

CT Protocol Review – Validation and Verification

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Why do CT protocol review?

Patient Dose



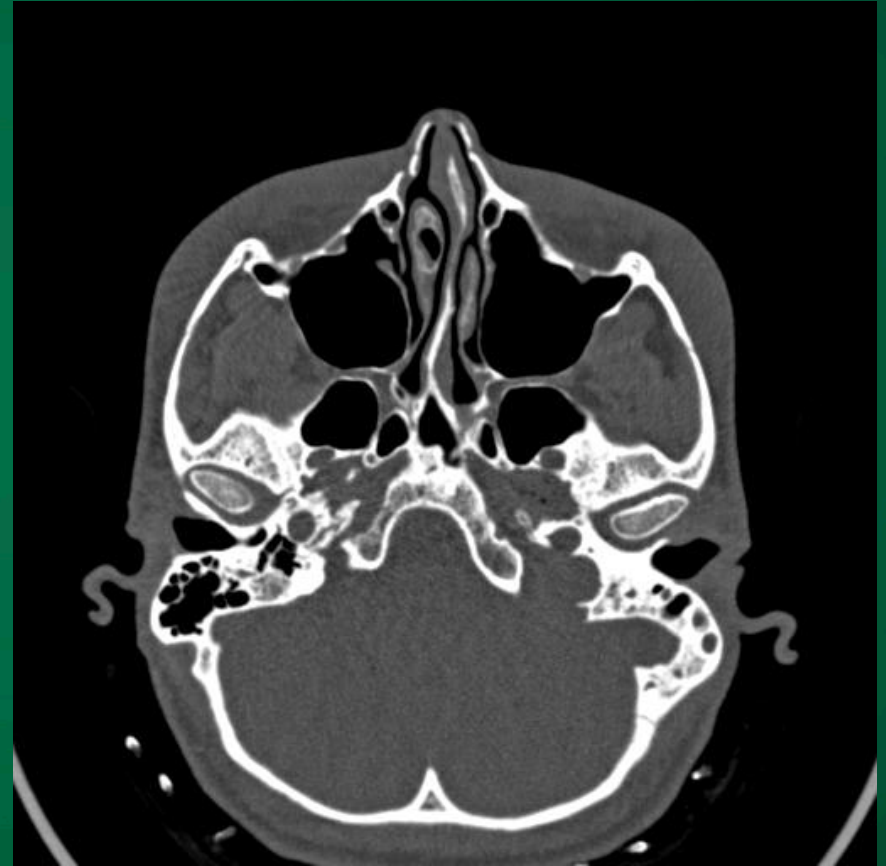
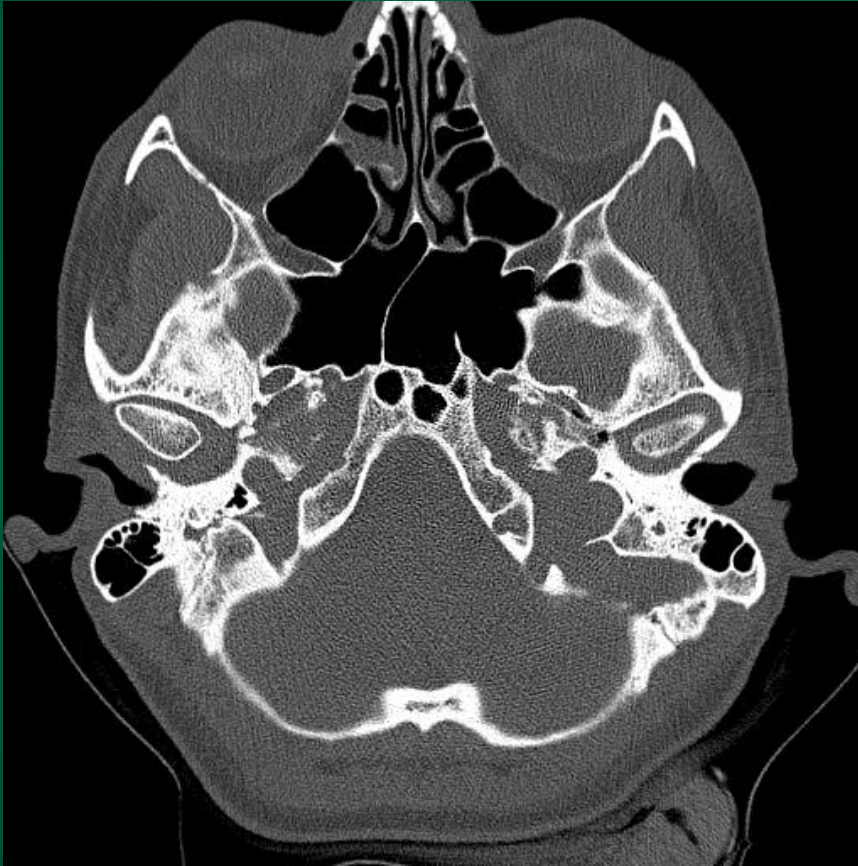
Photograph courtesy Alabama Media Group

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Why do CT protocol review?

Image quality

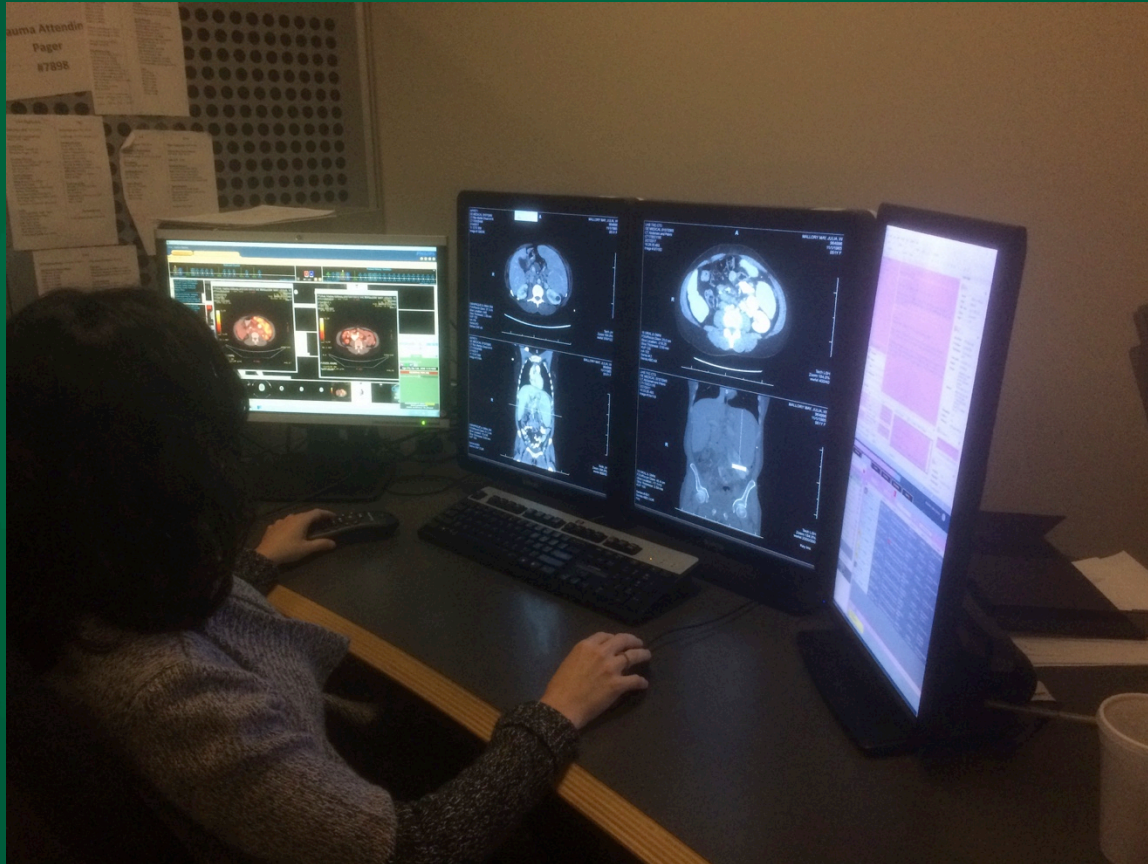


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Why do CT protocol review?

Workflow



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Why CT protocol review?

Organization	Who	What	How often
State of Texas	Radiologist (or RadOnc), Physicist, Radiation Safety Officer	All “Radiation protocols”	Annually
TJC	Radiologist, Physicist, Technologist	“Imaging protocols” Indications Contrast administration Patient age and size Expected CTDI	Up to facility
ACR (CTAP)	Physicist	“Clinical protocols”	Annually
ACR (2012 QCM)	Radiologist, Physicist, Technologist	“All protocols” kV, mAs, detector config, image width, pitch, etc.	Annually
AAPM (Professional Practice Guidelines)	Radiologist, Physicist, Technologist	Six specific clinical protocols Periodic verification Dated history of documents	Monthly to biannually

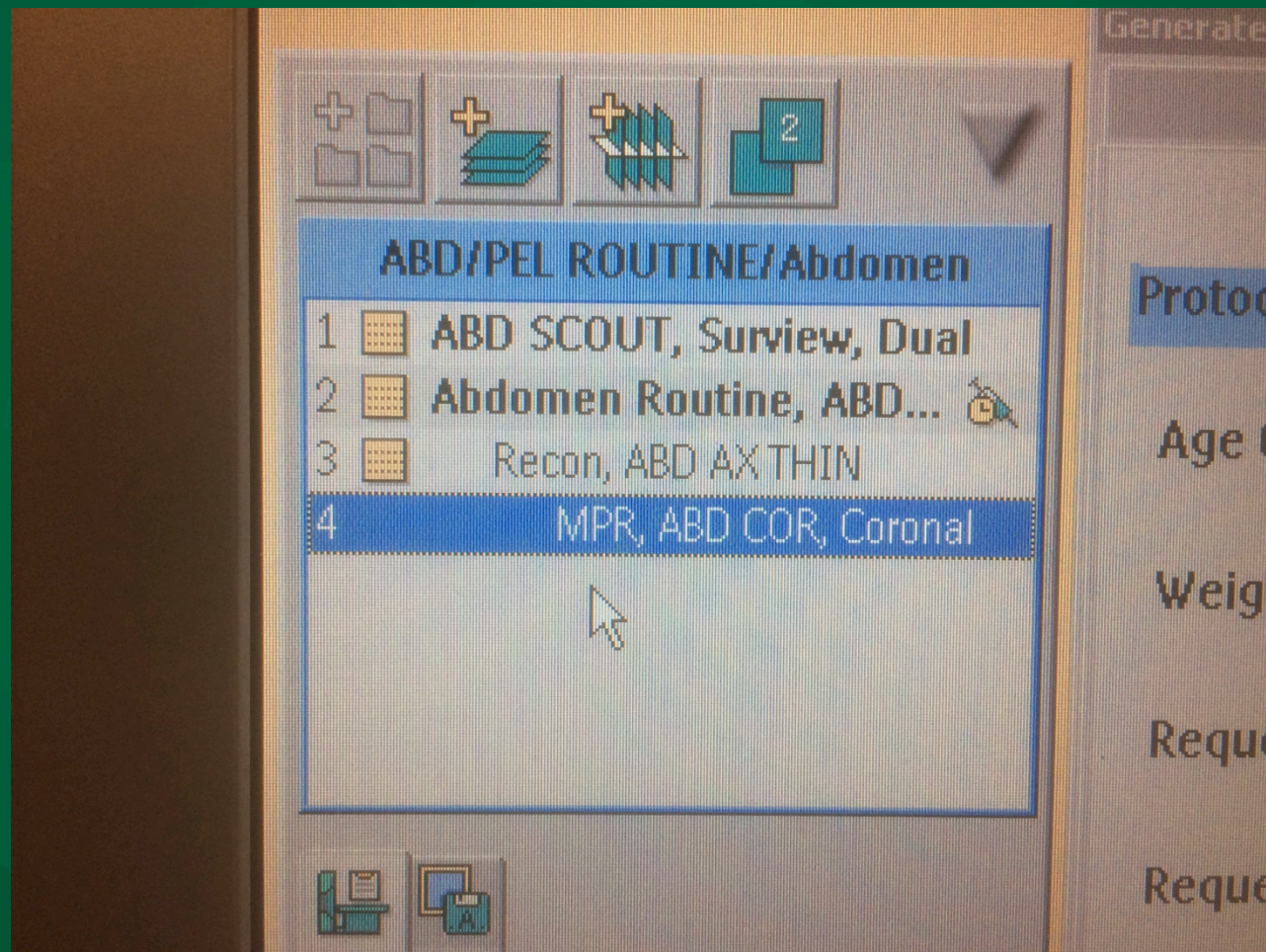
What is CT protocol review?

ISO 9000: validation is a confirmation that “the requirements (3.6.4) for a specific intended use or application have been fulfilled”.

ISO 9000: verification is a confirmation that “[the] specified requirements (3.6.4) have been fulfilled”.

Console based review

Philips Brilliance 64



Console based review

Philips Brilliance 64

The image displays three overlapping screenshots of the Philips Brilliance 64 console interface, showing various scan and processing parameters.

Left Screenshot:

- Icons: Radiation, Scan, Syringe, Speaker, Monitor, Graduation Cap
- ☒ DoseRight Z-DOM
- kV: []
- Avg Patient mAs: (mA) []
- Dose notification value**
- CTDIvol: []
- DLP: []
- Accumulated Dose**
- CTDIvol: *
- DLP: 471.7
- CTDI Phantom size: 32
- Images: 161 CTDIvol: 5
- Time: 6.61s DLP: 462
- OK

Middle Screenshot:

- Icons: Radiation, Scan, Syringe, Speaker, Monitor, Graduation Cap
- Scan Type: Abdomen Routine
- Clinical Application: none
- Label: ABD AX
- Length: 402.5
- Direction: ☐ In ☒ Out
- Thickness: 2.5 mm
- Increment: 2.5 mm
- ☒ Evolving

Right Screenshot:

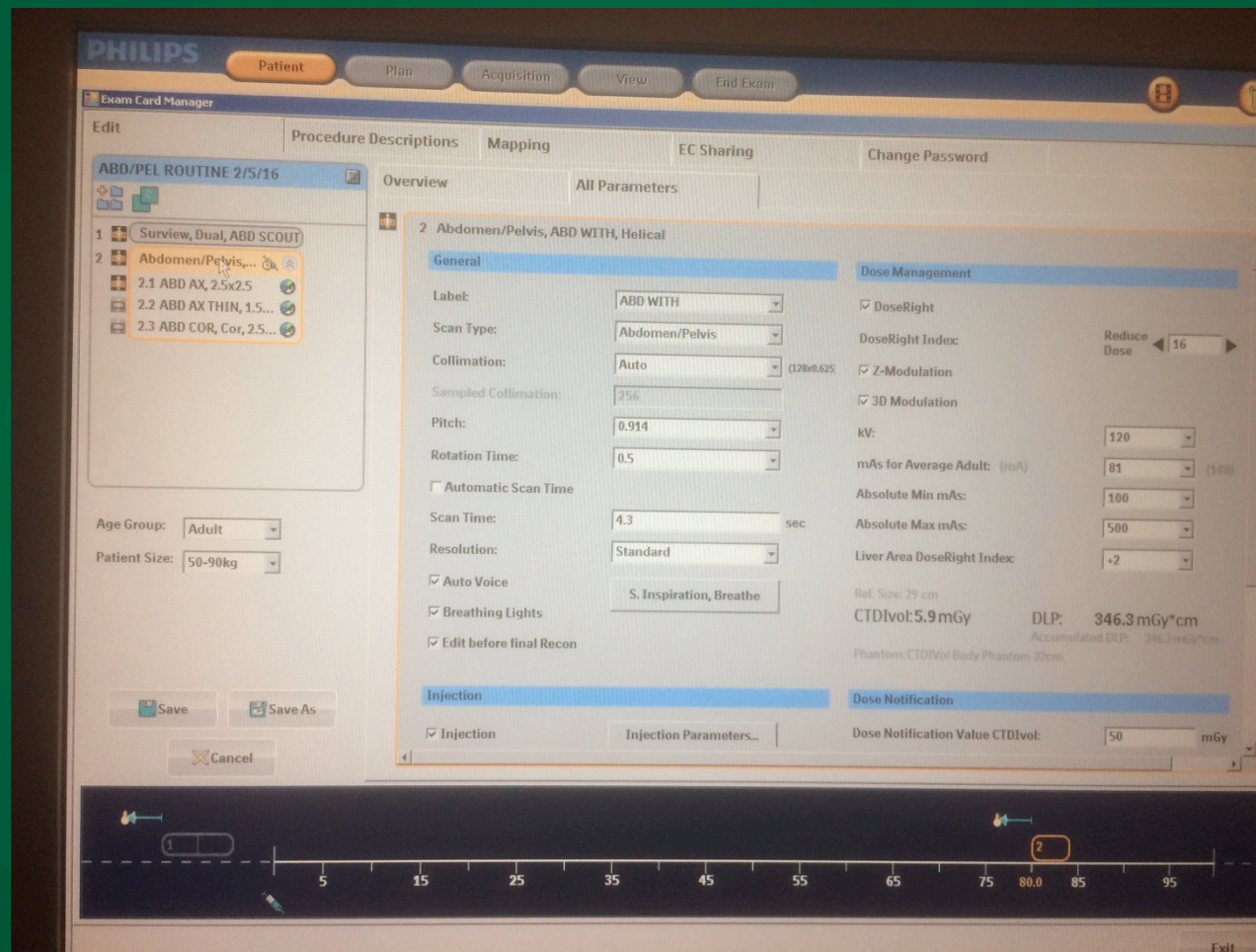
- Icons: Radiation, Scan, Syringe, Speaker, Monitor, Graduation Cap
- Auto Storing: Default
- Local, PACS
- Storage Devices...
- Apply To All Series
- Auto Filming...
- Auto Processing:
- ☐ Review:
- ☒ CT Viewer
- ☒ Cardiac Viewer
- ☐ Analysis: []
- Create New Study For:
- Rq. procedure: []
- ☐ Merge with previous series

Bottom Right Screenshot:

- Icons: Radiation, Scan, Syringe, Speaker, Monitor, Graduation Cap
- Resolution: standard
- Collimation: 64x0.625
- Pitch: 0.891
- Rotation time: 0.5 sec
- FOV: 400 mm
- Reconstruction: iDose 3
- Filter: Sharp (C)
- Enhancement: 0.0
- Window C: 60 W: 360
- Center X: 0 Y: 0
- Matrix: 512
- ☒ Adaptive Filter

Console based review

Philips ICT 256

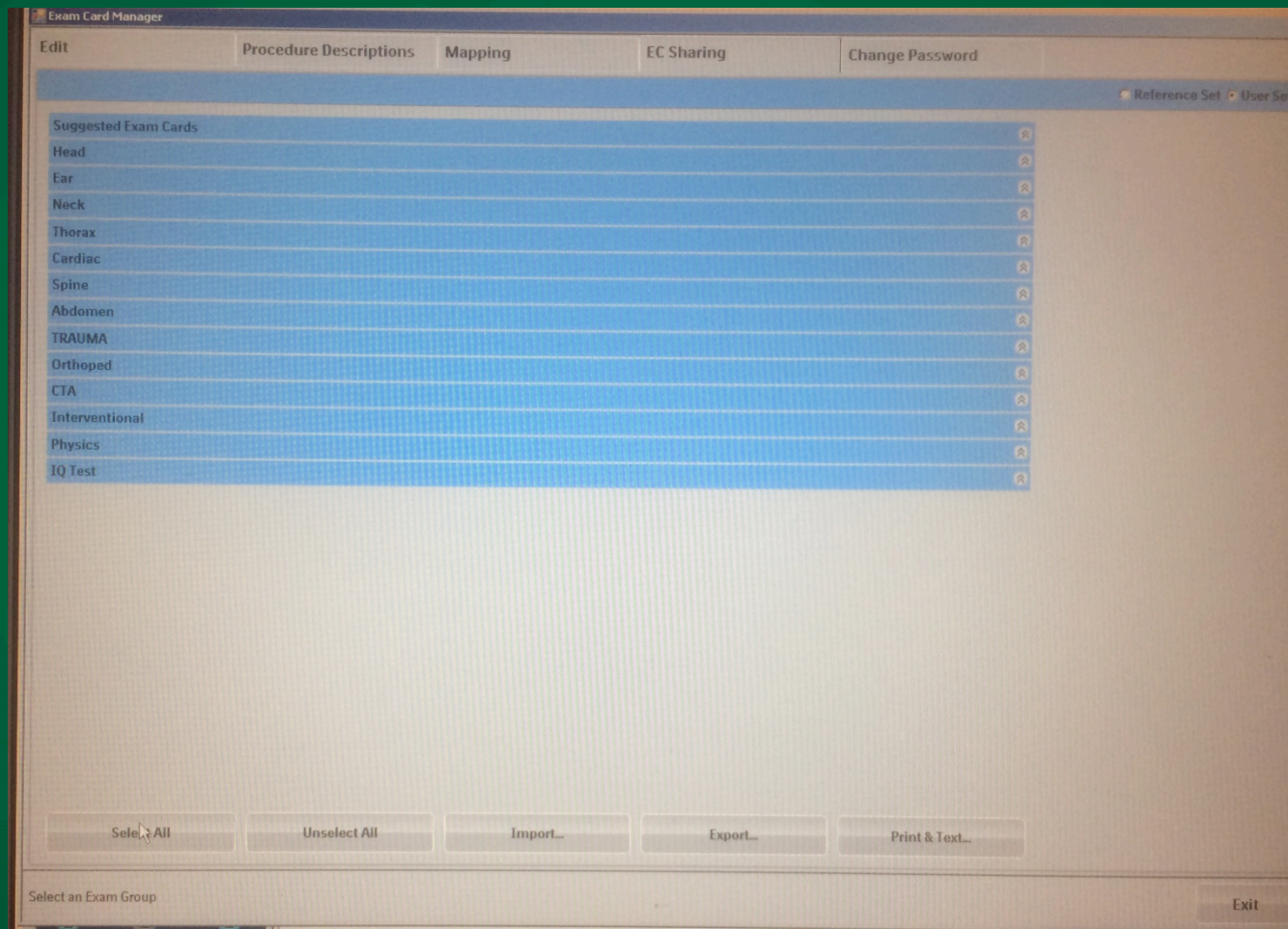


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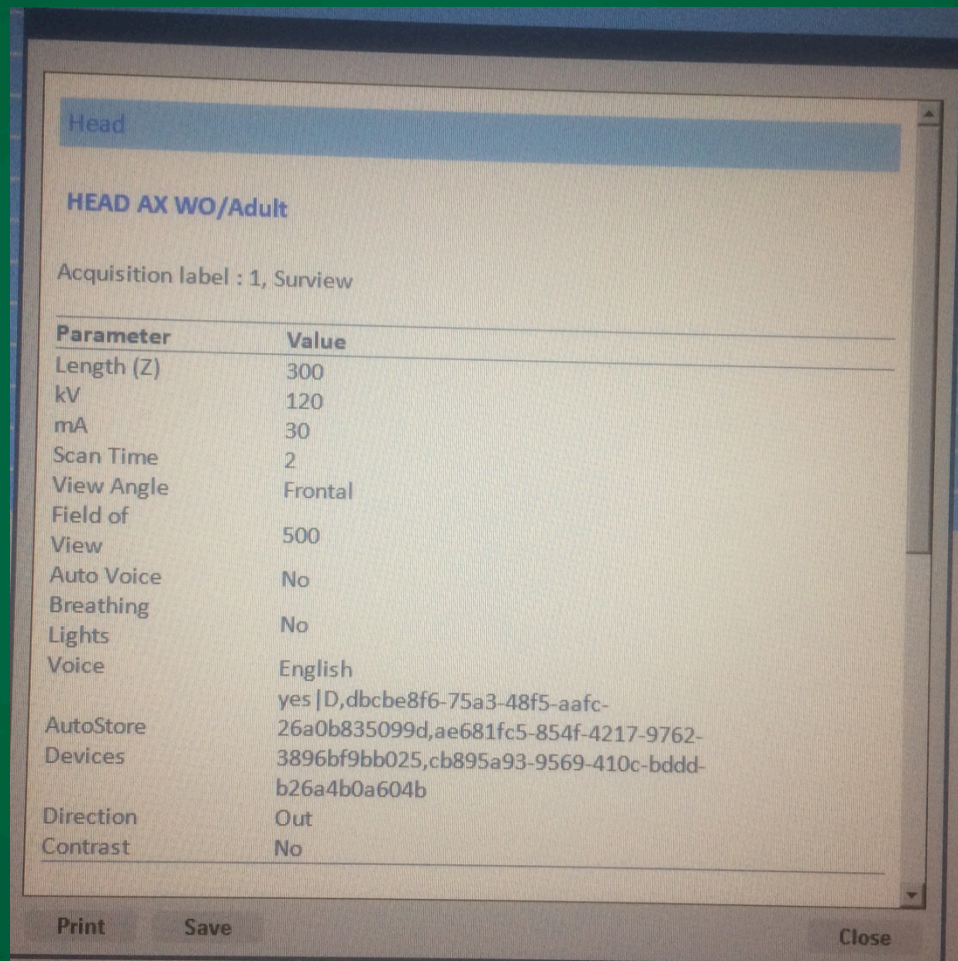
Console based review

Philips ICT 256



Console based review

Philips ICT 256



The screenshot shows a software window titled 'Head' with a sub-header 'HEAD AX WO/Adult'. Below this, it says 'Acquisition label : 1, Surview'. A table lists various parameters and their values. At the bottom of the window are buttons for 'Print', 'Save', and 'Close'.

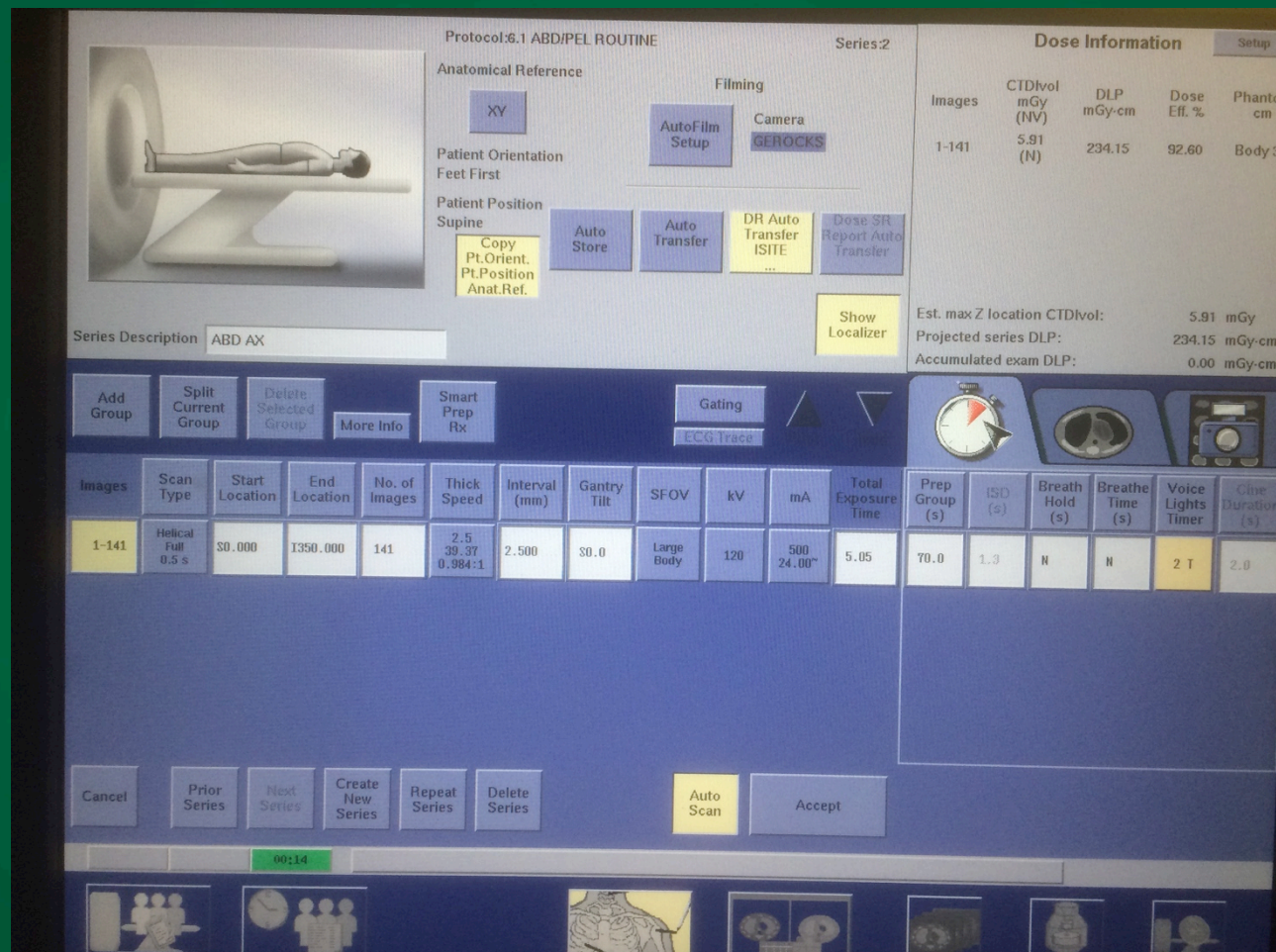
Parameter	Value
Length (Z)	300
kV	120
mA	30
Scan Time	2
View Angle	Frontal
Field of View	500
Auto Voice	No
Breathing Lights	No
Voice	English
AutoStore	yes D,dbcbe8f6-75a3-48f5-aafc-26a0b835099d,ae681fc5-854f-4217-9762-3896bf9bb025,cb895a93-9569-410c-bddd-b26a4b0a604b
Direction	Out
Contrast	No

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Console based review

GE Discovery 750HD



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Console based review

GE Discovery 750HD

The screenshot displays the GE Discovery 750HD console interface, which is divided into several functional areas:

- Anatomical Reference:** Shows a patient lying on the table with the 'XY' button selected.
- Filming:** Includes 'AutoFilm Setup' and 'Camera' (set to 'GEROCKS').
- Patient Orientation:** Set to 'Feet First'.
- Patient Position:** Set to 'Supine'.
- Buttons:** 'Copy Pt.Orient. Pt.Position Anat.Ref.', 'Auto Store', 'Auto Transfer', 'DR Auto Transfer ISITE', 'Dose SR Report Auto Transfer', and 'Show Localizer'.
- Series Description:** 'ABD AX'.
- Technical Data:**
 - Images: 1-141
 - CTDIvol: 5.91 mGy (N)
 - DLP: 234.15 mGy-cm
 - Dose Eff. %: 92.60
 - Phantom: Body 32
- Summary:**
 - Est. max Z location CTDIvol: 5.91 mGy
 - Projected series DLP: 234.15 mGy-cm
 - Accumulated exam DLP: 0.00 mGy-cm
- Buttons:** 'Add Group', 'Split Current Group', 'Delete Selected Group', 'More Info', 'Smart Prep Rx', 'Gating', 'ECG trace'.
- Table:**

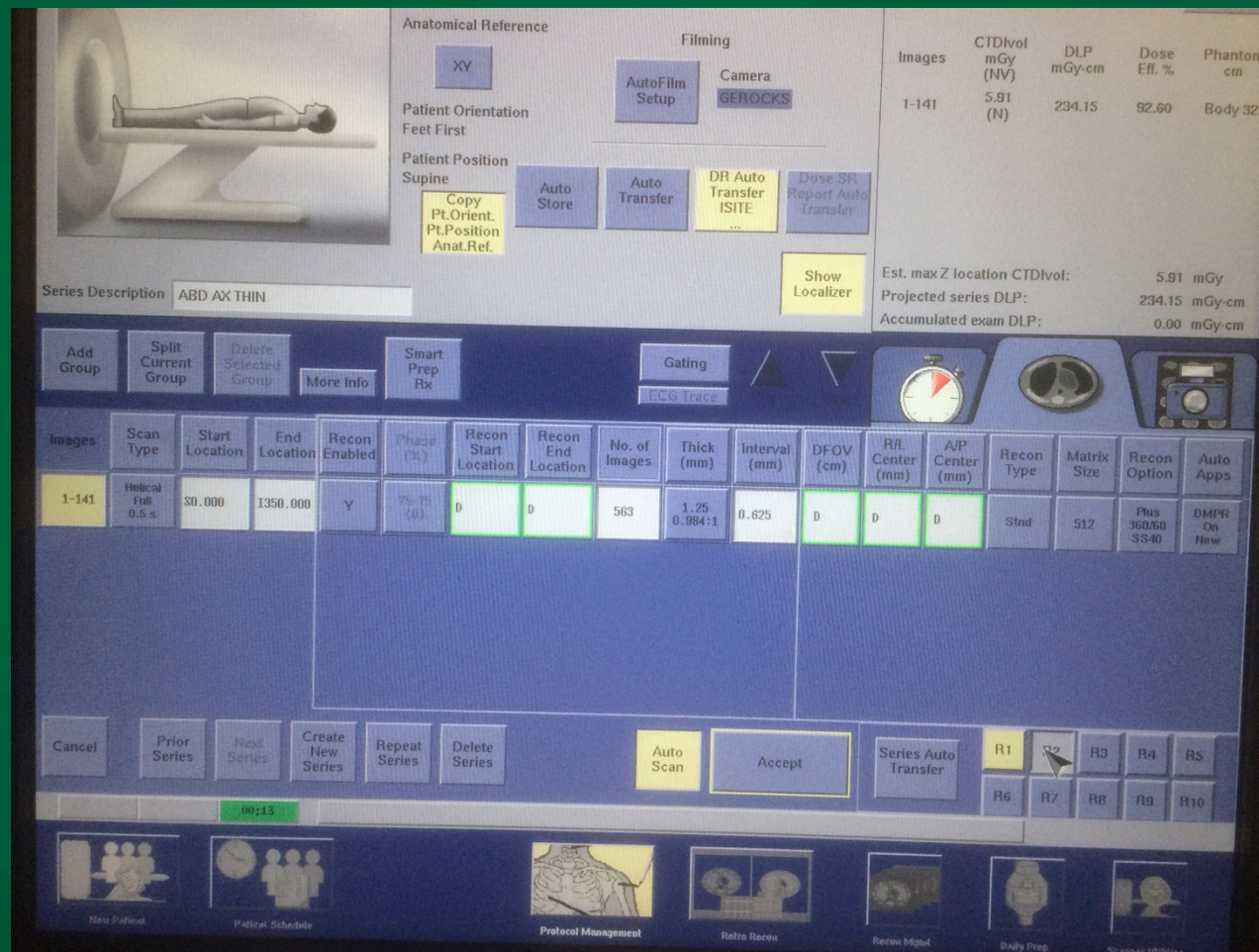
Images	Scan Type	Start Location	End Location	No. of Images	Thick Speed	Interval (mm)	Gantry Tilt	SFOV	kV	mA	DFOV (cm)	R/L Center (mm)	A/P Center (mm)	Recon Type	Matrix Size	Recon Option	Auto Apps
1-141	Helical Full 0.5 s	\$0.000	\$350.000	141	2.5 39.37 0.984:1	2.500	\$0.0	Large Body	120	500 24.00"	36.0	\$0.0	\$0.0	Std	512	Plus 360/60 SS40	Off
- Buttons:** 'Cancel', 'Prior Series', 'Next Series', 'Create New Series', 'Repeat Series', 'Delete Series', 'Auto Scan', 'Accept', 'Series Auto Transfer ISITE'.
- Buttons:** 'R1', 'R2', 'R3', 'R4', 'R5', 'R6', 'R7', 'R8', 'R9', 'R10'.
- Buttons:** 'View Patient', 'Patient Schedule', 'Protocol Management', 'Reco Recon', 'Reco Mgmt', 'Daily Prep', 'Scanner Utilities'.

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Console based review

GE Discovery 750HD



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Console based review

GE Discovery 750HD

Session Setup

Session Selection

Start New **Combine Current** **Off**

Batch Protocol		Filming	Auto Batch	Auto Store	Auto Transfer
ABD COR	Setup	Off	On	Off	On
Unused	Setup	Off	Off	Off	Off
Unused	Setup	Off	Off	Off	Off
Unused	Setup	Off	Off	Off	Off
Unused	Setup	Off	Off	Off	Off

OK **Cancel**

Images	Scan Type	Start Location	End Location	Recon Enabled	Phase (%)	Recon Start Location	Recon End Location	No. of Images	Thick (mm)	Interval (mm)	DFOV (cm)
1-141	Helical Full 0.5 s	30.000	1350.000	Y	75-75 (0)	D	D	563	1.25 0.984:1	0.625	D

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Console based review

GE Discovery 750HD

Batch Protocol List

CT Thick Axials 5mm
Fan
Oblique
PETAxial
PETCoronal
PETSagittal
Slices 10mm
Slices 5mm
SAGITTAL NECK
ABD COR
ABD COR 1
ABD COR ART

Batch Protocol List

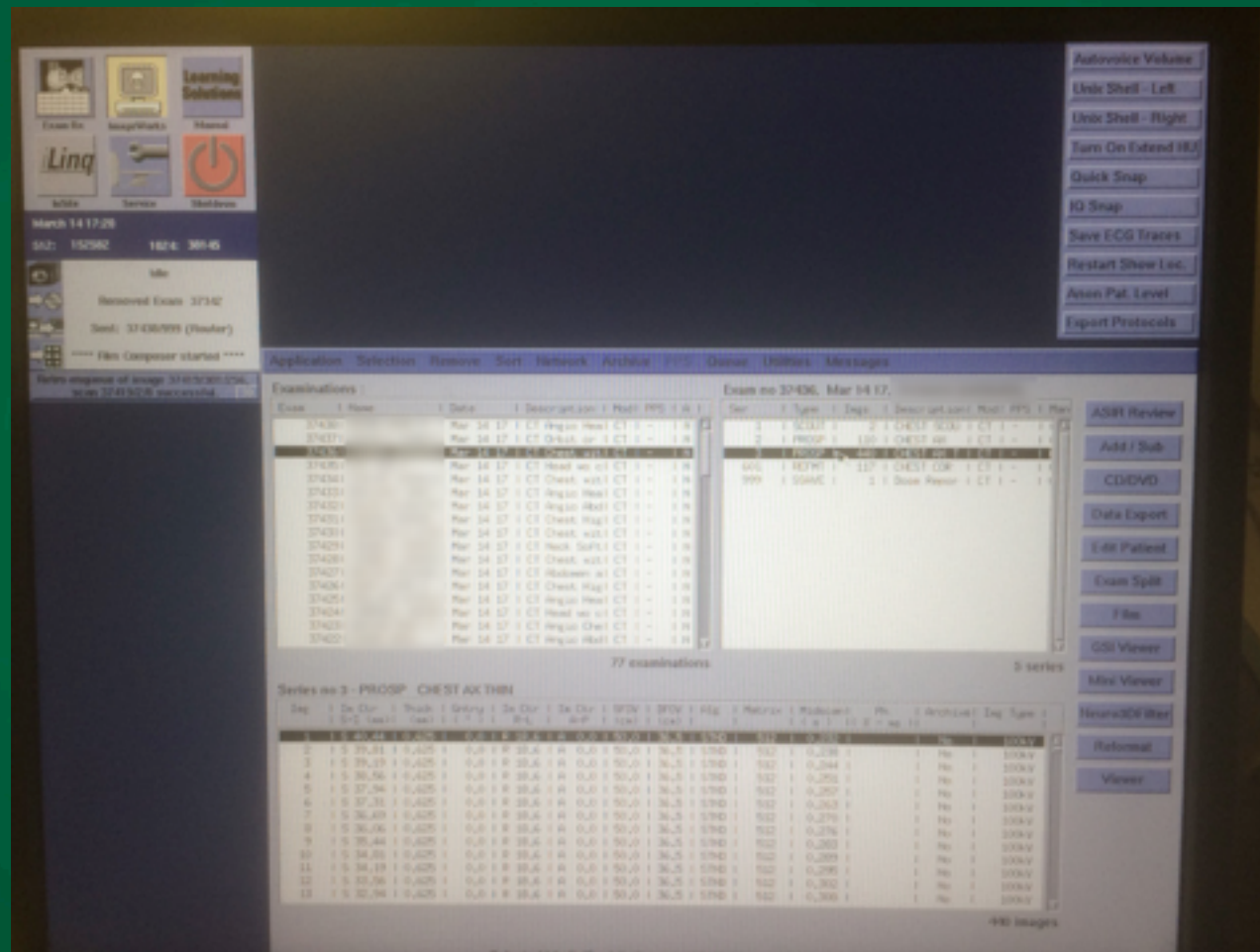
ABD COR ART AAA
ABD COR THIN
ABD COR VEN
ABD SAG ART
ABD SAG ART MIP
CAP COR ART AAA
CAP COR THICK
CHEST COR 125
CHEST COR 2X2
CHEST COR EXP
CHEST COR GILEAD
CHEST COR INSP

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Console based review

GE Discovery 750HD

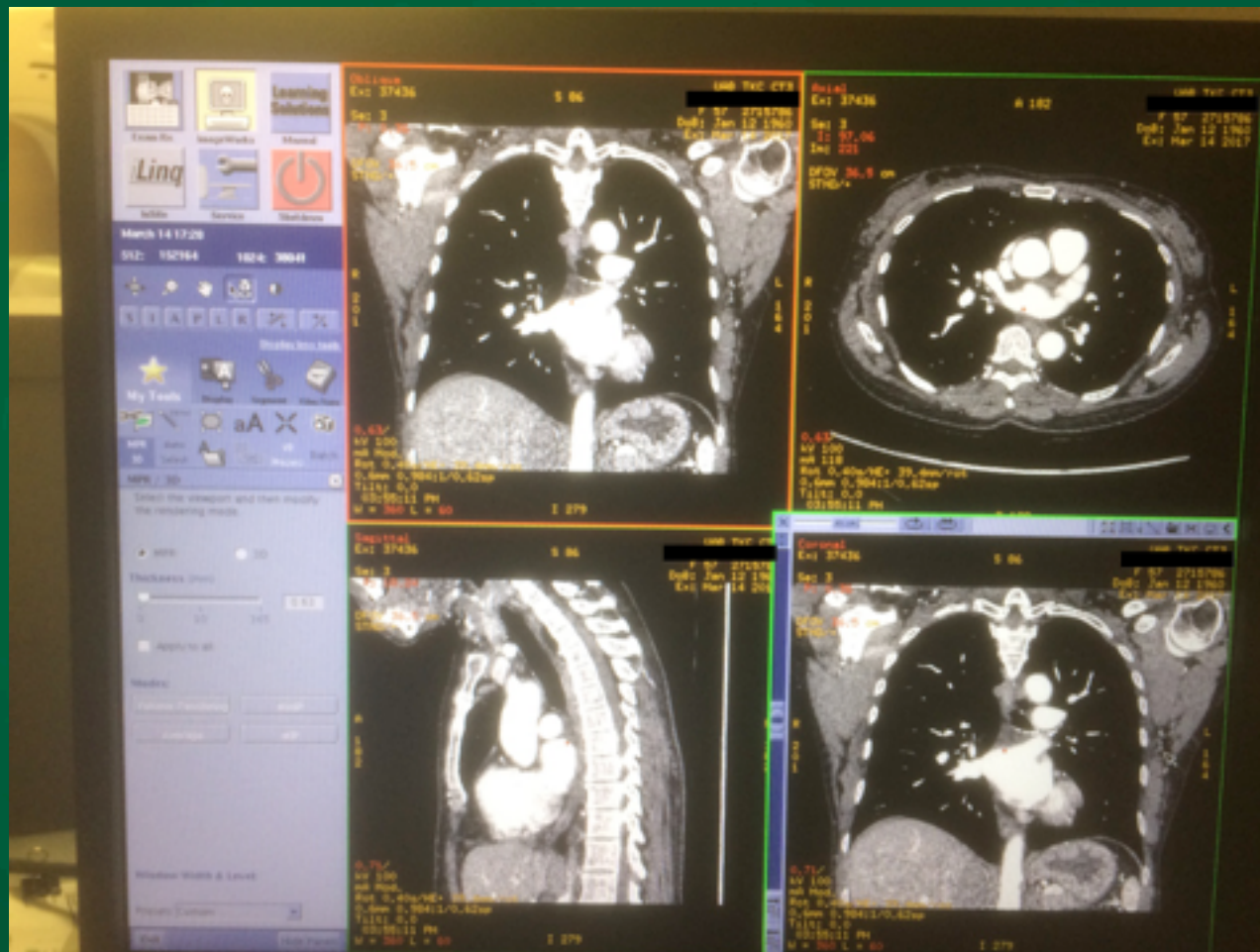


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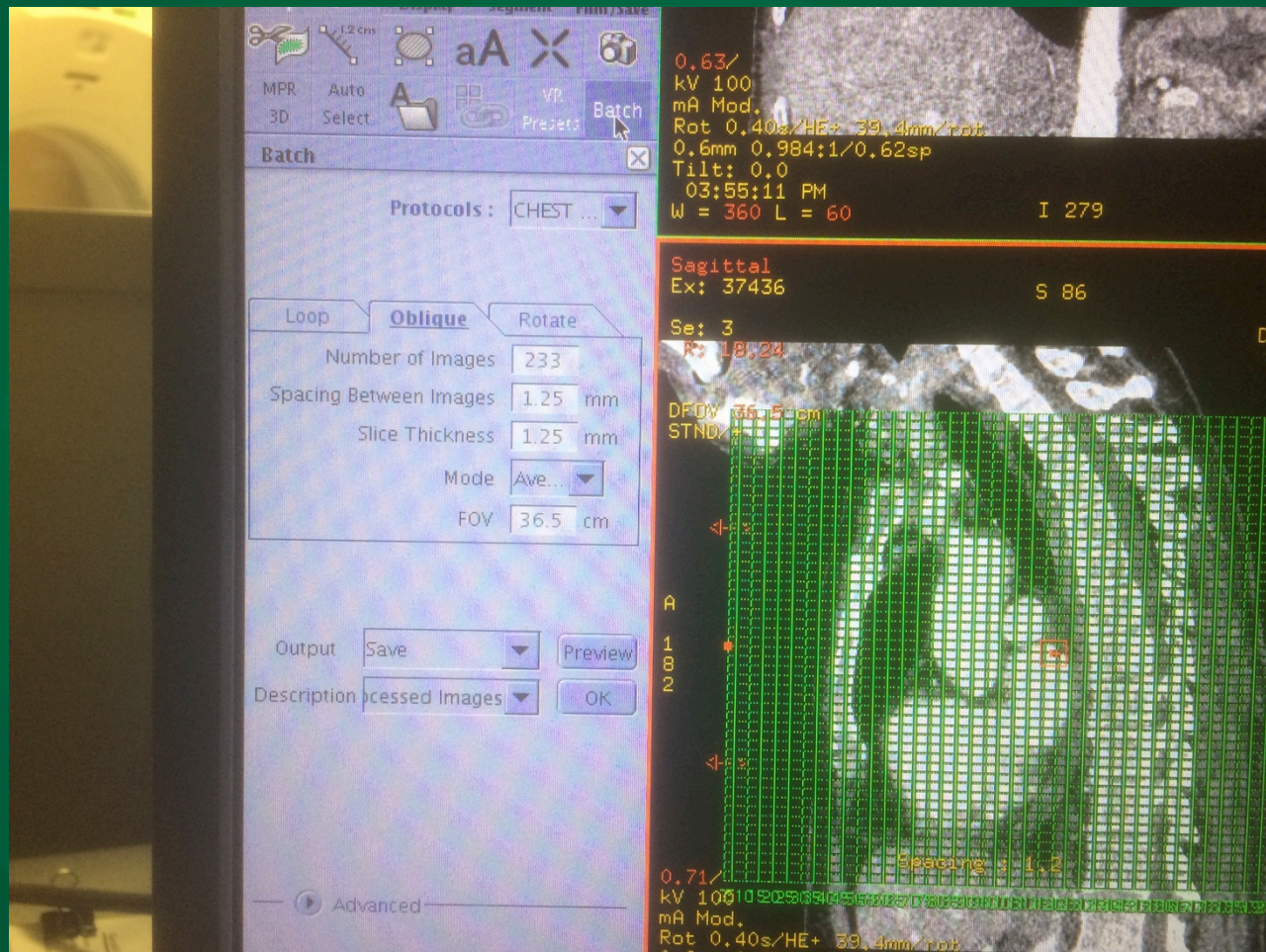
Console based review

GE Discovery 750HD



Console based review

GE Discovery 750HD

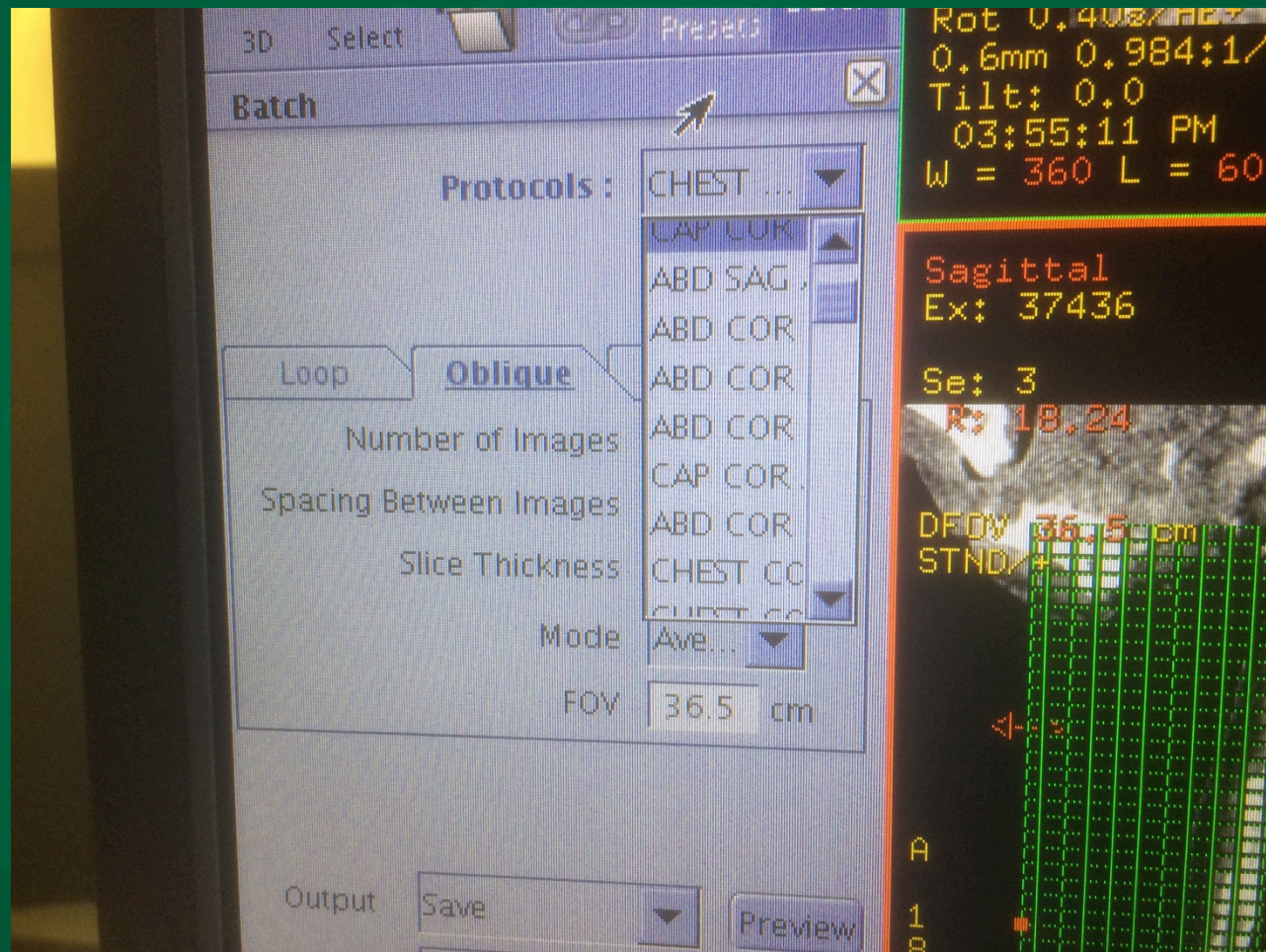


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Console based review

GE Discovery 750HD



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Philips ICT 256

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Document based review

Siemens Somatom Force

Scan Protocol Lists																											
file:///Users/gsauntt/Documents/UAB/Service/Clinical/Protocol Support/CT/CT Scanners/TKCFORCE/161228_TKCFORCE/ProtocolsList.xml																											
Most Visited - Getting Started Latest Headlines - UAB - OE Support Docu...																											
Protocol name	Range name	Series description	Ref. kV	Quality ref. mAs	(Eff.) mAs(Tube A)	(Eff.) mAs(Tube B)	CARE kV	Tissue of Interest (Slider position 1 - 12)	Dose modulation	CARE Dose type	CTDIvol (mGy)	FAST Adjust: Upper limit scan time	FAST Adjust: Lower limit max. mAs	Dose Notification value CTDIvol (mGy)	Dose Notification value DLP (mGy*cm)	Rotation time (s)	Scan time (s)	Delay (s)	Pitch	Feed per scan (mm)	Slice (mm)	Acq.	Effective Slice (mm)	Position increment (mm)			
Customized scan protocols																											
Head																											
Dental (Adult)																											
Dental (Adult)	Topogram	Topogram 0.6 T/20	120		55			3 Off		CARE Dose	0.16		25%			0.5	2	0			6x0.6mm		0.6				
	Dental		120	120	63	63	On	5 On		CARE Dose4D	9.10	6s	25%			1	2	0.8		0.75	192x0.6mm						
		Dental 0.75 H/59 3																					0.75	0.5			
HeadIntervention (Adult)																											
HeadIntervention (Adult)	Topogram	Topogram 0.6 T/20	120		106			3 Off		CARE Dose	0.16		25%			0.5	2	0			6x0.6mm		0.6				
	i-Spiral		120	120	420	420	On	3 On		CARE Dose4D	60.06	5s	25%			0.5	2	0.55		5	48x1.2mm						
		i-Spiral 5.0 H/40																					5	3.5			
HeadNeuro (Adult)																											
HeadNeuro (Adult)	Topogram	Topogram 0.6 T/20	120		55			3 Off		CARE Dose	0.16		25%			0.5	2	0			6x0.6mm		0.6				
	Head		120	120	273	273	On	3 On		CARE Dose4D	41.63	15s	25%			1	2	0.55		5	128x0.6mm				5		
		Head 5.0 H/40 3																									
HeadNeuroSeq (Adult)																											
HeadNeuroSeq (Adult)	Topogram	Topogram 0.6 T/20	120		55			3 Off		CARE Dose	0.16		25%			0.5	2	0			6x0.6mm		0.6				
	HeadSeq		120	120	273	273	On	3 On		CARE Dose4D	46.21		25%			1	2	0	34.0	5	128x0.6mm						
		HeadSeq 5.0 H/40 3																					5				
HeadNeuro_XCARE (Adult)																											
HeadNeuro_XCARE (Adult)	Topogram	Topogram 0.6 T/20	120		55			3 Off		CARE Dose	0.16		25%			0.5	2	0			6x0.6mm		0.6				
	Head		120	120	273	273	On	3 On		CARE Dose4D	41.63	15s	25%			1	2	0.55		5	128x0.6mm						

Document based review

GE Revolution 256

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T
1	ADULT	HEAD	protocolId(Missing)	CTA COW/CAROTID *																
2																				
3	Exam Dose Settings																			
4	ExamCtdi	ExamDLP																		
5	59.17	67.36																		
6																				
7	Series 1	Scout	HeadFirst	Supine																
8																				
9	AutoStore	Gating	SeriesLevelCopy	Injector																
10	AutoStore(Missing)	false	false	false																
11																				
12	Scan	kV	mA	Plane	Message	Timer	Light													
13	1	120	10	0	1	0	0													
14																				
15	Series 1 Group 1 Recon 1 Recon Settings																			
16	Start	End																		
17	\$250.000	I200.000																		
18																				
19	Scan	kV	mA	Plane	Message	Timer	Light													
20	2	120	10	90	1	0	0													
21																				
22	Series 1 Group 2 Recon 1 Recon Settings																			
23	Start	End																		
24	\$250.000	I200.000																		
25																				
26	Series 2	Axial	HeadFirst	Supine																
27																				
28	AutoStore	Gating	SeriesLevelCopy	SmartPrep	Injector															
29	AutoStore(Missing)	false	true	true	false															
30																				
31	Smart Prep Parameters																			
32	CTDI	CTDI NV	DLP	DLP NV																
33	CTDI(Missing)	1000	DLP(Missing)	1000																
34																				
35	Series 2 Group 1 Scan Settings																			
36	Speed	Type	Rows	HiRes	Shuttle	Tilt	SFOV	kV	SmartmA	NoiseIndex	MinmA	MaxmA	Message	Timer	Light	CTDI	CTDI NV	DLP	DLP NV	
37	0.5	Helical	128	false	false	50.0	Small Body	120	true	noiseIndex(Missing)	10	600	1	0	0	1.75	1000	38.65	1000	
38																				
39	Series 2 Group 1 Recon 1 Recon Settings																			
40	Images	Start	End	Thick	Int	DFOV	A/P	R/L	Filter	Type	ASIR	IQEnhance	Flip							
41	65	I200.000	S140.000	2.5	2.5	25	A0.0	R0.0	Std	Plus	AR50	false	None							
42																				

Document based review

Philips Brilliance

Protocols_7_8_2015_16_1_52.xml

Search in Sheet

Home Layout Tables Charts SmartArt Formulas Data Review Developer

Font: Arial 10, Bold, Italic, Underline, Text Color, Background Color, Alignment, Number, Format, Cells, Themes

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S
	Protocol	Scan Mode	Age Group	Head/Body	View Angle [deg]	Current [mA]	Scan Type	Clinical Application	Label	Position	Length [mm]	Direction	Thickness [mm]	Increment [mm]	Voltage [kV]	mAs	mAs/Slice	Reconstruction	Cyc
2	"Sinus Ax 3mm - Axial/Head/Ax"	axial	adult	head	180	317	Head	none		*	158	Out	3	3	120	185	150	concurrent	
3	"QA Head Std/Head/Ax"	axial	adult	head	180	267	Head	none		*	24	Out	6	6	120	200	150	concurrent	
4	"Chest HR Axial - Axial/Thorax/Ax"	axial	adult	body	180	400	Body	none		*	301.2	Out	1.2	1.2	120	200	150	concurrent	
5	"Retrospective - Surview/Cardiac/Sv"	surview	adult	body	180	30	invalid	invalid		*	300	Out	0.75	1.2	120	300	300	concurrent	
6	"Prospective - Surview/Cardiac/Sv"	surview	adult	body	180	30	invalid	invalid		*	300	Out	0.75	1.2	120	300	300	concurrent	
7	"THORAX PT. 2-10kg/Thorax/Hx"	helix	adult	body	180	56	Body	none		*	300	Out	3	3	120	300	30	concurrent	
8	"THORAX PT. 10-40kg/Thorax/Hx"	helix	adult	body	180	94	Body	none		*	300	Out	3	3	120	300	50	concurrent	
9	"THORAX PT. 40-60kg/Thorax/Hx"	helix	adult	body	180	150	Body	none		*	300	Out	3	3	120	300	80	concurrent	
10	"THORAX PT. 60-90kg/Thorax/Hx"	helix	adult	body	180	188	Body	none		*	300	Out	3	3	120	300	100	concurrent	
11	"THORAX PT. 90-120kg/Thorax/Hx"	helix	adult	body	180	225	Body	none		*	300	Out	3	3	120	300	120	concurrent	
12	"THORAX PT. >90kg/Thorax/Hx"	helix	adult	body	180	225	Body	none		*	300	Out	3	3	140	300	120	concurrent	
13	"Brain Axial/Head/Ax"	axial	adult	head	180	400	Head	none		*	264	Out	6	6	120	350	150	concurrent	
14	"Brain Spiral/Head/Hx"	helix	adult	head	180	183	Head	none		*	250	Out	5	5	120	300	200	concurrent	
15	"Surview 90/Head/Sv"	surview	adult	head	90	30	invalid	invalid		*	200	Out	0.75	5	120	300	300	concurrent	
16	"Mean CT Number Head 1/Head/Ax"	axial	adult	head	180	229	Head	none		*	24	Out	6	6	120	200	150	concurrent	
17	"CT Uniformity Head/Head/Ax"	axial	adult	head	180	229	Head	none		*	24	Out	6	6	120	200	150	concurrent	
18	"Image Noise Head 1/Head/Ax"	axial	adult	head	180	229	Head	none		*	24	Out	6	6	120	200	150	concurrent	
19	"Spatial ResolutionHead 1/Head/Ax"	axial	adult	head	180	216	Head	none		*	24	Out	1.5	1.5	120	189	150	concurrent	
20	"Spatial ResolutionHead 2/Head/Ax"	axial	adult	head	180	216	Head	none		*	12	Out	1.5	1.5	120	189	150	concurrent	
21	"Spatial ResolutionHead 3/Head/Ax"	axial	adult	head	180	216	Head	none		*	12	Out	0.75	0.75	120	189	150	concurrent	
22	"Slice Thickness Head 1/Head/Ax"	axial	adult	head	180	229	Head	none		*	12	Out	0.75	0.75	120	200	150	concurrent	
23	"Slice Thickness Head 2/Head/Ax"	axial	adult	head	180	229	Head	none		*	24	Out	1.5	1.5	120	200	150	concurrent	
24	"Brain Ax 4.5mm - Axial/Head/Ax"	axial	adult	head	180	457	Head	none		*	252	Out	4.5	4.5	120	400	150	concurrent	
25	"IAC <7y/Ear"	surview	adult	head	90	50	invalid	invalid	"IAC SCOUT"	*	250	Out	0.75	4.5	120	300	300	concurrent	
26	"IAC <7y/Ear"	helix	adult	head	180	107	Head	none	"IAC AX"	*	60	Out	0.8	0.4	120	300	200	concurrent	
27	"IAC 7y>Ear"	surview	adult	head	90	50	invalid	invalid	"IAC SCOUT"	*	250	Out	0.75	0.4	120	300	300	concurrent	
28	"IAC 7y>Ear"	helix	adult	head	180	133	Head	none	"IAC AX"	*	60	Out	0.8	0.4	120	300	250	concurrent	
29	"IAC - Surview/Ear/Sv"	surview	adult	head	90	50	invalid	invalid		*	200	Out	0.75	0.4	120	300	300	concurrent	
30	"Helical Neck/Neck/Hx"	helix	adult	body	180	375	Body	none		*	252	Out	3	3	120	300	200	concurrent	
31	"Neck Carotid/Neck"	surview	adult	body	90	50	invalid	invalid		*	350	Out	0.75	3	120	300	300	concurrent	
32	"Neck Carotid/Neck"	axial	adult	body	180	90	Body	none	LOCATOR	*	12	Out	12	12	120	30	300	concurrent	
33	"Neck Carotid/Neck"	axial	adult	body	180	90	Body	none		*	12	Out	12	12	120	30	300	none	

Sheet1

Normal View Ready Sum=0

GE Discovery

```
abdomen_1.proto
Protocol_mbir {
  VersionName = "3.5.1"
  MagicNumber = "1"
  Source = "Version0To1"
}
DoseCheckExamLevelValue {
  examCtdi = 23.6678
  examDLP = 1454.45
}
Series {
  isAutoScanEnabl
  isAutoRecordEna
  isAutoStoreEnab
  isAutoFilmDoseE
  isAutoXferEnabl
  drSeriesAutoTra
  srSeriesAutoTra
  isScanDataSaveE
  autoInjectionMo
  showLocalizer =
  filmGrayScale =
  isPMRDone = No
  isSeriesLevelIn
  patientOrientat
  patientPosition
  seriesType = Sc
  filmFormat = Fc
  filmDirection =
  SSAPProfileId =
  filmSize = Stan
  anatomicalRefer
  externalLandmar
  seriesUID = ""
  filmDestination
  filmDeviceName
  autoXferHostNam
  drSeriesAutoTra
  drSeriesAutoTra
  drSeriesAutoTra
  srSeriesAutoTra
  srSeriesAutoTra
  srSeriesAutoTra
  srSeriesAutoTra
  horizontalLandm
  seriesNumber =
  seriesSmartPrep
  seriesTime = 0
```

```
abdomen_1.proto
seriesSmartPrepSeriesTime = 0
numFilmCopies = 1
filmExamPage = Yes
filmSeriesPage = No
filmComposerFormat = Use
filmScout = No
filmScoutSeriesNumber =
filmScoutAll = No
filmScoutNumber = 2
filmScoutMagFactor = 1
filmScoutWindowWidth = 5
filmScoutWindowLevel = 5
filmScoutXR = Yes
filmScoutXRSeriesNumber
filmScoutXRAll = No
filmScoutXRNumber = 1
filmScoutXRMagFactor = 1
filmScoutXRWindowWidth =
filmScoutXRWindowLevel =
filmScoutXRImageRange =
isAutoStartFilmS1Enabled
isAutoStartFilmS2Enabled
isAutoStartFilmS3Enabled
autoStartFilmS1SheetChan
autoStartFilmS2SheetChan
autoStartFilmS3SheetChan
isAutoPrintFilmEnabled =
cardiacTBIvalue = 50
cardiacIRRvalue = 3
cardiacTDvalue = 70
cardiacRRIvalue = 0
isCardiacMonitoringOn =
isCardiacCineSSMonitorin
isGatingOn = No
isECGActive = No
isWaveformViewerOn = No
isNewRetroSeriesOn = No
isGsiOn = No
isContiguousSeries = Con
isEnhancedPriorityRecon0
isSmartPrepOn = No
isSmartPrepDone = No
isSmartPrepBaselineDone
spShowLocalizer = No
scanPhaseWhilePaused = No
smartPrepSeriesTime = 0
smartPrepSeriesUID = ""
baselineScanNum = 0
```

```
abdomen_1.proto
smartPrepSeriesTime = 0
smartPrepSeriesUID = ""
baselineScanNum = 0
numberOfSmartPrepScansDone =
numberOfSPScansCurrentSPSer
smartPrepMilliAmps = 40
diagnosticDelay = 3
enhancementThreshold = 50
monitoringDelay = 10
monitoringISD = 3
monitoringLocation = -400
isSmartPrep_NV_DLP_Needed =
isSmartPrep_NV_CTDI_Needed =
smartPrep_NV_DLP = 0
smartPrep_NV_CTDI = 0
smartPrepDLP = 0
smartPrepCTDI = 0
smartPrepSFOV = ScanFieldOfV
isSmartPrepAutoMinDiagnostic
isSmartPrepAutoVoicePreMsgEn
endSeriesTime = 1229441295
numberOfAutoXferHosts = 0
drSeriesAutoTransferNumber0f
srSeriesAutoTransferNumber0f
seriesPathDirectory = ""
isVavEnabled = No
isVavFOVAutoScaleEnabled = N
isVavBoundingBoxOn = Yes
vavZoomFactor = 1
vavAzimuth = -30
vavElevation = 20
vavUserAnnoLevel = VavAnnoFu
vavResolution = VavEnhancedF
vavPresetNumber = 1
vavNumberOfPresets = 5
vavProtocolName = "Default"
isVavARAutoStartEnabled = No
isVavARFilmEnabled = No
isVavARScreenSaveEnabled = N
vavWindowWidth = 500
vavWindowLevel = 50
vavPresetDirectory = "/usr/g
vavPreset1 = "PresetUnused"
vavOpacityIndex1 = 0
vavPreset2 = "PresetUnused"
vavOpacityIndex2 = 0
vavPreset3 = "PresetUnused"
vavOpacityIndex3 = 0
```

```
abdomen_1
vavPreset3 = "Prese
vavOpacityIndex3 =
vavPreset4 = "Prese
vavOpacityIndex4 =
vavPreset5 = "Prese
vavOpacityIndex5 =
autoVoicePresetDela
gatingType = NoGati
cardiacRateAutoDete
AutoDetectRateAlgorithml
cinePaddingValueSta
cardiacOperatorEnte
cardiacReconPhasePe
cardiacReconPhasePe
cardiacReconPhasePe
cineWindowPadding =
isEBAEnabled = No
ebaRequestMax = 2
petProtocolName = "
isPetOn = No
lastScanTableHeight
numOfPetFOV = 0
numOfPetImagesPerFO
overlapPerPetFOV =
petStartLoc = 0
petEndLoc = 0
expertMode = No
measdate = ""
measdate = ""
admindate = ""
admintime = ""
postMeasdate = ""
postMeasdate = ""
DateFormat = ""
traceractivity = 0
postActivity = 0
isMBIROnForRetro =
Group {
  IsThisGroup
  biopsyRefer
  isBiopsyGroup = No
  isImageEnhancementEnabled = No
  isSmartScanEnabled = No
  isDualKVGroup = No
  isRespTriggeringGroup = No
  direction = TowardFeet
  kiloVolts = 120
```

```
abdomen_1.proto
kiloVolts = 120
smartCathodeMode = scBiasMode
smartCathodeModeOption = 0
smartCathodeNumDeflections = 1
kvModulationMode = kvModulationNone
rotationType = FullScan
rotationTypeFactor = 1
scanFieldOfViewSize = 50
scanFieldOfViewType =
ScanFieldOfViewLargeBodyVCT
groupType = Scout
macroRowWidth = 1.25
imageThickness = 1.25
biopsyLocation = 0
doseEfficiency = 0
CTDI = 0
DLP = 0
endLocation = -500
gantryTilt = 0
groupDelay = 3.4
isd = 1
pitch = 3
retroEndLocation = 0
retroStartLocation = 0
retroImageInterval = 0
retroStartPhase = -5004800
retroEndPhase = -5004573
retroPhaseIncrement = 1
cardiacPhaseRxType = -5004656
rotationTime = 1
scanSpacing = 10
scanTime = 1
startLocation = 0
tableSpeed = 15
xrayOff = 0
xrayOn = 0
autoFilmDelay = 0
autoVoiceProtocolNumber = 2
breathHoldTime = 0
breathTime = 0
milliAmps = 10
autoMAFlag = 1
ManualmilliAmps = 400
milliAmps2 = 100
automaReferenceNoiseIndex = -1
automaNoiseIndex = -1
automaMaxMilliAmps = 440
```


Document based validation

UAB MEDICINE
UAB HOSPITAL

Effective Date: 8/16/16
Reviewed By: Gauntt/Sanyal
Created By: Gauntt

DEPARTMENTS: HIGHLANDS, TKC, UH, UHED

Protocol: LIVER 3 PHASE

Scanner model: 1CT 256

Description: Liver 3 phase (non-contrast, arterial, venous)

Protocol number: Study 2

PATIENT TYPE: Adult

INDICATIONS:
Cirrhosis, HCC evaluation, as well as portal hypertension. Chemoembolization ablation, cholangiocarcinoma or liver lesion of unknown origin

PATIENT PREPARATION:
NPO 2 hours prior. Encourage water up to time of scan and afterwards. 20 IV or greater. Oral contrast not required.

COMMENTS:
NOT TO BE DONE ON 16 SLICE SCANNERS
* ABD SAG ART MIP: 25cm FOV, center of Aorta
† If preplan prediction of tube current hits maximum, change slice thickness to 5mm

Volume	Weight based on 52g
40-60kg	99-104ml Omnipaque 350
60-90kg	143-148ml Omnipaque 350
90-110kg	180-185ml Omnipaque 350
>110kg	195-200ml Omnipaque 350

Type	Rate
Bolus tracked	4-6ml/s.

Delay	ROI
Arterial: 15 sec post threshold delay	Descending Aorta
Venous: 45 sec post threshold delay	

Thresh.	Saline
150 HU	Prepatency flush: 10-30ml
	Postcontrast flush: 50ml

PATIENT POSITION Supine

SCOUT IMAGES

LABEL	VIEW	kVp	mA	LENGTH	C,W
ABD SCOUT	Dual	120	30	550mm	20,1500

FOV	Destination
500	PACS

HELICAL ACQUISITIONS

ACQ SERIES	Start	Stop	Length	kV	Tube current
ABD AX	Just above diaphragm	Below Iliac crest	350	120	DRI=16; mAs 100 to 500
ABD AX ART			350		
ABD AX VEN		Ischium	500		

ACQUISITION SETTINGS

ACQ SERIES	Pitch	Rot. Time	Coverage	Detect.	Resolution	Thick.†	Interval
All	0.914	0.5 sec	80 mm	128x0.625	Standard	2.5	2.5

CTDI per series 12.8mGy

RECONSTRUCTION SERIES

RECON SERIES	ACQ	Filter kernel	Thick.	Interval	Direct.	C,W	FOV	iDose	Destination
ABD AX	ABD AX	SHARP (C)	2.5	2.5	HD->FT	60,360	BODY	iDose 4	PACS
ABD AX ART	ABD AX	SHARP (C)	2.5	2.5	HD->FT	60,360	BODY	iDose 4	PACS
ABD AX ART THIN	ABD AX	SHARP (C)	1.5	0.75	HD->FT	60,360	BODY	iDose 4	PACS, TERARECON
ABD COR ART	ART	SHARP (C)	2.5	2.5	A->P	60,360	BODY	iDose 4	PACS
ABD SAG ART MIP *		SHARP (C)	3	3	R->L	100,450	BODY	iDose 4	PACS
ABD AX VEN	ABD AX	SHARP (C)	2.5	2.5	HD->FT	60,360	BODY	iDose 4	PACS
ABD AX VEN THIN	ABD AX	SHARP (C)	1.5	0.75	HD->FT	60,360	BODY	iDose 4	TERARECON
ABD COR VEN	VEN	SHARP (C)	2.5	2.5	A->P	60,360	BODY	iDose 4	PACS

3D LAB REFORMAT None

Document based validation



Effective Date 8/16/16

Reviewed By: Gauntt/Sanyal

Created By: Gauntt

DEPARTMENTS: HIGHLANDS, TKC, UH, UHED

Protocol: LIVER 3 PHASE

Scanner model: ICT 256

Description: Liver 3 phase (non-con, arterial, venous)

Protocol number: Body 3

PATIENT TYPE: Adult	Volume	Weight based on 52gl
INDICATIONS: Cirrhosis, HCC evaluation, as well as portal hypertension. Chemoembolization, ablation, cholangiocarcinoma or liver lesion of unknown origin	40-60kg	99-104ml Omnipaque 350
	60-90kg	143-148ml Omnipaque 350
	90-110kg	180-185ml Omnipaque 350
	>110kg	195-200ml Omnipaque 350
PATIENT PREPARATION: NPO 2 hours prior. Encourage water up to time of scan and afterwards. 20g IV or greater. Oral contrast not required.	Type	Bolus tracked
	Rate	4-6ml/s.
	Delay	Arterial: 15 sec post threshold delay Venous: 45 sec post threshold delay
COMMENTS: NOT TO BE DONE ON 16 SLICE SCANNERS * ABD SAG ART MIP: 25cm FOV, center of Aorta † If preplan prediction of tube current hits maximum, change slice thickness to 5mm	ROI	Descending Aorta
	Thresh.	150 HU
	Saline	Prepatency flush: 10-30ml Postcontrast flush: 50ml
	PATIENT POSITION	Supine

SCOUT IMAGES

LABEL	VIEW	kVp	mA	LENGTH	C,W	FOV	Destination
ABD SCOUT	Dual	120	30	550mm	20,1500	500	PACS

HELICAL ACQUISITIONS

ACQ SERIES	Start	Stop	Length	kV	Tube current
ABD AX	Just above diaphragm	Below Iliac crest	350	120	DRI=16; mAs 100 to 500
ABD AX ART			350		
ABD AX VEN		Ischium	500		

ACQUISITION SETTINGS

ACQ SERIES	Pitch	Rot. Time	Coverage	Detect.	Resolution	Thick.†	Interval	CTDI per series
All	0.914	0.5 sec	80 mm	128x0.625	Standard	2.5	2.5	12.8mGy

RECONSTRUCTION SERIES

RECON SERIES	ACQ	Filter kernel	Thick.	Interval	Direct	C,W	FOV	iDose	Destination
ABD AX	ABD AX	SHARP (C)	2.5	2.5	HD->FT	60,360	BODY	iDose 4	PACS
ABD AX ART	ABD AX	SHARP (C)	2.5	2.5	HD->FT	60,360	BODY	iDose 4	PACS
ABD AX ART THIN	ABD AX	SHARP (C)	1.5	0.75	HD->FT	60,360	BODY	iDose 4	PACS, TERARECON
ABD COR ART	ART	SHARP (C)	2.5	2.5	A->P	60,360	BODY	iDose 4	PACS
ABD SAG ART MIP	ART	SHARP (C)	3	3	R->L	100,450	BODY	iDose 4	PACS
ABD AX VEN	ABD AX	SHARP (C)	2.5	2.5	HD->FT	60,360	BODY	iDose 4	PACS
ABD AX VEN THIN	ABD AX	SHARP (C)	1.5	0.75	HD->FT	60,360	BODY	iDose 4	TERARECON
ABD COR VEN	VEN	SHARP (C)	2.5	2.5	A->P	60,360	BODY	iDose 4	PACS

3D LAB REFORMAT	None
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LIVER 3 PHASE



Effective Date 8/16/16

Reviewed By: Gauntt/Sanyal

Created By: Gauntt

DEPARTMENTS: HIGHLANDS, TKC, UH, UHED

Protocol: LIVER 3 PHASE

Scanner model: Discovery 64

Description: Liver 3 phase (non-con, arterial, venous)

Protocol number: Body 3

PATIENT TYPE: Adult	Volume	Weight based on 52gl
INDICATIONS: Cirrhosis, HCC evaluation, as well as portal hypertension. Chemoembolization, ablation, cholangiocarcinoma or liver lesion of unknown origin	40-60kg	99-104ml Omnipaque 350
	60-90kg	143-148ml Omnipaque 350
	90-110kg	180-185ml Omnipaque 350
	>110kg	195-200ml Omnipaque 350
PATIENT PREPARATION: NPO 2 hours prior. Encourage water up to time of scan and afterwards. 20g IV or greater. Oral contrast not required.	Type	Bolus tracked
	Rate	4-6ml/s.
	Delay	Arterial: 15 sec post threshold delay Venous: 45 sec post threshold delay
COMMENTS: NOT TO BE DONE ON 16 SLICE SCANNERS * ABD SAG ART MIP: 25cm FOV, center of Aorta † If preplan prediction of tube current hits maximum, change slice thickness to 5mm	ROI	Descending Aorta
	Thresh.	150 HU
	Saline	Prepatency flush: 10-30ml Postcontrast flush: 50ml
	PATIENT POSITION	Supine

SCOUT IMAGES

LABEL	VIEW	kVp	mA	LENGTH	WW,W	FOV	Destination
ABD SCOUT	Dual	120	10	550mm	500,50	500	PACS

HELICAL ACQUISITIONS

ACQ SERIES	Start	Stop	Length	kV	Tube current
ABD AX	Just above diaphragm	Below Iliac crest	350	120	SmartMA NI=24 mA 100 to 500
ABD AX ART			350		
ABD AX VEN		Ischium	500		

ACQUISITION SETTINGS

ACQ SERIES	Pitch	Rot. Time	Coverage	SFOV	Resolution	Thick.†	Interval	CTDI per series
All	0.984	0.5 sec	40 mm	Lg Body	Standard	2.5	2.5	21.4mGy

RECONSTRUCTION SERIES

RECON SERIES	ACQ	Algorithm	Thick.	Interval	Direct	WW,WL	DFOV	ASIR	Destination
ABD AX	ABD AX	Std	2.5	2.5	HD->FT	360,60	BODY	SS40	PACS
ABD AX ART	ABD AX	Std	2.5	2.5	HD->FT	360,60	BODY	SS40	PACS
ABD AX ART THIN	ART	Std	1.25	0.625	HD->FT	360,60	BODY	SS40	PACS, TERARECON
ABD AX VEN	ABD AX	Std	2.5	2.5	HD->FT	360,60	BODY	SS40	PACS
ABD AX VEN THIN	VEN	Std	1.25	0.625	HD->FT	360,60	BODY	SS40	TERARECON

MULTIPLANE REFORMATS

MPR SERIES	Recon Series	Orientation	Thick.	Interval	Direct	WW,WL	Length	Mode	Destination
ABD COR ART	ABD AX ART THIN	COR	2.5	2.5	A->P	360,60	ABD	Avg	PACS
ABD SAG ART MIP	ABD AX ART THIN	SAG	3	3	R->L	450,100	ABD/PEL	MIP	PACS
ABD COR VEN	ABD AX VEN THIN	COR	2.5	2.5	A->P	360,60	ABD	Avg	PACS
3D LAB REFORMAT	None								

LIVER 3 PHASE



Knowledge that will change your world

Document based validation

161211 Body Protocols Ver 13.0.xlsm

Calibri (Body) 11 B I U \$ % .00 .00

Home Layout Tables Charts SmartArt Formulas Data

F30

1							
2		Scanner Model	Force 96				
3							
4		Manufacturer	Siemens				
5		IsGE	FALSE				
6		UseMPRParent	False				
7							
8							
9							
10		Scanner Database					
11		Scanner models					
12		Brilliance 16					
13		Brilliance 64					
14		Brilliance 40					
15		ICT 256					
16		Lightspeed 16					
17		Discovery 64					
18		Revolution 256					
19		Force 96					
20		All scanners					
21							
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Scanner Table of contents ABD_PEL

Normal View Ready

Scanner selection

Workbook

161211 Body Protocols Ver 13.0.xlsm

Scanner Force 96

Sheet visibility

- ☒ Show only protocols use by this model
- ☐ Autoselect protocol sheets
- ☐ Hide database rows

Subset Based on status

- ☒ Draft
- ☒ Physics approved
- ☒ Final

OK Cancel

Document based validation

161211 Body Protocols Ver 13.0.xlsm

Search in Sheet

Calibri (Body) 10

Home Layout Tables Charts SmartArt Formulas

C32 =VLOOKUP(AcqKey,AcquisitionData,COLUMN(),FALSE)

Effective Date: 8/16/16
Reviewed By: Gauntt/Sanyal
Created By: Gauntt

DEPARTMENTS: HIGHLANDS, TKC, UH, UHED

Protocol: LIVER 3 PHASE
Description: Liver 3 phase (non-con, arterial, venous)

Scanner model: Force 96
Protocol number: Body 3

PATIENT TYPE: Adult

Volume: Weight based on 52g/l

INDICATIONS:
Cirrhosis, HCC evaluation, as well as portal hypertension. Chemoembolization, ablation, cholangiocarcinoma or liver lesion of unknown origin

PATIENT PREPARATION:
NPO 2 hours prior. Encourage water up to time of scan and afterwards. 20g IV or greater. Oral contrast not required.

COMMENTS:
NOT TO BE DONE ON 16 SLICE SCANNERS
* ABD SAG ART MIP: 25cm FOV, center of Aorta
† If preplan prediction of tube current hits maximum, change slice thickness to 5mm

ROI: Descending Aorta
Thresh: 150 HU
Saline: Prepatency flush: 10-30ml
Postcontrast flush: 50ml

PATIENT POSITION: Supine

SCOUT IMAGES

LABEL	VIEW	kVp	mA	LENGTH	W,C	FOV	Destination
ABD SCOUT	Dual	120	106	550mm	?,?	500	PACS

HELICAL ACQUISITIONS

ACQ SERIES	Start	Stop	Length	kV	Tube current
ABD AX	Just above diaphragm	Below Iliac crest	350	120	QRM=150 mAs; CARE
ABD AX ART			350	(Semi)	Dose (4D)
ABD AX VEN		Ischium	500		

ACQUISITION SETTINGS

ACQ SERIES	Pitch	Rot. Time	Coverage	Detect.	Thick. †	Interval	CTDI per series
All	0.5	0.5	57.6mm	96x0.6	2.5	2.5	10 mGy

RECONSTRUCTION SERIES

RECON SERIES	ACQ	Filter kernel	Thick.	Interval	Direct.	W,C	DFOV	ADMIRE	Destination
ABD AX	ABD AX	Br40	2.5	2.5	HD->FT	360,60	BODY	?	PACS
ABD AX ART	ABD AX	Br40	2.5	2.5	HD->FT	360,60	BODY	?	PACS
ABD AX ART THIN	ABD AX	Br40	1	0.5	HD->FT	360,60	BODY	?	PACS, TERARECON
ABD COR ART	ABD AX	Br40	2.5	2.5	A->P	360,60	BODY	?	PACS
ABD SAG ART MIP *	ABD AX	Br40	3	3	R->L	450,100	BODY	?	PACS
ABD AX VEN	ABD AX	Br40	2.5	2.5	HD->FT	360,60	BODY	?	PACS
ABD AX VEN THIN	ABD AX	Br40	1	0.5	HD->FT	360,60	BODY	?	TERARECON
ABD COR VEN	ABD AX	Br40	2.5	2.5	A->P	360,60	BODY	?	PACS

3D LAB REFORMAT: None

ABD_PEL WO LIVER 3 PHASE

Normal View Ready

161211 Body Protocols Ver 13.0.xlsm

Search in Sheet

Calibri (Body) 11

Home Layout Tables Charts SmartArt Formulas Data

C82 Contig

Topogram settings

Column	GE	Philips	Siemens
LABEL	mA	Window	Level
ABD SCOUT	10	500	50

ACQUISITION SETTINGS

Philips Scanners

Acq key	PITCH	Rot. Time	Coverage	Detector	Model	Acq	AEC settings	CTDI	KV
Brilliance 16:All	N/A	N/A	N/A	N/A	Brilliance 16	All	N/A	N/A	120
Brilliance 64:All	0.891	0.5 sec	40 mm	64x0.625	Brilliance 64	All	150 mAs ACS/Z-DOOM	7.8 mGy	120
Brilliance 40:All	N/A	N/A	N/A	N/A	Brilliance 40	All	N/A	N/A	120
ACT 256:All	0.914	0.5 sec	80 mm	128x0.625	ICT 256	All	DRI=16; mAs 100 to 500	12.8mGy	120

Siemens scanners

Acq key	Pitch	Rot. Time	Coverage	Detector	Model	Acq	AEC Settings	CTDI	KV
Force 96:All	0.6	0.5	57.6mm	96x0.6	Force 96	All	QRM=150 mAs; CARE	10 mGy	120 (Semi)

GE Scanners

Acq key	Pitch	Rot. Time	Coverage	SFOV	Model	Acq	AEC Settings	CTDI	KV
Lightspeed 16:All	N/A	N/A	N/A	N/A	Lightspeed 16	All	N/A	120	
Discovery 64:All	0.984	0.5 sec	40 mm	Lg Body	Discovery 64	All	SmartMA NI=24	21.4mGy	120
Revolution 256:All	0.992	0.5 sec	40 mm	Lg Body	Revolution 256	All	SmartMA NI=17		120

Row in Reconstruction Settings

Level	Width	Interval	MIP/Parent	Filter	Thick.	NR
2	3	4	5	15	16	17

RECONSTRUCTION SETTINGS

Label	ABD AX	ABD AX ART	ABD AX ART THIN	ABD AX VEN	ABD AX VEN THIN	ABD COR ART	ABD COR VEN	ABD SAG ART MIP *
Level	60	60	60	60	60	60	60	100
Width	360	360	360	360	360	360	360	450
Interval	Contig	Contig	Overlap	Contig	Overlap	Contig	Contig	Contig

Brilliance 64 Filter

Thickness	IDose Level	IDose 3	IDose 3	IDose 3	IDose 3
2.5	2.5	1.5	2.5	1.5	3

Brilliance 16 Filter

Thickness	IDose Level	IDose 3	IDose 3	IDose 3	IDose 3
N/A	N/A	N/A	N/A	N/A	N/A

ABD_PEL WO LIVER 3 PHASE

Normal View Ready

Document based validation

Protocol Management.xlsm

Search in Sheet

Calibri (Body) 11 B I U

Home Layout Tables Charts SmartArt Formulas Data Review Developer

Edit Font Alignment Number Format Cells Themes

Paste Clear B I U

Normal Bad Good Neutral Calculation Check Cell

Insert Delete Format Themes Aa

C51 Helical

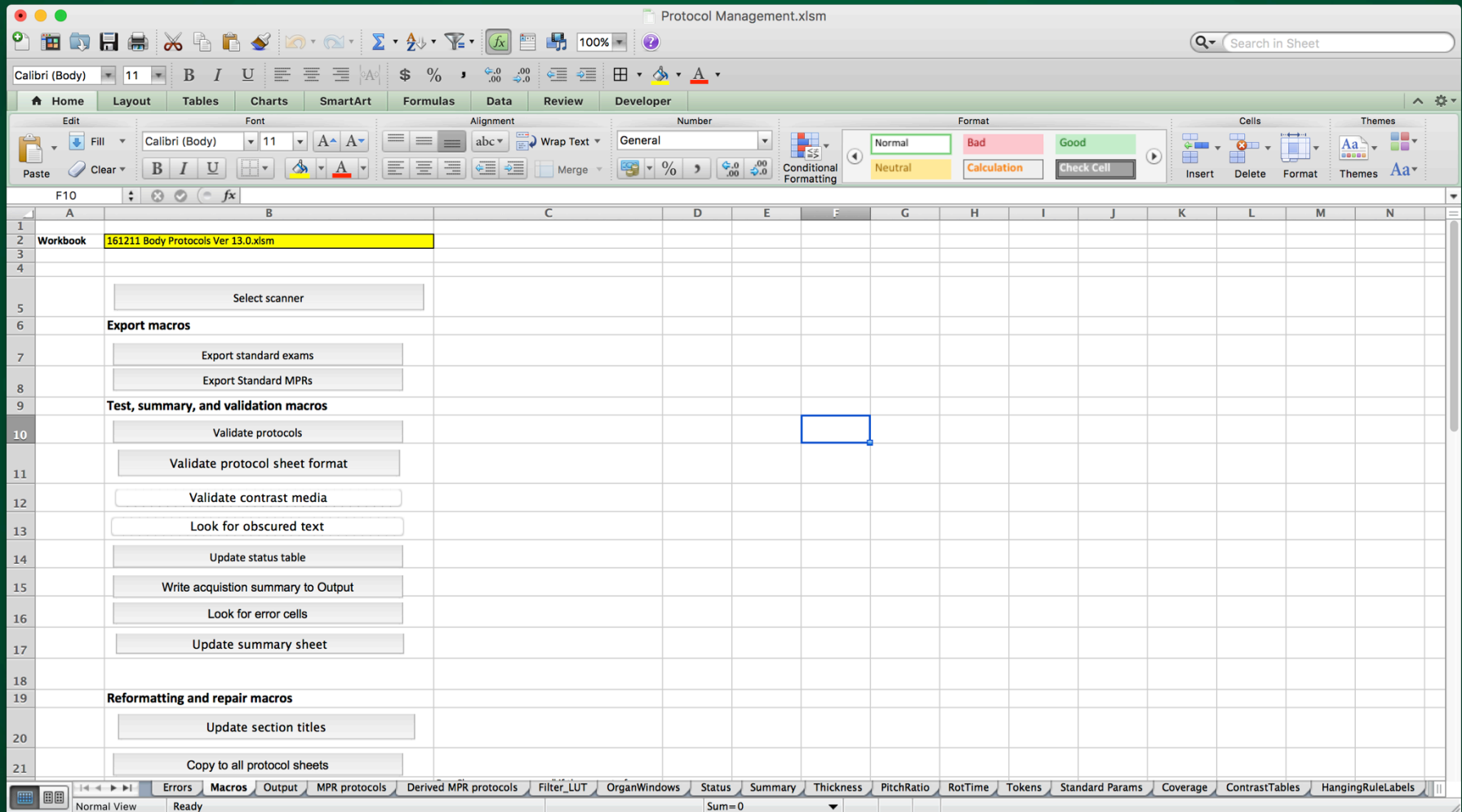
	A	B	C	D	E	F	G	H	I	J	K	L	M
1		Model	Reference							#REF!	#REF!		
2		ICT 256	ICT Family Instructions for Use, page 123										
3		Brilliance 64	Brilliance CT Vol 1. Instructions for Use. p.7-26, 7-29										
4		Brilliance 16	Help screen on NP6CT1										
5		Brilliance 40	160405_TKCCT40.xlsx										
6		Lightspeed 16	160216_ACTONCT1.xls										
7													
8			Note: the Brilliance 64 manual does not list 16x0.625 as a legal configuration, but the scanner allows it.										
9													
10													
11	Key	Model	Mode	Channel width	Coverage	Resolution	Thicknesses	ChannelsPerRow	Detector	Comments			
12	Brilliance 16 Helical 1.500 24.000	Brilliance 16	Helical	1.5	24	Standard, Ultra Fast Detail, High, Ultra Fast	2, 3, 5	1	16 x 1.5				
13	Brilliance 16 Axial 0.600 1.200	Brilliance 16	Axial	0.6	1.2	Ultra High	0.6, 1.2	1	2 x 0.6				
14	Brilliance 16 Axial 0.750 3.000	Brilliance 16	Axial	0.75	3	Standard, Ultra Fast Detail, High, Ultra High, Ultra Fast	0.75, 1.5, 3	1	4 x 0.75				
15	Brilliance 16 Axial 1.500 6.000	Brilliance 16	Axial	1.5	6	Standard, Ultra Fast Detail, High, Ultra High, Ultra Fast	1.5, 3, 6	1	4 x 1.5				
16	Brilliance 16 Axial 0.750 12.000	Brilliance 16	Axial	0.75	12	Standard, Ultra Fast Detail, High, Ultra High, Ultra Fast	0.75, 1.5, 3	1	16 x 0.75				
17	Brilliance 16 Axial 3.000 12.000	Brilliance 16	Axial	3	12	Standard, Ultra Fast Detail, High, Ultra High, Ultra Fast	3, 5, 12	1	4 x 3				
18	Brilliance 16 Axial 4.500 18.000	Brilliance 16	Axial	4.5	18	Standard, Ultra Fast Detail, High, Ultra High, Ultra Fast	4.5, 9, 18	1	4 x 4.5				
19	Brilliance 16 Axial 1.500 24.000	Brilliance 16	Axial	1.5	24	Standard, Ultra Fast Detail, High, Ultra High, Ultra Fast	1.5, 3, 6	1	16 x 1.5				
20	Brilliance 16 Axial 3.000 24.000	Brilliance 16	Axial	3	24	Standard, Ultra Fast Detail, High, Ultra High, Ultra Fast	3, 6, 12	1	8 x 3				
21	Brilliance 16 Helical 0.750 12.000	Brilliance 16	Helical	0.75	12	Standard, Ultra Fast Detail, High, Ultra High, Ultra Fast	0.8, 1, 1.5, 2, 3, 5	1	16 x 0.75				
22	Brilliance 40 Axial 0.000 0.000	Brilliance 40	Axial				0.625, 1, 1.25, 2.5, 5, 7.5, 10	1					
23	Brilliance 40 Helical 0.000 0.000	Brilliance 40	Helical				0.67, 0.8, 0.9, 1, 1.4, 1.5, 2, 2.5, 3, 4, 5	1					
24	Brilliance 64 Axial 0.500 1.000	Brilliance 64	Axial	0.5	1	Ultra High	0.5	1	2 x 0.5				
25	Brilliance 64 Axial 0.625 1.250	Brilliance 64	Axial	0.625	1.25	High	0.625, 1.250	1	2 x 0.625				
26	Brilliance 64 Axial 0.625 7.500	Brilliance 64	Axial	0.625	7.5	Standard, Detailed	7.5	1	12 x 0.625				
27	Brilliance 64 Axial 0.625 12.500	Brilliance 64	Axial	0.625	12.5	Ultra high	0.625, 1.25	1	20 x 0.625				
28	Brilliance 64 Axial 1.250 15.000	Brilliance 64	Axial	1.25	15	Standard, Detailed	3.75, 7.5, 15	1	12 x 1.25				
29	Brilliance 64 Axial 0.625 20.000	Brilliance 64	Axial	0.625	20	High, Standard, Detailed	0.625, 1.25, 2.5, 5, 10	1	32 x 0.625				
30	Brilliance 64 Axial 0.625 10.000	Brilliance 64	Axial	0.625	10	Standard	0.625, 1.25, 2.5, 5, 10	1	16 x 0.625				
31	Brilliance 64 Axial 1.250 22.500	Brilliance 64	Axial	1.25	22.5	Standard, Detailed	5.625, 11.25, 22.5	1	18 x 1.25				

Errors Macros Output MPR protocols Derived MPR protocols Filter_LUT OrganWindows Status Summary Thickness PitchRatio RotTime Tokens Standard Params Coverage ContrastTables HangingRuleLabels

Normal View Ready

Sum=0

Document based validation



Document based validation

Protocol Management.xlsm

Calibri (Body) 11

Home Layout Tables Charts SmartArt Formulas Data Review Developer

Visual Basic Add-Ins Form Controls

Editor Macros Record Relative Reference Add-Ins

Button Radio Button Scroll Bar Text Box Group

Check Box List Box Combo Box Spin Button Label

ReconSeriesTitle Validation Results for 1703xx_CTNeuroProtocols_Ver2.3.xlsm

	A	B	C	D	E	F
1	Validation Results for 1703xx_CTNeuroProtocols_Ver2.3.xlsm					
2						
3	Scanners tested					
4	Brilliance 16	Brilliance 64	ICT 256	Lightspeed 16	Discovery 64	
5	Optima 660	Revolution 256	Force 96			
6						
7	Worksheets tested					
8	HEAD WITH					
9						
10	10 errors found					
11						
12	ValidationResultsTable					
13						
14	Model	Sheet	Type	Label	Error	
15	Optima 660	HEAD WITH	Comment	HEAD AX	Not yet implemented	
16	Brilliance 16	HEAD WITH	StdAcqParams.ValidateCoverage	HEAD AX	Coverage (14x0.75) is not not found in thickness table	
17	Brilliance 64	HEAD WITH	StdAcqParams.Validate	HEAD AX	Illegal rotation time (0.9)	
18	Force 96	HEAD WITH	StdAcqParams.Validate	HEAD AX	Illegal pitch ratio (0.57) for 38.4mm coverage	
19	Brilliance 16	HEAD WITH	Invalid thickness	HEAD AX	Invalid image thickness (3) for 14x0.75	
20	Brilliance 16	HEAD WITH	ValidateImageThicknesses	HEAD AX	IsValidThickness: Illegal detector config. (14x0.75)	
21	Brilliance 16	HEAD WITH	Invalid thickness	HEAD AX THIN	Invalid image thickness (1.5) for 14x0.75	
22	Brilliance 16	HEAD WITH	ValidateImageThicknesses	HEAD AX THIN	IsValidThickness: Illegal detector config. (14x0.75)	
23	Brilliance 16	HEAD WITH	Invalid thickness	HEAD AX BONE	Invalid image thickness (3) for 14x0.75	
24	Brilliance 16	HEAD WITH	ValidateImageThicknesses	HEAD AX BONE	IsValidThickness: Illegal detector config. (14x0.75)	
25						

Errors Macros Output MPR protocols Derived MPR protocols Filter_LUT OrganWindows Status Summary

Normal View Ready Sum=0

Dose estimation

170312 CTDI calculator.xlsm

Calibri (Body) 12 B I U

Home Layout Tables Charts SmartArt Formulas Data Review Developer

A83

	A	B	C	D	H	I	J
1							
2		Model	iCT 256				
3		Manufacturer	Philips				
4		Phantom	Body				
5		Voltage	120	kV			
6		Scan mode	Helical				
9		Rotation time	0.5	sec			
10		Coverage	40	mm			
12		Helical pitch	0.984				
22		For Philips iCT					
23		mA mode	Manual				
24		Manual technique	300	mAs			
26		CTDI	21.6	mGy			
27		Tube current	590.4	mA			
31							
35							
49							
56							
110							
111							
112							
113							
114							
115							
116							

Calculation Instructions Coverage Models

Normal View Ready Sum=0

Dose estimation

170312 CTDI calculator.xlsm

Calibri (Body) 12 B I U

Home Layout Tables Charts SmartArt Formulas Data Review Developer

J8

	A	B	C	D	H	I
1						
2		Model	iCT 256			
3		Manufacturer	Philips			
4		Phantom	Body			
5		Voltage	120	kV		
6		Scan mode	Helical			
7		Patient size	Medium adult			
8		Water equivalent diameter	30.54	cm		
9		Rotation time	0.5	sec		
10		Coverage	40	mm		
12		Helical pitch	0.984			
22		For Philips iCT				
23		mA mode	DoseRight			
25		DRI	16			
28		Actual CTDI	12.7	mGy		
29		Actual technique	174.0	mAs		
30		Actual tube current	342.5	mA		
31						
32		Prescan estimated CTDI	16.8	mGy		
33		Prescan estimated mAs	229.4	mAs		
34		Prescan estimated mA	451.5	mA		
35						
49						
56						
110						

Calculation Instructions Coverage Models

Normal View Ready Sum=0

Dose estimation

170312 CTDI calculator.xlsm

Calibri (Body) 12 B I U

Home Layout Tables Charts SmartArt Formulas Data Review Developer

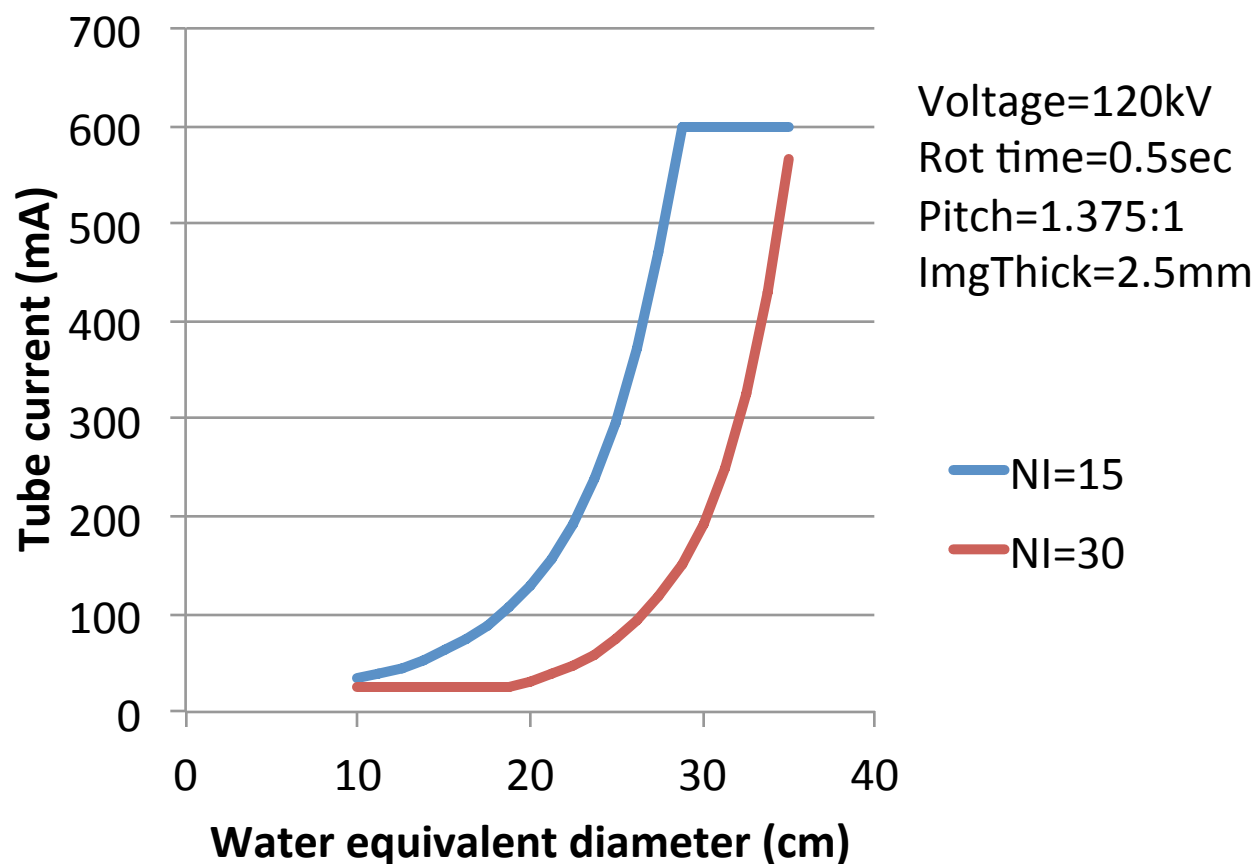
Model Discovery 64

	A	B	C	D	H	I	J
1							
2		Model	Discovery 64				
3		Manufacturer	GE				
4		Phantom	Body				
5		Voltage	120	kV			
6		Scan mode	Helical				
7		Patient size	Medium adult				
8		Water equivalent diameter	30.54	cm			
9		Rotation time	0.5	sec			
10		Coverage	40	mm			
12		Helical pitch	0.984				
35							
36		For GE Discovery/Lightspeed/Optima					
37		mA mode	AutoMA				
38		Focal spot	LFS				
39		Scan FOV	LBody				
40		Noise index	20				
41		Thickness	3.75	mm			
42		Dose Reduction	30	%			
44		Rotation time	0.5	sec			
45		Tube current	164.56	mA			
46		Effective mAs	83.62	mAs			
47		CTDI	6.71	mGy			
48		CTDIw	6.82	mGy			
49							

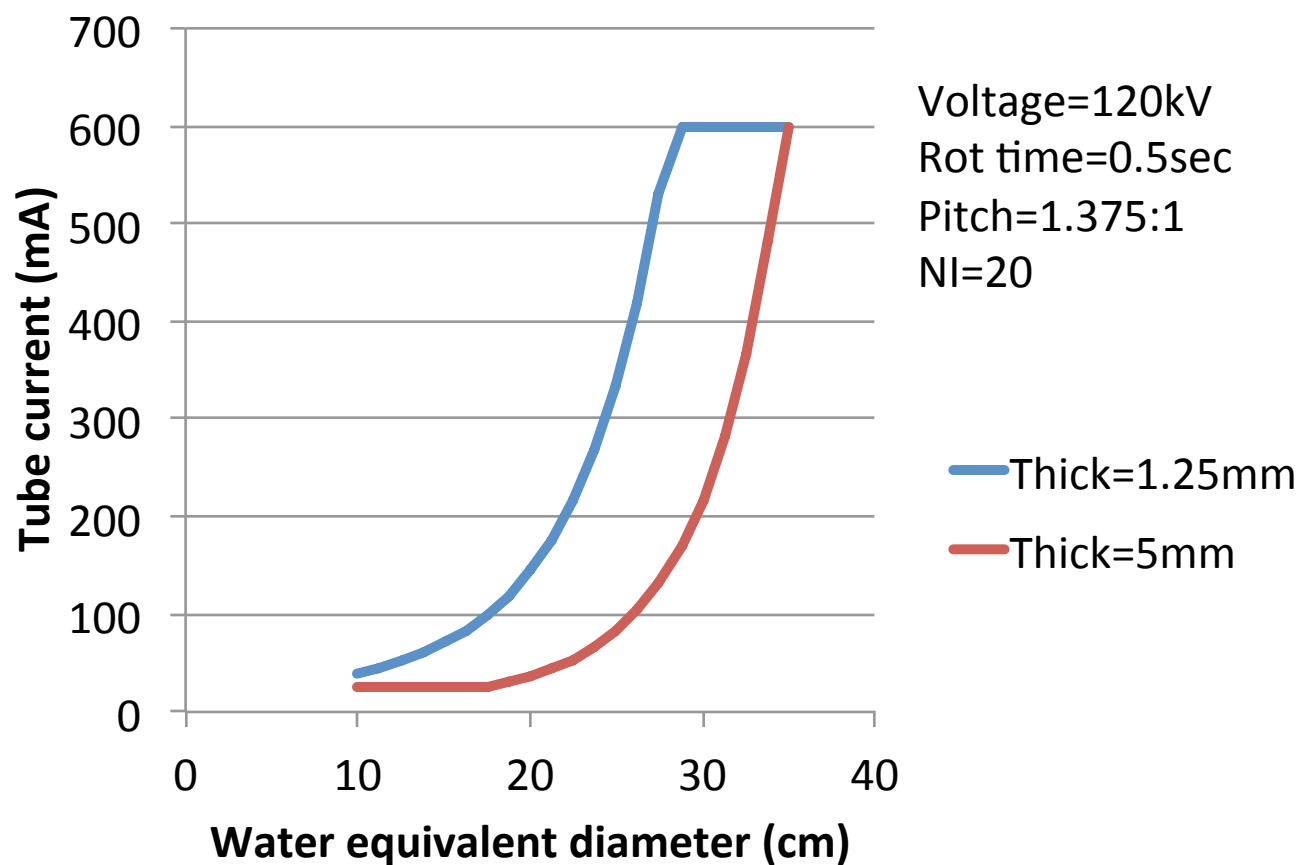
Calculation Instructions Coverage Models

Normal View Ready Sum=0

Discovery AEC



Discovery AEC




Philips Brilliance 64

UAB MEDICINE UAB HOSPITAL		Effective Date 10/18/16 Reviewed By: Gauntt / Singh Created By: DMGauntt, RSJohnson, RMFowler							
DEPARTMENTS: HIGHLANDS, TKC, UH, UHED		Scanner model: Brilliance 64 Protocol number: Chest 3							
Protocol: CHEST WITH Description: CT CHEST WITH CONTRAST									
PATIENT TYPE: Adult		Weight	Contrast Volume						
MULTIPLANE REFORMATS									
MPR SERIES	Recon Series	Orient.	Thick.	Interval	Direct.	C,W	Length	Mode	Destination
CHEST COR	CHEST AX THIN	COR	2.5	2.5	A -> P	60,360	CHEST	AVG	PACS


UAB MEDICINE UAB HOSPITAL		Effective Date 10/18/16 Reviewed By: Gauntt / Singh Created By: DMGauntt, RSJohnson, RMFowler							
DEPARTMENTS: HIGHLANDS, TKC, UH, UHED		Scanner model: Brilliance 64 Protocol number: Chest 5							
Protocol: CHEST WITH (NODULE) Description: CT CHEST WITH CONTRAST									
PATIENT TYPE: Adult		Weight	Contrast volume						
MULTIPLANE REFORMATS									
MPR SERIES	Recon Series	Orient.	Thick.	Interval	Direct.	C,W	Length	Mode	Destination
CHEST COR	CHEST AX THIN	COR	1.5	1.5	A -> P	60,360	CHEST	AVG	PACS
CHEST COR MIP	CHEST AX THIN	COR	5	5	A -> P	60,360	CHEST	MIP	PACS

GE Discovery 64

		Effective Date	10/18/16
DEPARTMENTS: HIGHLANDS, TKC, UH, UHED		Reviewed By:	Gauntt / Singh
Protocol: CHEST WITH Description: CT CHEST WITH CONTRAST		Created By:	DMGauntt, RSJohnson, RMFowler
		Scanner model:	Discovery 64
		Protocol number:	Chest 3
PATIENT TYPE: Adult	Weight	Contrast Volume	

MULTIPLANE REFORMATS

MPR SERIES	Recon Series	Orient.	Thick.	Interval	Direct.	WW,WL	Length	Mode	Destination
CHEST COR	CHEST AX THIN	COR	2.5	2.5	A -> P	360,60	CHEST	AVG	PACS

		Effective Date	10/18/16
DEPARTMENTS: HIGHLANDS, TKC, UH, UHED		Reviewed By:	Gauntt / Singh
Protocol: CHEST WITH (NODULE) Description: CT CHEST WITH CONTRAST		Created By:	DMGauntt, RSJohnson, RMFowler
		Scanner model:	Discovery 64
		Protocol number:	Chest 5
PATIENT TYPE: Adult	Weight	Contrast volume	

MULTIPLANE REFORMATS

MPR SERIES	Recon Series	Orient.	Thick.	Interval	Direct.	WW,WL	Length	Mode	Destination
CHEST COR 1_25	CHEST AX THIN	COR	1.25	1.25	A -> P	360,60	CHEST	AVG	PACS
CHEST COR MIP 5	CHEST AX THIN	COR	5	5	A -> P	360,60	CHEST	MIP	PACS

CT Protocol Manager

CT Protocol Manager (version 0.9.3 beta)

NP6CT1 (/Users/dgauntt/Documents/UAB/Service/Clinical/Protocol Support/CT/CT Scanners/NP6CT1/161102_NP6CT1/spr)
Selection: NP6CT1 (Nov 2, 2016) | NP6CT1

Known scanners

- ACTONCT1
- AIFPET1
- AIFPET2
- CHERCT1
- HCT1
- HCT2
- LCT1
- NP6CT1**
- NP6CT2
- NP6CT3
- NPERCT1
- NPERCT2
- TKCCT40
- TKCFORCE
- TKCHDCT1**
- TKCHDCT2
- WICCT

Database

Import selected scanners

Delete selected scanners

Edit scanner list

Select all scanners

Select no scanners

Export recon parameters

Export acq parameters

Validation/Verification

Validate recon labels

Verify standard exams

Protocol comparison

Scanner subset: ALL

Exam category: BODY

Standard exam name: ABD CTA 2 PHASE

Display mode: Topograms

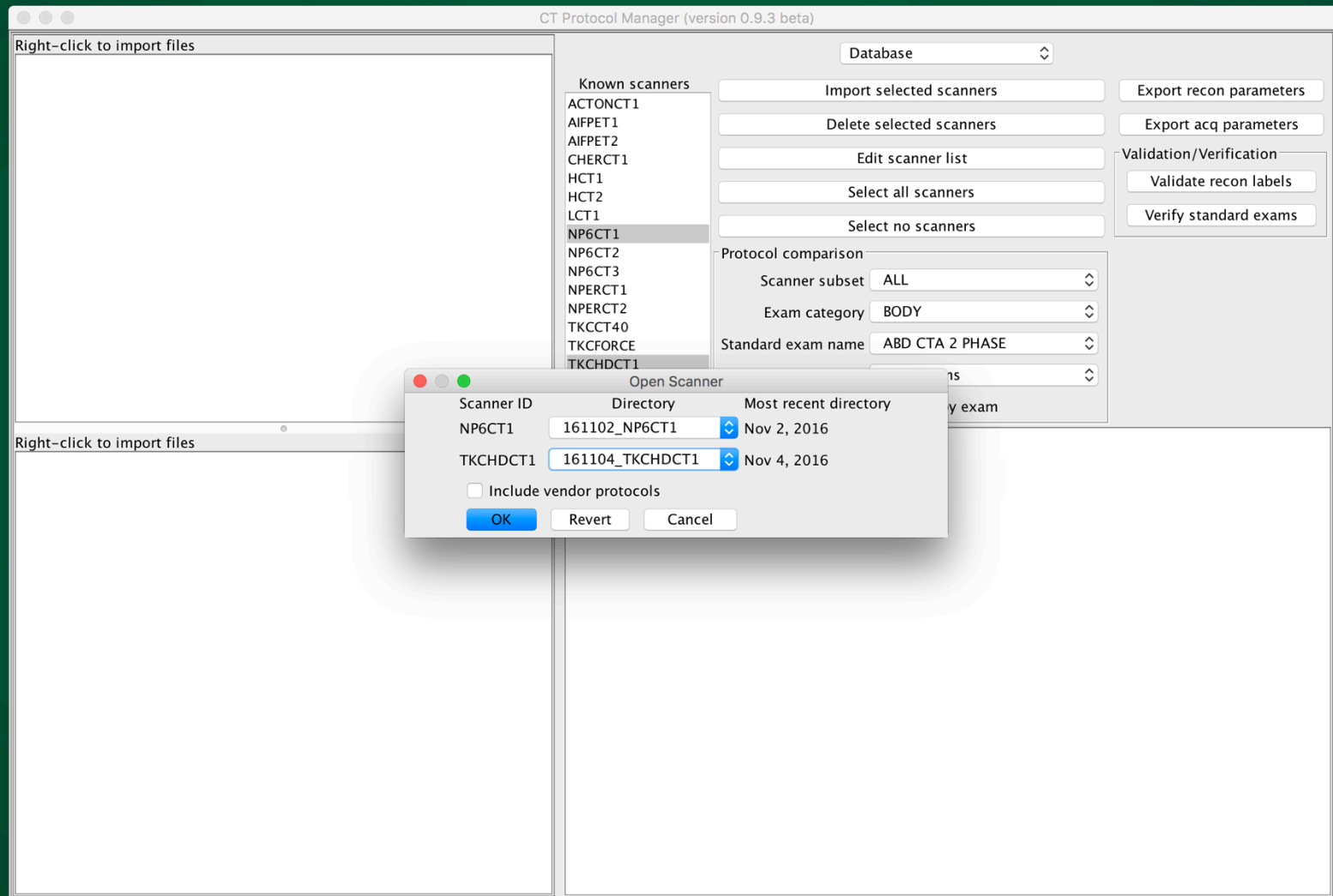
☐ Group by exam

TKCHDCT1 (/Users/dgauntt/Documents/UAB/Service/Clinical/Protocol Support/CT/CT Scanners/TKCHDCT1/161104_TKCHDCT1/protocols)
Selection: TKCHDCT1 (Nov 4, 2016) | TKCHDCT1

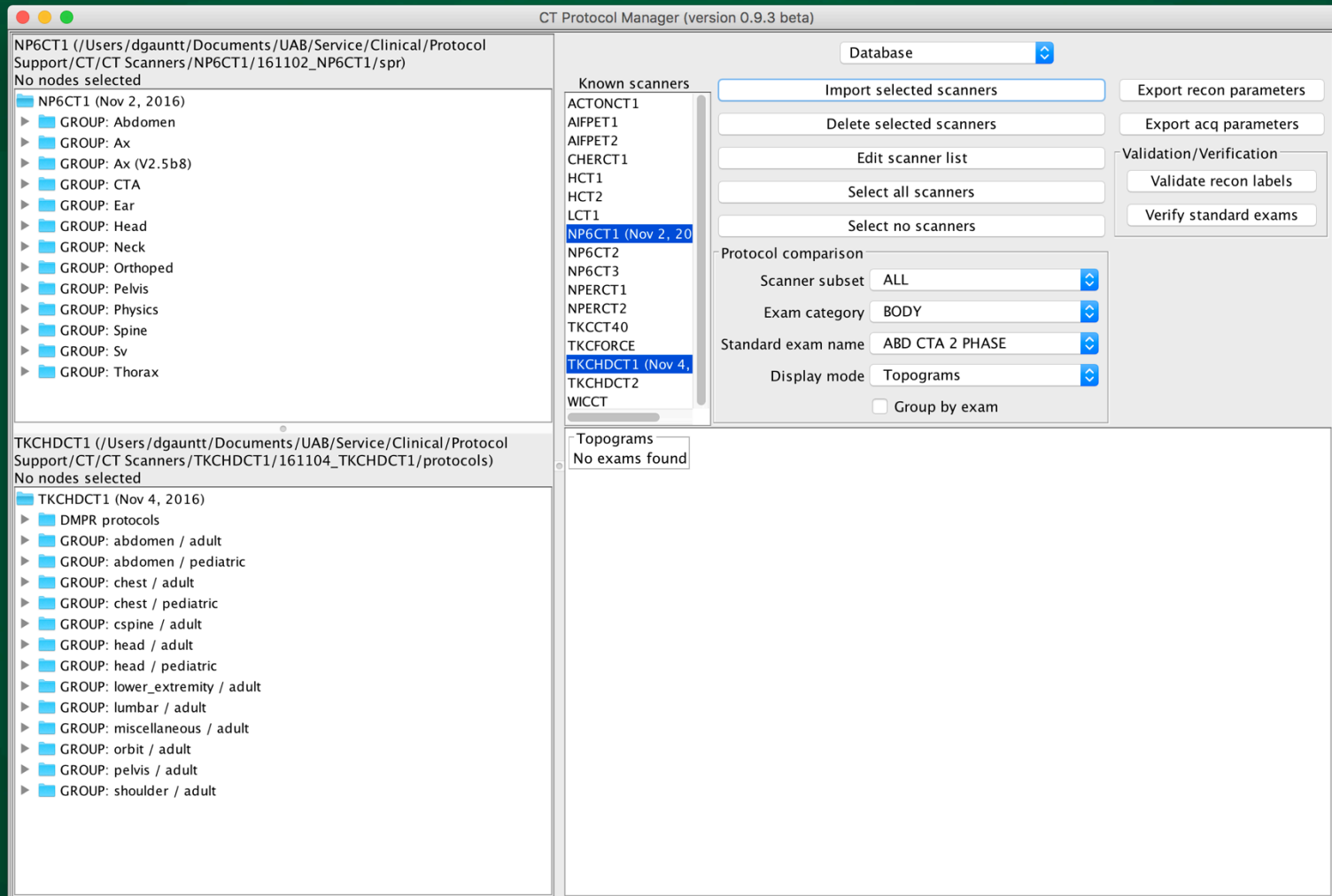
Topograms

No exams found

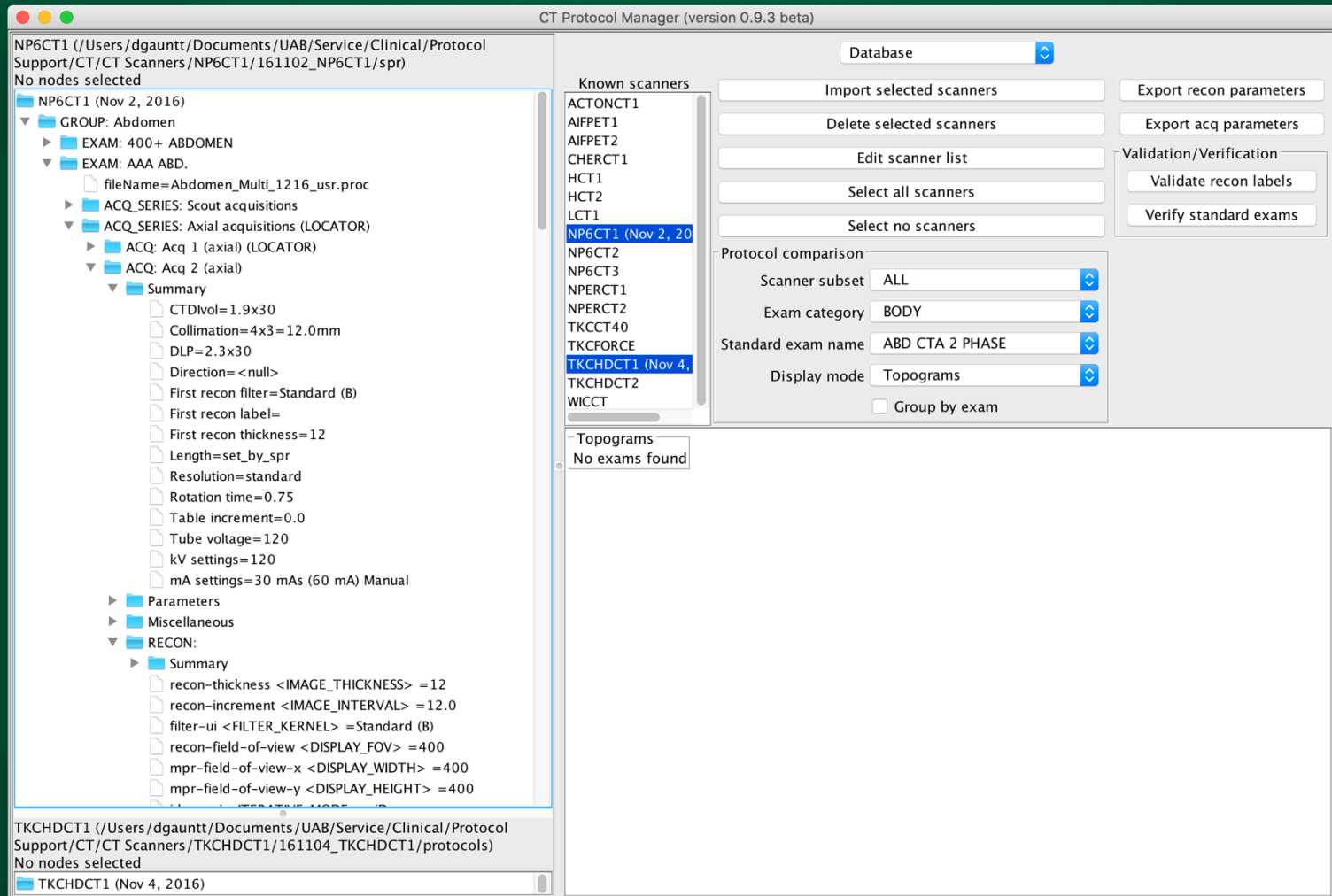
CT Protocol Manager



CT Protocol Manager



CT Protocol Manager



CT Protocol Manager

CT Protocol Manager (version 0.9.3 beta)

Exam details

Scanner: NP6CT1 (Nov 2, 2016)

Group: GROUP: Abdomen

Exam protocol: EXAM: AAA ABD.

NP6CT1
 (/Users/dgauntt/Documents/UAB/Service/Clinical/Protocol Support/CT/CT Scanners/NP6CT1/161102_NP6CT1/spr)
 No nodes selected

NP6CT1 (Nov 2, 2016)

GROUP: Abdomen

EXAM: 400+ ABDOMEN

EXAM: AAA ABD.

fileName=Abdomen_Mu

ACQ_SERIES: Scout acqu

ACQ_SERIES: Axial acqu

ACQ: Acq 1 (axial) (l

ACQ: Acq 2 (axial)

Summary

CTDIvol=1.9

Collimation=4

DLP=2.3x30

Direction=<n

First recon filt

First recon lat

First recon thi

Length=set_b

Resolution=st

Rotation time

Table increm

Tube voltage

kV settings=1

mA settings=

Parameters

Miscellaneous

RECON:

Summary

recon-thickne

recon-increm

TKCHDCT1
 (/Users/dgauntt/Documents/UAB/Service/Clinical/Protocol Support/CT/CT Scanners/TKCHDCT1/161104_TKCHDCT1/spr)
 No nodes selected

Topograms

NP6CT1 / Abdomen / AAA ABD.

Set options	Label	View	kV	mA	Length(mm)	FOV(mm)	WL/WC	WW	Destination
	Acq 0 (surview)	180	120	50	550.0	500	50	1200	Local, TERARECON

Acquisitions

NP6CT1 / Abdomen / AAA ABD.

Set options	Label	kV	Pitch	Rotation	Coverage	AEC settings	Resolution	Scan FOV	Direction	Length	CTDIvol
	Acq 1 (axial) (LOCATOR)	120	0 mm	- s	4x3=12.0mm	30 mAs (60 mA) Manual	standard	-	-	set_by_spr	1.9
	Acq 2 (axial)	120	0 mm	- s	4x3=12.0mm	30 mAs (60 mA) Manual	standard	-	-	set_by_spr	1.9x30
	Acq 3 (helix)	120	0.938	0.75 s	16x0.75=12.0mm	150 mAs (188 mA) ACS/Z-DOM	standard	-	-	519.8944	10.4

Reconstructions

NP6CT1 / Abdomen / AAA ABD.

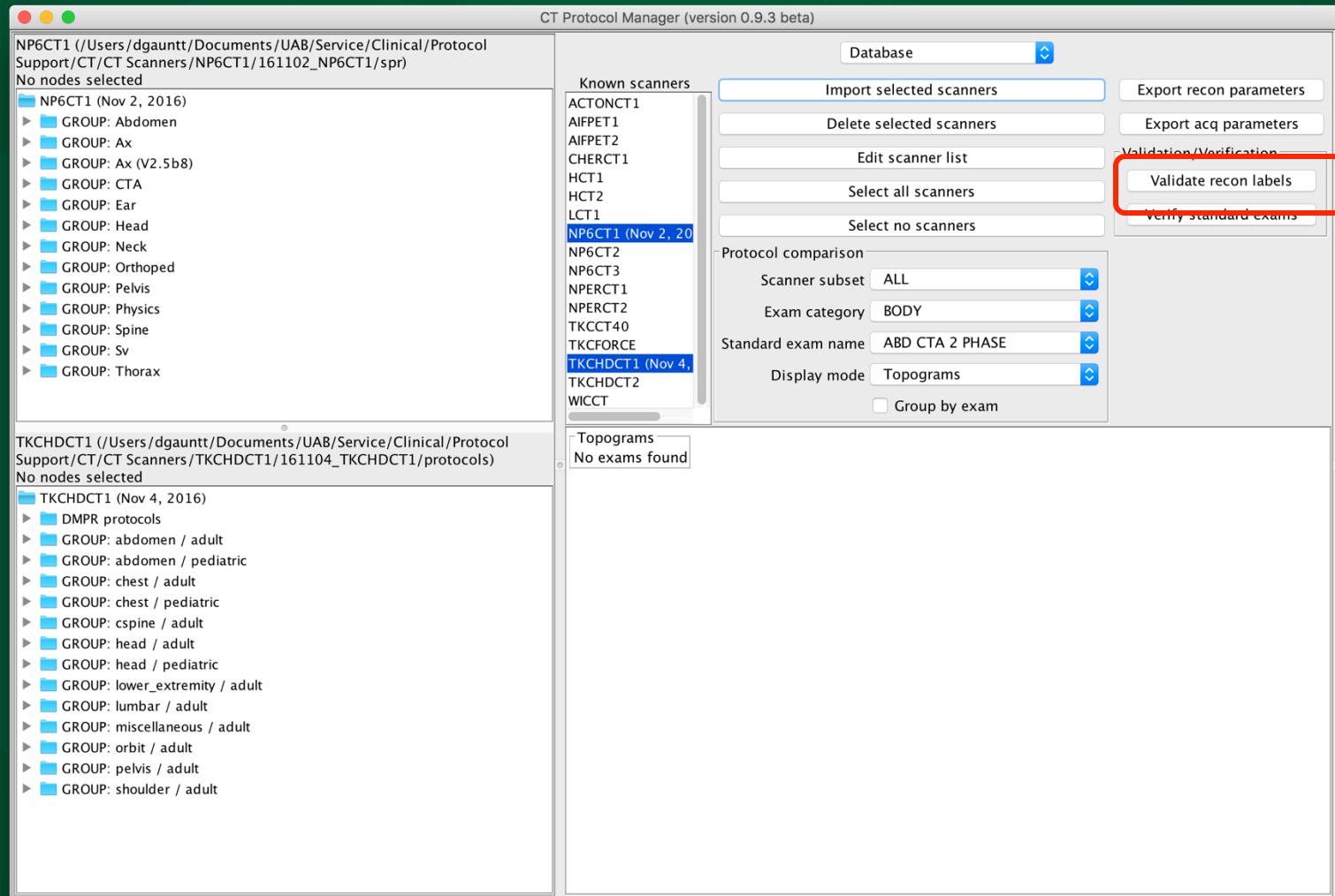
Set options	Label	Acquisition	Orientation	Filter	Thickness	Interval	Length	FOV	WL/WC	WW	Direction	Recon settings	Destination
	LOCATOR	Acq 1 (axial) (LOCAT...	axial	Standard...	12	12.0	12.0	400	40	400	NotSuppor...	iDose 3	Local, T
		Acq 2 (axial)	axial	Standard...	12	12.0	12.0	400	40	400	NotSuppor...	iDose 3	Local, T
		Acq 3 (helix)	axial	Sharp (C)	2	1.0	500.0	400	40	400	NotSuppor...	iDose 3	Local, T

Contrast agents

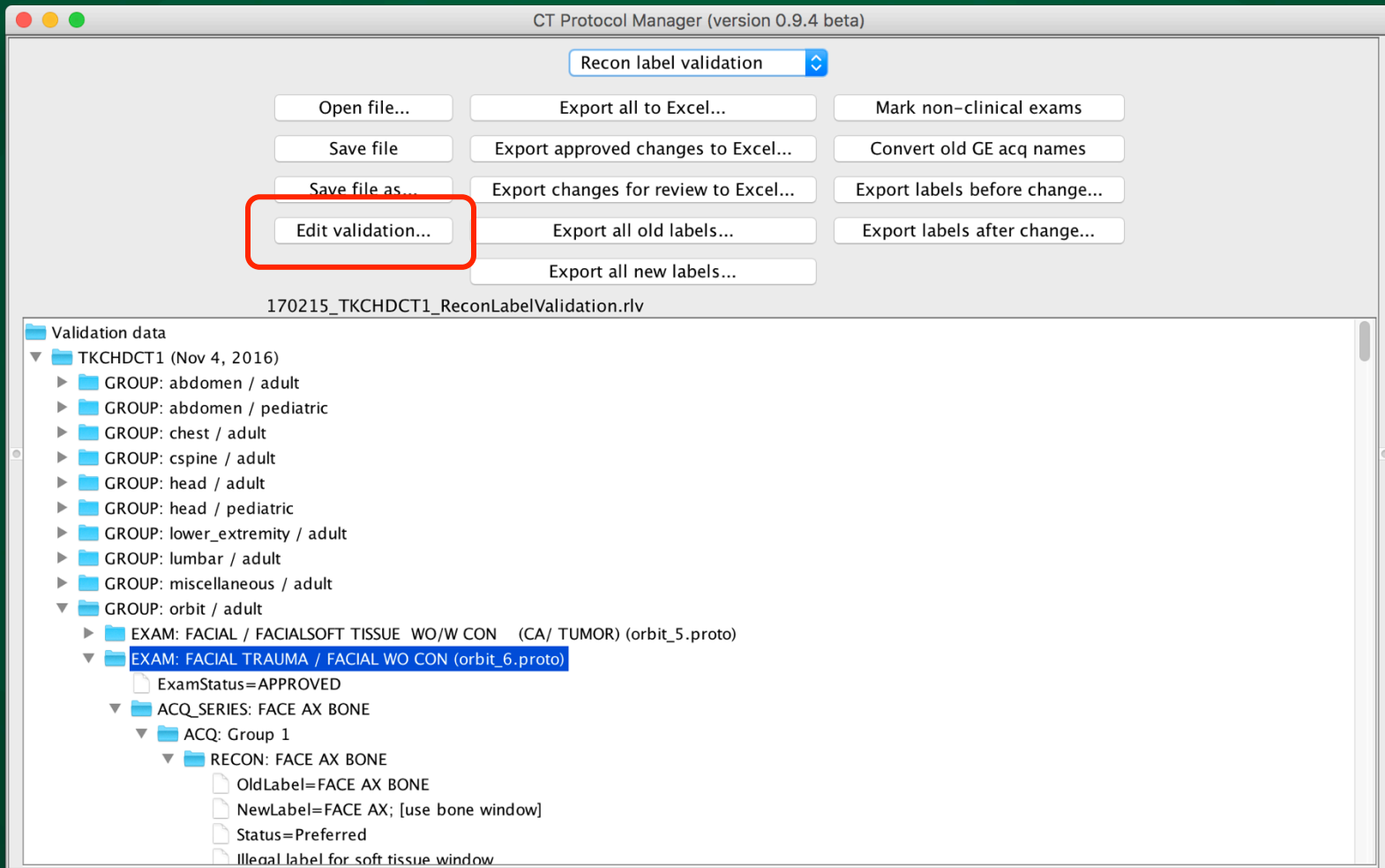
NP6CT1 / Abdomen / AAA ABD.

Set options	Label	Contrast agent
	Acq 1 (axial) (LOCATOR)	None
	Acq 2 (axial)	agent=CONTRAST: threshold=150: trigger=Injection: type=auto: delay=1 0

CT Protocol Manager



CT Protocol Manager



CT Protocol Manager

CT Protocol Manager (version 0.9.4 beta)

Exam details

Recon label validation

Exam protocol selection

Scanner: TKCHDCT1

Group: orbit / adult

Exam: FACIAL TRAUMA / FACIAL WO CON

Exam status: APPROVED

Exams to review: ALL

Buttons: Previous exam, Mark as approved, Mark for review, Do not review, Next exam

Validation results

Old label	Label Status	Destination	New label	Changed	Duplicate	Label Status	Validation
FACE SCOUT / Group 1							
FACE SCOUT	Preferred	-				Preferred	No errors found
FACE AX BONE							
FACE AX BONE	Deprecated	Router, TERARECON	FACE AX [use bone window]	Changed		Preferred	Illegal label for soft tissue window
FACE COR	Preferred	Router	FACE COR [use bone window]			Preferred	Illegal label for soft tissue window
FACE SAG	Preferred	Router	FACE SAG [use bone window]			Preferred	Illegal label for soft tissue window
FACE AX SOFT	Preferred	TERARECON	FACE AX SOFT [use soft window]			Preferred	Illegal label for bone window

Without contrast

Old label	Label Status	Destination	New label	Changed	Duplicate	Label Status	Validation
FACE SAG (FACE AX BO...)		SAGITTAL	-	1.600000	1.0000...	-	32.0000...
FACE AX SOFT		Axial	Soft	0.625	0.312	0 to 61.7...	20

CT Protocol Manager

CT Protocol Manager (version 0.9.4 beta)

Database

Known scanners

- ACTONCT1
- AIFPET1
- AIFPET2
- CHERCT1
- HCT1
- HCT2
- LCT1
- NP6CT1
- NP6CT2
- NP6CT3
- NPERCT1
- NPERCT2
- TKCCT40
- TKCFORCE
- TKCHDCT1 (Nov 4, 2016)**
- TKCHDCT2
- WICCT

Import selected scanners

Delete selected scanners

Edit scanner list

Select all scanners

Select no scanners

Export recon parameters

Export acq parameters

Validation/Verification

Validate recon labels

Verify standard exams

Protocol comparison

Scanner subset: ALL

Exam category: BODY

Standard exam name: ABD CTA 2 PHASE

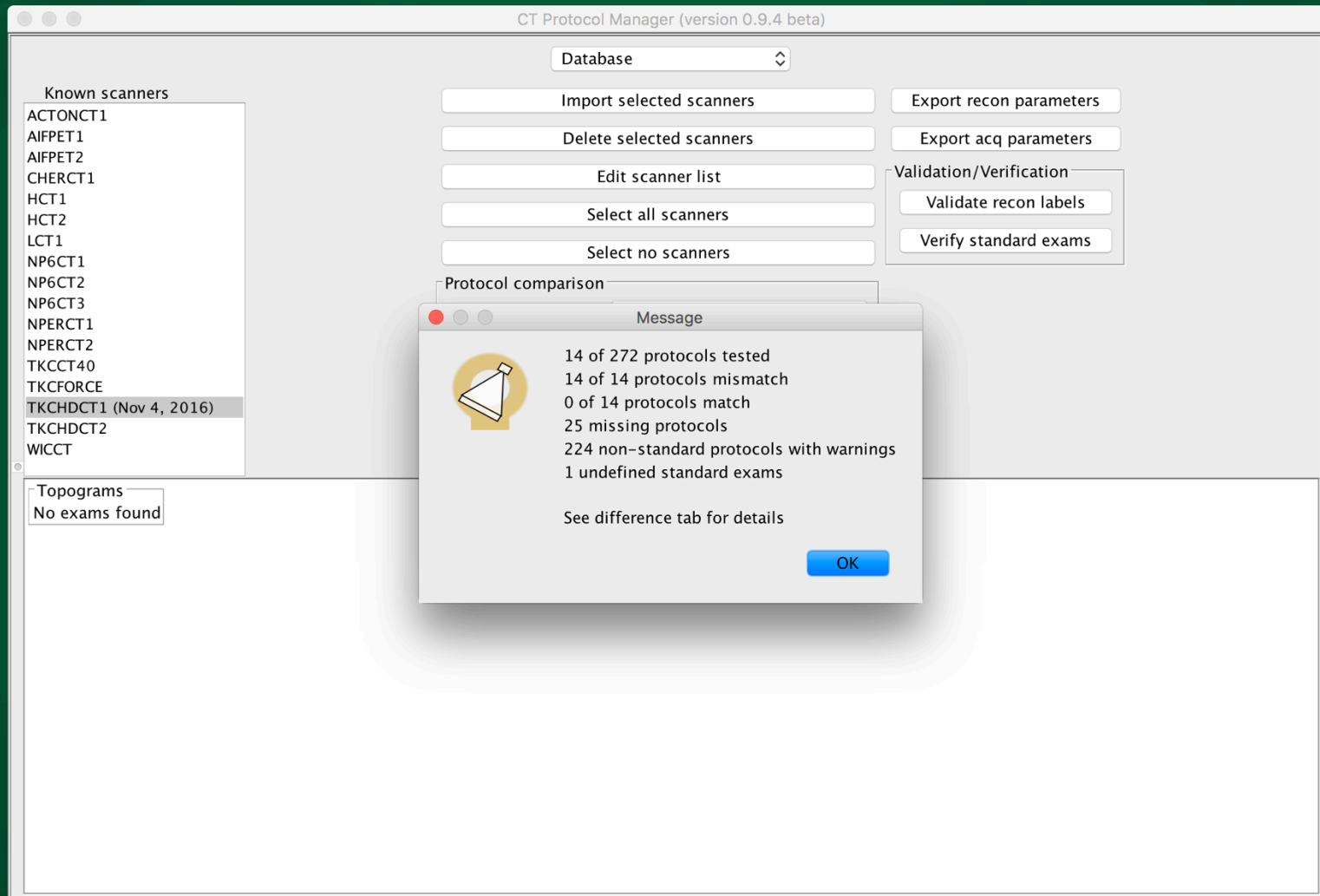
Display mode: Topograms

☐ Group by exam

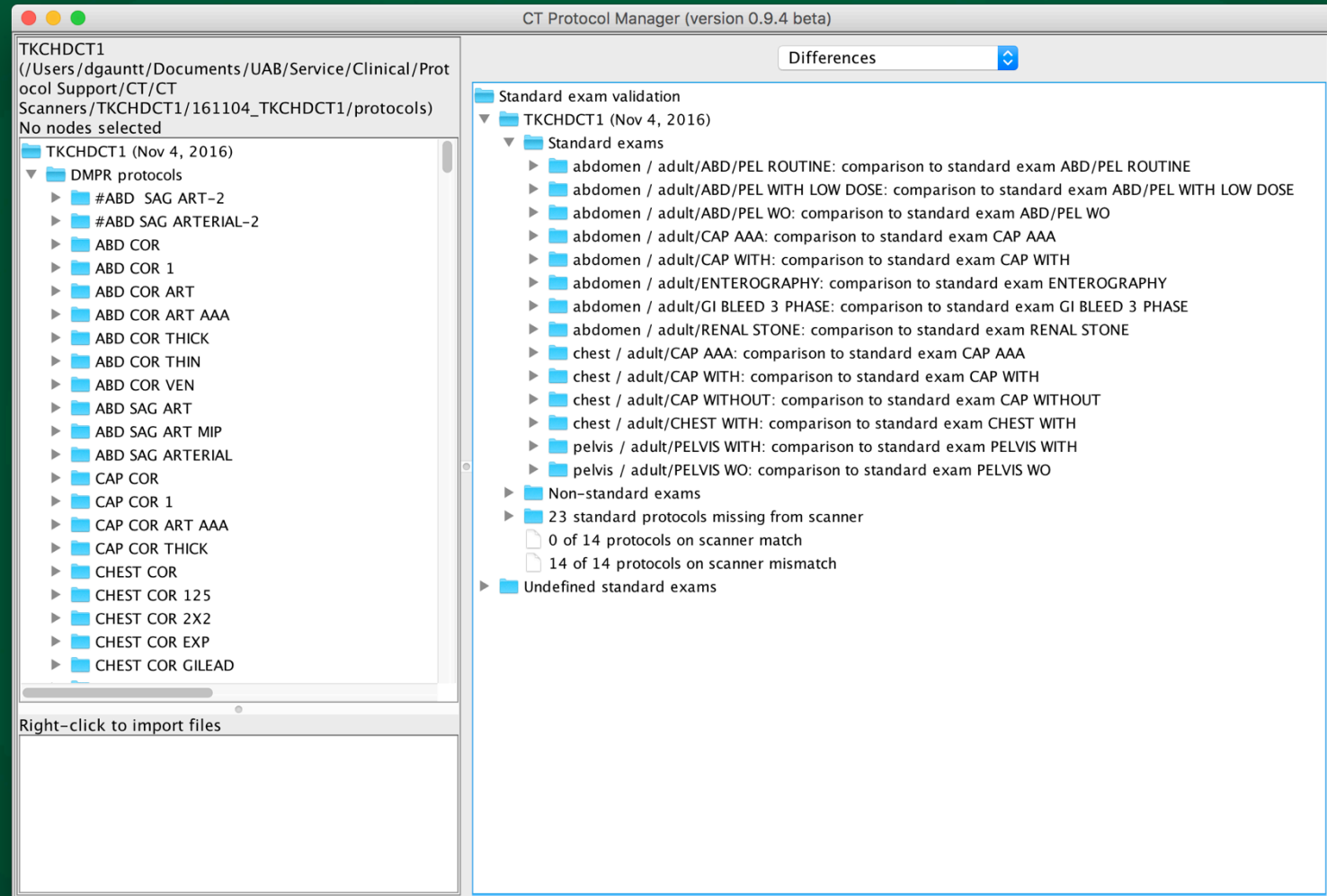
Topograms

No exams found

CT Protocol Manager



CT Protocol Manager



CT Protocol Review

- Do it!
- Dose, image, workflow
- Know your scanners
- Validate, then verify!

CT Protocol Review



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UAB MEDICINE

Knowledge that will change your world