

IV Contrast Shortage Situation Update and Options for Mitigation

SUMMER 2022

A work stoppage due to COVID-19 restrictions at a General Electric IV contrast dye factory in Shanghai, China earlier this spring led immediately to global shortages of contrast material. General Electric (GE) supplies about 50% of the non-iodinated radiocontrast material used in the United States. The next largest manufacturer of contrast is not taking new customers and other suppliers make up less than 10% of the market. Although the Shanghai plant is back to limited production as of May 20, and other locations are increasing production, for the reasons cited, shortages are expected to continue through early to mid-summer and some regional shortages are possible beyond that.

To help contrast users adapt to the shortage, the Minnesota Department of Health and Health Care Coalition partners are working to share information about current impacts and strategies being implemented by different systems, as well as any opportunities for resource sharing. Key strategies to conserve contrast include:

- Changing to a non-contrasted scan when possible (note that several systems have implemented a checkbox in the ordering process that now allows the radiologist to determine whether contrast will be used or not).
- Changing to a different imaging type when possible (e.g., ultrasound or MRI – see table below).
- Using the smallest dose of contrast that will yield acceptable results for the specific protocol and scan.
- Consider delaying outpatient / surveillance studies when deferral for a few weeks or up to months poses nominal risk – note that there are different tiers or strata of these types of non-emergency scans – see the Ohio State University example below.
- Diverting contrast for other types of studies (e.g., using iodinated contrast usually used for angiography like Visipaque) to CT for certain studies and patients that have appropriate renal function.
- Moving to other suppliers may be an option but because these contribute very little to overall daily demand these suppliers and supplies are not likely to contribute to meaningful relief of the shortage

Most hospitals and health care systems are implementing at least some of these strategies.

One of the key questions surrounds safe practices for ‘splitting’ larger vials of contrast and how long the resulting solutions can be considered sterile and safe for use. The MDH Science Advisory Team (SAT) has been monitoring this situation and has assembled the following resources that represent national specialty society consensus at present and we feel represent good stewardship practices. This situation and the information are subject to rapid change.

Medication Shortage / Splitting Information

CDC Protect Patients Against Preventable Harm from Improper Use of Single-Dose/Single-Use Vials: <https://www.cdc.gov/injectionsafety/CDCposition-SingleUseVial.html>

MDH Medication Administration Strategies for Scarce Resource Situations: <https://www.health.state.mn.us/communities/ep/surge/crisis/standards.pdf>

American Society of Hospital Pharmacists (2022): Considerations for Imaging Contrast Shortage Management and Conservation. <https://www.ashp.org/drug-shortages/shortage-resources/considerations-for-imaging-contrast-shortage-management?loginreturnUrl=SSOCheckOnly>

Consensus / Specialty Society Statements:

Statement by the American College of Radiology (Updated May 13, 2022): <https://www.acr.org/Advocacy-and-Economics/ACR-Position-Statements/Contrast-Media-Shortage>

Short-, Mid-, and Long-term Strategies to Manage the Shortage of Iohexol: <https://pubs.rsna.org/doi/10.1148/radiol.221183> - sample table shown below

Short-, Mid-, and Long-term Strategies to Manage the Shortage of Iohexol

Potential Imaging Alternatives to Be Considered Due to Shortage of Iodinated Contrast Media

Indication for CT with Iodinated Contrast Media	Alternative Examination
Renal obstruction	Renal US
Biliary obstruction	Right upper quadrant (RUQ) or abdominal US or MRI/MR cholangiopancreatography (MRCP)
Metastatic work-up	PET/CT
Renal mass work-up	Contrast-enhanced US or MRI
Chest pain (coronary CT angiography)	Nuclear medicine cardiac stress testing, MRI stress perfusion
Abdominal wall hernia	Soft-tissue US, noncontrast CT
Pancreatitis	MRI/MRCP or noncontrast CT
Gastrointestinal bleed	Nuclear medicine tagged red blood cell scan
Abdominal or pelvic mass characterization	MRI abdomen or pelvis
Venous obstruction (CT venography)	MR venography
Inflammatory bowel disease	MR enterography
Stroke	MRI and MR angiography brain
Suspected ascending aorta dilatation	MR angiography chest
Upper and lower extremity arterial disease	MR angiography or US
Deep venous thrombosis	US or MR venography
Acute cholecystitis	RUQ US or nuclear medicine scintigraphy

- Short-term strategies to mitigate the iohexol shortage include establishing an incident command center to monitor iodinated contrast material (CM) usage, delaying elective contrast-enhanced CT examinations, CM dose reduction, and use of MRI and US.
- Mid-term strategies include CM repackaging, multi-use and multi-access strategies, communication and negotiation with payers on billing and reimbursement, and communication with ordering providers.
- Long-term strategies include advocating to facilitate expansion of CM manufacturing plants including in the United States and institutional stockpiling of CM supplies.

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