

1	Status	Assigned
2	Date of Last Update	2016/09/05
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7	Submission Date	2016/06/10

8	Correction Number CP-1646	
9	Log Summary: Add repeat flag and reason to RDSR to help with outlier analysis	
10	Name of Standard	
11	PS3.16	
12	Rationale for Correction:	
13	Repetition of part of a CT study for reasons like patient motion or suboptimal contrast timing have been identified as reasons for	
14	radiation dose exposure being higher than usual for a procedure [Chen YA, MacGregor K, Li I, Concepcion L, Deva DP, Dowdell T,	
15	et al. Tracking and Resolving CT Dose Metric Outliers Using Root-Cause Analysis. Journal of the American College of Radiology.	
16	2016 Jun;13(6):680-7. Available from http://dx.doi.org/10.1016/j.jacr.2016.01.017 .]	
17	Knowledge of this information captured at the time of scanning would potentially reduce the number of outliers that needed to be	
18	investigated.	
19	It is proposed to add a per-event flag and reason to record this.	
20	<i>[Ed. Note: Can we reuse some image quality finding context group or codes ?]</i>	
21	Correction Wording:	

Amend DICOM PS3.16 as follows (changes to existing text are bold and underlined for additions and ~~struckthrough~~ for removals):

TID 10013 CT Irradiation Event Data

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Table TID 10013. CT Irradiation Event Data

	NL	Rel with Parent	VT	Concept Name	VM	Req Type	Condition	Value Set Constraint
1			CONTAINER	EV (113819, DCM, "CT Acquisition")	1	M		
2	>	CONTAINS	TEXT	EV (125203, DCM, "Acquisition Protocol")	1	U		
3	>	CONTAINS	CODE	EV (123014, DCM, "Target Region")	1	M		D???
4	>	CONTAINS	CODE	EV (113820, DCM, "CT Acquisition Type")	1	M		D???
4b	>>	CONTAINS	CODE	EV (113961, DCM, "Reconstruction Algorithm")	1-n	U		D???
5	>	CONTAINS	CODE	EV (G-C32C, SRT, "Procedure Context")	1	U		D???
6	>	CONTAINS	UIDREF	EV (113769, DCM, "Irradiation Event UID")	1	M		
6b	>	CONTAINS	TEXT	EV (113605, DCM, "Irradiation Event Label")	1	U		
6c	>>	HAS CONCEPT MOD	CODE	EV (113606, DCM, "Label Type")	1	MC	IF the value of Row 6b is the value of an Attribute in the images.	D???
6d	≥	<u>CONTAINS</u>	<u>TEXT</u>	<u>EV (ddd001, DCM, "Is Repeated Acquisition")</u>	<u>1</u>	<u>U</u>		DCID 230 "Yes-No"
6e	>>	<u>HAS CONCEPT MOD</u>	<u>CODE</u>	<u>EV (ddd002, DCM, "Reason for Repeating Acquisition")</u>	<u>1</u>	<u>M</u>		<u>DCID ccc01 "Reason for Repeating Acquisition"</u>
7	>	CONTAINS	CONTAINER	EV (113822, DCM, "CT Acquisition Parameters")	1	M		
...	

Content Item Descriptions

Row 6d, 6e	<u>If an acquisition is a repeat because an earlier acquisition was unsatisfactory, this may be recorded along with a coded reason. This is intended to help with subsequent analysis by providing a priori information about why the study might be flagged as an outlier with higher dose exposure values than usual for the type of study.</u>
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CID ccc01 Reason for Repeating Acquisition

Type: Extensible
Version: yyyyymmdd

Table CID ccc01. Reason for Repeating Acquisition

Coding Scheme Designator	Code Value	Code Meaning
DCM	ddd003	Patient motion
DCM	ddd004	Suboptimal contrast timing

CID 6135 Image Quality Finding

Type: Extensible
Version: 20090402

Table CID 6135. Image Quality Finding

Coding Scheme Designator	Code Value	Code Meaning
DCM	111208	Grid artifact(s)
DCM	111209	Positioning
DCM	111210	Motion blur
DCM	111211	Under exposed
DCM	111212	Over exposed
DCM	111213	No image
DCM	111214	Detector artifact(s)
DCM	111215	Artifact(s) other than grid or detector artifact
DCM	111216	Mechanical failure
DCM	111217	Electrical failure
DCM	111218	Software failure
DCM	111219	Inappropriate image processing
DCM	111220	Other failure
DCM	111221	Unknown failure
RADLEX	RID11327	Beam-hardening artifact

CID 7011 Rejected for Quality Reasons

Type: Extensible
Version: 20020904

Table CID 7011. Rejected for Quality Reasons

Coding Scheme Designator	Code Value	Code Meaning
DCM	111207	Image artifact(s)
DCM	111208	Grid artifact(s)
DCM	111209	Positioning
DCM	111210	Motion blur
DCM	111211	Under exposed
DCM	111212	Over exposed
DCM	111213	No image
DCM	111214	Detector artifact(s)
DCM	111215	Artifact(s) other than grid or detector artifact
DCM	111216	Mechanical failure

Coding Scheme Designator	Code Value	Code Meaning
DCM	111217	Electrical failure
DCM	111218	Software failure
DCM	111219	Inappropriate image processing
DCM	111220	Other failure
DCM	111221	Unknown failure
DCM	113026	Double exposure

CID 230 Yes-No

Type: Non-Extensible
Version: 20060613

Table CID 230. Yes-No

Coding Scheme Designator	Code Value	Code Meaning	SNOMED-CT Concept ID	UMLS Concept Unique ID
SRT	R-0038D	Yes	373066001	C1298907
SRT	R-00339	No	373067005	C1298908
SRT	R-0038A	Undetermined	373068000	C3536725

D DICOM Controlled Terminology Definitions (Normative)

Table D-1. DICOM Controlled Terminology Definitions

Code Value	Code Meaning	Definition	Notes
111210	Motion blur	Unacceptable image blur resulting from motion of the anatomy of interest during exposure or the inadequately compensated motion of X-Ray source with respect to the image detector during exposure.	
ddd001	Is Repeated Acquisition		
ddd002	Reason for Repeating Acquisition		
ddd003	Patient motion		
ddd004	Suboptimal contrast timing		