the Attribute.
- Optional** The SCU may or may not provide the Attribute.
- ~~**Undefined** The SCU's usage of the Attribute is undefined.~~

SCP Behavior

- Mandatory** The SCP shall support receiving the Attribute.
- Mandatory with Default** The SCP shall support receiving the Attribute. Upon receiving zero-length values, the SCP shall assign values as defined by the specification of the Service Class.
- Optional** The SCP may or may not support receiving the Attribute.
- ~~**Undefined** The SCP's support of the Attribute is undefined.~~

Usage	SCU		SCP
	Requirement	Zero Length	Requirement
1/1	Mandatory	Not Permitted	Mandatory

Usage	SCU		SCP
	Requirement	Zero Length	Requirement
2/1	Mandatory	Permitted	Mandatory with Default
2/2	Mandatory	Permitted	Mandatory
3/1	Optional	Not Permitted	Mandatory
3/2	Optional	Not Permitted	Optional
3/3	Optional	Not Permitted	Optional
-/-	Undefined	Undefined	Undefined
1/-	<u>Mandatory</u>	<u>Not Permitted</u>	<u>Mandatory</u>
2/-	<u>Mandatory</u>	<u>Permitted</u>	<u>Mandatory</u>
3/-	<u>Optional</u>	<u>Not Permitted</u>	<u>Mandatory</u>

240 If the SCU does not provide an Attribute that is Mandatory for the SCU, the SCP shall respond with a
241 Failure Status Code of 0120H "Missing Attribute".

242 If the SCU provides a zero-length value for a Mandatory Attribute when zero length is not permitted, the
243 SCP shall respond with a Failure Status Code of 0121H "Missing Attribute Value".

244

245 **5.4.2.2 DIMSE Service N-GET, N-EVENT-REPORT**

246 The following Requirements apply when specifying the use of DIMSE services N-GET, N-EVENT-
247 REPORT.

248 The convention used in the table below are as follows:

249 SCU Behavior

250 **Optional** The SCU may retrieve the Attribute.

251 **Undefined** ~~The SCU's usage of the Attribute is undefined.~~

252 **Sequence** The SCU is not permitted to retrieve the attribute individually. The SCU may
253 retrieve the entire top level sequence that contains the attribute.

254

255 SCP Behavior

256 **Mandatory** The SCP shall support retrieval of the Attribute.

257 **Optional** The SCP may or may not support retrieval of the Attribute.

258 **Sequence** The SCP shall return the attribute as part of the value if this attribute is present in
259 the sequence.

260 **Undefined** ~~The SCP's support of the Attribute is undefined.~~

261

Usage	SCU	SCP	
	Requirement	Requirement	Zero Length
3/1	Optional	Mandatory	Not Permitted

Usage	SCU	SCP	
	Requirement	Requirement	Zero Length
3/2	Optional	Mandatory	Permitted
3/3	Optional	Optional	Not Permitted
-/1	Undefined Sequence	Mandatory Sequence	Not Permitted
-/2	Undefined Sequence	Mandatory Sequence	Permitted
-/3	Undefined Sequence	Mandatory Sequence	Not Permitted

262 If support of an Attribute by the SCP is optional and the SCP does not support the Attribute and the
 263 Attribute is requested by the SCU, the SCP shall respond with a Failure Status Code of 0106H "Invalid
 264 Attribute Value" or 0116H "Attribute Value out of range".

265 **5.4.2.3 Other Requirements**

266 If the SCP usage type designation is modified by a "C" (e.g., 3/1C) the specification stated above shall be
 267 modified to include the requirement that the SCP shall support the Attribute if the specified condition is
 268 met.

269 For all N-CREATE, N-SET, N-GET, N-DELETE, N-ACTION and N-EVENT-REPORT operations, the SOP
 270 Class is conveyed in the request primitive in Affected SOP Class UID (0000,0002). The SOP Class UID
 271 (0008,0016) Attribute shall not be present in the Data Set.

272 For N-CREATE operations and N-EVENT-REPORT notifications, the SOP Instance is conveyed in
 273 Affected SOP Instance UID (0000,1000). The SOP Instance UID (0008,0018) Attribute shall not be
 274 present in the Data Set.

275 Note In some Service Classes, the SOP Class definition may override the general provision in PS3.7 that
 276 allows the SOP Instance UID to be specified or omitted in the N-CREATE request primitive, and require
 277 that the SCU be responsible for specifying the SOP Instance UID.

278 For N-SET, N-GET, N-ACTION and N-DELETE operations, the SOP Instance is conveyed in Requested
 279 SOP Instance UID (0000,1001). The SOP Instance UID (0008,0018) Attribute shall not be present in the
 280 Data Set.

281 **5.4.2.x Sequence Attributes**

282 **N-CREATE, N-SET, or N-GET always specify Attributes in the top level Data Set. When that top**
 283 **level Attribute is a sequence, any of the attributes within the sequence are included in the value.**

284 **N-CREATE and N-SET do not support specifying a subset of a sequence Attribute. To modify a**
 285 **single attribute in a specific item using N-SET the SCU will have to provide a new Attribute value**
 286 **that contains all of the items with all of their old values except for the one that is being modified.**
 287 **An SCU can only specify the top level Attribute in an N-GET and the SCP will return its entire**
 288 **contents, whether zero items or thousands of items.**

289

290 **C.6.1 Patient Root SOP Class Group**

291 ...

292

293

294

Modify Table C.6-2 as shown.

295
296
297

Table C.6-2. Study Level Keys for the Patient Root Query/Retrieve Information Model

Attribute Name	Tag	Type
...		
Study Update DateTime	(0008,041F)	O
<u>Gender Identity Sequence</u>	<u>(0010,xxx)</u>	<u>O</u>
<u>>Gender Identity Code Sequence</u>	<u>(0010,xxx4)</u>	<u>O</u>
<u>>Effective Start DateTime</u>	<u>(0010,xxx6)</u>	<u>O</u>
<u>>Effective Stop DateTime</u>	<u>(0010,xxx7)</u>	<u>O</u>
<u>>Gender Identity Comment</u>	<u>(0010,xxx8)</u>	<u>O</u>
<u>Sex Parameters for Clinical Use Sequence</u>	<u>(0010,xxx2)</u>	<u>O</u>
<u>>SPCU Category Code Sequence</u>	<u>(0010,xxx9)</u>	<u>O</u>
<i>>>Include Table C.6-2a "Enhanced Code Value Keys Macro with Optional Keys"</i>		
<u>>Effective Start DateTime</u>	<u>(0010,xxx6)</u>	<u>O</u>
<u>>Effective Stop DateTime</u>	<u>(0010,xxx7)</u>	<u>O</u>
<u>>SPCU Comment</u>	<u>(0010,xxx1)</u>	<u>O</u>
<u>>SPCU Reference</u>	<u>(0010,xx10)</u>	<u>O</u>
<u>Person Names to Use Sequence</u>	<u>(0010,xxx3)</u>	<u>O</u>
<u>>Name to Use</u>	<u>(0010,xx12)</u>	<u>O</u>
<u>>Effective Start DateTime</u>	<u>(0010,xxx6)</u>	<u>O</u>
<u>>Effective Stop DateTime</u>	<u>(0010,xxx7)</u>	<u>O</u>
<u>>Name to Use Comment</u>	<u>(0010,xx13)</u>	<u>O</u>
<u>Third Person Pronouns Sequence</u>	<u>(0010,xx21)</u>	<u>O</u>
<u>>Pronoun Code Sequence</u>	<u>(0010,xx22)</u>	<u>O</u>
<i>>> Include Table C.6-2a "Enhanced Code Value Keys Macro with Optional Keys"</i>		

Attribute Name	Tag	Type
<u>>Effective Start DateTime</u>	<u>(0010,xxx6)</u>	<u>Q</u>
<u>>Effective Stop DateTime</u>	<u>(0010,xxx7)</u>	<u>Q</u>
<u>>Pronoun Comment</u>	<u>(0010,xx23)</u>	<u>Q</u>

298

299

300 **Update Part 4, Table C.6-5**

301 **C.6.2 Study Root SOP Class Group**

302

303 **Table C.6-5. Study Level Keys for the Study Root Query/Retrieve Information Model**

Attribute Name	Tag	Type
...		
Patient's Sex	(0010,0040)	O
<u>Gender Identity Sequence</u>	<u>(0010,xxxx)</u>	<u>Q</u>
<u>>Gender Identity Code Sequence</u>	<u>(0010,xxx4)</u>	<u>Q</u>
<u>>>Include Table C.6-2a "Enhanced Code Value Keys Macro with Optional Keys"</u>		
<u>>Effective Start DateTime</u>	<u>(0010,xxx6)</u>	<u>Q</u>
<u>>Effective Stop DateTime</u>	<u>(0010,xxx7)</u>	<u>Q</u>
<u>>Gender Identity Comment</u>	<u>(0010,xxx8)</u>	<u>Q</u>
<u>Sex Parameters for Clinical Use Sequence</u>	<u>(0010,xxx2)</u>	<u>Q</u>
<u>>SPCU Category Code Sequence</u>	<u>(0010,xxx9)</u>	<u>Q</u>
<u>>>Include Table C.6-2a "Enhanced Code Value Keys Macro with Optional Keys"</u>		
<u>>Effective Start DateTime</u>	<u>(0010,xxx6)</u>	<u>Q</u>
<u>>Effective Stop DateTime</u>	<u>(0010,xxx7)</u>	<u>Q</u>
<u>>SPCU Comment</u>	<u>(0010,xxx1)</u>	<u>Q</u>

Attribute Name	Tag	Type
<u>>SPCU Reference</u>	<u>(0010,xx10)</u>	<u>Q</u>
<u>Person Names to Use Sequence</u>	<u>(0010,xxx3)</u>	<u>Q</u>
<u>>Name to Use</u>	<u>(0010,xx12)</u>	<u>Q</u>
<u>>Effective Start DateTime</u>	<u>(0010,xxx6)</u>	<u>Q</u>
<u>>Effective Stop DateTime</u>	<u>(0010,xxx7)</u>	<u>Q</u>
<u>>Name to Use Comment</u>	<u>(0010,xx13)</u>	<u>Q</u>
<u>Third Person Pronouns Sequence</u>	<u>(0010,xx21)</u>	<u>Q</u>
<u>>Pronoun Code Sequence</u>	<u>(0010,xx22)</u>	<u>Q</u>
<i>>> Include Table C.6-2a "Enhanced Code Value Keys Macro with Optional Keys"</i>		
<u>>Effective Start DateTime</u>	<u>(0010,xxx6)</u>	<u>Q</u>
<u>>Effective Stop DateTime</u>	<u>(0010,xxx7)</u>	<u>Q</u>
<u>>Pronoun Comment</u>	<u>(0010,xx23)</u>	<u>Q</u>
Other Patient IDs Sequence	(0010,1002)	O
...		

304

305

306 ...

307

308 **Update Part 4, Table F.7.2-1**

309 **F.7.2 Operations**

310 ...

311 **F.7.2.1.1 Modality Performed Procedure Step Subset Specification**

312

313 **Table F.7.2-1. Modality Performed Procedure Step SOP Class N-CREATE, N-SET and Final State**
314 **Attributes**
315

Attribute Name	Tag	Req. Type N-Create (SCU/SCP)	Req. Type N-SET (SCU/SCP)	Requirement Type Final State (see Note 1)
...				
Patient's Sex	(0010,0040)	2/2	Not Allowed	
<u>Gender Identity Sequence</u>	<u>(0010,xxxx)</u>	<u>3/3</u>	<u>Not Allowed</u>	
<u>>Gender Identity Code Sequence</u>	<u>(0010,xxx4)</u>	<u>1/-</u>	<u>Not Allowed</u>	
<i>>>Include Table F.7.2-1a. Modality Performed Procedure Step Enhanced Code Value Macro with no N-SET</i>				
<u>>Effective Start DateTime</u>	<u>(0010,xxx6)</u>	<u>3/-</u>	<u>Not Allowed</u>	
<u>>Effective Stop DateTime</u>	<u>(0010,xxx7)</u>	<u>3/-</u>	<u>Not Allowed</u>	
<u>>Gender Identity Comment</u>	<u>(0010,xxx8)</u>	<u>3/-</u>	<u>Not Allowed</u>	
<u>Sex Parameters for Clinical Use Sequence</u>	<u>(0010,xxx2)</u>	<u>3/3</u>	<u>Not Allowed</u>	
<u>>SPCU Category Code Sequence</u>	<u>(0010,xxx9)</u>	<u>1/-</u>	<u>Not Allowed</u>	
<i>>>Include Table F.7.2-1a. Modality Performed Procedure Step Enhanced Code Value Macro with no N-SET</i>				
<u>>Effective Start DateTime</u>	<u>(0010,xxx6)</u>	<u>3/-</u>	<u>Not Allowed</u>	
<u>>Effective Stop DateTime</u>	<u>(0010,xxx7)</u>	<u>3/-</u>	<u>Not Allowed</u>	
<u>>SPCU Comment</u>	<u>(0010,xxx1)</u>	<u>3/-</u>	<u>Not Allowed</u>	
<u>>SPCU Reference</u>	<u>(0010,xx10)</u>	<u>3/-</u>	<u>Not Allowed</u>	
<u>Person Names to Use Sequence</u>	<u>(0010,xxx3)</u>	<u>3/3</u>	<u>Not Allowed</u>	
<u>>Name to Use</u>	<u>(0010,xx12)</u>	<u>1/-</u>	<u>Not Allowed</u>	
<u>>Effective Start</u>	<u>(0010,xxx6)</u>	<u>3/-</u>	<u>Not Allowed</u>	

<u>DateTime</u>				
>Effective Stop DateTime	<u>(0010,xxx7)</u>	<u>3/-</u>	<u>Not Allowed</u>	
>Name to Use Comment	<u>(0010,xx13)</u>	<u>3/-</u>	<u>Not Allowed</u>	
Third Person Pronouns Sequence	<u>(0010,xx21)</u>	<u>3/3</u>	<u>Not Allowed</u>	
>Pronoun Code Sequence	<u>(0010,xx22)</u>	<u>1/-</u>	<u>Not Allowed</u>	
>> Include Table F.7.2-1a. Modality Performed Procedure Step Enhanced Code Value Macro with no N-SET				
>Effective Start DateTime	<u>(0010,xxx6)</u>	<u>3/-</u>	<u>Not Allowed</u>	
>Effective Stop DateTime	<u>(0010,xxx7)</u>	<u>3/-</u>	<u>Not Allowed</u>	
>Pronoun Comment	<u>(0010,xx23)</u>	<u>3/-</u>	<u>Not Allowed</u>	

316

317 **Update Part 4, Table F.8.2-1 Modality Performed Procedure Step Retrieve SOP Class N-GET**
318 **Attributes**

319 **F.8.2 Operations**

320

321 **Table F.8.2-1. Modality Performed Procedure Step Retrieve SOP Class N-GET Attributes**

Attribute Name	Tag	Req. Type (SCU/SCP)
...		
Patient's Sex	(0010,0040)	3/2
<u>Gender Identity Sequence</u>	<u>(0010,xxxx)</u>	<u>3/3</u>
> <u>Gender Identity Code Sequence</u>	<u>(0010,xxx4)</u>	<u>-/1</u>
>>Include Table 8-2a. "Enhanced Coded Entry Macro with Optional Matching Key Support and Optional Meaning"		
>Effective Start DateTime	<u>(0010,xxx6)</u>	<u>-/3</u>

<u>>Effective Stop DateTime</u>	<u>(0010,xxx7)</u>	<u>-/3</u>
<u>>Gender Identity Comment</u>	<u>(0010,xxx8)</u>	<u>-/3</u>
<u>Sex Parameters for Clinical Use Sequence</u>	<u>(0010,xxx2)</u>	<u>3/3</u>
<u>>SPCU Category Code Sequence</u>	<u>(0010,xxx9)</u>	<u>-/1</u>
<i>>>Include Table 8-2a. "Enhanced Coded Entry Macro with Optional Matching Key Support and Optional Meaning"</i>		
<u>>Effective Start DateTime</u>	<u>(0010,xxx6)</u>	<u>-/3</u>
<u>>Effective Stop DateTime</u>	<u>(0010,xxx7)</u>	<u>-/3</u>
<u>>SPCU Comment</u>	<u>(0010,xxx1)</u>	<u>-/3</u>
<u>>SPCU Reference</u>	<u>(0010,xx10)</u>	<u>-/3</u>
<u>Person Names to Use Sequence</u>	<u>(0010,xxx3)</u>	<u>3/3</u>
<u>>Name to Use</u>	<u>(0010,xx12)</u>	<u>-/1</u>
<u>>Effective Start DateTime</u>	<u>(0010,xxx6)</u>	<u>-/3</u>
<u>>Effective Stop DateTime</u>	<u>(0010,xxx7)</u>	<u>-/3</u>
<u>>Name to Use</u>	<u>(0010,xx12)</u>	<u>-/3</u>
<u>Third Person Pronouns Sequence</u>	<u>(0010,xx21)</u>	<u>3/3</u>
<u>>Pronoun Code Sequence</u>	<u>(0010,xx22)</u>	<u>-/1</u>
<i>>>Include Table 8.8-1 "Code Sequence Macro Attributes"</i>		
<u>>Effective Start DateTime</u>	<u>(0010,xxx6)</u>	<u>-/3</u>
<u>>Effective Stop DateTime</u>	<u>(0010,xxx7)</u>	<u>-/3</u>
<u>>Pronoun Comment</u>	<u>(0010,xx23)</u>	<u>-/3</u>

Update K.2.2.1.2 as shown

K.2.2.1.2 Return Key Attributes

The values of Return Key Attributes to be retrieved with the Worklist are specified with zero-length (Universal Matching) in the C-FIND request. SCPs shall support Return Key Attributes defined by a Worklist Information Model according to the Data Element Type (1, 1C, 2, 2C, 3) as defined in [PS3.5](#).

Every Matching Key Attribute shall also be considered as a Return Key Attribute. Therefore the C-FIND response shall contain in addition to the values of the requested Return Key Attributes the values of the requested Matching Key Attributes.

Note

1. The Conformance Statement of the SCP lists the Return Key Attributes of Type 3, which are supported.
2. An SCU may choose to supply any subset of Return Key Attributes.
3. An SCU can not expect to receive any Type 3 Return Key Attributes.
4. Return Key Attributes with VR of SQ may be specified either with zero-length or with the zero-length item in the sequence.
5. A sequence Attribute such as Person Names to Use Sequence(0010,xxx3) may be specified as an optional matching key, in which case sequence matching (see C.2.2.2.6) will be used, or it may be specified as a Return Key, in which case no matching is performed on this Attribute. In either case, if a match is found the entire value of the sequence Attribute (all of the items and all of the values of the attributes in those items) is included in the Identifier.

Update Part 4, Table K.6-1. Attributes for the Modality Worklist Information Model

K.6.1 Modality Worklist SOP Class

Table K.6-1. Attributes for the Modality Worklist Information Model

Description / Module	Tag	Matching Key Type	Return Key Type	Remark/Matching Type
...				
Patient's Sex	(0010,0040)	O	2	
<u>Gender Identity Sequence</u>	<u>(0010,xxx)</u>	<u>O</u>	<u>3</u>	
<u>>Gender Identity Code Sequence</u>	<u>(0010,xxx4)</u>	<u>O</u>	<u>1</u>	
<u>>>Include Table 8-2a. Enhanced Coded Entry Macro with Optional Matching Key Support and Optional Meaning</u>				
<u>>Effective Start DateTime</u>	<u>(0010,xxx6)</u>	<u>O</u>	<u>3</u>	
<u>>Effective Stop DateTime</u>	<u>(0010,xxx7)</u>	<u>O</u>	<u>3</u>	
<u>>Gender Identity Comment</u>	<u>(0010,xxx8)</u>	<u>O</u>	<u>3</u>	

<u>Sex Parameters for Clinical Use Sequence</u>	<u>(0010,xxx2)</u>	<u>0</u>	<u>3</u>	
<u>>SPCU Category Code Sequence</u>	<u>(0010,xxx9)</u>	<u>0</u>	<u>1</u>	
<i>>>Include Table 8-2a. Enhanced Coded Entry Macro with Optional Matching Key Support and Optional Meaning</i>				
<u>>Effective Start DateTime</u>	<u>(0010,xxx6)</u>	<u>0</u>	<u>3</u>	
<u>>Effective Stop DateTime</u>	<u>(0010,xxx7)</u>	<u>0</u>	<u>3</u>	
<u>>SPCU Comment</u>	<u>(0010,xxx1)</u>	<u>0</u>	<u>3</u>	
<u>>SPCU Reference</u>	<u>(0010,xx10)</u>	<u>0</u>	<u>3</u>	
<u>Person Names to Use Sequence</u>	<u>(0010,xxx3)</u>	<u>0</u>	<u>3</u>	
<u>>Name to Use</u>	<u>(0010,xx12)</u>	<u>0</u>	<u>1</u>	
<u>>Effective Start DateTime</u>	<u>(0010,xxx6)</u>	<u>0</u>	<u>3</u>	
<u>>Effective Stop DateTime</u>	<u>(0010,xxx7)</u>	<u>0</u>	<u>3</u>	
<u>>Name to Use Comment</u>	<u>(0010,xx13)</u>	<u>0</u>	<u>3</u>	
<u>Third Person Pronouns Sequence</u>	<u>(0010,xx21)</u>	<u>0</u>	<u>3</u>	
<u>>Pronoun Code Sequence</u>	<u>(0010,xx22)</u>	<u>0</u>	<u>1</u>	
<i>>> Include Table 8-2a. Enhanced Coded Entry Macro with Optional Matching Key Support and Optional Meaning</i>				
<u>>Effective Start DateTime</u>	<u>(0010,xxx6)</u>	<u>0</u>	<u>3</u>	
<u>>Effective Stop DateTime</u>	<u>(0010,xxx7)</u>	<u>0</u>	<u>3</u>	
<u>>Pronoun Comment</u>	<u>(0010,xx23)</u>	<u>0</u>	<u>3</u>	
...				

347

348

Update Part 4, Table Q.4-1. Attributes for the Relevant Patient Information Model

349 **Q.4.3 Relevant Patient Information Model SOP Classes**

350 ...

351

Table Q.4-1. Attributes for the Relevant Patient Information Model

Description / Module	Tag	Matching Key Type	Return Key Type	Remark/Matching Type
...				
Patient's Sex	(0010,0040)	-	2	
<u>Gender Identity Sequence</u>	<u>(0010,xxx)</u>	<u>O</u>	<u>3</u>	
<u>>Gender Identity Code Sequence</u>	<u>(0010,xxx4)</u>	<u>O</u>	<u>1</u>	
<i>>>Include Table 8-2a. Enhanced Coded Entry Macro with Optional Matching Key Support and Optional Meaning</i>				
<u>>Effective Start DateTime</u>	<u>(0010,xxx6)</u>	<u>O</u>	<u>3</u>	
<u>>Effective Stop DateTime</u>	<u>(0010,xxx7)</u>	<u>O</u>	<u>3</u>	
<u>>Gender Identity Comment</u>	<u>(0010,xxx8)</u>	<u>O</u>	<u>3</u>	
<u>Sex Parameters for Clinical Use Sequence</u>	<u>(0010,xxx2)</u>	<u>O</u>	<u>3</u>	
<u>>SPCU Category Code Sequence</u>	<u>(0010,xxx9)</u>	<u>O</u>	<u>1</u>	
<i>>>Include Table 8-2a. Enhanced Coded Entry Macro with Optional Matching Key Support and Optional Meaning</i>				
<u>>Effective Start DateTime</u>	<u>(0010,xxx6)</u>	<u>O</u>	<u>3</u>	
<u>>Effective Stop DateTime</u>	<u>(0010,xxx7)</u>	<u>O</u>	<u>3</u>	
<u>>SPCU Comment</u>	<u>(0010,xxx1)</u>	<u>O</u>	<u>3</u>	
<u>>SPCU Reference</u>	<u>(0010,xx10)</u>	<u>O</u>	<u>3</u>	
<u>Person Names to Use Sequence</u>	<u>(0010,xxx3)</u>	<u>O</u>	<u>3</u>	
<u>>Name to Use</u>	<u>(0010,xx12)</u>	<u>O</u>	<u>1</u>	
<u>>Effective Start DateTime</u>	<u>(0010,xxx6)</u>	<u>O</u>	<u>3</u>	

<u>>Effective Stop DateTime</u>	<u>(0010,xxx7)</u>	<u>O</u>	<u>3</u>	
<u>>Name to Use Comment</u>	<u>(0010,xx13)</u>	<u>O</u>	<u>3</u>	
<u>Third Person Pronouns Sequence</u>	<u>(0010,xx21)</u>	<u>O</u>	<u>3</u>	
<u>>Pronoun Code Sequence</u>	<u>(0010,xx22)</u>	<u>O</u>	<u>1</u>	
<i>>> Include Table 8-2a. Enhanced Coded Entry Macro with Optional Matching Key Support and Optional Meaning</i>				
<u>>Effective Start DateTime</u>	<u>(0010,xxx6)</u>	<u>O</u>	<u>3</u>	
<u>>Effective Stop DateTime</u>	<u>(0010,xxx7)</u>	<u>O</u>	<u>3</u>	
<u>>Pronoun Comment</u>	<u>(0010,xx23)</u>	<u>O</u>	<u>3</u>	
...				

352

353

354 ***Update Part 4, Table V.6-2. Attributes for the Substance Approval Query Information Model***

355 V.6.2 Substance Approval Query SOP Class

356 ...

357 **Table V.6-2. Attributes for the Substance Approval Query Information Model**

Description / Module	Tag	Matching Key Type	Return Key Type	Remark/Matching Type
Patient's Sex	(0010,0040)	-	2	
<u>Gender Identity Sequence</u>	<u>(0010,xxxx)</u>	<u>O</u>	<u>3</u>	
<u>>Gender Identity Code Sequence</u>	<u>(0010,xxx4)</u>	<u>O</u>	<u>1</u>	
<i>>>Include Table 8-2a. Enhanced Coded Entry Macro with Optional Matching Key Support and Optional Meaning</i>				
<u>>Effective Start DateTime</u>	<u>(0010,xxx6)</u>	<u>O</u>	<u>3</u>	
<u>>Effective Stop DateTime</u>	<u>(0010,xxx7)</u>	<u>O</u>	<u>3</u>	

<u>>Gender Identity Comment</u>	<u>(0010,xxx8)</u>	<u>0</u>	<u>3</u>	
<u>Sex Parameters for Clinical Use Sequence</u>	<u>(0010,xxx2)</u>	<u>0</u>	<u>3</u>	
<u>>SPCU Category Code Sequence</u>	<u>(0010,xxx9)</u>	<u>0</u>	<u>1</u>	
<u>>> Include Table 8-2a. Enhanced Coded Entry Macro with Optional Matching Key Support and Optional Meaning</u>				
<u>>Effective Start DateTime</u>	<u>(0010,xxx6)</u>	<u>0</u>	<u>3</u>	
<u>>Effective Stop DateTime</u>	<u>(0010,xxx7)</u>	<u>0</u>	<u>3</u>	
<u>>SPCU Comment</u>	<u>(0010,xxx1)</u>	<u>0</u>	<u>3</u>	
<u>>SPCU Reference</u>	<u>(0010,xx10)</u>	<u>0</u>	<u>3</u>	
<u>Person Names to Use Sequence</u>	<u>(0010,xxx3)</u>	<u>0</u>	<u>3</u>	
<u>>Name to Use</u>	<u>(0010,xx12)</u>	<u>0</u>	<u>1</u>	
<u>>Effective Start DateTime</u>	<u>(0010,xxx6)</u>	<u>0</u>	<u>3</u>	
<u>>Effective Stop DateTime</u>	<u>(0010,xxx7)</u>	<u>0</u>	<u>3</u>	
<u>>Name to Use Comment</u>	<u>(0010,xx13)</u>	<u>0</u>	<u>3</u>	
<u>Third Person Pronouns Sequence</u>	<u>(0010,xx21)</u>	<u>0</u>	<u>3</u>	
<u>>Pronoun Code Sequence</u>	<u>(0010,xx22)</u>	<u>0</u>	<u>1</u>	
<u>>> Include Table 8-2a. Enhanced Coded Entry Macro with Optional Matching Key Support and Optional Meaning</u>				
<u>>Effective Start DateTime</u>	<u>(0010,xxx6)</u>	<u>0</u>	<u>3</u>	
<u>>Effective Stop DateTime</u>	<u>(0010,xxx7)</u>	<u>0</u>	<u>3</u>	
<u>>Pronoun Comment</u>	<u>(0010,xx23)</u>	<u>0</u>	<u>3</u>	
...				

359

Update Table CC.2.5-3. UPS SOP Class N-CREATE/N-SET/N-GET/C-FIND Attributes

360

CC.2.5 Create a Unified Procedure Step (N-CREATE)

361

...

362

Table CC.2.5-3. UPS SOP Class N-CREATE/N-SET/N-GET/C-FIND Attributes

Attribute Name	Tag	Req. Type N-CREATE (SCU/SCP)	Req. Type N-SET (SCU/SCP)	Final State	Req. Type N-GET (SCU/SCP)	Match Key Type	Return Key Type	Remark/Matching Type
...								
Patient's Sex	(0010,0040)	2/2	Not Allowed	O	3/2	R	2	
<u>Gender Identity Sequence</u>	<u>(0010,xxxx)</u>	<u>3/3</u>	<u>Not Allowed</u>	<u>O</u>	<u>3/3</u>	<u>O</u>	<u>3</u>	
<u>>Gender Identity Code Sequence</u>	<u>(0010,xxx4)</u>	<u>1/-</u>	<u>Not Allowed</u>	<u>O</u>	<u>-/1</u>	<u>O</u>	<u>1</u>	
>>Include CC.2.5-2a. "UPS Code Sequence Macro"								
<u>>Effective Start DateTime</u>	<u>(0010,xxx6)</u>	<u>3/-</u>	<u>Not Allowed</u>	<u>O</u>	<u>-/3</u>	<u>O</u>	<u>3</u>	
<u>>Effective Stop DateTime</u>	<u>(0010,xxx7)</u>	<u>3/-</u>	<u>Not Allowed</u>	<u>O</u>	<u>-/3</u>	<u>O</u>	<u>3</u>	
<u>>Gender Identity Comment</u>	<u>(0010,xxx8)</u>	<u>3/-</u>	<u>Not Allowed</u>	<u>O</u>	<u>-/3</u>	<u>O</u>	<u>3</u>	
<u>Sex Parameters for Clinical Use Sequence</u>	<u>(0010,xxx2)</u>	<u>3/3</u>	<u>Not Allowed</u>	<u>O</u>	<u>3/3</u>	<u>O</u>	<u>3</u>	
<u>>SPCU Category Code Sequence</u>	<u>(0010,xxx9)</u>	<u>1/-</u>	<u>Not Allowed</u>	<u>O</u>	<u>-/1</u>	<u>O</u>	<u>1</u>	
>>Include CC.2.5-2a. "UPS Code Sequence Macro"								

>Effective Start DateTime	(0010,xxx6)	3/-	<u>Not Allowed</u>	<u>0</u>	<u>-3</u>	<u>0</u>	<u>3</u>	
>Effective Stop DateTime	(0010,xxx7)	3/-	<u>Not Allowed</u>	<u>0</u>	<u>-3</u>	<u>0</u>	<u>3</u>	
>SPCU Comment	(0010,xxx1)	3/-	<u>Not Allowed</u>	<u>0</u>	<u>-3</u>	<u>0</u>	<u>3</u>	
>SPCU Reference	(0010,xx10)	3/-	<u>Not Allowed</u>	<u>0</u>	<u>-3</u>	<u>0</u>	<u>3</u>	
Person Names to Use Sequence	(0010,xxx3)	3/3	<u>Not Allowed</u>	<u>0</u>	<u>3/3</u>	<u>0</u>	<u>3</u>	
>Name to Use	(0010,xx12)	1/-	<u>Not Allowed</u>	<u>0</u>	<u>-1</u>	<u>0</u>	<u>1</u>	
>Effective Start DateTime	(0010,xxx6)	3/-	<u>Not Allowed</u>	<u>0</u>	<u>-3</u>	<u>0</u>	<u>3</u>	
>Effective Stop DateTime	(0010,xxx7)	3/-	<u>Not Allowed</u>	<u>0</u>	<u>-3</u>	<u>0</u>	<u>3</u>	
>Name to Use Comment	(0010,xx13)	3/-	<u>Not Allowed</u>	<u>0</u>	<u>-3</u>	<u>0</u>	<u>3</u>	
Third Person Pronouns Sequence	(0010,xx21)	3/3	<u>Not Allowed</u>	<u>0</u>	<u>3/3</u>	<u>0</u>	<u>3</u>	
>Pronoun Code Sequence	(0010,xx22)	1/-	<u>Not Allowed</u>	<u>0</u>	<u>-1</u>	<u>0</u>	<u>1</u>	
>>Include CC.2.5-2a. "UPS Code Sequence Macro"								
>Effective Start DateTime	(0010,xxx6)	3/-	<u>Not Allowed</u>	<u>0</u>	<u>-3</u>	<u>0</u>	<u>3</u>	
>Effective Stop DateTime	(0010,xxx7)	3/-	<u>Not Allowed</u>	<u>0</u>	<u>-3</u>	<u>0</u>	<u>3</u>	
>Pronoun Comment	(0010,xx23)	3/-	<u>Not Allowed</u>	<u>0</u>	<u>-3</u>	<u>0</u>	<u>3</u>	

363

364

365

Update CC.2.8.3.1 as shown

366

CC.2.8.3.1 Worklist Search Method

367

The following steps are used to generate match responses.

368

- Match the key match Attributes contained in the Identifier of the C-FIND request against the values of the Key Attributes for each worklist entity.

369

370

- If there are no matching keys, then there are no matches, return a response with a status equal to Success and with no Identifier.

371

372

- Otherwise,

373

- For each entity for which the Attributes match all of the specified matching key Attributes, construct an Identifier. This Identifier shall contain all of the values of the Attributes for this entity that correspond to the return keys specified in the C-FIND request.

374

375

376

Note: A sequence Attribute such as Person Names to Use Sequence(0010,xxx3) may be specified as an optional matching key, in which case sequence matching (see C.2.2.2.6) will be used, or it may be specified as a Return Key, in which case no matching is performed on this attribute. In either case, if a match is found the entire value of the sequence Attribute (all of the items and all of the values of the attributes in those items) is included in the Identifier.

377

378

379

380

- Return a response for each remaining Identifier.

381

Table CC.2.5-3 defines the Attributes of the Unified Procedure Step Information Model, the requirements for key matching, and the requirements for return keys.

382

383

384

385

Part 6

386

Update Part 6, Table 6-1. Registry of DICOM Data Elements

387

Table 6-1. Registry of DICOM Data Elements

388

Tag	Name	Keyword	VR	VM
(0010,xxxx)	Gender Identity Sequence		SQ	1
(0010,xxx1)	SPCU Comment		UT	1
(0010,xxx2)	Sex Parameters for Clinical Use Sequence		SQ	1
(0010,xxx3)	Patient Name to Use Sequence		SQ	1
(0010,xxx4)	Gender Identity Code Sequence		SQ	1
(0010,xxx6)	Effective Start DateTime		DT	1

(0010,xxx7)	Effective Stop DateTime		DT	1
(0010,xxx8)	Gender Identity Comment		UT	1
(0010,xxx9)	SPCU Category Code Sequence		SQ	1
(0010,xx10)	SPCU Reference		URI	1..n
(0010,xx11)	Patient Name to Use		LT	1
(0010,xx13)	Name to Use Comment		UT	1
(0010,xx21)	Third Person Pronouns Sequence		SQ	1
(0010,xx22)	Pronoun Code Sequence		SQ	1
(0010,xx23)	Pronoun Comment		UT	1
(0010,xxx3)	Person Names to Use Sequence			

389

390 **Update Part 15 Table E.1-1. Application Level Confidentiality Profile Attributes**

391

Part 15

392

E.1 APPLICATION LEVEL CONFIDENTIALITY PROFILES

393

...

Commented [RH3]: Note local profiles

394 These action codes are applicable to both Sequence and non-Sequence Attributes; in the case of
 395 Sequences, the action is applicable to the Sequence and all of its contents. Cleaning a sequence ("C"
 396 action) entails changing values of Attributes within that Sequence when the meaning of the Sequence
 397 within the context of its use in the IOD is specified, or recursively applying the Profile rules to each
 398 Dataset in each Item of the Sequence otherwise. Keeping a Sequence ("K" action) requires recursively
 399 applying the Profile rules to each Dataset in each Item of the Sequence (for example, in order to remap
 400 any UIDs contained within that sequence).

401

...

402

Table E.1-1. Application Level Confidentiality Profile Attributes

Attribute Name	Tag	Ret d. (from PS 3.6)	In Std. Comp. IOD (from PS3.3)	Basic Pr of.	Rt n. Safe Priv. Opt.	Rt n. UI Ds Opt.	Rt n. Dev. Id. Opt.	Rt n. Inst. Id. Opt.	Rtn. Pat. Chars. Opt.	Rtn. Long. Full Dates Opt.	Rt n. Long. Modif. Dates Opt.	Cle an Des c. Opt.	Clea n Stru ct. Cont. Opt.	Cle an Gra ph. Opt.
Patient's Sex	(0010, 0040)	N	Y	Z					K					
Person Name	(0040, A123)	N	Y	D										
...														
<u>Gender Identity Sequence</u>	<u>(0010, xxx)</u>	<u>N</u>	<u>Y</u>	<u>X</u>										
<u>Sex Parameters for Clinical Use Sequence</u>	<u>(0010, xxx2)</u>	<u>N</u>	<u>Y</u>	<u>X</u>					<u>K</u>					
<u>Person Names to Use Sequence</u>	<u>(0010, xx12)</u>	<u>N</u>	<u>Y</u>	<u>X</u>										
<u>Third Person Pronoun Sequence</u>	<u>(0010, xx21)</u>	<u>N</u>	<u>Y</u>	<u>X</u>										
<u>Effective Start DateTime</u>	<u>(0010, xxx6)</u>	<u>N</u>	<u>Y</u>	<u>X</u>						<u>K</u>	<u>C</u>			
<u>Effective Stop DateTime</u>	<u>(0010, xxx7)</u>	<u>N</u>	<u>Y</u>	<u>X</u>						<u>K</u>	<u>C</u>			
<u>SPCU Comment</u>	<u>(0010, xxx1)</u>	<u>N</u>	<u>Y</u>	<u>X</u>					<u>C</u>			<u>C</u>		
<u>Gender Identity Comment</u>	<u>(0010, xxx8)</u>	<u>N</u>	<u>Y</u>	<u>X</u>								<u>C</u>		
<u>Name to Use</u>	<u>(0010, xx12)</u>	<u>N</u>	<u>Y</u>	<u>X</u>										
<u>Pronoun Comment</u>	<u>(0010, xx23)</u>	<u>N</u>	<u>Y</u>	<u>X</u>								<u>C</u>		

403

404

Part 16

405

406

407

408

Add Gender to TID 1007

409

TID 1007 Subject Context, Patient

410

Identifies (and optionally describes) a patient who is the subject.

411

Type: Extensible

412

Order: Significant

413

Root: No

414

415

Table TID 1007. Subject Context, Patient

416

417

	NL	Rel with Parent	VT	Concept Name	VM	Req Type	Condition	Value Set Constraint
...								
2			PNAME	EV (121029, DCM, "Subject Name")	1	MC	Required if not inherited	Defaults to Value of Patient's Name (0010,0010) of the Patient Module
3			CODE	EV (121030, DCM, "Subject ID")	1	MC	Required if not inherited	Defaults to Value of Patient ID (0010,0020) of the Patient Module
4			DATE	EV (121031, DCM, "Subject Birth Date")	1	U		Defaults to Value of Patient's Birth Date (0010,0030) of the Patient Module
5			CODE	EV (121032, DCM, "Subject Sex")	1	U		Defaults to value equivalent to Value of Patient's Sex (0010,0040) of the Patient Module DCID 7455 "Sex"
5a			CODE	<u>EV (Sup233-04, DCM, "Subject Sex Parameters for Clinical Use")</u>	1-n	U		<u>Defaults to value equivalent to Value of Sex Parameters for Clinical Use Sequence (0010,xxx2) of the Patient Module.</u>

								<u>DCID CIDxxx2. Sex Parameters for Clinical Use</u>
6			NUM	EV (121033, DCM, "Subject Age")	1	U		Defaults to value equivalent to Value of Patient's Age (0010,1010) of the Patient Study Module UNITS = DCID 7456 "Age Unit"
...								

418
419

420 **Update CID 7455 Sex**

421 **CID 7455 Sex**

422 This Context Group includes terms for the finding of sex of a subject for clinical purposes, such as
423 selection of sex-based growth metrics.

424 **Resources: HTML | FHIR JSON | FHIR XML | IHE SVS XML**

425 **Type: Non-Extensible**

426 **Version: 20040112**

427 **UID: 1.2.840.10008.6.1.519**

428
429

Table CID 7455. Sex

Coding Scheme Designator	Code Value	Code Meaning	Patient Sex (0010,0040) Equivalent
DCM	M	Male	M
DCM	F	Female	F
DCM	U	Unknown Sex	
DCM	MP	Male Pseudohermaphrodite	
DCM	FP	Female Pseudohermaphrodite <u>Pseudohermaphrodite</u>	
DCM	H	Hermaphrodite	
DCM	MC	Male changed to Female	
DCM	FC	Female changed to Male	
DCM	121104	Ambiguous Sex	
DCM	121102	Other Sex	
DCM	121103	Undetermined Sex	O

Include CID xxx2

430

431 Note

- 432 1. These terms are distinct from the gender of a subject for administrative purposes, although the default
433 value for clinical sex is often based on the administrative gender (e.g., see TID 1007 "Subject Context,
434 Patient"). The administrative value "O" from Patient's Sex (0010,0040) maps by default to
435 "Undetermined **Sex**" for clinical purposes.
- 436 2. This Context Group in a prior edition of the Standard included codes improperly attributed to ISO 5218.
- 437 3. These terms are derived from the terminology and codes for sex in ASTM E1633-02a "Standard
438 Specification for Coded Values Used in the Electronic Health Record."

Add CID's to PS 3.16

440

CIDxxx1 Person Gender Identity

442 **Resources:** HTML | FHIR JSON | FHIR XML | IHE SVS XML
 443 **Type:** Extensible
 444 **Version:** 202xmdd
 445 **UID:** 1.2.840.TBD
 446

447 **Table CID CIDxxx1. Person Gender Identity**

Coding Scheme Designator	Code Value	Code Meaning	UMLS Concept ID
SCT	446141000124107	Identifies as female gender	C3887375
SCT	446151000124109	Identifies as male gender	C3887374
SCT	33791000087105	Identifies as nonbinary gender	C3887376

448

449

CIDxxx2 Category of Sex Parameters for Clinical Use

451 **Resources:** HTML | FHIR JSON | FHIR XML | IHE SVS XML
 452 **Type:** Non-Extensible
 453 **Version:** 202xmdd
 454 **UID:** 1.2.840.TBD
 455

456 **Table CID CIDxxx2. Category of Sex Parameters for Clinical Use**

457

Coding Scheme Designator	Code Value	Code Meaning
DCM	Sup233-01	Female-typical
DCM	Sup233-02	Male-typical
DCM	Sup233-03	Specified

458
459
460
461
462
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464

CIDxxx4 Third Person Pronoun Sets

Resources: HTML | FHIR JSON | FHIR XML | IHE SVS XML
Type: Extensible
Version: 202xmdd
UID: 1.2.840.TBD

465

Table CID CIDxxx4. Third Person Pronoun Sets

Coding Scheme Designator	Code Value	Code Meaning
LN	LA29518-0	He/him/his/his/himself
LN	LA29519-8	She/her/her/hers/herself
LN	LA29520-6	They/them/their/theirs/themselves

466
467
468

Note: These LOINC codes specifically reflect English pronouns and their usage. There are no translated code meanings for these codes.

469

Add SPCU Category Codes to DICOM terminology

470

D DICOM Controlled Terminology Definitions (Normative)

471

472

Table D-1. DICOM Controlled Terminology Definitions (Coding Scheme Designator "DCM" Coding Scheme Version "01")

473

474

475

Code Value	Code Meaning	Definition	Notes
Sup233-01	Female-typical	Available data indicates that diagnostics, analytics, and treatments should consider best practices associated with female reference populations.	This code and definition taken from https://terminology.hl7.org/ValueSet-sex-parameter-for-clinical-use.html
Sup233-02	Male-typical	Available data indicates that diagnostics, analytics, and treatments should consider best practices associated with male reference populations.	This code and definition taken from https://terminology.hl7.org/ValueSet-sex-parameter-for-clinical-use.html

Sup233-03	Specified	Available data indicates that diagnostics, analytics, and treatment best practices may be undefined or not aligned with sex-derived reference populations. Additional information may be available in the form of comments and/or observations.	This code and definition taken from https://terminology.hl7.org/ValueSet-sex-parameter-for-clinical-use.html
Sup233-04	Subject Sex Parameters for Clinical Use	Sex Parameters for Clinical Use of patient who is the subject of these observations.	See https://terminology.hl7.org/ValueSet-sex-parameter-for-clinical-use.html

476
477

Add annex with use case and examples to Part 17

479

480

Part 17

481

Annex XX Sex and Gender Examples

482

XX.1 Sex and Gender Attributes in the Patient Study Module

483
484

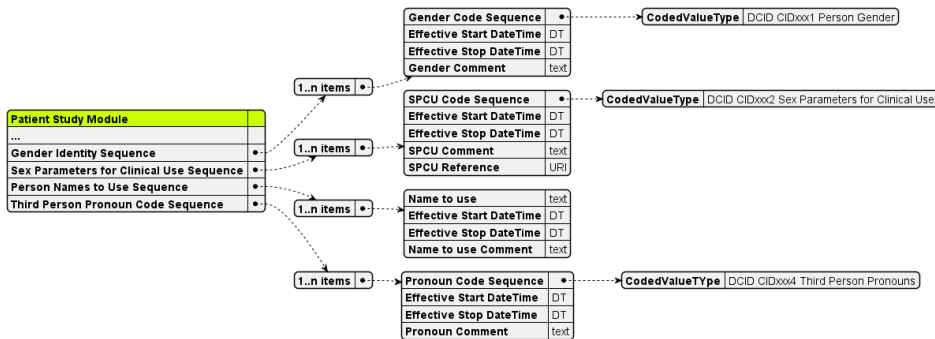
A patient's sex and gender characteristics may change during the patient's lifespan. This is reflected in four optional attributes that are in the Patient Study Module, shown in Figure XX.1-1. These are:

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- The Gender Identity Sequence (0010,xxxx), which contains the patient's chosen gender identity. This sequence may record multiple identities. This may capture a history of past identities, or it may reflect social choices. During transition a patient might choose to publicly use one identity but privately use another.
- The Sex Parameters for Clinical Use Sequence (0010,xxx2), which contains codes to describe sex-related parameter choices. Most often patients will have the "Female-typical" or "Male-typical" characteristic. This means that the typical normal reference ranges, alert limits, drug and hormone reactions, body fat characteristics, lean body mass algorithms, etc. apply. But there may be comments or references to indicate that specific typical parameters should not be used. For example, a cardiology exam might be ordered with an SPCU Category Code of "Male-typical" and the SPCU comment "Hormonal treatment, use gender identity Creatinine reference ranges". This could also reflect tumors affecting hormone levels that will change appropriate normal ranges or algorithm selection.
- The Person Names to Use Sequence (0010,xxx3) holds the names that the patient wants used during conversation or in instructions. These names may reflect social status, rank, name changes, formal vs informal names, personal identity, etc. It is present so that staff can begin a conversation without unnecessarily disturbing the patient. "Herr Doktor Professor Schmidt" may be very sensitive about getting the full list of titles right, or "Captain Smith" may

503 become angry if addressed as “Joan”. Recent name changes might not yet be legally
504 complete, but using the old name can cause serious distress.
505 • The Third Person Pronoun Code Sequence (0010,xx21) lists the pronouns wanted to be used
506 in instructions given in writing or to care givers. In direct conversation the third person is
507 rarely used.
508

509 All of these attributes are optional, all are multivalued, and all may be extended with local codes and
510 guidance. The DICOM standard only specifies the baseline value sets for Gender, SPCU, and Third
511 Person Pronouns. Local extensions for local usage should be expected.



512

513 **Figure XX.1-1 Sex and Gender Attributes added to Patient Study Module**

514 Note: "CodedValueType" indicates a code sequence as defined in Table C.6-2a, with the code chosen from
515 the context group specified.
516

517 **XX.2 Patient Level attributes that change over time**

518 In the DICOM Information Model, attributes in the Patient Module and the Clinical Trial Subject Module,
519 exist at the Patient Level. These are not supposed to be different at patient level for all the studies for the
520 patient. This has implications when:

- 521 • One of these attributes changes in the real world, e.g., a patient's name changes.
- 522 • SOP Instances are imported from a different environment.
- 523 • Hospitals merge and consolidate their VNAs.

524 Most organizations will have policies regarding what should be done when one of these changes takes
525 place. DICOM does not specify or recommend such policies, but rather supports the usage of local
526 policies.

527 The Original Attributes Sequence (0400,0561) and Instance Coercion DateTime (0008,0015) can be used
528 to record prior values when changes are made to any attributes.

529 There are also attributes at the Study Level that might differ between studies when Patient Root queries
530 are performed. These include:

- 531 • Gender Identity Sequence (0010,xxxx)
- 532 • Sex Parameters for Clinical Use Sequence (0010,xxx2)
- 533 • Person Names to Use Sequence (0010,xxx3)

- 534 • Third Person Pronoun Sequence (0010,xx22)

535 As study level attributes, the values of these attributes are required by DICOM to be the same for all the
536 SOP Instances in a single study. They are allowed to be different in different studies for the same patient.

537 **XX.3 Patient reconciliation**

538 The Gender Identity Sequence (0010,xxxx) and Person Names to Use Sequence (0010,xxx3) are
539 potentially useful for patient reconciliation activities to find all the patient records. When patient names
540 change or might be recorded differently at different times and locations, patient reconciliation can be
541 difficult. These sequences may provide a history of prior names and genders for use by reconciliation
542 algorithms.

543 These sequences might also be deliberately truncated or restricted for patient privacy reasons.

544 DICOM does not specify or make recommendations for how the local policies, procedures, and
545 reconciliation algorithms should be designed.

546 **XX.4 SR documents**

547 In an SR Instance the default subject context information is provided by the attributes in the Common
548 Patient IE Modules. This may include the Sex Parameters for Clinical Use (0001,xxx2).

549 Individual observations, analyses, etc. may have a different subject context. The default information can
550 be overridden by information that is provided within the specific template. This is particularly relevant to
551 the Sex Parameters for Clinical Use (0001,xxx2). An acquisition process or analysis that was performed
552 using a different Sex Parameters for Clinical Use can be indicated within the template.

553 It is possible that a specific analysis might be performed using both "Male-typical" and "Female-typical"
554 analysis methods. The Subject Context for each individual report TID can indicate which method was
555 used for that analysis. The physician might review and consider both analysis results when deciding how
556 to treat this patient.

557 **XX.5 Example of HL7/DICOM interactions**

558 **XX.5.1 Mappings between HL7 and DICOM**

559 The HL7 Implementation Guides have imaging order examples of FHIR, V2, and CDA documents with
560 their gender model encodings. These can be found at

561 https://hl7.org/xprod/ig/uv/gender-harmony/informative1/v2dicom_use_case.html

562 These might be mapped onto the DICOM Patient and Patient Study Module attributes as shown below.
563 These mappings are just illustrative.

564 ***The HL7 Use Cases in HL7 documents are similar to this use case but differ in detail. This reflects***
565 ***the difference in workflow focus.***

566 **XX.5.1.1 Example 01: Imaging Order**

567 The following HL7 v2.9.1 message is an order for a "PET Myocardial Perfusion, Rest and Stress" imaging
568 procedure.

569 The administrative sex is female based on prior admissions. The patient was given a gender of female at
570 birth in 1978. At admission on July 15, 2022, the patient informed the admitting staff that they now
571 identify as male and are taking hormonal treatment.

572 The PET imaging procedure uses creatinine reference ranges to determine details of the procedure.
573 Creatinine reference ranges are sex related. Hormonal treatment for gender changes also affects

574 creatinine reference ranges. At this hospital the medical protocol for patients taking hormonal treatment
575 is to use affirmed gender creatinine reference ranges.

576 The SPCU for the current procedure is set as Male-typical, with the comment that due to hormonal
577 treatment Male-typical creatinine reference ranges should be used. The SPCU at birth is also provided in
578 the order for use by equipment that might find that useful. (The SPCU at birth is not needed by the
579 PET/CT system but might be needed by subsequent analysis systems.)

580 Note that the HL7 model does not specify how the effective start and stop datetimes are chosen. That is
581 left to the local policies and procedures. DICOM systems will usually obtain these from the HL7
582 messages and are unlikely to modify them.

583 The HL7 OMI message is:

```
584 MSH|^~\&|||20220715142240||OMI^O23|WSA5mY0UBuCGrytRTAFR8UWJ|P|2.9.1
585 PID||patientID^^^MR||Smith^Janet^^^^B~Smith^John^^^^N||19780328000000|F
586 GSP|1|S||76691-5^Gender identity^LN|446151000124109^Identifies as male
587 gender^SCT|20220715010000
588 GSC|1|S||Male-typical^Male typical
589 parameters^SexParameterForClinicalUse||OBR^4|20220715090000|Due to hormonal treatment,
590 use Male-typical Creatinine reference ranges
591 GSC|2|S||Female-typical^Female typical
592 parameters^SexParameterForClinicalUse|197803280000^20220715090000|OBR^4||Sex at Birth
593 ORC|NW
594 OBR|||241439007^PET heart study^SCT|82800-
595 4^PET+CT Heart W contrast IV^LN
596 IPC|accessionNum|procedureID|studyInstanceUID|schProcedureStepId|PT^Positron emission
597 tomography^DCM|122793^PET Myocardial Perfusion, Rest and Stress^DCM
598
599
```

599 This message maps to DICOM Modality Worklist content as shown in Table XX.4-1.

600 **Table XX.4-1 Mapping HL7 v2.9.1 OMI to DICOM Modality Worklist**

HL7 V2.9.1 OMI field	HL7 Element name	DICOM MWL Attribute Name	Tag	VR	DICOM Value
PID-5	Patient Name	Patient's Name	(0010,0010)	PN	Smith^Janet^^^
PID-7	Date/Time of Birth	Patient's Birth Date	(0010,0030)	DA	19780328
PID-8	Sex	Patient's Sex	(0010,0040)	CS	F
GSP-4	Gender Identity	Gender Identity Sequence	(0010,xxxx)	SQ	
n/a		<i>Begin item</i>			
GSP-5	SOGI Concept Value Gender Identity	>Gender Identity Code Sequence	(0010,xxx4)	SQ	
n/a		<i>Begin item</i>			
GSP-5-1	n/a	>>Code Value	(0008,0100)	SH	446151000124109
GSP-5-3	n/a	>>Coding Scheme Designator	(0008,0100)	SH	SCT
GSP-5-2	n/a	>>Code	(0008,0104)	LO	Identifies as male gender

		Meaning			
n/a		<i>End item</i>			
GSP-6	Validity Period	Effective Start DateTime	(0010,xxx6)	DT	20220715010000
n/a		<i>End item</i>			
GSC	Sex Parameter for Clinical Use Segment	Sex Parameters for Clinical Use Sequence	(0010,xxx2)	SQ	
n/a		<i>Begin item</i>			
GSC-4	Sex Parameter for Clinical Use	>SPCU Category Code Sequence	(0010,xxx9)	SQ	
n/a		<i>Begin item</i>			
GSC-4-1	n/a	>>Code Value	(0008,0100)	SH	Sup233-02 (HL7 "Male-typical")
GSC-4-3	n/a	>>Coding Scheme Designator	(0008,0102)	SH	DCM
GSC-4-2	n/a	>>Code Meaning	(0008,0104)	LO	Male-typical
n/a		<i>End item</i>			
GSC-8	Comment	>SPCU Comment	(0010,xxx1)	LT	Due to hormonal treatment, use Male-typical Creatinine reference ranges
GSC-5-1	Validity Period	>Effective Start DateTime	(0010,xxx6)	DT	20220715090000
n/a		<i>End item</i>			
GSC-4	Sex Parameter for Clinical Use	>SPCU Category Code Sequence	(0010,xxx9)	SQ	
n/a		<i>Begin item</i>			
GSC-4-1	n/a	>>Code Value	(0008,0100)	SH	Sup233-01
GSC-4-3	n/a	>>Coding Scheme Designator	(0008,0102)	SH	DCM
GSC-4-2	n/a	>>Code Meaning	(0008,0104)	LO	Female-typical
n/a		<i>End item</i>			
GSC-8	Comment	>SPCU Comment	(0010,xxx1)	LT	Sex at Birth
GSC-5-1	Validity Period	Effective Start DateTime	(0010,xxx6)	DT	197803280000
GSC-5-2	Validity Period	Effective Stop DateTime	(0010,xxx7)	DT	20220715090000

n/a		End item			
-----	--	----------	--	--	--

601

602 **XX.6 Examples of Name to Use**

603 Person names are culturally and administratively complex. DICOM often uses names to identify the
604 subject of a SOP Instance, and DICOM often uses names as part of queries to find SOP Instances.
605 DICOM does make some assumptions about likely aspects of naming, but expects that external policies
606 and procedures are used to determine the proper name to use for a patient. The name to be used in
607 conversation might not be the same as the Patient's Name (0010,0010) used in the SOP Instances.

608 DICOM applications expect to be provided with the name or names to be used as part of a modality
609 worklist, report, or other SOP instance. There may be several kinds of names.

610 The DICOM name attributes related to a patient are:

611 Patient's Name (0010,0010) – a single name at patient level that is required to be supported in
612 many C-FIND services. This is usually coordinated with the other hospital systems to
613 be a primary name for finding records for the patient. This name must be the same for
614 all SOP Instances for that patient when in a Patient Root query model. When using a
615 Study Root query model these are allowed to change from study to study, but they
616 must be the same for all instances in a single study.

617 A Patient's Name (0010,0010) may change, but this must be done systematically and
618 consistently to preserve the Patient Root and Study Root query requirements.

619 Other Patient Names (0010,1001) – optional other names at patient level for the patient. These
620 names must be the same for all SOP Instances for that patient when in a Patient Root
621 query model. When using a Study Root query model these are allowed to change from
622 study to study, but they must be the same for all SOP Instances in a single study.

623 Other Patient Names (0010,1001) may change, but this must be done systematically
624 and consistently to preserve the Patient Root and Study Root query requirements.

625 Person Names to Use Sequence (0010,xxx3) – optional other names at study level for the patient.
626 These names are allowed to change from study to study in both Patient Root and Study
627 Root query models, but they must be the same for all SOP Instances in a single study.

628 A history of past names may be held in this attribute by making use of the applicability
629 dates. When the patient may be known by multiple names, that information can be
630 held in this attribute.

631

632 A patient's name might change for a variety of reasons:

- 633 1. The patient's name was not known prior to performing the study, so a temporary pseudonym is
634 assigned. Later, when the patient is identified, the pseudonym is replaced by the patient's correct
635 name.
- 636 2. The patient gets married, divorced, adopted, or some other social event takes place that results in
637 a name change.
- 638 ○ This might result in a change to their official registered name, or
 - 639 ○ This might not change their official registered name.
- 640 3. The patient has had gender reassignment and associated name change.

641

642 In some unusual circumstances there are differences between official registered names in different
643 jurisdictions for the same person at the same time.

644 When using a Patient Root model for storage and query of SOP Instances, there will need to be a local
645 policy for how to handle changes to the Patient's Name (0010,0010) or Other Patient Names
646 (0010,1001). This may require modification of many SOP Instances to preserve the restriction that these

647 have the same value for all SOP Instances for that patient, as well as maintaining consistency with
648 Modified Attributes Sequence (0400,0550).

649 There are also a wide variety of kinds of names. For example, the Swiss have identified seven (7) kinds
650 of names that they officially recognize. See <http://fhir.ch/ig/ch-core/ValueSet-ech-1-1-namedatatype.html>.
651 In addition, there are unofficial informal name uses that can be critically important in social interactions
652 with patients.

653 For example, there is the use of a “customary” name in cultures where the registered name is
654 inconvenient and used only in special legal circumstances. There is a Dutch photographer,
655 cinematographer, and director whose official registered name is “Anton Johannes Gerrit Corbijn van
656 Willenswaard” and he uses “Anton Corbijn” for almost all purposes. There will be a local policy for which
657 of his names is used as Patient’s Name (0010,0010), and this may be different from place to place. The
658 Person Name to Use Sequence (0010,xxx3) for him will contain “Anton Corbijn”.

659 The Person Name to Use Sequence (0010,xxx3) can also reflect name changes that are in process, and
660 name uses that are informal personal preferences.

661 The Person Name to Use Sequence includes optional applicability dates and comments. These can be
662 used to capture information about change history, which can be important when understanding the patient
663 record for a patient that has a long history and whose name has changed during that history.

664 The mapping between DICOM and other communications protocols is not specified by DICOM. For
665 example, the HL7 v2.9 encoding of Anton Corbijn’s name might be any of the following five encodings:

- 666 1. PID||patientID^^^^MR||Corbijn van Willenswaard^Anton Johannes
667 Gerrit^^^^L~^^^^^^N^^^^^^Anton Corbijn||19780328000000|M|
- 668 2. PID||patientID^^^^MR||Corbijn van Willenswaard^Anton Johannes
669 Gerrit^^^^L^^^^^^Anton Corbijn||19780328000000|M|
- 670 3. PID||patientID^^^^MR||Corbijn van Willenswaard^Anton Johannes
671 Gerrit^^^^L~Corbijn^Anton^^^^N||19780328000000|M|
- 672 4. PID||patientID^^^^MR||Corbijn^Anton^^^^N||19780328000000|M|
- 673 5. PID||patientID^^^^MR||Corbijn^Anton^^^^L||19780328000000|M| (this is
674 incorrect, but it is a common mistake)
- 675

676 The corresponding Name to Use (0010,xx12) for encodings 1 and 2 would contain:

677 “Anton Corbijn”

678 The Name to Use (0010,xx12) cannot be determined from encodings 3, 4, and 5. It could be provided
679 based on other information or could be missing.

680
681
682
683