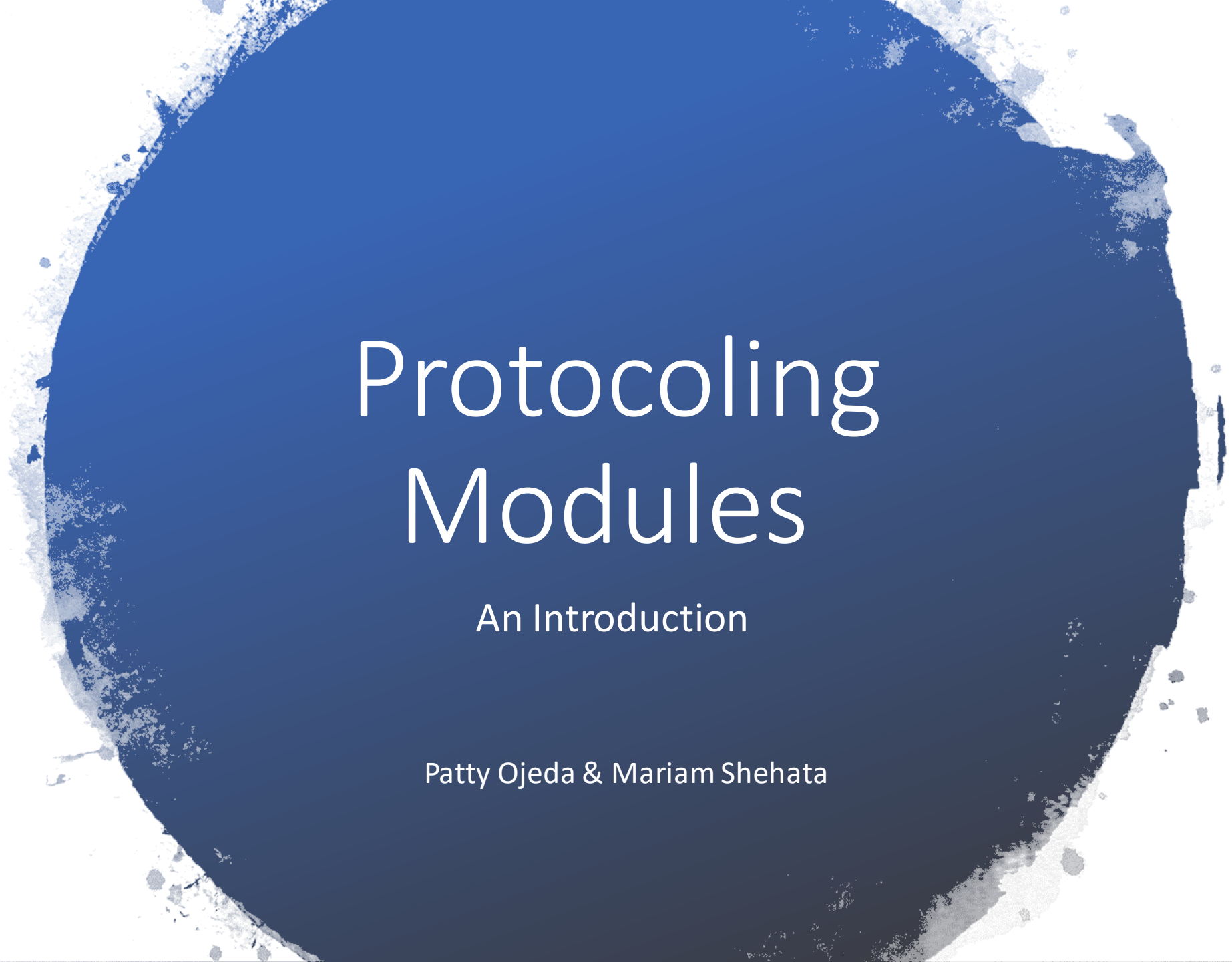




The following training module was developed as a quality improvement project to serve as an educational tool for junior radiology residents. The following diagnostic radiology protocoling modules were developed by University of Washington radiology residents Patricia Ojeda and Mariam Shehata.

08/2018



Prototyping Modules

An Introduction

Patty Ojeda & Mariam Shehata



Protocoling Tips and Tricks

The following slides were taken from Barun Aryal and Keegan Hovis's presentation: [Protocoling Pros](#)

Basic Protocols Page

https://ris.uwmedicine.org/ - Centricity RIS-IC 10.8 UP13 - Aryal,Barun - Internet Explorer

Worklist Pt Rec Registration Scheduling Tracking Results Provider MAM Sys Admin Tools Prefs Help Logoff

Home Radiologist Patients Exams Lookup Signing Protocol

Last Patient Last Exam

Protocol Worklist

find pt worklist filters search

Filter: HM NEURO From: 10/23/2017 To: 10/30/2017 Additional Search: (None)

	Name	Org	Acc	Sts	Exam	Requester	Date/time	Mod	Anat	Resource
🔴	H	HM	77777777	S	CT HEAD WO CONT	Kress,	10/23/2017 2:45 PM	CT	HEAD_NECK	HMCT2
🔴	K	HM	11111111	S	CT HEAD WO CONT ERAD	Mall	10/23/2017 3:00 PM	CT	ERAD	HMCT3
🔴	M	HM	77777777	S	CT HEAD WO CONT ERAD	Ben	10/23/2017 3:04 PM	CT	ERAD	HMCT3
🔴	R	HM	11111111	S	CT HEAD WO CONT	Ba	10/23/2017 3:18 PM	CT	HEAD_NECK	HMCT2
	R	HM	77777777	S	MRI ORB FACE NECK WO/W CONT	Han	10/26/2017 7:45 AM	MR	HEAD_NECK	HMMR2
	C	NJ	11111111	S	CT NECK SOFT TISS W CONT	O'K	10/26/2017 8:30 AM	CT	HEAD_NECK	NJCT1
	R	HM	77777777	S	MRI BRAIN WO/W CONT	Bran	10/26/2017 1:00 PM	MR	HEAD_NECK	HMMR1
📄	A	NJ	11111111	S	MRI BRAIN WO CONT	Ald	10/26/2017 1:15 PM	MR	HEAD_NECK	NJMR1
📄	C	HM	77777777	S	MRI BRAIN WO CONT	Wata	10/26/2017 2:30 PM	MR	HEAD_NECK	HMMR1
	L	HM	11111111	S	CT NECK SOFT TISS W CONT	Rar	10/26/2017 3:00 PM	CT	HEAD_NECK	HMCT1
📄	H	HM	77777777	S	MRI BRAIN WO/W CONT	Yu,	10/27/2017 7:00 AM	MR	HEAD_NECK	HMMR2
	Z	HM	11111111	S	MRI BRAIN WO CONT	Ko	10/28/2017 11:00 AM	MR	HEAD_NECK	HMMR1

Click the Accession # to Access the Exam

https://ris.uwmedicine.org/ - Centricity RIS-IC 10.8 UP13 - Aryal, Barun - Internet Explorer

Worldlist | Pt Rec | Registration | Scheduling | Tracking | Results | Provider | MAM | Sys Admin | Tools | Prefs | Help | Logoff

Home | Radiologist | Patients | Exams | Lookup | Signing | Protocol

Last Patient | Last Exam

Protocol Worklist

find pt | worklist | filters | search

Filter: HM NEURO | From: 10/23/2017 | To: 10/30/2017 | Additional Search: (None)

	Name	Org	Acc	Sts	Exam	Requester	Date/time	Mod	Anat	Resource
	H	HM	<u>77777777</u>	S	CT HEAD WO CONT	Kress,	10/23/2017 2:45 PM	CT	HEAD_NECK	HMCT2
	K	HM	<u>11111111</u>	S	CT HEAD WO CONT ERAD	Mall	10/23/2017 3:00 PM	CT	ERAD	HMCT3
	M	HM	<u>77777777</u>	S	CT HEAD WO CONT ERAD	Ben	10/23/2017 3:04 PM	CT	ERAD	HMCT3
	R	HM	<u>11111111</u>	S	CT HEAD WO CONT	Ba	10/23/2017 3:18 PM	CT	HEAD_NECK	HMCT2
	R	HM	<u>77777777</u>	S	MRI ORB FACE NECK WO/W CONT	Han	10/26/2017 7:45 AM	MR	HEAD_NECK	HMMR2
	C	NJ	<u>11111111</u>	S	CT NECK SOFT TISS W CONT	O'K	10/26/2017 8:30 AM	CT	HEAD_NECK	NJCT1
	R	HM	<u>77777777</u>	S	MRI BRAIN WO/W CONT	Bran	10/26/2017 1:00 PM	MR	HEAD_NECK	HMMR1
	A	NJ	<u>11111111</u>	S	MRI BRAIN WO CONT	Ald	10/26/2017 1:15 PM	MR	HEAD_NECK	NJMR1
	C	HM	<u>77777777</u>	S	MRI BRAIN WO CONT	Wata	10/26/2017 2:30 PM	MR	HEAD_NECK	HMMR1
	L	HM	<u>11111111</u>	S	CT NECK SOFT TISS W CONT	Rar	10/26/2017 3:00 PM	CT	HEAD_NECK	HMCT1
	H	HM	<u>77777777</u>	S	MRI BRAIN WO/W CONT	Yu,	10/27/2017 7:00 AM	MR	HEAD_NECK	HMMR2
	Z	HM	<u>11111111</u>	S	MRI BRAIN WO CONT	Ko	10/28/2017 11:00 AM	MR	HEAD_NECK	HMMR1

Exam Protocols Page

https://ris.uwmedicine.org/ - Centricity RIS-IC 10.0 UP13 - Aryal,Barun - Internet Explorer

Worklist | Pt Rac | Registration | Scheduling | Tracking | Results | Provider | MAM | Sys Admin

Home | Radiologist | Patients | Exams | Lookup | Signing | **Protocol**

MRN: _____ DOB: _____ Age at Exam: 55 Y, 3 M Sex: F ACC: _____ Ex. Sts: S Dt/Tm: 10/27/2017 7:00 AM(PDT)
SSN: _____ Chart Loc: Enterprise Allergies: Unknown Exam: MRI BRAIN WOW/ CONT Rpt. Sts: Pending Creation Visit Pt Loc: HMC Eye In...
POP: _____ Requester: Yip, Jennifer To... S/S: left inferior homonymous quadrantanopia...

Protocol Worklist

find pt | worklist | filters | search

Clinical Exam Notes -- Webpage Dialog

Clinical Exam Notes Note 12 of 13 help audit close < >

DOB: _____ Age at exam: 55 Y, 3 M Sex: F MRN: _____
ACC: 10/27/2017 7:00 AM PDT Exam: MRI BRAIN WOW/ CONT Org: HM
Ex. Sts: S Report Status: Pending Creation Perf. Resource: HMMR2

Clinical Info | Memos

This patient has no active allergy records on file.
Protocols

Prior Exam Protocol: ** Select Prior Protocol ** save save & next

Quick Protocol List : ** Select Quick Protocol ** ☒ Set reviewed status on save

Protocol: ☒ reviewed ☒ needs review

<input checked="" type="checkbox"/>	Code	Short Description	[Desc]	Comments
-------------------------------------	------	-------------------	--------	----------

Critical alert

Related Exams

hide list | all exams

<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
	Org	Acc	Sts	Exam	Requester	Date/time	Mod	Anat	Resource	
<input checked="" type="checkbox"/>	HM	8774806	F	MRI BRAIN WOW/ CONT	Nguyen, Sean T	10/29/2014 11:44 PM	MR	HEAD_NECK	HMMR2	

	Mod	Anat	Resource
M	CT	HEAD_NECK	HMCT2
M	CT	ERAD	HMCT3
M	CT	ERAD	HMCT3
M	CT	HEAD_NECK	HMCT2
M	CT	HEAD_NECK	HMCT1
M	MR	HEAD_NECK	HMMR2
M	CT	HEAD_NECK	NUCT1
M	MR	HEAD_NECK	HMMR1
M	MR	HEAD_NECK	NUMR1
M	MR	HEAD_NECK	HMMR1
M	CT	HEAD_NECK	HMCT1
M	MR	HEAD_NECK	HMMR2
AM	MR	HEAD_NECK	HMMR1

Scroll Down for the Indication

https://ris.uwmedicine.org/ - Centricity RIS-IC 10.8 UP13 - Aryal,Barun - Internet Explorer

Worklist | Pt Rec | Registration | Scheduling | Tracking | Results | Provider | MAM | Sys Admin

Home | Radiologist | Patients | Exams | Lookup | Signing | Protocol

DOB: Age at Exam: 55 Y, 3 M Sex: F ACC: Ex. Sts: S Dstn: 10/27/2017 7:00 AM(PDT)
SSN: Chart Loc: Enterprise Exam: MRI BRAIN WOWW CONT Rpt. Sts: Pending Creation Visit Pt Loc: HMC Eye In...
PCP: Allergies: Unknown Requester: Yu, Jennifer To... S/S: left inferior homonymous quadrantanopia...

MRN: Clinical Exam Notes -- Webpage Dialog

Clinical Exam Notes Note 14 of 15 help audit close < >

ACC: 10/27/2017 7:00 AM PDT DOB: Age at exam: 55 Y, 3 M Sex: F MRN: Org: HM Perf. Resource: HMMR2
Exam: MRI BRAIN WOWW CONT Ex. Sts: S Report Status: Pending Creation

Clinical Info | Memos

Critical alert
Critical Alert: None Communicated: No To:

Diagnostic report text

Signs and Symptoms: left inferior homonymous quadrantanopia, subjective aura
History: None, Last creatine level CREATININE 0.6 11/1/2014, Pregnancy unknown
Comments: From Epic: Comments: Please per form with and without contrast and include orbits.
Visit Pt Loc: HMCEYE Phone: (206) 744-8638

Performing Provider Comments:

▶ Attending: Yu, Jennifer Tong-Young, MD
▶ Requesting: Yu, Jennifer Tong-Young, MD

Performing & Responsible Providers

Providers

Name	Perf.	Cont.	Resp.	Signature
<click to add new row>				

Related Exams

hide list all exams

	Org	Acc	Sts	Exam	Requester	Date/time	Mod	Anat	Resource
	HM	8774806	F	MRI BRAIN WOWW CONT	Nguyen, Sean Ta	10/29/2014 11:44 PM	MR	HEAD_NECK	HMMR2

worldlist | filters | search

Mod	Anat	Resource
CT	HEAD_NECK	HMCT2
CT	ERAD	HMCT3
CT	ERAD	HMCT3
CT	HEAD_NECK	HMCT2
CT	ERAD	HMCT3
CT	HEAD_NECK	HMCT1
CT	HEAD_NECK	HMCT2
MR	HEAD_NECK	HMMR2
CT	HEAD_NECK	NJCT1
MR	HEAD_NECK	HMMR1
MR	HEAD_NECK	NJMR1
MR	HEAD_NECK	HMMR1
CT	HEAD_NECK	HMCT1
MR	HEAD_NECK	HMMR2
MR	HEAD_NECK	HMMR1

Checking Old Exams

https://ris.uwmedicine.org/ - Centricity RIS-IC 10.8 UP13 - Aryal,Barun - Internet Explorer

Worklist Pt Rec Registration Scheduling Tracking Results Provider MAM Sys Admin

Home Radiologist Patients Exams Lookup Signing Protocol

MRN: (HM) DOB: Age at Exam: 55 Y, 3 M Sex: F ACC: Ex. Sts: S DtTm: 10/27/2017 7:00 AM(PDT) Rpt. Sts: Pending Creation Visit Pt Loc: HMC Eye In... S/S: left inferior homonymous quadrantanopia... Requester: Yu Jennifer To... Clear

Clinical Exam Notes -- Webpage Dialog

Clinical Exam Notes Note 14 of 16 help audit close < >

DOB: Age at exam: 55 Y, 3 M MRN: Sex: F
Exam: MRI BRAIN WOW CONT Org: HM
Ex. Sts: S Report Status: Pending Creation Perf. Resource: HMMR2

Clinical Info Memos

This patient has no active allergy records on file.

Protocols

Prior Exam Protocol: ** Select Prior Protocol ** save save & next

Quick Protocol List: ** Select Quick Protocol ** Set reviewed status on save

Protocol: reviewed needs review

x	Code	Short Description	[Desc]	Comments

Critical alert

Related Exams hide list all exams

Org	Acc	Sts	Exam	Requester	Date/time	Mod	Anat	Resource
HM	8774806	F	MRI BRAIN WOW CONT	Nguyen, Sean Ta	10/29/2014 11:44 PM	MR	HEAD_NECK	HMMR2

Click to see ALL old Exams

Checking Allergies

https://ris.uwmedicine.org/ - Centricity RIS-IC 10.8 UP13 - Aryal,Barun - Internet Explorer

Worklist Pt Rec Registration Scheduling Tracking Results Provider MAM Sys Admin

Home Radiologist Patients Exams Lookup Signing Protocol

MRN: DOB: Age at Exam: 55 Y, 3 M Sex: F ACC: Ex. Sts: S DtTm: 10/27/2017 7:00 AM(PDT) Rpt. Sts: Pending Creation Visit Pt Loc: HMC Eye In... S/S: left inferior homonymous quadrantanopia... Requester: Yu Jennifer To... Clear

Protocol Worklist

Clinical Exam Notes -- Webpage Dialog

Clinical Exam Notes Note 12 of 13 help audit close < >

DOB: Age at exam: 55 Y, 3 M MRN: Sex: F
Exam: MRI BRAIN WOW CONT Org: HM
Ex. Sts: S Report Status: Pending Creation Perf. Resource: HMMR2

Clinical Info Memos

This patient has no active allergy records on file.

Protocols

Prior Exam Protocol: ** Select Prior Protocol ** save save & next

Quick Protocol List: ** Select Quick Protocol ** Set reviewed status on save

Protocol: reviewed needs review

x	Code	Short Description	[Desc]	Comments

Critical alert

Related Exams hide list all exams

Org	Acc	Sts	Exam	Requester	Date/time	Mod	Anat	Resource
HM	8774806	F	MRI BRAIN WOW CONT	Nguyen, Sean Ta	10/29/2014 11:44 PM	MR	HEAD_NECK	HMMR2

Technique Description

Clinical Exam Notes -- Webpage Dialog

Clinical Exam Notes End of List Note 15 of 15

ACC: 10/28/2017 11:00 AM PDT DOB: Age at exam: 65 Y, 3 M Sex: M MRN: Org: HM Perf. Resource: HMMR1

Exam: MRI BRAIN W/O CONT Ex. Sts: S Report Status: Pending Creation

Clinical Info | Memos

This patient has allergies on file. [details](#)

Protocols

Prior Exam Protocol:

Quick Protocol List : ☒ Set reviewed status on save

Protocol: ☒ reviewed ☒ needs review

Code	Short Description	[Desc]	Comments
<input type="radio"/> BCT A01	BODY CT Abdomen noncontrast A1 CABDWO 74150	<input type="checkbox"/>	<input type="text"/>

Click this button for detailed information on the protocol technique!

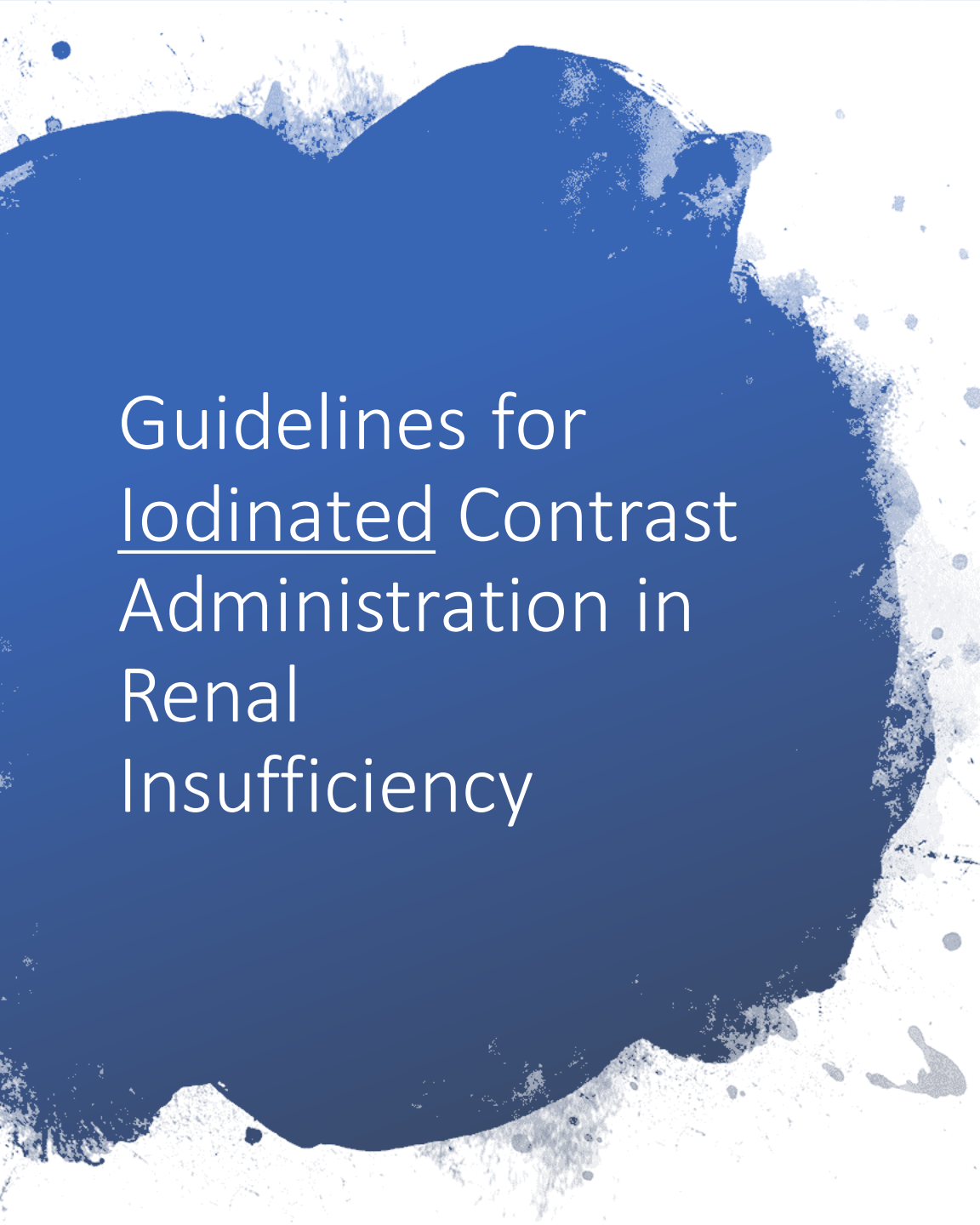
Related Exams [hide list](#) [all exams](#)

No related exams found



More Protocoling Tips

- The protocol name will include whether it is an IV only vs IV + Oral contrast study
- You need to specify in the comment section whether you want negative oral contrast
 - Oral contrast will be discussed in subsequent modules

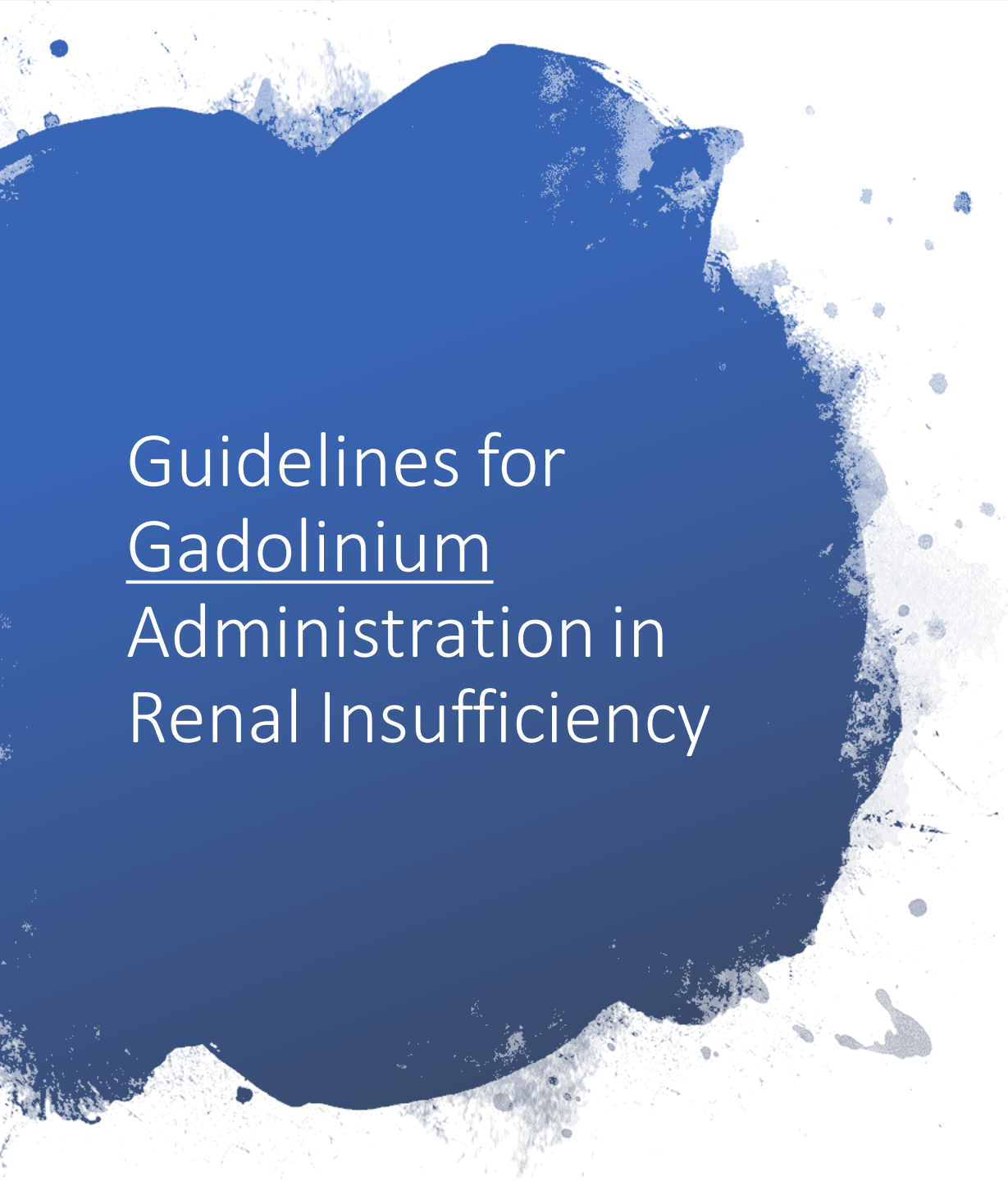


Guidelines for Iodinated Contrast Administration in Renal Insufficiency

- Little evidence supports IV iodinated contrast material as an independent risk factor for AKI in patients with $\text{GFR} \geq 30$ mL/min/1.73m².
- Aneuric patients with ESRD who do not have a functioning transplant kidney are not at risk for Contrast-Induced Nephropathy
- Specific hydration guidelines are in place for patients with $\text{GFR} < 60$

For further details, please refer to the official department policy:

<https://depts.washington.edu/uwerad/wordpress/contrast/renal-function/contrast-in-renal-impairment/>



Guidelines for Gadolinium Administration in Renal Insufficiency

- Nephrogenic Systemic Fibrosis (NSF)
 - Mimics systemic sclerosis
 - Skin tethering, flexion contractures, hyperpigmentation
- The most important risk factor for the development of NSF is acute and chronic renal impairment.
- Protocol: Do not give gadolinium if the $GFR < 15 \text{ mL/min/1.73 m}^2$!
- Usefulness of hemodialysis in preventing NSF is unknown
 - Gadolinium use is avoided in this patient subset

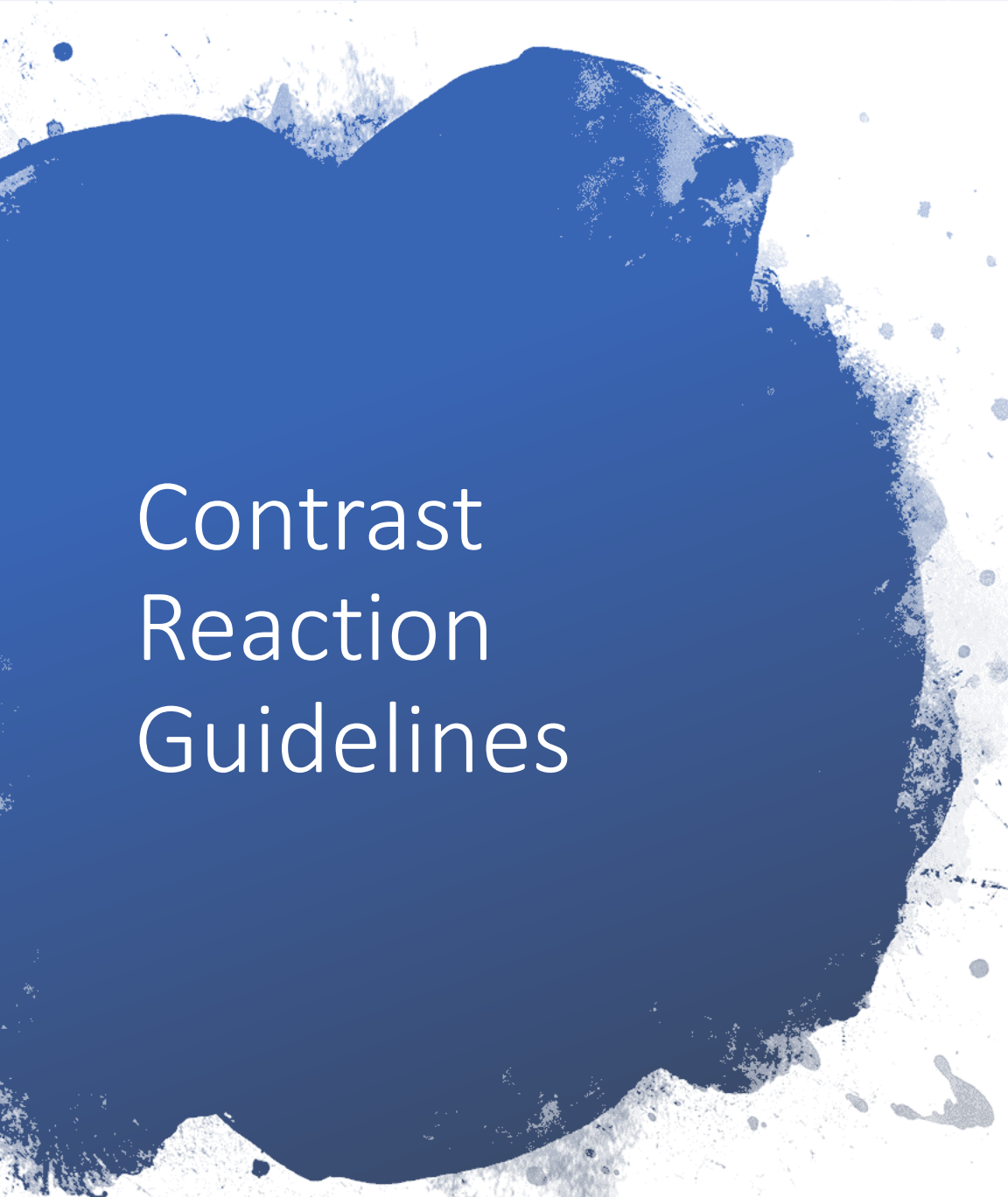


Contrast Extravasation Guidelines

- For contrast extravasations ≥ 20 mL, the radiologist will be contacted to assess the site of extravasation
- If any of these signs are present, a Plastic Surgery consultation is required:
 - Skin blistering
 - Evidence of altered tissue perfusion
 - Increasing pain
 - Change in sensation at or distal to the site of extravasation
- Extravasation of ≥ 60 mL should be reassessed in 30 minutes.

For further details, please refer to the official department policy:

<https://depts.washington.edu/uwerad/wordpress/contrast/extravasation-of-contrast/extravasation-policy/>



Contrast Reaction Guidelines

- Please refer to Dr. Carolyn Wang's ContrastRxn modules on contrast reactions at the following link:

www.contrastrxn.com

- Use the student registration key: FCHVFT

Special Thanks

Our great appreciation for the following individuals without whom we would not have been able to make this series of protocoling modules.

Thanks to Annemarie Relyea-Chew, Dr. Martin Gunn, Dr. Joel Gross, Dr. Orpheus Kolokythas, Dr. Felix Chew, Dr. Mahmud Mossa-Basha, Dr. Jalal Andre and the Department of Radiology Class of 2022 for your insight and patience with us while undertaking this endeavor.

-Mariam Shehata and Patricia Ojeda