Applies to patients 18 years of age and older, in RST/SWWI/NWWI/SEMN/SWMN/AZ/FL

Echocardiography Laboratory: Ultrasound Enhancement Agent Administration

Screening: Ultrasound Enhancement Agent/Echo Contrast

Reason for contrast identified by sonographer or ordering provider: (Select All That Apply)

- ☐ To opacify the left ventricular chamber.
- ☐ To enhance endocardial border definition.
- ☐ To assess for cardiac mass/thrombus.
- ☐ To assess myocardial perfusion.
- ☐ To enhance Doppler signals.

If any box checked, **proceed to the Contrast Screening section.**
If no boxes checked, protocol does not apply.

CONTRAST SCREENING SECTION: Establish intravenous access if not already established.

A. Perflutren Protein-type A Microspheres (Optison®) is available.

- ☐ No – Proceed to Question B below.
- ☐ Yes – Proceed to Perflutren Protein-type A Microspheres (Optison®) Eligibility questions

Perflutren Protein-type A Microspheres (Optison®) Eligibility: (Select All That Apply)

- ☐ Allergy or hypersensitivity to Perflutren Lipid Microsphere (Definity®) Sulfur Hexaflouride Lipid-type A Microspheres (Lumason™) or Polyethylene Glycol (PEG)
- ☐ A diagnosis of sickle cell anemia.

If any box is checked proceed to the Perflutren Protein-type A Microspheres (Optison®) screening. If no box is checked proceed to question B.

B. Sulfur Hexafluoride Lipid-type A Microspheres (Lumason™) is available.

- ☐ No – Proceed to Perflutren Lipid Microsphere (Definity®) Screening section.
- ☐ Yes – Proceed to Sulfur Hexafluoride Lipid-type A Microspheres (Lumason™) Eligibility questions.

Sulfur Hexafluoride Lipid-type A Microspheres (Lumason™) Eligibility: (Select All That Apply)

- ☐ Exercise stress echocardiogram.
- ☐ Transthoracic Echocardiogram (TTE) performed on an inpatient.
- ☐ Perflutren Lipid Microsphere (Definity®) is contraindicated.

If any box is checked proceed to the Sulfur Hexafluoride Lipid-type A Microspheres (Lumason™) Screening section. If no boxes checked proceed to the Perflutren Lipid Microsphere (Definity®) Screening section.

Perflutren Protein-type A Microspheres (Optison®) Screening Section:

Patient reports:

- ☐ Allergic or hypersensitivity to Perflutren Protein-type A Microspheres (Optison®).
- ☐ Refuses to use Perflutren Protein-type A Microspheres (Optison®).
- ☐ A prior transfusion reaction to blood, blood products or albumin.

If any box checked, protocol does not apply.

If no boxes checked, **administer Perflutren Protein-type A Microspheres (Optison®). Proceed to Contrast Administration Section.**

Sulfur Hexafluoride Lipid-type A Microspheres (Lumason™) Screening Section:

Patient reports:

- ☐ Allergic or hypersensitivity reaction to Sulfur hexafluoride lipid microspheres (Lumason™).
- ☐ Refuses to use Sulfur hexafluoride lipid microspheres (Lumason™).

If any box checked, protocol does not apply.

If no boxes checked, **administer Sulfur Hexafluoride Lipid-type A Microspheres (Lumason™). Proceed to Contrast Administration Section.**

If Sulfur hexafluoride lipid microspheres (Lumason™) is not available, go to the Perflutren Lipid Microsphere (Definity®) Screening section.

Perflutren Lipid Microsphere (Definity®) Screening Section:

Patient reports:

- ☐ Allergic or hypersensitivity to Perflutren Lipid Microsphere (Definity®).
- ☐ Refuses to use Perflutren Lipid Microsphere (Definity®).

If any box checked, **protocol does not apply. Notify supervising echo physician.**

If no boxes checked, **administer Perflutren Lipid Microsphere (Definity®). Proceed to Contrast Administration Section.**

CONTRAST ADMINISTRATION SECTION:

Sulfur hexafluoride lipid microspheres (Lumason™) administration instructions:

1. Reconstitute the Sulfur hexafluoride lipid microspheres (Lumason™) by injecting 5 mL sodium chloride 0.9% into the Lumason™ vial and shake vigorously for 20 seconds. Draw the 5 mL suspension into a syringe.
2. Administer 1 mL Sulfur hexafluoride lipid microspheres (Lumason™) IV.
3. Slow flush IV with 1 mL of 0.9% sodium chloride.
4. May repeat administration of 1 mL Sulfur hexafluoride lipid microspheres (Lumason™) as needed for adequate images for a maximum dose of 10 mL Sulfur hexafluoride lipid microspheres (Lumason™).
5. Slow flush IV with 1 mL 0.9% sodium chloride following each administration of Sulfur hexafluoride lipid microspheres (Lumason™).

Perflutren Protein-type A Microspheres (Optison®)

1. Administer 0.5 mL IV push over 10 seconds.
2. Flush with 3 mL of 0.9% sodium chloride.
3. May repeat steps 1 and 2 until optimal images are obtained (not to exceed 5 mL in any 10 minute period with a maximum dose of 8 mL per study).

Perflutren Lipid Microphere (Definity®)

- **Standard Concentration:** to be administered for inclusion criteria that does not include an indication of myocardial perfusion.
  1. Activate Perflutren Lipid Microsphere by shaking the vial for 45 seconds Using a Vialmix®.
  2. Draw up contents of vial into 10 mL syringe with 8.5 mL of 0.9% sodium chloride for a total of 10 mL.
  3. Administer 0.5 mL IV push of the diluted solution.
  4. Immediately flush with 3 mL 0.9% sodium chloride over 10 seconds.
  5. May repeat steps 3 and 4 until images are optimal or for a total of 10 mL of diluted solution being administered.

- **Perfusion Concentration via IV Syringe Pump**
  1. Activate Perflutren Lipid Microsphere by shaking the vial for 45 seconds using a Vialmix®.
  2. Draw up 58.5ml of preservative free 0.9% Sodium Chloride in a 60 ml syringe
  3. Draw up contents of activated vial into the 60 ml syringe
  4. Mix gently
  5. Place syringe into syringe pump and give a 2ml bolus of solution followed by a continuous infusion rate of 50ml/hr
  6. Rock syringe pump once during the 3 minute state to resuspend the Definity.

Contrast administered per Echocardiography Laboratory Contrast Administration Protocol.

- Discontinue intravenous access if no further testing and if patient is outpatient status.