



System Radiology Service Line
NORTHERN WESTCHESTER HOSPITAL

POLICY/GUIDELINE TITLE: eGFR Checking for CT Iodinated IV Contrast Administration in Adults	SYSTEM POLICY AND PROCEDURE
POLICY #: Rad.2.001	CATEGORY SECTION: Medication Management in Radiology
System Approval Date: 2/22/2024	Effective Date: 6/14/21
Site Implementation Date: 4/1/2024	Last Reviewed/Approved: 1/13/22
Prepared by: Radiology Service Line PICG Policy Subcommittee	Notation(s): N/A

GENERAL STATEMENT of PURPOSE

Intravenous iodinated contrast may be a component of certain CT examinations and can provide important clinical information. While generally safe, in a small subset of patients, iodinated intravenous contrast agents may cause acute kidney injury. The purpose of this document is to identify patients who are at risk for contrast-induced acute kidney injury (CI-AKI) before the CT scan so that an individual risk-benefit assessment can be performed.

POLICY

It is the policy of the Imaging Service Line that prior to the administration of iodinated intravenous contrast, patients must be screened for kidney disease. Patients with acute kidney injury or stage IV or V chronic kidney disease should undergo an individual risk benefit assessment regarding the administration of iodinated intravenous contrast. Alternative imaging tests must be considered. Patients at risk for CI-AKI may benefit from hydration resulting in volume expansion prior to and after the administration of the iodinated intravenous contrast.

SCOPE

This policy applies to all Northwell Health employees, as well as medical staff, volunteers, students, trainees, physician office staff, contractors, trustees and other persons performing work for or at Northwell Health; faculty and students of the Donald and Barbara Zucker School of Medicine at Hofstra/Northwell or the Hofstra Northwell School of Nursing and Physician Assistant Studies conducting research on behalf of the Zucker School of Medicine on or at any Northwell Health facility.

DEFINITIONS

- Patients at increased risk for contrast induced nephropathy include patients with:
 - acute kidney injury

- chronic kidney disease (CKD) Stages IV and V with eGFR < 30 mL/min/1.73m²
- **eGFR calculation for adult patients (CKD-EPI Creatinine equation):**

CKD-EPI equation expressed as a single equation:

$$eGFR_{cr} = 142 \times \min(S_{cr}/\kappa, 1)^\alpha \times \max(S_{cr}/\kappa, 1)^{-1.200} \times 0.9938^{Age} \times 1.012 \text{ [if female]}$$

where:

S_{cr} = standardized serum creatinine in mg/dL

κ = 0.7 (females) or 0.9 (males)

α = -0.241 (female) or -0.302 (male)

min(S_{cr}/κ, 1) is the minimum of S_{cr}/κ or 1.0

max(S_{cr}/κ, 1) is the maximum of S_{cr}/κ or 1.0

Age (years)

- eGFR CKD-EPI equation calculator link: [eGFR Calculator | National Kidney Foundation](#)
- Acute kidney injury
 - Increase in serum creatinine by ≥0.3 mg/dL (≥26.5 micromol/L) within 48 hours, or
 - Increase in serum creatinine to ≥1.5 times baseline, which is known or presumed to have occurred within the prior seven days, or
 - Urine volume <0.5 mL/kg/hour for six hours

PROCEDURE/GUIDELINES

Refer to Attachment A – Guidelines for Proper Patient Screening

CLINICAL REFERENCES/PROFESSIONAL SOCIETY GUIDELINES

- American College of Radiology Manual on Contrast Media
[Contrast Manual | American College of Radiology \(acr.org\)](#)
- Avner E, Harmon W, Niaudet Ed. Pediatric Nephrology 5th Edition - Dec. 2003

REFERENCES to REGULATIONS and/or OTHER RELATED POLICIES

N/A

ATTACHMENTS

Attachment A – Guidelines for Proper Patient Screening

FORMS

- HS087scm - Iodinated Intravenous Contrast Screening Form (Enterprise Sunrise Site)
- HS087nonscm - Iodinated Intravenous Contrast Screening Form (Non Enterprise Sunrise Site)

<u>APPROVAL:</u>	
Northwell Health Policy Committee	1/23/2024
System PICG/Clinical Operations Committee	2/22/2024

Standardized Versioning History:

Approvals: * =Northwell Health Policy Committee; ** = PICG/Clinical Operations Committee; ☒ = Provisional; ❖ = Expedited
 2/22/18*; 3/15/18**
 4/15/21*; 6/14/21**
 12/16/21*; 1/13/22**

Guidelines for Proper Patient Screening

If an eGFR performed within 48 hours for an emergency department patient or inpatient, and within 6 weeks for an outpatient, is ≥ 30 ml/min/1.73 m², iodinated intravenous contrast should be administered.

If no eGFR is available within the above time frame, patients should be screened verbally for kidney disease. If there is no known kidney disease, iodinated intravenous contrast should be administered. If there is a history of kidney disease, an eGFR should be obtained. If the eGFR ≥ 30 ml/min/1.73 m², iodinated intravenous contrast should be administered.

For patients with acute kidney injury, or an eGFR < 30 mL/min/1.73 m², a radiologist should review the patient's record and decide whether the benefit of administering the iodinated IV contrast outweighs the risk. Alternative tests not requiring iodinated IV contrast that may address the clinical question should be considered. If there is any doubt as to the best choice on how to proceed, the radiologist should contact a referring clinician. If the decision is made to proceed with the IV contrast examination, the possibility of IV hydration which may be protective of renal function in the setting of iodinated contrast administration, should be considered.

Patients on regularly scheduled dialysis can be given iodinated IV contrast. Patients who receive dialysis on a regular basis should continue their routine schedule. There is no need for urgent dialysis after intravascular iodinated contrast administration.

Level One Trauma Activation Patients

Level One Trauma Activation patients will be imaged upon arrival to the CT scan suite. For this subset of patients, the benefit of immediate imaging is felt to outweigh the risk of contrast induced nephropathy.

Code Stroke Patients

Code stroke patients will be imaged immediately unless they have known renal insufficiency or a known eGFR < 30 ml/min/1.73 m², in which case a provider from the referring team will decide whether to proceed with the contrast enhanced CT scan(s).

Iodinated Intravenous Contrast Screening Form (Non Enterprise Sunrise Site)

	CIRCLE	
Does the patient have an iodinated contrast allergy?	Yes	No
If yes, has the patient had any of the following:		
Hives	Yes	No
Facial swelling	Yes	No
SOB/wheezing	Yes	No
Throat tightness or hoarseness	Yes	No
Sudden drop in blood pressure	Yes	No
Fainting or collapse	Yes	No
Other: _____		
Is patient premedicated?	Yes	No
If yes, please list: _____		

If no eGFR is available within the last 48 hours for an ED or inpatient, or within 6 weeks for an outpatient:

Does the patient have kidney disease?	Yes	No
If yes, is the patient regularly scheduled for dialysis?	Yes	No
Creatinine Level: _____ [Normal value(0.5-1.3mg/dL)]		
eGFR: _____ Not applicable: <input type="checkbox"/>		
If eGFR is < 30: Is the patient on a metformin containing agent?	Yes	No
If yes, has metformin hold been initiated? <input type="checkbox"/> Radiologist has been consulted? <input type="checkbox"/>		
Date of Level: _____ POC Tester-Signature/Title: _____		
If the patient is at their 3rd birthday or younger, the Iodinated Contrast Thyroid Function sheet has been given, to the agent, relative or guardian. <input type="checkbox"/>		
A "Time Out" has been performed verifying that this patient has been ordered to receive intravenous contrast		
_____	_____	_____
Northwell Personnel performing injection (Signature)	Date/Time	Print Name

Iodinated Intravenous Contrast Screening Form (Enterprise Sunrise Site)

	CIRCLE	
Does the patient have an iodinated contrast allergy?	Yes	No
If yes, has the patient had any of the following:		
Hives	Yes	No
Facial swelling	Yes	No
SOB/wheezing	Yes	No
Throat tightness or hoarseness	Yes	No
Sudden drop in blood pressure	Yes	No
Fainting or collapse	Yes	No
Other: _____		
Is patient premedicated?	Yes	No
If yes, please list: _____		

If no eGFR is available within the last 48 hours for an ED or inpatient, or within 6 weeks for an outpatient:

Does the patient have kidney disease?	Yes	No
If yes, is the patient regularly scheduled for dialysis?	Yes	No
Creatinine Level: _____ [Normal value(0.5-1.3mg/dL)]		
eGFR: _____		Not applicable: <input type="checkbox"/>
If eGFR is < 30: Is the patient on a metformin containing agent?	Yes	No
If yes, has metformin hold been initiated? <input type="checkbox"/> Radiologist has been consulted? <input type="checkbox"/>		
Date of Level: _____ POC Tester-Signature/Title: _____		
A "Time Out" has been performed verifying that this patient has been ordered to receive intravenous contrast		
Northwell Personnel performing injection (Signature)	Date/Time	Print Name