**UPH-Meriter Iodinated Contrast Conservation Strategies: Quick Guide**

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| **Tier 1: Green** - Contrast inventory is *concerning, but adequate* to continue with routine practice  *^Contrast inventory is >/= 4 weeks on-hand* |
| **Waste Reduction**   * IR – spike single-use vial for use with multiple patients (Supplies & workflow according to Risk Assessment) * CT   + Spike single-use vial for use with multiple patients (Supplies & workflow according to Risk Assessment)   + Reduce Contrast dose by 20% of weight-calculated dose   + Re-bolus exams ONLY after review & approval by Radiologist   + Explore with pharmacy the potential repackaging large single use contrast containers into smaller single use containers     - Institute practice for all contrast agents, including those designated as “alternatives’ for Omnipaque/Visipaque   **Alternative Product:** Minimize use of Omnipaque for non-IV administration (especially oral administration)   * CT oral contrast – NO Omnipaque, primary contrast = Barium (if no suspicion for bowel perforation)   + Gastrografin/Breeza or NO contrast if suspicion for bowel perforation * Fluoroscopy – NO Omnipaque, refer to Radiologist-provided chart for alternative * Cystogram – NO Omnipaque, Alternative = Cystoconray or Cystograffin |
| **Tier 2: Yellow** - Contrast inventory is *insufficient* to continue with routine practice  *^Contrast inventory is 2 – 4 weeks on-hand* |
| *In addition to Tier 1 actions, the following will be implemented:*  **Tier 2(a): 3-4 weeks supply on-hand**  **Alternative Products:**   * IR – use alternative contrast agents as available, each procedure is triaged for appropriate contrast use   **Alternative Protocols/Procedures:** Triage exams with Radiologist to determine alternate appropriate exam with NO IV contrast   * Convert to Non-Contrast CT:   + Routine Neck for Palpable Lump   + Routine Chest for Pulmonary Nodule or Cancer Follow-up   + Routine Thoracic OR Abdominal Aortic Aneurysm Surveillance Follow-up (w/Gating)   + Trauma Chest with no high-energy trauma (exception – high suspicion for vascular injury)   + Abdomen/Pelvis with specified indications (Adults ONLY):     - Nonspecific/General Abdomen Pain     - Hernia Concern (w/Valsalva)     - Diverticulitis, Appendicitis     - Abdominal Distention/Diarrhea     - Suspected Abdominal Obstruction (>25 BMI)     - Adrenal Nodule Follow-up   + CT Urograms: Convert to non-contrast CT Abd/Pelvis to assess for stones (specifically for microhematuria and must be approved by Urologist)   + Oncologic Exams – single & multi-phase follow-up:     - Testicular Cancer     - Prostate Cancer     - Lymphoma     - Myeloma     - Leukemia * Exams still requiring use of Contrast:   + Routine Neck for Infection   + Chest CTA during non-staffed MRI hours   + Oncologic Exams as follows:     - GI Malignancies (Esophago-gastric, liver, pancreas, colorectal, GIST, Neuroendocrine)     - Melanoma     - Breast Cancer     - GU malignancies (renal cell carcinoma, bladder cancer, ovarian cancer, endometrial cancer, and cervical cancer)     - Pancreatic Cancer & Pancreatic Neuroendocrine Tumor   + Patients with prior abdominal surgery   + Patients with concern for procedural complication   + Intra-Abdominal Abscess   + Trauma: Patients with HIGH clinical suspicion for solid organ injury after trauma (mechanism of injury is high energy, etc). * Stroke Protocol & CT Contrast Use   + NO contrast: Low suspicion for Stroke (or other neurological entities such as dizziness)   + Consider CTA H/N with or without CT Perfusion: Moderate to High Suspicion for Stroke * Consider Converting to Alternate Modality (please see separate document: “Mitigation/Alternative to CT”):   + Chest CTA to Pulmonary MRA during MRI-staffed hours (as deemed appropriate by Radiologist)   + Converting CT TAVRs to non-contrast TAVR CT protocol (MRA) * OP – Triage contrast CT orders   + Convert appropriate exams/indications to CT without contrast   + Message provider for order change to alternate modality (e.g. MRA) via phones/Epic In-Basket     - Prior-Authorization must be re-worked   + Previously scheduled OP exams – consider non-contrast (Triage with Radiologist)   Fluoroscopy:   * Joint Injections: Consider using “air” instead of contrast for fluoroscopically guided therapeutic injections (please discuss with Radiologist prior to performing the procedure).   **Tier 2(b): 2 – 3 weeks supply on-hand**   * IR –defer non-emergent procedures * OP – Triage contrast CT orders, all routine (non-urgent) exams delayed until August 2022   + Previously scheduled OP exams –Exams triaged with Radiologist & rescheduled   + Triage the following types of cases with a Radiologist for rescheduling to a later date (examples):     - Routine Subacute Cases (potentially delayed 1-3 weeks without significantly affecting patient care)       * Chronic Infection requiring regular follow-up       * Cancer patients in clinical trials or needing study to determine next step in management.     - Routine Delayed Subacute Cases (potentially delayed 4-6 weeks without significantly affecting patient care).       * Cancer follow-up in patients responding to treatment on previous exam without new or concerning symptoms.       * Unexplained Chronic hematuria     - Chronic Cases (Delaying 2-3 months is unlikely to result in significant patient harm)       * Annual cancer or lesion follow-up in patients with remission or uneventful clinical status.       * Annual follow-up of syndromic condition with no new symptoms or clinical concerns.       * Adrenal work-up in an asymptomatic patient without history of cancer.       * Characterization or follow-up of a renal mass < 2 cm in size (can also consider MRI). |
| **Tier 3: Red** - Contrast inventory levels are *insufficient* to meet the needs of patients with non-elective indications and/or the needs of all patients  *^Contrast Inventory < 2 weeks supply on-hand* |
| *In addition to Tier 1 & Tier 2:*  **Tier 3(a): 10 – 14 days supply on-hand**   * IR: reserve contrast use for procedures with emergent indications (list?). Triage to other specialties? * ER/IP/OP: delay the following types of cases to a later date (Exams triaged in coordination with Radiologist & Ordering Provider)   + Urgent Cases (delaying 1-6 days may not affect patient care)   + Non-contrast CT exams, alternative modalities (please see separate document regarding “Mitigation/Alternative to CT")     - New cancer work-up in stable patients (such as aggressive cancer types, including large renal cell, pancreatic, and invasive melanoma)     - Transplant Work-Up     - Suspected Infection in a Stable Patient     - Suspected Post-Procedural Complication in a Stable Patient     - Pre-Operative Work-Up for a patient scheduled for surgery > 24 hours   **Tier 3(b): 7 – 9 days supply on-hand**  *\*ALL CT Contrast exams reviewed & approved by Radiologist\**   * ER/IP: Delay the following types of cases to a later date (Exams triaged in coordination with Radiologist & Ordering Provider).   + Emergent Cases (delaying will likely result in significant patient harm)   + Implement use of non-contrast CT, alternative modalities     - Stroke     - Level 1 Trauma     - Acute MI     - Aortic Dissection/Aortic Rupture     - Patients with HIGH suspicion of active bleeding/hemodynamic instability.     - Septic Shock |
| **Tier 4: Purple** – Contrast Inventory is either at *critical or critically depleted* levels and cannot meet the needs of patients with emergent indications.  *^Contrast Inventory < 1 week on-hand* |
| *In addition to Tiers 1, 2 & 3:*  **\*Contrast is reserved for procedures where there is potential life/limb-saving benefits\***  **\*\*All contrast use is determined and approved by designated Triage Officer\*\***   * IR: Procedures only to be done for life or limb-saving purposes (All cases triaged with IR Provider) * Radiology (Non-IR)   + Defer all diagnostic imaging examinations to only examinations where there is clear diagnostic AND therapeutic benefit     - Radiologist & Ordering provider to consult on whether other non-contrast CT or other imaging modalities have diagnostic value |

*^Contrast Inventory will also include incoming inventory considerations*