Q1. What is your name?

- [ ] First
- [ ] Last

Q2. What is your designation? (Select one or more):

- [ ] Faculty/Staff Interventional Cardiologist
- [ ] Catheterization Laboratory Medical Director
- [ ] ACGME Interventional Cardiology Program Fellowship Director

Q3. What is the name of your institution/hospital?

Q4. Are you aware of the current worldwide shortage in iodinated contrast dye?

- ○ Yes
- ○ No

Q5. Is your hospital experiencing a shortage in contrast dye?

- ○ Yes
- ○ No
- ○ I don't know

Q6. Which contrast agents do you use in the catheterization laboratory? (Select all that apply)

- [ ] Iodixanol (Visipaque) GE
- [ ] Iohexol (Omnipaque) GE
- [ ] Iopamidol (Isovue) Bracco
- [ ] Iopromide (Ultravist) Bayer
- [ ] Ioversol (Optiray) Guerbet
- [ ] Ioxilan (Oxilan) Bracco
- [ ] Others (specify)

Q7. Do you or the medical director of the cath lab have input into the choice of contrast media purchased?

- ○ Yes
- ○ No
- ○ May be (not sure)

Q8. How is the decision made to purchase specific types of contrast agents? (Select all that apply)

- [ ] Hospital cath lab administration makes the decision

- [ ] Physicians make the decisions
- [ ] Made by the hospital GPO (group purchasing organization) agreements
- [ ] I don't know

Q9. Has your hospital had to borrow contrast dye from another hospital system?

- ○ Yes
- ○ No
- ○ I don't know
- ○ There is no shortage in our hospital

Q10. For what types of cases do you use Iodixanol (Visipaque) GE in your cath lab? (Select all that apply)

- [ ] All cases
- [ ] Patients at risk for AKI (For example those with CKD)
- [ ] Peripheral arterial cases
- [ ] TAVR
- [ ] I don't use Visipaque

Q11. For patients at risk for AKI, does our contrast choice matter?

- ○ Always
- ○ Often
- ○ Sometimes
- ○ Never

Q12. Approximately how much contrast dye does your hospital have on hand currently for the cath lab?

- ○ 1–2-week supply
- ○ 3–4-week supply
- ○ 4–8-week supply
- ○ 8–12-week supply
- ○ I don't know
- ○ There is no shortage in my hospital

Q13. Have you triaged and deferred elective cases due to the contrast shortage?

- ○ Yes
- ○ No
- ○ There is no shortage in my hospital

Q14. Have you triaged and deferred stable outpatient coronary cases due to the contrast shortage?

- ○ Yes
- ○ No
- ○ There is no shortage in my hospital

Q15. Have you deferred peripheral angiograms/interventions (for claudication)?

- Yes
- No
- I don't do peripheral procedures
- There is no shortage in my hospital

Q16. Have you deferred peripheral angiograms/interventions (for CLI)?

- Yes
- No
- I don't do peripheral procedures
- There is no shortage in my hospital

Q17. Have you deferred TAVR cases?

- Yes
- No
- I don't do TAVR procedures
- There is no shortage in my hospital

Q18. For outpatients, what is your approach to deferring/rescheduling due to the contrast shortage?

	Select most widely used strategy		
	Must be done	Can be delayed up to 4 weeks	Can be delayed > 4 weeks
Class I/II angina			
Class III/IV angina			
Newly diagnosed systolic heart failure			
Ischemia on non-invasive testing or abnormal coronary CT angiogram with otherwise stable symptoms			
Pre-solid organ transplant (liver)			
Pre-solid organ transplant (kidney)			
Pre-solid organ transplant (lung)			

	Select most widely used strategy		
	Must be done	Can be delayed up to 4 weeks	Can be delayed > 4 weeks
Pre-non cardiac surgery (other than transplant)	○	○	○

Q19. During the contrast shortage what has happened to your complex PCI volume (CTOs, LM, Impella)?

- ○ Decreased
- ○ Increased
- ○ Unchanged
- ○ There is no shortage in my hospital

Q20. The impact on fellow education of the contrast shortage has been:

- ○ Minimal
- ○ Moderate (some reduction in volume)
- ○ Significant (marked reduction in volume)
- ○ None
- ○ There is no shortage in my hospital
- ○ Not applicable

Q21. How do you administer contrast in your cath lab?

- ○ Manifold only
- ○ ACIST injector
- ○ Manifold for some cases and ACIST for some cases

Q22. For CORONARY cases which of the following procedural techniques have you used to reduce contrast use during the shortage? (Select all that apply)

- ☐ Dilution of contrast dye (50% contrast/50% saline)
- ☐ Dilution of contrast dye (60% contrast/40% saline)
- ☐ Dilution of contrast dye (70% contrast/30% saline)
- ☐ Reduction of volume given through ACIST injector
- ☐ Use of contrast modulation technology (DyeVert PLUS)
- ☐ Use of ultralow or zero contrast PCI
- ☐ More use of IVUS
- ☐ Increased staging of procedures
- ☐ There is no shortage in my hospital so I have not changed my usual practice

- [ ] other dilution of contrast (specify)

Q23. For PERIPHERAL cases which of the following procedural techniques have you used to reduce contrast use during the shortage? (Select all that apply)

- [ ] Dilution of contrast dye (50% contrast/50% saline)
- [ ] Dilution of contrast dye (60% contrast/40% saline)
- [ ] Dilution of contrast dye (70% contrast/30% saline)
- [ ] Reduction of volume given through ACIST injector
- [ ] Use of contrast modulation technology (DyeVert PLUS)
- [ ] More use of IVUS
- [ ] Increased staging of procedures
- [ ] Use of CO2 imaging
- [ ] Use of more selective catheter injections
- [ ] There is no shortage in my hospital so I have not changed my usual practice
- [ ] I don't do peripheral procedures
- [ ] other dilution of contrast (specify)

Q24. For TAVR cases which of the following procedural techniques have you used to reduce contrast use during the shortage? (Select all that apply)

- [ ] Dilution of contrast dye (50% contrast/50% saline)
- [ ] Dilution of contrast dye (60% contrast/40% saline)
- [ ] Dilution of contrast dye (70% contrast/30% saline)
- [ ] Reduction of volume given through ACIST injector
- [ ] Use of catheters to mark the non-coronary cusp/landmark for deployment
- [ ] Use of non-contrast CT scans for valve planning
- [ ] There is no shortage in my hospital so I have not changed my usual practice
- [ ] I don't do TAVR procedures
- [ ] other dilution of contrast (specify)

Q25. What is the optimal contrast dilution (contrast%/saline%) for the following applications when trying to saving contrast?

- [ ] Coronary:
- [ ] Peripheral:
- [ ] TAVR:

Q26. My cath lab uses a contrast miser or similar device to allow a bottle of contrast to be used on multiple patients when using a manifold

- Yes
- No
- I don't know

Q27. My cath lab can use the bottle of contrast and the left-over contrast in the injection syringe in an ACIST injector for multiple patients

- Yes
- No
- I don't know

Q28. Moving forward, given the shortage is your hospital going to acquire contrast from more than one vendor?

- Yes
- No
- I don't know
- There is no shortage in my hospital

Q29. Moving forward, do you anticipate having to defer or transfer out urgent/inpatients (NSTEMI, heart failure, etc.) due to the contrast shortage?

- Yes
- No
- There is no shortage in my hospital

Q30. Moving forward, given the shortage is your hospital going to increase their total stock of contrast?

- Yes
- No
- I don't know
- There is no shortage in my hospital