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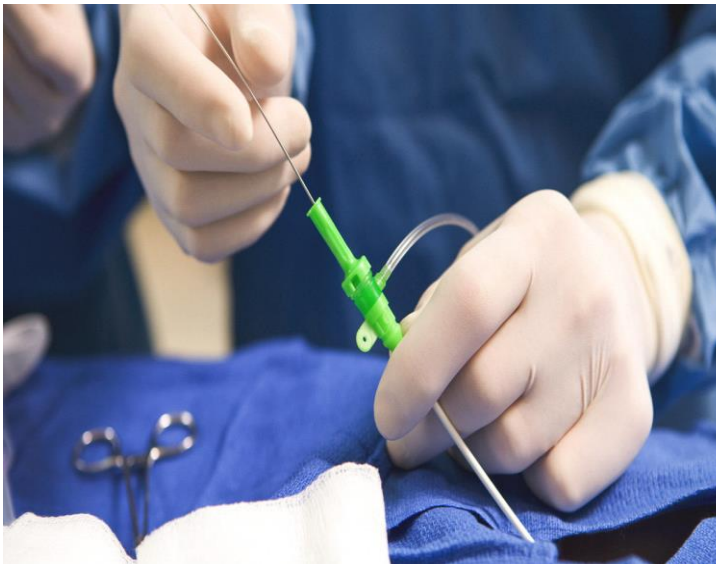

CARDIAC CATHETERIZATION LABORATORY MANUAL

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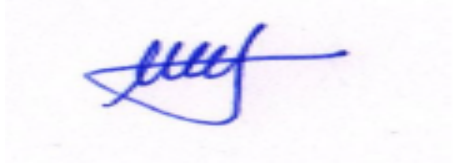
Annual Documents adequacy & Change Requirements Review

Sr.No	SOP /Doc No	Documents Name	Issue. No	Rev.No	Review Date	Change	Rev No	Revision Date	Resaon for Change	Amendment
1	SDH/CATHLAB/01	CONTENT	1	1	20-Nov-22	No Any change review completed	1	20-Nov-23	No Any change review completed	No Any Amendment History
2	SDH/CATHLAB/02	Oraganogram	1	1	20-Nov-22		1	20-Nov-23		
3	SDH/CATHLAB/03	Staff Responsibilities	1	1	20-Nov-22		1	20-Nov-23		
4	SDH/CATHLAB/4.1	Receiving Patients	1	1	20-Nov-22		1	20-Nov-23		
5	SDH/CATHLAB/4.2	Equipment Setting	1	1	20-Nov-22		1	20-Nov-23		
6	SDH/CATHLAB/4.3	Traffic Pattern	1	1	20-Nov-22		1	20-Nov-23		
7	SDH/CATHLAB/4.4	Patient Instructions	1	1	20-Nov-22		1	20-Nov-23		
8	SDH/CATHLAB/4.5	Emergency Transfer Communication Protocol	1	1	20-Nov-22		1	20-Nov-23		
9	SDH/CATHLAB/4.6	Transfer In and Out	1	1	20-Nov-22		1	20-Nov-23		
10	SDH/CATHLAB/4.7	Emergency On call	1	1	20-Nov-22		1	20-Nov-23		
11	SDH/CATHLAB/4.8	Patient Preparation	1	1	20-Nov-22		1	20-Nov-23		
12	SDH/CATHLAB/4.9	Safe Catherization	1	1	20-Nov-22		1	20-Nov-23		
13	SDH/CATHLAB/4.10	Sheath Removal and Vacular Closure Devices	1	1	20-Nov-22		1	20-Nov-23		
14	SDH/CATHLAB/4.11	Wound Dressing	1	1	20-Nov-22		1	20-Nov-23		
15	SDH/CATHLAB/4.12	Decontamonation of Equipment	1	1	20-Nov-22		1	20-Nov-23		
16	SDH/CATHLAB/4.13	Maintenance of Sterile Field	1	1	20-Nov-22		1	20-Nov-23		
17	SDH/CATHLAB/4.14	Cleaning & Disinfection of cath lab	1	1	20-Nov-22		1	20-Nov-23		
18	SDH/CATHLAB/4.15	Waste Disposal	1	1	20-Nov-22		1	20-Nov-23		
19	SDH/CATHLAB/4.16	Coronary Angiography	1	1	20-Nov-22		1	20-Nov-23		
20	SDH/CATHLAB/4.17	Right Heart Catherization	1	1	20-Nov-22		1	20-Nov-23		

21	SDH/CATHLAB/4.18	PTCA	1	1	20-Nov-22		1	20-Nov-23		
22	SDH/CATHLAB/4.19	PDA Device Closure	1	1	20-Nov-22		1	20-Nov-23		
23	SDH/CATHLAB/4.20	ASD Device Closure	1	1	20-Nov-22		1	20-Nov-23		
24	SDH/CATHLAB/4.21	VSD Device Closure	1	1	20-Nov-22		1	20-Nov-23		
25	SDH/CATHLAB/4.22	PTMC	1	1	20-Nov-22		1	20-Nov-23		
26	SDH/CATHLAB/4.23	TPI	1	1	20-Nov-22		1	20-Nov-23		
27	SDH/CATHLAB/4.24	EPS	1	1	20-Nov-22		1	20-Nov-23		
28	SDH/CATHLAB/4.25	Sheath Removal	1	1	20-Nov-22		1	20-Nov-23		
29	SDH/CATHLAB/4.26	PTCA Sheath removal	1	1	20-Nov-22		1	20-Nov-23		
30	SDH/CATHLAB/05	Registers	1	1	20-Nov-22		1	20-Nov-23		
31	**SDH/CATHLAB/05**	**General Policy On Clinical Procedures**	**1**	**1**	**21-Jun-22**	**Policy Updates Regarding Procedures**	**1**	20-Nov-23	**Change As per NABH Audit NC**	**Policy Updates Regarding Procedures**

		Original Date	Effective Date	Next date of revision	Issue NO		
		05 March 21	**20 November 2023**	**20 November 2024**	1		

Reviewed & Prepared By		Recommended By	Approved By
Dr.Kiran Deepak	Mrs.Shraddha suryavanshi	Dr.H.Kalgaonkar	Dr.S.S.Deepak
Cardiologist	Quality Co-ordinator	Chief Medical Administartor	Chairman & Managing Director



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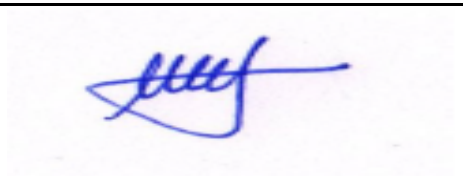
Reviewed & Prepared By		Recommended By	Approved By
Dr.Kiran Deepak	Mrs.Shraddha Suryavanshi	Dr.H.Kalgaonkar	Dr.S.S.Deepak
Cardiologist	Quality Co-ordinator	Chief Medical Administartor	Chairman & Managing Director
			

SAIDEEP HEALTHCARE & RESEARCH PVT. LTD.	**SAIDEEP HOSPITAL** **CARDIAC CATHETERISATION LABORATORY MANUAL**	Doc No	SDH/ CATHLAB /01
		Issue No	01
		Rev No.	01
		Date	5/3/2021
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	Amendment Sheet		

Sr. No	Page No	Clause No	Date of Amendment	Amendment Made	Reasons	Signature of Approval Authority

Recommended By	Signature	Approved By	Signature
Dr. Hrishikesh Kalgaonkar		Dr. S. S. Deepak	
Chief Medical Administrator		Chairman & Managing Director	

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4.19	PDA Device Closure	1-2
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4.23	TPI	1-2
4.24	EPS	1-1
4.25	Sheath removal	1-1
4.26	PCTA Sheath removal	1-1
5	Registers	1-1

SAIDEEP HEALTHCARE & RESEARCH PVT. LTD.	**SAIDEEP HOSPITAL** **CARDIAC CATHETERISATION LABORATORY MANUAL**	Doc No	SDH/CATHLAB/02
		Issue No	01
		Rev No.	01
		Date	5/3/2021
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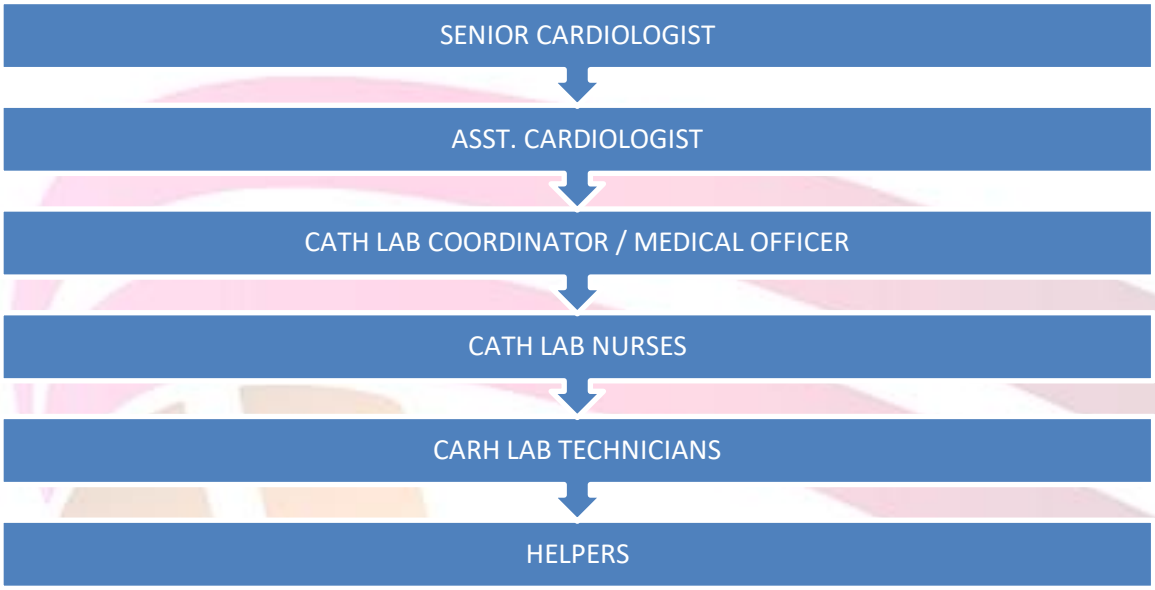
	Document Title : Organogram		



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Dr.Hrishikesh kalgaonkar		Dr.S.S.Deepak	
Chief Medical Administrator		Chairman & Managing Director	

4. Responsibilities of the Cardiac Catheterization Lab team members

- Daily Functioning of the Catheterization Lab 7:00 – 5:30 pm.

All responsibilities apply to both the STAFF NURSE and CVT role unless specific to a scope of practice.

- The Staff nurse/CVTs are responsible to stock both rooms and holding room with supplies, linens/blankets. Check sharps containers and empty if needed in soiled utility room. Obtain stretchers/beds for day.
- All stocking should be done prior to beginning other job duties and should be complete before leaving the unit or taking a break.
- All members of the team will assist in preparing the first patient of the day, i.e., paperwork, IV, ECG, lab work, before taking a break.
- Team members will recognize patient assignments and will promptly attend to the patient from admission to discharge from the Cardiac Catheterization Lab.
- Both the STAFF NURSE and/or CVT will perform transfers via w/c, stretcher, or bed to and from the Catheterization Lab and will assist to get the patient on the table and prepared for the procedure.
- If there is delay in department from Procedure Centre to Cardiac Catheterization Lab over 15-20 minutes, a Catheterization Lab staff member will be assigned to transport the patient to the Catheterization Lab.
- Neither team member should leave the patient without notifying the other member, for example, obtaining a blanket or lead. Time out of procedure rooms should be minimal to avoid disruption of flow and patient safety.
- Both staff nurse and CVT are responsible to ensure that the confidentiality and privacy needs of the patients are met.
- It is the responsibility of the team to ensure that privacy needs of the patient are met by covering genitals with a towel while doing skin prep and closing the door to the procedure room.
- All team members need to communicate respectfully to each other during cases; accurately and clearly reporting data, for example, allergies, height, weight, risk factors, equipment, and medications.

- The STAFF NURSE administers all medication ordered by the MD following medication protocols/MD orders to discontinue and titrate medications.
- It is the responsibility of all team members to watch the ECG monitor and report changes during the procedure.
- No team member should leave the room during the procedure except to retrieve equipment from the store room and it is never acceptable to have both members out of the room.
- Personal phone calls are to be kept to a minimum and absolutely no personal cell phones are to be used in procedure room for any reason.
- The Tech is responsible to obtain lesion information from the MD in a professional, tactful manner to record on protocol.
- It is both the Staff Nurse and CVTs responsibility to transfer and/or ensure the patient is transferred safely off the table to a bed or stretcher and that the patient is transferred to the receiving unit.
- Staff Nurse is to call report to receiving unit as soon as possible after case is complete.
- Both Staff Nurse / CVT are responsible for emergency care of a patient even after the procedure is complete.
- All patients are monitored per protocol during manual compression of groin after sheath removal until disposition to receiving unit.
- A staff member scrubbing in on a case is responsible for preparing the access site and uncovering the procedure table before scrubbing.
- At the end of the case it is the team's responsibility to remove drapes from the patient and table and take soiled instruments to soiled utility room.
- All team members are responsible for prompt room clean up. This includes trash disposal between cases and wiping the procedure table, patient table, ECG leads, BP cuff, pulse oxymeter probe and any soiled surface.
- Procedure Room must be left ready for the next procedure with consideration for next team to use the room. For example, all used medication vials should be discarded, counter tops tidy, and paperwork in appropriate basket, equipment for table set up and fresh linen on bed. This also applies to cases after hours and on call.

Remove all jewels before entering to the cathlab and should be kept in lockers in their on responsibility

Recommended By	Signature	Approved By	Signature
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Chief Medical Administrator		Chairman & Managing Director	

	SAIDEEP HOSPITAL CARDIAC CATHETERISATION LABORATORY MANUAL	Doc No	SDH/CATHLAB/4.1
		Issue No	01
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		Date	5/3/2021
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	SOP For Receiving of Patients for Cath procedures		

Purpose

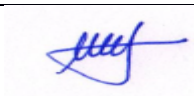
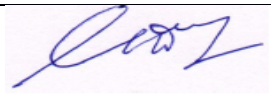
Proper receiving of the patient will enhance the safety of the patient will be legal evidence and will help the convenience of the Cath lab team. Once the patient is reached the Cath lab from the ward, a registered or a trained Cath Lab Technician should receive the patient.

Equipment/Materials Required:

- Patient trolley with side rails
- Pillow blanket
- Patient and relative
- All records and reports

Procedure:

- Welcome the patient with a smiling face.
- Make the patient to sit in the waiting room.
- Handover ask the name of the patient and also check the ID band with admission paper.
- Check whether the site preparation done or not
- Make sure that there are no jewels on patient's body and the dentures to be removed if it is not fixed.
- Check whether there are no loose teeth.
- Undergarments to be removed before shifting the patient for Catheterization.
- Consent from the patient and relatives.
- Explain the patient relative about the duration of the procedure and shifting time to the location and give psychological support also.
- Check the skin integrity and for skin allergy.
- Make sure whether the patient has undergone any previous surgery or Catheterization.
- Check for any allergies or drug allergy.
- No nails polish on the fingers and toes and nails should be cut short.

Recommended By	Signature	Approved By	Signature
Dr.Hrishikesh kalgaonkar		Dr.S.S.Deepak	
Chief Medical Administrator		Chairman & Managing Director	

➢ Check the papers of the file one by one

- Pre CATH check list, consents
- Admission reports
- Common check list
- OPD notes
- ECG
- X-Ray
- ECHO
- For PTCA, CAG report needed
- Finance clearance
- For PTMC, TEE report needed
- General and procedure consent
- All blood reports including serology.
- For all paediatric cases anaesthesia check list should check.
- Patient history
- Nurses notes
- Intake and output chart

✓ Never leave the patient alone.

✓ Once the patient is taken to the CATH LAB make sure that relative has left the waiting room.

✓ Give them support and sent to the room or reception area.

✓ Give premedication.

✓ In case of emergency maintain door to balloon timing by proper communication.

Purpose: All the CATH lab equipment should be kept in such a manner that it should allow the smooth functioning of the CATH lab. Registered nurse, trained technicians are involved in the before starting the surgery

Equipment / Materials Required:

- Procedure table,
- Boyls apparatus
- Diathermy Machine (for PPI)
- Defibrillator
- Suction Apparatus
- Light Source
- Basin stand
- ACT machine
- V stand, Footsteps
- Waste buckets
- Pulse generator
- Monitor
- SPO2 probe and NBP cuff
- Pressure bag
- Arm rest
- Oxygen
- Warmer
- Clock
- Phone
- Trolly,
- Crash cart.

Procedure:

- Equipment setting and checking must be done under supervision of Cath Lab Technician / Nurse In-charge every day prior to start of first case
- All equipments
  - Should be easily accessible
  - Should be kept in proper places
  - Should be properly connected and check the functioning
- Ensure the safety of all equipment
- Monitor ventilator, light source should be connected to UPS
- All the wheeled equipments should be locked and kept
- Separated bins should keep to linen, plastic paper and sharps.
- Crash Cart to be checked and same documented using **Crash Cart Checklist**

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Dr.Hrishikesh kalgaonkar		Dr.S.S.Deepak	
Chief Medical Administrator		Chairman & Managing Director	

Purpose: To ensure smooth functioning and minimizing possibility for cross infection for patients

Procedure

- The Catheterization Lab will be divided into the following two areas:

  1) restricted and

  2) unrestricted.

- Restricted areas include the procedure room. Clean scrub attire, hats, and masks are required in the table and sterile field areas; cardiovascular technologist is required to wear scrub attire. Lead aprons are to be worn by staff nurse by all personnel during the procedure.
- Unrestricted areas will include the following peripheral support areas: control room, CATH lab holding area
- Patients entering the procedure rooms will wear clean gowns and be covered with clean linens.
- Doors to procedure rooms will not be propped open.
- Clean supplies will enter and exit procedure rooms from the main hallway. Soiled items will exit the procedure rooms through the main hallway after the items are covered. All soiled items will be terminally processed in the Decontamination Area of the CSS/IR.
- Supplies and equipment will be removed from shipping containers prior to delivery into restricted and unrestricted areas.

Desired patient outcome: The patient will be free from signs and symptoms of infection

Clinical assessment & care

- ✓ Upon admission to the operating or procedure rooms, the patient will be assessed for wearing of proper attire for the area.
- ✓ The flow of clean and soiled items will be monitored and maintained per protocol.
- ✓ Doors to the procedure rooms will be kept closed except during movement of patients, personnel, supplies, and equipment in and out of the area.

PURPOSE: To provide guidelines for patient education and preparation pre cardiac procedure.

PROCEDURE:

Outpatient Scheduled by Cardiologist through CATH Lab RMO:

1. Patient Instructions:

a. Patient will report to Cardiopulmonary Office or Procedure Centre 1 ½ hours prior to scheduled procedure.

b. Patient must be fasting from midnight the night before scheduled CATH. May take medications with sip of water.

c. If patient is taking Coumadin or Warfarin, must be stopped three full days before scheduled procedure.

d. Patients will bring all medicines (in their appropriate bottle) to hospital with them.

e. Patient will bring insurance cards with them.

f. Patient must be accompanied by an adult to drive him/her home.

g. Patient must arrange for a competent adult to stay with them for four hours after arrival home.

h. Patient will be instructed to do only light activity for 24 hours after procedure.

2. **Preadmission Testing** (Lab work with ECG) must be done within 30 days prior unless clinically indicated. Arrange testing through referring MD or CATH Scheduling Secretary.

3**. Inpatient** can be scheduled at any available time slot in CATH Lab through CATH Lab Scheduling Secretary or CATH Lab charge person.

a. Cardiac CATH procedure will be scheduled through Attending Cardiologist or Cardiologist performing the Cardiac CATH.

b. Patient instructions/teaching done per respective nursing unit.

c. Pre-CATH orders and consent for procedure to be filled out and signed by Cardiologist performing Cardiac CATH.

4. **Transfer** patient from outside facility to be admitted to other hospital

a. Determine if patient needs to go to ICU, Telemetry or General Medical floor.

b. Be sure insurance is checked and need for precertification (individual interventional)

c. Patient should be transferred to Other Hospital 1 ½ hours prior to scheduled CATH time if going to hospital bed; 1/2 hour before scheduled CATH if going directly to CATH Lab. Be sure sending hospital knows to have patient fast after midnight the night before and sends appropriate records and should carry all records with patients.

Purpose: Patient presentation of an acute cardiac emergency (i.e. STEMI: ST Elevation myocardial infarction) that requires expedited transfer to the Cardiac Cath lab for intervention.

Patient will be expeditiously and safely transferred from the ED to the Cardiac Cath lab when emergent intervention is required/ make sure cath lab is ready to receive patients by reserving cath-table for emergency care.

Procedure

1. Once Cath lab staff has been notified of an emergent transfer from the ED, Cath lab staff will call ED Charge staff nurse to obtain the name, DOB of the patient who will be coming to the Cath lab. This information will be documented by the Cath lab staff on the ISBAR form and entered into the computerized Cath lab documentation system.

2. Phone report will be given by the primary ED staff nurse caring for the patient, if he/she is available, otherwise a verbal report will be given by the primary ED staff nurse upon arrival to the Cath lab.

3. The patient's primary staff nurse must accompany the patient to the Cardiac Cath lab.

4. The ED staff will print an ED record and patient identification stickers and bring these with the patient upon transfer.

5. Upon arrival to the cath lab, the Cath lab Staff nurse will address the ED staff nurse.

6. To verify the correct patient, the patient's armband will be checked by both the ED staff nurse and Cath lab Staff nurse together. The patient's name, DOB and ID# on the band will be compared to the name, DOB on the ISBAR form that was obtained prior to the patient's arrival.

7. Patients who are alert and oriented will be asked to participate in the identification proceed by stating their name and date of birth. These will be compared to their armband and ISBAR form information.

8. Try to maintain door to balloon timing.

Purpose

Coordination of transfer in and transfer out of patient in the Cath lab

Procedure

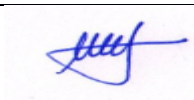
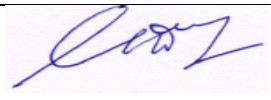
- Transfer in and Transfer Out of patients is managed through the Cath Lab Pre and Post Procedure Care Unit attached next to the Cath Lab.
- Transfer of patient to CATH lab is from either ED, CCU, or ward/ rooms
- All patients received from CCU, Wards, Rooms would have a pre-procedure checklist performed and documented by the nurses from the respective unit. Same shall be counter checked and reviewed by the receiving nurse at Cath Lab
- The CATH Lab Pre / Post Procedure care Area nurse check for ECG, ECHO, blood result and vital signs
- Verify CAG/PTCA check list/ Informed consent and procedure consent.
- All interventional cases are transferred to CCU immediately after procedure with monitor.
- Diagnostic procedure cases are transferred to room/ward after 1 hr observation in post CATH area as per consultant order.
- All cases will have a draft procedure note and post procedure care instructions documented in the case sheet by the cardiologists.
- The Transfer- In and Transfer Out details including timing are maintained in the Cath Lab Pre & Post Procedure Care Area Nominal Register

Purpose

To ensure a round a clock medical and staff availability for performing emergency Cath Lab services for cardiac patients admitted at the hospitals or being referred for immediate life saving procedures from emergency care department

Procedure

- Monthly schedule is prepared for daily emergency/ON CALL nursing staff, CATH Technician, and consultant.
- The monthly list is sent for information and coordination to MS Office, Medical Administrators Office, Emergency Care Unit, CCU and MICU
- Maintain call duty list with correct contact numbers.
- In case not getting the first call person try for the second on call

Recommended By	Signature	Approved By	Signature
Dr.Hrishikesh kalgaonkar		Dr.S.S.Deepak	
Chief Medical Administrator		Chairman & Managing Director	

Purpose: To ensure coordination between units and ensure proper preparation of patient ensuring smooth conduct of procedures and patient safety

Procedure

a. Hair Removal:

✓ Consideration should be made to avoid hair removal unless it directly interferes with the procedure. If it is necessary to remove hair at the access site, use a clipper or depilatory on the day of the procedure, and not before.

✓ Shaving with a razor should be avoided because it can injure the skin and increase the risk of infection.

✓ Depilatories sometimes will produce hypersensitivity reactions, so the cardiac Catheterization laboratory staff should be observant for these types of complications.

✓ **CDC recommendations**. Do not remove hair preoperatively unless the hair at or around the incision site will interfere with the operation. If hair is removed at an access site immediately before a procedure, it is preferable to use electric clippers or a depilatory cream.

b.Skin Cleaning:

✓ The skin at the cut down or puncture site should be thoroughly cleaned. Immediately before the procedure, a broad-spectrum antimicrobial agent should be generously applied, in accordance with manufacturer's recommendation.

✓ **CDC recommendations**: A 2% chlorhexidine-based preparation (e.g., Chloraprep) for skin antisepsis is preferred during central line insertion, but tincture of iodine (an iodophor) or 70% alcohol may be substituted. Allow the antiseptic to remain on the insertion site (do not swab excess) and air-dry before Catheter insertion when possible. Povidone iodine is most effective when allowed to remain on the skin for at least 2 min or longer if it is not yet dry. For patient skin preparation in the operating room, iodophors, alcohol-containing products, and chlorhexidine gluconate (CHG) are most commonly used. CHG achieved both a greater reduction in skin microflora and had a greater residual activity after a single application when compared with povidone-iodine. Further, CHG is not inactivated by blood or serum protein, whereas iodophors may be. CHG is bacteriostatic and effective as long as it is present on the skin.

c. Drapes:

✓ Nonporous drapes should be used to cover the area surrounding the wound.

✓ Maximum sterile barrier precautions should be utilized during Catheter insertion. The sterile sheet should be large enough to cover the entire patient and any other hardware attached to the table that could come in contact with long Catheter or wires.

✓ Any adhesive material attached to the skin around the wound and to the drapes should isolate the wound site from the surrounding unprepared skin.

✓ **CDC recommendations**: Use surgical drapes that remain effective barriers when wet (i.e., materials that resist liquid penetration). Use aseptic technique, including the use of a cap, mask, sterile gown, sterile gloves, and a large sterile sheet, for the insertion of central venous Catheters (including peripherally inserted central Catheter (PICCs) or guide wire exchange.

Purpose

Improve patient safety and minimize possible adverse events in Cath lab related to procedures

Guidelines

- ✓ Prolonged procedures and lapses in aseptic technique are important causes of wound infections.
- ✓ Care should be taken to prevent large hematomas, which serve as a nidus for infection. Although no data exist on the performance of cardiac Catheterizations or coronary interventions in a febrile patient, those with ongoing infections should be appropriately treated before an elective cardiac Catheterization.
- ✓ Fever is a relative contraindication for an elective cardiac Catheterization. The risks versus benefits of performing urgent invasive procedures on a febrile patient must be weighed individually.
- ✓ The choice of the access site is an issue if a second percutaneous procedure is performed shortly after the first.
- ✓ Local infection at the puncture site is more likely to occur after early puncture of the ipsilateral femoral artery.
- ✓ If a PCI procedure is performed after a 6-hr delay following a diagnostic Catheterization, the operator should consider contra lateral access for the PCI.

Purpose

To ensure standardization of Sheath removal process and handling of Vascular Closure Device patients

Procedure

- ✓ Vascular access sheaths are routinely removed following diagnostic procedures but not infrequently left in place following femoral interventional procedures. When this is necessary, a standard wound-dressing protocol should be followed, similar to that for other indwelling vascular Catheters. For in-dwelling venous Catheters, the duration of the Catheter placement is the most important predictor for an infection.
- ✓ Therefore, it is prudent to remove any in-dwelling sheath or Catheter as early as clinically appropriate. When clinically indicated, a Catheter and rarely even a sheath may be maintained for a period of days following the procedure. In this circumstance, appropriate wound dressings and daily wound inspections are critical.
- ✓ Multiple vascular closure devices (VCDs) are available for establishing haemostasis following femoral artery access. While these devices are designed to eliminate the need for manual compression and allow for earlier ambulation post procedure, they have not been shown to decrease vascular complications.
  These devices should be avoided when arterial puncture is into a pre-existing synthetic vascular graft, if local or systemic infection is a possibility, or if the sheath has been in-dwelling for an extended period of time.
- ✓ Following prolonged procedures, consideration should be given to site reclining as well as new sterile gloves for the operator before VCD placement. The presence of a hematoma before placement of a VCD may increase the incidence of infection
- ✓ When sutures are involved, these should be cut so the ends retract well below the skin and a topical triple antibiotic cream applied to the puncture site. The patient should be instructed to avoid tub baths until the skin puncture site is healed and to report early any groin complications or signs of infection. A pseudo aneurysm following a closure device should be considered a possible early sign of infection and thus treatment by local injection of prothrombotic agents used with caution.
- ✓ While shifting patient after PCI the femoral sheath should be sutured and kept closed with cannula closure and apply bandage.

Purpose: To standardize process for wound dressing related to Cath Lab procedures

✓ Although more applicable for prolonged use, non permeable plastic dressings should be avoided because they increase the infection risk two- to fourfold compared with traditional gauze dressings.

✓ **CDC recommendations**: Use either sterile gauze or sterile and transparent semi permeable dressing to cover the Catheter site. Do not use non permeable (plastic) dressings.

✓ If the patient is diaphoretic, or if the site is bleeding or oozing, gauze dressing is preferable to a transparent semi permeable dressing. Topical antibiotic ointments or creams promote fungal infections and antibiotic resistance. They should therefore be avoided except with dialysis Catheters

Universal Precautions

Requirements: Soap and water for hand washing, drape, sterile gloves, sterile mask, gown, cap and goggles.

PROCEDURE:

✓ Use appropriate type of barrier precaution for the type of procedure being performed and the type of exposure anticipated.

✓ Wash hands between caring for different patients and after removing gloves.

✓ Wear cap and mask

✓ Wear gloves when direct contact with moist body substances (e.g. Pus, sputum, blood, urine, cerebrospinal fluid, synovial, pleural, peritoneal, pericardial and amniotic fluids semen and vaginal secretions).

✓ Wear a gown when clothing is likely to be soiled by a body fluid.

✓ Wear a mask and goggles or glasses when splashes of a body fluid are anticipated (e.g. during the most invasive procedure).

✓ Wear a face protection (face shield) during procedure that is likely to generate droplets of blood or body fluid to prevent exposure to mucous membrane of the mouth, nose and eyes.

✓ Wash hands or other skin surfaces thoroughly and immediately if contaminated with blood, body fluids containing visible blood or other body fluids to which universal precautions apply.

✓ Be conscious while handling needles, scalpel blades, laboratory instruments, also when performing procedures, cleaning instruments, handling sharp instruments and disposing of used needles, pipettes, etc.

✓ Place used needles, disposable syringes, scalpel blades, pipettes and other sharp items in puncture resistant containers.

Purpose

To standardize process for decontamination and soiled equipment's and instruments

Reference

Care of Instruments, Scopes, and Powered Surgical Instruments will occur according to Recommended Practices (for same). Kindly refer to hospital Infection Control Manual and CSSD Manuals and specifically policy of hospital on reprocessing SUDs

PROCEDURE

1. Contaminated items from procedure rooms will be transported through the procedure room to the soiled utility room.

2. Treat hand washable items as follows: Follow manufacturer recommended protocol for cleaning and disinfecting instrument. Flush lumen with normal saline and place in plastic container for CSS pick up. Place contaminated items in plastic container for CSSD pick up. Pour liquid waste down drain. Follow Universal Precautions. Spray sink with enzymatic solution and rinse.

3. All disposable instruments, drapes, and equipment should be placed in appropriate "red bag" containers.

4. Procedure table will be wiped down with disinfectant solution between each case.

POINTS OF EMPHASIS

Contain all items used in procedure rooms using closed containers when transporting.

Purpose: To provide guidance on maintaining sterile field around procedure area in cath Lab to minimize cross-infections

Procedure

1. Scrubbed persons ONLY should function within a sterile field; scrubbed personnel who are independently donning sterile gowns and gloves should prevent contamination of the sterile field by gowning and gloving from a separate surface away from the main instrument table.

2. Sterile drapes should be used to establish a sterile field:

a. Sterile drapes will be handled as little as possible before and during draping;

b. During draping, gloved hands should be protected by cuffing the drape material over the gloved hands to reduce the potential for contamination;

c. The portion of the surgical drape that establishes the sterile field should not be moved after it is positioned.

3. Items used within the sterile field should be sterile:

a. all items should be inspected immediately before presentation to the field for proper packaging, processing, seal, package container integrity, and inclusion of a sterilization indicator;

b. indicators will be inspected immediately to verify the appropriate color change for the sterilization process selected;

c. if an expiration date is provided, the date should be checked before the package is opened and the contents are delivered to the field.

4. All items introduced to a sterile field should be opened, dispensed, and transferred by methods that maintain item sterility and integrity:

a. All invasive surgical procedures should be performed using sterile instruments and supplies, and the surgical team should practice aseptic technique for all surgical patients;

b. Unscrubbed individuals should open wrapped sterile supplies by opening the wrapper flap farthest away from them first, to prevent contamination from passing an unsterile arm over a sterile item. Next, they should open each of the side flaps. The nearest wrapper flap should be Clinical opened last;

c. All wrapper edges should be secured when supplies are presented to the sterile field;

d. Sterile items should be presented to the scrubbed person or placed securely on the sterile field.

d. 1. Sharps and heavy objects should be presented to the scrubbed person or opened on a separate surface

d. 2. Peel pouches should be presented to the scrubbed person to prevent contamination of the contents.

d. 3. Rigid container systems should be opened on a separate surface. The extra staff nurse indicator should be verified for appropriate color change. Locks should be inspected for security to verify there has not been a breach

of the container seal prior to use. The lid should be lifted toward the person opening the container and away from the container. The filter should be checked.

e. All items should be delivered to the surgical field in a manner that prevents non-sterile objects or people from extending over the sterile field;

f. When solutions are dispensed, the labeled solution receptacle on the sterile field should be placed near the table's edge or held by the scrubbed person. The entire contents of the container should be poured slowly to avoid splashing. Solutions should not be recapped for later use;

g. Medications stoppers should not be removed from vials for the purpose of pouring medications unless manufactured with break-away tops. Sterile transfer devices (e.g. sterile vial spike) should be used to dispense medications to the sterile field.

5. A sterile field should be maintained and monitored constantly:

a. the sterile field should be prepared in the location in which it will be used

b. sterile fields should be prepared as close as possible to the time of use and may not be left unattended;

c. sterile fields should not be covered for later use;

d. surgical equipment (e.g., cables, tubing) should be secured to the sterile field with non-perforating devices

e. non-sterile equipment (e.g., Mayo stands, microscopes, C-arms) should be covered with sterile barrier material(s) before being introduced to or brought over a sterile field

f. cover the non-sterile area with sterile drape in case of chance of contact.

6. All personnel moving within or around a sterile field should do so in a manner that maintains the sterile field:

a. scrubbed personnel should remain close to the sterile field;

b. scrubbed personnel should move from sterile areas to sterile areas to prevent contamination, using back-to-back or face-to-face movements or after assuring clear distance from other sterile areas;

c. Unscrubbed personnel should face sterile fields on approach, should not walk between two sterile fields, and should be aware of the need for a minimum of 12” distance from the sterile field;

d. scrubbed personnel should keep their arms and hands above the level of their waists at all times. Hands should remain in front of the body above waist level so the hands remain visible; arms should not be folded with the hands in the axilla;

e. scrubbed personnel should avoid changing levels and should be seated only when the entire surgical procedure will be performed at that level;

f. gloves should be examined when donned and periodically during the procedure; double-gloving should be considered to reduce exposure of staff to contaminants and to maintain aseptic technique; regloving should done by the open gloving technique;

g. when a break in sterile technique occurs, corrective action should be taken immediately unless the patient's safety is at risk. If the patient's safety is at risk, correct the break in technique as soon as it is safe to do so; when a break in sterile technique occurs, adjust the wound class accordingly.

7. Vigilant attention will be paid to the sterile field when the risk for fire safety is great related to the use of fiber optic light sources, electro-cautery (disposable hot wire cauterization), high speed burs, and defibrillators. If there is alcohol in the skin prep, the risk for fire will be minimized by allowing the prep to dry completely prior to using beginning the procedure and using any instrumentation or equipment that increases the risk of fire, as listed above.

8. The nursing, surgical, and anesthesiology staff will collaborate regarding the need to maintain sterility of instrumentation, equipment, and supplies until the patient is transferred from the OR. In most instances, it is acceptable to contaminate/ dismantle the setup prior to discharging the patient from the OR. If there is any question as to patient stability, the setup will remain sterile until the patient leaves the OR.

DESIRED PATIENT OUTCOMES:

1. The patient is free from signs and symptoms of infection.

2. The patient receives competent and ethical care through adherence to surgical conscience.

3. The patient receives consistent and comparable levels of care from all caregivers, regardless of the setting.

4. The loop ensures visibility for blood staff nurse and system integrity.

Purpose: It is the disinfection of CATHLAB by physical or chemical agents to prevent infection to the patient and CATHLAB staff and to maintain clean environment for the smooth functioning of the CATHLAB. CATHLAB cleaning should be done by the housekeeping staff under the supervision of registered nurse or trained CCA before in between and after the procedure.

Procedure

Materials Required:

Brush, Bucket, Cup, Mop, Stick

Solution: soap solution, 1% hypochlorite solution, chlorhexidine 20%.

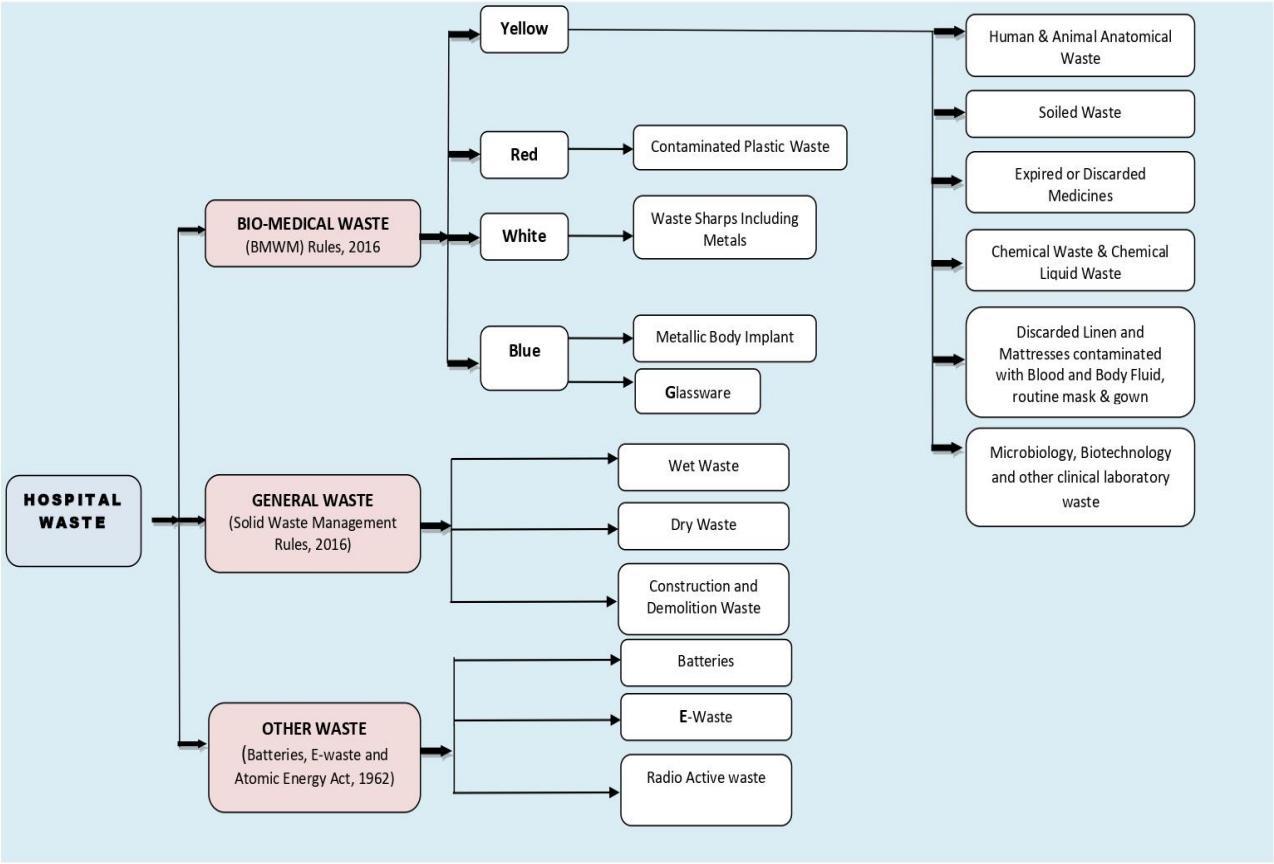
Procedure:

- ✓ The housekeeping staff should be instructed regarding the CATHLAB cleaning and it should be supervised by the CATHLAB staff
- ✓ Make sure that the cleaning solution is diluted in correct concentration
- ✓ Once the procedure is finished for the day the CATHLAB should thoroughly scrubbed including floors, walls, window glasses and equipment
- ✓ The nurse should check in the morning staff nurse whether the CATHLAB is mopped properly and should see the staff nurse of the windows, glass, doors and walls are cleaned properly.
- ✓ Before starting cleaning all the equipment should be kept out and specific care should be given to clean the wheels before taking them inside.
- ✓ Separate mop cloth should be used for each section such as sterile, clean and dirty area and the mop should be changed every day.
- ✓ The cleaning items, which are used for infected case, should be discarded after single use.
- ✓ At the end of the week the AC duct should be opened by the maintenance staff and vacuum cleaning should be done
- ✓ The racks, which are used to keep the steam and ETO items, should be cleaned every day.
- ✓ Every staff should be thoroughly known about the Cathlab cleaning protocol.
- ✓ Through deep cleaning, Fogging and swab culture monthly once.

MPCB Biomedical waste handling and disposal rules are followed.

Guidelines for Management of Healthcare Waste as per Biomedical Waste Management Rules, 2016

Figure 2: Categorization & Classification of Wastes in Health Care Facilities.



Recommended By	Signature	Approved By	Signature
Dr.Hrishikesh kalgaonkar		Dr.S.S.Deepak	
Chief Medical Administrator		Chairman & Managing Director	

Purpose: Provide guidance for smooth performance of CAG procedures

Procedure: Coronary angiogram is a diagnostic invasive procedure to visualize the coronary arteries under fluoroscopy by using a contrast media.

INDICATIONS

a. Suspected or known coronary artery diseases with unstable or progressive angina.
b. Known case of coronary artery disease and not responding were to medical treatment.

- ✓ Variant Angina.
- ✓ Following coronary artery bypass grafting.
- ✓ Stress test result that is very suggestive of myocardial ischemia.
- ✓ Recurrent chest pain of undetermined cause.
- ✓ Miscellaneous conditions such as aortic dissection.

PREPARATIONS

Trolley Preparation

A sterile trolley containing

- ✓ A bowl containing antiseptic solution (Betadine). Sponge holding forceps to clean the patient
- ✓ Sterile gauze pieces.
- ✓ BP handle with Blade No 11. Artery forceps
- ✓ Bowel with Heparin flush
- ✓ Needles and syringes
- ✓ 2% Xylocaine for local anesthesia.
- ✓ Catheter introducer set (Dilator, sheath, guide wire, needle No 18).
- ✓ Sterile drapes
- ✓ Catheters and diagnostic.
- ✓ Guide wire 0.35 - J- tip - 150cm
- ✓ IV Set
- ✓ Manifold
- ✓ Pressure line
- ✓ Inj. Heparin 2500 IU.
- ✓ Radio opaque contrast.

Preparation of the Patient

- ✓ Explain the procedure to the patient.
- ✓ Make the Patient to lie down on supine position.
- ✓ Connect 4 lead ECG/cardiac monitor.

✓ Clean the patient with antiseptic solution from umbilicus to mid thigh.

✓ Drape the patient with sterile drapes.

✓ Administer premedications.

Procedure Flow on table

a. Give local anaesthesia in the femoral area/radial.
b. Puncture the femoral artery and put sheath.
c. Administer heparin through the arterial sheath.
d. Insert the Catheter of choice, with its guide wire leading through the sheath and into the vessel.
e. Advance guide wire and Catheter into ascending aorta and aortic arch, using fluoroscopic guidance.
f. Remove the guide wire, aspirate, discard the aspirate, flush the Catheter and connect it to the fluid or contrast filled manifold.
g. Advance the Catheter to the desired position.
h. Record the Catheter tip aortic pressure.
i. Fill the Catheter with contrast media.
j. The Catheter will rotate slightly and seek and engage the left coronary osmium without requiring any manipulation.
k. Inject a small amount of contrast medium to check the Catheter position and correct alignment.
l. Perform left coronary arteriogram with various projections with hand injections of 6-8ml of contrast medical over 2-3 seconds.
m. Check the Catheter tip pressure before each injection.
n. Frequently watch the HR, BP and ECG.
o. After completion of left coronary arteriogram, withdraw the Catheter to abdominal aorta at a level below the renal artery.
p. Fill the coronary Catheter with contrast medium and advance it under fluoroscopy.
q. Precede the right coronary arteriography to abdominal aorta below the level of renal arteries.
r. Remove the guide wire and advance the pigtail Catheter to the aortic root and across the aortic valve and position in the LV check pressures.
s. Perform a test injection with 5-8ml of contrast agent to confirm satisfactory Catheter position.
t. Precede to left ventriculography in the 30° right anterior oblique projections with a power injection of 30-45ml of contrast agent. Pull the Catheter back to the aorta while recording pull backpressure. Then pull the Catheter to the abdominal aorta below the renal arteries. After completion of study and review of the data, the decision may make to the removal of the sheath and proper location of monitoring the patient.

Purpose: To provide guidance for handling Right Heart Catherisation cases

Procedure

It is a diagnostic procedure in which Catheters are introduced into the heart to check the pressures and chambers.

Indications

✓ Congenital heart disease including
✓ ASD
✓ VSD
✓ PDA
✓ Pulmonary thrombi embolic disease
✓ Suspected pericardial tamponade
✓ As a part of endo myocardial biopsy
✓ As a part left heart Catheterization and coronary angiography in complicated cases with left ventricular failure, previous myocardial infarction or cadiomyopathy.

Patient Preparation: Same like Angiogram

Trolley Preparation

- Same like angiogram
- Heparin 2500
- Venus and arterial sheath
- Swan's Catheter or Berman's or Multipurpose

On TableProcedure Flow

a. Local anaesthesia
b. Venous and arterial sheath
c. Swan or Berman or multipurpose should be introduced through FV, IVC, RA SVC saturation, pressure study.
d. Then RA- RV-PA-PCWP Sample + pressure checking.
e. Pigtail should be introduced through the femoral artery to do the aerogram and LV angiogram
f. Remove the Catheters
g. Put bandage and shift to CCU
h. Sheath removal.

SAIDEEP HEALTHCARE & RESEARCH PVT. LTD.	**SAIDEEP HOSPITAL** **CARDIAC CATHETERISATION LABORATORY MANUAL**	Doc No	SDH/CATHLAB/4.18
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	SOP For **PTCA - PERCUTANEOUS TRANSLUMINAL CORONARY ANGIOPLASTY**		

Purpose: To provide guidance for handling PCTA cases

Procedure

To do percutaneous transluminal coronary angioplasty and implantation of inter coronary stents for relieving coronary narrowing to relieve symptoms.

INDICATIONS

- ✓ Patient with asymptotic ischemia or mild angina with one or more significant lesions in one or two coronary artery lesions.
- ✓ Patient with moderate or severe symptoms with one or more significant lesions in one or more coronary arteries.
- ✓ Patient with focal saphanus vein or arterial graft lesions or multiple stenosis who are poor candidates for reoperative surgery.
- ✓ Patients with 2-3-vessel disease, with significant proximal LAD disease and treated diabetes or abnormal LV function.
- ✓ Patients who are within 36 hours of an acute ST elevation or Q wave or new LBBB who develop cardiogenic shock, are < 75 yrs of age revascularization can be performed within 18 hrs of onset of shock.

PREPARATIONS

TROLLEYPREPARATIONS

A sterile trolley containing

- ✓ A bowel containing antiseptic solution (Betadine). Sponge holding forceps to clean the patient.
- ✓ Sterile gauze pieces.
- ✓ BP handles with Blade No 11. Artery forceps
- ✓ Bowel with heparin flushes. Needles and syringes
- ✓ 2% Xylocaine for local anaesthesia
- ✓ Catheter introducer set (7F and 6F sheath using, 2 dilator, 2 sheath, 2 guide wire and 1 puncture needle No 18).
- ✓ Double hole drapes sterile.
- ✓ Pacing Catheter for emergency Manifold
- ✓ Pressure wire
- ✓ IV sets - 2
- ✓ Inj. Nitroglycerine in 10cc syringe, dilution 1ml=50mcgs Inj. Heparin 10000 IU in a syringe.
- ✓ Guiding Catheter
- ✓ Guide wire 0.35 J tip- 150cm. Y-Connector with extension. Torquer and introducing needle. PTCA

guide wire

✓ PTCA Balloon and stent

✓ Inflation device (indeflator)

✓ Diluted Contrast (1:2 ionic contrast) 20cc LL

PREPARATION OF THE PATIENT

✓ Explain the procedure to the patient.

✓ Make the patient to lie down on supine position.

✓ Clean the patient with antiseptic solution from umbilicus to mid thigh.

✓ Put the patient on cardiac monitor.

✓ Drape the patient with sterile drapes.

ON TABLE PROCEDURE FLOW

a. Give local anaesthesia in the femoral area.

b. Puncture the femoral artery and put sheath.

c. Advance the guide wire and guiding Catheter to selected narrowed artery to engage it.

d. Connect the Y connector and manifold to the guiding Catheter.

e. Slowly remove the guide wire and introduce the PTCA guide wire.

f. Inj. Heparin 10000 IU should be given through sheath.

g. According to the stenosis balloon will be selected and predilatation should be done if necessary.

h. Otherwise direct stenting should be done.

i. Tight pressure bandage should be applied.

j. Shift the patient to CCU. Patient should be on continuous monitoring.

k. After 4 hrs sheath should be removed.

Purpose: To provide guidance for handling PDA Closure Device Cases

Procedure

It is a procedure by which congenital defect of patent ductus arteriosus is closed with the help of sterile artificial device.

INDICATION: Patent ductus arteriosus

TROLLEY PREPARATION: Same like angiogram

NOTE: -

- ✓ Multipurpose Catheter
- ✓ Digital Catheter
- ✓ .032 exchange wire
- ✓ Mullen's sheath
- ✓ Device loader
- ✓ PDA device
- ✓ Cold saline
- ✓ Delivery cable
- ✓ Straight terumo

ON TABLE PROCURE FLOW

a. Right heart study should be done. [Saturation + pressure study].FV—IVC—RA—SVC RA—RV—PA

b. Introduce pigtail crossed PDA

c. PDA sizing should be done

d. Introduce multipurpose Catheter with straight terumo

e. It is introducing through IVC—RA—RV—PA

f. PDA to descending aorta

g. Introduce terumo from PA

h. Push multipurpose into descending aorta

i. Exchange terumo for amplatz wire

j. Remove multipurpose and introduce compatible mullen's sheath

k. Load the device over the device loader and passed it through the compatible sheath. Then introduce across the mullen's sheath

l. Then device with loader passed through the mullen sheath and brought to PA.

m. Then push the device with loader through the PDA to descending aorta, here deliver only amplatz end

n. Then mullen sheath and device both withdrawn into PDA now deliver the device.

o. Take check shoot if there is no residual flow then unscrew the loader (Deployment of device)

p. Pull the loader into mullen sheath

q. Withdraw whole assembly into IVC

r. Check shoot should be taken

s. Then remove pigtail

t. Exchange mullen sheath with regular wire for femoral sheath [compatible] shift the patient to CCU.

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	SOP for ASD Device Closures		

Purpose: Provide guidance for handling ASD Device Closure Cases

Procedure

It is procedure by which congenital defect of atrial septum is closed with the help of a sterile artificial device.

Indication:Atrial Septal Defect

Preparation: Patient preparation is same like angiogram.

NOTES: -

- ✓ Homodynamic monitoring should be done.
- ✓ Antibiotic should be administered.
- ✓ IV fluids should be started.
- ✓ Echo machine should be ready.

Trolley Preparation

Same like CAG set + ASD sizing balloon

- ✓ Mullen's sheath
- ✓ Amplatzer wire
- ✓ Terumo wire .035-150cm -straight
- ✓ 50cc syringe with 1:5 diluted ionic contrast
- ✓ Delivery cable
- ✓ Amplatzer device
- ✓ Cold saline
- ✓ Loader sheath according to size of mullen's sheath.

ON TABLE PROCEDURE FLOW

- ☐ Local anaesthesia
- ☐ Arterial and veins sheath insertion
- ☐ Heparin should be administered according to consultant order.

Step I - Insert terumo guide wire up to jugular vein through Rt. coronary Catheter across the ASD.

Step II - Balloon Catheter should be introduced across the ASD and ASD diameter should be measured.

Step III -- Insert Mullen's sheath through guide wire across ASD

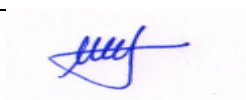
Step IV - The amplatzer device should be inserted in the loader sheath and should be introduced through the mullen's sheath.

Step V - Distal part of the device should be released and checked for slippage. After obtaining firm grip proximal should be released.

Step VI - After release of device, CATH should be done to check the residual shunt.

Put sheath and apply dressing. Sheath should be removed after some time.

Recommended By	Signature	Approved By	Signature
Dr.Hrishikesh kalgaonkar		Dr.S.S.Deepak	
Chief Medical Administrator		Chairman & Managing Director	

Recommended By	Signature	Approved By	Signature
Dr.Hrishikesh kalgaonkar		Dr.S.S.Deepak	
Chief Medical Administrator		Chairman & Managing Director	

Purpose

To provide guidance for handling VSD Device Closure cases

Procedure

It's a procedure in which, the defect in the ventricular septum is corrected with the help of a device.

Indications: Ventricular Septaldefect.

Preparation: Patient preparation same as other procedures

Notes:

✓ Hemodynamic monitoring should be done. Antibiotic should be monitored

✓ IV fluids should be satisfied

✓ Echo machine should be ready.

Trolley Preparation:

Same like CAG + Mullen's sheath. • 035 exchange terumo wire

✓ Delivery cable

✓ Device

✓ Cold saline

✓ Loader sheath according to mullen's sheath size.

ON Table Procedure Flow

- Local Anaesthesia
- Femoral arterial and jugular venous insertion
- Exchange thermo wire is introduced with the help of RCA Catheter retrogradially through femoral artery - descending aorta - Arch of aorta. Aortic valve and then to the LV.
- Wire crosses the VSD in to the RX and wire is guided through the RVOT in to the wedge position.
- Through the right jugular approach snare is introduced over a Catheter, via SVC - RA across tricuspid valve - right ventricle - RVOT and wedge.
- Heparin should be administered according to the consultant order

- Exchange wire from the femoral artery is caught by the snare and is pulled back from the wedge to the PA and into the right ventricle-right atrium -SVC- and pulled out through the jugular vein.
- Now the exchange wire from the right femoral artery is coming out via the right jugular vein. The course of the wire is right femoral artery - iliac artery-descending aorta - arch of aorta-ventricle VSD - right ventricle -right atrium -SVC- right jugular.
- Introduce the mullen's sheath through the right ventricle approach over the exchange wire and placed in the aorta
- Take out the exchange wire
- Device is introduced in to the Mullen's sheath with the help of a loader sheath and delivery cable
- Distal part of the device should be released and check for slippage. After obtaining a firm grip proximal should be released.
- After release of the device, CATH should be done to check the residual shunt.
- Put sheath and apply dressing
- Keep the patient in CCU and monitor the vital signs.

Sheath should be removed

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	SOP FOR PTMC: PERCUTANEOUS TRANSLUMINAL MITRAL COMMISSUROTOMY		

Purpose: To provide guidance on handling of PTMC Cases

Procedure

It is an interventional procedure in which mitral stenosis i.e. relieved by the inflation of a balloon.

Indication: Severe Mitral Stenosis

Préparations:

A Sterile trolley containing

- ✓ A bowl containing antiseptic solution (Betadine)
- ✓ Sponge holding forceps to clean the patient
- ✓ Sterile gauze pieces
- ✓ B.P. handle ċ blade ≠ 11 gloves and gowns Artery forceps
- ✓ A big bowl ċ heparin flush
- ✓ Needles and syringes
- ✓ 2% xylocaine for local anaesthesia
- ✓ Injection heparin 5000 kl.
- ✓ Small bowl with diluted ionic contrast
- ✓ Non ionic contrast in a small bowl
- ✓ Catheter introduces set (2 sheaths (6F & 7F) dilators guide wire, puncture needle ≠ 18)
- ✓ 3 way stopcock-3
- ✓ One single hole towel
- ✓ One large sheet
- ✓ Multipurpose Catheter
- ✓ 032 guide wire
- ✓ Mullen's sheath
- ✓ Broken brought needle
- ✓ LA guide wire
- ✓ Dilator
- ✓ Balloon with diluted contrast in 50 cc syringe and attachment
- ✓ L.V. stylet
- ✓ Sheath
- ✓ Pressure line - 2
- ✓ Wet gauze in a bowl

Preparation of the Patient

- ✓ Make the patient lie down in a supine position
- ✓ Connect ECG leads
- ✓ Explain the procedure to the patient
- ✓ Clean the patient from umbilicus to mid thigh with betadine
- ✓ Put sterile drapes

Recommended By	Signature	Approved By	Signature
Dr.Hrishikesh kalgaonkar		Dr.S.S.Deepak	
Chief Medical Administrator		Chairman & Managing Director	

✓ Start IV fluids according to the consultant order
✓ Antibiotics should be given as per the consultant order
✓ Saturation probe should be connected to assess the respiratory status
✓ Things should be kept ready puncturing

On Table Procedure Flow

✓ Puncturing and sheath insertion as same for other procedures
✓ Taken the right heart pressures
✓ Cross the septum with the help of multipurpose Catheter and 032 guide wire
✓ Remove the venous sheath and insert the mullen's sheath
✓ Puncture the septum ċ broken brought needle
✓ Give 5000kl heparin after puncture
✓ Put the L.A. wire after puncturing
✓ Dilate the site a dilator before the following:
✓ Balloon inflation and checking of pressure gradient
✓ Confirm it by an echo cardiogram
✓ Balloon inflation will be repeated if necessary
✓ Remove the balloon and put another venous sheath of appropriate size
✓ Apply tight bandage and shift the patient to CCU
✓ Sheath removal after ½ an hour.

Purpose: Provide guidance for Temperory Pacemaker Insertion

Procedure

A temporary pacemaker consists of a transvenous Catheter electrodes attached to an pulse generator.

Indication:

- ✓ Complete heart block with slow ventricular escape.
- ✓ Sinus bradycardia, asystole.
- ✓ Acute anterior myocardial infarction with complete heart block, mobitz type II AV block or bifascicular block.
- ✓ Selected tachyarrhythmias such as bradycardia induced or drug induced torsades de pointer, atria flutter or recurrent sustained ventricular tachycardia.
- ✓ Malfunction of implanted pacemaker.
- ✓ Prophylactic use i.e. Right heart Catheterization, Cardioversion of the patient, Right coronary artery angioplasty.

TROLLRY PREPARATION:

A sterile trolley containing:

- ☐ A bowl containing antiseptic solution (Betadine).
- ☐ Sponge holding forceps to clear the patient.
- ☐ Sterile gauze pieces.
- ☐ BP handle with Blade No 11
- ☐ A bowel with heparin flush
- ☐ Needles and syringe
- ☐ 2% Xylocaine for local anaesthesia
- ☐ Catheter introduces set [Dilator, sheath, guide wire, puncture needle No 18].
- ☐ Sterile drapes
- ☐ Pacing Catheter
- ☐ Pacemaker generator [keep ready outside].
- ☐ Suturing materials to fix the pacing wire.

Preparing of the patient:

- ✓ Explain the procedure to the patient.
- ✓ Make the patient to lie down on supine position
- ✓ Clean the patient with antiseptic solution from umbilicus to mid thigh
- ✓ Put the patient on cardiac monitor.
- ✓ Drape the patient with sterile draper.

Procedure:

- ✓ Give local anaesthesia in the femoral area.
- ✓ Puncture the femoral vein and put sheath.
- ✓ Advance the pacing Catheter into the Right ventricle.
- ✓ Connect the pacing Catheter to the pace generator and adjust the rate and output and pacing.
- ✓ Fix the pacing wire with suture.
- ✓ Shift out the patient to CCU.

Purpose: Provide guidance for handling EPS cases

Procedure

It is a diagnostic study of conduction system of heart to find out the occurrence of arrhythmias.

Indication:

- ✓ Cardiac arrest
- ✓ Unexplained recurrent syncope
- ✓ Recurrent sustained ventricular tachycardia
- ✓ WPW syndrome with symptomatic tachycardia
- ✓ Other supra ventricular tachycardia
- ✓ Bradycardia

Trolley preparation:

Same like coronary angiogram trolley

- ✓ Xylocaine 2%
- ✓ Decapolar Catheter
- ✓ Qutrapolar Catheter
- ✓ 3-6F sheath and 1-7F sheath

Patient Preparation:

- ✓ 12 lead ECG should be connected
- ✓ According to diabetic status fluid should be started
- ✓ Hemodynamic monitoring should be done
- ✓ Keep Isoprenaline should be ready to induce tachycardia.
- ✓ Antibiotic should be given
- ✓ Standby anaesthetist and sedation

On Table Procedure Flow

- ✓ Electrode tip Catheters are placed in RA, RV, bundle of his and coronary sinus at the origin of arrhythmias to map.
- ✓ Electrode tip Catheters are placed in RA, RV, Bundle of His and coronary sinus at the origin of arrhythmias to map.
- ✓ After the diagnosis ablate the arrhythmias with radio frequency ablation
- ✓ After procedure dressing should be done
- ✓ Patient should be kept in CCU.
- ✓ Continuous monitoring should be done.

Purpose : To provide guidance for Sheath removal post cases

Procedure

Articles for sheath removal:

A tray containing:

- ✓ Inj. Atropine [1 ampule loaded in 2cc syringe]
- ✓ Hepfulsh [in 10cc syringe]
- ✓ Sterile gauze pieces, IV set, IV F-NS
- ✓ Betadine solution
- ✓ Dynaplaster
- ✓ Sterile gloves

Procedure

- ✓ Explain the procedure to the patient.
- ✓ BP should be checked.
- ✓ Patient should be on cardiac monitor
- ✓ If Heart rate is below so (Vasovagal attack) IV fluid should be started and Inj. Atropine .3mg should be administered.
- ✓ Feel the femoral pulse by using middle finger and index finger. [1-2 inch above the puncture site]
- ✓ Slowly loose the finger and remove the sheath.
- ✓ As soon as the sheath comes out, allow the 1-2 drop of blood to flow out.
- ✓ Establish adequate haemostasis with 10 minute of manual pressure. It will help to prevent puncture site complications.
- ✓ Compression should not be too forceful [It will occlude the flow and risk femoral artery thrombosis.
- ✓ Check the distal pulse to confirm flow.
- ✓ Once haemostasis is established by manual compression, an assistant can delegate this function.
- ✓ Mechanical device should not be used [sand bags, clamps] for compression of femoral artery at this stage.

PTCA SHEATH REMOVAL

- ✓ For PTCA sheath should be taken out after 4 hrs
- ✓ Local anaesthesia should be given before the removal of sheath [Xylocaine 2% 10ml].
- ✓ After 10-15 minutes check the site for bleeding, haematoma and oozing.
- ✓ To make sure that the bleeding is stopped, ask the patient to cough once.
- ✓ Check the dorsalispedis pulse.
- ✓ Clean the area with betadine solution.
- ✓ Prepare gauze roll and apply over the site.
- ✓ Put a tight pressure bandage over the site with Dynaplast.
- ✓ Instructions to the patient:
- ✓ Keep the affected leg straight fir 6 hours.
- ✓ Warm feeling, numbness over the site should be informed to the allocated staff.

Instructions to the nurse:

- ✓ Check the pedal pulse every 15 minutes for 3-4 hours.
- ✓ Check the dressed area for bleeding.

PURPOSE

To provide guidelines for handling patient undergoing various clinical procedures of invasive and non-invasive nature for the purpose of diagnosis or treatment which are not amounting to surgeries.

RESPONSIBILITY PERSON

Head-Department of various Clinical Departments

SCOPE

This policy is applicable in all clinical departments with diagnostic and therapeutic procedures not amounting surgery like;

- Cardiac Catheterisation Laboratory
- Endoscopy, Bronchoscopy etc.
- Dental Procedures
- Gynaecology / Labour Room – MTP etc.

POLICY

1. Qualification of staff:

All clinical procedures will be performed by clinicians qualified and privileged to perform the same. Each department will maintain a list of clinical procedures performed by department / unit and the clinicians who are privileges / authorised to perform the same. A copy of the list will be sent to the

Medical Executive Committee and the list shall be updated by the Head of the Department of each clinical department at least once a year.

2. Pre-procedure Assessment:

Each clinical unit will maintain a list of pre-procedure evaluations / tests to be undertaken for each clinical procedure under their department. The respective nurses in the in-patient areas / ambulatory care areas will be responsible to ensure that the pre-procedure check –ups are done.

2. Pre anaesthesia Check up :

Pre-anaesthesia evaluation will be done for the patients where the procedure is conducted under anaesthesia or mild sedation. The same is not applicable where cases are done under local anaesthesia.

3.Pre-procedure Preparations and Medications

Each clinical unit will maintain written instruction for pre-preparation of patients required for each type of procedure. These may include site preparations or enemas etc.

Wherever possible the nursing units will use checklist based on the instructions to check and record whether the required preparatory activities for the clinical procedure has been performed. The nurse responsible for pre-paring patient will sign the checklist and in the absence on one will record the status of preparation with time in the nursing note section of the clinical case record.

4. . Informed Consent for Procedures:

Consent for the patients and or relatives for the clinical procedure should be obtained by the clinician performing the procedure or a clinician who member of the team / unit in the specified format after explaining the following details :

1. Nature of Procedure
2. Reason for the procedure.
3. Expected Outcome.
4. Risk Involved.
5. Expected duration of recovery
6. Other treatment options etc.

The consent is obtained from the patient and or the surrogate (ReferInformed consent Policy) as per the hospital's policy a day prior to the scheduled date for the surgery.

6. Prevention of Wrong Procedure/Side/Site and Wrong Patient:

The prevention of wrong site/side/procedure and patient begins with the preoperative evaluation of the patient.

This involves the following activities such as marking of the procedure site, verification of patient prior to the shifting of the patient from the ward to the OT, at the time of patient's entrance to procedures and prior to the initiation of the procedure etc

The policy for prevention of wrong procedure/side/site and patient could be referred for the hospital's detailed policy.

7. Transfer of Patient to Procedure Area:

a. Prior to the transfer of the patient the ward nurse informs the nursing/ technician in-charge of the procedure area about the patient details and confirms the scheduled time for procedure forty five minutes prior to the scheduled time of procedure.

b. The ward nurse prior to the transfer of the patient ensures that the nurse's pre- procedure checklist is dully filled and all the patient details as required by the clinicians are arranged in the proper order.

c. The patient is transferred to the procedure area as per the hospital's intramural transfer policy.

d. In case of day care procedures the above activities of pre-procedure preparation will be done by the nursing staff of the procedure area itself.

8. Receiving of patient and immediate pre-procedure assessment:

a) The patient is received in the procedure room / is by the nursing staff attached to the unit.

b) The nurse in-charge of the procedure area evaluates the patient's details and checks the pre-procedure nursing checklist filled by the ward nurse to ensure the patients preparedness and confirms the patient's identity as per the bed head ticket.

c) The patient is transferred to the procedure area where the concerned clinicianand anaesthetist(for procedures requiring anaesthesia) undertake immediate preoperative evaluation.

9. Post Surgery process :

a) Post procedure patient is shifted to appropriate care areas (to the CCU for example for post Cath lab procedures)to their rooms / wards as required. For procedures done on ambulatory / ray care basis the patient may be discharged based on observations..

b) Copies of procedure note v/ procedure reports shall be prepared by the procedure team and signed by the clinician performing the procedure and attached to the clinical case records..

c) The clinician performing the procedure documents the post procedure condition of the patient, post procedure treatment plan etc.

d) Post-operative treatment plan includes informs regarding the need for keeping the patient under intensive care, post procedure medications , examinations required if any etc.

10. Quality Assurance Programme for Procedure Units:

All procedure areas will keep the following QI data and analyse the same periodically

- Cancellation of scheduled procedure with reasons
- Adverse Reactions / Incidents concerning patient safety
- Infection / complications in procedure sites where applicable
- Unplanned conversion / usage of anaesthesia
- Malfunctioning of equipment used for performing the procedure or monitoring / diagnostic evaluation of the patient.

STANDARD REFERENCE-

COP 7 b

AMENDMENT HISTORY

Sl. No	**Current Revision**			**Nature of Change**
	Edition No	Revision No.	Date	
1	01	00	1 Oct 2019	First issue as per NABH Hospital Accreditation Standards – 4th Edition
2	01	00	1 Nov 2020	Minor Revisions, updating Doc No. and updating for compliance as per NABH Hospital Standards 5th Edition

Recommended By	Signature	Approved By	Signature
Dr. Hrishikesh Kalgaonkar Chief Medical Administrator		Dr.S.S. Deepak Chairman & Managing Director	

LIST OF CATH REGISTERS AND FORMATS

	LIST OF REGISTERS-CATH LAB	NUMBERS
1	Cath lab Register	MICC/NSG/CAT/R001
2	CSSD Issue Register	MICC/NSG/CAT/R002
3	CNE Register	MICC/NSG/CAT/R003
4	Duty Roster	MICC/NSG/CAT/R004
5	Drug & Fluid Reaction Register	MICC/NSG/CAT/R005
6	Fumigation Register	MICC/NSG/CAT/R006
7	Laundry Register	MICC/NSG/CAT/R007
8	Maintenance Complaint Register	MICC/NSG/CAT/R008
9	Staff Meeting and Communication Register	MICC/NSG/CAT/R009
10	Stock Register I	MICC/NSG/CAT/R010
11	Stock Register II	MICC/NSG/CAT/R011
12	Stock Register III	MICC/NSG/CAT/R012
13	Daily Inventory Register	MICC/NSG/CAT/R013
14	Narcotic Register	MICC/NSG/CAT/R014
15	Over time Register	MICC/NSG/CAT/R015
16	Cath Lab Register II	MICC/NSG/CAT/R016
17	Stent Details Register	MICC/NSG/CAT/R017
18	EPS+RFA Register	MICC/NSG/CAT/R018