



# Cath Lab Best Practices





# Pre-Procedural Best Practices

- ▶ **Pre-cath H&P  $\leq$  4 weeks (outpatient) or 24 hrs (inpatient), with update by attending physician at time of procedure.**
- ▶ **Informed Consent**
  - Within 4 weeks by physician or informed member of team
  - Lay terms outlining indications, risks, benefits and alternatives; outcomes of the procedure must also be discussed
  - Witnessed by third party, preferably a family member
  - Re-affirm at least verbally within 24 hours of procedure
- ▶ **Sedation, Anesthesia and Analgesia Evaluation**
  - Usually conscious sedation, although sedation not required
  - Physicians must be credentialed for conscious sedation
  - ASA and/or Mallampati classification designation should be established by the physician or designee





# Pre-Procedural Best Practices

## ▶ Pre-Procedure Checklist

- CBC and SMA within 4 weeks (PT/INR not required unless on warfarin)
- INR > 1.8 should consider alternative options or cancellation of elective cases
- Hydration, if possible, for CRI (N-acetyl-cysteine not recommended)
- Baseline EKG helpful, but CXR not routinely required





# Procedural Best Practices (Continued)

- ▶ Fertile women must have Beta-HCG within 72 hours
- ▶ Allergy documentation including contrast reaction and prior Heparin-Induced Thrombocytopenia (HIT)
- ▶ NPO except medications for minimum 4 hours
- ▶ Diabetics should have hypoglycemic medications and insulin regimens reviewed and adjusted
- ▶ Outpatients should arrange for transport to home
- ▶ Review previous procedure reports and films (CABG and/or PCI).





# Pre-Procedure Checklist

Patient Name: \_\_\_\_\_ MRN: \_\_\_\_\_ Procedure Date: \_\_\_\_\_

- Planned Procedure:
- Diagnostic Cardiac Catheterization
  - Diagnostic Cardiac Catheterization with possible PCI
  - Percutaneous Coronary Intervention

History and Physical Examination:

- Elective Outpatient Procedures: H & P documented within 2-4 weeks? Yes  No
- Inpatient Procedures: H & P documented within 24 hours of admission? Yes  No

History of prior PCI or CABG:

- If yes, previous reports obtained? Yes  No

Candidacy for DES:

1. Is the patient anemic? Yes  No
2. Major surgery in past month or in next year? Yes  No
3. Any clinically overt bleeding? Yes  No
4. Is patient on chronic anticoagulation (eg. warfarin, dabigatran) Yes  No
5. History of medication non-adherence? Yes  No

Allergies:

1. Iodine dye: Yes  No   If yes, was the patient pre-treated? Yes  No
2. Aspirin: Yes  No   If yes, does patient need desensitization? Yes  No
3. Heparin (HIT) Yes  No   If yes, consider alternative anti-thrombotic agents
4. Latex Yes  No   If yes, remove all latex products from procedural use
5. Multiple allergies Yes  No   If yes, consider prednisone pretreatment





# Pre-Procedure Checklist (Continued)

## Medications:

- 1. Did patient take aspirin within past 24 hrs? Yes  No
- 2. Did patient take clopidogrel within past 24 hrs? Yes  No
- 3. Did patient take metformin within past 24 hrs? Yes  No
- 4. Did patient take sildenafil (or equivalent) within past 24 hrs? Yes  No
- 5. Did patient receive LMWH within past 24 hrs? Yes  No 
  - If yes for LMWH, time of last dose \_\_\_\_\_

## Informed Consent:

Was informed consent obtained within 2-4 weeks? Yes  No

Is there a healthcare proxy? Yes  No

Is the patient DNR or DNI? Yes  No   Yes, but revoked for procedure

## Sedation, Anesthesia & Analgesia:

Are ASA and Mallampati Class documented? Yes  No

Is there any contraindication to sedation present? Yes  No

## Laboratories and Studies:

CBC and SMA performed within 2-4 weeks (outpatient) or 24 hours (inpatient) Yes  No

PT/INR within 24 hours (for patients on warfarin) Yes  No

Does the patient require pre-procedure hydration? Yes  No





## Procedural Best Practices (Continued)

- ▶ **Patient Preparation in Procedure Room**
  - Review medical record and checklist
  - Briefly re-confirm procedure and consent with patient
- ▶ **Sedation, Anesthesia Administration and Documentation**
  - Consider conscious sedation (nurse should be present)
  - All drugs recorded and signed by attending physician
- ▶ **Optimal Catheterization Laboratory Team**
  - Attending cardiologist and assistant/fellow in training.
  - One (1) monitoring and one (1) circulating nurse/tech
  - Consider anesthesiologist if deeper sedation is needed.





# Procedural Best Practices (Continued)

## ▶ Infection Control in the Lab

- Sterile clipping and prep over access site
- Surgical scrub for all tableside personnel is recommended for first case, followed by self-drying solutions for subsequent cases
- Hats and masks are optional for routine percutaneous procedures.
- Antibiotic prophylaxis not indicated, although may be considered for high infection risk procedures or permanent implants

## ▶ Universal Protocol and “Time Out”

- “Wrong Site” procedures are generally not a concern; therefore routine site marking is not necessary.
- All solutions on the table must be labeled in real-time (not pre-labeled)
- Documentation of verbal orders by technician or nurse and signed by MD
- “Time Out” Protocol
  - Performed prior to vascular access, when all team members present
  - Check patient ID with double-identifiers
  - Unanimous agreement as to nature of procedure to be performed





# Procedural Best Practices (Continued)

## ▶ Physician to Patient Communication

- Physician should discuss with patient and family procedure results
- Management plans should be discussed, including need for and duration of DAPT in those who receive a stent

## ▶ Access Site Management

- For femoral access, sheath removal generally when ACT < 180 seconds (for heparin), after 2 hours (bivalirudin) or after 6-8 hours (LMWH)
- For femoral closure devices, ambulation generally restricted for 1-4 hours
- For radial access, sheath removed immediately after case

## ▶ Monitoring and Length of Stay

- Telemetry monitoring in recovery or other unit specializing in cardiac care
- Length of stay for diagnostic cases range 2-6 hours
- Length of stay for PCI dependent on risk of complications, patient co-morbidities and need for further care





# Procedural Best Practices (Continued)

## ▶ Discharge Instructions

- Physician or designee instructs on any physical activity limitations
- Discuss follow-up appointment (usually at 2-4 weeks)

## ▶ Medication Reconciliation

- Medication reconciliation documented on discharge instructions (examples: DAPT, metformin and other oral hypoglycemic agents, warfarin)

## ▶ Attending to Referring Physician Handoff

- Handoffs require appropriate documentation, including procedure performed, complications and post-procedural plan
- Formal procedure notes as well as, ideally, verbal communication to the referring physician are necessary (consider automated electronic servers)





# Documentation 101

- ▶ **Physician documentation is required or recommended at multiple steps**
  - Update H&P at time of procedure (confirmation of ASA/ Mallampati classification)
  - Sign Informed Consent (IC) form
  - Sign for all drugs delivered during procedure
  - Sign for all verbal orders
  - Sign procedure note with all findings and complications, including the plan of care
  - Document discussion of findings with patient and family
  - Document discussion and handoff to referring physician

