Access, Assessment and Continuity of care (AAC)

SCOPE OF THE LABORATORY SERVICES IS COMMENSURATE TO THE CLINICAL SERVICES PROVIDED BY THE ORGANIZATION

Mission:

Pathology Lab., Faisalabad Institute of Cardiology is focused on providing quality test results in best minimum time to its patients.

Scope:

FIC Lab. offers: comprehensive set of lab services available in the health care field. It provides laboratory services that are designed to increase speed and precision to accelerate decision making to define a disease, monitoring clinical management of sick patients and to lead the patients towards their health management. It also provides this facility to the patients of other public and private sector.

Services:

FIC lab provides standardized scientific expertise by Consultants.

- State of the art Laboratory technology, Instruments and Equipments.
- Commitment to quality results.
- Efficient service, customized to patient needs.
- Open 24 Hours.

Functions & Expertise:

- Hematology Lab. works under supervision experienced Medical Officers and produce results of the Blood, its components.
- Biochemistry and special chemistry lab provides accurate and high quality results for routine and special tests in different body fluids under supervision of Medical Technologist. It works with fully automated chemistry analyzers and immunoassay systems.
- Tests regarding organism infections and, immunological reaction studies are carried out under expertise of Pathologist in Micro Biology section.

HEMATOLOGY SECTION

List of Tests

Sr. #	Tests	Sr. #	Tests
1	Hemoglobin (Hb)	9	Platelets count
2	Red blood cell count (RBC count)	10	RBC morphology
3	Packed cell volume (PCV)	11	Erythrocyte sedimentation rate (ESR)
4	Mean cell volume (MCV)	12	Reticulocyte count (Retic count)
5	Mean cell Hemoglobin (MCH)	13	Malarial parasite (M.P)
6	Mean cell Hemoglobin concentration (MCHC)	14	Prothrombin Time (PT)
7	Total leucocyte count (TLC)	15	Activated Trombo Plastin Time (APTT)

8	Differential leucocyte count (DLC)		

CHEMISTRY SECTION

List of Tests

Sr.#	Tests	Sr.#	Tests
1	Glucose	14	Sodium
2	Triglycerides	15	Potassium
3	Cholesterol	16	Calcium
4	HDL	17	PO4
5	LDL	18	Magnesium
6	Urea	19	CPK
7	Creatinine	20	CK-MB
8	Bilirubin	21	SGOT
9	SGPT	22	LDH
10	SGOT	23	Uric Acid
11	ALP	24	Urine Chemistry
12	Total Protein	25	Serum Digoxin Level
13	Albumin		

MICROBIOLOGY SECTION

List of Tests

Sr.#	Tests	Sr.#	Tests
1	Pus culture	11	Fungus culture
2	Fluid culture for, ➢ Cerebro spinal fluid ➢ Pleural fluid ➢ Pericardial fluid ➢ Ascitic fluid ➢ Seminal fluid	12	Urine complete examination
		13	Stool complete examination
3	Urine culture	14	Complete examination for, ➢ Pleural fluid ➢ Pericardial fluid ➢ Ascitic fluid ➢ Cerebro spinal fluid
4	Blood culture		

5	Tissue piece culture	15	Semen analysis
6	Sputum culture	16	Z.N. stain
7	Throat swab culture	17	Gram stain
8	HBsAg	18	Typhidot
9	Anti-HCV	19	RA Factor
10	ASOT	20	CRP

EMERGENCY SECTION

List of Tests

Sr.#	Tests	Sr.#	Tests
1	WBC	26	SGPT
2	RBC	27	SGOT
3	Hb	28	ALP
4	HCT	29	Total Protein
5	MCV	30	Albumin
6	MCH	31	Sodium
7	MCHC	32	Potassium
8	Platelets	33	Calcium
9	Polymorphs	34	Magnesium
10	Lymphocytes	35	CPK
11	Monocytes	36	CK-MB
12	Eosinophils	37	SGOT
13	ESR	38	LDH
14	MP	39	Uric Acid
15	RBC Morphology	40	ABG'S
16	PT	41	Trop-I
17	APTT	42	Urine Chemistries
18	Glucose	43	Urine complete examination

19	Triglycerides	44	HBsAg
20	Cholesterol	45	Anti-HCV
21	HDL	46	ASOT
22	LDL	47	CRP
23	Urea	48	RA Factor
24	Creatinine	49	Typhidot and Bilirubin

ICU / O.T. Lab.

List of Tests

Sr.#	Tests
1	Arterial blood gases (ABG'S) ➢ pH ➢ pO2 ➢ pCO2 ➢ Calcium ➢ O2 saturation ➢ Bicarbonate ➢ Base excess
2	Sodium
3	Potassium
4	Glucose
5	Hemoglobin
6	Urinary ketones

EQUIPMENT INVENTORY

SR.#	Equipment Name	Intended Use	Make	Department
1.	Cobas-B 121	Blood Gas Analyzer	Roche	ICU Lab
2.	Cobas-B 121	Blood Gas Analyzer	Roche	ICU Lab
3.	Easy state	Blood Gas Analyzer	Meditec	ICU Lab

4.	Easy state	Blood Gas Analyzer	Meditec	Emergency
SR.#	**Equipment Name**	**Intended Use**	**Make**	**Department**
5.	Centrifuge Machine	Centrifugation	Hettic EBA 20	Chemistry – 02
6.	Computer with printer	For printing reports & work lists	-	Computer Section
7.	Computer	For Posting reports & work lists	-	Chemistry
8.	Elecsys 2010	Sp. chemistry analyzer	Roche	Sp. Chemistry
9.	Olympus AU-400	Chemistry	Olympus	Chemistary
10.	Easylyte	Electrolyte Analyzer	Meditec	Chemistry
11.	Biolyte	Electrolyte Analyzer	Biocare	Emergency
12.	04 channel sami automatic coagulation Analyzer	Coagulation Analyzer	Weinner	Emergency
13.	Microscope	Microscopic Examination	Olympus	Microbiology
14.	Microscope	Microscopic Examination	Olympus	ICU Lab
15.	Microscope	Microscopic Examination	Olympus	Hematology
16.	Na\K Analyzer 644	Na\K Analyzer 644	Bayer	ICU Lab
17.	Sysmex kx-21	Hematology Analyzer	Sysmex	Hematology
18.	Medonic M20	Hematology Analyzer	Merck	Emergency
19.	Refrigerator	To keep reagent & chemicals	Dawlance	Chemistry
20.	Sample mixer	Sample mixer	Local	Hematology
21.	Sample mixer	Sample mixer	Local	Emergency
22.		Cell counter		Hematology
23.	Cobas B – 121	Blood Gas Analyzer	Roche	ICU Lab
24.	Fully Automated Coagulation Analyzer	Coagulation Analyzer	Sysmex CA-500	Hematology

ADEQUATELY QUALIFIED AND TRAINED PERSONNEL PERFORM AND/OR SUPERVISE THE INVESTIGATIONS

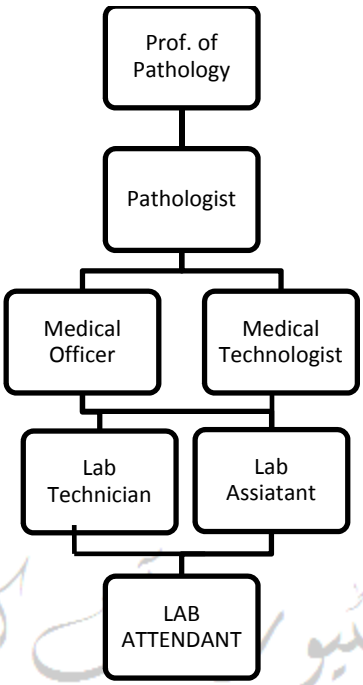


Figure: 1 THE STRUCTURE OF PATHOLOGY DEPARTMENT

Table: 1 Post and their Job Descriptions

Sr. No.	Post Name	Job Description
1	PATHOLOGIST (HOD)	• Management of the respective section. • Ensuring Quality control at all levels. (Both internal & External) • Checking slides and cultures. • Regulate supplies for the section. • Management of instruments maintenance. • Training and education of junior staff. • Problem handling of the section.
2	MEDICAL OFFICER	• In charge any section assigned by head of department. • Management of instruments maintenance. • Training and education of junior staff. • Problem handling of the section.
3	MEDICAL TECHNOLOGIST	• Ensuring Quality control (Internal and External). • Management of instruments maintenance.
4	LAB.TECHNICIAN	• Calibration of different instruments. • Operation of different instruments.

		• To run controls on the instruments. • Performance of different tests as per requirement. • Instruments maintenance
5	LAB ASSIATANT	• Maintenance of instruments. • Perform different tests. • To maintain the record of the tests and patients. • Preparation of samples for analysis
6	LAB ATTENDANT	• Preparation of samples for analysis. • Maintain cleaning of the instruments. • Data entry of patients. • Sample disposal

POLICIES AND PROCEDURES GUIDE THE: 1. COLLECTION, 2. IDENTIFICATION, 3. HANDLING, 4. SAFE TRANSPORTATION, 5. PROCESSING AND 6. DISPOSAL OF SPECIMENS

SOPs for Handling of Specimens

Standard Operating Procedure for Lab. Reception

- Ensure the request form is completely filled, enter it in LIMS & generate a Req.#.
- In emergency section if sample is brought from ward / OPD, check the specimen it is able to process or not along with Req. #.
- In case of any discrepancy or mismatch immediately return the specimen back to concerned person / ward.
- Label the specimen and generate work list from LIMS.
- Deliver the samples along with work list to concerned section of the laboratory.
- On demand print the final report from Req. #.
- Any inquiry, complaint or problem must be informed to the section in charge concerned.

Standard Operating Procedure Blood Gases in OT Lab/Emergency

ICU laboratory is situated in O.T to provide facilities of Blood Gases, Electrolytes, Blood Glucose and Hemoglobin round the clock samples analyzed under the supervision of section incharge.

Blood Gas analyzer/ Electrolyte analyze are calibrated (referred to instruction manual of machine) and control is run to ensure quality (referred to instruction manual). Regular maintenance is carried out (Ref. to instruction manual) by the operator or service engineer.

Reception:

1. **Sample Dealing:-**

Specimens with request forms are received from Emergency ward, OPD Lab staff check the request form of patient for tests required & data, i.e. name, ward, registration no. if there is any discrepancy in patient's data or any clots are observed (see instruction manual), sample is sent back with request form to concerned department for rectification. Sample from OT are received with label only and are collected through window.

2. **Processing of Sample**
   - Patent's data entered in record register with time of test.
   - Patient sample is processed and results of Blood Gases/ Electrolytes/ Hemoglobin are entered in record register.

- If results are critical, sample is re-run and discussed with section incharge.
- If necessary, critical results are immediately conveyed to related department on phone or request for a new sample for confirmation of result, is asked.
- Remaining sample is used for Glucose estimation (ref. to instruction leaflet of kit/ reagent being used).
- Final results are entered in record register and written on printed report forms.

Results Reviewing:

The reports are delivered and print generated by analyzer is checked and issued as such OT Patients.

Standard Operating Procedure for Chemistry Section

Biochemistry section is equipped with up to date automatic chemistry analyzers and biochemical tests and few special test are performed under the supervision of Medical Officer/ Medical Technologist.

Reception & Sample Handling:

Specimens along with work lists are received from reception to biochemistry section receiving counter. Every sample is checked for any kind of discrepancy and any Mismatch of Req. # on sample and work list.

Processing:

Specimens are checked for clotting & then centrifuged in disposable tubes at 4000 rpm for at least 5 minutes to get clear serum. Improper and hemolysed sample are returned back to reception with a request of new sample. All samples are checked for any kind of fibrin clots. Sample is then shifted into the sampling tray of the chemistry analyzer. For special Chemistry, samples is separated & handed over to concerned staff.

In morning when chemistry analyzer is started it is checked for normal functioning and calibration (see instruction manual). Normal and abnormal control serum are run by a technician. If results of control are within the acceptable range, then work list is entered in the chemistry analyzer and samples analysis started otherwise if calibration required it is performed.

Stat samples are kept separately into the sampling tray at specified position (see instruction manual of analyzer used). Results are obtained & entered on work list, critical results are discussed with biochemist/ section incharge and follow the instructions e.g re-run with dilution or a fresh sample is required for verification of results. Enter results in LIMS and sub posted by MO/ Lab. Technician.

- **Serology:** Different serological tests are performed.

Results Verification:

Work lists are handed over to section incharge for posting after verifications.

Sample Disposal:

All flagged samples are saved properly and the rest are disposed as per requirement.

SOP's for Hematology Section

Purpose:

Provide facilities to indoors, outdoor and private patients in morning shift.

Scope:

To perform Hematological tests and Coagulations test for patients on anticoagulants.

Reception & Sample Dealing:

Specimens along with work lists are received from reception to hematology section. Every sample is checked for any king of discrepancy and any mismatch of Req. No. on sample and work list.

Sorting:

Specimens are sorted according to test and are arranged to run in batch. For CBC and PT/APTT samples are checked for clot, hemolysis and any other discrepancy.

i. Run quality controls on Hematology analyzer as per schedule and calibrate if required. For CBC samples are processed at Hematology analyzer, other tests are performed manually; peripheral smears are prepared and stained. Abnormal and critical results are to pathologist / section incharge. Peripheral smears are screened by Lab. Technician and then shown to pathologist/ section in charge.
ii. Run quality controls for PT/ APTT on coagulation analyzer. Samples are centrifuged and analyzed at coagulation analyzer or manually. Abnormal and critical results are informed to pathologist/ section incharge and rerun the test with new sample if required.
iii. Results are entered on work lists. Data is entered in PMS and sub posted by MO/ Lab. Technician.

Results Verifications:

Work lists are handed over to section in charge for posting after verifications.

Sample Disposal:

Flagged samples are saved and the rests are disposed off in yellow bags.

SOP's for Emergency Section:

Emergency section deals with the samples of patients from emergency ward, collection center (Private OPD patients), urgent tests from all hospital ward specimens.

It is functional round the clock in three shifts and supervised by Medical officer or medical technologist. Section is assisted with Chemistry analyzers, hematology analyzers, Immuno-assay analyzer, gas analyzer, coagulation analyzer and electrolyte analyzer.

Sample Handling:

Specimens along with work lists are received from reception to emergency section receiving counter. Every sample is checked for any kind of discrepancy and any Mismatch of Req. no. on sample and work list.

Processing of Samples:

- For CBC, samples processed on hematology analyzer smear stained and shown to section incharge (for operation of hematology analysis ref. operating manual).
- For coagulation, samples processed on coagulation analyzer & performed manually (Ref. to operating manual).
- For chemistry, calibration of chemistry analyzers checked and recalibrated if required, control sera run and processing of samples done (ref. to operating manual).
- For special chemistry samples processed & saved for batch analysis accordingly.
- For blood gas analysis, samples processed on blood gas analyzer after checking the instrument calibration (Ref. to operating manual).
- Serology, body fluids and urine analysis done manually and culture specimens saved for analysis.

- Results from all the analysis are entered on work lists and then in PMS for sub posting by MO/ Lab. Technician.

Results Verification:

Works lists are handed over to section incharge for posting after verifications.

Sample Disposal:

All samples after processing are disposed off in yellow bags except flagged samples, which are stored in refrigerator.

SOP's for Microbiology Section

One lab medical officer & one lab attendant work in Microbiology section, under the supervision of Pathologist.

Reception/ Sample Handling:

Microbiology section deals with different samples for:-

- Culture & sensitivity of specimens like blood, urine, pus, wound swabs, fluid and other samples.
- Routing samples for Urinalysis, stool, body fluids for complete examination.

Specimens along with work lists are received from reception to emergency section receiving counter. Every sample is checked for any king of discrepancy and any Mismatch of request no. on sample and work list.

Sorting of Samples:

Chemistry of body fluids and serology test are performed in the chemistry section.

Processing:

- **Culture Media Preparation:** Culture media is prepared according to the requirements. Auto-claved plates are prepared & stored in refrigerator.
- **Routine Culture and Sensitivity:** Sample is inoculated on the plate of media relevant to the sample material and susceptible microorganism. After incubation of 24 hrs at 37 Growth is identified and sensitivity checking procedure is initiated. Sub cultured if required.
- **Gram staining & Z.N staining:** Smears are prepared and stained by the relevant stain, depending on the nature of specimen & suspecting organism.
- **Body fluids:** Specimens are processed for cell counts and smear examined for DLC and Presence of any microorganism.
- **Urine analysis:** Physical, chemical & microscopic examination is performed.
- **Result entry:** Results are entered on work lists. Data is entered in LIMS and sub posted by Lab. technician.

- **Results Verification:** Work lists are handed over to section in charge for posting after verifications.

  Sample disposal: Flagged samples are saved (kept for further scrutiny) & rest of samples and culture plates are disposed off depending on the nature of material into infected sample tray or after autoclaving.

3. SAMPLE DISPOSABLE

01. Register is being maintained for infections and other solid wash with
    Date --- weight ----------type of waste
    Separately

02. Liquid infectious waste, Blood , Body Fluid are collection in jar that contain to
    - Waste. Up to 05 liter
    - For sheet volume with D/W. the required 10% formal 37% stock = 27ml x 5 = 135ml is add to glass jar and on collecting, when rejected at 05L waste the jar fluid is liquid become it no has been decontaminated.

03. All other waste is sent for incineration

- Collected in ordinary trash labeled as NON INFECTIOUS and put in outer packing which is not orange or red.
- Infectious samples are autoclaved and put in separate containers
-

4. STORAGE

- Unauthorized people are not allowed for access to infectious waste. Only ward/ lab attendant is responsible to handle the infectious waste and to decontaminate under the supervision of medical officer on duty.
- All infectious waste is collected in red plastic bags.
- All kind of ways are disposed of within 07 days usually every Monday.
- Sharps are collected in hard card boxes labeled as SHARPS.

5. INFECTIOUS WASTE

- FIC follows national guidelines for management of infectious waste.
- Following are considered as infectious waste

- Biological Specimens e.g.
  - Blood products
  - Excretions / exudates
  - Secretion
  - Suctions
  - Body fluids
- Cultures and stocks
- Pathological wastes
- Sharps
  - All infectious wastes and sharps (Syringes used for non-infectious material are also included) are sent for incineration.
  - Cultures and stocks (Patri Dishes, Specimen Cultures, Swabs) are incinerated instead of being discarded to the sewer system.

6. DISPOSAL OF WASTE

- Infectious wastes ------collected in red containers and sent for incineration.
- Non infectious / sterile -----collected in ordinary trash (in containers other than orange or red)

7. STORAGE OF WASTES

- Infectious waste is collected in separate containers in the lab (RED)
- In factious waste (Except sharps) is stored in red plastic bags
- There is no refrigerator for storage of waste so infectious waste is incinerated within 07 days.
- Sharps are also incinerated within 07 days (on every Monday)

8. CHEMICAL WASTE

- One lab assistant has been assigned the duty of official hazardous waste determination to see if the waste is hazardous.
- It list of non hazardous chemicals has been prepared – all others are considered as hazardous.
- All hazardous waste is sent for incineration e.g.
  - Corrosives (PH below 2 or above 12)
  - Reactive (Oxidizers)
  - Flammables (Flash points below 140F)
  - Toxic.

9. CONTAINERS

- For liquid waste
  - About 05L sized container are used for each type which are compatible with the relevant liquid.
  - Liquid waste of blood gases, electrolyte,
- Liquid waste of blood gases, Electrolytes, Hematology analyzers is collected in the same regent module automatically and the regent modules are handled as infectious waste.
- For sharps
  - Sharp container / cardboard boxes are used and are packed in plastic bags to send for incineration.

10. LABELS

- All unused chemicals are labeled
- All waste containers are also labeled as hazardous waste at the place other than the original label of the container
- The label is complete and is attached to the waste container.
- Labels on solvent containers are attached on to the container
- Lower part of the label contains the name of the lab, section, name of contents, volume and percentage concentration (if any).

11. PACKING

- Card boxes are available to every section for waste and disposed after inspection.
- Sanitary worker collect and pack the waste as per their policies.
- The boxes are sealable.

12. EMERGENCIES

01. Spill of hazardous material
    - Employees are being aware about characteristics of every hazardous material being handled in FIC lab.
    - Almost all lab staff members have undergone periodic session about steps to be taken in case of spill of hazardous chemical such as.
      - Assessment of volume of spill
      - Use of PPE and spill treatment material.

02. Procedures: (Guidelines to the staff)
    - Use of PPE appropriate for situation e.g.
      - Gloves, impervious shoes, body protecting gowns

- Respiratory protective

➢ Spill control equipment

Spill control equipments are available in loose packing

- Liquid spills are taken more seriously.
- Ignition sources are only in the section of microbiology and hematology (during staining).

➢ Absorption of spill – if chances of spread, 1st the material is absorbed, then neutralization for acid / base is done.

03. Collected absorption is put into sturdy leak proof container is closed and informed to sanitary inspector for its disposal.

13. EMPTY CONTAINERS & GLASS

- ➢ All containers that are used for same one type of solvent and after receiving solvent, container left over <3% solvent.
- ➢ Some other types of material that container is called empty when it has been three times rinsed with a solvent that is capable of removing that material.
- ➢ For liquid, just keep upside down the container so that further drops should stop after pouring of the liquid.
- ➢ For liquid solution, pour the solution and wait for 60 sec to empty maximum.

14. NON HAZARDOUS CHEMICALS

01. A lab assistant has been assigned to assist and dispose of all chemicals.
02. Solids waste is collected in strong, non leaking big plastic bags marked as non hazardous waste.
03. Following waste is disposed through sever system.
    - ➢ Non-hazards water miscible liquid material.
    - ➢ PH 6-9.5
04. Flammables are included in hazardous even if water soluble.

LAB SAFETY PROCEDURES

01. DRINKING / EATING

As there is no available staff room for lab staff entertainment, so they are encourage to do so in canteen for lab store (for kits and chemicals) which is situated outside the lab.

02. WMOs work in the lab in overall and there head and long hair properly covered.
03. Closed shoes.
04. No sleeveless shirts and ornaments are allowed during lab work.
05. There are two exits of our lab; one is towards Angiography Ward and the other towards Blood Bank.
06. Fire extinguisher is located just outside the exit towards Angiography Ward. Two members of the lab staff have been trained by the civil defense trainers in this regard. There are four telephone sets (Intercom) in the lab.
    - One in the lab reception/ computer section.
    - One in MO office
    - One set in the lab store
    - One set in the ICU Lab
07. Any mishape (Major or minor) is reported to the Pathologist / MO Incharge of the shift.
08. The sinks are washed / cleaned to times in a day to keep them free of debris.

09. Only those equipments / lab items are placed of the lab work benches which are necessary to avoid any wastage / mishape during routine work.
10. Proper hand washing is routine before and after the lab work and before leaving the department.
11. Open flame is used only in microbiology but very cautiously.

08 SHARPS AND BROKEN GLASSED

01. Sharp containers (card boxes) and containers for broken glasses are placed to discard and upon filling, these are packed and sent for incineration along with other solid waste.
02. Solid waste of the lab is collected by the sanitary workers in the main hospital collections and is disposed-off properly.
03. Cuts and needle pricks are reported to the Incharge of the shift who inform Infection Control Nurses.

09. NOXIOUS CHEMICALS

01. Material safety data sheets contains 1st aid measures in case of spill, accident or a safety question and lab staff can find helpful information from them
02. Chemical spill clear up kit is available to every shift.

10. EQUIPMENTS

Lab staff is being trained in safe handling the lab instruments;

01. Microscope

The microscopes are placed in microbiology section, ICU lab, and hematology section one in each. As it is twenty-four hours running lab (so all microscopes are well covered) so rarely need to be transported, however if it at all,

- When it is lifted the one hand on the arm and one hand supporting the base
- Placed 3-4 inches away from the edge of the work bench.
- When unplugged, the cord is never left hanging down to floor.
- When in use, oil immersion lens or X 40 objective, the course adjustment is never used to focus the object.
- After reporting, the stained slides are saved on daily basis for one month and the wet preparations are placed in a tray of water to wash later on.
- Malfunctioning microscope are reported to the department of biomedic instruments caretakers to get them repaired.

02. Water Bath

- The incharge of the shift maintains the quality of water bath temperature.
- Water bath is placed within the clinical chemistry work area.
- Gloves are used to get the test tubes out of the water bath

03. Body fluids

Following safety precaution are observe to handle body fluids e.g. blood, urine, sputum etc because of their infectious nature

- Use of goggles / gloves while handling fluids
- Infectious materials are placed in the bio hazard bag e.g. slides, cover slips, truth picks or swabs.
- All body fluids are received through OPD collection point / from indoor directly into main lab.

04. Cytology specimens

- All cytology specimens are handled in microbiology section observing safety precautions mentioned above for spill and contamination.

11. IDENTIFICATION AND LABELING

In our lab, the labeling of the specimen tubes as follow.

01. Patient's full name
02. Patients Registration No.
03. Lab Number
04. Date / time / signature of sample collector;

- Signature of collector is applied for fluid and culture specimen and not to routine sampling. Routine sampling tubes are labeled otherwise (Full Name, Date, Registration Number, Ward)
- Only request form wrapped around the tube is not accepted.

12. HANDLING OF SPECIMEN

01. Culture specimens are handled only by the medical officer / senior technician.
02. Culture specimens are not taken out of container and the lab No. is put on the outer side of the packing if in plastic bag.
03. Broken or leaking containers are dealt in the same place and not moved to the other parts of the room.

13. TRANSPORT OF SPECIMENS WITHIN HOSPITAL

The FIC lab receives samples from OPD and indoor.
The responsibility of safe collection and transport rest upon the sender and all are advice about the safe handling and transport to the lab.

01. Samples are transported from collection to the lab in plastic / card boxes labeled as biological substance.
02. Two separate boxes are used marked as

- Blood samples
- Non Blood samples

In a plastic bag secured with cable tie.

03. It is avoided to transport the sample without protected covering.
04. The information about patients are never disclosed to unauthorized.
05. Hand washing is strictly observed before and after sample handling and at the end of the work.

14. SAMPLE PROCESSING (Volume and specific instruments of each test)

01. The volume of blood collected is specified for the required investigations as the vacationers are used in our lab with collect the blood according to the vacuum inside the container e.g.

- K_2 EDTA / K_3EDTA vials ……..03 ml for CBC/ESR
- PT vials ……03 ml for Coagulation profile.
- Gel and clot vial ……..03 ml for clinical chemistry tests
- ESR Tubes……upto the mark on the tube.

With the use of vacuutainers haemolysis is avoided and proper dilution of blood in anticoagulant is ensured.

02. Processing of each sample follows SOPs regarding that particular tests
03. Quality control procedures and data / schedule is saved in a file for each section separately. The prints are pasted in a register (blood gases / CBC/ Electrolytes/ Coagulation.
04. Instruments are specified for each type of testing e.g.

- Routine chemistry ……Olympus AU400
- Special Chemistry ……..Elecsys 2010
- Electrolytes ……Easilyte / Biolyte
- Coagulation ……Sysmex CA500 / Weinner
- Hematology..……..……Sysmex KX21 / Medonic M20
- Blood Gases ……...

05. Calibration of a parameter is only done if daily control levels abnormal values and controls are run daily and record of calibration is being maintained.
06. Blood gases, Electrolyte analyzer are difficult to maintenance become they are setup auto calibration.
07. All the tests are performed with sample from the relevant vacuutainer and sample is not to be decanted from one to other type of container as for every test, sufficient sample is collected in the relevant vecuutainer.
08. Sample not fit for processing (Low or high value) are rejected for receipt at the reception during sample receiving.
09. In the final report reference ranges are in built for each test parameters.

LABORATORY RESULTS ARE AVAILABLE WITHIN A DEFINED TIME FRAME

List of available Test & Reporting time with priority

Sr. No.	Test Name	Section	Normal Time (Days-hrs-min)	Urgent Time (Days-hrs-min)	Stat Time (Days-hrs min)
1	A. Line Tip C/S	Bacteriology	4--0--0	4-0-0	4-0-0
2	Ascitic Fluid for C/S		4-0-0	4-0-0	4-0-0
3	Blood Culture 1 Sample		7-0-0	7-0-0	7-0-0
4	Blood Culture 2 samples		7-0-0	7-0-0	7-0-0
5	Blood Culture 3 samples		7-0-0	7-0-0	7-0-0
6	Branula-tip for C/S		4-0-0	4-0-0	4-0-0
7	Bronchial Secretion C/S		3-0-0	3-0-0	3-0-0
8	Bronchial Washings for AFB.		1-0-0	1-0-0	1-0-0
9	CSF for C/S		4-0-0	4-0-0	4-0-0
10	CVP Tip C/S		4-0-0	4-0-0	4-0-0
11	Ear Swab C/S		3-0-0	3-0-0	3-0-0

12	Eye Swab C/S		3-0-0	3-0-0	3-0-0
13	Fluid for C/S		4-0-0	4-0-0	4-0-0
14	Gram Stain		0-6-0	0-6-0	0-6-0
15	Groin Swab for C/s		3-0-0	3-0-0	3-0-0
16	HVS C/S		3-0-0	3-0-0	3-0-0
17	Nasal Swab C/S		3-0-0	3-0-0	3-0-0
18	Pericardial Fluid for C/S		4-0-0	4-0-0	4-0-0
19	Pleural Fluid for C/S		4-0-0	4-0-0	4-0-0
Sr. No.	**Test Name**	**Section**	**Normal Time (Days-hrs-min)**	**Urgent Time (Days-hrs-min)**	**Stat Time (Days-hrs min)**
20	Pus for AFB		1-0-0	1-0-0	1-0-0
21	Pus for C/S		3-0-0	3-0-0	3-0-0
22	Semen Analysis		0-2-0	0-2-0	0-2-0
23	Semen C/S		3-0-0	3-0-0	3-0-0
24	Sputum for AFB.		1-0-0	1-0-0	1-0-0
25	Sputum for C/S	Bacteriology	3-0-0	3-0-0	3-0-0
26	Sputum for Gram Stain		1-0-0	1-0-0	1-0-0
27	Throat Swab C/S		3-0-0	3-0-0	3-0-0
28	Tissue for C/S		4-0-0	4-0-0	4-0-0
29	Urine Catheter Tip		3-0-0	3-0-0	3-0-0
30	Urine for C/S		3-0-0	3-0-0	3-0-0
31	Wound Swab C/S		4-0-0	4-0-0	4-0-0
32	Z N Stain		1-0-0	1-0-0	1-0-0
33	A/G Ratio	Biochemistry	0-6-0	0-3-0	0-3-0
34	ABGs		0-1-0	0-0-45	0-0-30
35	Albumin – Serum	Bacteriology	0-6-0	0-3-0	0-2-0
36	Alkaline Phosphatase		0-6-0	0-6-0	0-6-0
37	B.U.N.		0-6-0	0-3-0	0-2-0
38	Bilirubin - Conjugated		0-6-0	0-3-0	0-3-0

39	Bilirubin Total		0-6-0	0-3-0	0-2-0
40	Bilirubin Total & Conjugated		0-6-0	0-3-0	0-2-0
41	Bilirubin-Unconjugated		0-6-0	0-3-0	0-3-0
42	Blood Glucose Fasting		0-6-0	0-3-0	0-2-0
43	Blood Glucose Random		0-6-0	0-3-0	0-2-0
44	Blood Glucose 1Hr ABF		0-6-0	0-3-0	0-2-0
45	Blood Glucose 2Hr ABF		0-6-0	0-3-0	0-2-0
Sr. No.	**Test Name**	**Section**	**Normal Time (Days-hrs-min)**	**Urgent Time (Days-hrs-min)**	**Stat Time (Days-hrs min)**
46	Blood Glucose After Dinner		0-6-0	0-3-0	0-2-0
47	Blood Glucose After		0-6-0	0-3-0	0-2-0
49	Blood Glucose Before Lunch		0-6-0	0-3-0	0-2-0
50	Blood Urea		0-6-0	0-3-0	0-2-0
51	CPK	Bacteriology	0-6-0	0-3-0	0-2-0
52	Cardiac Enzymes		0-6-0	0-3-0	0-2-0
53	Chloride		0-6-0	0-3-0	0-2-0
54	Ck – MB		0-6-0	0-3-0	0-2-0
55	Creatinine Clearance		0-6-0	0-6-0	0-6-0
56	Fluid Urea		0-6-0	0-6-0	0-6-0
57	Fluid for Biochemistry		0-12-0	0-12-0	0-12-0
58	GTT		0-6-0	0-6-0	0-6-0
59	Glucose Challange Test (GCT)		0-6-0	0-6-0	0-6-0
60	HDL Cholestrol	Biochemistry	0-6-0	0-3-0	0-3-0
61	Ionized Calcium		0-6-0	0-4-0	0-2-0
62	LDH		0-6-0	0-3-0	0-2-0
63	LDL Cholestrol		0-6-0	0-3-0	0-3-0

64	LFTs		0-6-0	0-3-0	0-3-0
65	Lipid Profile		0-6-0	0-3-0	0-3-0
66	Liver Function Tests		0-6-0	0-3-0	0-3-0
67	Magnesium		0-6-0	0-3-0	0-2-0
68	O2 Saturation		0-2-0	0-2-0	0-2-0
69	Potassium		0-6-0	0-2-0	0-1-0
70	Renal Function Tests		0-6-0	0-3-0	0-2-0
71	SGOT (AST)		0-6-0	0-4-0	0-4-0
Sr. No.	**Test Name**	**Section**	**Normal Time (Days-hrs-min)**	**Urgent Time (Days-hrs-min)**	**Stat Time (Days-hrs min)**
72	SGPT (ALT)		0-6-0	0-4-0	0-4-0
74	Serum Creatinine		0-6-0	0-3-0	0-3-0
75	Serum Electrolytes		0-6-0	0-2-0	0-1-0
76	Serum Phosphorous		0-6-0	0-3-0	0-2-0
77	Serum Triglycrides		0-6-0	0-3-0	0-3-0
78	Sodium		0-6-0	0-2-0	0-2-0
79	Total Cholesterol		0-6-0	0-3-0	0-3-0
80	Total Proteins		0-6-0	0-3-0	0-3-0
81	Troponin I		0-3-0	0-2-0	0-2-0
82	Uric Acid	Biochemistry	0-6-0	0-3-0	0-3-0
83	Urinary Albumin to Creatinine Ratio		0-6-0	0-6-0	0-6-0
84	Urinary Calcium		0-6-0	0-6-0	0-6-0
85	Urinary Creatinine (24 Hour)		0-6-0	0-6-0	0-6-0
86	Urinary Creatinine (Spot)		0-6-0	0-6-0	0-6-0
87	Urinary Phosphate		0-6-0	0-6-0	0-6-0
88	Urinary Potassium		0-6-0	0-3-0	0-2-0
89	Urinary Potassium (24 Hour)		0-6-0	0-6-0	0-6-0

90	Urinary Protein (24 Hour)		0-6-0	0-6-0	0-6-0
91	Urinary Proteins (Spot)		0-6-0	0-3-0	0-3-0
92	Urinary Sodium		0-6-0	0-6-0	0-6-0
93	Urinary Uric Acid (24 hour)		0-6-0	0-6-0	0-6-0
94	Urinary Uric Acid (Spot)		0-6-0	0-6-0	0-6-0
95	APTT	Hematology	0-6-0	0-2-0	0-1-30
96	Absolute Neutrophil		0-6-0	0-2-0	0-2-0
Sr. No.	**Test Name**	**Section**	**Normal Time (Days-hrs-min)**	**Urgent Time (Days-hrs-min)**	**Stat Time (Days-hrs min)**
98	BT		0-6-0	0-3-0	0-2-0
99	Band to Neutrophil Ratio		0-12-0	0-8-0	0-4-0
100	Blood C/E		0-6-0	0-3-0	0-3-0
101	CT		0-6-0	0-3-0	0-2-0
102	DLC		0-6-0	0-3-0	0-2-0
103	ESR		0-6-0	0-3-0	0-3-0
104	Fibrinogen Level		0-6-0	0-3-0	0-3-0
105	HCT		0-6-0	0-3-0	0-2-0
106	Haemogram	Hematology	0-6-0	0-3-0	0-2-0
107	Hb		0-6-0	0-2-0	0-2-0
108	MP		0-6-0	0-3-0	0-3-0
109	PT / INR		0-6-0	0-2-0	0-2-0
110	Platelets		0-6-0	0-2-0	0-1-0
111	RBC Morphology		0-6-0	0-3-0	0-3-0
112	Retic Count		0-6-0	0-3-0	0-3-0
113	TLC		0-6-0	0-3-0	0-2-0
114	WBC Morphology		1-6-0	1-6-0	1-6-0
115	ASO Titre	Microbiology	0-6-0	0-3-0	0-3-0

116	Acid Fast Bacilli		0-6-0	0-6-0	0-6-0
117	Anti HCV (Screening)		0-6-0	0-3-0	0-2-0
118	Ascitic Fluid Examination		1-0-0	1-0-0	1-0-0
119	CRP		0-6-0	0-3-0	0-3-0
120	CSF Complete Examination		0-12-0	0-12-0	0-6-0
121	Fluid Complete Examination		1-0-0	1-0-0	1-0-0
123	Pericardial Fluid Examination		1-0-0	1-0-0	1-0-0
Sr. No.	**Test Name**	**Section**	**Normal Time (Days-hrs-min)**	**Urgent Time (Days-hrs-min)**	**Stat Time (Days-hrs min)**
124	Pleural Fluid Examination	Microbiology	1-0-0	1-0-0	1-0-0
125	RA Factor		0-6-0	0-6-0	0-6-0
126	Sputum for Eosinophils		1-0-0	1-0-0	1-0-0
127	Stool Examination		0-6-0	0-6-0	0-6-0
128	Urinary Glucose		0-6-0	0-3-0	0-2-0
129	Urinary Ketones		0-6-0	0-3-0	0-2-0
130	Urinary pH.		0-6-0	0-6-0	0-6-0
131	Urine C/E		0-6-0	0-3-0	0-3-0
132	Widal Test		0-6-0	0-6-0	0-6-0
133	Anti HCV ELISA	Special Chemistry	1-6-0	1-6-0	1-6-0
134	HBsAg ELISA		1-6-0	1-6-0	1-6-0

CRITICAL RESULTS ARE REPORTED IMMEDIATELY TO THE CONCERNED PERSONNEL

SOP's for Critical Results

Purpose and Scope:

To make accurate and timely medical management by the Consultant or duty doctor of their patients. Critical results of the Lab tests are too informed immediately.

Responsibility:

Lab. Technician performing tests in the concerned section will inform critical results immediately to duty doctor or staff nurse and record it on work list.

Short List of Lab Tests with Critical Values

And any other tests requested urgent by the consultants or duty doctor.

Section Name	Test	Critical Range	
Chemistry	Bilirubin Total		>20.0 mg/ dl
	Blood Gases	Urgent	Urgent
	Blood Urea		> 150 mg/dl
	Calcium (Ca)	< 5.0mg/dl	> 12.0 mg/dl
	CK-MB		> 25
	CPK		> 200
	Glucose	46	484 mg/dl
	Sodium (Na)	< 120 mmol/L	> 158 mmol/ L
	Potassium (K)	<2.5 mmol/L	> 8.0 mmol/L
Serology	HBsAg Screening	Positive	
	HCV Screening	Positive	
Hematology	APTT	Prolonged	More than 200
	Hemoglobin (HB)	< 6.0 G/dl	> 18.0
	Platelet Count	< 20 x 10 3ul	
	Prothrombin Time (PT)	Prolonged	> 100
Special Chemistry	Troponin-I	Positive	

- **As per hospital policy, No sample is allowed to avail out source facility.**

PRE – ANALYTICAL CONTROL OF SAMPLE

01. The personal fixed for sample collection are trained adequately.
02. Primary specimen collection manual is available containing all necessary information about;
    - Patient preparation before specimen collection when needed.
    - Exact methodology of specimen collection, labeling, hadndling transportation and storage of specimen.
    - List of pre analytical sources of errors.
03. Guide lines for sampling
    - Microbiology = for blood C/S more than one samples are needed from multiple sites

TIME OF COLLECTION

01. <u>FASTING SAMPLES</u>

- Lipid profile
- FBS
- Uric Acid (after 07 days of protein free diet and overnight fast)
  Spurum for AFB / C/S

02. Cardiac Patient are critical, so its not possible usually to obtain their culture specimen after stoppage of antibiotics for 07 days and then have their sample for C/s.
03. Volume of samples for chemistry, hematology is maintained as we use vaccutainers for sampling.

The samples for culture is collected as follow

1. **Sputum**:-
   In sterile container and early morning specimen
2. **Blood C/S** :
   The multiple sites after proper antiseptic measures to detect possible contamination on culture.

3. **Urine Sample:**
   In sterile urine container

4. **Swab C/S**:
   Sterile commercially available culture swab is used after proper antisepsis at the site of wound.
5. **Body Fluid C/S**:
   The Samples are Advised to collect in sterile disposable syringe of at least 5-10 ml
6. **Test Cultures** of daily useables from CSSD, Angio Ward ICU Departments (gloves / gauze / machentosh) sterile containers are available.

4. Labeling

- Sample container is labeled with name, registration No. date.
- Request form entries include bio-data, site of sampling (mention of site of indwelling catheter.

5. **Skin** is sterilized with 70% alcoholor best antiseptic for sampling through intact skin.
6. **Samples** are transported from OPD or Indoor within an hour or so after collection
7. **Personal** protection equipments are used appropriate to sampling.

LABORATORY TESTS NOT AVAILABLE IN THE ORGANIZATION ARE OUTSOURCED TO ORGANIZATION(S) BASED ON THEIR QUALITY ASSURANCE SYSTEM AND INDEPENDENT ACCREDITATION = Not Applicable

IMAGING SERVICES ARE PROVIDED AS PER THE CLINICAL REQUIREMENTS OF THE PATIENTS

IMAGING SERVICES COMPLY WITH LEGAL AND OTHER REQUIREMENTS

Make the patient aware of the risks involved and to cover the hospital from any liability from inappropriate medical ethics.

POLICY:

Informed consents are required for radiographic procedure which requires IV contrast or the instillation of contrast agent other than orally or rectally.

All invasive procedure's all biopsy procedures, voiding cystourethrograms, loopagrams/pouchograms, arthrograms, cystogram, IVP, hysterosalpingograms, and conduiograms.

PROCEDURE:

Refer to Hospital Administrative Policy and Procedure Manual, Policy # 3002 "Consent to Treatment.

SCOPE OF THE IMAGING SERVICES IS COMMENSURATE TO THE CLINICAL SERVICES PROVIDED BY THE ORGANIZATION

FIC is dedicated to providing quality patient care with unrelenting attention to clinical excellence, patient safety and an unparalleled passion and commitment to assure the very best healthcare for those we serve.

THE RADIATION PROTECTION

SCOPE:

All Radiologists, Radiographers, and Radio pharmacist

PURPOSE:

To establish the operating guidelines for the use of ionizing radiation in accordance with the regulatory agencies' policies.

POLICY:

It is the policy of the Radiology Department that all radiation exposure to patients shall be as low as reasonably achievable and consistent with good radiographic imaging. Radiation safety for employees shall be in accordance with the policies outlined in the Radiation Safety Manual and approved by the Radiation Safety Committee.

PROCEDURE:

I. Collimation

A. The radiation beam shall be collimated to the size of the anatomic area of interest.

II. Gonadal Shielding

A. Adequate gonadal shields shall be employed during all examinations which may include the gonads in the beam unless such devices interfere with the objectives of the examination.

B. The technologist should specifically ask all women under the age of 50 if there is a possibility of an existing pregnancy.

Should the possibility exist, the radiologist on duty and the patient's physician should be consulted before proceeding. Documentation of the decision shall be written on the requisition by the technologist and by the radiologist as part of the interpretation of the examination.

III. General Radiation Protection/Safety

A. Never expose a human being to ionizing radiation for demonstration purposes only.

B. An annual radiation survey of equipment and personnel film badge(s) monthly shall be conducted by the Radiation Safety Officer and all discrepancies noted, corrected and reported to HOD.

C. Rooms housing radiation sources shall be properly marked with a "Radiation Caution" sign. Only authorized personnel shall be allowed in these areas.

D. X-ray controls are located and designed to prevent the unintentional emerging of the unit.

E. The X-ray rooms are to be kept closed when the equipment is in use.

F. Lead aprons shall be worn by all employees working in the direct or scattered radiation.

IV. To further reduce patient exposure levels, the following procedures are employed:

A. Total X-ray tube filtration shall be at least 2-5 mm al.

B. The fastest film speed combination consistent with optimum image quality is employed.

C. Non-screen techniques are not used due to the increase in radiation.

D. Prevention of retakes is a primary goal and efforts to reduce retakes are conducted through a review of the monthly repeat rates.

ADEQUATELY QUALIFIED AND TRAINED PERSONNEL PERFORM, SUPERVISE AND INTERPRET THE INVESTIGATION

Table: QUALIFIED AND TRAINED PERSONNEL

Sr. No.	Post Name	Job Description
1	Associate Professor of Radiology	• Administrative control of the department • Departmental Safety in connection with all work done in the department and for the carrying out of those duties of heads of department specified in

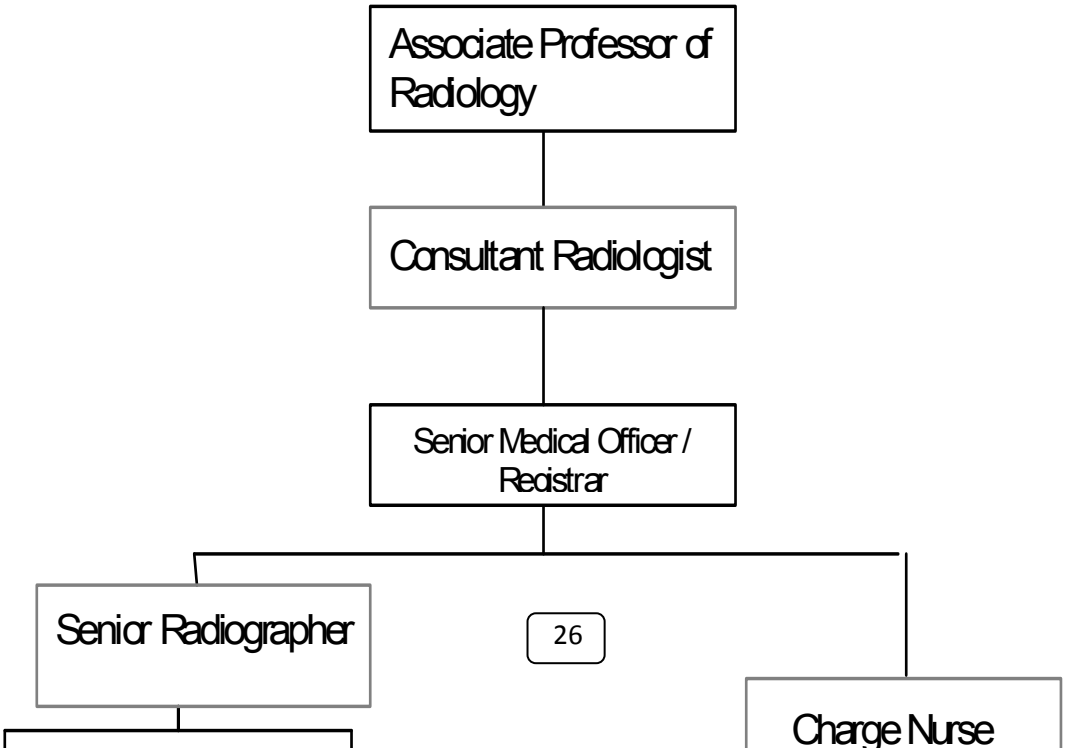
		hospital administration policy. • To advise on and check, where appropriate, procedures to ensure the safety of operations within the department for which responsible. • To control and ensure the academic activities. • To ensure teaching program for departmental staff and postgraduate classes. • Radiological procedures and reporting of X-Rays • Sonography and its reporting • Specialized radiological work and sonographic procedures including interventional radiology. • Weekly detailed round of department. • Perform and carry out the duties assign by the BOG, ED & MS.
2	Consultant Radiologist	• Administration control of department • Daily round of department in the morning and afternoon • Daily clinical discussion with staff • Academic activities • Class of radiographers • Attend ward calls • Reporting X-rays • Sonography and its reporting • Specialized radiological and sonographic procedures including interventional radiology • Regular checking and instructions to the staff for smooth functioning of department • Weekly meeting with staff to improve department working and patients care • Regular check to maintain the good quality X-ray • Duty roster of staff & interdepartmental rotation of staff. • Monitoring of personal radiation protection measures of radiology
3	SENIOR MEDICAL OFFICER/REGISTRAR	• Assisting HOD In administration control of department • Participation in daily clinical discussion • Assisting X-ray reporting • Assisting sonography & its reporting • Assisting specializes radiology procedure • Participation in academic activities • Duty roster & rotation of staff • Regular checking and instruction to the staff for smooth functioning of department • Daily checking of record and account receipt • Daily indent maintenance
4	SENIOR RADIOGRAPHER	• Supervision of Radiographers & dark room assistants • Record keeping and ledgers maintenance of X-ray films • Record keeping and indent maintenance of all department items • Making of Duty roster & rotation of Radiographers • Account & cash maintenance
5	RADIOGRAPHER	• In-charge X-ray room. • Protecting patients, attendants and companions from unnecessary & avoidable radiation exposures • Handing of X-ray machines, setting up factors for each film exposures • Exposing films in various radiological investigation / anatomical positions • Assisting the radiologist in specialized radiological procedures including interventional radiology

		• Basic maintenance including cleanliness and proper functioning of X-Ray machines • Films, cassettes, Grids Automatic X-ray films processor etc • Bedside X-ray film exposures for seriously ill indoor patients • Participation in paramedical academic activities • Maintain of record of X-ray films • Reception duty on rotation
6	DARK ROOM ASSISTANT	• Handing and protection of dark room equipment and materials such as Automatic processor, Film Cassettes, exposed & unexposed films • Printing of patient's mane on X-ray films • Making of developing chemical in ready-to-use form for manual & automatic processors • Maintenance & regulation of temperature of developing chemical • Cleanliness and maintenance of Automatic Processors, Films, cassettes, Film screens etc • Participation in paramedical academic activities • Assisting the radiographers for handing the patients. Especially for bedside X-ray films and specialized procedures • In case of manual processing, efficiently developing, fixing and drying of X-ray films of good quality
7	CHARGE NURSE	• Assist the Radiologist in sonography & radiological procedure • Assist the Radiologist in reporting of X-ray and ultrasound • Assist the Radiographers in female Radiography • Perform the reception duty • Maintenance of patient's records

Responsibility and Authority

The Organogram describes the hierarchical structure of Radiology Department**.**

The Department-wide Procedures and SOPs also describe the responsibilities of personnel in relation to various quality system requirements.



POLICIES AND PROCEDURES GUIDE IDENTIFICATION AND SAFE TRANSPORTATION OF PATIENTS TO IMAGING SERVICES

PROCEDURE:

1. Receptionist

Telephone Answering Procedures:
Department of Radiology
My name is.....
How May I Help You?
Telephone Closing Procedures:
Thank you for calling the Department of radiology.
Should you encounter difficulties?
(Unable to understand their needs, or solve their problems).
Take the person's name and telephone number
Inform them that a Senior Radiographer will return their call in less than 5 minutes.
Immediately notify the senior radiographer.
Desk Answering Procedure
How can I help you?
Provide and guide about Radiological examination, fee, appointment, Timing and etc.

2. Registration of Patient:

Policy:

I. All patients requiring Radiology examinations must be registered.
All examinations require an order by a physician or his credentialed designee.

1. Radiology requisitions shall be entered in departmental patient's information register by the receptionist.
2. All examination requests shall be reviewed by the technologist and/or radiologist for accuracy of examination, clinical history and inquiry regarding pregnancy status for all females between the ages of 14 and 50.
3. Prior to the performance of the examination consent for procedure is obtained if necessary, the procedure shall be explained to the patient, i.e., type, duration, and side effects if indicated.
4. Examinations are performed by the Radiographer in conjunction with appropriate support staff when necessary.

3. Selection of services:

Policy:

A. The Department of Radiology in compliance with all regulatory agencies requires that pertinent clinical information be obtained in order to perform radiographs appropriately and provide adequate interpretation.

4. Procedure:

A. To order a radiograph the following information is required:
B. Patient name, age, sex, Registration no., category, ward, pertinent clinical history and provisional diagnosis; Medical Record Number.
C. Form for general radiography should be filled and sent by attending Registrar/M.O.
D. Request for Special & interventional radiography should be filled and sent by the SR/ Attending Consultant.

5. Payment:

6. Examination:

Policy:

Dependent upon examination being performed patients will be assessed in the following manner:

Appropriate Clinical History
Current Medications
Allergy History
Females (12-50 years of age) Pregnancy Status
Ability to Provide Consent if Needed
Weight
Iodinated contrast Risk Factors Such As:
A. Previous Contrast Reactions
B. Asthma
C. Significant Myocardial Dysfunction
D. Renal Failure
E. Diabetes (Glucophage)
F. Sickle Cell Anemia
G. Multiple Myeloma
Conscious Sedation

Procedure:

A. Diagnostic Core Examinations

1. Patients are assessed prior to examinations by a radiology technologist or radiologist.
2. Patients will be assessed for the following:
a. Allergy history
b. Clinical history
c. Current health problem
d. Pregnancy status
e. Contrast risk factors
f. If children weight
g. Age
h. Response to treatment
3. If no physician involvement is required, for performance of examination, technologist will explain procedure to patient and assess patient's ability to understand and cooperate with procedure.
4. If contrast is required the radiologist will assess the patients ability to understand and provide consent.
5. During administration of contrast and for at least 15 minutes after, the radiologist will assess patient for signs and symptoms of contrast reaction and infiltration.

B. Ultrasound

1. Patients will be assessed by a radiologist.
2. Patients will be assessed for the following:
a. Allergy history to Gel or etc.
b. Clinical history
c. Current health problem
d. Pregnancy status

e. Response to treatment
C. Special Procedures
1. Patients are assessed by Radiologist prior to the start of a procedure.
2. Patients will be assessed for the following:
a. Clinical history
b. Current health problem
c. Contrast risk factors
d. Required laboratory values
e. Pregnancy status
f. Response to treatment
3. Patients ability to understand and provide consent will be assessed.
D. Conscious Sedation
1. Patients are assessed by a radiologist.
2. Patients are assessed for the following:
a. Clinical history
b. Current health problem
c. Review of systems
d. Response to treatment
e. Return to baseline

7. Generation, Review and Delivery of Report:

Policy:

All radiologic examinations shall be dictated, transcribed/typed, signed by Radiologist and delivered within twenty-four hours.

Procedure:

1. Upon completion of the x-ray examination, the films are reviewed by radiologist and a report generated into the Radiology Information System.
2. This report reviewed and signed by radiologist, is the official report.
3. All referred patient's reports are mailed or delivered within 24 hours after signature by an Attending Radiologist.
4. When significant unexpected or potential life threatening findings are seen on initial evaluation of the x-ray films, the radiologist immediately telephones the requesting physician with the results! Such findings include, but are not limited to, retained surgical material, new pneumothorax, intraperitoneal free air. Notification shall be dictated into the report.

Delivery of Report:

- Report delivers on same day.

POLICY:

It is the policy of the Radiology Department to provide an environment that is hazard free for any patient who enters the department be it a patient, visitor, or employee. Every supervisor and his/her staff shall be responsible for taking the necessary actions, that will include but shall not be limited to submitting work request (s), documentation of accidents/injuries, etc. in an effort to prevent and control accidents and incidents.

General Safety Guidelines

A. Radiation Protection Procedures are reviewed on any on-going basis and shall be the primary responsibility of the Radiation Safety Officer or Medical Physicist

assigned to the department. Additionally, every Radiographer shall, in the performance of his/her duties, comply with all guidelines outlined in the Radiation Safety Manual.

B. All Ionizing Radiation equipment is inspected annually by a Certified Medical Physicist and is subject to an annual preventative maintenance by the equipment manufacturer or a Radiological Service Contractor.

C. Drugs, contrast media and other dated supplies are reviewed for expiration dating by each area supervisor, Radiology nurses, and the Department of Infection Control.

D. Environmental inspections shall be conducted once in three month.

1. Results of **inspection are documented** and reviewed at monthly Department meeting.

E. All incidents/accidents shall be **reported and documented** on the appropriate forms located in each section or in the Administrative Office.

1. A copy of each incident/accident report shall be forwarded to ED.
2. A copy of each incident/accident report shall be forwarded to risk Management.

PROCEDURE:

I. Patient and Employee Safety

A. Electrical Safety

1. Every radiographer shall know the location of all main switches for all x-ray equipment to include the master breaker switches and/or Red kill (emergency shut-off) buttons.
2. All electrical cables and fixtures shall be inspected periodically as part of the preventative maintenance program and at the beginning of each use for defective, torn or faulty insulation in covering. If found defective, the system shall be repaired before it's return to use.

B. Mechanical Hazard Protection

1. Check all wheels, moving parts or equipment and locking mechanisms for security and proper function prior to use.
2. All stretchers and wheel chairs shall be inspected and removed from use until properly repaired.
3. Scissors, scalpels, razors, needles and other sharp items must be safely stored and if disposal is required, it shall be in the appropriate containers.
4. It is the responsibility of every employee to report all broken furniture, supplies or damages to the physical plant. When indicated, a **work request** shall be completed and submitted to the Maintenance Department.
5. Stored items must be properly stacked and secured in an orderly manner to prevent toppling on the user and **shall** be (18) eighteen inches from the ceiling.
6. Always have sufficient and proper assistance when it is necessary to move or lift a patient.
7. All patients are to wear slippers or shoes when in the Department of Radiology to ensure protection from possible glass particles or other foreign material.

C. Fire and Explosive Safety

1. Know the location of all fire alarms and fire extinguishers. (Refer to the Fire Emergency Policy and the Disaster Manual).
2. All glass cylinders shall be secured at all times and not be left free standing without a holder/can.

3. Never attempt to open a gas cylinder valve without the proper tool or wrench.

D. Radiological Patient Emergencies

A radiological emergency can be associated with a dangerous condition arising in a patient from the use of a contrast agent or a pre-existing medical condition.

To facilitate the treatment of these emergencies, the Radiology Department is equipped with emergency carts, stethoscope, blood pressure cuffs, and life-saving drugs.

For major emergencies or accidents, the following procedure has been adopted:

1. Call for Help and give immediate CPR if indicated. **Note -** Dial 321 for all emergencies (Indicate type and location).
2. Have someone obtain the Emergency Cart, Oxygen, and stethoscope.
3. The Radiology Nurses and the Radiologist assigned to the area shall respond to all emergencies.
4. The Radiology Nurse or the area supervisor shall be responsible for completing the **Incident/Accident Report.**

E. Chemical Hazards

All chemicals or hazardous materials shall be managed in accordance to the Department of Environmental Health and Safety guidelines which includes:

1. Notification of the purchase of **all** chemicals or hazardous materials.
2. Use in accordance with the manufacturer's guidelines.

PERFORMING RADIOGRAPHS ON A PREGNANT PATIENT

PURPOSE:

To establish a method for determining the pregnancy status of women of childbearing age, to ensure all women who require radiographs while pregnant are properly educated regarding the potential risk(s) and to require adequate documentation for this education as well as justification for the radiograph.

PROCEDURE:

Upon ordering radiographs on women of childbearing age the Radiographer on reception duty will question the patient concerning the possibility for pregnancy.

The order entry personnel (Doctor / Staff Nurse) will also question the potential pregnancy status of the patient prior to responding to this question as it appears on the Performa should be answered accurately -- "not pregnant" or "may be pregnant" for women who are unsure or who positively are pregnant.

Prior to performing a radiograph on women of child-bearing age ALL radiologic technologist or radiologic technology students will also question the patient regarding the possibility for pregnancy to verify the information which appears on the requisition.

If the patient is absolutely positive she is NOT pregnant -- proceed with the exam.

If the patient is pregnant or is unsure -- but the exam can be performed with adequate shielding (i.e. non =-pelvic examinations) then shield the patient and perform the exam.

If the patient is pregnant or is unsure -- but the exam will expose the fetus or adequate shielding cannot be attained then do not perform the radiograph and notify the Consultant Radiologist /HOD..

The radiologist will then consult with the referring physician to discuss the necessity of the exam.

If the exam is performed the radiologist MUST include in the dictated exam report the discussion with the referring/ordering physician and the decision to proceed with the exam.
When a referring/ordering physician instructs the technologist to proceed with the exam with or without consulting with the radiologist, then the referring/ordering physician is responsible to discuss the potential risk(s) with the patient and document this discussion and the decision to continue with the exam in the patient's medical record or progress note.

IMAGING RESULTS ARE AVAILABLE WITHIN A DEFINED TIME FRAME

PROCEDURE:

1. Receptionist

Telephone Answering Procedures:

Department of Radiology

My name is .....

How May I Help You?

Telephone Closing Procedures:

Thank you for calling the Department of radiology.

Should you encounter difficulties?

(Unable to understand their needs, or solve their problems).

Take the person's name and telephone number

Inform them that a Senior Radiographer will return their call in less than 5 minutes.

Immediately notify the senior radiographer.

Desk Answering Procedure

Patients come to reception with prescribed X-Ray request form. Patients are called for X-Ray examination check the prescribed form. Provide and guide about radiological examination, fee, appointment, timing and etc.

CRITICAL RESULTS ARE INTIMATED IMMEDIATELY TO THE CONCERNED PERSONNEL

In Radiology Department of FIC the critical results are communicated with the concern department immediately, within one hour.

List of Radiology Critical Results

General: Retained sponge or other clinically significant foreign body, new/unexpected and clinically significant mass/tumour or arterial dissection/occlusion.

Acute Abdomen: Life-threatening obstruction; previously undiagnosed abscess, acute thrombotic or embolic event, including DVT; unexpected or previously undiagnosed free air or active leakage; previously undiagnosed, clinically significant haemorrhage or vascular disruption, ectopic pregnancy and intestinal ischemia.

Acute Head: Unexpected and clinically significant intracranial haemorrhage, new midline shift, aneurysm, abscess and meningoencephalitis; clinically significant herniation; new/unexpected cerebral infarction.

Acute Neck: Acute airway compromise, new, clinically significant, unexpected abscess, discitis and unexplained haemorrhage.

Acute Spine: New, unexpected, clinically significant discitis, abscess, cord compression or transaction and acute cord haemorrhage or infarct.

Acute Chest: New, unexpected, clinically significant collapse of lung, pneumothorax and pulmonary artery embolus.

Acute Skeletal: Impending pathologic fracture and new, unexpected, clinically significant fracture.

Nuclear Medicine: Newly diagnosed absent perfusion in a postoperative kidney, brain death (transplant team waiting for results) and new high probability ventilation/perfusion (V/Q) lung scan5.

QUALITY ASSURANCE ACTIVITIES ARE EVIDENT IN THE IMAGING DEPARTMENT

Each x-rays generating equipment will be evaluated at six month intervals by the Medical Physicist/Radiation Protection Officer to ensure safe and proper working condition. The evaluation consists conducting a radiation survey of each piece of x-ray generating equipment while activated and in use in accordance with established operating procedures set forth for each unit by trained personnel.

The privilege to use ionizing radiation at Faisalabad Institute of Cardiology strictly follows Pakistan Nuclear Regulatory Authority (PNRA) regulations, local policy and procedures. PNRA visit annually to check all the parameters according to International Atomic Energy Commission (IAEA) standards and then issue the license after inspection.

Recordkeeping:

The Chief Radiographer shall maintain all records pertinent to the safe use and operation of x-ray generating equipment as well as also keep the record of procedures and number of patients in radiology department, Faisalabad Institute of Cardiology.

IMAGING TESTS NOT AVAILABLE IN THE ORGANIZATION ARE OUTSOURCED TO ORGANIZATION(S) BASED ON THEIR QUALITY ASSURANCE SYSTEM AND COMPLIANCE WITH APPLICABLE LAWS AND REGULATIONS = Not Applicable

Special cases like CT Angio refer to Allied Hospital

Care of Patients (COP)

EMERGENCY SERVICES ARE GUIDED BY POLICIES, PROCEDURES AND APPLICABLE LAWS AND REGULATIONS.

POLICIES AND PROCEDURES FOR EMERGENCY CARE ARE DOCUMENTED.

ADMISSION POLICIES:

- All patients presenting to emergency room from ED screening room for further evaluation and management like ACS, AC. MI, Arrhythmias, and AC. LVF will be admitted to ED.
- If ED gets choked up and no beds are available any more, SR on duty will inform the consultant on call. Consultant will visit the emergency immediately and will decide the policy regarding further admission or referral of patients to CCU of Allied or DHQ hospital. Consultant will make the round along with SR on call and doctors on duty in the emergency and will decide regarding shifting/transfer the patients.

Medications:

- All medications in the emergency ward is kept in Medicine Store adjacent to ward under the care of Two charge nurses to maintain the record supervised by a hospital pharmacist and is dispensed by the staff as advised by the doctor on duty.

Inter-Hospital transfers;

- Doctor will clinically review the patient and nurse will take the vitals. Doctor on duty after reviewing will refer all Cardiac patients to ER for management and further evaluation while non-cardiac and medical patients will be referred to medical units if they are hemo-dynamically stable. Hemodynamically unstable/critical patients even if they are non-cardiac will be managed in ER and once stable enough to be transported will be shifted to concerned department on hospital ambulance.

POLICIES REGARDING SPECIAL PROCEDURES;

- Any patient who is admitted to emergency will be managed after written informed consent from the first relatives of the patient. Doctor on duty will discuss the patient with the SR on call regarding the management of patient.
- All critically ill patients, patient requiring special procedure like Thrombolysis, CVP insertion, TPM insertion, Cardio version and CPR will be managed in the ICU under the supervision of SR on call or Senior Resident/Medical Officer.

Thrombolytic Therapy:

- Patients landing with Myocardial Infarction will be immediately attended by the doctor on duty in ICU. Nurse on duty in ICU will immediately maintain IV line, attach monitor, Oxygen, take vitals and send investigations.

- Doctor on duty will discuss the patient with the SR on call. If patient is a candidate for Primary PCI as per AHA guidelines, SR on call will immediately inform the Consultant on call who will visit the patient urgently. If patient fulfills the criteria for Primary PCI as laid down by Senior Consultants of FIC, patient will be immediately transferred to Cath.Lab.

- If Consultant/SR advice to proceed for thrombolytic therapy, doctor on duty will clearly mention the territory involved on Thrombolysis Performa, look for any contraindication for thrombolysis, and will discuss the potential risks to the attendants, nature of disease and possibility of worse outcome of disease pattern.

- After informed written consent thrombolytic therapy will be instituted by the nurse on duty, she will arrange the crash trolley to the side of the patient, record the starting and ending time of thrombolytic therapy, monitor BP and pulse periodically after every five minutes.

- Thrombolysis will be completed in 60 minutes under the close monitoring of patients by on duty doctor for any likely complication.

- After thrombolytic therapy is completed successfully, patient will be shifted to emergency room for further monitoring and will be retained in emergency for 8 hours before shifting to CCU.

TPM Insertion;

- Patients presenting in the emergency with syncope and ECG showing Complete Heart Block, Symptomatic Bradycardia requiring TPM insertion will be immediately shifted to ICU and will be attended by on duty doctor in ICU.

- On duty doctor will discuss the patient with the SR on call. SR on call will intimate this to consultant on call

- On duty doctor will discuss the patient condition and nature of disease to the attendants. After getting written informed consent, on duty doctor will seek help from cath.lab to pass TPM under flouro-guidance. If facility is not available or there is acute emergency to proceed, TPM will be inserted in the ICU by the SR on call or by Resident/Medical Officer who is trained enough in doing the procedure.

- Nurse on duty will attach the monitor, Oxygen, arrange TPM trolley, crash trolley alongside the patient bed and take vitals.

- Doctor will drape the pt. with sterilized sheets and will take necessary aseptic measures and will proceed with the procedure assisted by a doctor.

- After the procedure is successful, on duty doctor will make the documentation while staff will get the post TPM ECG with the help of ECG technician. Patient then will be shifted to emergency room for monitoring.

- Chest x ray will be done of every patient on TPM

Pericardiocentesis:

- Patients coming to emergency and diagnosed as having Pericardial Effusion will be shifted to ICU and will be immediately evaluated by on duty doctor. He will discuss the

patient with the on duty SR who will do his/her Echocardiography in the emergency department and will look if the patient needs pericardiocentesis or not.

- Once decided to go for pericardiocentesis, SR on call will intimate this to Consultant on call.
- On duty nurse will maintain IV line, attach monitor, arrange pericardiocentesis trolley alongside the patient.
- On duty doctor will discuss the nature of disease, its management, likely potentially hazards of procedure to the attendants.
- After getting written informed consent procedure will be conducted by the SR on call or by Resident/Medical officer who is trained enough to do pericardiocentesis after draping the patient with sterilized sheets and taking other aseptic measures under Echo-guidance.
- Once the procedure is completed successfully and patient remains well, he will be shifted to emergency room for further monitoring.
- Doctor on duty will make the documentation in patient file while nurse on duty will send the aspirated fluid to laboratory for its examination as advised by the doctor.

CVP line insertion;

- Patients requiring CVP line insertion as advised by the SR on call or Consultant will be shifted to ICU.
- On duty nurse will arrange CVP-line trolley alongside the patient while doctor on duty will discuss this with the attendants. After getting written informed consent, Resident/Medical officer who is trained enough to do the procedures will carry out the procedure maintaining all aseptic measures.
- After the completion of procedure, ward servant will shift the patient to his/her respective bed. On duty doctor will make documentation in the file and nurse will carry out the orders as measuring Central venous pressure.
- Chest x ray will be done in emergency.

Direct Current Cardio version:

- Patients presenting to emergency with tachyarrhythmia's and are hemodynamically unstable requiring DCC will be immediately shifted to ICU.
- On duty staff will record vitals, attach monitor, maintain IV line, oxygen, and draw blood samples.
- On duty doctor will discuss the patient with the SR on duty.
- Attendants of the patient will be counseled regarding the nature of disease, its management, and likely hazards of DCC.
- After getting informed consent in written, cardio version will be carried out after proper sedation under the supervision of SR on duty.
- Once the procedure is successful, SR on duty will advise further management as needed.
- Patient will be monitored in ICU till he/she is stable enough to be transported to emergency room.

- Patients requiring elective DCC will be seen by consultant, proper anticoagulation will be carried as per guidelines, Consultant will perform trans esophageal echocardiography if needed, when he will advise DCC, likely hazards will be counseled to attendants.
- DCC will be done after written informed consent in the presence of anesthetist.
- After the DCC is successful on duty doctor will make proper documentation in the patient file ad will start treatment as dictated by the Consultant/SR on duty.

POLICIES ALSO ADDRESS HANDLING OF MEDICO-LEGAL CASES.

POLICIES FOR HANDLING MEDICOLEGAL CASES:

- The cardiac patients who are under trial in medico-legal cases and who are referred from jail or DHQ hospital will be admitted after informing the Medical Superintendent and DMS on duty.
- Pt will be attended by the Senior Registrar on duty and he will start treatment after consultation with the respective consultant.
- After stabilization and initial management patient will be referred to CCU or Cardiology ward.
- All the investigations will be kept confidential and in hands of head nurse in-charge of that ward.
- If patient will move for any investigation like X-Ray, Echo or Coronary Angiography all the documents will be carried out by the charge nurse and she will hand over the patient and documents to the charge nurse of respective section.
- At the time of discharge or referral of such patients, discharge summary will be counter signed by respective consultant with prior information of administration.

POLICIES FOR CPR IN ED:

- If patient develops cardiac arrest in ED, doctor on duty in emergency room will immediately attend the patient and assess him/her and will start CPR. He will call help from his/her other colleagues in the emergency; SR on duty will be intimated who will then supervise the CPR as team leader.
- Team leader will advice necessary medication and tests and will also order to change the person doing CPR if he/she gets exhausted.
- He will intimate the situation to Consultant on call and other persons like anesthetist, pharmacist may seek their help.
- He will communicate the condition of the patient with the attendants . He will also decide when to stop CPR in case of successful CPR or failure.
- Nurse on duty will do the medication as advised by the team leader. She will draw the sample as per advice of team leader.
- Ward servant will curtain off the patient and will provide the necessary equipment like suction machine, attach oxygen.
- Successfully resuscitated patients will be shifted to ICU for invasive and closed monitoring and post CPR care.

THE PATIENTS RECEIVE CARE IN CONSONANCE WITH THE POLICIES.

POLICIES FOR PATIENTS REQURING MECHANICAL VENTILATION:

- Patients requiring mechanical ventilation will be discussed by doctor on duty with the SR on call/duty. Patients reviving after successful CPR, young patients, patients with acute myocardial infarction, patients surviving sudden cardiac death who need

mechanical ventilation will be given the chance in emergency ICU equipped with 02 Ventilators.

- Patients with multi-organ involvement, prolonged CPR, terminally ill patients like advanced cardiomyopathy, non-correctable valvular lesions, patients with poor prognosis will be intimated to Consultant on call by the SR on duty that will visit the patient and will advise next plan of action.
- Consultant on call will discuss the condition and ultimate outcome to the attendants of the patient and will give his final decision regarding whether to ventilate the patient or declare DNR (Do Not Resuscitate) status.
- Consultant on call will do all this in writing and will get it signed by two of patient's attendants.

Emergency Medical Services;

- Doctor on duty in E/R will attend the patient immediately. He/She will write down receiving notes along with time and date. Receiving notes should include
    - History and clinical examination
    - Diagnosis
    - General Condition
    - Vitals
- After writing receiving notes doctor on duty will sign and stamp with name on the patient file and will categorize the received patient according to triage.

- Treatment will be started according to category of patients:
    - Immediate Resuscitation (immediately)
    - Emergency (within 05 minutes)
    - Urgent (within 05 minutes)
    - Semi-Urgent (within 30 minutes)
    - Non-urgent. (within 120 minutes)
- While at the same time the nurse on duty will check the vitals, take I/V lines and attach cardiac monitor, carry out orders and send investigations as advised by the Doctors.
- Priority will be given to the Immediate Resuscitation, Emergency and Urgent category patients.
- The diagnosis and treatment will be reviewed by SR on duty.
- SR will call consultant if requires and he will attend patient within 30 minutes of phone call.
- All patients will be managed in ER as per AHA guidelines.
- SR on call will conduct round of all the admitted patients in each shift of morning, evening and night.
- Consultant on call will conduct round of all the admitted patients at morning and night.
- All the major decisions will be taken by the consultants regarding treatment plan, intervention etc.
- SR on call will inform the consultant on call about all the sick patients and will take management decision after discussing with him.
- SR on call will stay in emergency/CCU in 24 hour duty and will visit any patient in other wards if he is called by MO.
- SR on call will not discharge patients in evening and night from wards other than emergency. It is the duty of SR of concerned department to discharge the patients.

POLICIES AND PROCEDURES GUIDE THE TRIAGE OF PATIENTS FOR INITIATION OF APPROPRIATE CARE.

Emergency Department Design;

Emergency department comprises of

1. Screening room (Reception area Emergency Department)
2. In Emergency rooms bed 1-14 are meant for acute cardiac emergency monitoring. These beds are for critically sick patient for close monitoring. There are fully prepared trolleys available in emergency room.
3. Procedure room having 04 beds. Procedure room is meant for following procedures
   A) Thrombolysis
   B) CPR
   C) CVP line
   D) TPM Insertion
   E) Arrhythmia Management etc.
4. ICU equipped with two ventilators and monitors for invasive monitoring of blood pressure, respiratory rate, CVP monitoring and oxygen saturation monitoring. A fully prepared crash trolley is available in emergency room.

Staffing of Emergency Services;

- One consultant will be on call for 24 hours.
- Five doctors and an Admin. Registrar at morning shift while 4 doctors in the evening and night shift supervised by a Senior Registrar.
- At morning fourteen charge nurses will work under the supervision of 2 head nurses while ten staff nurses in the evening and 9 in the night with 01 head nurse will work in Emergency.
- Four ward servants and two sweepers are responsible for cleanliness and other ward activities in divided duties of 24 hours.
- One security guard performs his duties at emergency gate.

Arrival of Patient to ED:

- Patients landing in emergency will be taken up a trolley man deputed at Ambulance arrival area, he will take the patient to ECG room outside the ED and then to screening room while critical patients will directly move to emergency room. ECG of such patients will be done in ED and will be immediately attended by doctor on duty in ER.

Patient assessment and care;

All critically ill patients e.g. unconscious, severe chest pain, severe dysponic will be directly shifted to ER for management and all other patients walking to emergency will go to E/R ECG room.

Initial Screening Examination:

- After getting ECG done patient will move to ER screening room and will be evaluated by doctor on duty in screening room. He will evaluate the patients and will refer those patients to ER who require further evaluation and management. While doctor on duty in screening room will refer those patients to OPD who do not require emergency treatment.

- Doctor on duty in screening room will hold those patients in holding area outside ER who require observation and serial ECGs on OPD basis.
- Non-cardiac patients will be referred to their respective departments in Allied/DHQ hospital after initial assessment.

Triage:

Patients received in emergency room are categorized on basis of Urgency with which they need medical attention. Categories include,

- Immediate Resuscitation,
- Emergency
- Urgent
- Semi-Urgent
- Non-urgent.

Triage Categories

1. **Immediate Resuscitation**

Patients who need treatment immediately or within two minutes are categorized as having a life-threatening condition. Most of them would have arrived in the ED by ambulance and would probably be suffering from a critical cardiac problem.

2. **Emergency**

Patients who need to be treated within 10 minutes are categorized as having an imminently life-threatening condition. This group of patients includes those suffering from a critical illness or are in very severe pain e.g. chest pain, difficulty in breathing etc.

3. **Urgent**

This group of patients requires treatment within 30 minutes and is categorized as having a potentially life-threatening condition. These include patients suffering from severe illnesses, AMI.

4. **Semi-Urgent**

People in this group are having a potentially serious condition with less severe symptoms, such as a high/low blood pressure and need to be treated within one hour.

5. **Non-Urgent**

This category includes patients who have a less urgent condition and need to have treatment within two hours. This includes those having minor illnesses or symptoms which may have been present for more than a week such as pains.

ADMINISTRATION OF TEST DOSE FOR THE FIRST TIME:

- Administration of test dose for the first time of drugs known to have hypersensitivity reaction e.g. Benzedrine Penicillin will be administered in ED.
- Nurse on duty will maintain IV line, attach cardiac monitor, arrange crash trolley alongside the patient with all resuscitative measures will give the test dose intradermal and patient will be observed for 30 minutes.

- Doctor on duty will get the written informed consent from his/her attendants and will closely observe for any hypersensitive reaction.

Return of admitted patients to ED;

- Patients admitted in CCU, Cardiology ward if become sick will be managed at concerned department by the doctor on duty and if he/she needs ventilator support and further resuscitation will be shifted to emergency accompanied by Doctor and a staff with Oxygen cylinder and Defibrillator on bed.

Length of stay in ED;

- After initial management and monitoring patient will be kept in ER for minimum of 8 hours and then shifted to CCU or Cardiology ward. After discussing and advice of senior registrar on duty.

Shifting of Patients;

- Patients with Acute MI, Arrhythmias, ACS, and Acute Pulmonary edema will be shifted to CCU after advice of SR Emergency while CCF, Cardiomyopathy, valvular heart diseases, pericardial diseases will be shifted to Cardiology ward.

Medical record;

- Doctor On Duty in each shift will make a round of his/her patient's bed and will make proper documentation regarding patient's complaint and further management plan.
- Senior Registrar on duty of morning, evening and night shift will make their round at 8:30 AM to 2:30 PM and 8:30 PM. She/he will advise necessary investigation and treatment and he will discuss further treatment plan with consultant on call.
- At the time of change of shift, outgoing doctor will give bed to bed over to next coming doctor. This over should be written in the form of flow sheet.

Attendants of Patient:

- More than one attendant is not allowed with any patient.

Shifting of patient to CCU/C.W.

- The nurse taking care of the patient will properly give over to the nurse of shifting department (CCU/Cardiology ward).

POLICIES FOR PEDIATRIC CARDIAC PATIENTS:

- Pediatric Cardiac patients having congenital heart diseases, dilated cardiomyopathy or valvular heart diseases presenting with heart failure, shock, cyanotic spell or dyspnea will be directly shifted to emergency room. After initial management and stabilization by the staff and duty doctor/SR, pediatric cardiology consultant will be informed telephonically for visit and further advice.
- Pediatric cardiac patient will be assessed by pediatric cardiology consultant before shifting to cardiology ward or before discharge.
- The pediatric non cardiac patients landing in emergency will be shifted to other hospitals taking pediatric emergencies after initial stabilization.
- Pediatric cardiac patient below 4 years of age will be referred to other hospitals taking pediatric emergencies after initial stabilization as pediatric cardiology is in initial phase of development and is not yet able to handle such emergencies due to lack of human resource.

STAFF MEMBERS ARE FAMILIAR WITH THE POLICIES AND TRAINED ON THE PROCEDURES FOR CARE OF EMERGENCY PATIENTS.

HUMAN RESOURCES AVAILABLE

Following medical personnel's are available for well care of patients according to assigned duty roster/ schedule

Professor of cardiology
Associate Professor of cardiology
Assistant Professor of cardiology
Assistant Professor of Pediatric cardiology
Senior registrars
Medical officers/ PG trainees
Head nurse
Staff nurses
Ward boys/ Ayas

Designated registered medical officers with cardiology credentials along with sufficient supporting staff is present in the ward and registered specialists with credentials in cardiology provide sustainable 24-hour coverage.

FACILITY AVAILABLE

Following facilities are available in the cardiology ward for patient management.

1. Beds (equipped with central O2 and suction supply system)
2. Cardiac monitors(with central cardiac monitoring facility)
3. Crash carts
4. Patients medicine trollies
5. Infusion (Syringe) pumps
6. Cardioverter/Defibrillator
7. ECG machines
8. Nebulizers
9. Mobile suction machines
10. TPM batteries
11. Blood pressure apparatus (14 desk,2 mobile, 29 wall fixed)
12. Centrally connected computer system
13. Weighing machine
14. Wheel chairs
15. Stretchers

ADMISSION / SHIFTING& MANAGEMENT OF PATIENT IN WARD

1. Cardiology ward deals with relatively stable patients with adult as well as congenital heart diseases shifted from emergency, CCU, Cath lab and those admitted through OPD.
2. Patient with decompensated heart failure, infective endocarditis rheumatic heart diseases, heart block, and stable patients with acute coronary syndromewill be admitted in Cardiology.

3. Pediatric cardiac patients with congenital heart diseases having decompensated heart failure, infective endocarditis, rheumatic carditis, and dilated cardiomyopathy will be admitted in the cardiology ward.
4. Shifting or admission in ward from other departments or from emergency will be done after a proper call or complete shifting documentary work up.
5. The over of the patient being shifted will be from doctor to doctor and staff nurse to staff nurse.
6. Every patient being received from emergency ward will also be immediately attended by staff on duty. She will check the vitals and in form the doctor on duty that will immediately attend the patient and write down receiving notes.
7. Patient being shifted from cath lab will be immediately attended by staff on duty. She will check her vitals and inform the doctor on duty and there after she will check his/her vitals hourly for next 6 hours. She will note any soaking of dressing and will inform duty doctor if any such situation
8. After admission and identification of patient in cardiology ward the nurse on duty will take vitals of the patient and will attach cardiac monitor.
9. She will inspect general condition of patient take care of I/V lines, TPM Etc. She will inform doctor on duty immediately.
10. Doctor on duty will attend the patient soon after arrival of patient. He/She will write down receiving notes along with time and date. Receiving notes should include
    a. Reason for admission
    b. Diagnosis
    b. General Condition
    c. Vitals
    d. Treatment plan
11. Patients will be risk stratified/ prioritized on the basis of urgency on which they need medical attention.
12. Patients will be counseled about the nature of diseases, current treatment being given, further plan and prognosis by the duty doctor.
13. Pediatric cardiac patients shifted from emergency will be attended by staff nurse, duty doctor according to above described protocol and then consultant pediatric cardiology will be informed.
14. In case further opinion is required from other departments/colleagues, the call will be sent on a specified Performa.
15. Nurse on duty will immediately inform doctor in following situation.
    BP < 90 Systolic
    HR > 110/min
    RR > 25/min
    BSL < 70mg/dl or >400mg/dl
    Temp > 100F
16. Patient with STEMI will be kept in cardiology ward for at least 48 hours. Patient with heart failure will be kept till stabilization of the condition .After that stable patients can be discharged.
17. If case any CPR or procedure is done in cardiology ward complete notes of attending doctor and staff nurse shall be written on file
18. CPR will be conducted under recent ACLS guidelines.

MANAGEMENT OF MEDICATION:

1. No drug will be administered to a patient without a valid prescription/ written orders of the treating doctor
2. Policy of right drug, right patient, right dose, right route and right time will be adopted.
3. Proper documentation of prescribed medicines will be done clearly indicating the name, dose, route, time along with the name and signature of the prescriber.

4. In case of emergency telephonically prescribed medicine by consultant will be mentioned properly and signed by duty doctor.
5. In case of emergency verbal orders of medication may be obeyed by the staff nurse but she will have to get it countersigned by the doctor giving verbal orders with in duty shift.
6. High risk medication will be double checked by nurse and doctor on duty before administration.
7. Dosage of medicines for pediatric cardiac patients will be in mg/kg and adjusted by consultant pediatric cardiologist.
8. Drugs being given in drips, micro-burette and infusion pumps will be labeled mentioning name of patient, name of drug and dosage along with time and signature of staff nurse.

CARE OFPATIENT's INVESTIGATIONS:

1. Nurse on duty shall collect labs reports already send from emergency. For all new patients presenting with ACS, a lipid profile will be sent next morning.
2. Every patient will have daily ECG during stay in cardiology ward and additionally when ordered by doctor.
3. Blood samples of patient taken for investigations will be properly labeled and mentioned on a Performa having name, age, hospital registration number, reason for testing and Clinical history of patient. The blood samples will be transported to blood laboratory within half hour.
4. Patient with decompensate heart failure, infective endocarditic rheumatic heart block, and heart failure, post MI shortness of breath or heart murmur will get Echocardiogram ordered by at least senior registrar.
5. Patient with NSTEMI, unstable angina or preserved EF after MI will be advised coronary angio only by at least senior registrar and attending consultant of the day.
6. In case of X-Rays, Ultrasounds and Doppler studies of patient proper call will be sent on a Performa of investigations to radiology department duly signed by doctor on duty. Request Performa will be filled by doctor giving clinical history and reason of the test
7. In case of blood transfusion to the patient the duty doctor will properly check the blood bag for cross match and sign it. The staff nurse will transfuse the blood and proper documentation will be done by the duty doctor as well as staff nurse.

MANAGEMENT OF HUMAN RESOURCES/ DUTIES:

1. Each staff member including doctor, staff nurse will be aware and follow the rules and regulations of hospital
2. A proper duty roster will be made for staff members by administrative registrar/ senior registrar of the ward in consultation with all concerned and head of cardiology and then properly displayed in appropriate place in the ward
3. Medical officer on morning duty in cardiology ward will make detailed ward round and will write down daily progress notes.
4. Senior Registrar will start round at about 9 Am before consultant round. He/ She will advise necessary investigation and treatment. He/ She will discuss further treatment plan with consultant.
5. All round orders of consultant will be noted on a specified round register and will be carried out on the same day by the duty staff nurse.
6. At the time of change of shift, outgoing doctor will give bed to bed over to next coming doctor.
7. Doctor on duty in evening & Night shift will perform bed to bed round and in case of any problem will inform Senior Registrar in Emergency ward.
8. No doctor will leave cardiology ward before arrival of next doctor. Following change over time will be observed
   Morning 8:00 Am – 2:00 Pm

Evening 2:00 Pm – 8:00 Pm
Night 8:00 Pm – 8:00 Am

9. No leave is allowed without replacement. Replacing doctor should be from different shift
10. In case of any disciplinary complaint Senior Registrar of the ward will deal with the situation empathetically and inform higher authorities if needed.
11. More than one attendant is not allowed with any patient.
12. Mobile phone use is prohibited for patients and cardiology staff.
13. Nurse will remove chest electrode, I/V lines angio dressing etc at the time of discharge of patient.
14. Discharge Slip will be made by doctor on duty & will be checked and counter signed by Registrar/Senior Registrar.
15. Discharge slip will be handed over& explained to the patient by the doctor on duty by himself.
16. In case of death of the patient Medical officer/SR will sympathetically declare it to the first degree relative preferably in his office.

CLINICAL AUDIT:

1. Statistical record of the ward shall be maintained and regularly checked by the registrar / S.R.
2. Fortnightly or monthly clinical audit meeting shall be conducted in the ward & supervised by the Professor in-charge of the ward.
3. Annual appraisal of each unit shall be carried out regarding practices, performances and issues by the S.Rs who shall be trained for conducting audits.
4. Nurses, paramedics and class-IV staff shall also be involved in the audit process.
5. Adverse events & recent mishaps shall be discussed in no blame environment to improve patient outcome & shall be notified to the administration.
6. Protocols for emergencies shall be displayed by all the Units & regularly updated.
7. Minutes of clinical audit meeting and adverse eateries shall be sent to MS/CE office.

ADMISSION OR DISCHARGE TO HOME OR TRANSFER TO ANOTHER ORGANIZATION IS DOCUMENTED

DISCHARGE OF PATIENT:

- Patients discharged from ED on advice of SR on duty or Consultant during ward round will be managed by doctor taking care of that patient. He will prepare his discharge summary.
- Nurse on duty at that bed will remove patient IV line and will hand over the discharge summary to patient,
- Ward servant will take that patient to his/her vehicle on wheel chair.

DISCHARGE SUMMARY:

The discharge summary shall be signed by the treating doctor or member of his/her team and will contain;

- Patient's name
- Mark of identification
- Date of admission
- Date of Discharge
- Reason for admission
- Significant Findings

- Diagnosis
- Patient's condition
- Investigation Results
- Any procedure performed
- Medication administered
- Treatment given
- Follow up advice and other instructions deemed necessary.

POLICIES REGARDING DECLARING DEATH IN ED:

- If a patient dies despite all resuscitative measures in ED, death will be declared by SR (team leader) to the first relatives. On duty doctor will fill the death certificate and will hand over to the attendants.
- SR will write down the notes in the patient file.
- ECG technician will record the ECG long strip.
- Nurse accompanying resuscitation team will remove IV lines and discontinue medications.
- Ward servant will neat the patient and cover the body with mortality sheets and will shift the body outside the ED to the vehicle.

فیصل آباد انسٹیٹیوٹ آف کارڈیالوجی، فیصل آباد

﴿اجازت نامہ برائے علاج﴾

میں / ہم اپنے مریض _____ ولد _____ میڈیکل ریکارڈ نمبر _____ ایمرجنسی حالت / تکلیف کے ساتھ ہوں / لائے ہیں۔اس کے ساتھ ساتھ ہمارا مریض / میں ہارٹ اٹیک / دل کی دھڑکن کم / دل کی دھڑکن تیز / دل فیل ،مرض میں مبتلا ہے / ہوں۔اور ہمیں / مجھے _____ کی ضرورت ہے، مجھے / ہمیں علاج کے فائدے اور متوقع پیچیدگیوں (Complications) کے بارے میں مکمل طور پر آگاہ کر دیا گیا ہے اور _____ نظام (Organ Failure) خراب ہو رہے ہیں۔مجھے / ہمیں بتا دیا گیا ہے کہ علاج کا کوئی بھی عمل خطرے سے خالی نہیں ہے۔ اور ہمارے پاس تمام ادویات (خون پتلا کرنے والی ادویات ،اینٹی بائیوٹکس ،ڈرپ وغیرہ وغیرہ) کی حساسیت (الرجی) چیک کرنے کا یقینی ٹیسٹ نہیں ہے اور یہ بھی ممکن ہے کہ تمام احتیاط کے باوجود علاج کے دوران بالکل غیر متوقع اور لاعلاج مرض یا صورت حال نکل آئے یا پیدا ہو جائے جس میں دانت ٹوٹنے سے لیکر موت تک واقع ہو سکتی ہے۔دل یا خون کی نالیوں سے جما ہوا خون یا ہوا (Air/Fat Embolism) خود بخود پھیپھڑوں یا دماغ میں جا سکتا ہے۔جس سے سانس کی تنگی سے لے کر فالج یا موت تک واقع ہو سکتی ہے جس کا کوئی قطعی اور مکمل علاج بھی ہمارے پاس نہیں ہے۔علاج کے دوران یا بعد میں گردے یا کوئی اور اعضاء (Organ System) فیل ہو سکتے ہیں اور مریض کو مصنوعی سانس دلانے والی مشین (Ventilator) پر بھی ڈالنا پڑ سکتا ہے۔

مندرجہ بالا حقائق سے ہمیں آگاہ کر دیا گیا ہے اور میں / ہم نے باہوش و حواس قبول (Accept) کر لیا ہے۔میں / ہم علاج کی آزادانہ ،بلا جبر و کراہ اجازت (Free Permission) دیتا ہوں / دیتے ہیں۔میں / ہم علاج کا طریقہ کار اور ادویات کا استعمال ڈاکٹر کی صوابدید پر چھوڑتا ہوں / چھوڑتے ہیں۔ہمیں ڈاکٹروں کی صلاحیت وقابلیت اور خلوص پر مکمل اعتماد اور یقین ہے اور کسی بھی پیچیدگی (خواہ وہ کتنی ہی مہلک کیوں نہ ہو) کی صورت میں ہسپتال ،عملے ،ڈاکٹر حضرات کو ہرگز مورد الزام نہ ٹھہرائیں گے۔ہسپتال ،عملے اور ڈاکٹر حضرات کے خلاف کسی قسم کی اخلاقی ، محکمانہ اور قانونی چارہ جوئی نہ کرونگا / کریں گے۔اور اگر ایسا کرونگا / کریں گے تو جھوٹ اور باطل ہوگی۔اور اس طرح کرنے سے ہسپتال اور ڈاکٹر حضرات کو کسی قسم کے پہنچنے والے ذہنی ، جسمانی اور مالی نقصان کے ازالہ کا ذمہ دار ہونگا / ہونگے۔

مندرجہ بالا تحریر مجھے / ہمیں پڑھ کر سنا دی گئی ہے اور میں / ہم نے درست تسلیم کر لی ہے اور اس پر اپنی آزاد مرضی کے ساتھ دستخط کر دیئے ہیں اور نشان انگوٹھا ثبت کر دیا ہے۔

(I/we have read the above statements and agreed upon with free will)

1- نام مریض _____ دستخط _____ نشان انگوٹھا _____ شناختی کارڈ نمبر _____

2- نام خونی رشتہ دار _____ دستخط _____ نشان انگوٹھا _____ شناختی کارڈ نمبر _____

﴿نوٹ﴾ (اگر خونی رشتہ دار زندہ / موجود نہ ہوں)

3- نام رشتہ دار / سرپرست _____ دستخط _____ نشان انگوٹھا _____ شناختی کارڈ نمبر _____

4- خونی رشتہ / سرپرست یا کوئی بھی رشتہ دار موجود نہ ہونے کی صورت میں (لاوارث) اجازت برائے علاج ہسپتال انتظامیہ (کم از کم ڈی ایم ایس اور دو ڈاکٹرز) دستخط کریں۔

ہسپتال کا عملہ اور ڈاکٹر حضرات دل و جان سے مریض کے علاج کیلئے کوشاں ہیں اور دعا گو ہیں کہ اللہ تعالیٰ انہیں شفاء کاملہ عطا فرمائے۔میں تصدیق کرتا / کرتی ہوں کہ میں نے مریض / رشتہ دار کو علاج کی نوعیت و اثرات اور پیچیدگیوں سے باخبر کر دیا ہے اور مریض نے انہیں قبول (Accept) بھی کر لیا ہے۔

نام و عہدہ ڈاکٹر _____ دستخط _____ مورخہ _____ وقت _____

POLICIES AND PROCEDURES DEFINE RATIONAL USE OF BLOOD AND BLOOD PRODUCTS

DOCUMENTED POLICIES AND PROCEDURES ARE USED TO GUIDE RATIONAL USE OF BLOOD AND BLOOD PRODUCTS

The policies & procedures are being adopted for blood & blood product accordingly as mentioned below

1. Donor screening
2. Storage of blood
3. Separation of blood products
4. Identification and analysis of real or suspected transfusion reactions
5. Disposal of blood and related products.

We are observing the safety of staff, donor, and patients to ensure that only blood & blood products derived according to standard safety guidelines for blood transfusion services.

All staff are fully trained and following the S.O.Ps of blood bank.

Staff members are fully trained and having adequate means for any remedial action if transfusion reaction occurs. While at job, they remain in contact with emergency ward, ICU, OT and other wards to liaison with the concerned staff.

SOP's for General working of blood bank

1- Blood bank staff (lab technician & lab attendants)will wear overall in Working area during their respective duty timings.

2- Every donor will be bleed after proper screening, grouping and cross matching.
For each directed donation for patients on elective surgery list, O6 donors will be prepared (Screening, grouping & Cross matching).Two of these donors will be bleed on surgery day after confirmation from OT/Ward.

3- Both of these units will be processed to FFP & PCV

4- These units will be shifted to blood storage cabinets immediately.

5- Each unit of blood should be kept in blood storage e cabinet/ Plasma freezer, not at room temperature after bleed or return from OT/ICU or Ward.

6- FFP will be consider red as hospital stock and will be issued on request from the relevant department after proper documentation.

7- Each blood unit (Whole Blood Plasma & PCV) will be entered on Patient's stocks register & Plasma register respectively and issued to the relevant patient on request.

8- On 7th day of bleed whole blood & PCV will be shifted to hospital stock which will be considered hospital property and can be issued to any patient in FIC, on request dully sign by MO / Registrar of the relevant department.

9- After 21 day of bleed, the blood units (Whole Blood & PCV) from hospital stock can be donated to the thalasemia centre DHQ Hospital Fsd properly allowed by BTO and MS, FIC FSD.

10- Proper handing over & taking over in black & white will be observed shift wise by all lab technicians & lab attendants strictly. Failing which a strict disciplinary action will be taken against the responsible person.

11- Female donor will be bleed only in the presence of female attendant or staff nurse.

12- Strict maintenance of record by lab staff will be observed shift wise.

13- Blood bank officer will check the record of blood bank shift wise & on every Saturday traceability will be done by the blood bank officer in morning duty.

14- PRECAUTIONS FOR SCREENING:

1. Before starting the screening of donor's blood for anti-HI V, Anti TP, Anti Malaria, HBsAg and Anti-HCV please ensure that SAFE LABORATORY PRECAUTIONS are obeyed properly.
2. Person qualified and trained in the field should be perform the tests.
3. Wear gloves and white coat before starting the procedures.
4. The samples and wastes are BIOHAZARDS and should be carefully handled and properly disposed off
5. Screening table should be separately placed from the other laboratory tables.

SMPLE INDENTIFICATION

6. Identity the samples from labels/names etc.
7. Make complete entries in the respective registers.
8. Also prepare a worksheet before starting the procedure.

SEQUENCE OF TESTING

9. Perform the screening in the following sequence

1. Anti-IICV if the result is +ve, don't perform the remaining screening.
2. HbsAg if the result is +ve, don't perform the remaining screening.
3. Anti-HIV
4. MP
5. Syphilis

HBsAg SCREENING WITH RAPID IMMUNOCHROMATOGRAPHIC TECHNIQUE

Follow strictly manufacturer instructions.

Manufacturer: ACON HBsAg, One step Hepatitis B Surface Antigen Test Device

Sample:

Donor serum or plasma as mentioned in manufacturer instructions.

Technique:

Bring specimen (serum) and reagent to room temperature).

1. Run positive and negative controls once daily. If there are unexpected results, then start the test with another kit.
2. Write the sample identification number on the device provided and prepare a work sheet as well.
3. with the help of disposable pipette provided place the 3 full drops (1OOuL) of sample (plasma or serum) in the sample well S.

4. Interpret the results after 15 minutes as per manufacturer instruction.
a. If there are two visible red lines in the window, one at “C”region and other at “T”region then the test is considered as POSITIVE and differ the donor.
b. If there is only one line at the “C” region then the test is considered as NEGATIVE.
c. If there is no line in both the “C” AND “T” regions then the test is INVALID and repeats it again on a new device. This may happen when the device is exposed to humidity or when the test is run in an improper manner.
d. If there is a single line at the “T”region and no line at the “C”region the test is again INVALID and repeat it. This may happen when the device is exposed to humidity or when the test is run in an improper manner.
5. Record the result on the respective registers.
6. When the kit not in use, store it in a refrigerato

ANTI-HCV SCREENING WITH RAPID IMMUNOCHROMATOGRAPHIC TECHNIQUE

Follow strictly manufacturer instructions.

Manufacturer: ACON HCV.

Sample:

Donor serum or plasma as mentioned in manufacturer instructions.

Technique:

Bring specimen (serum) and reagent to room temperature).

1. Run positive and negative controls once daily. If there are unexpected results, then start the test with another kit.
2. Write the sample identification number on the device provided and prepare a work sheet as well.
3. With the help of disposable pipette provided place 5ul of sample (Donor plasma or serum) in the sample well S. Add 2 drops of buffer provided with the kit.
4. Interpret the results at 10 minutes as per manufacturer instruction.
a. if there are two visible red lines in the window, one at “C” region and other at “T” region then the test is considered as POSITIVE and defer the donor.

b. If there is only one line at the “C” region then the test is considered as NEGATIVE.
c. If there is no line in both the “C” AND “T” regions then the tests is INVALID and repeat it again on a new device. This may happen when the device is exposed to humidity or when the test is run in an improper manner.
d. If there is a single line at the “T” region and no line at the “C” region the test is again INVALID and repeat it. This may happen when the device is exposed to humidity or when the test is run in an improper manner.
5. Record the result on the respective registers.
6. When the kit not in use, store it in a refrigerator.

ANTI-HIV SCREENING WITH RAPID IMMUNOCHROMATOGRAPHIC TECHNIQUE

Follow strictly manufacturer instructions.

Manufacturer: Eco test. D-HIV-32

Sample:

Donor serum or plasma as mentioned in manufacturer instructions.

Technique:

Bring specimen (serum) and reagent to room temperature).

1. Run positive and negative controls once daily. If there are unexpected results, then start the test with another kit.

2. Write the sample identification number on the device provided and prepare a work sheet as well.
3. With the help of disposable pipette provided place 3 drops (75ul) of sample (Donor plasma or serum) in the sample well S.
4. Interpret the results at 10 minutes as per manufacturer instruction.
a. If there are two visible red lines in the window, one at “C” region and other at “T” region then the test is considered as POSITIVE and defer the donor.
b. If there is only one line at the “C” region then the test is considered as NEGATIVE.
c. If there is no line in both the “C” AND “T” regions then the tests is INVALID and repeat it again on a new device. This may happen when the device is exposed to humidity or when the test is run in an improper manner.
d. If there is a single line at the “T” region and no line at the “C” region the test is again INVALID and repeat it. This may happen when the device is exposed to humidity or when the test is run in an improper manner.
5. Record the result on the respective registers.
6. When the kit not in use, store it in a refrigerator.

ANTI-TP (Syphilis) SCREENING WITH RAPID IMMUNOCFIROMATOGRAPHIC TECHNIQUE

Follow strictly manufacturer instructions.
Manufacturer: ACON. Syphilis Ultra Rapid Test Device
Sample:
Donor whole blood, serum or plasma as mentioned in manufacturer instructions.
Technique:
Bring specimen (serum and reagent to room temperature).
1. Run positive and negative controls once daily. If there is unexpected result, then start the test with another kit.
2. Write the sample identification number on the device provided and prepare a work sheet as well.
3. With the help of disposable pipette provide place 3 drops of sample (Donor WIB, plasma or serum) in the sample well S. Add 1 drop of buffer.
4. Interpret the results within given time as per manufacturer instruction.
a. If there are two visible red lines in the window, one at “C”region and other at “T”region then the test is considered as POSITIVE and defer the donor.
b. If there is only one line at the “C” region then the test is considered as NEGATIVE.
c. If there is no line in both the “C” AND “T” regions then the test is INVALID and repeats it again on a new device. This may happen when the device is exposed to humidity or when the test is run in an improper manner.
d. If there is a single line at the “T”region and no line at the “C”region the test is again INVALID and repeat it. This may happen when the device is exposed to humidity or when the test is run in an improper manner.
5. Record the result on the respective registers.
6. When the kit not in use, store it in a refrigerator.

MALARIAL PARASITE SCREENING WITH RAPID IMMUNOCHROMATOGRAPHIC TECHNIQUE

Follow strictly manufacturer instructions.
Manufacturer: Eco test. Malaria PF Pan Rapid Test Device

Sample:

Donor whole blood as mentioned in manufacturer instructions.

Technique:

Bring specimen (serum and reagent to room temperature).

1. Run positive and negative controls once daily. If there is unexpected result, then tart the test with another kit.
2. Write the sample identification number on the device provided and prepare a work sheet as well.
3. with the help of disposable pipette provided place 10uL of whole blood in well 1 (W-I). Add 2 full drops of buffer in well 2 (W-2).
4. Interpret the results within given time as per manufacturer instruction.

a. If there are two visible red lines in the window, one at “C”region and other at “PF’region then the test is considered as POSITIVE and defer the donor.

b. If there are three visible red lines in the window, one at “C”region and other at “PF’ and “Pan” regions then the test is considered as POSITIVE and defer the donor.

c. If there is only one line at the “C” region then the test is considered as NEGATIVE.

d. If there is no line in both the “C” regions then the tests is INVALID and repeat it again on a new device. This may happen when the device is exposed to humidity or when the test is run in an improper manner.

5. Record the result on the respective registers.
6. When the kit not in use, store it in a refrigerator.

PREPARATION OF RED BLOOD CELLS

1. Take out the donation/donations, from the blood storage cabinet, intended for the processing of red cells.
2. Program the refrigerated centrifuge machine as under

RPM: 4200, TEMERATURE 20°C, ACCELERATION: 9, DEACCELERATION: 6 & TIME: 12 Minute

3. Place the donation in the bucket.
4. Balance the bucket on an electronic balance.
5. Adjust the balanced buckets on the opposite arms of the centrifuge spindle.
6. Secure the safe shield on the drive spindle.
7. Close the centrifuge lid.
8. Press the start button.
9. on completion of the program press lid button to open the lid.
10. Remove the safe shield.
11. Take out buckets carefully to the component separation area.
12. Carefully remove the bag/bags from the bucket and place carefully in the plasma extractor with tubing facing upward.
13. Respine the bag if plasma is contaminated with red cells.
14. If the donation has been collected in double bags proceed as follows.

14.1 Components should be separated within 6 hours of donation collection.

14.2 Keep the donation at room temperature (20 ± 2^{0}C) till the components are separated.

14.3 After centrifugation carefully place the primary pack in the plasma extractor.

14.4 Relieve the extractor handle slowly against the pack.

14.5 Break the seal (cannula) at the top of the primary pack.

14.6 Look the plasma flows to the plasma pack. The plasma left above the plasma RBCs interface block the plasma flow by applying a clamp or artery forcep.
14.7 When there are 2 —3 cm (25 % of the plasma) of plasma left above the plasma RBCs interface block the plasma flow by applying a clamp or artery forcep.
14.8 Apply two knots to the plasma transfer tube and cut between the tubes to separate the bags. Then cut the extra tubes.
14.9 Confirm the labels on each pack are correct and entries in the registers are complete.
14.10 Mix gently the red cell pack and store at 2 - 6°C till the expiry date. Freeze the plasma pack accordingly at or below -30°C.
15.1 Donation has been collected in a single CPD-A1 bag then proceeds as follows. Red cells can be prepared at any time between the collection of donation and its expiry.
15.2 After centrifugation carefully place the bag in the plasma extractor and relieve the handle slowly to press against the bag.
15.3 Make a loose knot on the tube and apply a clamp/artery forcep distal to the knot.
15.4 Cut the tube distal to the clamp and bring a container below this end of tube. The tube end should not touch the container which is for plasma disposal.
15.5 Relieve the clamp and allow the plasma to flow in the container.
15.6 When there is 2 - 3 cm (25 % of plasma) of plasma over the RBCs, apply the clamp again.
15.7 Tight the knot and cut the extra tube.
15.8 Take out the bag of red cells from the plasma extractor.
15.9 Mix the red cells thoroughly.
15.10 Confirm the labels and entries in the registers.
15.11 Issue the red cell pack with proper instructions.
Note: When the component is to be prepared by using an open system then it must be prepared in a flow cabinet (Biological safety cabinet).

THE TRANSFUSION SERVICES ARE GOVERNED BY THE APPLICABLE LAWS AND REGULATIONS

ISSUE AND SUPPLY OF SAFE BLOOD/COMPONENT FOR TRANSFUSION
RESPONSIBILITY
It is the responsibility of the technician on shift duty to issue the blood for which requisition is received.
MATERIALS REQUIRED
Issue register
Inventory register
Request form compatibility report
PROCEDURE
1. In order to avoid outdating, implement FIFO (First in First Out) policy.
2. Carry out compatibility testing using SP —
3. Ensure that the compatible units arc tested for TTIs and found suitable for use.
4. Remove the correct unit from blood bank refrigerator.
5. Make entries in the issue register.
6. Instruct the individual to take the unit straight to OT/ Ward for transfusion.
7. Make following entries in issue register.
• Name of patient

• Hospital registration number
• Blood group
• Date and time of issue
• Unit No. issued
• Blood group of unit
• Component of blood
• Signature of technician who issues
• Signature of receiver.

Blood Bank responsibilities

Check for clerical mistakes:
• Wrong issuance of Blood/Component
• Issuance of Expired Blood Component
• Wrong entries made in compatibility card or register.
• Wrong labeling on the bag
• Wrong labeling of recipient sample by the ward
Improperly filled requisition form by the competent authority
If there is no clerical mistake proceed further:
• Repeat the blood grouping of pre transfusion sample of recipient and donor
• Repeat the routine compatibility test
• Repeat the blood grouping of post transfusion sample of recipient and bag
• Send post transfusion urine sample to clinical lab for evaluation of hematuria or hemoglobin urea

BLOOD BANK WASTE MANAGEMENT

FOLLOW THE INSTRUCTION/POLICY OF HOSPITAL ADMINISTRATION FOR WASTE DISPOSAL

Blood bank generates plenty of hazardous, non-hazardous and sharp waste. The waste is segregated within the blood bank before it is packed by hospital administration for disposal.
I. Any waste that could produce laceration or puncture injuries must be disposed of as "SHARPS". Sharps must be segregated from other waste. Metal sharps and broken glass may be commingled with each other, but not with non-sharp waste.
2. Waste that is to be incinerated should not be mixed/combined with glass or plastics.
3. Biological waste must not be combined mixed with chemical waste or other laboratory trash.
4. Hazardous biological waste should be segregated from other biological waste.

Waste Containers

Containers must be appropriate for the contents i.e. not leaks, properly labeled and maintain their integrity if chemical or thermal treatment is used. Containers of bio hazardous material should be kept closed.
I. **Metal Sharps**. Place in a rigid, puncture resistant container (heavy walled plastic is recommended). Never attempt to retrieve items from a sharps container. Do not place sharps in plastic bags or other thin-walled containers.
2. **Broken Glassware**. Place in a rigid, puncture resistant container (plastic, heavy cupboard or metal), seal surely and clearly label "BROKEN GLASS".
3. **Solid Bio hazardous Waste**. Use heavy duty plastic "BIO-HAZARD BAGS" (autoclave bags) or containers for solid bio hazardous waste (including contaminated disposable plastic lab ware, paper, bedding, etc which are not sharp).

4. **Non Hazardous Biological Waste**. Heavy duty plastic bags or other appropriate container without a Biohazard label are preferred. Red or orange biohazard bags or containers should not be used for nonhazardous material.
5. **Liquids**. Liquids like blood, plasma serum and reagents should be placed in leak- proof containers able to withstand thermal or chemical treatment. DO NOT USE PLASTIC BAGS TO CONTAIN LIQUIDS.

HOSPITAL TRANSFUSION COMMITTEE

Each Hospital should constitute a Hospital Transfusion Committee (HTC) consisting of blood users (such as representatives from surgical and medical disciplines, hematologist and anesthesiologist), representative of hospital admin, nursing staff and hospital blood I in charge.

Functions of HTC

The functions of HTC could be summarized as follows:
I. Provide a forum which facilitates the communication between those involved with transfusion of blood! Blood component.
2. To Implement policies for use of blood and blood components
3. Give inputs for the 'development of guidelines for rational use of blood! Plasma substitutes.
4. Establish standard Surgical Blood Ordering Schedules for their own hospital.
5. Monitor source and supply of blood components.
6. Monitor adverse effects of blood transfusion.
7. Audit blood transfusion practices.
8. the most important is the regular periodic meetings of HTC.

INFORMED CONSENT IS OBTAINED FOR DONATION AND TRANSFUSION OF BLOOD AND BLOOD PRODUCTS

DONATION COLLECTION

1. Blood should be collected by a suitably qualified and trained person. It is preferred that a doctor should be present on premises.
2. Donation should be collected in a CPD-A1 bag and a 3-4m1 of donor's blood sample for donation testing is also taken in a properly labeled clean dry test tube.
3. Donor should always be identified before making a venepuncture.
4. The donor must have given CONSENT for DONATION of BLOOD / Apheresis procedure and have been found suitable for blood donation by the donor selection staff.
5. It should be confirmed that the donation number on the donor history card, blood collecting bag and test tube is same.
6. Blood should be drawn from a suitable vein in the antecubital fosse that is free of skin lesions.The veins can be made more prominent by using an inflated blood pressure cuff.
7. A suitable antiseptic (70% wlv alcohol) which assures the sterility of the venepuncture site, should be applied over the skin area chosen for venepuncture.
8. Before making the venepuncture, a loose knot should be made on the tube midway between the bag and the needle.
9. A good venepuncture should be made in order to make a continuous flow of blood and to collect a clot free donation within 8 minutes.
10. During the collection the bag should be gently agitated every 30 seconds to mix the blood and anticoagulant.
11. Volume of the blood collected should be between 405-495 ml. (450 ±45m1).

12. At the end of the donation, the collection tube should be clamped between the needle and loose knot.
13. The knoll should now be tight end and collection tube be cut between the knot and clamp.
14. Donor blood sample for donation testing should now be collected by loosening the clamp which should he tightened again after sample collection.
15. The pressure unit should be deflated and the needle should then be removed from the arm.
16. Immediately after removing the needle a high pressure with sterile cotton should be applied on the venepuncture site in order to stop out flowing of blood from that site. A light bandage should then be applied.
17. The blood contained in the collection tube should be expressed into the pack containing the blood donation and allowed to flow back into the tube to ensure anticoagulation.
18. The needle must be discarded in a puncture proof container / bag for proper thoroughly.
19. The blood bag should be inverted several times to mix the contents thoroughly.
20. The donor should be reassured and counseled to keep the bandage for up to one hour. He/she should also be asked to some refreshment and during the refreshment period keep observing the donor for any unwanted effect of blood donation.
21. Before putting the donation and blood sample in their proper place, the donation number on the blood bag test and history card should again be matched.

CRITERIA FOR SELECTION OF BLOOD DONORS

A. Accept only voluntary/replacement non remunerated blood donor if following criteria are fulfilled

The interval b/t blood donation should be no less than three months. The donor shall be in good health, mentally alerts and physical fit and shall not be a jail inmate or a person having multiple sex partners or a drug-addict.

1. The donors shall fulfill the following requirements, namely :-
2. The donor shall be in the age group of 18 to 60 years.
3. The donor shall not be less 45 kilograms.
4. Temperature and pulse of the donor shall be normal.
5. The systolic and diastolic blood pressure is within normal limits without medication.
6. Hemoglobin shall not be less than 12.5 g/dl.
7. The donor shall be free from ad acute respiratory disease.
8. The donor shall be free from any skin disease at the site of phlebotomy.
9. The donor shall be free from any disease transmissible be blood transfusion, in so far as can be determined by history and examination indicated above.
10. The arms and forearmed of the donor shall be free from skin puncture and scars indicative of professional blood donors or addiction of self-injected narcotics.

B DEFFER THE DONOR FOR THE PERIOD MENTIONED AS INDICATED IN THE FOLLOWING TABLE:

ABORTION	6 MONTH
HISTORY OF BLOOD TRANSFUSION	6 MONTH
SURGERY	12 MONTH
TYPHOID FEVER	12 MONTH AFTER RECOVERY
HISTORY OF MALARIYA DULLY TREATED	3 MONTH ENDEMIC AREA AND THREE YEARS FOR NON ENDAMIC AREAS.

TATTOOING	6 MONTH
BREAST FEEDING	12 MONTH AFTER DELIVERY
IMMUNIZATON (CHOLERA, TYPHOID, DIPTHERIA, TETANUS, PLAGUE, GAMMAGLOBIN)	15 DAYS
RABIES VACCINATION	1 YEARS AFTER VACINATION
HEPATITUS IN FAILY OR CLOSE CONTACTS	12 MONTHS
HEPATITUS AMMUNGLOBOLIN	12 MONTHS

B. Differ the donors permanently from any of the following disease.

1. Screen
2. HBAg
3. Hepatitis B &C
4. HIV
5. VDRL

6. **F. DOCUMENTATION**
7. Enter all details in the donor questionnaire form/card and computer

CONSENT FORM FOR BLOOD OR BLOOD COMPONENT TRANSFUSION

Date: _____

Patient's Name: _____ Age:_____

Identity Card No. : _____ Sex: Male/Female*_____

Address:_____

__

Attending Medical Practitioner: Dr. _____

Identity Card No./PMDC Reg. No. : _____

I, the parent/guardian/spouse/next-of-kin of the above-named*, have been informed of the need for a blood transfusion for the patient. The attending medical practitioner has explained to me the risks and benefits involved in the transfusion as well as answered all my inquiries satisfactorily. I understand that despite testing and screening on the blood/blood components for HIV, hepatitis B, hepatitis C and syphilis, there are still risks of developing the disease. I also understand that unavoidable complications of transfusion may also occur.

I fully understand the above and hereby agree to the blood/blood component transfusion.

_____ _____

Signature of the patient/ Signature of Attending

parent/guardian/spouse/next-of-kin* Medical Practitioner

Name of parent/guardian/spouse/next-of-kin** _____

Identity Card No. of the above: _____

I was present while the above matter was explained to the patient/parent/guardian/spouse/next- of- kin* whose signature appears above. In my opinion, the person referred to has understood the contents of this form and agreed to the transfusion willingly.

_____

Signature of Witness

Name of Witness : _____

Identity Card No. : _____

* Delete appropriately ** If necessary

STAFF MEMBERS ARE TRAINED TO IMPLEMENT THE POLICIES

Blood Bank responsibilities:-

- Check for clerical mistakes:
  - Wrong issuance of Blood/Component
  - Issuance of Expired Blood Component
  - Wrong entries made in compatibility card or register.
  - Wrong labeling on the bag
  - Wrong labeling of recipient sample by the ward
- Improperly filled requisition form by the competent authority
- If there is no clerical mistake proceed further:
  - Repeat the blood grouping of pre transfusion sample of recipient and donor
  - Repeat the routine compatibility test
  - Repeat the blood grouping of post transfusion sample of recipient and bag
  - Send post transfusion urine sample to clinical lab for evaluation of hematuria or hemoglobin urea

HOSPITAL TRANSFUSION COMMITTEE

- Each Hospital should constitute a Hospital Transfusion Committee (HTC) consisting of blood users (such as representatives from surgical and medical disciplines, hematologist and anesthesiologist), representative of hospital admin, nursing staff and hospital blood I in charge.

Functions of HTC

The functions of HTC could be summarized as follows:

A) Provide a forum which facilitates the communication between those involved with transfusion of blood! Blood component.
B) To Implement policies for use of blood and blood components
C) Give inputs for the 'development of guidelines for rational use of blood! Plasma substitutes.
D) Establish standard Surgical Blood Ordering Schedules for their own hospital.
E) Monitor source and supply of blood components.
F) Monitor adverse effects of blood transfusion.
G) Audit blood transfusion practices.
H) The most important is the regular periodic meetings of HTC.

TRANSFUSION REACTIONS ARE ANALYZED FOR PREVENTIVE AND CORRECTIVE ACTIONS

INVESTIGATION QF TRANSFUSION REACTIONS

(Pertaining to Blood Bank)

Prerequisite for investigations

The blood/component transfusing physician must send the following to the blood bank.

• Completed transfusion reaction report form.
• Compatibility card
• Blood/component Pack.
• Post reaction blood sample
• Post reaction urine sample (Do not delay investigation while waiting for a urine sarrtpk3

Additional samples some times required (as directed by hematologist on call)

• Blood cultures

• 1-ILA or neutrophil antibodies
• Anti-IgA antibodies
• HLA typing

ISSUE AND SUPPLY OF SAFE BLOOD/COMPONENT FOR TRANSFUSION

RESPONSIBILITY

It is the responsibility of the technician on shift duty to issue the blood for which requisition is received.

MATERIALS REQUIRED

Issue register
Inventory register
Request form compatibility report

PROCEDURE

1. In order to avoid outdating, implement FIFO (First in First Out) policy.
2. Carry out compatibility testing using SP —
3. Ensure that the compatible units arc tested for TTIs and found suitable for use.
4. Remove the correct unit from blood bank refrigerator.
5. Make entries in the issue register.
6. Instruct the individual to take the unit straight to OT/ Ward for transfusion.
7. Make following entries in issue register.

• Name of patient
• Hospital registration number
• Blood group
• Date and time of issue
• Unit No. issued
• Blood group of unit
• Component of blood
• Signature of technician who issues
• Signature of receiver.

POLICIES AND PROCEDURES GUIDE THE ADMINISTRATION OF ANAESTHESIA

THERE IS A DOCUMENTED POLICY AND PROCEDURE FOR THE ADMINISTRATION OF ANAESTHESIA

The prime duty of anesthesia department is to anaesthetize the patient, pain management, advanced airway management, ventilator support and ABG's control, monitoring and managing critically ill patients to facilitate surgery in operation theaters and patients in ICU, Emergency and wards in a manner stated below:

SOP: Administering Anesthesia

1. A documented policy and procedure shall exit for administration of Anesthesia.
2. All patients for anesthesia have a pre-anesthesia assessment by a qualified individual.
3. The pre-anesthesia assessment results in formulation of an anesthesia plan which is documented.
4. Informed consent for administration of anesthesia is obtained by a qualified member of the anesthesia team.
5. During anesthesia monitoring shall include regular and periodic recording of heart
6. Rate, cardiac rhythm, CVP, respiratory rate, blood pressure/iBP, oxygen saturation, airway security and patency.
7. Each patient's post anesthesia status is monitored and documented.
8. All adverse pre anesthesia events are recorded and monitored.

The Anesthetist shall be responsible for

- Checking anesthesia machine, oxygen supply, anesthesia circuits, laryngoscope, suction machine, monitors etc.
- Duck labeling on the syringes of anesthesia drugs
- Ensuring stand-by supply of oxygen cylinder, emergency drugs, ambu bag, defibrillator etc.
- Setting I/V line arterial line, CVP & starting I/V fluids
- Setting monitors-SpO2, BP, ECG etc.
- Pre-medication
- Induction & maintenance of anesthesia as planned
- Recovery of patient
- Shifting the patient from the operation theater to ICU accompanied by Doctor, Anesthesia nurse and Anesthesia assistant.
- Consultation with seniors in difficult situation

Anesthetic Theatre Standards Contents

- Safely prepare and transfer patients for clinical procedures
- Safely position the patients for clinical procedures
- Appropriately prepare the anesthetic room and operating theatre ready for adult/pediatrics anesthesia dependent on theatre operating list

- The anesthetic assistant is competent in the location and use of all emergency equipment required within their working environment
- Safely and competently prepare materials and equipment for intravenous infusion and transfusion
- Patients physiological parameters are adequately monitored during the induction of anesthesia
- The patient is safely transferred to the operating table from the bed or trolley
- All staff to attend mandatory training
- Faulty equipment is dealt with promptly and in the correct manner
- The anesthetic care plan is accurately completed according to the patients individual needs and received care.
- The anesthetic assistant appropriately assists the anesthetists during the reversal of anesthesia if patient is to be extubated in OT like PDA cases.
- Safely prepare and monitor anesthetic materials and equipment.
- Safely monitor and maintain medical gas supplies within the operating department.
- Ensure the patient is adequately prepared for clinical procedures.
- Safely assist in venous and arterial cannulation during clinical procedures for both adult and pediatric patients.
- Assist in the establishment and maintenance of the patients airway both adult and Pediatric.
- Accurately monitor the physiological parameters and fluid balance of patients
- Undergoing clinical procedures.
- Competently identify and respond to clinical emergencies.
- Competently assist the clinician in treating patients during clinical emergencies.
- Identify the need for and perform immediate life support.

ALL PATIENTS FOR ANAESTHESIA HAVE A PRE-ANAESTHETIC ASSESSMENT BY A QUALIFIED INDIVIDUAL

Anesthetic room and operating theatre preparation

The anesthetic room and operating theatre is appropriately prepared ready for adult/pediatrics anesthesia dependent on theatre list and the anesthetists requirements.

Method:

- All anesthetic staff will have the required training, skills and knowledge, and will have been assessed as competent.
- The anesthetic machine in the anesthetic room and the anesthetic machine in the operating theatre should be checked following the manufacturers guidelines, i.e. cylinders and pipeline gases, vaporizers, breathing circuits, suction, ventilator, alarms, oxygen analyzer, capnograph, airway manometer and spirometery.
- All patient breathing circuits should be changed, the spirometer, CO2 line, pressure monitor tube are disposable items, therefore, should be replaced every day.
- Full monitoring should be available and ready for use, i.e. ECG, pulse oxi-meter, capnograph, non invasive blood pressure, invasive blood pressure, CVP, Spiro-meter, and temperature monitor.

Airway management trolley

- Laryngoscopes (McGill, McIntosh along with all sizes of blades)
- A selection of cuffed endotracheal tubes for adults and un-cuffed
- endotracheal tubes for pediatrics appropriate to the type of surgical or anesthetic procedure
- Appropriate oral & nasal airways
- Bougie introducer and stylets
- Suction
- Selection of securing tapes.
- Prepare trolley for Arterial and CVP line.
- Prepare trolley for intubation.
- Selection of BP transducers and tubing's and syringes.
- Arterial and central venous equipment.
- The anesthetic room should be checked to ensure adequate stock levels of all items that may be required appropriate for all types of cardiac surgery.
- Specific pediatrics equipment should be prepared appropriately for the patients weight and size, please see pediatrics standards.
- The temperature in the anesthetic room/operating theatre will be adjusted accordingly dependent on the patients individual needs.
- The anesthetic room and all equipment should be clean after each patient and kept tidy at all times.
- Emergency equipment should be available, in good working order at all times and when in use documented appropriately.
- Equipment found to be faulty should be sent to the appropriate department for repair and a replacement obtained if necessary.
- Any missing equipment should be traced and returned.
- Play equipment should be readily available and used if appropriate (advice from the play specialist in the children's unit can be sought)

FAISALABAD INSTITUTE OF CARDIOLOGY, FAISALABAD
ANAESTHESIA CONSENT FORM

BASIC INFORMATION:

Patient's Name:_____**S/o,D/o,W/o**: _____

Sex: M/F **Age: ____**

FIC Reg. No:_____

PROPOSED TYPE OF ANAESTHESIA TECHNIQUE

Diagnosis: _____ **Procedure:** _____

Anaesthesia: _____

ANAESTHETIST'S STATEMENTS

1. I have adequately assessed the patient's physical condition prior to the anaesthesia.
2. I have given a verbal explanation to the patient, in a way that the patient can understand, concerning the anaesthesia intervention to be carried out, including Anaesthesia procedure, related risks and any adverse effects following anaesthesia.
3. I have also provided the patient with sufficient time to inquire about the questions concerning the anaesthesia procedure and answered these questions accordingly.

Name of anaesthetist: _____**Signature:** _____ **Date/Time:** _____

PATIENT'S/GUARDIAN'S STATEMENT

1. I understand that the anaesthesia procedure is necessary for this surgery in order to alleviate pain and fear during the operation.
2. The anaesthetist has explained the risks and procedure of anaesthesia to me.
3. I had addressed my concerns and doubts regarding the anaesthesia to the anaesthetist who has given me satisfactory responses.

اجازت نامہ برائے بے ہوشی

- مجھے سمجھا دیا گیا ہے کہ آپریشن کے لئے اور درد دور کرنے کے لئے بے ہوش کرنا ضروری ہے اور یہ کہ بے ہوشی کے بغیر آپریشن ممکن نہیں ہے۔
- مجھے بے ہوشی کا طریقہ کار اور اس کی وجہ سے پیش آنے والے خطرات سے آگاہ کر دیا گیا ہے۔
- میں اس پر مطمئن ہوں اور ڈاکٹر کو بے ہوشی کی اجازت دیتا ہوں اور یہ کہ کسی بھی قسم کے مسئلہ کی صورت میں ڈاکٹر صاحبان اور عملہ ہسپتال ذمہ دار نہ ہونگے۔

مریض/وارث (مریض سے رشتہ)

دستخط/نشان انگوٹھا

THE PRE-ANAESTHESIA ASSESSMENT RESULTS IN FORMULATION OF AN ANAESTHETIC PLAN FOR EACH PATIENT, WHICH IS DOCUMENTED

There is a proper documentation (consent forms) for pre anaesthesia which describes the type of anaesthesia i.e. GA, regional or local, the drugs to be used for induction and the drug to be used for maintenance.

Anesthetic Theatre Standard No 2

Standard:

Anesthetic materials and equipment

Standard Statement:

All anesthetic materials and equipment are safely prepared and monitored in preparation of the list and continuously throughout

Method:

- All staff must undertake the appropriate training and deemed competent in the use of materials & equipment prior to use.
- Recheck and ensure the correct materials and equipment are selected and prepared accordingly and patients individual needs
- Ensure all materials and equipment are prepared in the appropriate manner and time, according to the patients clinical status.
- (i.e. elective or emergency)
- Ensure and document all equipment is checked and confirmed as safe, ready for use & functioning correctly.
- Ensure all equipment is set up & calibrated correctly in line with the manufacturers

- Instructions, and to meet the needs of the overall operating list and the patients plan of care.
- Where equipment is found to be faulty or unsafe during preparation, the appropriate action is taken to remedy or report the fault (Refer to anesthetic standards for faulty equipment).
- Ensure all materials and equipment are positioned in a way which facilitates their access and use, according to the sequence of procedures on the operating list.
- Ensure all materials and equipment are handled and moved safely, correctly & hygienically, in accordance with manufacturers guidelines & infection control.
- Anesthetic machine checks should be carried out according to check list and documented.

ANAESTHESIA MATERIAL AND EQUIPMENT;

- Anesthetic machines
- Ventilators
- Vaporizers
- Breathing systems
- Vascular access
- Suction apparatus
- Hotline fluid warmer and bear hugger
- Airway management trolley
- Invasive procedures trolleys
- Laryngoscopes
- Intubation aids
- Endotracheal tubes (cuffed, uncuffed, , LMA & ILMA)
- Airways both oral & nasal
- ECG
- Pulse oxi-meter
- NIBP/IBP
- Invasive blood pressure monitors and transducers
- Capnogragh
- Spiro-meter
- Disconnection alarms
- Temperature monitoring probes and equipment
- Intravenous fluids
- Syringes and Drugs

AN IMMEDIATE PRE-OPERATIVE (PRE-INDUCTION) RE-EVALUATION IS DOCUMENTED.

The Pre-Induction Assessment and shall be done by the anaesthetist just before the patient is shifted into the respective OT. Any planned changes to the anaesthesia plan shall be documented. When anaesthesia must be provided on an urgent basis, the pre-anaesthesia assessment may be performed and documented. (See consent form)

Anesthetic Theatre Standard No 3

Standard:

Arterial cannulation

Standard Statement:

Safely assist in arterial cannulation during clinical procedures for both adult and pediatric Patients.

Method:

- Ensure the patient is offered appropriate information, support and reassurance in a sensitive manner.
- Ensure the care provided to the patient is consistent with their individual needs, plan of care & expressed personal beliefs, & preferences, within the constraints of the setting and the clinical procedure.
- Ensure that the required materials & equipment are made available & ready for use before the arterial cannulation procedure is started.
- Ensure the specified cannulation site is prepared & cleaned effectively, and in a way which optimizes the patients comfort, dignity & safety and that the site is prepared to provide optimal pain free conditions to facilitate cannulation.
- Ensure the canula/line is secured adequately & safely, to facilitate access and minimize patient discomfort.
- Ensure the transducer line is clearly labeled and identifiable as an arterial line.
- Ensure Health Department Govt. of Punjab precautions for infection control are applied correctly and that waste & sharps are disposed of safely in the correct manner.

INFORMED CONSENT FOR ADMINISTRATION OF ANAESTHESIA IS OBTAINED BY A QUALIFIED MEMBER OF THE ANAESTHETIC TEAM

The patient and their family are educated on the risks, benefits, and alternatives of anaesthesia by the anaesthetist. There is a separate consent form shows above and it is documented separately.

Anesthetic Theatre Standard No 4

Standard:

Airway maintenance and establishment

Standard Statement:

Assist in the establishment and maintenance of the patients airway both adult and pediatrics.

Method:

- All staff assisting in the establishment and maintenance of a patient's airway will have under gone the appropriate training and deemed competent.
- Ensure liaison with the lead anesthetic clinician and surgical clinician where appropriate.
- Ensure the required airway establishment & maintenance materials and equipment are selected, according to the patient and the procedure, confirmed as fit for use, and prepared correctly at the appropriate time.
- Ensure the patient is offered the relevant information, reassurance & support in a manner which is sensitive to their needs & concerns.

- Appropriate action is taken to optimize the comfort & dignity of the patient throughout & to minimize pain & trauma.
- Ensure the patient is appropriately positioned for the procedure (rapid sequence induction, oral/nasal intubation, tracheotomy, awake fibre optic intubation).
- Ensure all materials & equipment is handled correctly & safely throughout, in line with manufacturer's instructions.
- Ensure patients physiological parameters are monitored throughout the procedure.
- Ensure all devices used to maintain the patient's airway are secured appropriately.
- Apply precautions for infection control at all times.
- Ensure that any signs of the patient's airway being compromised is recognized promptly and the appropriate action is taken immediately.

DURING ANAESTHESIA, MONITORING INCLUDES REGULAR AND PERIODIC RECORDING OF HEART RATE, CARDIAC RHYTHM, RESPIRATORY RATE, BLOOD PRESSURE, OXYGEN SATURATION, AIRWAY SECURITY AND PATENCY AND LEVEL OF ANAESTHESIA

The patient is monitored since there are rapid changes in the patient status during anaesthesia. There are following monitoring parameters which are documented.

a. Patient Heart rate
b. Cardiac Rhythm
c. Respiratory rate
d. Arterial Blood Pressure
e. Oxygen Saturation
f. Airway Security
g. Level of Anaesthesia
h. Evaluation of the Circulatory Function

Anesthetic Theatre Standard No 5

Standard:

Transfer of patients from the operating theatre to the Intensive care unit (ICU)

Standard Statement:

Staff will ensure the safety and dignity of the patient during the transfer from theatre to

ICU, and ensure full handover takes place.

Method:

- A qualified anesthesia nurse and theatre assistant will accompany the patient and the anesthetists during the transfer.
- Ensure the syringe pumps, monitor and bed is working appropriately.
- Ensure ETT, all drains, catheters, infusion etc are protected and are not pulled or dislodged accidentally during the transfer.
- Care should be taken to ensure that limbs remain in an appropriate anatomical Position.
- Ensure the patient is moved only at the command or permission of the anesthetists along with all drugs running in syringe pumps at pre-set infusion rate.
- Ensure the patient is moved carefully and placed in a position appropriate for the surgery undertaken and to ensure adequate ventilation with Oxygen and Ambo bag.
- Monitoring should be removed on the instruction of the anesthetists.
- Alternative Ambo-bags should be available at all times.
- Cot sides should be raised during movement of the bed and for transfer of patient to ICU.
- The patient must remain covered to protect dignity at all times during the transfer process.
- Theatre staff will ensure the exit route is clear to facilitate rapid transfer.
- Cot side guards should be used as necessary
- On arrival to ICU bed or trolley will be positioned to allow access to the head of the bed, and the brakes applied.
- Theatre staff will assist in the application of the oxygen delivery system and full monitoring as required.
- The anesthetists will hand over all relevant information concerning the patient to the Designated ICU staff member.
- The scrub practitioner should handover any relevant information regarding the surgical procedure etc to the ICU practitioner, any property to the patient should also be transferred to ICU.
- All relevant documentation should accompany the patient and should be completed.
- Anesthesia nurse/anesthesia assistant will handover to ICU all relevant details
- i.e. operation performed, secured ETT, Naso-gastric tube, catheters(venous line, arterial line and CVP), any local anesthetics given, any items left in situ requiring later removal.
- Other relevant patient care details such as pressure are problems, known skin breaches or adverse reactions must be recorded in the peri-operative printout and handed over to ICU for communication to the ward staff.
- The theatre staff will sign the printout on completion of handover.

NO ANAESTHETIC SHOULD BE ADMINISTERED UNLESS THE IDENTITY OF THE PATIENT CAN BE GUARANTEED

There is a developed patient ID system in the IMS department of Faisalabad Institute of Cardiology.

There are many instances when patient misidentification can occur, including invasive procedures, medication administration, transfusion of blood/blood products, and matching pathology specimens to the correct patient. That's why FIC has dedicated software for the patient data and information.

EACH PATIENT'S POST-ANAESTHETIC STATUS IS MONITORED AND DOCUMENTED

There is a separate consent form which is filled by anaesthetic at the recovery stage. There are following things which are being measured in recovery area. If the patient's condition is unstable and he/she moves to ICU care and same figures shell be monitored there.

a. Blood pressure
b. Pulse rate
c. Respiratory status
d. Oximetry
e. Level of consciousness
f. Pain.

Anesthetic Theatre Standard No6

Standard: Venous & central venous cannulation

Standard Statement:

Safely assist in venous and central venous cannulation during clinical procedures for both adult and pediatrics patients

Method:

- Ensure the patient is offered appropriate information, support and reassurance in a sensitive manner.
- Ensure the care provided to the patient is consistent with their individual needs, plan of care & expressed personal beliefs, & preferences, within the constraints of the setting and the clinical procedure.
- Ensure that the required materials & equipment are made available & ready for use before the venous, arterial and CVP cannulation procedure is started.
- Ensure the specified cannulation site is prepared & cleaned effectively, and in a way which optimises the patients comfort, dignity & safety and that the site is prepared to provide optimal conditions to facilitate cannulation.
- Ensure the canula/line is secured adequately & safely, to facilitate access and minimise patient discomfort.
- Ensure the transducer line is clearly labeled and identifiable as an venous and central venous line.
- Ensure precautions for infection control are applied correctly and that waste & sharps are disposed of safely in the correct manner.
- Ensure the safe handling, storage & transfusion of blood components.

All theatre staff to be competent in the safe handling of all blood components, understanding the importance of storing blood correctly, the implications of incorrect storage, the location of all blood storage areas and fridges in all theatre departments and to follow the correct procedures and policies for the transfusion of all blood components. Anaesthetist will sign the slip issued by the blood bank after comparing with blood bag and patient's record. Number of transfusions will be documented.

A QUALIFIED INDIVIDUAL APPLIES DEFINED CRITERIA TO TRANSFER THE PATIENT FROM THE RECOVERY AREA

There is a dedicated qualified team for the transfer of the patient and it is documented such as who, when and where the patient is being move. (See the consent form)

ALL ADVERSE ANAESTHESIA EVENTS ARE RECORDED AND MONITORED

There is a documented policy for the adverse condition in anaesthesia department and the report regarding such event sent to the CQI committee for the improvement.

FAISALABAD INSTITUTE OF CARDIOLOGY, FAISALABAD
PRE AND POST EXTUBATION STATUS OF PATIENT IN ICU

BASIC INFORMATION:
DATE:_____

Patient's Name		**S/o,D/o,W/o**	
Sex		**Age**	
FIC Reg. No		**Received in ICU at**	
Diagnosis		**Surgical Procedure**	

PATINET'S PHYSICAL AND MENTAL STATUS DURING

1. VOLUME CONTROL

VENTILATOR SETTINGS	Tidal		PEEP			FiO2		RR			
VITALS	BP		HR		SpO2			TEMP			
METABOLIC	pH		pO2		pCO2		K		BEecf		
Urine output			DRAIN		PALLOR----JAUNDICE-----CYANOSIS------						
ECG					XRAY CHEST						
SHIVERING					ANY OTHER EVENT						

NAME OF ANAESTHETIST:_____

2. SIMV

DATE/TIME:_____

Conscious Level	Awake-----Drowsy------					Drugs given at (time) _____						
EYE OPENING		NECK HOLDING				TONGUE PROTRUDING			ARM RAISE (≥15 sec)			
VENTILATOR SETTINGS	Tidal		PEEP			FiO2			RR			
VITALS	BP		HR		SpO2		RR		TEMP			
METABOLIC	pH		pO2		CO2		K		BEecf			
Urine output						DRAIN						
ECG						PALLOR----JAUNDICE-----CYANOSIS------						
SHIVERING						ANY OTHER EVENT						

NAME OF ANAESTHETIST:_____

3. T-PIECE **DATE/TIME:** _____

Conscious Level	ORIENTED				DISORIENTED					
EYE OPENING		NECK HOLDING			TONGUE PROTRUDING			LIMB MOVEMENT& POWER		
VITALS	BP		HR		O2		RR		TEMP	
METABOLIC	pH		pO2		CO2		K		BEecf	
Urine output					DRAIN					
ECG					PALLOR----JAUNDICE-----CYANOSIS------					

NAME of ANAESTHETIST:_____

4. PRE-EXTUBATION STATUS **DATE/TIME:_____**

Conscious Level	ORIENTIATION									
AUSCULTATION										
CXR (finding)										
VERBAL RESPONSE		NECK HOLDING			TONGUE PROTRUDING			LIMB MOVEMENT& POWER		
VITALS	BP		HR		O2		RR		TEMP	
METABOLIC	pH		pO2		CO2		K		BEecf	

URINE OUTPUT		DRAIN	
ECG		PALLOR----JAUNDICE-----CYANOSIS------	

5. EXTUBATION PROCEDURE: **DATE/TIME:_____**

ORO PHARYNGEAL SUCTION				TT SUCTION		
NG SUCTION/REMOVED				TT REMOVED DURING EXPIRATION		
VITALS	BP		O2		SpO2	
ANY EVENT NOTED			MEASURES TAKEN			

6. POST-EXTUBATION;

1. ENCOURAGE COUGHING
2. OXYGEN INHALATION
3. NEBULISATION
4. VITALS MONITORING

NAME of ANAESTHETIST:_____

FAISALABAD INSTITUTE OF CARDIOLOGY, FAISALABAD
PATIENT'S IDENTIFICATION FORM

BASIC INFORMATION:
DATE:_____

Patient's Name:_____**S/o,D/o,W/o:** _____

Sex: M/F **Age**: _____

FIC Reg. No:_____

Diagnosis: _____ **Surgical Procedure**:_____

IDENTITY CONFIRMED BY:

1. The patient himself.
2. Available record.
3. Patient's tag.

WITNESSED BY:

STAFF NURSE PRE-OP ROOM:

Name:_____ **Signature:**_____ **Date/Time:**_____

ANAESTHESIA NURSE:

Name:_____ **Signature:**_____ **Date/Time:**_____

ANAESTHETIST:

Name:_____ **Signature:**_____ **Date/Time:**_____

FAISALABAD INSTITUTE OF CARDIOLOGY, FAISALABAD

ANAESTHESIA PRE-OP ASSESSMENT

PATIENT NAME: **s/o, d/o, w/o:** **FIC REG. NO:**

DATE: **TIME:** **HT.** **PRE-OP DIAGNOSIS:**

AGE: **SEX:** **M** **F** **WT.** **Surgical Procedure:**

Mode of hospital admission: E/OPD

MEDICAL HISTORY

ALLERGIES:

DRUG USE: TOBACCO: ALCOHOL:

PRESENT PROBLEM:

CARDIOVASCULAR

RESPIRATORY

DIABETES

NEUROLOGICAL

RENAL

MUSCULO-SKELETAL

HEPATIC

OTHERS

PREVIOUS SURGERY:

PREVIOUS ANESTHETICS:

FAMILY HISTORY

LAST ORAL INTAKE

PHYSICAL EXAMINATION **BP** **P** **R** **T**

HEART EXTREMITIES

LUNGS NEUROLOGIC

OTHERS

AIRWAY :

MALLAMPATI GRADE: I II III IV MANDIBULAR PROTRUSION: A B C

ATLANTOOCCIPITAL EXT: .....

THYROMENTAL DISTANCE: ..... CONGENITAL DEFORMITY: .....

TEETH: .....

LABORATORY

BLOOD GROUP:

HB:..... PLT..... WBC..... INR.....

BSL..... UREA..... CREATININE.....

HBV..... HCV..... LFT`S.....

URINE ..... CHEST X-RAY.....

ECG.....

ECHO.....

ANGIOGRAPHY..... .....

OTHERS/ET TEST

ASA CLASSIFICATION

ANTICIPATED PROBLEM: **MONITORING: 1. NON INVASIVE**

2. INVASIVE

ANAESTHESIA PLAN: CONSULTANT'S ADVICE:

ANY SPECIAL TECHNIQUES:

PATIENT CONSENT

ANESTHETIC ALTERNATIVES AND RISKS RANGING FROM TOOTH DAMAGE

TO LIFE-THREATENING EVENTS HAVE BEEN EXPLAINED AND ACCEPTED

PATIENT`S NAME **PATIENT' SIGNATURE/THUMB IMPRESSION**

DOCTOR ON DUTY	NAME:	SIGNATURE:

FAISALABAD INSTITUTE OF CARDIOLOGY, FAISALABAD

PRE-INDUCTION ON OPERATION TABLE RE-EVALUATION IN OT

Consultant anaesthetist : **Anaes Assistant:**

MO Anaesthesia: **Anaes Nurse:**

Diagnosis & procedure

1. **Confirmation of the Patient's ID by:** **Patient'sName:**
   a. The patient himself **FIC Reg.No.:**
   b. The patient's record
   c. The tag
2. **Machine check:**
   a. Gas supply
   b. Flow meter & vaporizers
   c. Oxygen flush
   d. Circuit
   e. Ventilator Doctor's Name
3. **Patient Consent:**
4. **NPO:** **Pre-op medication**
5. **Pre-induction status:**
   a. Pulse rate Rhythm
   b. iBP
   c. RR
   d. AVPU
   e. CVS Breathlessness Chest pain
   f. ECG any change noted
   g. Resp SpO2
   h. On air blood gases/electrolytes
6. **Teeth/Denture** **Removal of jewelry**
7. **Procedures** **Site** **performed by**
   a. IV cannulation
   b. Arterial line
   c. CVP line
   d. Intubation
   e. NG tube
   f. Temperature probe
   g. Induction
8. **Review of Anaesthesia plan**
   By Consultant **CONSULTANT'S NAME**

OT Number:_____ Date: _____

FAISALABAD INSTITUTE OF CARDIOLOGY, FAISALABAD
DEPARTMENT OF ANESTHESIA

(ABGs & S/E reports Attached) Anesthesia Notes

Patient Name	Age/Sex	Weight	Registration No	ASA:
Diagnosis	Operation		Surgeon	Blood Group

Anesthetist	Staff Nurse	Induction Management	Imp Events	Risk Factor & Medical History
Induction Time	Imp Events & Management	Lines	Site	Size
		Venous 1		
		Venous 2		
		Arterial		
		Central		
		ETT		

Maintenance																Gases & Volatile Agents						
Drugs Time Event																						

Weaning from bypass Drug Infusion	Events	Total	ACT Pre-H Post-H Post-P
			CVP/LAP

PCST Bypass Drug Infusion	Event	Total	ICU Status	I/V Fluids Pre-Bypass Post-Bypass
				Urine Output Pre-bypass During bypass Pst-bypass

B.P

BP at the time of Aline
BP Pre induction
BP at Induction
BP during harvesting internal memory artery

Drugs prepared by **Ind/ & Maintenance by** **Patient shifting to ICU time** **Shafting time from OT⟶ ICU** **By Nurse**	**By Doctor** **(Name &Signature)** **Patient Received by** **Nurse in ICU (Name &Signature)**

POLICIES AND PROCEDURES GUIDE THE CARE OF PATIENTS UNDERGOING SURGICAL PROCEDURES

THE SURGERY-RELATED POLICIES AND PROCEDURES ARE DOCUMENTED

Policies and Procedures to Be Followed In Department

On Admission

Following guidelines are to be followed on admission of every patient for cardiac surgery.

1. All patients admitted for surgery should have followings done
   a. History and general physical examination
   b. CXR,
   c. ECG
   d. Baseline investigations (CBC, LFTs, Urea/cret, S.electrolyte Na, K, Ca, Mg, Blood sugar and screening
   e. Echo within last 3 months
   f. Lipid profile(If for CABG)
   g. Coronary angiography for all patients undergoing CABG and all valvular patients male over 40yr and females >45yrs or if H/O IHD, DM, Obese or on clinical discussion)
   h. Carotid Doppler
      For all IHD>60 yrs. with LMS, H/o CVA/TIA
      For all patients with h/o CVA/TIA or LMS even if age is <60
2. Consent Performa for treatment (should be signed as policy) annexure attached page#
3. If diabetic, blood sugar should be monitored every 8 hourly and controlled HbA1c should be done
4. If any other medical condition is present relevant investigations should be done.
5. Medication orders are to be written in clear, legible, dated and timed, proper dose and route under name and sign of already provided names of consultants/residents and administration of the drugs should also be documented under name and sign properly timed and dated after ruling out contraindications and allergies and confirmation of patient I.D.
6. All allergies should be written in red and posted on bed head end.
7. Resuscitation trolley to be daily stocked and checked by CN/head nurse and documented.
8. Proper stock of life saving and emergency drugs should be kept at proper mentioned place along with mentioned expiry dates.
9. Cleaning of ward and equipment maintenance is responsibility of the head nurse and that of controlling and monitoring infection control is of infection control team
10. Duty roaster is to be followed by all medical persons involved.
11. Strict application of visiting hours for patient attendants.

WARD ROUNDS

Consultant Ward Rounds: morning and evening
SR/ MO round: morning round
MO round: at 4 pm daily

SURGICAL PATIENTS HAVE A PRE-OPERATIVE ASSESSMENT AND A PROVISIONAL DIAGNOSIS DOCUMENTED PRIOR TO SURGERY.

Pre Operative Management Plan

1. All patients on next day morning list should be done Nothing Per Oral at midnight and shifted to OT at 6:00 am next morning.
2. Informed consent should be got signed by patient, next of kin/guardian/spouse countersigned by doctor name and stamp.
3. In case of high risk patient high risk consent should be signed and explained to patient/next of kin/spouse/guardian
4. All patient on list should have chlorhexidine bath twice before surgery
5. Donor s lists should be confirmed and co-ordinate with blood bank.
6. Person responsible for shaving and preparation of the patient should document that it is done under his name and stamp
7. All morning fresh labs, relevant investigations and up-to-date CD should be seen by surgical team responsible for the procedure
8. Mentioned antibiotics/drugs should be administered according to time and documented.
9. Pre-operative consent form should be properly filled and signed by doctor on duty at night before.

Preoperative Ward Policies to Be Followed

1. Patients should be received and records and operative file should be completed and checked including written consent and it should be documented with name and stamp
2. Patient identification should be double checked against procedure and plan and Performa should be filled and documented.

AN INFORMED CONSENT IS OBTAINED BY A QUALIFIED MEDICAL MEMBER OF THE SURGICAL TEAM PRIOR TO THE PROCEDURE.

I.C.U Receiving and Treatment Policies

1. Every patient should be received with complete operation/anesthesia notes and treatment plan with proper take over policy.
2. Following investigations should be done on arrival of the patient in ICU, CXR, ECG, ABGs (after every 1 hour or as directed), blood sugar (after every 1 hour or as directed) Electrolyte (every 1 hourly or as directed) and routine labs.
3. Blood sugar should be controlled according to sliding scale
4. Daily CXR and ECG should be done.
5. If IABP is placed distal pulses chart should be maintained and APTT, PT and INR should be repeated 4 hourly.

6. And any other test necessary advised by consultant/resident on call.

On Shifting Back To Ward

1. All labs, CXR, ECG, should be repeated on arrival to ward on next morning.
2. All patients to have blood sugar checked for first 24 hour
3. All diabetic patients to get sugar checked after every 8 hour before insulin administration.
4. All valvular patients to have INR daily.
5. All post-operative labs would be repeated twice a week or as directed.
6. Daily progress notes should be written on every patient in ward
7. Removal of pacing wires for CaBG on 5th POD
8. Removal of pacing wires of valvular patients after 5th day if INR is <2.
9. Discharge of the patient when clinically indicated or as advised.
10. Discharge Performa should be got signed from patient/guardian/spouse.
11. Continuity of the information through different shifts and units of duty staff is vital.

DOCUMENTED POLICIES AND PROCEDURES EXIST TO PREVENT ADVERSE EVENTS LIKE WRONG SITE, WRONG PATIENT AND WRONG SURGERY.

Prevention of Adverse Events

To ensure the patient safety there is a proper identification procedure which prevents the FIC staff about any misfortune. This also helps in operating and avoid the surgical team to do operate on the wrong site, wrong patient and wrong procedure.

Identification of patients:

Purpose

The purpose is to identify the patient and match the correct patient for an intended clinical procedure on the correct site.

Scope

The SOP's applies to establishing patient identity and confirming consent prior to any clinical activity including withdrawal of blood sample, introduction of oral/parenteral medication, performance of medical imaging and non-invasive/invasive and non-surgical/surgical procedures in the OT. In case of a surgical procedure, patient/client identification process also includes the verification of correct side/site of surgery. The SOP's shall also be applied for reviewing imaging or other investigations in the OT.

PERSONS QUALIFIED BY LAW ARE PERMITTED TO PERFORM THE PROCEDURES THAT THEY ARE ENTITLED TO PERFORM.

Cardiac Surgeon, Professor, Associate Professor, Assistant Professor are authorize to perform cardiac operation

1. Responsible of high standard of surgical work at FIC
2. Be responsible for overall technical and administrative oversight of surgical department
3. Remain during working hours and emergency advice and teachings
4. Ensure punctuality of staff, attendance through register and upkeep of ward
5. Supervision of the OT head nurse and stock
6. Paper recommendation for new purchases
7. Physical protection of OT staff and sterilization of equipment
8. Responsible for smooth functioning of surgical OPD and supervision in provided patient care.
9. Ensure rehabilitative facilities
10. Teaching and training of the staff
11. Write performance evaluation reports of staff based on set target goals
12. Develop good surgical, communicational and computer skills
13. Visiting consultant surgeon should provide surgical assistance advice and services according to signed agreement
14. Training of PGs and paramedics
15. Research program and paper writing program along with CPC, Journal Club

Operation Theater Assistant Job's Description

i. Maintaining the standard of the OT/suite to meet all the functional requirements in the highest quality manner including cleanliness, sterilization and maintenance of OT.
ii. Ensure regular functionality and maintenance of physical infrastructure and equipment at all time. Calibration of the all machines of OT is responsibility of OTA
iii. Ensure regular supply of medicine/consumables and positive stock of other essentials as per requirement.
iv. Give technical advice to OTMC for new purchases and attend meetings of OTMC as per schedule.
v. Ensuring sterilization services
vi. Work under DMS OT/Head Nurse/ senior OTA and perform duties assigned.
vii. Careful shifting of the patient in and out of OT along with surgical and anesthesia staff.

A BRIEF OPERATIVE NOTE IS DOCUMENTED BY THE SURGEON OR A DOCTOR IN THE SURGICAL TEAM PRIOR TO TRANSFERRING THE PATIENT OUT OF THE RECOVERY AREA.

There is a brief operative note which is documented before transferring the patient from recovery area. This note provides information about the procedure performed,

postoperative diagnosis and the status of the patient before shifting. The policies and procedures are shown below.

Operation Theater Policies and Procedures

1. All patients should be shifted to Operation Theater with complete medical record informed consent, preparation document and identification Performa.
2. Daily cleaning of the theater, documented in register by OT nurse and infection control nurse.
3. Scheduled Rounds of infection control nurse twice a week should be conducted and documented
4. Operation theater instruments should be daily sent for sterilization and documented when sent and received.
5. Maintenance of biomedical machines should be checked at morning and documented in maintenance register.
6. All the members of the OT should scrub at morning and follow strict sterilization and disinfectant policy.
7. There shall be clear separation of dirty areas of OTs wearing of theater dress and foot wear is compulsory in the OT and it shall be further ensured that leaving OT/OR with OT dress in strictly prohibited and in case of any verifiable departure the dress should be changed before reentering
8. Calibration of the all machines of OT is responsibility of OTA or head nurse at the start of the day and dispatch of the dirty linen and instruments to CSSD and cleaning of the OT complex at the end of the day
9. Maintenance of the theater and its equipment like infection control, electricity and fire hazards, daily cleaning moping of the theater floor and walls, lights and windows and scrub sink is responsibility of the head nurse
10. Only designated staff and patient who need surgical procedures are permitted in the OR/OT after identification and following the prescribed protocols.
11. OT/ORs are not accessible to general people and clear warning and hazards notices are displayed before restricted and high risk areas.

THE OPERATING SURGEON OR THEIR SURGICAL ASSISTANT DOCUMENTS THE POST-OPERATIVE PLAN OF CARE.

In FIC the Postoperative care includes care given during the immediate postoperative period, both in the OT and post-opt recovery area. Another objective of postoperative care is to assist patients in taking responsibility for regaining optimum health.

Handing over of postoperative patient in ward

Patients are accompanied by a suitably trained staff and porter during transfer to the ward. The anaesthetic record, recovery note and prescription charts must accompany the patient. The recovery nurse must ensure that full clinical details are relayed to the ward nurse with particular emphasis on problems and syringe pump setting.

Procedures for pre-operative and postoperative handover of the patients

Continuity of information through different shifts of duty staff posted in surgical departments is vital to the safety of patients. With the increase in the number of individuals caring for

patients, the need of handing over comprehensive clinical information is of critical importance.

The guidelines regarding proper handover and improved outcome are as under:

a. Shifts must coordinate.
b. Adequate time must be allowed.
c. Handover should have clear leadership.
d. Information technology support may be provided.
e. Sufficient and relevant information should be exchanged to ensure patient safety.
f. Junior members of the team are adequately briefed about the clinically unstable patients.
g. Tasks not yet completed should be clearly understood by the incoming team.

A QUALITY ASSURANCE PROGRAM IS FOLLOWED FOR THE SURGICAL SERVICES

Surgical Quality Assurance Program

Quality Assurance (QA) in surgical services is an integral part of the overall QA program of the FIC. It focuses on postoperative complications, e.g. bleeding, postoperative infections, rational use of antibiotics etc.

Salient features of the QA program in a surgical department

- Provide efficient services and support to the surgical department.
- Provide adequate infrastructure for effective and efficient surgical services.
- To impart surgical skills to doctors and nurses.
- Scheduling the procedures on a 'first come first serve' basis/need basis.
- Conducting all planned surgeries in routine working hours (9.00 am to 5.30pm).

Equipment maintenance

A log book of all equipment with respect to their date of purchase, preventive maintenance, repairs conducted etc. are also is being maintained in Bio medical Department of FIC.

Staffing schedules

Monthly duty schedules ensuring availability of adequate staff is being projected.

Policies to ensure Quality

- Duration of time for the OTs to be operational for planned surgeries is 9.00am to 5.30pm.
- OTs has qualified personnel in terms of Medical, Nursing and Paramedical staff (OT technicians/ assistants etc.).
- Floors of OTs are antistatic for the safety of patients as well as staff.
- Visitors or patients are not allowed in the OT except with explicit permission from the OT in charge.

Polices about cleaning in operations theaters

- Wrap wet, soiled and infected linen in red plastic bags and put them on the trolley for taking linen to the Sterilization Department.
- Collect all dry linen and put into the canvas laundry bags to be transported to the Sterilization Department.
- Wet mop the floor of the theatres and scrub with effective disinfectant.
- If the surgery was that of an infected case, fumigate the respective theatre.

Daily cleaning

- Sweep and wet mop all theatres.
- Wipe down all walls.
- Clean and disinfect castor and wheels on the furniture.
- Sweep and wet mop offices, lounges, bath, and storage rooms.
- Wipe OT light and fixtures with clean wet cloth.
- Clean windows and mirrors.
- Clean scrub sink, and soap dispensers.

Weekly cleaning (when the OT is non-operational)

- Remove portable equipment from the room.
- Clean overhead light and all fixed fixtures with soap solution and a wiper.
- Clean equipment before they are replaced in the room with soap and disinfectant. While replacing the equipment, roll the wheels across towel saturated with the same solution.
- Clean doors, hinges, glass inserts and rinse with disinfecting solution.
- Wipe down wall with a clean sponge mop soaked in disinfecting solution.

THE SURGICAL QUALITY ASSURANCE PROGRAM INCLUDES SURVEILLANCE OF THE OPERATION THEATRE ENVIRONMENT

Polices regarding Surveillance activities:

- Daily monitoring of humidity and temperature.
- At least monthly monitoring of pressure differential.
- At least a six month monitoring of integrity of filter.
- Medical equipment maintenance.
- In addition to this, efficacy of the OT cleaning and disinfection processes shall be monitored.

Monitoring of humidity and temperature at least thrice daily at regular intervals by a designated staff of the OT maintenance team is considered important for patients as well as staff comfort. Similarly a regular monthly check of the OT pressure differential and negative air pressure vented to the OT and a twice daily environmental cleaning of OTs should be done.
Do not waste chemicals; only remove the dust with moist cloth, use chemicals/disinfectants only when contaminated with blood or body fluids.

Caring for floors:

1. Use only vacuum cleaners.
2. Do not use a broom.
3. Use a mop and keep it dry.

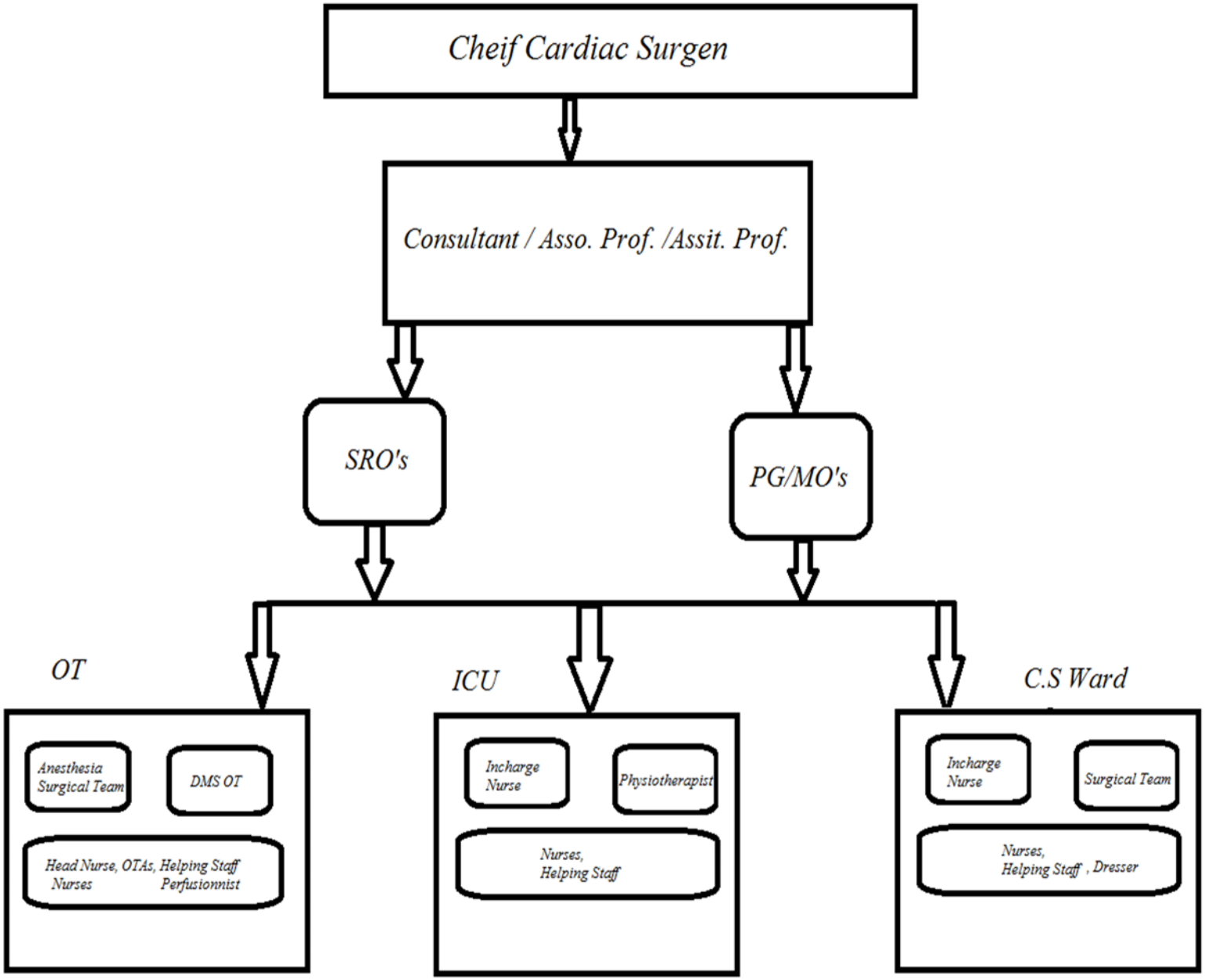
Care of Walls and Roofs of OTs:

Frequent cleaning has little effect; do not disturb these areas unnecessarily. There are no ceiling fans in OTs as they cause aerosol spread. Clean only when re-modeling or dust is accumulated.

THE PLAN ALSO INCLUDES MONITORING OF SURGICAL SITE INFECTION RATES

Policy Regarding Infection of Cases and Receiving Infected Caeses

1. Every infected case should be reported and Performa should be completed
2. All infected cases would be admitted in isolation room
3. Baseline investigations and culture examination should be sent on arrival and administration of antibiotics and daily dressing should be done under supervision.
4. Consent form is attached.


Cheif Cardiac Surgen
Consultant / Asso. Prof. /Assit. Prof.
SRO's
PG/MO's
OT
ICU
C.S Ward
Anesthesia Surgical Team
DMS OT
Head Nurse, OTAs, Helping Staff Nurses
Perfusionnist
Incharge Nurse
Physiotherapist
Nurses, Helping Staff
Incharge Nurse
Surgical Team
Nurses, Helping Staff , Dresser

FAISALABAD INSTITUTE OF CARDIOLOGY FAISALABAD

PRE OPERATIVE CHECK LIST

Name _____ Reg #_____ Date____/____/____

Planned Operative Procedure_____

Lab results	Old	Pre-operative	
CBC			Age/Sex
Hb			
ESR			MS Approval
WBC			
RBC			Dental Clearance
Platelets			
Neutrophils			Consent
Lymphos			
Monos			History
Eosinophils			
Chemistry			DM Y/N
blood sugar			HTN Y/N
Blood urea			CVA Y/N
S. cretinine			
Na +			Previous Surgery Y/N
K +			Diagnosis
Cl -			
Ca++			Echocardiography
LFTs			EF
Bilirubin			
Conj.			Aortic annulus:
Non Conj.			
Alk. Phosphatase			Valve lesion:
SGPT/ALT			
CARDIAC ENZUMES			Chest X-Ray
C.K MB			
SGOT/AST			
LDH			Carotid Doppler
Mg++			
P.T.			
A.P.T.T			USG
I.N.R			
HBs Ag			
Anti HCV			CT SCAN
ASO Titer			
Urine C/E			
PUS Cells			
RBC			
Epithelial Cell			

Comments

Dr. Name
Sign
Date

FAISALABAD INSTITUTE OF CARDIOLOGY

CARDIAC SURGERY DEPARTMENT

GENERAL PROFORMA FOR POST-OPERATED INFECTED PATIENT

PATIENT NAME: _____ S/O,
W/O_____ AGE/SEX: _____ CNIC_____-_____-_
CELL #_____ HOSP ID_____

ADDRESS_____

DIAGNOSIS_____
TREATMENT_____

CATEGORY_____

INFECTED CASE NUMBER

DATE OF OPERATION_____

SURGICAL TEAM WITH DUTIES

_____
_____
_____
_____

SIGNIFICANT RISK FACTORS

TYPE OF
INFECTION_____

SITE OF
INFECTION_____

C/S_____

DEVISED PLAN FOR TREATMENT

_____
_____
_____

DRESSING_____TIMES/DAY WOUND WASH_____ WITH>

INCHARGE DOCTOR

Signature _____

Name and stamp_____

Date_____

ؒفیصل آباد انسٹیٹیوٹ آف کارڈیالوجی ،فیصل آباد

﴿ڈسچارج فارم برائے اظہار رائے دہی وتجاویز﴾

مریض کا نام----------ولدیت----------عمر--سال جنس مرد/عورت ہسپتال کا رجسٹریشن نمبر-------

شناختی کارڈ نمبر----------مکمل پتہ----------.

تاریخ پیدائش----------شریک حیات/اولاد/بھائی کا نام----------فون نمبر----------

تشخیص----------علاج/آپریشن لائحہ عمل----------

میں اپنی تجاویز/رائے علاج/ہسپتال کے میعار کو بہتر بنانے کی غرض سے دے رہا ہوں، چونکہ میں علاج کی ترجیحاتی بنیادوں اور انتظامی امور کو سمجھنے سے قاصر ہوں لہذہ یہ تجاویز غیر حتمی ہیں ۔میں اپنی تجاویز/رائے کو ادارتی احتساب اور سربراہ ادارہ کے زیرغور ہونے کے لیے پیش کر رہا ہوں تا کہ وہ اپنی اہمیت وافادیت پائیں

میں مورخہ----------کو اپنے علاج/آپریشن کی غرض سے ہسپتال ھذا میں داخل ہوا تھا، اپنے قیام، تشخیص ،علاج، آپریشن ،نگہداشت، عملہ کے رویہ، ہسپتال کے ماحول اور فراہم کردہ ادویات کے میعار سے----------ہوں غیر مطمئن ہونے کی صورت میں ناگواری کی تفصیل

نیز میں نے مذکورہ فارم کو پڑھ/سن کر اپنی آزاد مرضی کے ساتھ دستخط/نشان انگوٹھا ثبت کر دیے ہیں میرا مقصد ادارہ کی ساکھ کو نقصان پہچانا یا قانونی چارہ جوئی کرنا ہرگز نہیں۔

مریض کا نام بمع ولدیت----------دستخط/نشان انگوٹھا----------

نام انچارج نرس----------دستخط----------

تاریخ ووقت----------

فیصل آباد انسٹیٹیوٹ آف کارڈیالوجی، فیصل آباد

اجازت نامہ برائے علاج و تحقیق برائے تشخیص و آپریشن

مریض کا نام ---------- ولدیت ---------- عمر ---- سال جنس مرد/عورت ہسپتال کا رجسٹریشن نمبر ------

شناختی کارڈ نمبر ---------- مکمل پتہ ----------

تاریخ پیدائش ---------- شریک حیات/اولاد/بھائی کا نام ---------- فون نمبر ----------

عارضی تشخیص ---------- عارضی علاج/آپریشن لائحہ عمل ----------

میں اس ہسپتال میں اپنے علاج/آپریشن کی درخواست کرتا/کرتی ہوں اور اس سلسلہ میں شامل تمام تشخیصی ٹیسٹ، ادویات اور طریقہ کار کی اجازت دیتا/دیتی ہوں۔ مجھے اپنی بیماری، متعلقہ علاج/آپریشن، تحقیقات، ممکنہ نتائج، درپیش خطرات اور اس ہسپتال میں قیام کے دوران اپنے حقوق و ذمہ داریوں کے بارے میں مکمل طور پر آگاہ کر دیا گیا ہے۔ میں اپنی اور اپنے لواحقین کی جانب سے مکمل اعتماد اور تعاون کی ضمانت دیتا/دیتی ہوں۔ ہم اس ہسپتال میں قیام کے دوران کسی قسم کے لڑائی جھگڑے، دنگا فساد، سامان کی توڑ پھوڑ یا اس ہسپتال کے امور میں دخل اندازی نہیں کرینگے۔ علاج/آپریشن یا ہسپتال سے متعلق شکایت کی صورت میں وضع کردہ طریقہ کار اور اصولوں کی پاسداری کرونگا/کرونگی بصورت دیگر ادارہ ہذا ہمارے علاج/آپریشن سے انکار کرنے اور ہمارے خلاف قانونی کاروائی کرنے کا مجاز ہوگا۔ میں اجازت دیتا/دیتی ہوں کہ میری علاج/آپریشن سے متعلق میڈیکل ریکارڈ اور معلومات، طبی نمونے و تجزیات اور تشخیصی ٹیسٹ متعلقہ ڈاکٹر صاحبان و عملہ طبی تجزیات و مشاہدات، تحقیق و اشاعت اور انشورنس جیسے معاملات میں استعمال کر سکتے ہیں۔

یہ ایک سرکاری ادارہ ہے جو کہ عوامی علاج کی غرض سے بنایا گیا ہے یہاں علاج صرف ترجیحاتی بنیادوں پر کیا جاتا ہے جسکے فیصلہ کا اختیار ڈاکٹر صاحبان کو ہے۔ یہاں، علاج/آپریشن کا خرچہ سرکاری حکومت کی طرف سے کیا جاتا ہے۔

ادارہ ہذا میں پوسٹ گریجویشن ٹریننگ کے تحت علاج/آپریشن کے مختلف عوامل اور مراحل میڈیکل آفیسرز/ریزیڈنٹس میں اہم کردار ادا کرتے ہیں میں اپنے علاج/آپریشن میں انکی شمولیت کی اجازت دیتا ہوں۔ میں کسی خاص ڈاکٹر صاحب/سرجن سے علاج پر اصرار نہیں کرونگا اور میں ڈاکٹر صاحبان و عملہ پر مکمل اعتماد اور تعاون کا اظہار کرتا ہوں۔ میں علاج/آپریشن کے تمام مراحل میں ذمہ داری کا مظاہرہ کرونگا اور ڈاکٹر صاحبان و عملہ کے مشورہ سے فرائض سرانجام دونگا

مذکورہ فارم پر میں نے اپنی آزاد مرضی کے ساتھ دستخط/نشان انگوٹھا ثبت کر دیے ہیں۔

مریض کا نام بمع ولدیت ---------- دستخط/نشان انگوٹھا ----------

نام و عہدہ ڈاکٹر صاحب ---------- دستخط ----------

تاریخ و وقت ----------

فیصل آباد انسٹیٹیوٹ آف کارڈیالوجی، فیصل آباد

﴿فارم برائے بنیادی شناختی معلومات قبل از آپریشن متعلقہ مریض﴾

مریض کا نام----------ولدیت----------عمر--سال جنس مرد/عورت ہسپتال کا رجسٹریشن نمبر------

شناختی کارڈ نمبر----------مکمل پتہ----------

تاریخ پیدائش----------شریک حیات/اولاد/بھائی کا نام----------فون نمبر----------

تشخیص----------علاج/آپریشن لائحہ عمل----------

وزن--کلوگرام کیٹیگری------

میں آج مورخہ----------کو علاج/آپریشن کی غرض سے تھیٹر میں لایا گیا ہوں، میں اس مرحلہ پر اپنی شناخت اور بتلائے گئے آپریشن کی تائید کرتا/کرتی ہوں۔

مریض کا نام بمع ولدیت----------دستخط/نشان انگوٹھا----------

نام انچارج جنرل----------دستخط----------

تاریخ ووقت----------

I have recieved patient _____ , confirmed his identity from him and cross checked from his medical record.I confirm his identity and correctness of stated procedure.

Name and signature of Anesthetist _____

_____

فیصل آباد انسٹیٹیوٹ آف کارڈیالوجی، فیصل آباد

﴿اجازت نامہ برائے آپریشن و بے ہوشی﴾

میں / ہم اپنے مریض _____ولد _____

میڈیکل ریکارڈ نمبر _____ ایمرجنسی حالت / تکلیف کے ساتھ ہوں/لائے ہیں۔اس کے ساتھ ساتھ ہمارا مریض/میں _____ مرض میں مبتلا ہے/ ہوں۔اور ہمیں /مجھے آپریشن _____ کی ضرورت ہے، مجھے/ہمیں آپریشن کے فائدے اور متوقع پیچیدگیوں (Complications) کے بارے میں مکمل طور پر آگاہ کر دیا گیا ہے اور _____ نظام (Organ) خراب ہو رہے ہیں۔ مجھے/ہمیں بتا دیا گیا ہے کہ آپریشن و بے ہوشی کا کوئی بھی عمل خطرے سے خالی نہیں ہے۔اور ہمارے پاس تمام ادویات (بے ہوشی کی ادویات، اینٹی بائیوٹکس، ڈرپ وغیرہ وغیرہ) کی حساسیت (الرجی) چیک کرنے کا یقینی ٹیسٹ نہیں ہے اور یہ بھی ممکن ہے کہ تمام احتیاط کے باوجود آپریشن و بے ہوشی کے دوران بالکل غیر متوقع اور لاعلاج مرض یا صورت حال نکل آئے یا پیدا ہو جائے جس میں دانت ٹوٹنے سے لیکر موت تک واقع ہو سکتی ہے۔دل یا خون کی نالیوں سے جما ہوا خون یا ہوا (Air/Fat Embolism) خود بخود پھیپھڑوں یا دماغ میں جا سکتا ہے۔جس سے سانس کی تنگی سے لے کر فالج یا موت تک واقع ہو سکتی ہے جس کا کوئی قطعی اور مکمل علاج بھی ہمارے پاس نہیں ہے۔احتیاط کے باوجود انتقال خون سے ری ایکشن ہو سکتی ہے۔آپریشن کے دوران یا بعد میں گردے یا کوئی اور اعضاء (Organ System) فیل ہو سکتے ہیں۔آپریشن کے بعد قدرتی سانس بحال نہ ہونے کی صورت میں مصنوعی سانس دلانے والی مشین (Ventilator) پر بھی ڈالنا پڑ سکتا ہے۔

مندرجہ بالا حقائق سے ہمیں آگاہ کر دیا گیا ہے اور میں/ہم نے باہوش و حواس قبول (Accept) کر لیا ہے۔میں/ہم آپریشن اور بے ہوشی کی آزادانہ، بلا جبر و کراہ اجازت (Free Permission) دیتا ہوں/دیتے ہیں۔میں/ہم بے ہوشی کا طریقہ کار اور ادویات کا استعمال ڈاکٹر کی صوابدید پر چھوڑتا ہوں/چھوڑتے ہیں۔ہمیں ڈاکٹروں کی صلاحیت و قابلیت اور خلوص پر مکمل اعتماد اور یقین ہے اور کسی بھی پیچیدگی (خواہ وہ کتنی ہی مہلک کیوں نہ ہو) کی صورت میں ہسپتال، عملے، ڈاکٹر حضرات کو ہرگز مورود الزام نہ ٹھہرائیں گے۔ہسپتال، عملے اور ڈاکٹر حضرات کے خلاف کسی قسم کی اخلاقی، محکمانہ اور قانونی چارہ جوئی نہ کرونگا/ کریں گے۔اور اگر ایسا کرونگا/ کریں گے تو جھوٹ اور باطل ہو گی۔اور اس طرح کرنے سے ہسپتال اور ڈاکٹر حضرات کو کسی قسم کے پہنچنے والے ذہنی، جسمانی اور مالی نقصان کے ازالہ کا ذمہ دار ہونگا/ ہونگے۔

مندرجہ بالا تحریر مجھے/ہمیں پڑھ کر سنا دی گئی ہے اور میں/ہم نے درست تسلیم کر لی ہے اور اس پر اپنی آزاد مرضی کے ساتھ دستخط کر دیئے ہیں اور نشان انگوٹھا ثبت کر دیا ہے۔

(I/we have read the above statements and agreed upon with free will)

1- نام مریض _____ دستخط _____ نشان انگوٹھا _____ شناختی کارڈ نمبر _____

2- نام خونی رشتہ دار _____ دستخط _____ نشان انگوٹھا _____ شناختی کارڈ نمبر _____

﴿نوٹ﴾ (اگر خونی رشتہ دار زندہ/موجود نہ ہوں)

3- نام رشتہ دار/سرپرست _____ دستخط _____ نشان انگوٹھا _____ شناختی کارڈ نمبر _____

4- خونی رشتہ/سرپرست یا کوئی بھی رشتہ دار موجود نہ ہونے کی صورت میں (لاوارث) اجازت برائے آپریشن و بے ہوشی ہسپتال انتظامیہ (کم از کم ڈی ایم ایس اور دو سرجن) دستخط کریں۔ہسپتال کا عملہ اور ڈاکٹر حضرات دل و جان سے مریض کے علاج کیلئے کوشاں ہیں اور دعا گو ہیں کہ اللہ تعالیٰ انہیں شفاء کاملہ عطا فرمائے۔میں تصدیق کرتا/کرتی ہوں کہ میں نے مریض/رشتہ دار کو آپریشن کی نوعیت و اثرات اور پیچیدگیوں سے باخبر کر دیا ہے اور مریض نے انہیں قبول (Accept) بھی کر لیا ہے۔

نام و عہدہ ڈاکٹر _____ دستخط _____ مورخہ _____ وقت _____

Management of Medication (MOM)

POLICIES AND PROCEDURES EXIST FOR THE PRESCRIPTION OF MEDICATIONS.

DOCUMENTED POLICIES AND PROCEDURES EXIST FOR THE PRESCRIPTION OF MEDICATIONS.

OBJECTIVE:

I. To provide standard operating procedure for dispensing prescription drugs/generic equivalent drugs.
II. To maintain good patient relations.
III. To ensure that the prescription is safe for the patient.
IV. To ensure that the prescription is clinically appropriate.
V. To ensure that the prescription form presented relates to the named patient.
VI. To ensure safe dispensing.
VII. To ensure that the details on the prescription form are correctly filled out.
VIII. To ensure effective communication between the pharmacist and the patient.
IX. To ensure that any significant interventions are recorded.

SCOPE:

I. All prescription/generic equivalent drugs present in hospital formulary, passed by drug testing laboratory and issued from main pharmacy.
II. Prescription forms received by telephone call are excluded from this SOP.

RESPONSIBILITY:

I. Pharmacist
II. Pharmacy Technician

REVIEW:

I. The SOP will be revised every year by the AMS (Stores) to reflect any changes to legislation affecting the process.
II. A review of the SOP is required in the event of any change of staff, or any increase or decrease in the number of competence level of staff.
III. The SOP should also review following a critical incident.
IV. If as a result of review, any changes to the SOP are deemed necessary, these must be approved by the AMS (Stores).

ASSOCIATED RISKS:

I. The prescription may be out of date.
II. The prescription may be a forgery.
III. The patient details may be illegible or incorrect – potentially leading to a dispensing error.

IV. Loss of patient health if the prescription has not been completed correctly
V. Prescription being misplaced whilst being transferred to the dispensary
VI. The prescription may be given to the wrong patient.

PROCEDURE:

I. Greet the patient with a smile.
II. Receive the prescription in a dignified manner.
III. Read the prescription properly category, date, name, strength, dose and quantity. If in case of doubt, ask the pharmacist.
IV. Check the legality and legibility of the prescription.
V. If the prescription is illegible of in case of doubt, confirm with the doctor via telephone. Do not dispense a prescription drug without a proper prescription order and do not dispense when doubting.
VI. After that check for the availability of the stock and make sure that the product is the one that said in the prescription order. Make sure that the product is under the good condition and the expiration date is still far.
VII. All the prescriptions containing ***Tab warfarin*** and ***Tab amiodarone*** will be checked by pharmacist before dispensing.
VIII. Any unusual dose or drug trade or generic or combination will be verified by pharmacist before dispensing.
IX. Take out the medicine from required place, double check from the prescription order and take out the quantity mentioned.
X. Check the medication in front of the patient and interpret the instruction of the doctor to the patient and give him the relevant information regarding the proper storage, use and administration of the medication.
XI. Countersign the prescription and handover to the IT personnel for entering in the data system.

QUALITY OF RECORD

I. All the prescriptions after being dispensed will be entered by IT personnel in the MIS data after verification and will stamp the individual prescription.
II. The prescription will be kept for 2 years.

THE ORGANIZATION FORMALLY DETERMINES WHO CAN WRITE ORDERS.

Policy:

Only a registered Medical Practitioner (Medical and Dental) is authorized to write prescriptions/prescribe medicines on their own, in accordance with the parameters of the FIC formulary.

ORDERS ARE WRITTEN IN A UNIFORM LOCATION IN THE MEDICAL RECORDS.

Policy:

A uniform location in the patient's medical record , which is then transferred to the patient's medical record periodically or at discharge, facilitates understanding the specifics of an order, when the order is to be carried out, and who is to carry out the order. It also creates easy accessibility to the orders so that orders can be acted upon in a timely manner.

Documentation:

Each patient care plan includes written orders by individuals qualified to order and record patient orders, e.g. diagnostic tests orders for laboratory testing, orders for surgical and other procedures, medications orders, nursing care orders, and nutrition therapy orders.

MEDICATION ORDERS ARE CLEAR, LEGIBLE, DATED, TIMED, NAMED AND SIGNED.

Policy:

All medication orders are to be prescribed in writing which should be dated, timed and signed by the prescribing doctor.

Prescription Order:

It contain following items:

1. The Patient's full name and parentage etc.
2. Weight
3. Allergies
4. The date of the order
5. Name of the medication
6. Dosage and administration information
7. Route of administration
8. Physician's Signature

POLICY ON VERBAL ORDERS IS DOCUMENTED AND IMPLEMENTED.

- Verbal orders should only be used in exceptional circumstances. The diagnosis and health status as evaluated and documented by a doctor must be available if the prescribing doctor is not the one who made the initial assessment.

- Only one state dose may be prescribed verbally.
- Verbal orders shall initially be taken by a Nurse, and repeated to a second Nurse.
- The Nurse receiving the order must record the order on the drug treatment sheet. The entry is to be in red ink and should also include the time, date, name of prescriber and the Nurse's signature, as well as the second Nurse's signature.
- The Nurse should repeat the order to the doctor to ensure that the details are correct.
- The drug treatment sheet is to be countersigned by the doctor who gave the verbal order at the earliest possible time, within 24 hours.
- If they are in any doubt, the Registered Nurse should seek clarification from the doctor until they are satisfied about the correctness of the

    - Right Drug
    - Right Patient
    - Right Dose
    - Right Route
    - Right Time

- The medication is now to be administered as per the Administration of Medication Procedure and the Medication Policy.
- A verbal order should be reconfirmed if the nurse believes that it may compromise the patient's care and treatment.
- **NO** Verbal Orders for High Alert Medications and High Risk Medications.FIC should declare their own list, based upon its usage of drugs, of High Risk and High Alert drugs.

THE ORGANIZATION DEFINES A LIST OF HIGH-RISK MEDICATION.

Policy:

High-alert medications are medications that are most likely to cause significant harm to the patient, even when used as intended.

Although any medication used improperly can cause harm, high-alert medications cause harm more commonly and the effect they produce is likely to be more serious and lead to the patient's suffering, and additional costs associated with care of these patients.

Although the list of high-risk medications includes many, but some of them have been associated more frequently with harm, such as anticoagulants, narcotics and opiates, insulin, concentrated electrolytes

HIGH-RISK MEDICATION ORDERS ARE VERIFIED PRIOR TO DISPENSING.

Policy:

- Independently comparing the Label and Product Contents in hand versus the written order or pharmacy-generated Medication Administration Record (MAR).
- Independently verifying any calculations for doses that require preparation.
- Assuring the accuracy of infusion pump programming for continuous intravenous infusions of medications.

Strategies to Avoid Errors Involving High Risk Medications

a) Medication arrangement:

   i) Avoid storing look-alike, sound-alike (LASA) drugs next to each other (example: instead of storing by generic name (e.g. vincristine and vinblastine) store drugs by brand name (e.g. Oncovin and Velban).
   ii) Limit/eliminate high risk drug storage in pixie (i.e. list and store separately).

b) Formulary selection;

   i) Minimize LASA formulary combinations.

c) Tallman lettering:

   i) All medicines should be written in capital letters to eliminate illegible hand writing.
   ii) Labeling to emphasize differences in medication names (example: hydrOXYzine vs. hydrALAzine).

d) Computerized Prescriber Order Entry (CPOE)

   i) Eliminates illegible handwriting.
   ii) Reduces opportunities for misinterpretation of verbal orders.

e) LASA drugs could still be confused by Nurses/Dispensers.

   i) System alerts are in place to safeguard selection.
   ii) Bar coding can serve as a double check system during medication, selection, preparation, and prior to administration.
   iii) Scanning a bar coded medication just prior to administration can detect many types of medication errors before they occur.

f) Alert notes:

   i) Highlighted stickers on packaging.
   ii) Pop-up messages attached to LASA drugs.
   iii) Highlighted drug storage areas

POLICIES AND PROCEDURES GUIDE THE SAFE DISPENSING OF MEDICATIONS.

DOCUMENTED POLICIES AND PROCEDURES GUIDE THE SAFE STORAGE AND DISPENSING OF MEDICATIONS.

OBJECTIVE:

I. To provide standard operating procedure for proper storage and dispensing of disposables/cath lab items and medicines in main pharmacy.
II. To ensure safe dispensing.
III. To ensure that expiry dates are checked well in time and no expired medicine is issued.
IV. To ensure that DTL pending medicines are stored separately and no such medicines is issued.
V. To ensure that any significant interventions are recorded.

SCOPE:

I. All disposables/cath lab items and medicines coming in main pharmacy and being dispensed to OPD and various ward pharmacies.
II. Indoor order forms received by telephone call are excluded from this SOP.

RESPONSIBILITY:

I. Pharmacist
II. Pharmacy Technician

REVIEW:

I. The SOP will be revised every year by the AMS (Stores) to reflect any changes to legislation affecting the process.
II. A review of the SOP is required in the event of any change of staff, or any increase or decrease in the number of competence level of staff.
III. The SOP should also review following a critical incident.
IV. If as a result of review, any changes to the SOP are deemed necessary, these must be approved by the AMS (Stores).

ASSOCIATED RISKS:

I. The indent/order may be out of date.
II. The indent/order may be a forgery.
III. The indent/order may be illegible or incorrect – potentially leading to a dispensing error.
IV. The indent/order may be given to the wrong ward.
V. Wrong dispensing done posing threat to patient.
VI. DTL pending/expired medicines issued to the OPD or any ward leading to potential risk.

PROCEDURE:

I. Stocks should be stored as per instructions given on the respective labels of the medicines, as well as any specific instructions given by the manufacturer.

II. For aforementioned purpose, following are the temperature requirements for different areas;

Room Temperature	20 -- 25 ^{o}C
Cold Storage	02 -- 08 ^{o}C
Refrigerators	02 -- 08 ^{o}C

III. The above temperatures are to be maintained round the clock, even on off days and holidays too without fail.

IV. Stocks should be segregately placed on racks manufacturer wise, product wise, and batch wise/expiry date wise (where applicable). Moreover, different strengths and packing's of same product/batch should be stacked together separately.

V. Stocks sgould be stacked on pellets and racks, and no item should be kept on bare floor.

VI. Disposables/surgical items/cath lab items and medicines should be stacked together, and should be stored in separate areas (totally segregated).

VII. The quarantine area for DTL pending items/expired items/unverified items should be marked with the words "DTL Pending/Expired items/Unverified Items".

VIII. All DTL Pending/Expired items/Unverified Items should be physically kept in the quarantine area, and under no circumstances, such items should be stored inside the main pharmacy. Moreover, under no circumstances the DTL Pending/Expired items/Unverified stock should be physically stacked with the other stock in use.

IX. The expired/unusable stocks received from OPD/ward pharmacies should be supported by the complete record of identification of ward/date of receiving and any additional information.

X. Updated temperature log sheet, capturing separately daily temperature readings of the main pharmacy and afternoon, should be displayed at a prominent and visible place inside the major pharmacy.

XI. Used stationery items as well as the past record (Registers, Indents etc) should be stacked in the separate cabinet with labels indicating their necessary details such as nature and period. These should be properly placed in boxes and their updated lists should be maintained at main pharmacy.

XII. The stock should be stamped with "FIC Property" or defaced using permanent marker before dispensing.

XIII. Dispensing of medicines should be done after double checking the indent book for proper date, strength and dosage form of medication, relevant ward and duly signed by incharge pharmacist, Charge nurse and admin registrar of the ward, Incharge pharmacist of the main pharmacy and AMS (Stores).

XIV. Separate cabinet with proper lock system should be allocated for narcotics/controlled drugs and separate register maintained thereof.

XV. Methylated spirit should be stored in totally separate area and expense be maintained on separate register.

XVI. Empty cartons, wooden pallets and any other hazardous material should never be stacked inside the storage areas.

XVII. Costly and vulnerable items should be checked by the incharge pharmacist on daily basis.

XVIII. Pharmacy equipment such as refrigerators and fire extinguishers should be serviced at regular intervals to ensure that they remain in operating conditions at all times. The related service and maintenance certificates should be obtained and filed.

XIX. Likewise, except for the designated staff for the main pharmacy, incharge pharmacist, DMS (Stores), AMS (Stores), M.S and E.D; no other staff or visitor should be allowed to enter the main pharmacy area unless authorized by the authority.

XX. Eating, drinking or smoking should be strictly prohibited inside the pharmacy storage area. For this purpose, no smoking sign should be displayed at prominent places throughout the premises.

XXI. Physical sorting of the stocks by the Pharmacy technicians should be done in accordance with the invoices/ Delivery Challans received from the suppliers as per the quantities, batches (where applicable) and other specification mentioned therein, under the supervision of incharge pharmacist.

XXII. At the time of handing over the indent stock to the relevant ward/OPD personnel, the written signatures of Charge nurse/ OPD Pharmacy technician should be checked on back side of indent page to be retained by the main pharmacy.

XXIII. Expiry dates of the medicines/disposables should be checked prior to dispensing.

XXIV. Proper bin cards should be maintained and expiry dates are mentioned on bin cards. Bin cards will be updated after every issuance.

XXV. FIFO as well as FEFO principle will be followed in all cases of dispensing.

XXVI. Pharmacy technicians must check expiry date on a regular basis at least once in a month.

XXVII. An expiry sheet should be printed on a monthly basis containing list of medications to be expired in the next six months and reminders for replacements should be issued to manufacturer/suppliers regarding replacement.

XXVIII. Near expiry items should be segregated and labeled so as to be utilized on priority basis.

QUALITY OF RECORD

III. All the indents after being dispensed will be entered by IT personnel in the MIS data after verification and will stamp the individual prescription.

The data will be kept for 2 years.

THE POLICIES INCLUDE A PROCEDURE FOR MEDICATION RECALL.

RECALL IN MAIN AND OPD PHARMACY

OBJECTIVE:

I. To provide standard operating procedure for proper receipt of medication both from ward as well as OPD patient.

II. To ensure effective communication between the pharmacist and the patient in case of any adverse event occurring with the use of medication.

III. To ensure that any significant interventions are recorded.

SCOPE:

I. All prescription/generic equivalent drugs present in hospital formulary issued from main pharmacy or OPD and having any ADR or expiry issue occurring.

RESPONSIBILITY:

I. Pharmacist

REVIEW:

I. The SOP will be revised every year by the AMS (Stores) to reflect any changes to legislation affecting the process.

II. A review of the SOP is required in the event of any adverse event or reporting issue to relevant authorities.

III. The SOP should also review following a critical incident.

IV. If as a result of review, any changes to the SOP are deemed necessary, these must be approved by the AMS (Stores).

ASSOCIATED RISKS:

I. The medicines may be expired while being used by the patient.

II. The medication may have undergone physical or chemical deformation due to improper storage conditions.

III. The patient may have misused or over dosed the medication leading to potential ADR.

IV. The prescription may be delivered to wrong patient.

PROCEDURE:

I. Medications of near expiry (03 months remaining) present in any ward pharmacy shall be intimated to main pharmacy.

II. In case of any return of medication/ disposable of near expiry from the ward pharmacy, return will be on the ward indent duly signed by the relevant incharge of the ward, incharge pharmacist and AMS (stores).

III. Medications/disposables returned will be duly checked for expiry date, batch number, brand name, generic name, strength, genuineness and condition.

IV. In case of any discrepancy in batch number where applicable, apparent efficacy or genuineness, return will not be acceptable.

V. In case of any ADR reported with the use of a medication of specific brand of manufacturer and that particular drug be used in our institution, that should be stopped immediately if the batch is same .

VI. In case a medicine is returned from an OPD patient due to quality problem, missing tablet, deterioration, or misprinting etc, the related medicines should be checked by the incharge pharmacist and complete information be recorded regarding the product name, brand, strength, dosage form, strength, manufacturer, date of issuance and be returned to main pharmacy.

VII. Essential information to permit assessment of the validity of any quality defect, safety, or efficacy problem with the medication having potential dangerous effect to the patients should be assessed.

VIII. Any problem occurring with the use of any disposable/medication shall be reported by the relevant clinician, pharmacist, and staff nurse on the yellow cards for that specific purpose with full information regarding the patient and ADR occurring and report to the Pharmacovigilance committee.

IX. Any person reporting with any adverse effect regarding any medication in OPD pharmacy shall be completely investigated for that purpose regarding the name of medication, brand, date of issuance, strength, manufacturer, expiry date, manufacturing date, dosage form, registration number, active ingredients, quantity used by the patients, adverse effects occurring in the patients, associated risk factors of the patient, complete history of the patient and medical record and nay other information possible. All the data will be carefully assessed and will be discussed in the Pharmacovigilance committee and be reported to the provincial Pharmacovigilance Cell within 24 hours if deemed necessary. The reporting will be on the yellow card designed for that specific purpose.

QUALITY OF RECORD

I. All the ADR reported should be properly noted and discussed in the Pharmacovigilance committee and should be reported to the provincial Pharmacovigilance centre of Punjab in Lahore within 24 hours of reporting and after final discussion of the committee.

II. The copy of the ADR reported will be retained along with all data.

EXPIRY DATES ARE CHECKED AND DOCUMENTED PRIOR TO DISPENSING.

Policy:

The Pharmacy Department is responsible for conducting physical examinations of all medication to ensure their being intact and in date at the time of use. The pharmacy in-charge shall ensure implementation of the following SOPs for the Monitoring of Expiry Dates;

i. The orders for responsibility to check the Expiry Dates on Daily/Monthly/ Quarterly/Yearly basis should exist.

ii. Once a drug is re-packaged in a separate container there is a reduction in the shelf life of the product, therefore, original expiry dates should not be used. It is the responsibility of the re-packaging technician to inspect these products for date of manufacturing and then proposed expiry.

iii. Expired stock or products which expire within a month are pulled from the shelves and the purchasing cell notified of the need for additional stock.

iv. The pharmacists and pharmacy technicians in the dispensing areas are responsible for the inspection of all drugs products in the working stock. Each technician will have a portion of the stock from the central pharmacy assigned for monthly inspection. A visual inspection for deterioration and expiry date shall be a normal part of the dispensing and checking procedure.

v. All expired repackaged products shall be pulled from the shelves and held in a segregated area for disposal.

vi. All expired drugs which are in the original package shall be stored in a segregated area in the stockroom and will be processed as per hospital policy.

LABELLING REQUIREMENTS ARE DOCUMENTED AND IMPLEMENTED BY THE ORGANIZATION. = Not Applicable

But Labeling done only in ICU Department

Bedside Medication Labeling Check List

a. Medication name.

b. Medication strength (concentration).

c. Expiry date is required if the medication will not be used within 24 hours.

d. Expiry time is required if the expiry will occur in less than 24 hours.

e. Date prepared and the preparer's initials.

f. Any remaining medication must be discarded immediately after the case/procedure

THERE ARE DEFINED PROCEDURES FOR MEDICATION ADMINISTRATION

MEDICATIONS ARE ADMINISTERED (DISPENSED) BY THOSE WHO ARE PERMITTED BY LAW TO DO SO.

Policy:

Administering a medication to treat a patient requires specific knowledge and experience. Each FIC Executive Officer is responsible for identifying those individuals with the requisite knowledge and experience, and who are also permitted by licensure, certification, laws or regulations to administer medications (PMDC Ordinance 1962, PMDC Amendment Act 2012, PNC Ordinance, Pharmacy Council Act, Punjab Medical Faculty Act, Pakistan Injured Person Act etc.) An organization may place limits on medication administration by an individual, such as for controlled substances or radioactive and investigational medications. In emergency situations, the organization identifies any additional individuals permitted to administer medications

PREPARED MEDICATIONS ARE LABELLED PRIOR TO PREPARATION OF A SECOND DRUG.

Policy:

Prepared medicines are labeled immediately upon preparation including following information:

i. Patient's full name and a second patient identifier (e.g., medical record number, DoB).
ii. Full generic drug name.
iii. Drug administration route.
iv. Total dose to be given.
v. Total volume required to administer this dosage.
vi. Date of administration.
vii. Date and time of preparation.
viii. Date and time of expiration when not for immediate use.

PATIENT IS IDENTIFIED PRIOR TO ADMINISTRATION.

Policy:

Avoid Serious Mistakes by Complying with the following SOPs;

i. Prepare medication for one individual at a time.
ii. Give the medication to the individual as soon as you prepare it.

iii. Do not talk to others and ask them not to talk to you when you are giving medication.
iv. Do not stop to do something else in the middle of giving medications.
v. Pay close attention at all times when you are giving medications.
vi. Must compare the individual's name on the prescription label, the medication order and the medication log. Make sure that they match. If they do not match, or if there is any doubt about whether you are giving the medication to the right individual, **ASK QUESTIONS!**
vii. If you make a mistake, follow the Policy for reporting medication errors. You may need to call the individual's physician, or take the individual to the emergency room for evaluation

MEDICATION IS VERIFIED FROM THE ORDER PRIOR TO ADMINISTRATION.

Policy:

i. Read the medication label carefully (remember that some medications have more than one name: a brand name and at least one generic name).
ii. Check the spelling of the medication carefully. If there is any doubt about whether the medication name is correct, stop and call the pharmacist before given the medication.
iii. Read the medication order carefully. Make sure that the medication name on the order matches the medication name on the label.
iv. Read the medication log carefully. Make sure that the medication name on the label, the medication order and medication log match before giving the medication.
v. Look at the medication. If there is anything different about the size, shape or color of the medication, call the pharmacist before giving it. It could be that you have been given a different generic brand of the medication. But sometimes when a medication looks different it means that wrong medication has given.

DOSAGE IS VERIFIED FROM THE ORDER PRIOR TO ADMINISTRATION.

Policy:

Ensure the following Dose Verification points:

i. Prescription Label
ii. The Medication Order
iii. The Medication Log

ROUTE IS VERIFIED FROM THE ORDER PRIOR TO ADMINISTRATION.

Policy:

Additional care is taken when administering the following dosage forms:

a. Transdermal patches
b. Modified release oral medicines
c. Inhaled Medicines
d. Parenteral fluids.

TIMING IS VERIFIED FROM THE ORDER PRIOR TO ADMINISTRATION

Policy:

Medications must be given within a ½ hour of the time that is listed on the medication log. This means that you have ½ hour before the medication is due, and ½ hour after it is due to administer the medication in order to be on time with medication administration.

MEDICATION ADMINISTRATION IS DOCUMENTED.

Policy:

The following instructions must be acted upon for proper documentation;

i. Each time a medication is administered; it must be documented and signed with full name/stamp.
ii. Documentation of medication must be done at the time of actual administration.
iii. All documentation required for the patient, must be completed on the medication log individually and not all together as a batch.
iv. Documentation should be done in BLUE or BLACK ink.
v. NO PENCIL or WHITE OUT can be used.
vi. NEVER OVER WRITE documentation.
vii. In case of a mistake in documenting the medication log, CIRCLE the MISTAKE and write a note on the log to explain what happened.
viii. Double check documentation done by you after finishing the medication process and again at the end of the duty.
ix. Coordinate with a colleague to have documentation done by you double-checked for you, ask him/her to go over your medication log documentation to make sure that it is complete and vice versa.

POLICIES AND PROCEDURES GOVERN PATIENT'S SELF-ADMINISTRATION OF MEDICATIONS

Policy:

The FIC has following SOPs:

1) The SAM (Self-Administration of Medicines), either those brought into the FIC or those prescribed or ordered within the FIC, is known to the patient's physician and noted in the patient's record.
2) The FIC controls the availability and use of medication samples

3) Every patient entered in the self-administration scheme is given a Medicine Information Card approved by the Drug and Therapeutics Committee which carries the following information:
    a. The name and strength of the medicine.
    b. The reason for taking the medicine.
    c. The time and dose of the medicine.
    d. Any special directions relating to the medicine.
    e. Possible significant common side-effects of the medicine.

1) The Medicine Information Card is completed by the person assessing the patient, using the in-patient prescription chart as a guide. This information is checked by another trained nurse/pharmacist, or pharmacy technician to ensure it is transcribed accurately.
2) The information given to the patient is reinforced verbally at the point the Medicine Information Card is handed over, and is checked and further reinforced on a continual basis.
3) Patients will receive the manufacturer's Patient Information Leaflet with their medicines.
4) The in-patient prescription chart is checked by the nurse for any changes at least once a day and the Medicine Information Card updated as necessary.
5) Patients entered in the self-medicine scheme may continue to administer their medicines pre-operatively, but must be given clear guidance on any medicine that must be omitted on the day of operation.
6) All medicines self-administered by patients must be presented and labeled in a form that provides all the information necessary for the patient to self-administer without risk of error. This is achieved in one of two ways:
   a) Patients' own medicine may be reused for self-administration provided they meet the requirements of the FIC Policy for Safe and Secure Handling of Medicines.
   b) Individually dispensed items from the pharmacy will be supplied from the Pharmacy Department fully labeled for use by the patient and will include the manufacturer's Patient Information Leaflet.
7) The quantity of medicine supplied will be sufficient to cover the patient's anticipated length of stay plus a further fourteen days' supply following discharge.
8) Any dosage alteration to a SAM by a prescriber must be brought to the attention of a nurse and pharmacist at the earliest opportunity to allow re-labeling/re-supply and alteration of the Medicine Information Card to occur.
9) Any discontinuation of a SAM must be brought to the attention of a nurse and pharmacist at the earliest opportunity to allow the medicine to be removed from the cabinet.

POLICIES AND PROCEDURES GOVERN PATIENT'S MEDICATIONS BROUGHT FROM OUTSIDE THE ORGANIZATION.

Policy:

Every medicine that is brought into hospital by a patient and is either prescribed for them by their registered medical practitioner or purchased for them by others is classified as Patient's Own Drugs (POD).

SOP's

Any medicines remaining at home should, if possible, be brought in by relatives as soon as possible. If consent is granted, the drugs should be locked in the locally agreed POD storage area for assessment by the Pharmacist.

Consent

i. Drugs brought in from home remain the patient's property and verbal consent for their use or destruction must be obtained by the admitting nurse, pharmacist or doctor. Where it is not possible for a patient to consent, a relative or attendant may assent on the patient's behalf. This should be documented in the patient's notes. Please note if patient gives the consent, hospital is still legally accountable if there is a problem with the patient's own

medication. So the hospital should devise a safe and clear-cut policy on the use of POD.

ii. If the patient/attendant does not agree to use the PODs in the ward, the medicines must be stored in the ward in a locked cupboard and returned to the patient on discharge with clear instructions as to their use. If any drugs are considered unsatisfactory for use, the pharmacist should inform the patient/attendant of the risks associated with poor quality medicines or poor labelling. This should be documented in the patient's medical notes.

POD Assessment:

i) Only medicines that can be positively identified will be accepted for use. The responsible pharmacist, registered nurse, mental health practitioner or registered medical practitioner must be satisfied with the general condition of the product and its packaging and labeling. PODs which are not currently prescribed or whose directions do not correspond with the prescription should be stored in the POD overflow cupboard or other secure drug storage cupboard. The ward pharmacist should be informed at the next available opportunity and a note should be left in the doctor's communication book. Any discontinued items should be removed immediately.

During Routine Opening Hours:

1) PODs will be checked in the wards. If they are suitable the prescription chart will be marked 'POD' by the pharmacist or pharmacy technician, initialed, dated and the number of tablets noted in the pharmacy box on the prescription chart. The POD will have a green sticker affixed to the container, which will be signed, dated and endorsed with the quantity and strength by the pharmacist if they are suitable for use or reissue. The pharmacist will only endorse the chart when they have assessed the PODs.

Out of Pharmacy Hours

a. PODs will be checked by a registered nurse or pharmacist. Any medication which has been checked should have a ward POD sticker attached which should be signed and dated by the assessing nurse. The pharmacist or pharmacy technician will re-check these PODs on their next visit.
b. Unsuitable medicines will be returned to the Pharmacy Department for assessment by pharmacy staff and if necessary a new supply organized by the clinical pharmacist or by the technician on their next round.

Supply of PODs:

The PODs will only be used in the hospital when they are passed by the doctor or pharmacist. All regular medicines will be dispensed from the hospital Pharmacy Department. Ward stock bottles or in-patient supplies must never be stored in the patient's cabinet unless labeled with full instructions for use.

Patient Rights and Education (PRE)

A DOCUMENTED PROCESS FOR OBTAINING PATIENT AND/OR FAMILY CONSENT EXISTS FOR INFORMED DECISION MAKING ABOUT THEIR CARE.

GENERAL CONSENT FOR TREATMENT IS OBTAINED WHEN THE PATIENT ENTERS THE ORGANIZATION. PATIENT AND/OR THE FAMILY MEMBERS ARE INFORMED OF THE SCOPE OF SUCH GENERAL CONSENT

Policy:

The patent has the right to have correct information about his/her health status (unless explicitly requested not to do so), proposed treatment plan and all related issues in general. This information should be conveyed by the attending staff in a clear way and appropriate language. The client should have sufficient information to help him/her understand the issue and have informed decisions regarding treatment and management.

The general consent is already given to all departments of FIC, Faisalabad.

THE ORGANIZATION HAS LISTED THOSE SITUATIONS WHERE SPECIFIC INFORMED CONSENT IS REQUIRED

Scope:

- When a patient is unable to express his or her will and a medical intervention is urgently needed, the consent of the patient may be presumed, unless it is obvious from a previous declared 'Expression of Will' that consent would be refused in the situation.
-
- When the consent of a legal representative is required and the proposed intervention is urgently needed, that intervention may be made if it is not possible to obtain the representative's consent in time.
- When the consent of a legal representative is required, patients (whether minor or adult) must nevertheless be involved in the decision-making process to the fullest extent which their capacity allows.
- If a legal representative refuses to give consent and the physician or other provider is of the opinion that the intervention is in the interest of the patient, then in case of a non-emergency situation, the decision must be referred to a court or some form of arbitration.
- In all other situations where the patient is unable to give informed consent and where there is no legal representative or representative designated by the patient for this purpose, appropriate measures should be taken to provide for a substitute decision making process, taking into account what is known and, to the greatest extent possible, what may be presumed about the wishes of the patient.
- The consent of the patient is required for the preservation and use of all substances of the human body. Consent may be presumed when the substances/body part are to be used in the current course of diagnosis, treatment and care of that patient.

- The informed consent of the patient is needed for participation in clinical teaching.
- The informed consent of the patient is a prerequisite for participation in scientific research. All protocols must be submitted to a proper ethical review committee. Such research should not be carried out on those who are unable to express their will, unless the consent of a legal representative has been obtained and the research would likely be in the interest of the patient.

INFORMED CONSENT INCLUDES INFORMATION ON RISKS, BENEFITS, AND ALTERNATIVES AND AS TO WHO WILL PERFORM THE REQUISITE PROCEDURE IN A LANGUAGE THAT THEY CAN UNDERSTAND

Information about Risks, Benefits and Alternatives

It is the responsibility of FIC staff that they should take the time to explain with the patient and his/her attendant about the following points:

- Health status facts
- Diagnosis of the problem
- Proposed management plan
- Expected outcome
- Costs (expected)
- Risks
- Choices of patients
- Follow up to the patients
- Right to read own medical file

Policy:

The person performing the procedure shall be responsible for the entire consent process including providing explanation and taking the signature. A team member can take consent on behalf of the person performing the procedure, but their name and designation must be clearly mentioned in the chart.
When the patient does not speak or understand the predominant language of the community, the FIC will make efforts to ensure that proper interpretation is done if it is possible to provide an appropriate interpreter for the same.

THE POLICY DESCRIBES WHO CAN GIVE CONSENT WHEN PATIENT IS INCAPABLE OF INDEPENDENT DECISION-MAKING

Policy Regarding Consent for Incapacitated Patient

The FIC staff shall take into consideration the statutory norms. This would include taking of consent from next of legal guardian. The order of preference is; spouse, son, daughter, brother, sister, parents. However, in case of unconscious/unaccompanied patients the treating doctor can take a decision in life-saving circumstances.

PATIENT AND FAMILIES HAVE A RIGHT TO INFORMATION ON EXPECTED COSTS

THERE IS UNIFORM PRICING POLICY IN A GIVEN SETTING (OUT-PATIENT AND WARD CATEGORY

Billing Policy

There is a Billing policy which defines the charges to be levied for various procedures. The policy is clearly procedure based.

THE TARIFF LIST IS AVAILABLE TO PATIENTS

Policy for billing list:-

The FIC establishment shell ensures that there is an updated tariff list and that this is available to patients when required. The FIC establishment shall charge as per the tariff list without any hidden costs whatsoever. Any additional charge should also be enumerated in the tariff and the same communicated to the patients with a clear and justified explanation. Tariff rates should be uniform and transparent.

The Reception Area/Almoner Department/Account Section and wards should display information about the tariff policy of the FIC which includes:

- The rights of the patients.
- Services and facilities available in the hospital.
- Costs of services.
- Feedback and complaints pathways.

PATIENTS AND FAMILY ARE EDUCATED ABOUT THE ESTIMATED COSTS OF TREATMENT

Information about Estimated Cost of Treatment

The patient and family members are explained about the expected costs. Patients should be given an estimate of the expenses on account of the treatment/investigations to be performed in different settings, preferably in a written form. This estimate shall be prepared on the basis of the treatment plan.

It cost should be prepared by the OPD/Registration/Admission staff in consultation with the treating doctor.

PATIENTS AND FAMILY ARE INFORMED ABOUT THE FINANCIAL IMPLICATIONS WHEN THERE IS A CHANGE IN THE PATIENT CONDITION OR TREATMENT SETTING

Information about Financial Implications

When patients are shifted from one setting to another, typically to and from ICUs, other specialized care facilities, the financial implications must be clearly conveyed to patient.

PATIENT RIGHTS FOR APPEALS AND COMPLAINTS

THE ORGANIZATION INFORMS THE PATIENT OF HIS/HER RIGHT TO EXPRESS HIS/HER CONCERN OR COMPLAIN EITHER VERBALLY OR IN WRITING

- **Right to Express Concern or Complain**

  The information as how to lodge a complaint is clearly displayed in the local language at prominent places in FIC.

  Complaint is an expression of client dissatisfaction and a way of feedback on the quality of care which needs a response. Every healthcare facility should inform the patients about their right to complain and the complaint handling procedures. A complaint may be written or verbal and be lodged by the patient, his/her attendants or a legally authorized person.

THERE IS A DOCUMENTED PROCESS FOR COLLECTING, PRIORITIZING, REPORTING AND INVESTIGATING COMPLAINTS, WHICH IS FAIR AND TIMELY

- **Complaint Management Procedure**

  To become a quality driven service, a facility should encourage the clients and their family members to freely raise and discuss their views, concerns or complaints with the concerned staff. These dialogues help and serve as opportunities for improvement.

THE ORGANIZATION INFORMS THE PATIENT OF THE PROGRESS OF THE INVESTIGATION AT REGULAR INTERVALS AND INFORM ABOUT THE OUTCOME

- **Policy about Progress of Investigation and Outcome**

  It is important that the patient is informed of the level at which the complaint can be handled. This duty should be clearly entrusted to a designated staff member of the complaint cell/department of the FIC.

  The patient should be kept informed about the progress of the investigation at regular intervals, in case these are prolonged, and also of the outcome. This will help to build the credibility of the process/facility.

THE ORGANIZATION USES THE RESULTS OF COMPLAINTS INVESTIGATIONS AS PART OF THE QUALITY IMPROVEMENT PROCESS

- The result of the inquiry should be taken in a positive manner. Feedback from clients includes both compliments (satisfaction) and complaints (dissatisfaction) about quality of care. Patient's feedback should be valued, as this would help the FIC to improve quality of services.

- The FIC have mechanisms to obtain feedback as an on-going process.

Hospital Infection Control (HIC)

THE ORGANIZATION HAS A WELL-DESIGNED, COMPREHENSIVE AND COORDINATED INFECTION CONTROL PROGRAMME AIMED AT REDUCING/ELIMINATING RISKS TO PATIENTS, VISITORS AND PROVIDERS OF CARE

THE HOSPITAL INFECTION CONTROL PROGRAM IS DOCUMENTED WHICH AIMS AT PREVENTING AND REDUCING RISK OF NOSOCOMIAL INFECTIONS.

STANDARD PRECAUTIONS

PURPOSE:

The intent of FIC is that all patients' blood and body fluids will be considered potentially infectious. Standard precautions are indicated for all patients.

Definition:

Adaptation of uniform precautions for all patients regardless of their diagnosis is called Standard (Universal) Precautions.

STANDARED PRECAUTIONS:

1) Hand hygiene
2) Use of personal protective equipment (e.g., gloves, gowns, masks)
3) Safe handling of potentially contaminated equipment/surfaces/sharp disposal in the patient environment
4) Respiratory hygiene/cough etiquette
5) Safe injection practices
6) Use of masks for insertion of catheters or injection of material into spinal or epidural spaces via lumbar puncture procedures (e.g., myelogram, spinal or epidural anesthesia)

1. HAND HYGIENE:

Hand hygiene should be maintained before and after each physical contact as per FIC hand hygiene guideline.

2. USE OF PERSONAL PROTECTIVE EQUIPMENT (PPE)

a. GLOVES:

Gloves should be worn whenever there is a risk of exposure with the following:

1. Blood or Blood products
2. Body fluids
    a) Urine.
    b) Feces.
    c) Saliva.
    d) Mucous membranes.
    e) Wound drainage.
    f) Drainage tubes.
    g) Broken skin.
    h) Amniotic fluid, Cerebro – Spinal fluid, Pericardial/ Pleuralfluid, Peritoneal fluid, Synovial fluid.
    i) Performing Venipuncture or other invasive procedures.

b. MASKS:

Should be worn during procedures that are likely to generate droplets /splashing of blood / body fluids and removed after procedure.

c. GOWN /APRON:

Should be worn, when there is potential for soiling clothing with blood / body Fluid

d. EYE SHIELD /GOGGLE:

Wear eye shield /goggle over the eyes during procedures that are likely to generate splash of blood / body fluids.

e. SHOE COVERS:

Shoe cover should be used while cleaning spillage, entering into restricted areas without changing personal shoes etc.

f. RESUSCITATION EQUIPMENT:

Mouth pieces or other ventilation devices should be available as alternatives for Mouth to mouth resuscitation.

3. SAFE HANDLING OF POTENTIALLY CONTAMINATED EQUIPMENT/SURFACES/SHARP DISPOSAL IN THE PATIENT ENVIRONMENT:

Dispose of sharps in the sharp container immediately after use by the person who uses it.

a. NEEDLE RECAPPING:

Do not recap used needles.

B .LAB SPECIMENS:

1. Should be placed in a container that prevents leakage. Care should be taken during collection, handling, transportation, processing and storage.
2. If shipping is needed should be labeled with biohazard symbol.
3. If outside contamination of the primary container occurs, it should be placed within a second container.

c. BLOOD SPILLS

1. Spills of blood/body fluids and other should be cleansed by following Spillage Guideline. Decontaminate the area using the approved solution.
2. Gloves should be worn during cleaning and decontamination.

d. LINEN

4. Gloves should be worn while handling solid/dirty linen.
5. The soiled/wet linen should not be shaken and should be rolled outward to inward and place in an alginate bag then in white bag label it and finally disposed in The Linen Hamper & sent to the laundry.
6. Linen contaminated with cytotoxic material, or if indicated by infection control should be double bagged in red bags, labeled and sent for incineration.

e. CLINICAL/INFECTIOUS WASTE:

Clinical waste should be disposed in designated container by the user.

4. RESPIRATORY HYGIENE/COUGH ETIQUETTE:

The elements of Respiratory Hygiene/Cough Etiquette include

a. education of healthcare facility staff, patients, and visitors
b. posted signs, in language(s) appropriate to the population served, with instructions to patients and accompanying family members or friends
c. source control measures (e.g., covering the mouth/nose with a tissue when coughing and prompt disposal of used tissues, using surgical masks on the coughing person when tolerated and appropriate)
d. hand hygiene after contact with respiratory secretions
e. spatial separation, ideally >3 feet, of persons with respiratory infections in common waiting areas when possible. Covering sneezes and coughs and placing masks on coughing patients are proven means of source containment that prevent infected persons from dispersing respiratory secretions into the air

Healthcare personnel are advised to observe Droplet Precautions (i.e., wear a mask) and hand hygiene when examining and caring for patients with signs and symptoms of a respiratory infection. Healthcare personnel who have a respiratory infection are advised to avoid direct patient contact, especially with high risk patients. If this is not possible, then a mask should be worn while providing patient care.

5. SAFE INJECTION PRACTICES

a. Use aseptic technique when preparing and administering chemotherapy infusions or other parenteral medications (e.g., antiemetic, diphenhydramine, dexamethasone)
b. Whenever possible, use commercially manufactured or pharmacy-prepared prefilled syringes (e.g., saline and heparin)
c. Avoid prefilling and storing batch-prepared syringes except in accordance with pharmacy standards
d. Avoid unwrapping syringes prior to the time of use
e. Never administer medications from the same syringe to multiple patients, even if the needle is changed or the injection is administered through an intervening length of intravenous tubing
f. Do not reuse a syringe to enter a medication vial or solution
g. Do not administer medications from single-dose or single-use vials, ampoules, or bags or bottles of intravenous solution to more than one patient (e.g., do not use a bag of saline as a common source supply for multiple patients)
h. Cleanse the access diaphragms of medication vials with 70% alcohol and allow the alcohol to dry before inserting a device into the vial
i. Dedicate multi-dose vials to a single patient whenever possible. If multi-dose vials must be used for more than one patient, they are restricted to a dedicated medication preparation area and should not enter the immediate patient treatment area (e.g., exam room, chemotherapy suite)
j. Dispose of used syringes and needles at the point of use in a sharps container that is closable, puncture-resistant, and leak-proof
k. Do not use fluid infusion or administration sets (e.g., intravenous tubing) for more than one patient

l. Use single-use, disposable finger stick devices (e.g., lancets) to obtain samples for checking a patient's blood glucose, PT/INR, etc. and dispose of them after each use; do not use a lancet holder or pen let device for this purpose

HAND HYGIENE

1. Definition:

Hand Hygiene is a general term that applies to routine hand washing, antiseptic hand wash, antiseptic hand rub, or surgical hand antisepsis.

2. Purpose

To provide hand hygiene guidelines for FIC employees, patients, and visitors.

3. Policy:

Hand hygiene is a critical component for patients/visitors' and employees' safety. FIC has a policy to maintain hand hygiene before and after each patient contact, including contact with intimate objects and surfaces.

Hand hygiene is well researched and uncontroversial, having been found to be the single most practice for preventing nosocomial infection. Contaminated hands have been shown to be an important route of transmission of infection.

3. INDICATIONS FOR HAND WASHING

Wash your hands with soap and water:

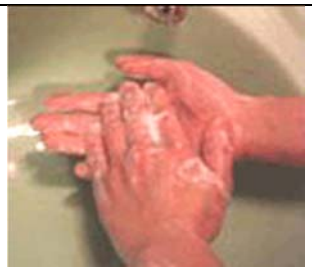
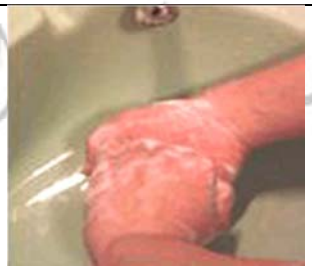
a) If hands are visibly dirty/soiled with blood, body fluid and secretions
b) Before and after eating
c) Before and after attending a patient or performing a procedure.
d) Before and after removing gloves
e) After using the toilet.
f) If exposure to spore-forming organism such as *B. anthracis or C. Difficile* is suspected or proven.

3.1 GENERAL PRINCIPAL OF HAND WASHING:

a) Roll up sleeves, remove rings and wrist watches.
b) Turn on tap water to a comfortable warm temperature.
c) Position hands to avoid contaminating arm
d) Avoid splashing clothing and floor
e) Take 2-3ml soap on your hand and moisten hands with soap and water.
f) Rub hands together vigorously to make a heavy lather and use friction on all surfaces following rotary motion minimum of 15 seconds.
g) Rinse hands thoroughly with hands held down wards under running water.
h) Dry hands with a clean paper towel and turn off tap (faucet) with same paper towels and discard in available waste container. If a paper towel is not available rinse the tap head (Faucet) with water and close with left hand.

3.2. HAND WASHING TECHNIQUE

Steps	Procedures

Step 1.	Wet hands and wrists with lukewarm water. Apply soap.	
Step 2	Place one palm over the other working the soap into a lather	
Step 3	Rub your hands palm to palm, fingers interlaced	
Step 4	Rub back fingers to opposing fingers interlocked. Be sure to get underneath the fingernails.	
Step 5	Rotate the right thumb in a rotational manner clasped in left palm and vice versa.	
Step 6	Rub backwards and forwards while rotating with tops of fingers and thumb of right hand in left and vice versa.	

Repeat steps 1-6 until hands are clean. Wash hands for at least 40-60 seconds.

Step 7	Pat hands dry using clean paper towels, ensuring that all areas have been dried. Closed the Tap water with paper towel which was used for hand drying and discard in available bin.	
If hand washing sink is not available, alcohol based cleansing agents are available. These hand hygiene products can be used in place of a hand wash when hands are <u>not</u> visibly dirty/soiled. Alcohol-based sanitizers are special brand of sanitizer that doesn't require rinsing,		

4.0 INDICATIONS FOR HAND RUB

Use alcohol – based Hand Rub/Jell solution in all situations listed below:

a) Before entering patient's room
b) Before and after contact with patient's intact skin (e.g., taking pulse or blood pressure etc).
c) Before donning sterile glove
d) Before inserting invasive devices
e) After removing gloves.
f) After contact with objects and equipment in the patient's immediate vicinity or within the patient care unit.
g) Between procedures (when moving from a contaminated body site to a clean body site during patient care).

4.1 HAND RUB TECHNIQUE

a) Apply hand rub solution/Gel to palm of one hand and rub hands together, covering all surfaces of hands and fingers, until hands are dry.
b) Follow the manufacture recommendations regarding the volume, at least more than 3 ml
c) Hand rub solutions should be strategically placed in all required areas along with hand washing facility.

5.0. SURGICAL HAND ANTISEPSIS

a) Remove rings, watches and bracelets before beginning the surgical hand scrub.
b) Remove debris from underneath finger nails using a nail cleaner under running water.
c) Surgical hand antisepsis using either antimicrobial soap or alcohol based hand rub with persistent activity is recommended before donning sterile gloves when performing surgical procedures.
d) When performing surgical hand antisepsis using an antimicrobial soap, scrub hand and forearms for the length of time usually two to six minutes. Long scrub time (e.g., 10 minutes) is not necessary.

6.0. STAFF TRAINING AND EDUCATION:

All Health Workers (Medical, Nursing & others) should attend training sessions and workshop on an annual basis (record)

7.0. MONITORING FOR ADHERENCE

a) Hand Hygiene Audit will be conducted on a quarterly basis by Infection Control Team (Infection Control Nurses' and Infection Control link liner representatives from all departments).
b) Infection control nurses will conduct monthly clinical rounds hospital wide.
c) Non compliances with hand hygiene policy will be communicated to the head of department with identity of employee involved for the purpose of corrective action.
d) ID physician and ICN will conduct pre-audit meeting with concerned.
e) Small sessions in the units will be conducted by ICN as a part of continual training regarding hand hygiene.
f) Feedback from staff will be gathered through a survey in case of poor compliance.

8. OTHER ASPECTS OF HAND HYGIENE

a) Keep nails short less than ¼ in. long and should not be coated with polish
b) Wear gloves when contact with blood or other potentially infectious materials, mucous membrane, and non intact skin could occur.
c) Remove gloves after caring for a patient. Use new pair of gloves for each patient. (Do not wear the same pair of gloves for the care of more than one patient; do not wash gloves between uses with different patients).
d) Change gloves during patient care if moving from contaminated-body site to a clean-body site.
e) Senior staff must be a role model to the junior staff.

Peripherally Inserted Venous Cannula

1. PURPOSE:

To provide guidelines for health care workers for the insertion, care and removal of peripheral Intra-venous (IV) cannula.

2. SCOPE OF GUIDELINES

FIC staff, who are trained and competent for the insertion, care and removal of peripheral intra-venous (IV) cannula.

3. POLICY:

Peripheral intravenous catheters must be inserted by physician, or competent Registered Nurses.

4. INDICATIONS:

a) To keep vein open for IV access
b) Medication Administration
c) To provide hydration
d) To transfuse blood or blood products

A. ASEPTIC TECHNIQUE

1. Handhygiene.
2. Attention to aseptic measures (non-touch technique).
3. Wear latex gloves & apron.

B.CHOICE OF CANNULA:

1. For pediatric patients select proper (22 or 24) gauge cannula.

2. For adult patients select the cannula of 20 or 22 gauge unless there is indication for fluid bolus or blood.
3. The size of cannula is measured by the length of the needle (stylet) and the gauge of the lumen, which corresponds to a colored port cover.

c.CHOICE OF VEIN/SITE

1. The patient's general condition must be assessed with regard to the reason for cannulation.
2. The patient's superficial veins of both hands and arms must be assessed visually and by palpation to determine their suitability for cannulation. Application of a tourniquet will promote venous distension.
3. Sites near joints, in close proximity to an infected wound, or veins that are inflamed, thready, thrombosed, and slippery in older patients should be avoided.
4. Always maintain cannula at upper extremity. Upper extremity sites are differing in their risk of phlebitis.
5. In adults, hand veins insertion have a lower risk of phlebitis than do upper arm, or wrist vein insertions.
6. Lower extremity has greater risk, if used should be replaced/ removed as soon as possible.
7. Cannula already inserted from other facility or suspected being passed under inappropriate skin preparations need to be changed.

D.SITE PREPARATION

1. Assess vein first and then wash hands before site cleaning(hands should be washed before assessing and then again as required)
2. Use alcohol or 2% chlorhexidine with 70% isopropyl swabs from inner to outer way for three times or more as needed and then allow the alcohol to dry at least for up to 30 seconds.
3. Once site is cleaned, it should not be touched or palpated. If it is done for re-assessment in difficult veins, it should be cleansed again.

E. CANNULA DRESSING

1. Transparent dressing should be applied to cover the insertion site.
2. The cannula should be secured to stabilize it at the insertion site
3. Label the cannula with date & time of insertion & Employee code of inserting person.

F.PROCEDURE:

1. Prepare cannulation tray after confirming expiry date of all item. Make sure good light, comfortable sitting arrangement for patient including other required equipment (IV pole, Sharps container etc).

2. Explain procedure to the patient, allowing time to ask questions, and make sure that patient understands.

3. All stages of the procedure should comply with the principles of minimizing infection e.g.:

   a) Proper hand washing technique, if a sink is not available hands can be decontaminated with an alcohol hand rub, ensuring a proper technique is followed.
   b) Careful handling of the equipment to prevent contamination and maintain sterility (non touch technique)
   c) Wear clean gloves and apron.
   d) If hair removal is required this should be done with clipper (electrical shaver) or scissors

e) Check all equipment packaging before opening and preparation for use.

4. Place the extremity/site in comfortable position. Apply the tourniquet 6 to 8cm above the insertion site and allow the vein to engorge with blood. Assess suitability of chosen vein i.e. palpable, non-pulsatile, straight and healthy. Veins must be palpated to assess suitability.

5. Thoroughly disinfect the skin area to be cannulated with alcohol or 2% chlorhexidine with 70% isopropyl swabs from inner to outer way for three times or more as needed and then allow the alcohol to dry at least for up to 30 seconds.

6. Insert the cannula, bevel side up, into the patient's vein at an angle of approximately 15-25° to the skin (note: fragile veins usually require a lower angle of insertion), depending on the depth of the vein and the amount of sub-cutaneous tissue.

7. Stop when blood is seen in the flashback chamber

8. Lower the angle of insertion to correspond to vein depth, direction and carefully advance the cannula and stylet up to 5 millimeters into the lumen of the vein.

9. Withdraw the stylet up to 5 millimeters to see a second flashback in the length of the cannula. (NB Never re-insert the stylet)

10. Slowly advance the cannula into the vein in short stages, after each stage gradually withdraw a section of the needle – never fully remove the needle from the patient until the cannula is fully inserted.

11. Once the cannula is fully inserted, release the tourniquet and apply digital pressure to the vein above the cannula tip before completely removing the stylet, disposing of it immediately into the sharps container.

12. Attach the luer lock cannula cap to the hub of the cannula. Release digital pressure from the vein.

13. Apply the IV moisture responsive transparent dressing as per manufacturer's instructions, ensuring the puncture site is covered properly.

14. Flush the cannula with sodium chloride 0.9% injection using push pause technique observing for signs of swelling or leakage, asking the patient, where possible, if any pain or discomfort is felt. If so, remove the cannula.

15. Write down cannula insertion date, time and Emp # of inserting person.

16. Dispose of used materials safely in the appropriate waste bags and sharps in sharp box.

17. Documentary problems or difficulties encountered during cannulation, e.g. Number of attempts made.

If peripheral cannula insertion is difficult, report to the physician for central venous access.

G. MAINTENANCE OF IV SITE

1. Patients with cannula should be evaluated in each shift for any signs of phlebitis. Infiltration or extravasations (redness, swelling pain & burning sensation).
2. This evaluation includes visual inspection and gentle palpation of insertion site through the intact dressing.
3. Ask the patient about any discomfort such as pain and burning sensation.
4. Dressing may remain in place for 72hrs unless it becomes moist or soiled etc.
5. Effective flushing is achieved with a 'push-pause' technique, i.e. 1ml. at a time
6. Any cannula not used for treatment within 24 hours should be evaluated as to the Appropriateness of remaining in situ.

REMOVAL OF A CANNULA

1. Peripheral cannula should be changed after 72 hrs. But some literature supports that that cannula can be change after 96hrs with no significant complications providing that non-irritant drugs are administered (for detail see RMM Page 864).
2. Change IV cannula, administration set, intravenous fluid and 3 way stopcocks after 72 hrs.
3. Heparin lock/stopper should be changed after each use.
4. If for any reason peripheral cannula cannot be removed, patient's physician should be informed and document in online notes for prolonged cannulation.
5. As soon as the IV fluid or drug is discontinued removal of IV cannula should be considered.

Note: If patient is received with cannula inserted from outside, inquire date of insertion and redress with transparent dressing only in emergency situation.

CENTRAL VENOUS CATHETER

1.0. POLICY:

All Central Venous Access Devices will be inserted by a competent/ experienced physician. A non-experienced physician will only perform this procedure under expert supervision.

Definition:

A Central Venous Access Device is one where the catheter is threaded into the central vasculature. If inserted by direct skin puncture into a vein it is percutaneous, e.g., non-tunneled central venous catheter or peripheral inserted central venous catheters (PICC).It can also be tunneled under the skin, e.g.Broviac catheter.

NOTE:

Administration of "Contrast Medium" using a pressure injector should not be performed via any Central Venous Access Device (CVAD), e.g. while performing CT scan with contrast

2.0. PURPOSE:

To provide guidelines for central venous catheters such as:

a) Midline Catheters.
b) Non-tunneled central venous catheters.
c) Tunneled central venous catheter.
d) PICC (peripheral inserted central venous catheters).

e) Implantable catheters (ports).

1.0. INDICATION:

a) To monitor Central Venous Pressure in seriously ill patients.
b) For the administration of large amounts of IV fluids or blood in case of shock or major surgery.
c) In difficult peripheral access.
d) To provide long term access:
    1. Hydration or electrolyte maintenance
    2. Repeated administration of drugs such as Cytotoxic and antibiotic therapy
    3. Repeated transfusion of blood or blood products
    4. Repeated specimen collection
    5. Parenteral nutrition

1.0. HAZARDS OF INSERTION:

1. Sepsis (central line associated blood stream infection)
2. Hydrothorax
3. Brachial plexus injury
4. Catheter embolism
5. Arterial puncture and malposition
6. Air embolism
7. Haemorrhage
8. Thoracic duct trauma
9. Thrombosis
10. Pneumothorax
11. Haemothorax
12. Misdirection or kinking
13. Cardiac tamponade
14. Cardiac arrhythmias

Insertion

Personnel:

Medical doctors who have been trained to perform CVC line procedure. They should have initial competency paper work completed before being allowed to do CVC under indirect supervision.

Supervision is direct or indirect. Direct supervision requires consultant to be present while medical doctor performs procedure. Indirect supervision is after medical doctor has acquired initial competency to perform CVC and is available when called for help.

Documented Competency Record:

Training and education of medical doctors should be done in-house by respective departments.

A joint competency paper work should be developed for ICU and OR doctors who routinely perform CVC.

Call for Help:

It should be clear whom to call for help in case of difficulty.

Place:

Elective CVC should be performed in OR/ ICU. Emergency CVC depending on clinical scenario can be done in any clinical area.

Check list (CVC Bundle):A check list is developed that should help implement infection control measures during the insertion of CVC.

General Considerations:

1. Use a CVC with a minimum number of lumens/ports essential for patient management.

2. Use of antimicrobial or antiseptic-impregnated CVC may be considered when catheter is expected to remain in place for >5days and if after implementing comprehensive infection control strategy (CRBSI) rate remains above the target set by infection control.

3. Weigh the risk and benefits of placing a device at a recommended site to reduce infectious complications against the risk for mechanical complications (e.g., Pneumothorax, subclavian artery puncture, subclavian vein laceration, subclavian vein stenosis, haemothorax, thrombosis, air embolism, and catheter misplacement).

4. Indication and contraindication should be taken into account while making the decision to put CVC.

5. Awareness of already existing and previous lines/devices will impact above decision and site of insertion.

Consent:

A written informed consent as part of anesthetic provided. In ICU setting performed with best interest of patient and family informed. Written Consent from family is not required in case of lifethreatening situation.

Assistance:

Trained assistance is required for insertion of CVC. For OR its technicians, residents and in ICU/other areas a competent RN or trained resident. Role of assistant is to help in ensuring adherence to safety check list.

Monitoring:

ECG for above diaphragm CVC, additional as per patient condition.

Position: Head down to reduce risk of air embolism except for femoral CVC. In case patient cannot be put in head down position due to medical contraindication then it needs to be documented along with its risk in consent form.

Aseptic Technique:

1. Hand Hygiene: Wash hands with soap and water or disinfect hands with alcohol based hand rubs, following six steps technique.
2. Use of gloves does not eliminate the need for hand hygiene.
3. Full barrier precautions:
4. Use of PPE (Cap, face mask, sterile gloves, sterile gown and eye protection is optional and large sterile drape to cover the entire patient.
5. For skin asepsis: 2% chlorhexidine in 70% Isopropyl alcohol is the antiseptic solution of choice except for <2 months of age.
6. In case of intolerance/allergy to chlorhexidine, use povidine-iodine solution, after cleaning skin with soap and water. Allow it to dry naturally (about a minute or more)
7. Chlorhexidine should be coated/sprayed thrice, allowed to dry (usually takes 30 seconds).
8. If it is necessary to remove hair, then clippers should be used immediately prior to insertion, otherwise small abrasions may get heavily contaminated with bacteria. Shaving should be avoided where possible.
9. Trolley for placement of CVC should be cleaned with disinfectant wipe.
10. Trolley should be covered with large sterile drape that should cover entire trolley surface and hang down from trolley edges.
11. Ultrasound guided / assisted: Currently not in practice. Before introducing department should address issues of training and sterility of probe. Use sterile Jell and sterile probe

cover.

12. After insertion, all blood on CVC ports and in field should be cleaned with 2% chlorhexidine.
13. All ports should be aspirated and then flushed, capped and clamped to prevent air embolism.
14. Sterile, transparent, semi-permeable dressing should be placed to help in visualize the site for inspection. In case of oozing/ bleeding a sterile swab can be placed to sterile, transparent dressing.
15. Sharps must be disposed in sharps container immediately by the person using.
16. Chest X-Ray to confirm CVC tip position except for femoral lines. In operating room/emergency situations CVC can be inserted with hemodynamic monitoring and should be confirmed with X-Ray as soon as possible.
17. Initial documentation should include indication, any complications, site and number of lumens, fixed at mark and comment after review of X-Ray.

Maintenance

1. Do not routinely replace central venous catheters only to reduce the incidence of infection.
2. Do not use guide-wire technique to replace catheters in patients suspected of catheter related infections.
3. Education and training of personnel responsible for line maintenance must be done regularly.
4. Report immediately to nurse in charge and doctor in case of following:

   a. Accidental removal
   b. Absence of blood return in CVC device.
   c. Disconnected with blood loss.
   d. Infiltration.
   e. Suspected air or catheter embolism.
   f. Suspected arterial placement.
   g. Persistent pain at the insertion site or in the shoulder on the same side of the CVC.
   h. Infection /phlebitis signs (swelling/oedema) at the site of CVC insertion.
   i. Pain or ringing in the ears while flushing or during infusion.
   j. Resistance to flushing or infusion, distended veins on the same side as the central venous catheter.
   k. Suspected blood clot
   l. Excessive bleeding/drainage at the site.
   m. Pinch -off syndrome
   n. Unsecured CVC. (broken sutures)/ Malposition of catheters etc.

This list is indicative of some problems and is by no means exhaustive.

Site assessment:

a) Encourage patients to report any change at site of catheter insertion or any discomfort.
b) Primary Nurse should assess CVC insertion site for phlebitis and infection including redness, swelling, pain/tenderness, indurations, and disruption of flow and lack of blood return.
c) CVC site should be assessed in each shift. In case of any problem with flow disruption report to Shift in charge as well as on duty doctor and document in patient's notes.

Grading of phlebitis:

a) No Symptoms
b) Erythema at access site with or without pain
c) Pain at access site with erythema and/or oedema
d) Pain at access site with erythema and/or oedema. Streak formation. Palpable venous cord.
e) Pain at access site with erythema and/or oedema. Streak formation, Palpable venous cord >
1 inch in length and purulent drainage.

Dressing change:

a) Initial dressing (gauze) must be changed after 24hours(RMM,2008.7thed Page 868)
b) Replace dressings used on short-term CVC sites:
    i. Every 2 days for gauze dressings
    ii. Every 7 days for transparent dressings.
c) Replace catheter site dressing if the dressing becomes damp or loosened.
d) Clean any loose blood or exudates with sterile gauze and sterile 0.9% NaCl at time of change of dressing.
e) Do not let it get wet by bathing.
f) Report to physician and nurse in charge the condition of site noted during dressing (redness, hematoma, oozing/pus) and document in patient's record.
g) Do not use any topical antibiotic creams on insertion site as it may cause fungal infection and resistance.
h) For change of dressing, hands should be decontaminated with soap and water or alcohol gel, use sterile gloves and wear an apron, wear mask. Adopt aseptic non- touch technique.
i) CVP port should be changed after 7 days.

Line management:

a) Before accessing any part of central venous catheter system, decontaminate hands either by washing or alcohol gel on physically clean hands.
b) Clean injection ports with 70% alcohol before accessing.
c) All unused ports should be flushed, capped (occlusive sterile caps/bungs) and clamped.
d) Needle free devices should be used to reduce risk of needle stick injury.
e) Cap locks/stopcocks when not in use.
f) Change caps every 72 hours, or when removed should be replaced with a new one. Please note that frequent manipulation of port hub increases risk of microbial contamination.
g) Do not use filters routinely for infection control purposes.
h) Administration sets and needle-less components should be changed every 72 hours unless catheter related infection is suspected or documented.
i) Ensure all components of system are compatible to minimize the risk of contamination and leaks.

Fluid and additives:

a) Except for life threatening emergency, TPN should be given via dedicated port and should not be used for anything else.
b) Except for theatres and in emergency, all fluids should be given by infusion pump.
c) Whenever administration set is disconnected from patient it should be discarded and replaced with a new one.
d) All lines should be labeled with time and date when it was changed.
e) All non-lipids, non-blood products administration set should be changed 72 hours.
f) All lipid containing solutions should be administered within 24 hours of hanging.
g) All lipid emulsions should be administered within 12 hours of hanging.
h) All blood and blood products should be given within 2-4 hours of hanging.
i) Distal port of multi-lumen catheter is to be used for CVP monitoring, Blood/ colloid and high volume fluid administration.

j) Fluid bag should be changed after every 24 hours and CVC flushing fluid change as needed or at least every 96 hours.
k) Replace tubing used for lipid containing fluids every 24 hours of starting infusion.
l) Replace tubing used for propofol infusion every12 hours.
m) If medicine is added to fluid then fluid bag should be labeled indicating drug name, amount, concentration and rate of infusion along with time/date and signature.

Assess for patency before use:

a) Before each use assess for patency by which it means easy to flush and blood on drawing back.
b) A syringe of 10mls or greater size should be used to flush, to reduce risk of rupture due to increased pressure.
c) Return of blood should be checked from the port before starting infusion or flushing.
d) Technique of flashing back of blood:
   - Attach a 10 mls syringe containing 0.9% saline, to the catheter, flush a few mls into line and then withdraw. As soon as you see a trace of blood in catheter or syringe, flush the rest of saline into line.
e) Use gravity technique that is, attach a fluid bag to CVC line, open the catheter line clamp it and hold the infusion bag below the level of patient's heart until you see a flashback or backflow of blood. Then flush line to avoid clotting in line.
f) If there is an infusion of vasoactive drugs in lumen, withdraw prior to flushing in order to avoid bolus dose.

Flushing:

a) Flush when not in continuous use and /or when administering incompatible fluids/ medications the following flush should be used.
b) Always flush with NaCl 0.9% first and then heparin flush if ordered.
c) NaCl 0.9% 10mls for each lumen.
d) Frequency of flush, after each use or at least 8 hourly if not in use.
   For adult patients, if ordered Heparin lock by doctor, Heparin flushes 6mls of Heparin 10unit/ml for each lumen.

Removal:

Education & Training of personnel who will remove CVC:

Only competent physician who have demonstrated competency can remove central venous catheter with the training of following:

a) Coagulopathy
b) Position
c) During expiration/ Valsalva.
d) Continued pressure for three minutes or longer with sterile swab.
e) Sterile occlusive dressing
f) Sterile scissors to send tip off for culture.
g) Keep patient in bed for 30 minutes and assess for haematoma (pain, swelling, altered voice and airway obstruction).
h) Documentation

Procedure:

a) Always do this procedure with assistance, do not attempt it alone.
b) Check patient's coagulation status. If there is an increased risk of bleeding discuss with medical team before proceeding. If platelets are < 50, platelets should be administered immediately prior to the procedure. If the patient is on anticoagulant, this should be managed as for surgery.
c) The risk of air embolism increases if patient is dehydrated, is unable to lie flat, or has an uncontrolled cough. Assess for these risks and only proceed if you are satisfied

that it is safe to do so.

d) Unless contraindicated (e.g. head injury or respiratory difficulties), lie the patient flat and tip the head of the bed downward to reduce the risk of air embolism (except femoral catheters).
e) Remove the dressing. If there is any sign of infection, take a swab of the exit site.
f) Ask patient to perform Valsalva'smanoeuvre (i.e. take a deep breath, hold it, and bear down).
g) If patient unable to do this, remove the catheter during expiration and NEVER when the patient is breathing in, as this will increase the risk of air being sucked into the venous system.
h) Gently and swiftly pull out the catheter and immediately apply pressure to the site using sterile gauze. The patient they can now breathe normally and the bed can be returned to the flat position.
i) Continue applying pressure to the exit site for three minutes (or longer in cases of deranged clotting).
j) If systemic infection is suspected, use sterile scissors to cut off the tip of the catheter and without contaminating drop it into a dry sterile specimen bottle & send it to microbiology for culture.
k) Apply a sterile occlusive dressing to prevent air from entering the venous system.
l) Advise the patient to stay in bed for 30 minutes to allow any bleeding to stop.
m) During this time observe patient for signs of haematoma (i.e., swelling, pain, altered voice, airway obstruction).
n) Remove central venous catheter when no longer needed. The continual need for a CVC should be assessed on daily basis.
o) Do not routinely replace CVC to reduce risk of infection.
p) Rewire or change over guide wire should not be done in case of catheter related infection.
q) Do send tip for culture of all CVC.
r) Document:
    1. Assessed site of insertion.
    2. Peripheral IV required/ not required.
    3. Position of patient.
    4. Dressing applied
    5. Tip intact
    6. Tip sent for culture or not.

Special Circumstances

1. Rewire

    Not in case of suspected infection.
    Same full barrier precautions.
    Site is cleaned with chlorhexidine
    A new set of sterile gloves shall be worn prior to handling the new catheter.

2. Emergency

    In case full barrier precautions are not observed then it should be changed as soon as Medically feasible.

URINARY CATHETERS

Purpose

1. To ensure the appropriate technique in the insertion, care and maintenance of Foley catheters.

2. Urinary Catheterization is the insertion of a specially designed tube into the bladder using aseptic technique, for the purpose of draining urine, the removal of clots/debris, and installation of medication.

3.0. INDICATIONS FOR CATHETERIZATION.

3.1. Examples of appropriate indications for indwelling urethral catheter use

1. Patient has acute urinary retention or bladder outlet obstruction
2. Need for accurate measurement of urinary output in critically ill patients
3. Perioperative use for selected surgical procedures
    a. Patients undergoing urologic surgery or other surgery on contiguous structures of the genitourinary tract.
    b. Anticipated prolonged duration of surgery (catheter inserted for this reason should be removed in PACU.
    c. Patients anticipated to receive large-volume infusion or diuretics during surgery
    d. Need for intra-operative monitoring of urinary output.
4. To assist in healing of open sacral or perineal wounds in incontinent patients.
5. Patients requires prolonged immobilization (e.g. potentially unstable thoracic or lumber spine, multiple traumatic injuries such as pelvic fractures)
6. To improve comfort for end of life care if indicated.

3.2. Examples of inappropriate uses of indwelling catheters

1. As a substitute for nursing care of the patient with incontinence
2. As a means of obtaining urine for culture or other diagnostic tests when the patient can voluntarily void.
3. For prolonged postoperative duration without appropriate indications (e.g. structural repair of urethra or contiguous structures, prolonged effect of epidural anesthesia, etc.)

4.0. Proper Techniques for Urinary Catheter Insertion

1. Perform hand hygiene immediately before and after insertion or any manipulation of the catheter device or site.
2. Ensure that only properly trained persons, who know the correct technique of aseptic catheter insertion and maintenance, are given this responsibility.
3. Insert urinary catheters using aseptic technique and sterile equipment, Use sterile gloves, drape, sponges, an appropriate antiseptic or sterile solution for periurethral cleaning, and a
4. Single-use packet of lubricant jelly for insertion.
5. Routine use of antiseptic lubricants is not necessary.
6. Technique for intermittent catheterization is an acceptable and more practical alternative to sterile technique for patients requiring chronic intermittent catheterization.
7. Properly secure indwelling catheters after insertion to prevent movement and urethral traction.
8. Unless otherwise clinically indicated, consider using the smallest bore catheter possible, consistent with good drainage, to minimize bladder neck and urethral trauma.
9. If intermittent catheterization is used, perform it at regular intervals to prevent bladder over distension.
10. Consider using a portable ultrasound device to assess urine volume in patients undergoing intermittent catheterization to assess urine volume and reduce unnecessary catheter insertions.
11. If ultrasound bladder scanners are used, ensure that indications for use are clearly stated, nursing staff are trained in their use, and equipment is adequately cleaned and disinfected in between patients.

5.0. PROPER TECHNIQUES FOR URINARY CATHETER MAINTENANCE

1. Following aseptic insertion of the urinary catheter, maintain a closed drainage system
   a. If breaks in aseptic technique, disconnection, or leakage occur, replace the catheter and collecting system using aseptic technique and sterile equipment.
   b. Consider using urinary catheter systems with pre-connected, sealed catheter-tubing junctions.

2. Maintain unobstructed urine flow.
   a. Keep the catheter and collecting tube free from kinking.
   b. Keep the collecting bag below the level of the bladder at all times. Do not rest the bag on the floor.
   c. Empty the collecting bag regularly using a separate, clean collecting container for each patient; avoid splashing, and prevent contact of the drainage spigot with the non-sterile collecting container.
   3. Use Standard Precautions, including the use of gloves and gown as appropriate, during any manipulation of the catheter or collecting system.
   4. Complex urinary drainage systems (utilizing mechanisms for reducing bacterial entry such as antiseptic-release cartridges in the drain port) are not necessary for routine use.
   5. Changing indwelling catheters or drainage bags at routine, fixed intervals is not recommended. Rather, it is suggested to change catheters and drainage bags based on clinical indications such as infection, obstruction, or when the closed system is compromised.
   6. Unless clinical indications exist (e.g., in patients with bacteriuria upon catheter removal post urologic surgery), do not use systemic antimicrobials routinely to prevent CAUTI in patients requiring either short or long-term catheterization.
   7. Do not clean the periurethral area with antiseptics to prevent CAUTI while the catheter is in place.
   8. Routine hygiene (e.g., cleansing of the metal surface during daily bathing or showering) is appropriate.
   9. Unless obstruction is anticipated (e.g., as might occur with bleeding after prostatic or bladder surgery) bladder irrigation is not recommended
      - If obstruction is anticipated, closed continuous irrigation is suggested to prevent obstruction.
   10. Routine irrigation of the bladder with antimicrobials is not recommended.
   11. Routine instillation of antiseptic or antimicrobial solutions into urinary drainage bags is not recommended.
   12. Clamping indwelling catheters prior to removal is not necessary.

6.0. Catheter Materials
   1. If the CAUTI rate is not decreasing after implementing a comprehensive strategy to reduce rates of CAUTI, consider using antimicrobial/antiseptic-impregnated catheters. The comprehensive strategy should include, at a minimum, the high priority recommendations for urinary catheter use, aseptic insertion, and maintenance.
   2. Hydrophilic catheters might be preferable to standard catheters for patients requiring intermittent catheterization.
   3. Silicone might be preferable to other catheter materials to reduce the risk of encrustation in long-term catheterized patients who have frequent obstruction.

7.0. Specimen Collection

   1. Obtain urine samples aseptically. If a small volume of fresh urine is needed for examination (i.e., urinalysis or culture), aspirate the urine from the needle less sampling port with a sterile syringe/cannula adapter after cleansing the port with a disinfectant.

   2. Obtain large volumes of urine for special analyses (not culture) aseptically from the drainage bag.

GUIDELINES FOR WOUND MANAGEMENT

1.0. PURPOSE

To provide uniform guidelines for wound management across the hospital

2. Definition:

Wound is defined as:

- A defect or breaks into skin resulting from physical, mechanical or thermal damage that develops as results of presence of underlying medical or physiological disorder.
- Injury to body that involves a break in the continuity of tissue or of body structure.

3. Objectives:

3.1 To improve clinical practice and quality patient's care
3.2 To maximize skin integrity
3.3 To provide comfort to the patient and protection of the wound
3.4 To reduce infection, pain, exudate and maloduor
3.5 To remove visible debris and slough

4. Types of wounds

4.1 Ulcerative wounds
- A. Leg ulcers
  - a. Venous
  - b. Mixed
  - c. Arterial
- B. Diabetic ulcers
- C. Pressure ulcers

4.2 Abrasions
4.3 Laceration
4.4 Penetrating
4.5 Bites (human & animal)
4.6 Burns
4.7 Chemical injuries
4.8 Fungating wounds

5. Assessment

The healing process is complex and is affected by numerous general and local factors. It is essential to treat the person as a whole and not just the wound in isolation. Further management of wound based on assessment, so it performed carefully to get desired results. Following must be taken into account during wound assessment.

a. Wound dimensions (length, width and depth)
b. Wound Bed (necrotic, sloughed, granulating, epithelialzing)
c. Exudating level (none, low, moderate, high, amount increasing or decreasing)
d. Wound skin (intact, healthy, fragile, dry, scaly, erythema, maceration, edema, eczema, nodules, stripping, dressing/tap allergy)
e. Odor (none, slight, moderate and strong)
f. Bleeding (none, slight, moderate , heavy or at dressing change)
g. Pain (level 0-10, continues or at specific time)
h. Wound infection (redness, temperature, localized pain, localized heat, lymphangitis)
i. Wound swab (must be taken after wound cleaning)

6. Preparation

a. Environmental preparation (ventilation, privacy, room temperature, light and waste disposal equipment)

6.2. Trolley preparation

a. Clean the top, bottom shelves and sides with surface disinfectant.
b. Arrange trolley according to your requirement and place the dressing set on top shelf.
c. Check dressing set for expiry date, sterilizing indicators and packing (loose, wet or torn)
d. All other required items should be placed on the bottom shelf

6.3. SUPPLIES NEEDED

Some key items are prescribed as under but may require some others depending on the type and nature of wound.

1. Plastic trash bag attached with the cart
2. Scissors
3. Medication / ointment
4. Dressing tray
5. Gauze 4x4 & 2x2
6. Surgical tapes (size as per requirement)
7. Sterile & un-sterile gloves
8. Normal saline solution
9. Ortho pads
10. Sterile container
11. Hypodermic needles (all sizes)
12. Apron
13. Mask
14. Surgical blades (11, 12 & 15 sizes)
15. Crape & cotton bandages (4 and 6 inch. sizes)
16. Dressings as per requirement
17. Choice of dressing (alginate, hydrochloride, hydro films, hydrofiber etc.)

6.4. Personal preparation

Mentally prepared, have enough time, proper donning of PPE (cap, mask, apron/gown and gloves etc)

6.5. Patient Preparation

Patient preparation should be done according to the nature of wound, patient needs and wants. Assess pain and give Pain medication if necessary

7.0. PROCEDURE

1. Provide privacy, Ensure suitable temperature, light and clean environment.
2. Introduce yourself to the patient
3. Identify patient by using 02 identifiers.
4. Check physician's orders
5. Explain procedure to the patient

6. Make comfortable position of the patient
7. Bring prepared trolley, ensure all waste disposal equipment are present and nearby
8. Wash hands according to hand hygiene guideline.
9. Put on gloves
10. Soak with normal saline and then remove previous dressing
11. Discard soiled dressing and gloves in waste bag.
12. Assess the wound according to Wound Assessment Tool.
13. Manage pain before changing or applying a dressing.
14. Wash your hands again.
15. Put the sterile gloves on.
16. Clean wound must be cleansed from inner to outward.
17. Fungating and infected wound must be cleansed from outer to inner side.
18. Preferably wound should be cleaned with normal saline warmed to the body temperature but may use other antiseptic solutions.
19. Avoid using antiseptics which are toxic to human tissue as they may delay healing.
20. Apply clean dressing as ordered.
21. Cover and protect the wound with appropriate dressings.
22. Put Initial date and time of dressing.
23. Make patient comfortable after dressing.
24. Discard the used material (sharps should be handled carefully)
25. Clean the trolley with surface disinfectant and replace all used items.
26. Wash your hands after dressing.
27. If wound swab, biopsy or any specimen has been taken during procedure, it should be properly labeled and sent to the lab as soon as possible.
28. At the end of the procedure documentation should be made in patients record.
29. Guide and provide education and following issues must be discussed with the patient and family.

a) Patient activities
b) When to call the nurse and physician
c) Safety concerns
d) How and when to use medications (analgesia)
e) How to manage dressings at home
f) Special consideration for social and emotional effects of wound.
g) When huge wounds are handled special considerations should be taken of Patient's feeling such as anger, embarrassment, depression, guilt, disgust and denial.

NOTE:

I. If patient is soiled; wound care should not be initiated until the patient is cleansed.
II. It is essential to consider the nutritional status of all patients with wounds.
III. If clinical situation indicates refer the patient to the Nutritionist as appropriate nutrition helps in wound healing, maintains immune competence and decreases the risk of infection.
IV. Dressing trolleys top, bottom shelves and sides should be cleansed daily with surface disinfectant.

MANAGEMENT OF PRESSURE NULCERS

DEFINITION:

Bed sore /Pressure ulcers/Decubitus ulcers means damage to the skin and underlying tissues caused by pressure caused by excess pressure, shearing or friction forces or combination of these.

PURPOSE:

1. To manage skin integrity as it relates to pressure ulcers.
2. To improve nursing practices in regard of quality patient care.
3. To reduce infection, pain, exudates/odor

POLICY:

It is the policy of Nursing Division at FIC that all patients who have developed Pressure Ulcers are assessed in accordance with the Wound Assessment Chart and nursing care provided as appropriate. All high risk patients of developing pressure ulcers are assessed in accordance with Waterloo Assessment and cared for as appropriate.

CLASSIFICATION PRESSURE ULCER AND THEIR MANAGEMENT

1. Non blanching macule (capillary walls are damaged and fluid leaks into interstitial space) and signs are (discoloration of skin oedema, warmth, hardness with dark skin).

Management:

c. Must relieve pressure
d. Regular skin inspection
e. Expose the area because can cause further damage
f. Change position 2-4hourly
g. Assess nutritional needs and provide nutritional support as appropriate and consultation with the nutritionist.

2. Partial thickness: Skin breaks down to the dermis & epidermis layer (ulcer is superficial Clinically presents abrasion/blister)

Management:

h. Must relieve pressure
i. Regular skin inspection
j. Do not cover small blister if intact.
k. I f skin loss(breakdown) protect ulcer with thin foam dressing
l. Change position 2-4hourly
m. Assess nutritional needs and intervene as above.

MANAGEMENT OF LARGE BLISTER:

a. Aspirate large blister with sterile needle until all fluid has disappeared.
b. Apply non adherent dressing
c. Rest of care will be same as other type.

3. Full thickness of skin loss:

(Skin breaks down in to subcutaneous tissue. This will look like a deep crater with or without affecting surrounding tissue but not through underlying fascia.

Management:

a. Relieve pressure
c. Regular skin inspection.
d. Avoid packing if wound is on sacral region as this will add further pressure
e. Assess nutritional needs and intervene as mentioned previously.

f. Change position 2-4hourly

g. Assess patient for appropriate pressure relieving equipment according to the mobility Waterlow assessment).

If non peripheral disease do not debride heel pressure ulcer

Select appropriate dressing

Full thickness (extensive destruction or tissue necrosed, damage to the muscle bone or supporting structure with or without skin loss.

Management:

1. Select appropriate dressing

a. In necrotic tissue use hydro- jell,
b. For Sloughed wound hydro- jell, / hydro- foam,
c. Epithelial wound semi permeable film
d. For necrotic tissue & sloughed wound use hydro- jell, semi permeable film hydro- jell, / hydro- foam,
e. For granulated hydro-fiber or adhesive foam.
f. For epithelial wound semi permeable film
g. Rest of management is same

5. Procedure:

1. After self introduction Provide privacy, ensure suitable temperature, light and clean environment.
2. Ensure patient correct identification by using 02 identifiers.
3. Check Orders for specific intervention.
4. Gather all required supplies.
5. Explain procedure to the patient
6. Make suitable position of the patient as per procedure requirement.
7. Bring prepared trolley, ensured all waste disposal equipment are present and nearby
8. Wash hands and put on latex gloves
9. Before removing previous socked dressing, soak with normal saline and than place in transparent waste bag.
10. Discard soiled dressing and gloves in waste bag.
11. Assess the wound according to the Wound Assessment Tool.
12. Manage pain before changing or applying a dressing.
13. Wash your hands as per hand washing guideline.
14. Put on clean/sterile gloves.
15. Clean wound must be cleansed from inner to outward.
16. Fungating and infected wound must be cleansed from outer to inner side.
17. Preferably wound should be cleaned with normal saline warmed to the body temperature but may use other antiseptic solutions.
18. Avoid using antiseptics which are toxic to human tissue as they may delay healing.
19. Apply clean dressing as ordered.
20. Cover and protect the wound with appropriate dressings.
21. Put Initial date and time of dressing.
22. Make patient comfortable after dressing.
23. Discard the used material (sharps should be handled carefully)
24. Clean the trolley with surface disinfectant and replace all used items.
25. Wash your hands after dressing.
    - If wound swab, biopsy or any specimen has been taken during procedure, it should be properly labeled and sent to the lab as soon as possible.
27. At the end of the procedure documentation should be made in patient's record.
    - Guide and provide education and following issues must be discussed with the patient and family.

6. Patient activities

a. When to call the nurse and physician
b. Safety concerns
c. How and when to use medications (analgesia)
d. How to manage dressings at home
e. Special consideration for social and emotional effects of wound.
f. When huge wounds are handled special considerations should be taken care of Patient's feeling such as anger, embarrassment, depression, guilt, disgust and denial.
g. Dispose of waste in appropriate container and wash hands.
h. Document in nurses' notes.
i. Relieve pressure to skin by repositioning patient every two hours. Pressure mattress or air fluidized beds may used.
j. Ambulate or provide activity for the patient as much as possible.
k. Consider nutrition consult.
l. Avoid friction, shearing and pressure on bony prominence and effected areas.

NOTE:

V. If patient is soiled; wound care should not be initiated until the patient is cleansed.
VI. It is essential to consider the nutritional status of all patients with wounds.
VII. If clinical situation indicates refer the patient to the dietician as appropriate nutrition helps in wound healing, maintains immune competence and decreases the risk of infection,

Personal Precautions

BLOODBORNE PATHOGENS

Definition of exposure — CDC has defined "exposure" to blood, tissue, or other body fluids that may place a HCW at risk for HIV infection and therefore requires consideration of post exposure prophylaxis (PEP) as:

- A percutaneous injury (e.g., a needle stick or cut with a sharp object)
- Contact of mucous membrane or nonimpact skin (e.g., exposed skin that is chapped, abraded, or afflicted with dermatitis)

Body fluids of concern include:

- Implicated in the transmission of HIV: semen, vaginal secretions, other body fluids contaminated with visible blood.
- Potentially infectious (undetermined risk for transmitting HIV): cerebrospinal, synovial, pleural, peritoneal, pericardial, and amniotic fluids.

Fluids that are not considered infectious unless they contain blood include: feces, nasal secretions, saliva, sputum, sweat, tears, urine, and vomitus.

In addition, any direct contact (i.e., without barrier protection) to concentrated HIV in a research laboratory or production facility is considered an "exposure" that requires clinical evaluation and

consideration of PEP. This definition should also be used for providing post exposure evaluation for HBV and HCV.

Post-exposure evaluation and follow up

Initial actions following exposure:

1. Post- exposure procedure:

Test results should be communicated to infection control nurse/employee health physician (see below point 2-Management) as soon as possible, once positive.

f) Post exposure testing of the exposed person (if source is positive):

- HIV antibody testing should be sent immediately before starting post exposure prophylaxis with antiretroviral drugs. Follow up HIV testing should be done at 6 weeks, 3 months, 6 months and one year post exposure.
- HCV evaluation:
  - i) Baseline testing for Anti-HCV and ALT activity
  - ii) HCV PCR Qualitative (RNA) after 4 – 6 weeks if early diagnosis desired by physician/Gastroenterologist
  - iii) Anti-HCV and ALT activity after 4 – 6 months

-hepatitis B evaluation

i) Previous vaccinated against hepatitis B: get anti HBsAg titers if not recently done.

ii) No previous history of hepatitis B vaccination: check baseline HBsAg and anti HBsAg

Post exposure precautions and counseling regarding safe sex, risk and symptoms should be At the time of a suspected exposure, the following measures should be taken to thoroughly irrigate and disinfect the affected body part to prevent infection/illness.

a) For skin exposure, puncture, or laceration: Wash with soap and water. Small wounds and punctures may be cleansed with an antiseptic such as an alcohol-based hand hygiene agent,(since alcohol is virucidal to HIV, HBV, and HCV)

b) For exposure of eyes, mouth or other mucous membranes: Rinse with running water, normal saline or other suitable sterile eye wash for at least 10 minutes.

c) Seek first aid in Emergency Assessment Room (EAR) if injury/exposure involves need for X. ray, suture, etc. Notify immediate supervisor and report to EHC (or EAR / senior resident on-call during after-hours and on holidays)

b) Fill out reporting form as soon as possible, during the same work shift as injury

c) Obtain base line lab work for HIV and hepatitis B& C on source patient (anti-HIV, Anti-HCV, HBsAg)

d) If source person is negative for HIV, hepatitis B and hepatitis C, then exposed employee need not to be tested for Testing of source patient should be done as soon as possible to obtain the result within first few hours done.

2. Management:

i) Hepatitis B

Exposed Person	Exposure Source		
	HBsAg +	HBsAg -	Status Unknown (1)

Unvaccinated	Give HBIG 0.06 ml/kg IM & initiate HB vaccine	Initiate HB vaccine	Initiate HB vaccine
Vaccinated (antibody status unknown)	Do anti-HBsAg on exposed person: If titer >10 mIU/ml: no treatment If titer < 10 mIU/ml: give HBIG + HB vaccine	No treatment necessary	Do anti-HBsAg on exposed person: If titer >10 mIU/ml: no treatment If titer < 10 mIU/ml: give HBIG + HB vaccine
(1) If known high risk source, treat as if source were HBsAg positive			

ii) Hepatitis C: No effective prophylaxis available for hepatitis C

iii) HIV: Consult infectious disease consultant on call. Remember this is an emergency and post exposure prophylaxis should be initiated within few hours

Pathology Department

PURPOSE

To provide employee and patient protection from communicable diseases in the laboratory

POLICY:

1. EMPLOYEE HEALTH
   a) Lab personnel will follow the facility's policy for employee health.
   b) Eating drinking and smoking are not allowed in the laboratory.

2. Safety
   a) Employee will have access to safety information and personnel protective equipment
   b) A training program will be followed for all laboratory workers

3. ISOLATION
   a. Standard precautions are followed with all patients and all specimens. Should there be the potential for air borne transmission of disease, mask will be used. Unit personnel will inform lab personnel of any measure needed above standard precautions. Adequate protective attire will be maintained in the lab.
   b. All fluids and specimens will be considered potentially infective and appropriate precautions used to avoid direct contact
   c. If the exterior of a specimen container is contaminated, specimen should be bagged or gloves worn to handle the container
   d. Before entering the room of a patient in isolation, Phlebotomist should read and follow precautions. Entries tray should not be taken in to the isolation room

4. ASEPSIS
   a. Aseptic technique will be used in performing venipuncture and other invasive procedure.
   b. Hand washing will be done between seeing patients, when hands are soiled, prior to performing invasive procedures
   c. Alcohol-based hand rubs may be used as well as water Hand washing.(See hand hygiene policy)
   d. Engineering controls are examined, replaced, and maintained on a regular basis, including annual inspection of biomedical hoods

e. Personal protective equipment (PPE) is removed after leaving the work area in appropriate container. Plastic shield are to be used when need to reduce splashing.
f. Needles/sharps are not to be recapped, bent, or broken. Needles and sharps are to be disposed of in impervious container located in an easy-to-see/access position within the work area. Boxes are to be replaced when 2/3 full.
g. Foods and drinks are not to be stored near laboratory supplies, specimen, etc.
h. Mechanical pipetting devices are to be used for all liquids. Mouth pipetting is prohibited.
i. Unfixed, unstained slides are considered contaminated and are handled using PPE.
j. Laboratory surfaces are constructed to allow easy and complete disinfection of surfaces.
k. Personnel entering the laboratory to provide services will be educated about the safety requirements of the laboratory.
l. No working equipment will be tagged and taken out of services until repaired.
m. Puncture- proof gloves are to be available for wear when changing knife blades
n. Sinks used for biohazard s waste should not be used for hand washing
o. All personnel should wash their hand after completion of activities and before leaving the laboratory.

5. EQUIPMENT

a. Disposable equipment and supplies will be discarded after use. Tourniquets will be washed on daily basis, or single use disposable tourniquets will be used.
b. Equipment that is not disposable or is permanent should be disinfected
c. If equipment is dismantled or receives maintenance, equipment should be disinfected and personnel providing maintenance will wear PPE.
d. Bulk fluids will be discarded in the sanitary sewer except microbiological cultures
e. The biomedical waste policy will be followed in discarding lab items

6. AUTOPSY SUITE AND MORGUE

a. Ventilation requirement for the autopsy suite and morgue are negative in air pressure, with10-12 air changes per hour.
b. Standard precautions/barrier precautions are always to be used and autopsy area is to be designated as biomedical with appropriate signage posted

FOOD & DIETARY SERVICES

PURPOSE

To provide safe healthy food to the end-users, the department is required to comply with the local food laws and HACCP guidelines.

POLICY:

1. Purchasing and Receiving of Raw Foods

Purchasing of foods should be done from reputable dealers. On delivery foods must be inspected for quality, validity date secure packaging and infestation of insects. Deliveries should schedule to facilitate availability of freezers / refrigerators or storage space.

a) Meat must be inspected.
b) Milk must be pasteurized
c) Eggs must be washed before storage

2. Storage of Raw Foods

Raw foods should be stored only in the designated areas after placing in clean wrappers or containers with covers and properly marked (e.g. date item received and contents). Storage areas must be kept clean at all the times. Goods should be used in the order in which they are received. Check all goods on periodic basis for expiration dates. Old stock is rotated and used first. Storage of foods must be done in proper temperatures. Refrigerate dairy products at $4^{O}C$ or less and fish / meat at $1^{O}C$ or less. Long term freezing temperature must be $-22^{O}C$ or less.

3. Personnel Policies / Procedures.

Excellent personal hygiene should be maintained by all Food & Dietary Staff. Street clothes are not allowed in the preparation areas. A proper clean uniform with scarf and cap to be worn. Monitoring of employee health progress, all illnesses must be promptly reported to EHC. Traffic of unauthorized individuals through food preparation and service areas must be controlled.

Washing of hands and cleaning of nails must be done after:

a) Using toilet.
b) Contact with unclean equipment and work surfaces, soiled clothing, washcloths etc.
c) Handling raw foods.
d) Dishwashing

Cleaning consists of removing food and soil from surfaces, utensils and equipment. Rinsing with clean, potable water to remove organic matter and detergent must proceed sanitizing and / or the water temperature in dishwashers for final rinsing should be above $70^{O}C$.

5. Food Preparation

Avoid touching foods directly, use implements or gloves to minimize touch contamination. Select appropriate equipment. Separate cutting boards must be used for meat, poultry, fruits and vegetables, and cooked foods unless boards are nonabsorbent. All working surfaces, utensils and equipment must be cleansed thoroughly, rinsed and sanitized after each period of use. Food should be thoroughly cooked and handled with care at every stage of preparation. Use correct cooking temperature for meat and poultry to kill or reduce the number of microorganisms. Minimum internal cooking temperature has must be above $70^{O}C$ for minimum of 15 sec.

6. Holding and Serving Prepared Foods

Improper storage or holding temperature must be strictly followed to reduce opportunity for microorganism replication.

a. Avoid thawing and refreezing food products.
b. Avoid precooking and holding meats for final cooking.
c. Chill cooked perishable leftover foods to an internal temperature of $7.2^{O}C$ or less within 2-4 hours of preparation.
d. Reheating hazardous foods that are cooked and refrigerated should be reheated rapidly to $74^{O}C$ or higher before being served
e. Hold hot foods for serving at $60^{O}C$ or above and cold foods below $8^{O}C$.
f. Protect food from airborne contamination e.g. use covers at serving lines.
g. Establish safe times for food items to be delivered to inpatient areas.
h. Transports food to patient units in temperature controlled carts to keep foods hot or cold.
i. Distribute food to patients with a minimum of handling.
j. Microbiological testing.

All food items will be tested against microbiological organisms' contamination on twice a year basis plus as and when required.

LAUNDRY SERVICES

PURPOSE

To provide adequate and steady supply of clean and fresh linen for the hospital operations and uniform to the staff .In order to achieve the highest possible standards linen/uniforms must be processed in the sterile Laundry, using appropriate wash formulas, temperature, pressure and consumables

POLICY

1. Personal Precautions
   Excellent personal hygiene shall be maintained by all Laundry Staff. Use of appropriate protective gear according to the laundering activities. Heavy-duty gloves are used if the task has a high risk for percutaneous injury. Monitoring of employee health on regular basis. All illnesses must be promptly reported to EHC.
2. Clean Linen Delivery
   Clean linen shall be delivered to clinical areas, according to the schedule or requirements of end user departments in designated trolleys .Clean linen must be stored in a separate confined area away from soiled storage, which must be kept clean at all times. Handling must be minimized to avoid contamination.

3. Soiled Linen Collection
   Collection from the clinical areas must be made in designated trolleys, which are disinfected after every use. Appropriate protective gear e.g. apron, scarf and gloves are mandatory to prevent any infections. Soiled linen must be collected frequently enough to prevent overfilling of bags.
4. Dirty Uniform Collection
   To be done at the designated counter in soiled area, which must be regularly cleaned and kept free from insects / pests.

5. Clean Uniform Delivery
   Issuance of washed / pressed uniform articles shall be done at the designated counter in clean area.
6. Wash Formulas
   Maximum temperatures depending of the type of fabric shall be given in the process of washing to achieve high levels of disinfection. In case, the fabric could not withstand temperature then it should be chemically treated.
7. Laundry Chemicals
   Professional products must be used for laundering purposes, which are appropriate for usage, efficient, and safe on equipment, fabrics & environment. Each product must be supported by a proper product datasheet.

Physio-Therapy DEPARTMENT

PURPOSE:

To promote effective infection control procedures in the physical therapy department

POLICY:

1. HANG HYGIENE

Hands washing will be done between patients, when hands are soiled and before procedure. Alcohol-based hand rubs may be used as well as soap and water hand wash. (See hand hygiene policy)

2. ISOLATION

a) Standard precautions as well as transmission –based precautions (airborne, droplet, contact) will be used when providing care for patients according to infection control policy. Before entering the room staff will read and follow precautions
b) Patient requiring airborne/droplet will be managed in his room
c) Patient requiring contact precautions will be handled by using glove and plastic apron.
d) Gloves and gowns are to be used to handle all linens , dressings from open wounds and non- intact skin

3. ROUTINE CLEANING AND DISINFECTING

a. After each patient treatment, equipment used is washed or wiped with a disinfectant.
b. Ultrasound/diathermy equipment is cleaned/ disinfected after use
c. If support stockings are used by patient, these should be neat and clean
d. Daily cleanse table/trolley with hospital disinfectant and between patient when they become soiled

HOUSEKEEPING SERVICES

PURPOSE:

Maintenance of clean and safe environment throughout the hospital is mandatory at all times. The cleaning process must be carried out in accordance to the requirements of different areas & usage, in a way that it has minimal impact/affect on the operations.

POLICY:

1. PERSONAL PRECAUTIONS

Excellent personal hygiene shall be maintained by all Housekeeping staff. Use of appropriate protective gear according to the cleaning activities. Heavy-duty gloves are used if the task has a high risk for percutaneous injury. Monitoring of employee health progress. All illnesses must be promptly reported to EHC.

2. CLEANING/DISINFECTION

Cleaning of hard surfaces shall proceed disinfection with appropriate disinfectant & in recommended dilutions i.e. ppm. Most suitable disinfectants for hard surface disinfection are phenolic, QAC (quaternary ammonium Compound) and chlorine based.

Mop heads, cleaning cloths, and cleaning solution shall be changed as often as required.

Damp mopping is recommended in patient care areas.

3. NEEDLE STICK INJURY

In case of Needle stick injury the employee shall be referred to the ICN & proper preventive / corrective action should be taken.

4. CLEANING BODY FLUIDS

Gross spills of body fluids on non-critical (may touch intact skin) smooth, hard, surfaces such as floors, walls and countertops shall be cleaned then disinfected with a chlorinated solution.

5. ISOLATION ROOMS

Mandatory use of gown, gloves, masks. All protective gear shall be worn before entering the room and discarded within the room just before leaving. Disposal of all waste must be done in a waste disposal bag within the room. Preferably Isolation rooms shall be cleaned at last. Hand washing is mandatory after completion of cleaning tasks.

6. HOUSEKEEPING CHEMICALS

Professional products must be used for cleaning purposes, which are appropriate for usage, efficient, and safe on user, equipment, surfaces & environment. Each product must be supported by a proper product datasheet.

THE HOSPITAL HAS A MULTI-DISCIPLINARY INFECTION CONTROL COMMITTEE.

To provide a forum for multidisciplinary input, cooperation, and information sharing, the Management of the FIC has notified the Infection Control Committee (ICC).

	Designation
Executive Director	Chairman
Associate Prof. of Cardiology	Member
AMS/ Director Medical Edu.	Member
Pathologist	Member
Nursing Superintendent	Member
DMS	Member
System Analyst	Member
Bio Medical Engineer	Member
Infection Control Nurses	Member
Dietitian	Member
Store Supervisor	Member
Sanitary Inspector	Member

THE HOSPITAL HAS AN INFECTION CONTROL TEAM.

The Management of the FIC has notified the Infection Control Team (ICT).

	Designation
Pathologist	Chairman
DMS (Administration)	Member
Head Nurse ICU	House Keeper
Infection Control Nurses	Member
Sanitary Inspector	Member

THE HOSPITAL HAS DESIGNATED A QUALIFIED INFECTION CONTROL NURSE(S) FOR THIS ACTIVITY

Responsibility is delegated to the infection control nurse to carry out the daily function of the infection control program. These functions include data management, policy and procedure development, education, employee health, quality improvement, consulting and investigating potential out breaks.

Responsibilities of ICN

a. Develop/adapt and get IC Manual endorsed.
b. Disseminate SOPs of IC based on the IC Manual.
c. Coordinate and conduct training activities related to IC.
d. Enforce minimum IC standards.
e. Identifying and investigating nosocomial infections.
f. To collaborate with the microbiologist on surveillance of infection and detection of outbreaks due to improper sterilization of instruments.
g. To liaise between Sterilization Department and clinical departments for detection and control of Hospital Acquired Infection (HAI).
h. Carry out the surveillance program and monitor and manage critical incidents.
i. Ensuring compliance with local and national regulations.
j. Liaison with public health and with other facilities where appropriate.
k. Providing expert consultative advice to staff health and other appropriate hospital programs in matters relating to transmission of infections.
l. Compile periodic (at least 3 monthly) reports of hospital infections.
m. Report directly to the MS or Executive Director and the ICC.

THE ESTABLISHMENT HAS APPROPRIATE CONSUMABLES, COLLECTION AND HANDLING SYSTEMS, EQUIPMENT AND FACILITIES TO MANAGE THE CONTROL OF INFECTION

CONTACT PRECAUTIONS

PURPOSE

It is the intent of this facility to use contact precautions for patients known or suspected to have serious illness easily transmitted by direct patient contact or by contact with items in the patient's environment. Examples include

1. Multiresistant organisms e.g.,
    a. Methicillin resistant staphylococcus aureus (MRSA)
    b. Pan resistant Acinetobacter
    c. Vancomycin resistant enterococci (VRE)
    d. Carbapenemase-producing *Enterobacteriaceae*(CRE)
    e. Any other resistant organisms

2. Scabies
3. Clostridium difficilediarrhoea
4. Open draining wounds

PROCEDURE

1. <u>All steps as in STANDARD PRECAUTIONS</u>
2. GLOVES- Gloves should be worn when entering the room.
3. GOWNS - A gown should be worn for contact with the patient and with patient items.
4. PLACEMENT
   a) The patient should be placed in a separate (isolation) room.
   b) If a separate room is not available, the patient may be placed in a room with another patient with an identical infectious condition ("cohorting")
   c) Appropriate signage to be placed outside the room
   d) Limit the number of visitors as appropriate and family or care givers should be educated on contact precautions and hand hygiene

5. TRANSPORT – activities of the patient may need to be limited and when transportation is required, the following measures should be undertaken:
   a) Patient's body is contained or covered
   b) Avoid contact with objects and if necessary use gloves and hand hygiene
6. PATIENT CARE EQUIPMENT
   a) Use of dedicated patient care equipment should be considered where possible (e.g. stethoscope)
   b) Where this is not possible, items should be disinfected after each use.
7. ENVIRONMENTAL MEASURES
   a) Focus on room cleaning and disinfection (e.g., dailybed rails, over bed table, bedside commode, lavatory surfaces in patient bath rooms, door knobs) and equipment in the immediate vicinity of the patient.
   b) Housekeeping services need to be done at the end and then change the mops, dusters, solutions.

DROPLET PRECAUTIONS

PURPOSE: It is intent of this facility to use droplet precautions to decrease the risk of droplet transmission of infectious agents.

Droplets may be generated by patient's coughing, sneezing, talking, or during the performance of procedure, e.g., suctioning. Droplet precautions may be considered for:

Disease	Duration
Pertussis	9 days after start of treatment
Rubella	7 days after onset or rash
Mumps	9 days after onset of swelling
Meningococcal infections	1 day after start of treatment
Meningitis (Haemophilus influenza, type b)	1 day after start of treatment
Influenza	5 days after onset of illness
Mycoplasma pneumonia	until resolution of symptoms

Plague (pneumonic)	2 days after treatment
Diphtheria (pharyngeal)	until two cultures negative

PROCEDURE

1. All steps as in STANDARD PRECAUTIONS

PLUS

2. MASK - a mask should be worn within 3 feet of the patient.
3. PLACEMENT

a) Patients may be placed in private room. When private room is not available, maintain spatial separation of at least 3 feet between the infected and other patient and use privacy (curtain).

b) For those with excessive cough and sputum production, placement in a single room is required

4. TRANSPORT – limit patient movement. If transport is necessary, the patient must put on a mask

AIRBORNE PRECAUTIONS

PURPOSE: It is intent of this facility to use precautions to decrease risk of air borne transmission of infectious diseases. These precautions will be used for patients known or suspected to be infected with a disease spread by small droplet nuclei (5mm or small). These include:

Disease	Duration
Pulmonary tuberculosis	14 days after start of effective therapy
Chickenpox or Herpes Zoster	until crusting of lesions
Measles	4 days after onset of rash
SARS	10 days after resolution of symptoms
Small pox	until all scabs have crusted
Viral Hemorrhagic fever (Due to Lassa, Marburg, Crimean-Congo Fever viruses)	Duration of Illness plus contact measures

PROCEDURE

2. All steps as in STANDARD PRECAUTIONS
3. MASK - An N-95 respirator (mask) is required to be worn for patients of tuberculosis (TB), small pox, or severe acute respiratory syndrome (SARS). Only susceptible persons need use of a mask for measles, chicken pox, or disseminated Zoster. N- 95 masks can be changed after end of shift or when they become moistened

4. PLACEMENT

a) A single negative pressure room with 6-12 air changes per hour.
b) The door must remain closed to maintain negative pressure.
c) Limit visitors, only attendant with surgical mask may visit TB patients.
d) Designated negative pressure rooms [currently rooms 104, 205 & 206].
e) Monitoring of negative pressure will be performed with the assistance of facilities and engineering staff

5. TRANSPORT – limit patient movement. If transport is necessary, the patient must put on a mask

WORK RESTRICTION FOR COMMUNICABLE DISEASES

PURPOSE:

To prevent Nosocomial (hospital acquired infection) spread of communicable diseases to patients and staff within FIC hospital from staff with communicable diseases.

POLICY:

Persons with communicable diseases or who are susceptible and exposed to communicable diseases shall be restricted from direct contact with patients when:

- Transmission of diseases to the recipients of care or others in the workplace can occur in that particular job environment; and

SECTION **1**. EMPLOYEE WITH COMMUNICABLE ILLNESS

**Employee may not work in the hospital environment during the known period of communicability for: Duration of restriction

Chicken Pox (Varicella Zoster)	Until all vesicles are dried and crusted.
Shingles (Herpes Zoster)	Patient contact is limited to immune patients and lesions are covered.
Measles (Rubeolla)	Until7 days after rash appears
Mumps	For 9 days after onset of swelling; less if swelling subsided
Rubella(German Measles)	Until 5 days after onset of swelling; less if swelling has subsided
Scabies or Pediculosis	Until 12 hours after initiation of appropriate treatment
Tuberculosis	Until receiving appropriate therapy with clinical improvement and three consecutive smears on different days become negative for AFB. The employee health physician consultant shall review the case prior to allowing the employee to return to work.

**Employee may or may not require work restriction due to specific acute infections or carrier states

1. Group A streptococcus Staphylococcus aureus: Evaluation by employee health Acute hepatitis A or B (or HBsAg positive), Acute hepatitis C, HIV positive or AIDS: Individual evaluation by Employee Health. Work restriction will depend upon the employee's hygiene and preventing his/her blood and other body fluids from contacting others.

2. Neisseria meningitidis (meningococcus): No restriction for treatment of carrier state required; for acute meningococcal disease, including meningitis, employee would be too ill to work and plan to either admit or give leave after consultation with EHC consultant.

3. Amebiasis, Salmonella, Campylobacter, Shigella Cholera, Worms/Parasites, Hepatitis A / E==Food handlers are restricted. In other health care workers, evaluation by Employee Health Clinic.

**Employee must be evaluated by Employee Health regarding their area if they have certain signs or symptoms of the following conditions:

a. Diarrhea

b. Draining abscesses, boils
c. Exudative dermatitis
d. Herpes Simplex (whitlow, stomatitis)
e. Uncontrolled respiratory symptoms/infections
f. Impetigo
g. Influenza
h. Pertussis

SECTION II. SUSCEPTIBLE EMPLOYEES

Exposure of susceptible employees to specific communicable diseases may require restriction from work during the incubation period, for example:

1. Chicken pox, Varicella

   Incubation period is 13-21 days after exposure; restriction would be from day 10 after first exposure through day 21 after last exposure or, if diseases develops, until the last crop of vesicles is dried and crusted.

2. Measles, Rubeola

   Incubation period is 7-18 days; restriction would be from day 5 after first exposure to day 21 after last exposure; if disease develops, until 7 days after onset of rash. Live vaccine given to susceptible with-in 72 hours of exposure may prevent illness

3. Mumps

   Incubation period is about 14 to 21 days. Restriction would be from 12 until 26 days after exposure. If disease develops, for 9 days after onset of parotid gland swelling, but less if swelling has subsided. Immunization of susceptible following exposure is of uncertain value.

4. Rubella

   Incubation period is 14-23 days; restriction would be from day 7after exposure through day 21; if disease develops, until 4 days after rash appears.

MANAGEMENT OF EXPOSURE TO COMMUNICABLE DISEASES

Purpose: To identify methods of managing employee exposure to specific communicable diseases.

Communicable disease	Management of exposed susceptible personnel
AIDS/HIV infection	a) Employee should promptly report exposure and receive counseling.
b) Post-exposure HIV testing	immediately and, if negative, at six weeks, 12 weeks 6 months and 12 months.
c) Administer or arrange for	administration of prophylaxis per CDC guidelines and Infectious disease consultant recommendations.
2. Diphtheria	Immediate consultation with EHC / ID consultant for recommended actions.
3.Hepatitis A	Employee having direct fecal-oral exposure to excretions of a person with Hepatitis A should receive immune globulin within two weeks after last exposure.

4. Hepatitis B	a) Consult EHC consultant prior to prophylaxis. Vaccination of employees is strongly recommended. HBIG and vaccine may be used.
b)	Refer to Updated U.S. Public Health Service Guidelines for the Management of Occupational Exposures to HBV, HCV, and HIV and Recommendations For Post-Exposure Prophylaxis.
c)	See policy titled Recommendations for Hepatitis B prophylaxis following percutaneous or permucosal exposure.
5. Hepatitis C	a) Employee counseling regarding exposure. Baseline testing may be performed if source patient is positive with follow-up following the exposure (anti-HCV and ALT activity).
b)	Prophylactic immune globulin not effective.
c)	Anti-viral interferon therapy may be considered when begun early in the course of infection. Employee should be referred to a specialist for management.
6 .Herpes labialis	Prophylactic therapy (cold sores, fever blisters) with acyclovir, famciclovir may be considered
7. Measles	Immune serum globulin to be given preferably within six days. Documentation of immunity is an important tool in the prevention of healthcare-associated transmission.
8. Meningitis (Neisseria meningitidis)	Treatment for exposure should be carried out for personnel having intimate contact with infected patients, such as suctioning, intubating, or performing mouth-to-mouth ventilation. Treat with one of the following medications:
a)	Rifampin 600 mg. bid for two days (This is the drug of first choice)
b)	Adults may also be treated with a single dose of Ceftriaxone, 250 mg. IM, or a single dose of Ciprofloxacin 500 mg. PO.
9.	Mumps None. Mumps vaccine should be given to susceptible personnel.
10.Pediculosiscapitis (head lice)	1. Appropriate education of exposed individuals. 2. Direct inspection of head and when necessary of body and clothing.
11.Pertussis	Postexposure prophylaxis is indicated for personnel exposed to pertussis. A 14-day course of erythromycin (500 mg., 4x/day) or trimethoprim – sulfamethoxazole (1 tablet, 2x/day) are used.
12. Rubella	Ensuring immunity among healthcare personnel is the goal to prevent healthcare-associated spread of Rubella. A dose of MMR may be given to employees who do not have documentation of vaccine or laboratory and repeated three weeks later. An employee in the first trimester of pregnancy shall have serum drawn for antibody titer and be referred to her

obstetrician for evaluation. Follow-up titer will be drawn three weeks later unless contraindicated by obstetrician.

13. Salmonellosis/Shigellosis Observe for diarrhea. Stool cultures for symptomatic workers. A specimen of
3 g–10 g of fecal material is preferred to rectal swabs. Specimens should be collected over a period of several days.

14.Scabies a) Appropriate education of exposed individuals.
b) Treat prophylactically using 5% permethrin those who have had skin-to-skin contact with an infested individual.

15. Tuberculosis Skin test all PPD negative individuals with 5 TU tuberculin PPD at the time of exposure and again in 10–12 weeks. Positive reactors shall have a chest x-ray and be referred to the health department of county of residence. Previous positive reactors shall receive only a chest x-ray in 10–12 weeks.

16. Varicella zoster (Chickenpox) Vaccinate susceptible persons within three days of exposure. VZIG may be considered if employee is immune-compromised. Antiviral drugs (e.g., acyclovir) within seven days of exposure. Unvaccinated susceptible employees should be excluded from duty from the 10th day after exposure until day 21 or until all lesions are crusted if employee becomes infected.

17.Vaccinia (Smallpox) Due to threats of bioterrorism smallpox programs have been enacted on a Limited basis to vaccinate healthcare workers who may be delivering care to smallpox patients. After an event occurs, personnel may receive smallpox vaccine within the first four days of exposure. Refer to the facility's and health department's bioterrorism plans for further information.

SURGICAL SERVICES

PURPOSE:

To promote effective infection control procedures in the surgical suites to reduce post-operative infection

POLICY:

1. GENERAL GUIDELINES:
   A. Whenever possible, identify and treat all infections, remote to the surgical site before elective operation and postpone as per Surgeons guidelines.
   B. Antimicrobial prophylaxis will be given with an appropriate antimicrobial agent via IV route by Anesthetists. In most instances, a single antibiotic dose should be completed within 30 minutes of skin incision. For prolonged cases (four hours) another dose should be given.
   1. Operating room personnel must practice strict standard precautions (i.e. blood and body substance isolation).
   2. All items (e.g. instruments, needles, sutures, dressings, covers, solutions) used in the operating room must be sterile.
   3. All operating room personnel must perform a surgical scrub.
   4. All operating room personnel are required to wear specific, clean attire, with the goal of "shedding" the outside environment. Specific clothing requirements are prescribed and standardized for all operating rooms.
      a. Operating room personnel must wear a sterile gown, gloves and special shoes.

b. Hair must be completely covered by surgical Cap.
c. Masks must be worn at all times in the operating room for the purpose of minimizing airborne contamination; they must be changed between operations or more often if necessary.

5. Any personnel who harbor pathogenic organisms (e.g. those with colds or infections) must report themselves and should not be allocated to work in the operating room to protect the patient from outside pathogens.
6. Scrubbed personnel wearing sterile attire should touch only sterile items.
7. Sterile gowns and sterile drapes have defined borders of sterility. Sterile surfaces or articles may touch other sterile surfaces or articles and remain sterile; contact with unsterile objects at any point renders a sterile area contaminated.
8. The circulator and unsterile personnel must stay at the periphery of the sterile operating area to keep the sterile area free from contamination.
9. The utmost caution and vigilance must be used when handling sterile fluids to prevent splashing or spillage.
10. Anything that is used for one client must be discarded or, in some cases, re-sterilized.

PERSONNEL

Personnel will follow all Employee Health policies

ATTIRE

1. Those entering the restricted area (Red Lines) of the surgical suite shall wear scrub Kit and before wearing scrub kits, personnel clothes, socks, vests, and woolen garments should be removed.
2. Scrub clothes will be changed when they become visibly soiled or wet with blood, sweat, etc.
3. For essential ward visit white coat must be wore over green kit with closed button, remove theatre shoes, cap and mask.
4. Emergency ward visit may be attended with green theatre kit but the complete kit to be changed on return to Operation Theater.

A. Shoes

All personnel entering the surgical suite must wear clean designated front covered theatre shoes. Shoe covers may be allowed in semi restricted area for short visit.-

B. Hair

All personnel entering the surgical suite must wear clean surgical cap or hood and ensure all hair is covered appropriately including beards.

C. Masks

I. Disposable masks are worn at all times when in the operating room and should cover nose and mouth completely
II. Masks must be changed between each case and as they become moist.

D. Jewellary

I. Rings, watches, and bracelets must be removed by scrubbed personnel
II. No scrubbed personnel may wear a wedding band, watch, earrings or any Jewellary.

E. Nails

I. Nails should be kept short (1/4) inch or less)
II. Nail polish should not be applied by scrubbed personnel

1. PERSONNEL TRAFFIC

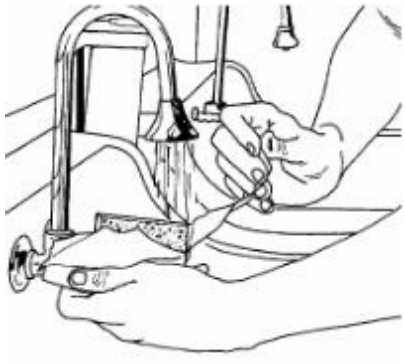
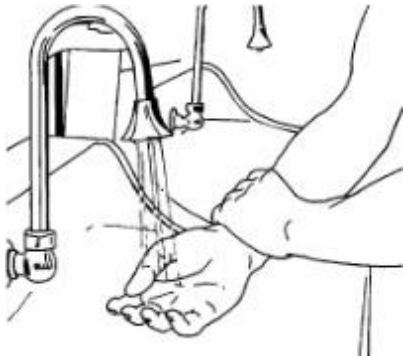
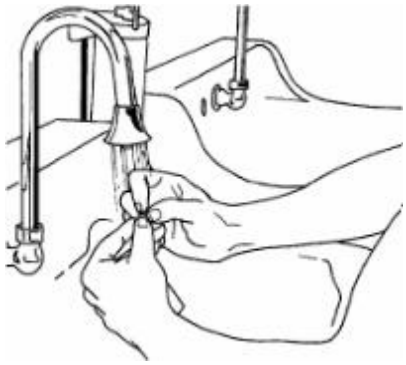
A. Only authorized personnel are allowed within the surgical suite. Proper attire is worn by all persons entering the restricted area.
B. During a surgical procedure, traffic should be controlled in and out of the room to minimize air turbulence. Door should be kept closed except for passage of personnel and equipment, etc.

C. DEFINITIONS
   a. UNRESTRICTED AREA (Pre-Op Areas, Lounges, Chair Recovery)
      Place where staff and patients enter and leave the department. Street clothes worn: no surgical attire necessary.
   b. SEMI-RESTRICTED AREAS: Separated from unrestricted area by red line and doors including PACU, work rooms, case-cart rooms, and peripheral support areas for storage of clean and sterile supplies. Attire includes scrub suits, head covering, and theatre shoes.
   c. RESTRICTED AREA: Sterile procedure room with positive pressure and separated by doors. Attire includes scrub suit, head covering, theater shoes, and a surgical mask.

2. SURGICAL SCRUB

Surgical scrub is done before gowning and gloving. It may be done adhering to either an anatomical time scrub procedure or a counted stroke method. In count stroke method each finger, hand, and forearm is visualized as having four sides and each side is scrubbed with twenty strokes each with an appropriate antiseptic.
In time scrub procedure, time of scrubbing is from two to five minutes with an appropriate antiseptic. Alternate scrub less product may be employed as per manufacturer recommendations

a) Adjust mask over mouth and nose.
b) Adjust water to comfortable temperature
c) Wet hands under running water.
d) Put several drops of scrub solution in to palm of hand .wash hand.
e) Clean finger nails, under running water, with a disposable nail cleaner. Open disposable scrub sponge and wet it thoroughly.
f) Scrub each hand, wrist, forearm, starting at the hand up to the elbow, for two minutes. Scrub each hand for two minutes. Be sure to scrub between fingers and around nails.
g) Rinse hands and arms. Begin with the hand and rinse back to elbow.
h) Keep the hands higher than the elbow, so that water will not run down the lower arms to hands
i) Cut the water off using the foot
j) When drying the hands use sterile hand towel
k) Use closed gloving technique preferably
l) Prefer to use double gloves for bone surgery

(1) Regulate the flow and temperature of the water. (2) Pretear package containing brush (see Figure 1-4); lay the brush on the back of the scrub sink.	 Figure 1-4
(3) Wet hands and arms (see Figure 1-5) for an initial prescrub wash. Use several drops of surgical detergent, work up a heavy lather, and then wash the hands and arms to a point about two inches above the elbow.	 Figure 1-5
(4) Rinse hands and arms thoroughly, allowing the water to run from the hands to the elbows (see Figure 1-6). Do not retrace or shake the hands and arms; let the water drip from them.	 Figure 1-6
(5) Remove the sterile brush and file, moisten brush and work up lather. Soap fingertips and clean the spaces under the fingernails of both hands under running water (see Figure 1-7); discard file.	 Figure 1-7

(6) Lather fingertips with sponge-side of brush; then, using bristle side of brush, scrub the spaces under the fingernails of the right or left hand 30 circular strokes (see Figure 1-8). When scrubbing, slightly bend forward, hold hands and arms above the elbow, and keep arms away from the body.

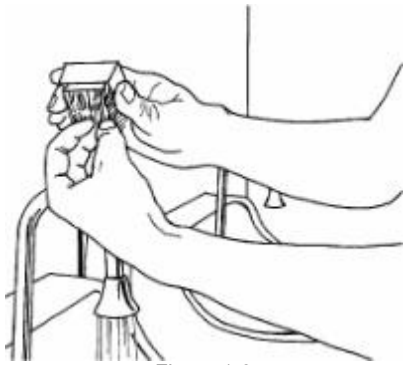


Figure 1-8

(7) Lather digits (see Figure 1-9); scrub 20 circular strokes on all four sides of each finger.

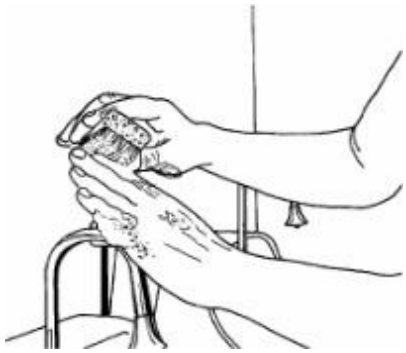


Figure 1-9

You may begin with the thumb or little finger (see Figure 1-10) or the right or left hand. Scrub one hand and arm completely before moving on to the other hand and arm.

(8) Lather palm, back of hand, heel of hand, and space between thumb and index finger. Choosing either of the surfaces, scrub 20 circular strokes on each surface.

(9) You are now ready to scrub the forearm. Divide your arm in three inch increments. The brush should be approximately three inches lengthwise. Use the sponge-side of the brush lengthwise to apply soap around wrist. Scrub 20 circular strokes on all four sides; move up the forearm--lather, then scrub, ending two inches above the elbow.

(10) Soap and/or water may be added to the brush at any time

(11) Repeat steps (6) through (9) above

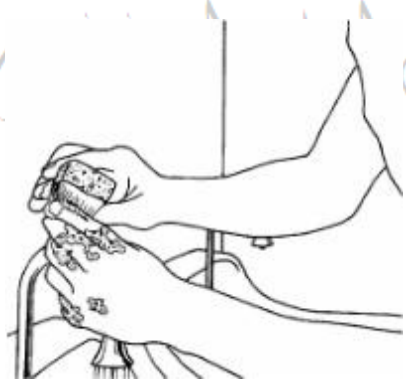


Figure 1-10

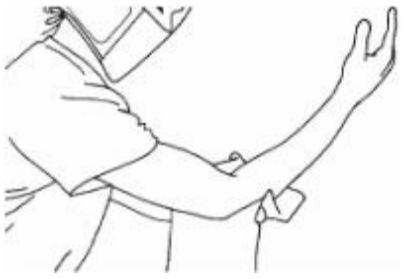
for the other arm. (12) Discard brush. (13) Rinse hands and arms without retracing and/or contaminating. (14) Allow the water to drip from your elbows before entering the operating room.	
(15) Slightly bend forward, pick up the hand towel from the top of the gown pack and step back from the table (see Figure 1-11). Grasp the towel and open it so that it is folded to double thickness lengthwise. Do not allow the towel to touch any unsterile object or unsterile parts of your body. Hold your hands and arms above your elbow, and keep your arms away from your body.	 Figure 1-11
(16) Holding one end of the towel with one of your hands, dry your other hand and arm with a blotting, rotating motion (see Figure 1-12). Work from your fingertips to the elbow; DO NOT retrace any area. Dry all sides of the fingers, the forearm, and the arms thoroughly (see Figures 1-13 and 1-14). If moisture is left on your fingers and hands, donning the surgical gloves will be difficult. Moisture left on the arms may seep through surgical cloth gowns, thus contaminating them. (17) Grasp the other end of the towel and dry your other hand and arm in the same manner as above. Discard the towel into a linen receptacle (the circulator may take it from the distal end).	 Figure 1-12  Figure 1-13 

	Figure 1-14

3. PREOPERATIVE PATIENT SKIN PREP

A. Consider requiring patient to shower or bath with soap or an antiseptic agent if required at least the morning before surgery

B. Do not remove hair unless it will interfere with the surgery. If removed, preferably use electric clippers. Depilatory cream may be used as feasible to patient .Shaving is not recommended.

C. The surgical prep allows for patients' skin and surrounding site to be as free of exogenous microorganism as possible.

a) Antibiotics may be chosen by facilities or physician preference

b) Use absorbent towel to absorb drips. Do not allow solution to pool. Do not allow flammable substance with laser cases

4. OPERATING ROOM CLEANING

A. Prior to each case

I. Flat surfaces, over head light and equipment are wiped with a hospital disinfectant.

II. Damp dust any equipment entering OR from outside the area

B. Between cases cleaning

1. Prior to leaving the operating room, personnel should place gown and gloves in proper receptacle.
2. Dry linen is deposited in hamper and soiled linen in alginated bag
3. Disposable suction tubing is disposed of with the waste article.
4. Suction content are disposed of in dump room using appropriate personnel protective equipment. Gloved scrub nurse place all instruments in a contaminated bag. Instruments are carried to the instrument room for initial rinse
5. Lensed or fiber optic instruments are cleaned and chemically disinfected. All flat surfaces, OR table and equipment are wiped with a germicide. This includes lights and visibly soiled areas of room.
6. Mop the floor with disinfectant

C. Terminal cleanings

Terminal cleaning will be performed daily These areas include surgical suites, utility room, work rooms, scrub sink, sterile corridor, kick buckets, ceiling mounted equipments, anesthesia gas lines, ventilator air returns.

D. Weekly cleaning

a) All theatre area will be cleansed using hospital disinfectant, floor scrubbed, and cleansing of vertical and horizontal surfaces, wall ceiling, equipment and storage cupboard and maintain all supplies neat and clean.

b) Ceiling and wall must be regularly inspected for paint crack /peeling and must be maintained on regularly basis

Staff key responsibilities during terminal cleaning

RNs	HCA	OR Techs	House keeping
* Scrub Trolleys * PACU Cardiac Monitors and all attachments like	* Damp dusting of related areas like PACU * Mattresses, PACU beds including wheels, bed side	* Anesthesia machines. *Other related machines like	*Floor cleaning * Wash room cleaning * Walls and doors

thermal probe, capinographyleed, pulse oxymeter * Nursing Counter * Medication Refrigerators * CSSD supply store * Laparoscopy Store * Crash Cart * Clinical Item supply Store	lockers. * Clinical supply trolleys. * Shoes cleaning * Dumb waiter area * Bed pan & urinals cleaning * Hand hygiene sanitizer refilling * Emptying of suction bottles.	diathermy, suction machine, valley and liga sure. * light pendulum cleaning * OR tables. * All types of operating lights. * Induction trolley and other equipment related to anesthesia.	cleaning * Bath room cleaning * Dust bins cleaning

* Team leaders are over all responsible to call laud ray, Bio Medical and Maintenance department for their related jobs.

PACU AND HOLDING BAY CLEANING

A. Prior to case
   a) All flat surfaces of Holding bay and PACU, bed and equipment are wiped with a germicide. This includes wheel chairs, monitor's leads and visibly soiled areas of room.
   b) Damp dust any equipment entering PACU from outside the area
   c) Mop the floor with disinfectant

B. Between cases cleaning
   d) Dry linen is deposited in hamper and soiled linen in alginate bag
   e) Disposable suction tubing is disposed of with the waste article.
   f) Suction content are disposed of in dump room using appropriate personnel protective equipment.
   g) All flat surfaces, PACU bed and equipment are wiped with a germicide. This includes monitor's leads and visibly soiled areas of room.
   h) Mop the floor with disinfectant

C. Terminal cleanings

Terminal cleaning will be performed daily .These areas include PACU and Holding Bay , ceiling mounted equipment, gas lines, Suction and oxygen outlets.

D. Weekly cleaning

All theatre area will be cleansed using hospital disinfectant, floor scrubbed, and cleansing of vertical and horizontal surfaces, wall ceiling, equipment and storage cupboard and maintain all supplies neat and clean.

   c) Ceiling and wall must be regularly inspected for paint crack /peeling and must be maintained on regularly basis

5. SAFETY PRECAUTIONS

A. Needles will never be broken, capped or re-sheathed.
B. A “no-touch” or hand free zone technique will be employed as a safe method of transferring sharps from one person to the other

6. Refrigerator

A. Cleaned on weekly basis with hospital disinfectant
B. Temperature is maintained between two degree –eight degree centigrade

7. Fluid warmer

Do not head IV fluid warmer more than 40-45 C

8. BACTERIOLOGICAL MONITORING

Culturing is done as deemed necessary by infection control department and the operating room super visor.

9. PRESSURE DIFFERENCIAL AND AIR EXCHNGE

The operating room maintains the following:

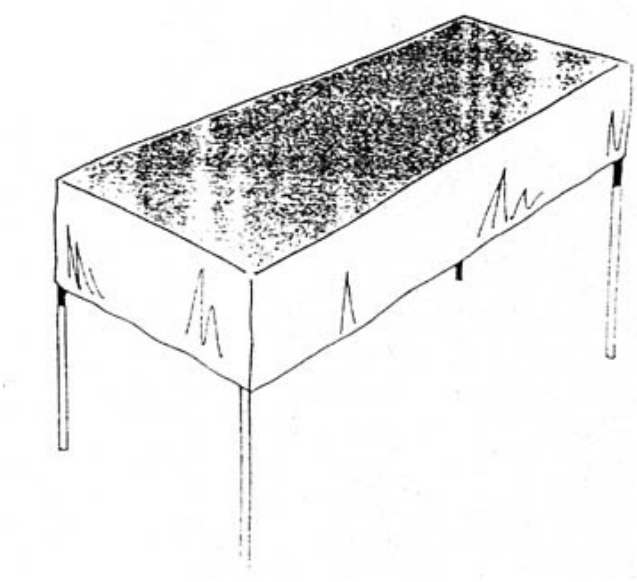
a) At least 15 inside air changes per hour
b) Three outside air changes per hour
c) Temperature range of 68-73F (20-23C)
d) Humidity control of 30%-60%
e) Humidity and temperature should be checked whenever required
f) Points to Remember about Aseptic Technique

1. The patient is the center of the sterile field.

2. Only sterile items are used within the sterile field.
3. Sterile persons are gowned and gloved.
A. Keep hands at waist level and in sight at all times.
B. Keep hands away from the face.
C. Never fold hands under arms.
D. Gowns are considered sterile in front from chest to level of sterile field, and the sleeves from above the elbow to cuffs. Gloves are sterile.
E. Sit only if sitting for entire procedure.

4. Tables are sterile only at table level.
A. Anything over the edge is considered unsterile, such as a suture or the table drape.
B. Use non-perforating device to secure tubing and cords to prevent them from sliding to the floor.

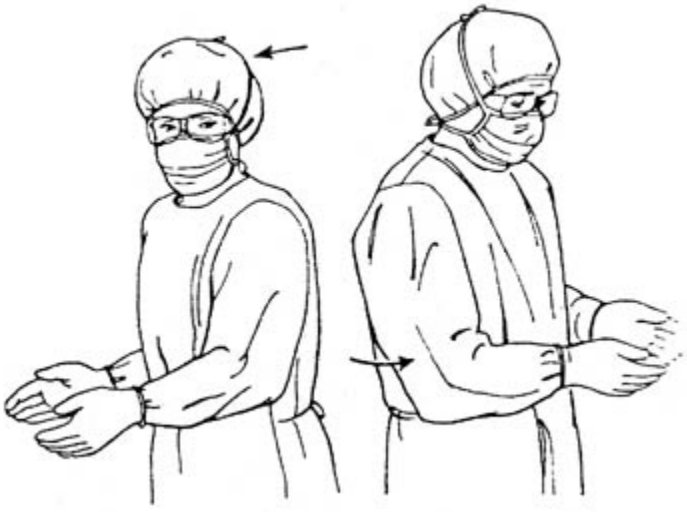
5. Sterile persons touch only sterile items or areas; unsterile persons touch only unsterile items or areas.
A. Sterile team members maintain contact with sterile field by wearing gloves and gowns.
B. Supplies are brought to sterile team members by the circulator, who opens wrappers on sterile packages. The circulator ensures a sterile transfer to the sterile field. Only sterile items touch sterile surfaces.



6. Unsterile persons avoid reaching over sterile field; sterile persons avoid leaning over unsterile area.
A. Scrub person sets basins to be filled at edge of table to fill them.
B. Circulator pours with lip only over basin edge.
C. Scrub person drapes an unsterile table toward self first to avoid leaning over an unsterile area. Cuff drapes over gloved hands.
D. Scrub person stands back from the unsterile table when draping it to avoid leaning over an unsterile area.

7. Edges of anything that encloses sterile contents are considered unsterile.
A. When opening sterile packages, open away from you first. Secure flaps so they do not dangle.
B. The wrapper is considered sterile to within one inch of the wrapper.
C. In peel-open packages, the edges where glued, are not considered sterile.

8. Sterile field is created as close as possible to time of use.
A. Covering sterile tables is not recommended.
9. Sterile areas are continuously kept in view.
A. Sterility cannot be ensured without direct observation. An unguarded sterile field should be considered contaminated.
10. Sterile persons keep well within sterile area.
A. Sterile persons pass each other back to back or front to front.
B. Sterile person faces a sterile area to pass it.
C. Sterile persons stay within the sterile field. They do not walk around or go outside the room.
D. Movement is kept to a minimum to avoid contamination of sterile items or persons.



11. Unsterile persons avoid sterile areas.
A. Unsterile persons maintain a distance of at least 1 foot from the sterile field.
B. Unsterile persons face and observe a sterile area when passing it to be sure they do not touch it.
C. Unsterile persons never walk between two sterile fields.
D. Circulator restricts to a minimum all activity near the sterile field.

12. Destruction of integrity of microbial barriers results in contamination.
A. Strike through is the soaking through of barrier from sterile to non-sterile or vice versa.
B. Sterility is event related.

13. Microorganisms must be kept to irreducible minimum.
A. Perfect asepsis is an idea. All microorganisms cannot be eliminated. Skin cannot be sterilized. Air is contaminated by droplets.

10. Management of TB in surgical suite
    a) Only emergency /essential surgery should be performed
    b) Good communication between staff member is essential
    c) Perform surgery during off –peak times.
    d) Anesthesia breathing circuits should have bacterial filter place on expiratory side. Circuit should be changed at end of case.
    e) patient should be masked when transferred fr4om to and from operating room
    f) door should remain closed
    g) Surgical team is to wear N-95 respirator during procedure. Patient may be recovered in operating room with door closed or in isolation room in recovery area, if available.
    h) The operation room should be left vacant for a specified time period to allow the air to clear.

LEAR MEDICINE

PURPOSE:

To provide employee and patient protection from communicable diseases in the radiology and nuclear medicine departments and also to provide optimum care when performing invasive procedures requiring surgical asepsis in these departments.

1. EMPLOYEE HEALTH

Radiology/Nuclear Medicine personnel will follow the facility's policies for Employee Health.

2. ISOLATION

Standard and Transmission-Based Precautions (Airborne, Droplet, and Contact) are followed with all patients, according to Infection Control policies. Attending staff will inform radiology personnel of any measures needed above Standard Precautions. Unit Link liners will check or consult for implementation. Adequate protective attire will be maintained in the department.

3. HANDWASHING
    a) Hand washing will be done between patients, and prior to performing procedures. Alcohol-based hand rubs may be used as well as soap and water handwash. (See hand hygiene policy)
    b) Hand rub will be available to all areas
    c) In case of contamination with radio isotopes, radio wash solution or towelettes will be used.

4. ASEPTIC PRACTICE/INVASIVE PROCEDURES
    a) An approved surgical hand scrub is used by personnel involved in invasive procedure (line placement, etc.).
    b) A sterile field will be used according to principles of surgical asepsis used in the surgical suite.
    c) Sterile gowns, gloves, masks, and caps will be worn.
    d) All principles of aseptic technique will be observed. All equipment will be cleaned between procedures and for room preparation between patients. Terminal cleaning of rooms used for invasive procedures will occur every 24 hours.
    e) Surgical skin preparation of patient, prior to invasive procedure, will be performed.
    f) Ventilation requirements for procedure rooms used for invasive procedures in radiology and nuclear medicine should ideally have positive pressure with 15 air exchanges/hour and three air changes of outdoor air/hour.

5. EQUIPMENT
    a) Disposable equipment and supplies will be discarded after use.

b) Reusable equipment and supplies will be cleaned if contaminated and reprocessed in the central services department if applicable.
c) Bulk body fluids (e.g., urine) will be discarded in the sanitary sewer.
d) All other equipment will be disinfected between patients by use of approved hospital disinfectant.

6. DEPARTMENTAL CLEANING
a) Daily cleaning of the department is done by housekeeping.
b) All clinical equipment will be cleansed by concerned personnels
c) Special cleaning will be requested if needed due to soiling of the environment.

ALL STAFF INVOLVED IN THE CREATION, HANDLING AND DISPOSAL OF MEDICAL WASTE SHALL RECEIVE REGULAR TRAINING AND ONGOING EDUCATION IN THE SAFE HANDLING OF MEDICAL WASTE.

HANDLING AND DISPOSAL OF SHARPS

1.0. Purpose:

To have the provision of guidelines for all staff, in regards of safe handling and disposal of used sharps.

Definition of sharp:

Sharp is any item having corners, edges or projection capable of cutting or piercing skin.

2.0 Policy statement:

It is the policy of FIC that all sharps (Syringes, needles, cannula, blades, broken glasses, disposable razors, and glass ampoules) must be disposed off immediately by the person who uses it, in a designated sharp container.

3.0. Equipment and supplies:

A. **Safer sharp devices (safety brannula, needle less syringes etc).**
B. **Sharps container on a stand.**
C. **Gloves (as indicated).**
D. **Other equipment and supplies as necessary or appropriate.**

3.1. Safety Precaution

1. Dispose off all used and unused sharps (blades, metallic pins, slides and glass bottles) in sharp container.
2. Promptly dispose off needles without recapping, with gloved hand into sharp container.
3. Do not recap, bend, break, or cut needles.
4. Recapping is only acceptable for sterile needles.
5. Needle can be recapped only when it is mandatory for example; sampling of Blood gases, nuclear medicine etc. For these situations one hand technique (scoop method) must be used.
6. When the sharps container is filled to the red mark, the lid must be closed & kept separate for collection by housekeeping staff.
7. Do not leave sharps unattended (at patient's bed side or on counters). Sharp objects must not be carried around or placed in pockets while working.

8. In the event of injury with sharp/ a needle stick injury, the employee should follow the steps given below:

    a. Squeeze the blood from the site as much as possible.
    b. Wash the area with copious amount of water & soap.
    c. Clean the area with any antiseptic available.
    d. Cover the site with water proof dressing.
    e. Inform the supervisor on duty.
    f. Note patient MR number & diagnosis.
    g. Fill in a Needle Stick Injury Report and send to Employee Health Clinic/Infection Control Nurse.
    h. Contact Employee Health Clinic from Monday – Friday at 9: AM-5: PM.
    i. Contact Emergency Assessment Room when EHC is closed.
    j. Infection Control Nurse will follow further and inform to the employee, as appropriate
    k. Departmental heads are responsible to educate their staff about the risks of needle stick injury and the importance of standard precautions while handling sharps.
9. Use alternative method other than needle, where appropriate.

NOTES:

- Proper sharp disposal containers on stands should be made easily accessible within the horizontal reach by the users in all areas.

HOSPITAL WASTE MANAGEMENT

PURPOSE:

The Hospital waste should be managed by adopting strict safety measures from the point of generation to final disposal. The purpose of the treatment of waste is to seize any hazardous activity present in the waste and to make the leftover.

POLICY:

Following measures must be carried out for the management of waste:

1. Awareness
   All waste handlers must be able to understand the logic of proper waste management.
2. Identification
   Handlers must be able to identify different categories of waste produced.
3. Segregation
   Segregation of different categories of waste.
4. Disposal
   Disposal in correct color coded bag / bin i.e. infected in yellow bags, cytotoxic in red bags and sharps in sharp bins.
5. Closure
   Closure of bag when ¾ filled.
6. Collection
   Immediate replacement of bag / bin & removal.
7. Transportation
   Transporting to the Waste Storage in covered trolleys designated for waste transportation.
8. Storage
   Store in a designated and secure area where any kind of unauthorized traffic and entry of insects / pests is controlled.
9. Treatment Incineration.

10. Final Disposal
    Earth filling of ash at the designated disposal pit.
11. Safety Precautions Using appropriate protective gear.
12. Incidents / accidents (involved in handling clinical waste) All accidents / incident involving clinical waste must be treated immediately following preventive / corrective action.

INSECT/PEST CONTROL

PURPOSE:

The presence of insects and pests shall be kept to the minimal levels especially within the confined areas of the Hospital. Insect / pest control treatment must be carried out using appropriate products, methods and according to the requirement of different areas.

POLICY:

1. Personal Precautions
   Every care must be taken while handling the insecticides and pesticides. Use of appropriate protective gear according to the nature of treatment is mandatory.
2. Insecticides / Pesticides
   Water miscible insecticides & pesticides from pyrethroid group are considered to be safest. Dilution / strength or mammalian toxicity must be kept to minimal levels.
3. Treatment
   The insect / pest control treatment via sprayers must be carried out at the time of minimum traffic and fogging should only be done when the area / s can be secluded for minimum of two hours.

CONSTRUCTION AND RENOVATION IN THE HEALTH CARE FACILITY

General Infection Control Measures

PURPOSE: To encourage use of current CDC guidelines in construction and renovation projects in hospitals.

Abbreviations:

ICRA—Infection control risk assessment

PE—Protective environment

ACH—Air changes per hour

HVAC—Heating, ventilation, air conditioning

Policy: The facility will do the following:

1) Establish a multidisciplinary team that includes infection control staff to coordinate demolition, construction, and renovation projects and consider proactive preventive measures at the inception; pro¬duce and maintain summary statements of the team's activities.
2) Educate both the construction team and healthcare staff in immunocompromised patient care areas regarding the airborne infection risks associated with construction projects, dispersal of fungal spores during such activities, and methods to control the dissemination of fungal spores.
3) Incorporate mandatory adherence agreements for infection control into construction contracts, with penalties for noncompliance and mechanisms to ensure timely correction of problems.

4) Establish and maintain surveillance for airborne environmental disease (e.g., aspergillosis) as appropriate during construction, renovation, repair, and demolition activities to ensure the health and safety of immunocompromised patients.

a) Using active surveillance, monitor for airborne infections in immunocompromised patients.
b) Periodically review the facility's microbiologic, histopathologic, and postmortem data to identify additional cases.
c) If cases of aspergillosis or other healthcare¬-associated airborne fungal infections occur, aggressively pursue the diagnosis by taking tissue biopsies and cu1tures as feasible.

5) Implement infection control measures relevant to construction, renovation, maintenance, demolition, and repair.

a) Before the project gets under way, perform an ICRA to define the scope of the activity and the need for barrier measures.
b) Determine if immunocompromised patients may be at risk for exposure to fungal spores from dust generated during the project.
C) Implement infection control measures for external demolition and construction activities.
I) Determine whether the facility can operate temporarily on recirculated air; if feasible, seal off adjacent air intakes.
II) Seal windows and, wherever possible, reduce other sources of outside air intrusion (e.g., open doors in stairwells and corridors), especially in PE areas.

d) Avoid damaging the underground water system (i.e., buried pipes) to prevent soil and dust contamination of the water. Implement infection control measures for internal construction activities.
I) Construct barriers to prevent dust from construction areas from entering patient care areas; ensure that barriers are impermeable to fungal spores and in compliance with local fire codes.
II) Seal off and block return air vents if rigid barriers are used for containment.
III) Implement dust control measures on surfaces and divert pedestrian traffic away from work zones.
IV) Relocate patients whose rooms are adjacent to work zones, depending on their immune status, the scope of the project, the potential for generation of dust or water aerosols, and the methods used to control these aerosols.
A. Perform engineering and work site–related infection control measures as needed for internal construction, repairs, and renovations.
i) Ensure proper operation of the air-handling system in the affected area after erection of barriers and before the room or area is set to negative pressure.
ii) Create and maintain negative air pressure in work zones adjacent to patient care areas and ensure that required engineering controls are maintained.
iii) Monitor barriers and ensure integrity of the construction barriers; repair gaps or breaks in barrier joints.
iv) Seal windows in work zones if practical; use window chutes for disposal of large pieces of debris as needed, but ensure that the negative pressure differential for the area is maintained.
v) Direct pedestrian traffic from construction zones away from patient care areas to minimize dispersion of dust.
vi) Provide construction crews with a. designated entrances, corridors, and elevators wherever practical; b. essential services (e.g., toilet facilities) and convenience services (e.g., vending machines); c. protective clothing (e.g., coveralls, footgear, and headgear) for travel to patient care areas; and d. a space or anteroom for changing clothing and storing equipment.

vii) Clean work zones and their entrances daily by a. wet-wiping tools and tool carts before their removal from the work zone; b. placing mats with tacky surfaces inside the entrance; and c. covering debris and securing this covering before removing debris from the work zone.
viii) Upon completion of the project, clean the work zone according to facility procedures and install barrier curtains to contain dust and debris before removing rigid barriers.
ix) Flush the water system to clear sediment from pipes and minimize waterborne microorganism proliferation.
x) Restore appropriate ACH, humidity, and pressure differential; clean or replace air filters; dispose of spent filters. Use airborne-particle sampling as a tool to evaluate barrier integrity.

6) Commission the HVAC system for newly constructed healthcare facilities and renovated spaces before occupancy and use, with emphasis on ensuring proper ventilation for operating rooms, AII rooms, and PE areas.
7) No recommendation is offered regarding routine microbiologic air sampling before, during, or after construction or before or during occupancy of areas housing immunocompromised patients.
8) If a case of healthcare-associated aspergillosis or other opportunistic airborne fungal disease occurs during or immediately after construction, implement appropriate follow-up measures.

a) Conduct a prospective search for additional cases and intensify retrospective epidemiologic review of the hospital's medical and laboratory records.
b) If no epidemiologic evidence of ongoing transmission exists, continue routine maintenance in the area to prevent healthcare-associated fungal disease.

PROTECTIVE ENVIRONMENT

This will be used for patients undergoing allogeneic hematopoietic stem cell transplant.

PURPOSE: To implement procedures to protect patients with allogeneic hematopoietic stem cell transplant. Use of guidelines (e.g. CDC USA) will be used as a guide.

PROCEDURE

1. PLACEMENT

a) Positive room air pressure in relation to corridor.
b) Well- sealed room (all fissures, crevices need to be repaired).
c) Ventilation to maintain ≥12 air changes per hour
d) Use HEPA (99.97% efficiency) filters capable of removing particles 0.3um in diameter from incoming air
e) Monitor results of air flow daily using visual methods (e.g., flutter strip, smoke tubes).
f) Daily wet-dusting of horizontal surfaces using disinfectant or detergent.

2. TRANSPORT – limit patient movement. An N-95 respirator (mask) is required to be worn by the patient when leaving protective environment during periods of construction in the facility

EDUCATION

STAFF EDUCATION

PURPOSE: To ensure the education of personnel in infection control policies and procedures.

POLICY AND PROCEDURE:

1. All new personnel will attend an infection control orientation session that addresses basic principles of infection control, including hand hygiene, standard precautions, blood-borne pathogens, waste disposal, needle stick injury and vaccination.
2. All nurses, nursing assistants, nursing assistant technicians, physicians and other employees as appropriate will be provided training sessions in infection control.
3. On the job practices may be reviewed from time to time and corrective actions taken as needed

PATIENT AND FAMILY EDUCATION

PURPOSE: To establish a process for the education of patients and family relating to infection control.

POLICY and PROCEDURE: FIC will provide education to patients and visitors in relevant aspects of infection control. This will include general strategies like hand hygiene, cough and sneeze etiquette but may include specific information related to the situation, e.g. isolation and barriers precautions, transmission of infection, room changes related to infection control needs and antibiotic use. This teaching may be imparted using oral instructions, written material or displays and audiovisual means. Opportunities for this education include admission to the facility, change of condition due to an infection or other situations where deemed appropriate by the care team. Documentation will be carried out in the patient record.

DISEASE SURVEILLANCE AND OUTBREAKS

SURVEILLANCE

PURPOSE

Collection and analysis of healthcare associated infections (HAI) datain the institution and use of this data to guide preventive activities

POLICY:

The infection control nurse (ICN) conducts surveillance of infections among patients and employees by collaboration of unit staff

PROCEDURE

1. HAIs and risks pertinent to the institution are identified by the ICC
2. Internationally acceptable case definitions and methods of analysis are used, when available. Where such data is not available a scientific basis for collection and analysis is adopted.
3. Collection of this data is aided by the use of
    a. Laboratory and diagnostic data
    b. Referral from nursing or medical staff
    c. Review of coding and chart data from patients or staff
    d. Standardized forms in the electronic record
4. Specific HAI whose rates and trends are tracked over time and compared with internationally accepted benchmarks (e.g. National Health Safety Network – NHSN)
    a. Surgical site infections (SSI)
    b. Catheter associated blood stream infections (CLABSI)
    c. Catheter associated urinary tract infections (CAUTI)
    d. Ventilator associated pneumonia (VAP)
    e. Rates of methicillin resistant staphylococcus aurous (MRSA)

f. Rates of vancomycin resistant enterococci (VRE)
g. Clostridium difficile rates

THERE ARE DOCUMENTED PROCEDURES FOR STERILIZATION ACTIVITIES IN THE ORGANIZATION.

THERE IS ADEQUATE SPACE AVAILABLE FOR STERILIZATION ACTIVITIES.

INTRODUCTION

The Central Sterilization Supply Department (CSSD) provides variety of services for infection control inside the CSSD and in FIC Hospital and FIC. CSSD controls infections on three principles:

1. Employee Safety
2. Patient Safety
3. Environmental Safety

For employee safety there are many protocols like hand washing guide lines and use of personal protective equipment. For patient safety CSSD is responsible for processing hospital medical and surgical instruments thereby assuring that all end users receive the same degree of Disinfections and Sterilization. For environmental safety CSSD collects used medical and surgical instruments in closed trolleys. The handling based on Comprehensive guide to steam sterilization and sterility assurance in health care facilities by Association for the Advancement of Medical Instruments (AAMI) and Central Technical Manual 7th –Ed 2007.

PURPOSE:

To provide sterilized material from a central department where sterilization practice is carried out under controlled conditions to reduce the incidence of hospital acquired infections.

Purpose of this procedure is to set the guidelines for the maintenance and promotion of standard practices in Central Sterilization Supply Department.

SCOPE:

These guidelines are applicable to all CSSD staff, visitors within CSSD of FIC where CSSD services are being provided.

REGULAR VALIDATION TESTS FOR STERILIZATION ARE CARRIED OUT AND DOCUMENTED.

POLICY & PROCEDURE:

A. Environmental Control in CSSD:

1. CSSD physically designed to separate clean area from decontamination area
2. Department is divided physically into following areas:
    - Decontamination
    - Clean Instrument preparation area
    - Sterilized storage area
3. CSSD should have specific temperature, pressure, humidity and air exchanges according to area requirements.

Work Area	Temperature	Pressure	Humidity	Air Exchanges
Decontamination	16 to 18	negative	30% to 60 %	6/ hour
Clean Instrument Packaging	20 to 23	positive	30% to 60 %	10/ hour
Clean Linen folding and packaging	20 to 23	positive	30% to 60 %	10/ hour
Clean/Sterilized storage	24 or lower	positive	Less than 70%	5/ hour

Temperature, Pressure, Humidity and Air Exchange Requirements in areas of CSSD

B. Education:

1. Basic training in aseptic technique for all new CSSD personnel is provided by the CNM CSSD and trained techniques.
2. All new joiners will receive an orientation program related to all Central Sterile Supply Department (CSSD) functions and procedures and review of all regulations will be provided by the Clinical Nurse Manger (CNM) CSSD. All employees will be provided informed of hospital as well as departmental rules and regulations through orientation at the time of joining.
3. In-service programs related to Infection control policies and practices (or other related material) are provided annually by the CNM CSSD and Infection Control Nurse as indicated by CSSD CNM.
4. CNM CSSD will observe practices of other departments related to disinfections of medical and surgical instrument.
5. CNMCSSD will provide knowledge about disinfection to other health care professionals.
6. CSSD technicians should complete competencies within 1st year of employment.
7. CSSD technician will eligible to join Operating Room (OR) & CSSD Technician course after completion of one year of employment and competencies

C. Personal Practices:

1. The Central Sterilization Supply Department personnel must be free of active infections based on Employee Health Clinic evaluation.
2. All personnel with the possibility or certainty of a contagious disease will not be allowed to return to work until cleared by the Employee Health Clinic doctor.
3. All new joiners must comply with the pre-employment health screening /examination.
4. All employees are required to adhere to the guidelines form proper attire and personnel protective equipment as required for category of work that assigned.

D. Personal Hygiene:

1. Cleanliness and good personal hygiene is mandatory for CSSD staff.
2. Frequent and thorough hand washing is required and FIC hand washing guidelines must be followed.
3. All personnel handing soiled items should take a shower at the end of shift.

4. Decontamination attire must be removed and hands must be washed prior to leaving the area.
5. Technicians should never go to any other area of the department while dressed for decontamination.

E. Dress Code:

1. **CSSD is a restricted area and demands use of defined attire for all staff working in CSSD.**
    a. A prescribed CSSD kit is to be worn while on duty daily.
    b. Head coverings must be worn at all times appropriately.
    c. Outside visitors must wear hair covering, shoe covers and gown over their personal (street) clothes, while visiting the department.
    d. Clean shoes should be worn according to area. Shoes must be outerwear.
    e. Do not wear open toe shoes and cover with a shoes cover or winter outerwear.
    f. Persons going out of the department for tea or meal breaks should change CSSD kit to their own clothes.
    g. If person is going for clinical work area or collection or work delivery of instrument, he should wear lab coat over CSSD kit with closed buttons.
    h. Eating is not allowed in CSSD. All involved individual should follow hospital food policy.
    i. Decontamination area is considered as high risk Bio-Burden area because of all involved tasks exposes the person to blood, body fluid and / or tissue and requires personnel protective equipment to be worn and they are as follows:
2. **For entering into decontamination area in addition to kit:**
    - Full sleeved gown (surgeon gown)
    - Disposable mask
    - Prescribed decontamination shoes
3. **For working in decontamination area especially manual cleaning:**
    - Full sleeved gown plus disposable plastic apron
    - Disposable mask plus Goggles or face shield
    - Thick long gloves
    - Wellington boot (Long rubber boot)

Special Note:

Decontamination attire must be removed and hands must be washed prior to leaving the area. Technicians should never go to any other area of the department while dressed for decontamination.

F. Traffic Control

1. The Decontamination area is physically separated from all other areas of the CSSD department.
2. Unauthorized person is not allowed to enter in decontamination area
3. Soiled supplies should be collected be CSSD technician on defined timetable in closed cart and route should be ended up in the decontamination area.

4. If some department (other than OR) wants to hand over used or soiled items to CSSD after use should call CSSD Tech from Collection of soiled items.
5. One CSSD Tech assigns inside OR to receive used inside OR to receive used instruments immediately after procedure for their early pre-cleaning inside the OR. After pre-Cleaning instrument should be moved to CSSD for Decontamination process.

G. Care and Handling of Soiled Supplies:

a) All equipment and instruments returned to CSSD will be treated as contaminated and must be exposed to a method of cleaning that will make the item safe for handling except expired single use items.
b) All used equipment and instruments returned to CSSD should be in closed cart to protect environment from infection.
c) All items will be cleaned using the following methods:

1. Manual Cleaning:

Manual Cleaning is to physically remove deposits that were not removed during the rinsing.

Manual Cleaning may be done:

a) Some time prior to mechanical cleaning
b) When the decontamination area does not have an Ultrasonic Cleaner or Washer disinfector are not in working condition.
c) Complex and delicate instruments that cannot be processed in mechanical equipment
d) To clean electrical, battery, or pneumatic equipment that can not be immersed in water.
e) For instruments with lumens.

Procedure of Manual Cleaning

a) A two sink arrangement is used for manual cleaning
b) A wash sink with water and detergent
c) Second sink with water for rinsing
d) Prepare solution of detergent according to the manufacturer guidelines in one sink.
e) When cleaning aluminum or stainless steel, a "to and fro" (motion in the direction of grain should be used rather than a circular motion).
f) All instruments should be cleaned in a wide open position to allow cleaning of hinged area.
g) Brush instrument under the water's surface to prevent aerosol contamination.
h) Brushes must be cleaned, disinfected or sterilized.
i) For Lumens of instruments use correct size of brush for proper cleaning.
j) Rinse luminal instruments with water in utility sink and with spray gun for good cleaning then cleaned in ultrasonic cleaner if compatible or check manufacture recommendation.
k) Other instruments also cleaned with brush and then rinsed with water.
l) Manual Cleaning using a hospital approved detergent or enzymatic cleaner mixing thoroughly from top to bottom.
m) Sinks drained and cleaned frequently and fresh cleaning solution is prepared.

n) Items will be rinsed with tap water and where necessary dried with a clean dry cloth and transported to the clean area for further assembly as required.

3. Mechanical Cleaning:

a) Automatic washers and Ultrasonic cleaners are required for mechanical cleaning.
b) Washers work on the principal of impingement.
c) Detergent used in Washer must be approved for use with the equipment.
d) Level of detergent should be checked daily.

e) Count, Open and disassemble all instruments in baskets to facilitate proper cleaning of instruments.
f) Place scissors, lighter-weight instruments, and microsurgical instruments on top.
g) Keep baskets in the chamber of washer disinfector in proper order. Washer racks should never be overloaded and spray arms should move freely during operation.
h) Multiple Level Baskets should be avoided to reduce the chance of failure of the cleaning of cycle.
i) Close the door of washer and select appropriate cycle according to the instruments.
j) Observe cycle closely to make sure that cycle is running according to the manual of the washer disinfector.
k) All detergent should be used according to manufacturer's recommendations.
l) The completion of wash cycles instruments will exit to clean area from other door of washer disinfector.

4. Handling of Instruments (Consultant's owns, Borrowed and loner):

a) These instruments will treat as contaminated or used instruments.
b) These instruments will follow whole process of Decontamination and Sterilization before use in surgical procedure at FIC.

H. Chemical Disinfection:

a) This is the process that removes many or all disease-producing organisms except bacterial spore.
b) For chemical disinfection, FIC guidelines for Chemical Disinfection based on Spaulding classification system should be followed. Guidelines document number is ND/CSSD/CD01

I. Packaging Material(Containers and Wrappers)

The outside wrapper/container constitutes a bacterial barrier, which ensures sterility of the contents. Acceptable

Packaging material for sterilization is as follows:

1. **Linen:**
   a. Cloth thread count should be 270 to 280/cm.
   b. Lint free women fabric is recommended.
   c. Launched (when new and after use) and inspected to be sure that there are no holes or tears.
2. **Disposable Wrapping Paper and See-through reels:**
   a) Steri paper (green and white sheets) See through Pouches & Reels
   b) Packs should be double wrapped.

c) Paper packing should be done according to Sequential fold; this type of wrapping always indicates that pack is double wrapped.

d) See through packing should be double.

e) Inner pack should not be folded or turned to adjust in outer packing.

3. **Rigid Container:**

a) Should have proper closer system

b) Gas kit of container should be in working Condition.

c) Filter should be placed in an exposed area of container.

d) Should be packed in Steri paper for extra precautions.

J. Sterilizing Standards:

1. Sterilization is the process of destroying all microorganisms and their pathogenic products. The most effective types of sterilization methods are available for different types of medical and surgical instrument. the following methods of sterilization are used within CSSD of FIC For reference see sterilization procedure of CSSD):

a. Steam Sterilization - High vacuum: a vacuum pump is sterilized to rapidly remove air from the sterilization chamber. This is followed by the injection of steam under pressure. The temperature range is generally 121 and 134 degree centigrade.

b. Steris sterilization - Hydrogen peroxide processed for the sterilization of heat and moisture sensitive instruments and medical devices.

c. Low temperature formalin - dehyde sterilization process for the sterilization of heat and moisture sensitive instruments and medical devices. In this process temperature range is 65 to 69 degree centigrade. The vacuum should be 0.71mbar

d. Adherence to manufacturer's recommendations should be followed strictly.

K. Sterilization Controls:

1. Monitoring of Cycle:

e) Recording charts gauges and screens; the sterilizer operating technician must examine temperature, pressure on the screen or print out indicators at the beginning of each sterilizer cycle. Before ironing load removed from the sterilizer the operator must examine the print out/chart fir accuracy of parameters.

f) If any of the above control fails the load is considered non sterile and the product recall should be performed as per recall policy.

2. Chemical indicators

a) External process indicator: should be placed at outside of pack for identification evaluates pack has been exposed through the method of sterilization. It does not indicate sterility of pack.

b) Chemical indicator or Integrator: A temperature sensitive or a parameter assurance device used at the center of each packet of CSSD assembled material. The indicator or integrator remains in the package until the time it is used.

c) This indicator or integrator is placed inside each pack for sterilization and changes its color when exposed to sterilizing conditional parameters.

Special Note: External indicators do not ensure sterility it only indicates that an item has been exposed to a method of sterilization or parameters.

3. **Bowie Dick Test**:
   a. Designed to the monitors the air evacuation effectiveness of a high a vacuum sterilizer.
   b. This test should be performed in the first load of the day. If the results of the test indicate failure, remove sterilizer from service.
   c. If the sterilizer is out of service or not utilized the test is not required.

4. **Biological Indicator (BI):**
   a) Each steam sterilizer used for terminal processing of patient care goods within FIC CSSD must be tested by use of Bacillus Stearothermophilus spore preparations.
   b) Steam sterilizers are tested weekly. If the sterilizer is out of service, BI is not required.
   c) BI or spore tests are incubated in CSSD for time period given by manufacturer of BI. Results should be recorded in the appropriate log sheet.
   d) When implantable or intravascular material undergoes sterilization, live spore tests are used with each load, and if possible, the results of the spore tests are known before the item is used.
   e) If any positive culture results, indicating possible sterilization failure, to be reported to the Infection Control Nurse. The recall procedure of institution will be followed and the sterilizer involved will be taken out of service until repair and / or the authorized individuals perform inspection.

L. Lot Control Sticker:

a. These are placed on each assembled package. It identifies the sterilizer used, calendar date and cycle. It is used to identify items that are recalled for any reason.

M. Event Related Dating:

1. Sterility is event related. It is the event that determines the sterility of the product. The sterility of items will be determined by event criteria rather than time related.
   a. The integrity of product packaging will be the determining factor establishing sterility.
   b. All products sterilized on the site are considered sterile till expiry date or if open or pack is damaged.

N. Storage:

1. After sterilization cycle is complete all steam items are allowed to cool for 15 minutes inside the sterilizer with the door open. This allows for a cool down period that prevents condensation. Sterilizer carriers are then removed and allowed to cool for 30 minutes prior to handling. Supplies to be stored on shelves will be carefully transported to pre-labeled shelves and placed in the shelves from the rear to facilitate rotation of sterile stock.

O. Recall:

Recalling means calling of sterilized instrument lot back to CSSD if any sterilization cycle failure notified. If instruments already used on patients then all patients should be recalled for specific interventions if required The Central Sterilization Supply Department will notify Infection Control immediately of any sterilization failures.

a. Any surgeon or attending physician will be notified within 24 hours of any sterilization failures that may involve item used in sterile procedures on their patients.
b. All items in the lot number involved will be immediately recalled to Sterilization Supply Department.

P. Housekeeping:

a) Housekeeping procedure in CSSD should be same as OR.
b) There should be separate cleaning carts along with wet and dry mops for each area.
c) Floor and horizontal work surfaces should be cleaned at least twice daily.
d) All work surfaces are clean utilizing the hospital-approved disinfectant daily.
e) Sterilizer chambers racks and carts are cleaned daily by CSSD Technician.
f) Monthly or quarterly cleaning will be schedule to include buffing and waxing by Bio-Medical and CSSD Technician as appropriate.

Q. Engineering:

a. The Bio-Medical Department keeps preventative maintenance records on all CSSD related equipment.
b. All equipment returned to CSSD carefully tested and inspected after use.
c. Suspected defective or broken equipment also sent to CSSD (with mark out of order) for disinfection then to Bio-Medical Department for repair.
d. Preventative maintenance program exists for sterilizers, ultra sonic cleaner, washer disinfector and other machines to ensure good working condition.

R. Standard Precautions:

1. All staff is required to practice Standard Precautions. All body fluids shall be considered potentially infectious materials. Standards precautions consistent application of infection control principles.
2. All staff, when there is possibility of exposure to blood on other potentially infectious material, is required to use appropriate personal interactive equipment. This equipment includes gloves, gowns, lab coats, face shields, goggles, masks, shoe covers and head coverings.
3. Hepatitis B vaccine is available to all employees who have occupational exposure and must be vaccinated against hepatitis B.
4. Sharps should be handled in such a manner to prevent accidental cuts, punctures and place in the sharp container for disposal.
5. If there is needle prick and any sharp injury hospital guide lines should be followed.

ENDOSCOPES

PURPOSE

To provide a safe and infection –free method of visualizing the interior body spaces for diagnosis and treatment of diseases.

POLICY:

Strict guidelines will be followed to ensure the safety of flexible endoscopes coming in to contact with critical sterile body sites

RECOMMENDATIONS:

1. Employee's safety is of the utmost importance and should be in the forefront of each employee's mind
2. All personnel should be immunized against Hepatitis B
3. Health care workers who have respiratory problem (i.e. asthma) should be assessed by Employee health clinic prior to working with chemical germicides
4. Moisture resistant apparel should be worn to prevent contamination of personnel due to splash of blood or other fluid. The changing of gowns is recommended between procedures
5. Cleaning of the endoscope to remove organic debris with an enzymatic detergent should be performed as soon as possible after use. All channels should be irrigated (also brushed) and crevices cleaned. Alternate suctioning of fluid and air is more effective than suctioning alone in the removal of debris from internal lumens. Immersible parts should be rinsed in water. All organic debris must be off prior to disinfection.
6. Check scope for damage and leaks. Take out of service if found.
7. Use approved disinfectant and follow manufacturer's recommendations for product compatibility.
8. Item should be immersed (interior and exterior portions) as per manufactures guidelines
9. Nonimmersible endoscopes should not be used.
10. Following chemical disinfection, rinse item in sterile water or tap water, followed by 70% alcohol rinse
11. Routine testing of disinfectants should be carried out to ensure effective minimal concentrations.
12. Air-dry endoscope and channels. Flushing channels with alcohol reduce the risk of waterborne organism contamination.
13. Do not coil endoscopes for storage. Hang vertically. Wipe down the storage cupboard with hospital disinfectant weekly
14. Cleaning Brushes should be wash thoroughly after each use and disinfect atleast daily
15. Ultrasonic cleaning is recommended to remove debris that hand cleaning can't do
16. Sterile water is to be used in water bottle. All parts (bottle and connecting tubing) should be sterilized/disinfect daily
17. Keep all non-critical equipment (i.e. teaching heads, light sources, cameras) cleanse with soap and water or hospital disinfectant
18. Employees shall be trained regarding the proper handling, cleaning, and disinfection of endoscopes as well as chemical and biologic hazards present.
19. Maintain a log indicating for each procedure the patient's name and medical record number, the procedure, the endoscopist, and the serial number of endoscope to assist in an outbreak investigation.

SPECIAL CONSIDERATION

Sterilization or high level disinfection should be used as directed by institutional policy. Diagnosed or suspected infection, including Hepatitis B, VRE, MRSA or HIV is not a contraindication for endoscopy. It is not recommended to have instruments dedicated for use with infected patients.

For patients with known or suspected case of M. tuberculosis, severe acute respiratory syndrome (SARS) ,or other organisms potentially transmitted via airborne droplet nuclei, health care worker should wear appropriate personnel protective equipment including N95 Mask and give adequate time for potential air borne contaminants to be removed.

RESPIRATORY THERAPY

PURPOSE: To promote effective infection control procedures in respiratory therapy.

POLICY:

1. EMPLOYEE HEALTH
   Respiratory therapy personnel will follow the facility's policies for employee health.
2. ISOLATION
   Standard precautions as well as transmission-based precautions (airborne, droplet, contact) will be used when providing care for patients according to infection control policy.
3. HANDWASHING
   Hand washing will be done between patients, when hands are soiled and before procedures. Alcohol-based hand rubs may be used as well as soap and water hand wash. (See hand-hygiene policy.)

4. ASEPTIC PRACTICE
   Principles of asepsis and sterile technique will be followed when the respiratory therapy department is performing/ assisting with a sterile procedure.
   a) EQUIPMENT:
   I) The O2 cannula or mask may remain in place on one patient until it malfunctions or becomes visibly contaminated Disposable equipment is used one time and discarded.
   II) The tubing should be kept off the floor and drained frequently if condensate accumulates.
   III) Pulmonary function equipment's external tubing, connecter, rebreathing valves and mouth pieces should be cleansed and subject to high level disinfection.
   IV) Nebulizers that have reservoirs can allow growth of waterborne organisms. These organisms can multiply and lead to colonization/infection of patient, increasing risk of pneumonia. Sterilization or high-level disinfection should be used. Use only sterile fluid for the nebulizer and dispense the fluid into the nebulizer aseptically. Use single-dose vials whenever possible.

5. MECHANICAL VENTILATION:
   I) Ventilated patients are at high risk for aspiration pneumonia due to presence of an artificial airway. Infection/colonization with micro-organisms can also occur due to contamination of ventilator circuit tubing humidification systems and techniques used to maintain patient's airway. Remove all equipment (respiratory or GI) when no longer needed.
   II) Elevate head of bed at 30° to minimize aspiration of secretions. Avoid deflation of endotracheal tube cuff routinely.
   III) Suctioning: Wash hands, gloves should be used on both hands. Masks, Plastic apron and eyewear should be used. Sterile disposable catheters will be used each time suctioning is performed. The mouth is suctioned after tracheal suctioning. Sterile water is used when rinsing catheter.

IV) Tracheostomy care: Dressing set and single-use saline should be used for tracheostomy care.
V) Do not routinely change ventilator circuits.
VI) Heated humidifier systems may reduce bacterial pathogens. Sterile water is generally used to fill these humidifiers.
VII) Suction jugs need to cleanse daily.
VIII) Sterile fluid used for humidification must be resealed and dated after opening. Open fluids should be discarded after 24 hours
IX) Ensure no open fluids within patient's surroundings.

X) Resuscitation bags can be easily contaminated. Wipe off exterior frequently. Sterilize/high-level disinfect bags between patients or when soiled.
XI) Always wash your hands after contact with respiratory equipment. Health care worker's hand may become easily contaminated with microorganisms from patient's airway.

THERE IS AN ESTABLISHED RECALL PROCEDURE WHEN BREAKDOWN IN THE STERILIZATION SYSTEM IS IDENTIFIED

Policy:

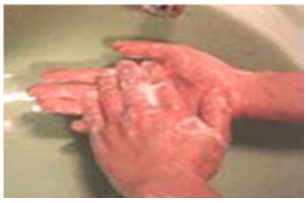
The FIC management should ensure that the sterilization procedure is regularly monitored and in the eventuality of a breakdown it has a procedure for withdrawal of such items. A batch processing system with date and machine number for effective recall should be in place. Whenever a breakdown in the sterilization system is noted, all packs sterilized by the faulty machine should immediately be called back from the respective area where the sterile packs has been supplied. The packs called back should be sent for re-sterilization using a proper machine/technique.

APPENDIX A

HAND HYGIENE TECHNIQUES

NOTE Hand washing and use of alcohol based solutions can both be used but hand washing must be done if there is visible soiling or when exposure to Bacillus anthracis is suspected or proven

HAND WASHING



Step 1.Wet hands and wrists with lukewarm water. Apply soap.

Step 2Place one palm over the other working the soap into a lather.

Step 3.Rub your hands palm to palm, fingers interlaced.

4. Rub back fingers to opposing fingers interlocked. Be sure to get underneath the fingernails.

Step 5 Rotate the right thumb in a rotational manner clasped in left palm and vice versa.

Step 6 Rub backwards and forwards while rotating with tops of fingers and thumb of right hand in left and vice versa. Repeat steps 1-6 until hands are clean. Wash hands for at least 15 seconds.

Step 7 Pat hands dry using clean paper towels, ensuring that all areas have been dried.

USE OF ALCOHOL BASED SOLUTIONS

Apply product to palm of one hand and rub hands together, covering all surfaces of hands and fingers, until hands are dry.follow the manufacturer's recommendations regarding the volume to be used.

APPENDIX B

Donning and removing of PPE(Personal protective equipment)

1. PPE IS PROVIDED TO ALL PERSONNEL - each employee is responsible for knowing where the equipment is kept in the department.
2. TYPES OF PROTECTIVE BARRIERS - the type of protective barrier (s) used should be appropriate for the procedure being performed and the type of exposure anticipated.
3. PPE AVAILABLE - This includes gloves, gown, or aprons, masks, eye protection and resuscitation devices.
4. RESPIRATORY HYGIENE - it should be practiced by all health care workers and families at all times to reduce the spread of respiratory illness. Respiratory hygiene posters are displayed on prominent places.
5. DONNING AND REMOVING PERSONAL PROTECTIVE EQUIPMENT (PPE) - Remove PPE at doorway before leaving patient room or in anteroom; remove respirator outside of room. Perform hand hygiene immediately after removing all PPE.

GOWN

- DONNING
- Fully cover torso from neck to knees, arms to end of wrist, and wrap around the back
- Fasten in back at neck and waist

- REMOVING
- Gown front and sleeves are contaminated!
- Unfasten neck, then waist ties.
- Remove gown using a peeling motion; pull gown from each shoulder toward the same hand
- Gown will turn inside out
- Hold removed gown away from body, roll into a bundle and discard into waste or linen hamper.

MASK OR RESPIRATOR

- DONNING
- Secure ties or elastic band at middle of head and neck
- Fit flexible band to nose bridge
- Fit snugly to face and below chin
- Fit-check respirator

- REMOVING
- Front of mask/respirator is contaminated – DO NOT TOUCH!
- Grasp bottom then top ties/elastics and remove
- Discard in waste container

GOGGLES / FACE SHIELD

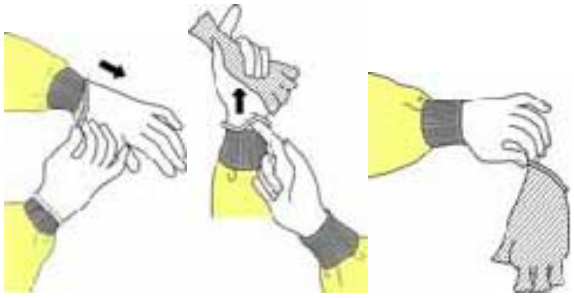
- DONNING
- Put over face and eyes and adjust to fit

- REMOVING
- Outside of goggles or face shield are contaminated!
- To remove, handle by “clean” head band or ear pieces.
- Place in designated receptacle for reprocessing or in waste container.

GLOVES

- DONNING
- Extend to cover wrist of isolation gown

- REMOVING
- Outside of gloves are contaminated!
- Grasp outside of glove with opposite gloved hand; peel off.
- Hold removed glove in gloved hand.
- Slide fingers of ungloved hand under remaining glove at wrist.



Continuous Quality Improvement (CQI)

THERE IS A STRUCTURED QUALITY IMPROVEMENT AND CONTINUOUS MONITORING PROGRAMME IN THE ORGANIZATION

THE QUALITY IMPROVEMENT PROGRAMME IS DEVELOPED, IMPLEMENTED AND MAINTAINED BY A MULTI-DISCIPLINARY COMMITTEE

SOP'S and Guidelines of CQI (Continues Quality Improvement), FIC, Faisalabad.

CQI in Healthcare

CQI has been used in the manufacturing world more extensively than in the healthcare field. However, the underlying foundation of medicine is in fact quite closely tied to the principles of CQI. This includes the observation of a phenomenon, isolating variables and changing the process, observing the results and taking action. If the results are beneficial, continue with the change and look for the next area to improve. If the results are adverse, discard them and try something else. Continue to observe the results until a pattern of foreseeable results emerges from performing certain actions.

CQI is easy for healthcare professionals to learn since it is based on this basic scientific model of discovery. As healthcare professionals learn the concepts and strategies behind CQI, they will infuse their scientific background and experience into the program.

Innovative measures and positive results follow quickly. These results include higher quality of service delivered, happier patients and customers, and lower costs. Quality Control has proven time and again to cut costs dramatically. Improved quality not only can improve the quality of life, it can actually give life, extend life and permit life.

CQI Committee Responsibilities:

There is a quality improvement committee, who looks after the departments/wards for CQI, it forward suggestions and reservations to the department/wards after inspection and take positive feedback for Continues quality improvement.

The committee shall have terms of reference and powers and be subject to such conditions, such as reporting back to the board, as the board shall decide and shall act in accordance with any legislation and regulation or direction issued by the regulator. The role of the committee is to provide assurance to the board, along with the audit committee,

Members of the Committee:

- The Executive Director
- Member BOM (board of Management)
- Medical Superintendent
- Director of clinical department
- Manager of Ancillary Services
- Nursing Superintendent
- QI Manager
- Head of Pharmacy Department
- Infection Control Nurse
- Electronic Equipment Care Taker

The meetings of the committee held quarterly and annually for continue quality improvement. The programs and plans are updated at least one time in a year for better quality.

THE QUALITY IMPROVEMENT PROGRAMME IS DOCUMENTED

Quality Control

a) **Internal Monitoring**
Management Information System Hospital should collect data pertaining to performance of different departments and hospital as a whole. These performance indictors shall regularly be monitored and analyzed. Corrective and preventive actions shall be taken to improve the performance.

b) **Internal Audit**
Audit of the services available in the hospital should be done on regular basis (preferably quarterly). Findings of audit shall be discussed in meetings of hospital monitoring committee and corrective and preventive action shall be taken. Internal audit shall be done through multi disciplinary committee.

c) **Medical audit**
Medical audit committee shall be constituted in the hospital. Audit shall be done on regular basis (preferably monthly). Sample size for audit shall be decided and records of patients shall be selected randomly. Records shall be evaluated for completeness against standard content format, clinical management of a particular case.

d) **Death review**
Review of the all mortality that occurs in the Faisalabad Institute of Cardiology shall be done on fortnightly basis. All maternal deaths at hospital shall come under this preview.

THERE IS A DESIGNATED INDIVIDUAL FOR COORDINATING AND IMPLEMENTING THE QUALITY IMPROVEMENT PROGRAMME

QI Program Coordinator

The Manager QI works collaboratively with the ED/MS, committee members and departments to coordinate and facilitate the activities of the CQI program throughout the organization.

He is responsible for identifying quality indicators, collecting and analyzing data, developing and implementing changes to improve service delivery, and monitoring to assure that improvement is made and sustained.

The ultimate goal is to improve the quality of care that is routinely provided to the patients in the Faisalabad Institute of Cardiology.

THE QUALITY IMPROVEMENT PROGRAM IS COMPREHENSIVE AND COVERS ALL THE MAJOR ELEMENTS RELATED TO QUALITY IMPROVEMENT AND RISK MANAGEMENT

Four Key Points Involved CQI:-

Proper CQI starts with planning and data collection. Statistical analysis on the wrong or incorrect data is rubbish, the analysis must be appropriate for the data collected. Be sure to PLAN, and then constantly re-evaluate your situation to make sure the plan is correct.

Plan:

Collect data and establish a baseline. Identify the problem and the possible causes. The CQI of Faisalabad Institute of Cardiology described and identifies the problems to prioritize corrective actions.

Do:

Make changes designed to correct or improve the situation.

Study:

Study the effect of these changes on the situation. Collect data on the new process and compare to the baseline. Evaluate the results and then replicate the change or abandon it and try something different.

Act:

If the result is successful, standardize the changes and then work on further improvements or the next prioritized problem. If the outcome is not yet successful, look for other ways to change the process or identify different causes for the problem.

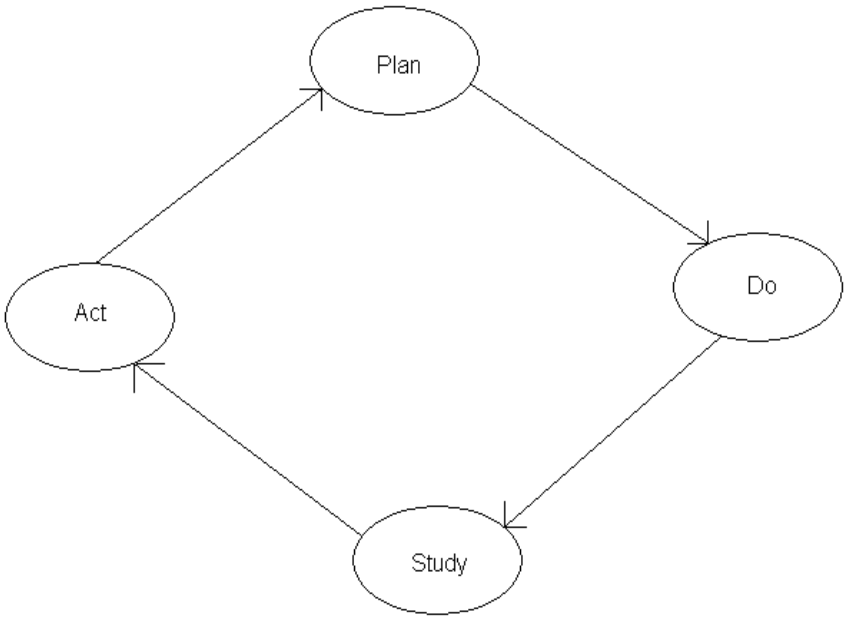


Figure: 1 Flow diagram Of Continues Quality Improvement

Quality of service should be ensured at all levels. Standard treatment protocols for heart diseases. Hospital should develop and implement standard operating procedures for the critical administrative and clinical processes. Relevant work instructions and clinical protocols should be displayed at point of use.

There are following Administrative and Clinical Programs which plays a vital role in CQI.

Administrative Programs

1. Patient Registration, Admission & Discharge Management
2. Hospital Stores & Inventory Management
3. Procurement & Outsourcing Management
4. Hospital Transportation Management
5. Hospital Security & Safety Management
6. Hospital Finance & Accounting Management
7. Hospital Infrastructure/Equipment Maintenance
8. Management
9. Hospital housekeeping & General Upkeep
10. Management
11. Human Resource Development & Training
12. Management
13. Dietary Management
14. Laundry Management
15. Hospital Waste Management

Clinical Programs

1. Outdoor Patient (OPD) Management
2. In-Patient (IPD) Management (General/Critical/
3. Intensive Care)
4. Hospital Emergency and Disaster Management
5. Operation Theatre and CSSD Management
6. Hospital Diagnostic Management
7. Blood Bank/Storage Management
8. Hospital Infection Control Management
9. Data and Information Management
10. Hospital Referral Management
11. Pharmacy Management
12. Management of Death
13. Some of quality assurance measures are already described under departmental requirements.

THE DESIGNATED PROGRAMME IS COMMUNICATED AND COORDINATED AMONGST ALL THE EMPLOYEES OF THE ORGANIZATION THROUGH A PROPER TRAINING MECHANISM

Policy for communication of QI Program

- All staff is assigned the responsibility and authority to participate in the FIC QI Plan. To fully accomplish this, all staff shall be provided education regarding the QI Plan during their initial orientation and on an annual basis thereafter.

- This education shall include a description of the QI Plan and how they fit into the plan, based on their particular job responsibilities. It shall also include education regarding the QI methodology utilized by the Faisalabad Institute of Cardiology.

THE QUALITY IMPROVEMENT PROGRAMME IS A CONTINUOUS PROCESS AND UPDATED AT LEAST ONCE IN A YEAR

Policy of reviewing the QI Program

The QI Plan shall be evaluated on an annual basis for effectiveness in achieving the goal of assuring that the most appropriate quality of care has been provided to patients.
A summary of activities, improvements made, care delivery processes modified, projects in progress, and recommendations for changes to this QI Plan, shall be compiled and forwarded to the Board of Management (BOM) for action.

THE ORGANIZATION IDENTIFIES KEY INDICATORS TO MONITOR THE CLINICAL STRUCTURES, PROCESSES AND OUTCOMES WHICH ARE USED AS TOOLS FOR CONTINUAL IMPROVEMENT

MONITORING INCLUDES APPROPRIATE PATIENT ASSESSMENT

Policy against the monitoring of Patient Assessment

The FIC has developed appropriate Key Performance Indicators (KPIs) shown below.

1. Time for initial assessment of indoor and emergency patients.
2. Percentage of cases (in-patients) wherein care plan with desired outcomes is documented and counter-signed by the doctor.
3. Percentage of cases (in-patients) wherein screening for nutritional needs has been done.
4. Percentage of cases (in-patients) wherein the nursing care plan is documented.

MONITORING INCLUDES SAFETY AND QUALITY CONTROL PROGRAMS OF THE DIAGNOSTIC SERVICES

Policy for Monitoring of Diagnostic Services

The FIC has developed appropriate Key Performance Indicators (KPIs) for diagnostic services shown below.

i. Number of reporting errors/1000 investigations.
ii. Percentage of re-dos.
iii. Percentage of reports co-relating with clinical diagnosis.
iv. Percentage of adherence to safety precautions by employees working in diagnostics

MONITORING INCLUDES ALL INVASIVE PROCEDURES

Policy Regarding Monitoring of Invasive Procedures

The FIC has developed appropriate Key Performance Indicators (KPIs) for Invasive Procedures shown below.

i. Percentage of unplanned invasive procedures.
ii. Percentage of rescheduling of invasive procedures.
iii. Percentage of cases where the organization procedures, to prevent adverse events like wrong patient and wrong procedure, have been adhered to.
iv. Percentage of cases who received appropriate prophylactic antibiotics within the specified time frame.

MONITORING INCLUDES ADVERSE DRUG EVENTS

Policy against the monitoring of adverse drug events

The FIC has developed appropriate Key Performance Indicators (KPIs) for adverse drug events shown below.

i. Percentage of medication errors (Prescribing, dispensing, administration)
ii. Incidence of adverse drug reactions (ADRs).
iii. Percentage of admissions with adverse drug reaction/s.
iv. Percentage of medication charts with error prone abbreviations.
v. Percentage of patients receiving high risk medications developing adverse drug event.

MONITORING INCLUDES USE OF ANAESTHESIA.

Policy for Monitoring of Anaesthesia Use

The FIC has developed appropriate Key Performance Indicators (KPIs) for Anaesthesia monitoring shown below.

i. Percentage of modification of anaesthesia plan
ii. Percentage of unplanned ventilation following anaesthesia
iii. Percentage of adverse anaesthesia events
iv. Anaesthesia-related mortality rate.

MONITORING INCLUDES USE OF BLOOD AND BLOOD PRODUCTS

Policy regarding (Monitoring) Use of Blood and Blood Products

The FIC has developed appropriate Key Performance Indicators (KPIs) for Blood and Blood products monitoring shown below.

i. Percentage of transfusion reactions.
ii. Percentage of wastage of blood and blood products.
iii. Percentage of blood component usage.
iv. Turnaround time for issue of blood and blood components.

MONITORING INCLUDES AVAILABILITY AND CONTENT OF MEDICAL RECORDS

Policy for Monitoring Availability and Contents of Documentation

The FIC has developed appropriate Key Performance Indicators (KPIs) for monitoring of Availability and Contents of Documentation shown below.

i. Percentage of medical records not having discharge summary.
ii. Percentage of medical records not having codification as per International Classification of Diseases (ICD).
iii. Percentage of medical records having incomplete and/or improper consent.
iv. Percentage of missing records.

SENTINEL EVENTS ARE INTENSIVELY ANALYSED

THE ORGANIZATION HAS DEFINED SENTINEL EVENTS

CQI for Sentinel Events:

FIC defined sentinel events:

There are following events which are defied by FIC, Faisalabad

- All unexpected deaths.
- Serious patient events that caused harm to the patient.
    - Re-admission
    - Wrong patient
    - Wrong site
    - Wrong procedure
    - Wrong medication
- Patient violence against staff
- Violence against patients

Faisalabad Institute of cardiology has established processes for intense analysis of above said events.

SENTINEL EVENTS ARE INTENSIVELY ANALYZED WHEN THEY OCCUR

Sentinel events are intensively analyzed when they occur:

- There is proper documentation of such events in the concern department and record is being kept at least for the period of 12 months.
- The corrective action should be taken under the result of CQI committee analysis.
- According to the events the committee has rights to change the policy, procedure and training of the staff.
- CQI Committee takes the actions which reduce such events against the findings of analysis.

Responsibilities of Management (ROM)

THE RESPONSIBILITIES OF THE MANAGEMENT ARE DEFINED

THOSE RESPONSIBLE FOR GOVERNANCE LAY DOWN THE ORGANIZATION'S MISSION STATEMENT

Save Heart for healthy Life

THOSE RESPONSIBLE FOR GOVERNANCE LAY DOWN THE STRATEGIC AND OPERATIONAL PLANS.

Plan: 1

Expansion of Emergency 40 Bedded

OBJECTIVES

Faisalabad Institute of Cardiology, Faisalabad is functioning since 13th November 2007 and is providing services to about 600-700 patients daily. The objectives of the expansion in emergency are: -

1. To provide the best possible cardiac emergency services to the people of Faisalabad and adjacent districts of Sargodha, Toba Tek Singh, Jhang and other adjoining areas.
2. To faster Emergency Cardiac Health care facilities.
3. To provide facilities of highly specialized nature.
4. In the field of acute coronary care, to provide emergency care to 100-200 Cardiac patients per day
5. To accommodate referred patients from the adjacent areas.
6. To train medical, paramedical personnel and nurses.
7. To provide research facilities in the field of emergency cardiology and cardiac surgery.

To train local and foreign graduates in all fields related with cardiology.

Plan: 2

Construction of Hostels and Staff Residences

PROJECT OBJECTIVES

There are 1095 employees in the institute. At present one hostel for 137 Nurses and one hostel for 108 Doctors available. There is no family accommodation available at all. The objectives of residential plan for the staff are:-

1. To provide state of art living facilities to the people round the clock.
2. To provide accommodation for families in healthy and safe environment.
3. To facilitate the staff so as they may perform their duties with piece of mind.
4. The services of consultants and essential staff to be available at door step.

Plan: 3

Boring of tube well for 1 cusec discharge with KSB turbine and pumping chamber

OBJECTIVES

As the previous bore has been declared defective. The institute is facing problems for the supply of water in the hospital as well as in the hostels. This essential commodity if not available will lead to suffering in the whole of the institute. Therefore this maybe approve at top priority.

Plan: 4

Coronary CT Angio machine

OBJECTIVES

Faisalabad Institute of Cardiology, Faisalabad is fully functional tertiary care institute, providing all services regarding cardiac patients. This non invasive technique is required to enhance the diagnostic tool for the cardiac physicians to find vital information, like detecting soft plaque in the coronary arteries. The objectives are that: -

- Coronary CT Angiography may reduce the need for surgery. If surgery remains necessary, it can be performed more accurately.
- Coronary CT angiography is able to detect narrowing of blood vessels in time for corrective therapy to be done.
- Coronary CTA gives more precise anatomical detail of blood vessels than magnetic resonance imaging (MRI).
- Many patients can undergo Coronary CTA instead of a conventional catheter angiogram.
- Compared to catheter angiography, which involves placing a catheter (plastic tube) and injecting contrast material into a large artery or vein, CT angiography is a minimal invasive and more patient-friendly procedure.
- This procedure is a useful way of screening for arterial disease because it is safer and much less time-consuming than catheter angiography and is a cost-effective procedure.

There is also less discomfort because contrast material is injected into an arm vein rather than into a large artery.

- No radiation remains in a patient's body after a CT examination.
- X-rays used in CT scans usually have no side effects

Plan: 5

Echocardiography Machine

OBJECTIVES

Faisalabad Institute of Cardiology, Faisalabad is fully functional tertiary care institute, providing all services regarding cardiac patients. This program is to teach the undergraduate and postgraduate students and to be made aware public how to prevent from the diseases leading to cardiovascular problem. The objective of awareness to the undergraduate and postgraduate students is to give information of risk factors/ diet etc. The preventive cardiology program is to provide:-

1. Best possible awareness campaign for the people of Faisalabad and adjacent Districts
2. To change the trend for healthy life style and thus influence disease progression.
3. To reduce the No. of rheumatic/congenital heart disease.
4. To decrease the load of ischemic heart disease, hypotension and diabetes mellitus.
5. To provide research facilities in the field of preventive cardiology.
6. To trained the medics and paramedics in this field.
7. To achieve the goal for the healthy and productive nation.

Plan: 6

Pediatric Cardiology Unit

OBJECTIVES

1. To provide the best possible diagnostic and treatment facilities to the pediatric cardiac patients of Faisalabad and adjacent districts of Sargodha, Toba Tek Singh, Jhang and other adjoining areas.
2. Will improve pediatric Cardiac Health care facilities in this region.
3. Will provide facilities of highly specialized nature.
4. Will provide Health care to about 50 inpatients per day.
5. Will provide Health care to about 100 out patients per day.
6. In the field of congenital heart diseases, it will provide emergency care to the ailing patients.
7. Will act as a referral center for the central Punjab and adjacent areas.

8. Will train medical, paramedical personnel and nurses.
9. Will provide research facilities and field of cardiology and cardiac surgery.
10. Will become a center of initiating public health awareness programs to prevent Congenital and acquired pediatric cardiac diseases.
11. Will provide training in all pediatric Cardiology specialties to both local & foreign graduates.
12. Will attract patients and research workers from other countries for advanced and specialized training and research.

Plan: 7

Preventive Cardiology Department

OBJECTIVES

Faisalabad Institute of Cardiology, Faisalabad is fully functional tertiary care institute, providing all services regarding cardiac patients. This program is to teach the undergraduate and postgraduate students and to be made aware public how to prevent from the diseases leading to cardiovascular problem. The objective of awareness to the undergraduate and postgraduate students is to give information of risk factors/ diet etc. The preventive cardiology program is to provide:-

1. Best possible awareness campaign for the people of Faisalabad and adjacent Districts
2. To change the trend for healthy life style and thus influence disease progression.
3. To reduce the No. of rheumatic/congenital heart disease.
4. To decrease the load of ischemic heart disease, hypotension and diabetes mellitus.
5. To provide research facilities in the field of preventive cardiology.
6. To trained the medics and paramedics in this field.
7. To achieve the goal for the healthy and productive nation.

- PC-I has been forwarded to Health Department. All the plans will be accomplish after approval and availability of funds.

SWOT Analysis

Internal

Strength	Weakness
Prime location with good approach	Lacking of medical staff
Latest Electro medical equipment	Short of funding
Only facility in the region	Lack of dedication
Govt. funding	Lack of residence

Training program	

External

Opportunities	**Threats**
Diagnostic	Burn threats for staff
Lab collection center	Increasing influx of patients
Public awareness program	
Continuing Medical Education	
Bio Medical engineering Services	
Philanthropist Trust	

THOSE RESPONSIBLE FOR GOVERNANCE APPROVE THE ORGANIZATION'S BUDGET AND ALLOCATE THE RESOURCES REQUIRED TO MEET THE ORGANIZATION'S MISSION

A budget process refers to the process by which FIC create and approve a budget, which is as follows:

- The Finance Department prepares worksheets to assist the HoD in preparation of departmental budget estimates.
- The Executive Director calls a meeting of the BOM and they present and discuss plans for the following year's projected level of activity.
- The BOM can work with the Finance Department, or work alone to prepare an estimate for their departments for the coming year.
- The completed budgets are presented by the director finance to their Executive Officers for review and approval.
- Justification of the budget request may be required in writing. In most cases, the deputy director finance (DDF) talks with their administrative officers about budget requirements. Adjustments to the budget submission may be required as a result of this phase in the process.

DDF should develop procedures to efficiently manage resources and ensure that operations are carried out smoothly and accurately. Policies must not conflict with the rules laid by respective authorities. He should work towards:

- Creating good administrative procedures
- Making funds available for operation (implementing service plans)
- Monitoring the use of funds and managing the real revenue, expenditure, assets and liabilities (a cash-modified basis of the Accounting System as per prescribed Accounting Policies and Procedures)
- Expenses incurred are authorized and are in line with the budget and the service plan.
- Following the regulations that guide spending, revenue collection and safeguarding.
- There is proper reporting on revenue and expenditure.

- There are good internal controls and fraud prevention.

Key Management Information:

The deputy director Finance should always keep track of the key information which forms a basis for the preparation of financial statements and efficient operations of the FIC.

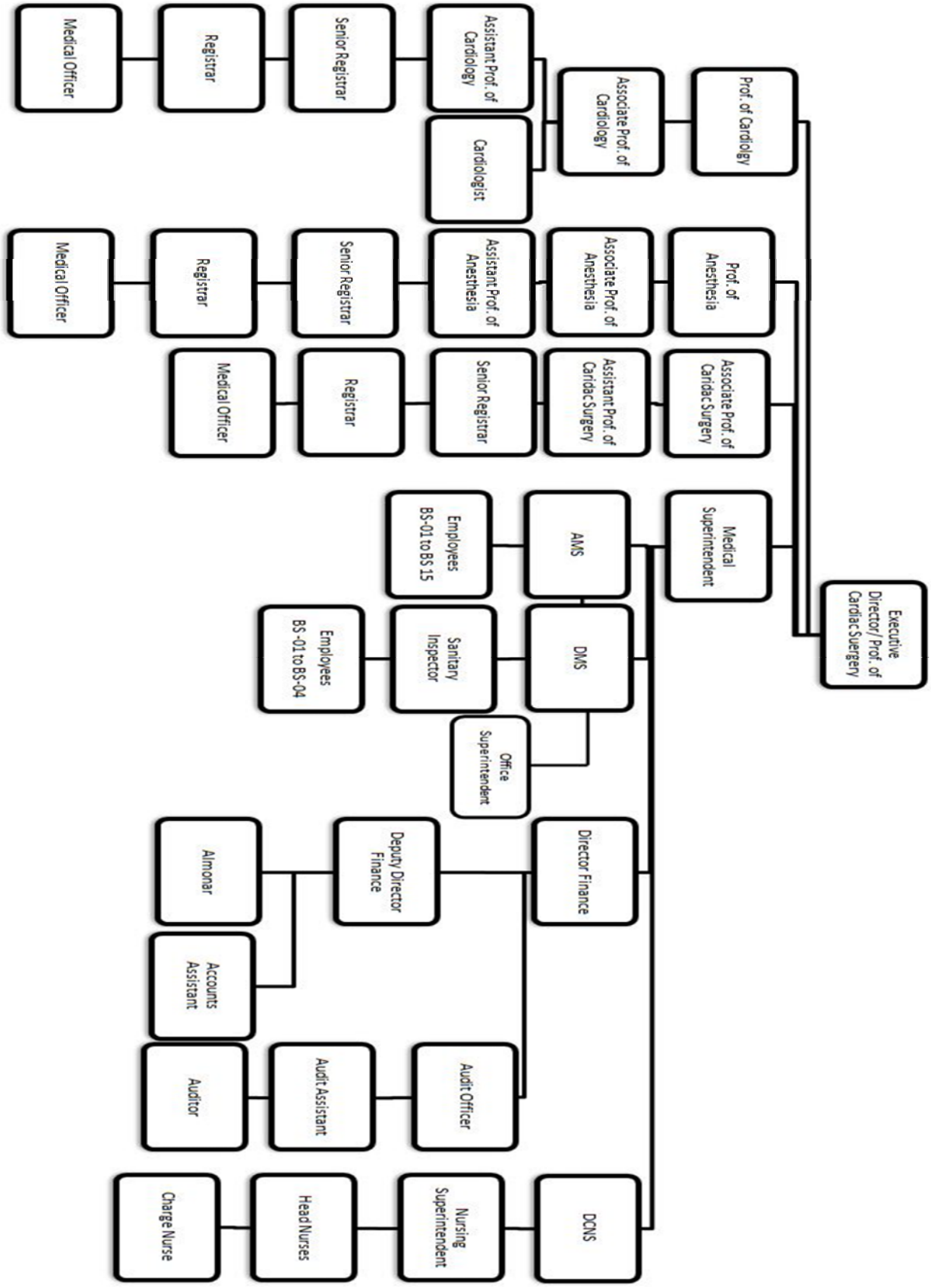
THOSE RESPONSIBLE FOR GOVERNANCE MONITOR AND MEASURE THE PERFORMANCE OF THE ORGANIZATION AGAINST THE STATED MISSION

Internal Monitoring and Evaluation

The FIC establishment monitors and implement of its plan and report to the BOM. As part of its monitoring responsibility, the FIC establishment prepares quarterly reports to identify the progress in terms of implementation.

The FIC is also prepared an annual report, (during the first quarter of the following year) which compares progress on planned objectives, constraints experienced during the year and recommendations on the way forward.

THOSE RESPONSIBLE FOR GOVERNANCE ESTABLISH THE ORGANIZATION'S ORGANOGRAM



THOSE RESPONSIBLE FOR GOVERNANCE APPOINT THE SENIOR LEADERS IN THE ORGANIZATION

The BOM Committee of FIC obeys the following policy:

i. A non-official member shall, unless otherwise directed by the Government, hold office for a period of three years and shall be eligible for re-appointment.

ii. The MS shall also act as Secretary of the Management Committee.

iii. All decisions of the BoM Committee shall be taken by a majority of votes; provided that, in case of equality of votes, the Chairman of the Board/Committee shall have a second or casting vote.

iv. No Act or proceeding of the BoM Committee shall be invalid merely on the ground of existence of any vacancy or defect in the constitution thereof.

v. It shall be lawful for the BoM Committee to start functioning as soon as it is notified.

vi. The BoM Committee shall appoint senior leaders in the FIC.

THOSE RESPONSIBLE FOR GOVERNANCE SUPPORT RESEARCH ACTIVITIES AND QUALITY IMPROVEMENT PLANS

Research and Quality Improvement at FIC

Research in Cardiac healthcare is a process of gathering information, gaining knowledge about a condition, disease or a medicine etc. for the purpose of initiating, modifying or terminating a particular treatment of a disease for continually raising the standards of cardiac healthcare.

All research including the protocols must be formally approved by the senior management of the FIC.

Research reports are submitted to the governing body that documents the results of the CQI program or research activities.

THE ORGANIZATION COMPLIES WITH THE LAID DOWN AND APPLICABLE LEGISLATIONS AND REGULATIONS

Compliance to Legislation and Regulations in FIC

FIC is abide by the relevant laws of the State/Province to ensure safety and comfort of patients and the care providers like waste management, infection control and building codes etc.

It is the responsibility of the senior management to be familiar with these laws/rules/regulations and ensure the same by other relevant staff for implementation

THOSE RESPONSIBLE FOR GOVERNANCE ADDRESS THE ORGANIZATION'S SOCIAL AND COMMUNITY RESPONSIBILITIES

Policy for the Social and Community Responsibilities

The FIC should be sensitive to the needs of the community it serves and should have evaluated prevalence of health related problems in its catchment area. These evaluations/surveys/statistical analyses may be pertaining to incidence of some diseases like heart attack. Then there can be training events, educational talks or free medical camps for checkups and advice, arranged for the community either at the FIC premises or in an outreach setting. A tertiary level FIC is expected to have conducted and documented at least six such activities in a year.

A SUITABLY QUALIFIED AND EXPERIENCED INDIVIDUAL HEADS THE ORGANIZATION

THE DESIGNATED INDIVIDUAL HAS REQUISITE AND APPROPRIATE ADMINISTRATIVE QUALIFICATIONS AND EXPERIENCE

Qualification and Experience of Hospital Administrators

MS/Administrator/In-charge of the FIC should be a medical graduate, having a postgraduate qualification in hospital management.

Duties/Responsibilities

Administrative and Management:

1. Responsible for the overall delivery of preventive, promotive, curative and rehabilitative healthcare from the FIC.
2. Ensures medical cover in emergency arising due to floods, heavy rains, epidemics or disaster situation like major accidents or earthquakes.
3. Ensures medical cover during international matches, games, national festivals, arrival of VIPs or any other such requirement.
4. Coordinates in the development of strategic vision/direction/plan.
5. Responsible for preparation and implementation of Hospital Annual Operational Plan (HAOP).
6. Acts as member of District Health Management Team (DHMT), if established, and participates in its quarterly meetings.
7. Ensures the implementation of decisions of the DHMT.
8. Sanctions leave of the officers/officials of the FIC as per delegation/rules.
9. Constitutes a Planning Committee to make and execute a Facility Health Plan to improve healthcare system and its delivery.
10. Ensures regular maintenance/prompt repair of all the equipment of the FIC for keeping in working order at all times.
11. Responsible for redressing the grievances of the public by taking quick and appropriate decisions.
12. Delegate's administrative power to his subordinate administrative staff for the smooth functioning of the hospital.
13. Prepares Disaster Plan and ensure its implementation through regular drills and revisions.

14. Responsible for developing and smooth functioning of the health management systems through proper and timely collection of statistics from all source points.
15. Reviews the FIC services quarterly to know about defects and lapses and takes measures to improve these.
16. Holds regular meetings with the clinical staff in order to keep in touch with their problems if any, and to have an appraisal of the services provided by them.
17. Assigns duties to his subordinate administrative staff.
18. Signs all the LP medicines of admitted and outdoor patients.
19. Leads the Waste Disposal Committee to take care of the disposal of human tissues, other wastes etc. according to SOPs.
20. Leads the Infection Control Committee to ensure actions according to SOPs.
21. Adapts broader Policies/Protocols/SOPs to meet local requirements/conditions to make those specific and ensures that every employee is conversant with these for ease of functionality and conformance.
22. Recruitment, promotion and transfer of staff within the hospital as authorized by the Government.
23. Submits the disciplinary cases to the competent authority.
24. Conduct at least one round of the FIC every day in order to meet the patients to ensure their satisfaction, find out their problems, see history sheets at random to check the standard of written clinical notes of doctors and compliance of nurses, provision of medical facilities, treatment accordingly and general cleanliness of hospital to ensure conformance to standards.
25. Checks that the expense book/Empty Vial register is being maintained.
26. Conducts at least one surprised round of FIC departments and support services in a week in order to ensure that they are doing their jobs as prescribed and are supporting the clinical services to be delivered in conformance to the standards.
27. Identifies the deficiencies in performance of the staff during visits and suggests corrective measures in consultation with relevant staff.
28. Reviews the Faisalabad Institute of Cardiology MIS reports and provides feedback to the concerned as appropriate.
29. Issues JDs to each employee under their signatures and maintains that record.
30. Initiates the Objective Performance Evaluation Reports of the officers/officials of FIC.
31. Countersigns the Objective Performance Evaluation Reports of the officers/officials initiated by the offices under his direct control.
32. Ensures submission of MIS reports of FIC as per laid down format and details.
33. Ensures that procedures and protocols as amended from time to time and as given in the MSDS, SOPs and SMPs and are complied with.

Trainings:

1. Ensures appropriate trainings (orientation as well as refresher) of concerned personnel to enable them to perform duties effectively as laid down in the objectives of the healthcare deliveries.
2. Receives training as and when organized by the higher authority

Financial:

- Ensures the submission of annual budget proposal from FIC.

- Ensures the utilization of the budget in accordance with the Financial Rules.
- Heads Condemnation and Auction Committees as per rules.
- Ensures that the records of all types of receipts is properly maintained and deposited daily.
- Makes sure the contractors of canteen, cycle stand, telephone booths deposit the required amount of contract money timely with the cashiers.

Facility Management and Safety (FMS)

THE ORGANIZATION IS AWARE OF AND COMPLIES WITH THE RELEVANT RULES AND REGULATIONS, LAWS AND BY-LAWS AND FACILITY INSPECTION REQUIREMENTS UNDER THE RELEVANT BUILDING AND ASSOCIATED CODES APPLICABLE TO HOSPITALS

THE MANAGEMENT IS CONVERSANT WITH THE RELEVANT LAWS AND REGULATIONS AND KNOWS THEIR APPLICABILITY TO THE ORGANIZATION.

The basic functions of FIC are as follows.

i. Emergency services
ii. Outpatient-related functions
iii. Indoor facilities
iv. Diagnostic and treatment activities
v. Research, training and teaching
vi. Pharmacy services
vii. Administration/Hospital management
viii. Support and supply services
ix. Residential accommodation for essential staff
x. Catering services
xi. Parking areas
xii. Horticulture

THE MANAGEMENT REGULARLY UPDATES ANY AMENDMENTS IN THE PREVAILING LAWS OF THE LAND.

The management of the FIC is responsible to keep itself/its staff abreast with any amendment/updates in the relevant laws and codes of the land and ensure their implementation during the construction/establishment of the facility in the prescribed time frame.
The FIC management is responsible for planning and budgeting for the necessary upgrading or replacement as identified by monitoring data, or to meet applicable requirements, and then to show progress towards meeting the plans.

THE MANAGEMENT ENSURES IMPLEMENTATION OF THESE REQUIREMENTS.

Risk Management

All aspects of the risk management program including inter alia the following features are being managed effectively in a consistent and continuous manner:

i. Planning all aspects of the program.
ii. Implementing the program.
iii. Educating the staff.
iv. Testing and monitoring the program.
v. Periodical review and revision.
vi. Annual reports to the governing body/Board on the effectiveness of the program.
vii. Providing consistent and continuous management support.

THERE IS A MECHANISM TO REGULARLY UPDATE LICENSES/REGISTRATIONS/ CERTIFICATIONS

Renewal of Licenses and Certifications

The FIC has maintained a Log Book Sheet for Renewals of licenses/certifications.

A designated official/staff member is responsible for licenses/registrations/certifications which are required under the laws and regulations applicable to the FIC.
This official identifies the appropriate personnel in the FIC who can be made responsible to implement the respective laws and regulations ensuring the timely renewal of the pertinent licenses/certificates.

THE ORGANIZATION HAS A PROGRAM FOR CLINICAL AND SUPPORT SERVICE EQUIPMENT MANAGEMENT

THE ORGANIZATION PLANS FOR EQUIPMENT IN ACCORDANCE WITH ITS SERVICES AND STRATEGIC PLAN

Organization plans regarding equipment purchasing and maintenance

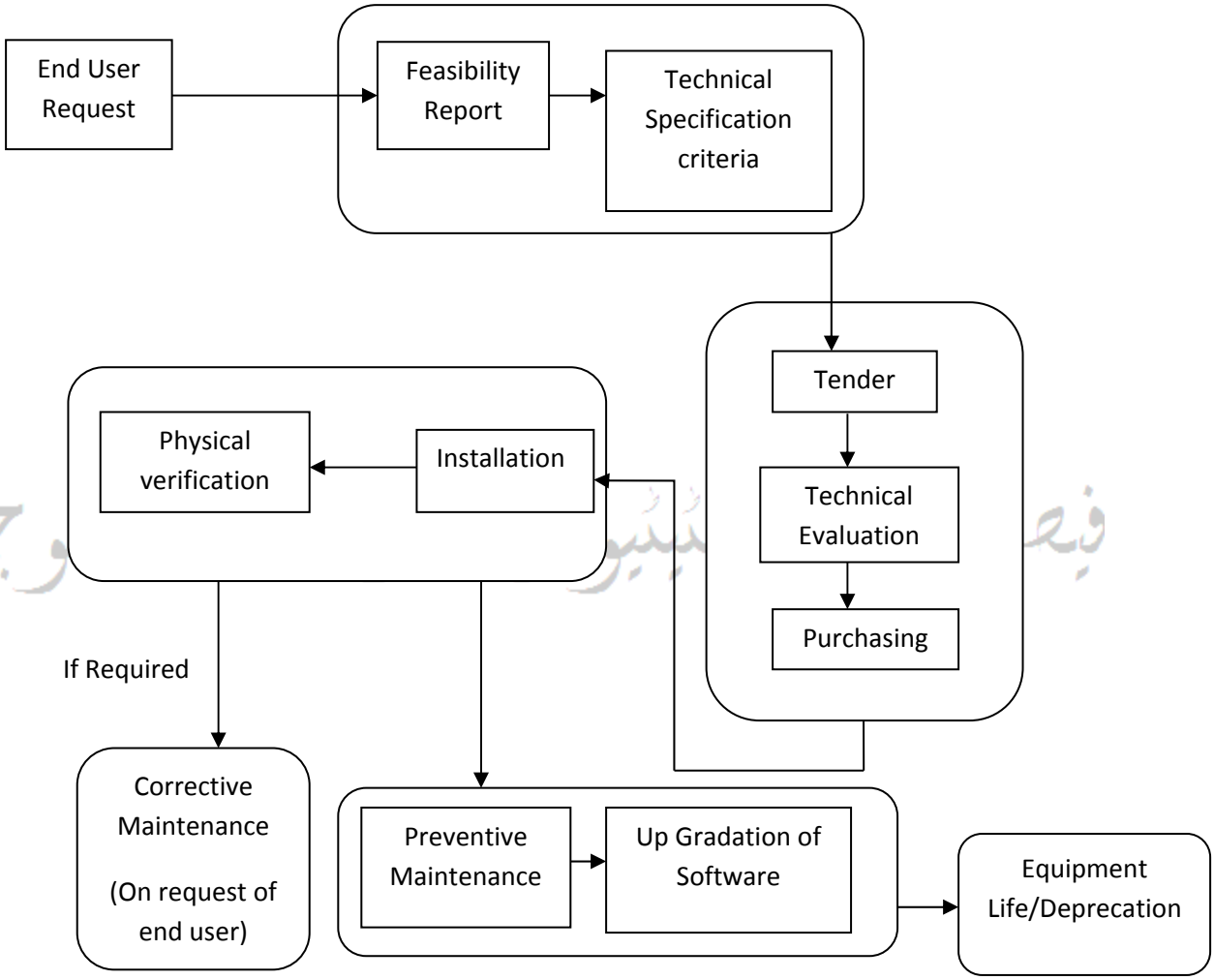


Figure 1: Complete Flow diagram of Equipment procurement and maintenance

End User Request:-

End users send a request in the form of written application for the purchasing of equipment to the Medical Superintendent office.

Feasibility Report:-

Bio Medical engineering department design its feasibility report for the institute.

Design of Specification criteria:-

In this stage specification of equipment designed by bio medical engineer with the coordination of end user and set a standard for the equipment.

Tender:-

After that (Tender) advertisement given in the daily news paper/PPRA website according to the PPRA rules, it can also be seen on the institute web site on the same day.

Technical Evaluation:-

All bidder files are technically evaluated according to PPRA grading system which was already given to the participants.

Purchasing:-

After technical evaluation supply order generates from purchase department and equipment supplied to the institute by the concern company.

Installation:-

Supplier Company installed the equipment in the department including its all accessories.

Inspection/Physical verification:-

Physical verification committee verified the equipment by checking its originality according to the specification given by bio medical engineering department.

Preventive Maintenance:-

Preventive Maintenance will be done periodically using PM schedule provided by the principal of the equipment.

Up gradation:-

Embedded software of machines (ECG machine, Defibrillator, etc) will be upgrade once in the year. (Bio medical department take care all of it)

Equipment Life/Deprecation:-

Usually the life of equipment is 10 to 15 years but it's very according to the type of equipment.

Standard Operating Procedure (SOP) of Bio Medical Engineering Department

1. **BMSOP1 Employee Health**

- The Institute has keen interest in the health of their Employees. There must be no smoking zones in the institute. (Smoking must be strictly prohibited in the Bio Medical Engineering Department)

2. BMSOP2 Hand washing

- Hand must be washed with soup before and after attending of electro medical equipment.

3. BM SOP3 Glove and Utensil Use

- Gloves must be used when you deal with mercury and bloody equipments.
- Tools must be used with respect to the types of equipments.

4. BM SOP4 Testing Methods

- Periodically testing methods have to apply in all equipments for checking their full functionality.

5. BM SOP5 Employees Eating and Drinking at Work

- Two teams of the department one by one gives back up in the Zohar prayer and break time.
- During break, department should be in working mode.

6. **BM SOP6 Contact with Blood and Infected Machines**

- The gloves and face mask should be used before attending the infected equipments. (while working in different wards of hospital)

7. BMSOP7 Equipment Cleaning and Sanitizing

- All the bio medical equipments which are used in the running department should be proper cleaned and sanitize after its usage.

8. BMSOP8 Machine washing

- Machine body should be washed with chemical observing its standard temperature recommended by its principal.
- The electronic part of machine should be cleaned with pressure air and with the material which is not destructive for the electronic circuit.
- There must be manual cleaning for those parts of machine which cannot clean using above two methods.
- Machine should be sanitize and free of germs after cleaning.

9. BMSOP9 Pest and Rat Control System Against Equipments

- Pest and rats are very detrimental for the equipments. There should be proper safety measurements in the room where the equipment is being used.

10. BMSOP10 Calibration of Equipments

- Calibration of the automated Bio medical equipments should be done periodically according to the principles recommendation.

11. BMSOP11 Facility and Equipment Maintenance

- On request equipment maintenance should be done within short time of period to facilitate the patients.
- If there is a major problem in the equipment it should be done after the approval of higher authority. (after giving back up of that specific equipment)

12. BMSOP12 Cleanliness and Sanitation of Equipments

- Staff should be aware about the cleaning and Sanitation of the equipment after the training lecture given by electro medical department of a specific equipment.

13. BMSOP13 Purchasing and Technical Scrutiny of Bio Medical Equipments

- Technical scrutiny should be done according to the Punjab Procurement Regulatory Authority given evaluation criteria.
- Bio medical equipments should be purchased according to the Government of Punjab (PPRA) rules.

14. BMSOP14 Back up of Bio medical Equipments

- There must be an electric supply backup of all high tech equipments.
- The backup of equipment should be ready in case of emergency.

15. BMSOP15 Employee Training

- There should a one training related to electro medical equipment for all staff members of the Bio medical department.

16. BMSOP16 Self Inspection for Continuous Quality Improvement

- Weekly self inspection must be done for quality assurance by senior engineers of the department.

17. BMSOP17 Record Keeping and Documentation

- There should be a maintenance record of all equipments in dedicated software.
- All equipments records should be present with respect to their departments in the Bio medical department.
- Daily visit and maintenance reports should be signed by the senior engineer of the department.

18. BMSOP18 Working Environment as per International Standard

- There should be cool and energetic working environment always be present in duties hours as per international standard.

19. BMSOP19 Keeping Manuals up to date

- The updated operating and service manuals of all equipments should be present in the department.

20. BMSOP 20 Few Simple Steps of Working Procedure

- Call at Bio Medical Engineering Department
- Write an Application
- Send the equipment at Bio Medical Workshop
- Take a receiving from Bio Medical Workshop member
- After approval of your application a call will generate from Bio Medical Workshop to concern department and you will able to take your equipment with you after giving back issued receiving.

21. BMSOP 21 Up Gradation Methods

- The embedded software of computerized machines must be upgraded before its expiry using principal's guideline

Note: Care taker's have a daily visits to Departments/Wards.

EQUIPMENT IS SELECTED BY A COLLABOURATIVE PROCESS.

Preventive Maintenance and Calibration Schedule of Equipment

Equipments Name	PM/Calibration Schedule
Cardiac monitors	After Six Months
Syringe Pumps	After Six Months
Defibrillator	After Six Months
ECG Machine	After Six Months
Nebulizer (Ultra Sonic)	After Six Months
Blood Warmer	After Six Months
Central Monitoring System	After Six Months
Mobile Suction Machine	After Six Months
Electronic Beds	After Six Months
Echo Machine vivid - 7	After Six Months
Ventures	After Six Months
E.T.T Machine	After Six Months
Holter Monitoring System	After Six Months
OT Table	After Six Months
Saw machine	After Six Months
Anesthesia machine with ventilator	After Six Months
Heart lung machine	After Six Months

Diathermy machine	After Six Months
Suction machine	After Six Months
X-Ray Machine	After Six Months
Mobile X-Ray Machine	After Six Months
Ultra Sound Color Doppler	After Six Months
X-Ray Film Processor	After Six Months
Memert Owen	After Six Months
Centrifuge Machine	After Six Months
Water Bath	After Six Months
CR -System	After Six Months
MMM Mini Steam Sterilizer	After Six Months
3M ETO Sterilizer	After Six Months
HAWO Sealing Machine	After Six Months
Steel co Washer Disinfector	After Six Months
MMM Dryer	After Six Months
Sonica Ultra Sound Cleaner	After Six Months
HP- DeskJet Sterilizer Printer	After Six Months
R.O Plant	After Six Months
Plasma Freezer	After Six Months
Blood Storage Cabinet	After Six Months
Hypothermia Machine	After Six Months
ICU Ventilator	After Six Months
Itnra Aortic Balloon Pump	After Six Months
Portable Mobile Light	After Six Months
Ultraviolet light	After Six Months
OT Lights	After Six Months
Mobile Dental unit	After Six Months
Gamma Camera Cardio MD-3	After Six Months
Angiography Machines	After Six Months

Compressed Air Station	After Six Months

Equipment Audit:-

There is an equipment audit committee is working in the institute. The committee consists on following members.

- Executive Director FIC, Faisalabad.
- Head of Concern Department
- Bio Medical Engineer
- Nursing Superintendent

QUALIFIED AND TRAINED PERSONNEL OPERATE AND MAINTAIN THE EQUIPMENT.

GUIDE LINE OF BIO MEDICAL ENGINEERING DEPARTMENT

OVERVIEW

Bio medical engineering department is latest and most dynamic department in the hospital. In today's high technology environment with a proliferation of advanced & complex medical equipment, Bio medical department has assumed great significance. The aim of bio medical engineering department is to provide technical expertise & management support to hospital administration, engineering department and the medical staff. The following departments are associated with Bio-medical Engineering department.

- Electrical Department
- Civil Department
- Mechanical Department

FUNCTIONS

The engineering department performs a wide image of functions which may be assigning to various unit of department. It is responsible for the operation of all equipment, machinery and repair specifically, the department performs the following functions.

1. Care Taking of all Bio Medical Equipments on daily basis.
3. Mechanical & Electrical maintenance.
4. Preventive maintenance and Corrective maintenance of bio medical Equipments.

TYPES OF MAINTENANCE WORK

Typically, the hospital maintenance work falls into one of the following classes.
a) Preventive Maintenance
b) Emergency Maintenance

Equipment Checking and tagging
The Bio Medical Engineering department receives the equipment. After checking of its accuracy, an initial calibration procedure and records are initiated, furthermore all the records of equipments are maintained on their prescribed registers and software with respect to their departments for future benefits. Tags and labels are affixed to the equipment after completion of procedure.

SAFETY IN ELECTRIC GOODS

- Prevent dampness near switches, wiring and appliances. Keep hand dry when you handle them.
- Do not use an electrical outlet when a plug does not fit smugly. Get the outlet changed.

- Be sure the equipment is properly grounded. Three-wire “ground” plugs are a good protection.

Bio Medical Engineers are also member of technical and purchase committees and use their expertise for electro medical equipments.

PATIENT CARE

- Prevent patients from falling on bed. It occurs frequently as they attempt to get on or off the bed unaided. Many of them may be feeble, disoriented or under sedation.
- Make infirm patients feel at ease. Make them understand that they need to get assistance.

Provide for patients personal belongings to be kept within their easy reach. Ask them to use nurses call bell to get bedpan or urinal

Qualified and trained staff of Bio Medical Engineering Department

The following staff is taking care of all equipment in the institute.

Sr. No.	Designation	BPS	Strength
1	Bio Medical Engineer	17	1
2	Electronic Equipment Care Taker	17	2
3	Assistant Electronic Equipment Care Taker	11	5
4	Electro Medical Mechanics	11	2

EQUIPMENT IS PERIODICALLY INSPECTED, SERVICED AND CALIBRATED TO ENSURE THEIR PROPER FUNCTION. THERE IS A DOCUMENTED OPERATIONAL AND MAINTENANCE (PREVENTIVE BREAKDOWN AND REPLACEMENT) PLAN.

Schedule of Weekly/Daily Inspection

Daily Visits of A.E.E.C.T with respect to their departments	
Name	**Assigned Departments**
Assistant Electronic Equipment Care Taker -1	Operation Theater + ICU I-II
Assistant Electronic Equipment Care Taker-2	CCUI-II + Cardiac Surgery Ward +Cardiology Ward
Assistant Electronic Equipment Care Taker-3	Emergency ward + Radiology + OPD
Assistant Electronic Equipment Care Taker-4	*Central Sterile Supply Department (CSSD)*
Assistant Electronic Equipment Care Taker-5	Blood Bank +Cath Lab+ Gamma Camera + Laboratory

Weekly Inspection of Senior Engineers		
Sr.	**Department Name**	**Day**

No.		
1.	ICU and CSSD	Monday
2.	CCU and OPD	Tuesday
3.	Angio Department	Wednesday
4.	CSW and CW	Thursday
5.	Operation Theater	Saturday
6.	Emergency Ward	Daily

Equipment History:-

There are dedicated Log register's for each department which maintained the complete history of each equipment pattern shown below.

Cardiac Monitor

Total Strength	Brand Name	Date Of inspection	PM Schedule	Warranty Expired on	Repairing Cost	Approx Running hours	Status
46	Data Scope	17-07-08	10-07-13 Next due 10-01-14	17-07-13	Nil	17520	2 None Functional
50	Omni – II	12-03-10	10-07-13 Next due 10-01-14	12-03-15	Nil	7280	3 None Functional
40	Nihon Kohden	28-04-10	10-07-13 Next due 10-01-14	28-04-15	Nil	10560	All OK

Note: -

- Assistant Electronic Equipment Care Taker's have daily visits in the hospital according to their dedicated departments and available for their services 24/7.

Performa copies of Daily inspection report, Preventive Maintenance, Corrective Maintenance and Installation are attached.

Maintenance Service Report Dated: _____

Department Name		Application No.	
Extension No.		Equipment Code	

Software/Log Register Entry

Page Number in Log Register	
Software Entry Post By	
Entry in Monthly Progress Report	

Approximately Saving amount in Rupees	

Equipment Data

Equipment Name	
Model Number	
Serial Number	
Supplier/ Company	

Service Data

Nature of Service	
Equipment Status	
Service Report	

Designation	Name	Signature
Head/Incharge Nurse		
A. E .E. C. T		
Head OF Bio-Medical Engineering Department		

Bio Medical Engineering Department FIC Faisalabad

Ext: 226, 242

Corrective Maintenance Service Report Dated:_____

Department Name		Application No.	
Extension No.		Equipment Code	

Equipment Data

Equipment Name	
Model Number	
Serial Number	
Supplier/ Company	

Service Data

Nature of Fault	
Equipment Status	
Repairing Report	

Parts Data

Part Name	Part serial Number	Quantity

Designation	Name	Signature
Head/charge Nurse		
A. E .E. C. T		
Head OF Bio-Medical Engineering Department		

Bio Medical Engineering Department FIC Faisalabad

Ext: 226, 242

Installation Report Dated: _____

Department Name		Application No.	
Extension No.		Equipment Code	

Equipment Data

Equipment Name	
Model Number	
Serial Number	
Supplier/ Company	

Installation Data

Nature of Installation	
Equipment Status	
Installation Report	

Designation	Name	Signature
Head/charge Nurse		
A. E .E. C. T		
Head OF Bio-Medical Engineering Department		

Bio Medical Engineering Department FIC Faisalabad

Ext: 226, 242

Daily Inspection Satisfactory Report Dated: _____

Department Name	
Extension No.	

I __xxxxxx___ confirm that all electro medical equipments are fully functional, which are checked by a person from electro medical department. Currently there is no complaint regarding Electro Medical equipments which are present in my department/Ward.

Instead of (if Any) _____

_____

Remarks (if Any) _____

_____

Designation	Name	Signature
End User		
A. E .E. C. T		
Head OF Bio-Medical Engineering Department		

THE ORGANIZATION HAS PLANS FOR FIRE AND NON-FIRE EMERGENCIES WITHIN THE FACILITIES.

THE ORGANIZATION HAS PLANS AND PROVISIONS FOR 1. EARLY DETECTION, 2.CONTAINMENT AND 3.ABATEMENT OF FIRE AND NON-FIRE EMERGENCIES

SOP's FOR FIRE & NON FIRE EMERGANCY

Objective:

- To ensure the safe and effective use of all exits facilities in case of actual fire emergency.
- To acquaint hospital personnal with hospital fire alarm signal with acutal emergency courses of action called for under different fire conditions.
- To achieve an orderly and safe evacuation under proper discipline.
- To prevent panic, confusion, injury and loss of lives in case of actual fire.

FIRE PROTECTION AND CONTROL

1. All employees shall know the location and be properly trained in the operation of all firefighting equipment.
2. Portable fire extinguishers shall be suitable to the conditions and hazards involved. They also will be provided and maintained in good operating condition. Each extinguisher will be serviced at least once a year and tagged and dated to show this.

-Portable fire extinguishers shall be conspicuously located and mounted where they will be readily accessible. Extinguishers weighing 40 pounds or less shall be installed so the top is not more than 5 feet above the floor. Extinguishers weighing more than 40 pounds shall be installed so the top is not more than 3 ½ feet above the floor.

-Fire extinguishers shall not be obstructed or obscured from view.

3. When using a typical extinguisher, follow the "PASS" method. Hold the extinguisher upright and:

-Pull the pin, stand back eight or ten feet.

-Aim at the base of the fire

-Squeeze the handle

-Sweep at the base of the fire with the extinguishing agent

-If you aim high at the flames, you won't put out the fire. Remember, too, that most extinguishers have a very limited operation time, only 8-10 seconds, so you have to act fast and spray correctly at the base of the fire, not at smoke or flames.

4. Gasoline shall never be used as a cleaning agent.
5. An approved safety container shall be used for handling flammable liquids up to five gallons.
6. Post "NO SMOKING" signs in the vicinity of fueling and flammable storage areas.
7. The furnace room shall be kept free of all combustible material and the heating system periodically checked to make sure it is in good operating condition.
8. All electrical installations must follow the National Electrical Code for the class of occupancy that exists.
9. Before quitting for the day, an inspection shall be made of each work area and all equipment for possible fires.
10. In the event of a fire, report the fire first, if possible, then try to extinguish it.
11. The number of the nearest fire department shall be conspicuously posted near the phone in the plant.

12. Rubbish shall only be burned in approved incinerators.

Exits

1. Every building designed for human occupancy shall be provided with exits sufficient to permit the prompt escape of occupants in case of emergency.
2. All passageways to exits must be unobstructed and accessible at all times.
3. Exits shall be marked by readily visible signs reading EXIT with letters not less than 6 inches high.
4. Any door, passage, or stairway which is neither an exit nor a way of exit access, and which is so located as to be likely mistaken for an exit, shall be identified by a sign reading “Not an Exit” or shall be identified by a sign indicating its actual character, such as “To Basement”.
5. Where occupants may be endangered by the blocking of any single exit due to fire, there shall be at least two means of egress removed from each other.

A. **Standard Operating Procedure (SOP)**

Each medical medical superintendent shall establish a fire and emergency Standard Operating Procedure consistent with fire codes and safety regulations. The SOP must address fire prevention, safety, the use of fire protection services, safety equipment, fire drills, and evacuation plans.

B**. Fire Safety Plan**

1. The Department will ensure that each institution has the following:
a. An adequate fire protection service (the medical superintendent shall forward a copy of the institution's fire safety plan to the local fire department);
b. At least weekly inspections of the fire safety equipment, as set out in D below;
c. Inspections by qualified fire inspectors as required by state or local codes;
d. Adequate fire protection equipment throughout the institution;
e. A centralized automatic fire alarm/annunciation system that is certified effective; individual smoke detectors may be inspected by department safety officers;
f. A written fire evacuation plan;
g. Non-combustible receptacles for smoking materials in authorized smoking areas outside State facilities;
h. Non-combustible containers in specified areas solely for the disposal of rags cleaning items used with flammable liquids, and a plan for daily disposal and cleaning of the containers;
i. All evacuation routes clearly marked and posted with exits that are distinctly and permanently identified, clear, and useable;
j. A generator must provide essential lighting, power and communication capability during emergencies, and
k. Training for all personnel in the implementation of emergency plans, facility evacuation, and the use of fire suppression equipment and procedures within their assigned facility.

C. Written Safety Plan

1. Each institution shall establish and maintain a detailed Fire Safety Plan that addresses the following:
2. An institutional fire evacuation plan that includes:
a. Floor plan layout, including the location of fire suppression equipment;
b. Posted evacuation routes and emergency exits;
c. Location and distribution of fire safety plans;
d. A schedule and procedure for fire drills and partial or full evacuation;
g. Security and safety rules governing evacuation; and

h. Posted local emergency telephone numbers;
3. Fire and smoke alarm systems;
4. Inventory, status, and location of fire control equipment;
5. Emergency lighting, power, and communication systems, including on-site emergency generator in the event of power failure;
6. Emergency keys and unlocking devices,
7. Local Fire Department annual review of fire safety and written plans;
8. Inspection schedule for all fire safety equipment by a qualified outside authority;
9. Inspection schedule for all fire safety equipment by institutional personnel;
10. Procedures for testing, operating, and training employees on fire suppression equipment;
11. Flammable material containers and storage;
12. Operation of fire doors;
13. Open burning;
14. Fire Investigations; and post-fire clean-up procedures as it relates to preserving the fire scene and evidence until an investigation is complete; and
15. Schedule review and update of the fire safety plan.

D. Safety Officer

The Medical superintendent shall designate a safety officer that has received training in fire prevention, inspections and control to inspect fire safety and emergency equipment, ensure adequate staff training to include fire drills and the use of iEvac Hoods.

E. Weekly Inspection

The safety officer shall inspect and audit fire safety and emergency equipment weekly for compliance with federal, state and local fire codes. The safety officer shall utilize a checklist provided by the Medical superintendent and return the completed checklist to the Medical superintendent or designee upon completion of the inspection. In conducting the inspection, the safety officer shall, at minimum:

1. Visually observe all fire safety and emergency equipment to ensure compliance with federal, state, and local codes;
2. Check all fire extinguisher and first aid kit placements and their readiness;
3. Check the placement and operational readiness of all alarm systems;
4. Ensure that storage and use areas for flammable substances, comply with applicable requirements;
5. Check exit signs and exit accessibility; ensure trash is collected and stored in a safe manner, for example that it does not block exits or create a fire hazard;
6. Ensure emergency phone numbers are available and posted;
7. Check whether evacuation plans are posted in each area of the institution; and
8. Check emergency generators and sprinkler systems.

F. The safety officer shall immediately notify the Medical superintendent of any major problem revealed in the inspection.

G. The Medical superintendent shall review all inspection reports and arrange for any necessary corrective action.

THE ORGANIZATION HAS A DOCUMENTED SAFE EXIT (EVACUATION) PLAN IN CASE OF FIRE AND NON-FIRE EMERGENCIES.

Duties and responsibilities of different trained persons during emergency

1. DMS on duty will be the supervisor of fire fighting hospital team.
2. Laundry manager, Sanitary Inspector and admin security officer is focal person for fire and non fire emergency in hospital.
3. Any employee who listen the fire alarm/smell smoke will immediately inform the on duty telephone operator or DMS.
4. On duty operator will immediately inform the on duty DMS, Electrician, Plumber, fire Bridgette about the emergency.
5. Trained employee in fire fighting will work in all three shifts according to rotation.

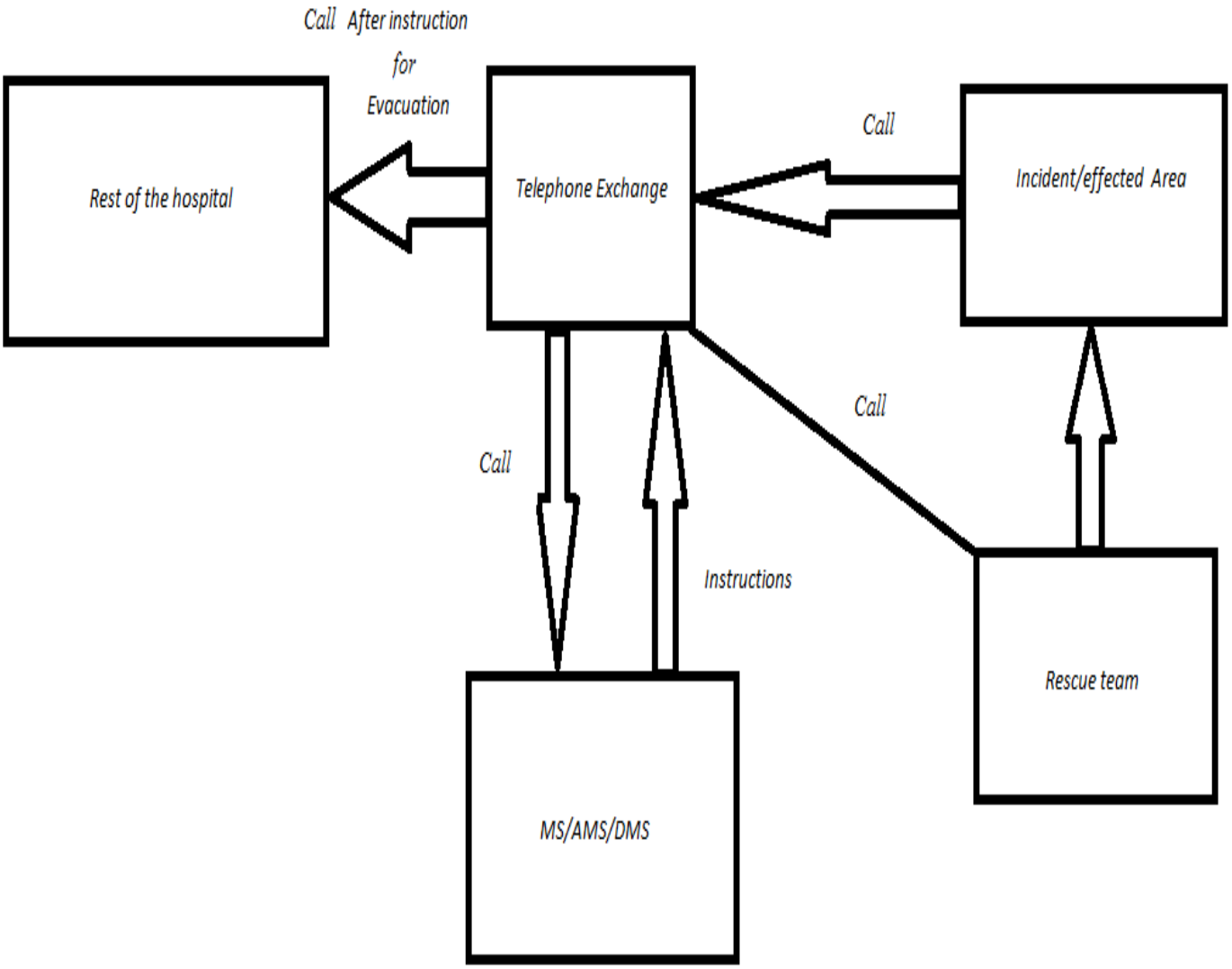


Figure: Complete flow diagram of instruction in case of emergency

MOCK DRILLS ARE HELD AT LEAST ONCE IN A YEAR.

Policy for Mock Drills

The following actions should be taken to comply with the standards;

viii. **Mock drills are conducted on all shifts in all buildings.**

Mock drills are conducted in all locations on each shift. For the Hospital, drills on top and network floors are conducted so that the area of fire origination is evaluated along with the floor above and below. All drills are reviewed for the purpose of identifying deficiencies and for improvement. Unless specifically arranged, all mock drills are unannounced.

ix. **At least 50% of the required drills are unannounced.**

Management maintains a schedule of drills which is designed to cover all areas of the facility. The Fire Safety DMS reviews the schedule and makes adjustments based upon drill performance and real events.

x. **All mock drills are critiqued to identify deficiencies and opportunities for improvement.**

Health and Safety fire safety staff coordinates fire drills, which includes critiques. Fire wardens observe staff reaction and participation. After the drill, the lead fire warden conducts a debriefing with the nurse in-charge and/or the fire warden, advising of any problems or areas for improvements. A report of the drill is maintained identifying what went well and opportunities for improvements and tracks their progress.

xi. **The effectiveness of fire response training according to the fire plan is evaluated at least annually.**

The Health and Safety committee completes an annual evaluation of the Environment of Care. A score is utilized to rate compliance to the main elements of the Standards.

v. **During fire drills, staff knowledge is evaluated including the following:**

a. When and how to sound fire alarms (where such alarms are available).

b. When and how to transmit for offsite fire responders.

c. Containment of smoke and fire.

d. Transfer of patients to areas of refuge.

e. Fire extinguishment.

f. Specific fire response duties.

g. Preparation for building evacuation.

STAFF MEMBERS ARE TRAINED FOR THEIR ROLE IN CASE OF SUCH EMERGENCIES

There is thirty eight staff members are fully trained in FIC for any emergency (disaster).

Policies for trainings

Training in Emergency Situation Handling

The training shall include various classes of fire, information and demonstration on how to use a fire extinguisher and the procedure to be followed in case of fire and non-fire emergencies.

Specific roles and responsibilities of staff, and volunteers at a fire's point of origin

Fire Wardens are trained to respond to the enunciator panel in their area to determine location of alarm. The Fire Warden assigns additional specific duties in and away from the fire point of origin as needed.

Specific roles and responsibilities of staff, and volunteers away from a fire's point of origin

When chimes sound, indicating the alarm source is on another floor, staff is trained to be on standby for further instructions. In departments away from the fire origin, staff should prepare the area in case an evacuation is necessary.

- At a minimum, the following is done:
- Keep patients and visitors calm and informed.
- Close doors in department to limit spread of smoke from a fire.
- Clear corridors of equipment to ensure clear evacuation route.

In off-site facilities, staff, patients, and visitors exit to the exterior of the building, no matter where the fire is located.

Human Resource Management (HRM)

THE STAFF MEMBERS JOINING THE ORGANIZATION ARE ORIENTED TO THE HOSPITAL ENVIRONMENT, THE INSTITUTION, RESPECTIVE DEPARTMENTS AND THEIR INDIVIDUAL JOBS.

EACH STAFF MEMBER, EMPLOYEE, STUDENT AND VOLUNTARY WORKER IS APPROPRIATELY ORIENTED TO THE ORGANIZATION'S MISSION AND GOALS

Policy:-

The aim of the policy is to specify a program to introduce new joiners to the organization, work colleagues, its culture and environment. All new employees will go through an orientation and induction program designed by the HR Department, which should include the following:

a. The vision, mission, values, objectives and policies of the FIC.
b. Overview of the organizational structure, systems and key processes.
c. Brief on job responsibilities and key processes of the relevant department.
d. Description of the FIC's specialty/s and target population.

EACH STAFF MEMBER IS MADE AWARE OF HOSPITAL WIDE POLICIES AND PROCEDURES AS WELL AS RELEVANT DEPARTMENT/UNIT/SERVICE/PROGRAM POLICIES AND PROCEDURES.

Job Specific Orientation

The departmental orientation given to the employees at the first day of joining . The success of FIC depends upon the capacities of its staff.
The FIC induction and orientation processes are provide the information, guidance and support required for staff to undertake their organizational responsibilities and to develop and succeed in their new role. This will be achieved by familiarizing new staff with the FIC's significant policies, systems, procedures, governance structure and the work location, and encouraging commitment to the vision, mission and values of the hospital.

EACH STAFF MEMBER IS MADE AWARE OF HIS/HER RIGHTS AND RESPONSIBILITIES.

JOB DESCRIPTION OF ACADEMIC STAFF

SOP'S FOR OPD CONSULTANTS

All patients requested by the house officer or registrar will be seen by the consultant. During morning round, he will make a diagnosis of the disease, will teach & train the registrar and house officers and implement the training program for patient care. He will keep the discipline and supervise every house officer and registrar.

SOP'S FOR PROFESSOR

1. In-charge of administrative affairs for Ward. He may assign his staff assist members to him to carry out such affairs effectively.

2. Overall supervision of patient care, Academic activities and Services delivered through medical unit in ER/OPD and In-Patient
3. Selection and Recruitment of Postgraduate Trainee, House Officers according to rules devised by Academic council and Recruitment Committee.
4. Overall monitoring of record keeping by medical staff.
5. Research publication: Annually one paper publication in PMDCR Recognized Medical Journal and active participation in process of research project selection, planning supervision and paper writing.
6. Supervision of Clinical Rounds.
7. Participation and Representation in Academic meetings, National and International medical Conferences.
8. Participation in Academic Council Meeting and Meetings called by Hospital administrators.
9. Third on call for Emergency room cover and inpatient management. Second on call consultant may call head of unit II, if he wants his assistance or thinks that matter is serious enough and should be brought in notice of Professor in-charge.
10. In-charge of teaching program for medical students. He may assign duties to Associate and Assistant Professor/SR for teaching and training of medical students.
11. He will make sure that training program is full compliant with recommendations of PMDC (Pakistan Medical and Research Council) and CPSP (College of Physicians and Surgeons Pakistan).

ASSOCIATE PROFESSOR/ASSISTANT PROFESSOR/SENIOR REGISTRAR

1. Administrative affairs for Ward and Hospital as assigned by Head of Department.
2. Supervision of patient care and services deliver through medical unit in ER / OPD and ward.
3. During OPD duty OPD patient care, support & supervision of Medical Residents and House Officers.
4. Monitoring of record keeping by medical staff.
5. Research Publication: Annual one paper publication in PMDC recognized Medical Journal and active participation in process of research project selection, planning supervision and paper writing.
6. Clinical Rounds.
7. Active participation and supervision of training program for resident staff. Participation and representation in Academic meetings. National and International Medical Conference. Second on call for Emergency room cover and ward cover after 2pm on their respective call days.

SOP's FOR MEDICAL OFFICERS/REGISTRARS

2. All admission / shifts to ward should be made by registrars of respective departments with full clinical notes and indications.
3. Duty Registrars / MOs of concerned departments must visit their patients in ITC at least have 6 hourly progress notes at 0800, 1400, 1800 and 2200 hours and additional notes in case of some inter-current problem or when called.
4. All concerned MOs / Registrars of different departments must keep strict check on their House Officers.
5. Registrar / MO of Medical Department is additionally responsible for maintenance of admission / discharge register, Ventilator support register, Handing taking over register of staff nurses, and sign it daily and report any mismanagement of patients.
6. Registrar in OPD will see all the patients seen by the house officer & will give proper and clear advice, regarding diagnosis, management and education of the patient.
7. He will also consult all new patients with consultant on call and follow up cases if necessary.

8. Registrar / MOs will be responsible for the proper supervision & guidance of the house officers in management of patients.
9. All duty MOs / Registrars must kept strict check on working of staff concerning the management / progress / intake / output / medication and general care of their patients, and point out any irregularities and management to ward in-charge.
10. Registrar / MOs must also help house officers in general problems regarding patient's management i.e. arranging of medicines and their dietary advices etc.
11. Registrar / MOs will immediately inform the consultant on call for any mishap and try to resolve the issue.
12. Registrars / MOs must report any type of irregularity / mismanagement in working to in-charge in written, so that necessary action can be taken.
13. No false entries on patients file are allowed.

SOP'S FOR HOUSE OFFICERS

1. Duty timing should be strictly followed.
2. House officers will take the history of the patient and write the summary in SOAP format.
3. During OPD duty, no House officer is allowed to send any patient without consulting the registrar.
4. House officer can also consult the consultant as per requirement.
5. House officer will write everything clear, medicines in capital letter and prescription and will sign the chit & also will write his/her name clearly.
6. Duty house officers from must stay in ward with their patients, all the time and must not leave their post in any case.
7. No relieve / replacement without prior permission form concerned registrars and this permission will be submitted to ward in-charge.
8. All house officers must follow strict aseptic techniques and clothing in ITC.
9. All house officers on call must keep check on the working of para-medical staff and report any irregularity to in-charge concern.
10. All house officers should check patient's management, feeding, bed care, mouth care, availability of medicines, intake / output charts, and other progress charts.
11. Patient's documents should be efficiently maintained.
12. House officers are responsible for proper dispatch of investigations and their collection.
14. House officers are responsible for proper shifting and discharge of patients.
15. A report register will be maintained in which all concerned House Officers will write any irregularity / mismanagement / problems at the end of their duties and get it duly signed by the ward in-charge and any representative of administration.
16. House officers are responsible for maintenance of admission / discharge / ventilator support register.
17. All House officers should clearly write order on progress sheets, including doses, route of administration of different drugs.
18. No false entries on patient file are allowed.
19. No House officer is allowed to discharge/shift patients in and out of department without prior permission of concerned Registrar.

SOP'S FOR CHARGE NURSES

Experience and Training

- Competent in planning and delivering care to patient with a variety of complete care needs
- Able to teach and supervise new nurses and professionals
- Able to take charge of the unit in the absence of head nurse, when necessary.

Knowledge, Skills, Abilities and Traits

- Expressed commitment of nursing and to excellence in patient

- Readiness of new learning and challenges
- Readiness to accept guidance and constructive criticism
- Ability to work as a member of team, and to contribute to ongoing team building
    - Good basic clinical knowledge and level of technical skills commensurate with experience

Duties and Responsibilities

- Report punctually on duty
- Observes the uniform code at all time
- Has extensive theoretical knowledge of her area applies her knowledge
- Throughout nursing process, and acts as a resource person to other staff members
- Exercises a democratic approach to leadership in managing the unit when assigned
- Organizes workload well and completes assignment even under difficult and stressful circumstances
- Evaluate results of interventions and modifies nursing care plans
- Incorporates patient's teaching needs into nursing care plan and utilize other resources if necessary
- Implements an individualized programme of teaching with patient and family
- Teaches the patient about effects of medications and their safe administration
- Charting reflects a comprehensive understanding of the patient's status, efforts are made to improve the quality of charting and to help others to do the same
- It is good delegator in emergencies, evaluates the outcome of the emergencies and shares knowledge with other colleagues
- Has excellent awareness of hospital policies and reinforces same in practice
- Makes every effort to expand her clinical and skills, seeking out available resources
- Based on knowledge of team members, skill and experience allocates assignment so as to provide for their professional growth
- Is supportive and considerate to less experienced nurse when offering criticism, offer positive suggestions for correction and improvement
- Plans assignments and experiences for new nurse which involve application of new protocols and procedures
- Helps and direct new staff member with personal integration as well as with professional responsibilities
- Anticipate student's learning needs, offers suggestions and material for student's experience
- Seeks and welcomes criticism in order to improve performance, uses resources personnel to evaluate results
- Takes a leading role in the development of unit standards. Actively participates in follow up of audit recommendations.
- Demonstrates enthusiasm in updating self by reading new nursing literature and compiling same for the use of the unit
- Attends conferences and workshops even in her own time
- Shares new ideas and information with the rest of the staff or nurse
- Reinforces the unit philosophy and goals when replacing the head nurse
- Identifies resource person or persons
- Demonstrations a positive attitudes towards authority
- Integrates criticism to improve practice
- Interacts well with peers, senior nurse and subordinates
- identifies learning needs and seeks assistance
- Demonstrates familiarity with the concepts of
    - Nursing quality assurance
    - Infection control
    - Nursing policies and procedures
    - Patient confidentiality and privacy

- Demonstrate as “caring” attitude towards patient and family
- Makes efforts to establish positive nurse / patient / family relationship
- Administers medication safely
- Demonstrates beginning skills in nursing process and care planning i.e. attempts to make or to design and update plans of assigned
- Document and signs off all nursing entries
- Performs all unit procedures independently
- Is skilled in given basic nursing care
- Is aware of the components of safe nursing care and exercise due care in delivery of same. Demonstrate basic skills in the use of:
  - Nurses notes
  - Flow chart
  - Incident reports
- Demonstrates commitment to nursing
- Seeks out opportunities for improving clinical knowledge and skills
- Expense of medication carefully

SOPs of Assistant (Statistical & Development)

1) He / She will collect data of in/out patients OPD, Emergency and indoor departments/ wards , treating doctor or services provider, staff nurse, dispenser will maintain the OPD / Emergency registers, fill the abstract form and summary of the patient at the end of the each date and signed the register with date and time. Statistical Assistant will collect data from OPD/ Emergency OPD disease wise, patient wise, age wise, sex wise, new and old patients on daily, monthly and yearly basis.
2) He / She will collect indoor patient’s data/reports. Senior registrar/ registrar/ nursing staff will maintain the in patient record/abstract and prepare daily summary of the patients. In patient discharge register has the following minimum details, serial number, registration number, disease/procedure, name of ward, date of admission, date of discharge, sex, age,etc.
3) He / She will collect data from OT, wards, diagnostic area like (ECG, Pathology, Radiology etc)

   O.T Registers/record will maintain Nursing Staff/Services Provider/treating doctor. Wards register /Record will maintain Nursing staff/Services Provider/ Treating Doctor. ECG registers /Record will maintain ECG staff/Services Provider. Pathology registers /Record will maintain Lab Technician/Services Provider. Radiology registers /Record will maintain Technician/Services Provider. Assistant Statistics & Dev Will collect reports/data form OPD/ Emergency OPD, Inpatients, diagnostic areas investigations, invasive & interventional Procedures etc.

   He / She will collect /compile tabulate data, lists of death, discharge, operations, reports etc.

   Daily bed statement will maintain night supper. Nursing Superintendent will send this report to MRD. Central death report/ register will prepare Head Nurse of concern ward with following minimum details, identification of patient, Registration No. Age, Sex, Address diagnosis/procedure name of ward name of doctor D.O.A, Date of death Name of doctor, who certify death, D.O.A, Date of death and will sent to MRD /statistics Deptt. Assistant Statistics & Dev will compile daily beds statement, and death record.

Assistant (Statistical & Development):

Assistant (Statistical & Development) will perform the following duties:

1) He / She will collect data/reports from OPD/Emergency OPD, Indoor daily, monthly and yearly basis
2) He / She will collect statistics disease, patient, sex, age, category, locality wise from out/in patients.
3) He / She will Prepare reports of MIS, BOM, monthly performance/progress report
4) He / She will collect data of OT, Expiry, and Diagnostic, investigations, invasive and interventional procedures and will point out discrepancies in data/reports if any.
5) He / She will compile/computerized all statistical data/list and represent graphically.
6) He / She will compile daily bed statement
7) He / She will maintain daily expiry statistics.
8) He / She will maintain daily OT list/ statistics.
9) Any other assigned by the authority.

Statistical Officer

1) He / She will tabulate , analysis statistical data and prepare graphical and other statistical reports
2) He / She will facilitate the researchers/PG Trainees regarding data analysis , Statistical methods.
3) He / She will handle the problems/ issues related to statistics and will supervise the record room staff.
4) He / She will prepare statistical reports which will be send to competent authority BOM and as well as to the Government.
5) He / She will intimate about the trend/flow of patients.
6) He / She will calculate statistical indicators like death, birth rate, bed occupancy rate, turn over, length of stay etc and intimate the authority time to time.
7) He / She will apply the statistics of collected data and intimate the authority about the trend of patients and future planning.

Any other assigned by the authority.

SOP'S FOR STAFF NURSES

1. All staff nurses must have key of store and bed sheets.
2. Must wear OT dress (for ITC).
3. Must not leave respective ward and so should not sit at nursing station.
4. Report any non-availability of drugs to concern house officer and not just write N/A on treatment sheet.
5. Must maintain proper intake / output, treatment and other charts.
6. Report register of staff nurses will also be maintained in which they will write about the problems regarding working of students, nurses, ward servants, ward cleaners, availability of medicines and working equipments.
7. Should take over charge at the start of their duty bed to bed and strictly maintain handling / taking.
8. Staff nurses are responsible of feeding, mouth care and general care of patients.
9. Vital sign charts should be maintained on hourly basis.
10. Intake / output chart should be maintained properly and output should be entered twice daily i.e. 6:00 AM and 6:00 PM.
11. Should check the proper working of ward servants, ward cleaners, and report any irregularity on report register.
12. In case of any problem regarding patients should immediately inform doctors on duty.
13. Will draw the samples using full aseptic measure and dispatch on register.
14. Check list provided by doctors should be checked and sign by staff nurses.
15. If anything lost or damaged during dy any staff, she should be responsible for it.
16. Over should be given by students.
17. All staff should know how to operate and interpret cardiac monitor.
18. Should have knowledge about defibrillator.
19. They are also responsible for maintenance and working of all equipments and cleanliness if the ward in their duty hours.
20. Responsible for proper bedding etc.
21. Dispose used syringes / cannulas / IV sets properly.
22. Patient's register will be maintained and should contain all information regarding admission and progress of patient in each shift.

SOP'S FOR WARD SERVANTS

1. Must follow proper timing.
2. Must wear OT dress (for ITC).
3. Must stay in ward.
4. Should not follow any personal orders i.e. to bring tea for staff on duty.
5. Evening and night duty ward servants should clean the ward.
6. They are also responsible for the entrance of attendants at times other than visiting hours.
7. They should help in shifting the patients and preparing the dead bodies.
8. Responsible for non-medical articles i.e. beds, wheel chairs, side tables, stands etc.
9. Report any irregularity to staff nurse.
10. They are not allowed to interfere or help staff nurses in preparation and administration of medicines.
11. They are also responsible for oxygen supply and cleanliness and working of compressor.

SOP'S FOR WARD CLEANERS

1 Must follow strict timings.
2 Wear OT dress (for ITC).
3 Should not leave during their duty hours, in the absence of ward servant must stay at entrance to check entrance of attendants.
4 Responsible for emptying of urine bags after informing staff on duty.
5 Care of bowl i.e. to provide urinals / pans to patients.
6 Clean the ward at least once during their duty hours.
7 Emptying of buckets and dustbins properly before duty finishes.

ALL EMPLOYEES ARE EDUCATED WITH REGARD TO PATIENTS' RIGHTS AND RESPONSIBILITIES.

HUMAN RESOURCE MANAGEMENT

MISSION: The purpose of Human Resource Standard is to ensure that the hospital determines qualification and competency for staff that meets the Institution's mission, patient population and patient care needs. To provide right number of competent staff to meet patient care requirement, Human Resource Establishment (HRE) plan for staffing, orient, educate, and train staff, assess, maintain and improve staff capability and promote self development and learning. There is well organized Human Resource Department in FIC, Faisalabad whose function is not merely the hiring & firing the staff but to develop the human resource and consider it an asset for the Institution for proper care of the patients.

SOPS

ESTABLISHMENT BRANCH

1. Hiring of Staff.
2. Advertisement of the vacant posts.
3. After recruitment verification of documents / incredentials of all recruited employees.
4. Arrangement of training of the staff.
5. Maintenance of personal files, which contains personal information regarding employees qualification, disciplinary background, in service training & education.
6. Page marking.
7. Preparation of Leave Account Register.
8. Preparation of Service Books of non-gazzetted staff.
9. Issuance guidance letters to the staff regarding their duties and responsibilities.
10. Maintenance of ACRs dossier.
11. Put agenda for extension of contract appointment of contract employees BS-01 to BS-16 by Board of Management.
12. Initiate disciplinary action against the employees who are irregular and against the delinquent.
13. Preparation of duty roster of the staff.
14. Issuance of explanation letters on account of absence from Govt. duty of the absentees.
15. The staff members joining the organization are oriented to the hospital environment, the Institution respective departments and their individual jobs.
16. Each staff member is made aware of Hospital wide policies and procedures as well as relevant department / unit / service / programe policies and procedures.

17. Every staff member is made aware of his / her rights and responsibilities.
18. All employees are educated with regard to patient right and responsibilities.
19. Performance appraisal system is being maintained and the employees are made aware of the system of performance appraisal and it is considerable tool for further development.

AN APPRAISAL SYSTEM FOR EVALUATING THE PERFORMANCE OF AN EMPLOYEE EXISTS AS AN INTEGRAL PART OF THE HUMAN RESOURCE MANAGEMENT PROCESS.

A WELL-DOCUMENTED PERFORMANCE APPRAISAL SYSTEM EXISTS IN THE ORGANIZATION.

Policy:

The performance of employees is evaluated through an Annual Confidential Report (ACR) written by the supervisor (reporting officer)/second reporting officer. ACR covers evaluation of the respective employee against the Job Descriptions assigned to the position and covering strength and areas of improvement.

THE EMPLOYEES ARE MADE AWARE OF THE SYSTEM OF PERFORMANCE APPRAISAL AT THE TIME OF INDUCTION.

Policy regarding Orientation of Performance Appraisal

As an integral part of the initial orientation, the employee should be briefed about the performance appraisal system in practice in the FIC. There should be documented evidence (such as the employee's signature on the JD) that confirms that the employee understands about the evaluation.

THE APPRAISAL SYSTEM IS USED AS A TOOL FOR FURTHER DEVELOPMENT.

Policy for Career Development in FIC

There is a appraisal system for career development in FIC because the appraisal system is used as a tool for further development (such as more experience, more training, and a different job assignment).
A performance appraisal is a part of guiding and managing career development. It is the process of obtaining, analyzing, and recording information about the relative worth of an employee to the organization.

PERFORMANCE APPRAISAL IS CARRIED OUT AT PRE-DEFINED INTERVALS AND IS DOCUMENTED.

Policy for Performance Appraisals

The FIC have defined the performance appraisals.
Customarily this is within first 3-4 months (probation period) for new employees and at least annually for ALL other employees.

There is an employee of month which displayed on the notice board in OPD hall of FIC.

THERE IS A DOCUMENTED PERSONNEL RECORD FOR EACH STAFF MEMBER.

PERSONNEL FILES ARE MAINTAINED IN RESPECT OF ALL EMPLOYEES.

The personnel file of each employee is very confidential and access to the file is only allowed after the approval from a competent authority. Access to information about employees is strictly limited to those people in the FIC who need to use it for official purposes. Since unauthorized access to personnel files can result into severe repercussions, any breach in this connection should make the responsible person liable to severe penalties. It should be ensured that personnel files (hard and soft copies) are stored in a secure physical location and are not left unattended even during working hours. When asked by the people outside the organization to provide "verification" of certain employment information about the employee/s of the FIC, it should be ensured that only the information which has been authorized by the employee/s is released.

The Office superintendent tells the employee that the policy is designed for his/her protection.

THE PERSONNEL FILES CONTAIN PERSONAL INFORMATION REGARDING THE EMPLOYEE'S QUALIFICATION, DISCIPLINARY BACKGROUND AND HEALTH STATUS.

The Personnel Files of employees are contain Personal Information regarding their

1. Qualification
2. Disciplinary Background
3. Health Status

ALL RECORDS OF IN-SERVICE TRAINING AND EDUCATION ARE CONTAINED IN THE PERSONNEL FILES.

The HR Department is responsible for maintaining the following documents in the personnel file of each employee of the FIC;

1. Curriculum Vitae
2. Photograph (two, blue background, passport size)
3. CNIC copy
4. Copies of documents pertaining to all academic and professional qualifications
5. Copies of trainings/certifications
6. Salary slip/certificate (previous employer)
7. Experience certificate
8. Offer letter
9. Contract copy and JD
10. Joining report
11. Reference form/background check
12. Medical/personal information form
13. Information for employee/business card
14. Leave forms (if any)

15. Notice (if any)
16. Performance Evaluation Form
17. In-service trainings
18. Salary Increment/Promotion
19. Resignation/termination letter (whichever is received in the HRD)
20. Exit interview form (whenever employee leaves office)

PERSONAL FILES CONTAIN RESULTS OF ALL EMPLOYEE EVALUATIONS.

Policy regarding Evaluation Records

This standard relates to both the periodic appraisal and to any "Ad Hoc" evaluation (such as their involvement in an adverse event).

THERE IS A PROCESS FOR COLLECTING, VERIFYING AND EVALUATING THE CREDENTIALS (EDUCATION, REGISTRATION, TRAINING AND EXPERIENCE) OF MEDICAL PROFESSIONALS INCLUDING PHYSICIANS, NURSES, PHARMACISTS AND OTHERS PERMITTED TO PROVIDE PATIENT CARE WITHOUT SUPERVISION.

ONLY MEDICAL PROFESSIONALS PERMITTED BY LAW, REGULATION AND THE HOSPITAL ARE TO PROVIDE PATIENT CARE WITHOUT SUPERVISION.

Policy:

The FIC should have verified the documents with the primary source such as the college/university/authority or the training organization, as the case may be, as follows;

xii. Current licensure/certification or registration is verified with the primary source at the time of hiring.

xiii. Primary source verification will be obtained through a secure electronic communication. If a licensing board/agency/authority cannot provide this type of verification, a letter in that respect must be obtained from it.

xiv. In the event that an employee is hired against a position that requires license, certification or registration, and the same has been revoked, suspended or rendered invalid, the FIC may terminate the concerned employee on these grounds.

xv. Practitioners should have current/valid registration with the respective professional council or body e.g. PMDC for doctors, Pharmacy Council for pharmacists, PNC for nurses and Punjab Medical Faculty for paramedics.

xvi. It is the employee's responsibility to provide proof of license, certification and/or registration, and to notify HR immediately of any change in the status of the license, certification, and/or registration.

THE 1.EDUCATION, 2.REGISTRATION, 3.TRAINING AND 4. EXPERIENCE OF THE IDENTIFIED HEALTH PROFESSIONALS IS DOCUMENTED AND UPDATED PERIODICALL

Policy for Periodical Updating of Credentials

The HR Department should update the file at least once in a year or more frequently if required.

Employee should intimate the HR Department about any change in the credentials immediately/soon after its occurrence.

The HR Department shall maintain/place copies of credentials of all employees of the FIC in their respective personal files which shall include at least;

a. Educational Degrees/Diplomas, both Undergraduate and Postgraduate.

b. Registration with Registering/Licensing Body.

c. Pre-Service and In-Service Trainings.

d. Related Experience; Local or Foreign.

Information Management Systems (IMS)

THE ORGANIZATION HAS A COMPLETE AND ACCURATE MEDICAL RECORD FOR EVERY PATIENT

Registrar / senior Registrar of the ward will issue the duplicate discharge slip, one copy handed over the patient / guardian (blood relation) of the patient and other will place in inpatient medical record file. Record keeper will ensure that discharge slip is present in medical record file. If Medical record of discharged / expired patients is required to the patient / guardian of the patient he will apply to the Medical Superintended for discharge / expiry record, after approval / permission of the competent authority(MS) copy of the record will provide medical record department to the patient / guardian of the patient

Discharge files contain the following minimum details

I. Patient identification
II. Registration Number
III. Date of admission
IV. Date of discharge
V. Age
VI. Diagnosis/procedure
VII. Investigations
VIII. Daily notes and any other forms in chronological order.

At the time of receiving files record keeper signed the discharge register with date and time.

Standard Operating Procedures

The standard operating procedures are being formulated in compliance with the following indicators provided by Punjab Health Care Commission

1. Every Medical Record HAS A UNIQUE IDENTIFIER
2. ORGANIZATION POLICY IDENTIFIES THOSE AUTHORIZED TO MAKE ENTRIES IN THE SYSTEM
3. EVERY MEDICAL RECORD ENTRY IS DATED AND TIMED
4. IDENTIFICATION OF AUTHOR OF DATA /RECORD ENTRIES
5. THE RECORD PROCIDES AND UPTODATE AND CHRONLOGICAL ACCOUNT OF PATIENT CARE

THE MEDICAL RECORD REFLECTS CONTINUITY OF CARE

THE MEDICAL RECORD CONTAINS INFORMATION REGARDING REASONS FOR ADMISSION, DIAGNOSIS AND PLAN OF CARE

Registration of a Patient

Each Patient must be assigned a computer generated Unique Registration No on his/her first visit in the hospital. All the documents (visit slips, Pathology reports ,diagnostic tests reports etc) of a patient must be linked with the assigned registration Number. The format of the registration may be 8 digits (YY-#####) first two digits depicts the year and last five digits as unique

number of that year. The following attributes of a patient must be entered at the time of registration..

- Patient Full Name
- Gender
- DOB
- CNIC
- Father Name
- Husband Name
- Marital Status
- Location

Change in Patient Basic Data

After posting of the data at reception desk the patient registration attributes can not be changed by the operator. If any changes required that must be done after the approval of a competent authority and system must log any changes made to patient registration data.

Socio –Economic Status

The socio- economic status must be updated by the competent officer in system by his own user and any change in the category not allowed prior to approval of competent authority. System must log any changes made to patient Category. For entitled Patients the following data must also be saved in system

- Name and CNIC of Govt. Employee
- Department of govt. Employee
- Designation and pay scale
- The Relation with the Patient

OPERATIVE AND OTHER PROCEDURES PERFORMED ARE INCORPORATED IN THE MEDICAL RECORD

Appointment of Diagnostic Procedure

The system must have a mechanism to manage the patient list (as per prevailing policies) of different diagnostic centers. The appointment must be given to patients on first come first server basis. However for paying and g-user patients there should be space to adjust them early. The person who is feeding appointment in computer must verify the referring doctor whether he is authorized to order such test. The feeding operator must keep referral slip and mention carefully the patient information and the advice of the doctor in the system. The referral slip must have two portions on should be kept by the feeding operator and on should be attached with the computer generated appointment slip. (The referral slip format is attached herewith). After generation of appointment slip that record can not be changed without the approval of competent authority.

Reporting in Pathology Lab

The pathology lab reports must be computer generated .

Reporting of different Diagnostic Procedures

All the diagnostic test reports must be computer generated. The system should be designed in such a way that all the necessary parameters of a test result must be saved in system and accessible online for further actions and research purpose. The referring physician, reason for Procedure, Procedure operators Name, Reporter name etc must also be saved. Once a report is posted that should be locked for any changes.

WHEN A PATIENT IS TRANSFERRED TO ANOTHER HOSPITAL, THE MEDICAL RECORD CONTAINS THE DATE OF TRANSFER, THE REASON FOR THE TRANSFER AND THE NAME OF THE RECEIVING HOSPITAL

Discharge/Transfer Notes

Date and time of discharge, Discharge by, Final Diagnosis, Treatment Summary, medication advised on discharge must be recorded

If the patient has been transferred at his/her own request, a note to that effect may be added in the patient's record.

Issuance of medical record file:

I. Record keeper will issue medical record file on the medical record slip which is duly filled by the head nurse / staff nurse of the concerned ward on the orders of treating doctor.
II. DMS (OPD) will signed the medical record slip, record keeper will be ensured that medical record slip is complete in all aspects then he/she will enter in out file record register with date and time, after this he/she will issue the medical record file to the concerned ward.

If any file is not retrieved/ received in medical record department or need to issue duplicate file. The patient / guardian of the patient will sent written request to the medical superintendent/AMS, after approval of the DMS (OPD)/SO duplicate file will be issued.

THE MEDICAL RECORD CONTAINS A COPY OF THE DISCHARGE NOTE DULY SIGNED BY APPROPRIATE AND QUALIFIED PERSONNEL

In patient medical files record:

Ward sisters/Head nurses will be responsible to sent in patient medical discharge/Expiry files in medical record department within 72 hours or as soon as possible, after discharge / death of the patients

Record Keeper will receive medical record discharge/expiry files and will ensure that medical record files are completed promptly and correctly.

Discharge Summary Record

A discharge summary is a summary of the patient's stay in the FIC written by the attending doctor. The summary contained following details:

i. Patient identification.
ii. Reason for admission.
iii. Examinations and findings.

iv. Treatment while in FIC.

v. Proposed follow up.

vi. Medications.

vii. Diet and instructions to maintain health status

IN THE CASE OF DEATH, THE MEDICAL RECORD CONTAINS A COPY OF THE DEATH CERTIFICATE INDICATING THE CAUSE, DATE AND TIME OF DEATH

In case of death, details of circumstances leading to the death of patients like primary and secondary cause of death are being mentioned. The death certificate is signed and stamped by registrar and dead body handed over to blood relations like father, mother, spouse etc.

Policy:

On the death of the patient, the medical record including ALL forms relating to the admission plus any previous records should be sent to the Medical Record Department as soon as possible or within 72 hours.
All deaths occurring in FIC, either inpatient or outpatient must be documented in the Medical Record Department

WHENEVER A CLINICAL AUTOPSY IS CARRIED OUT, THE MEDICAL RECORD CONTAINS A COPY OF THE REPORT OF THE SAME

Policy:

Clinical autopsies serve two major purposes. They are performed to gain more insight into pathological processes and determine what factors contributed to a patient's death. Autopsies are also performed to ensure the standard of care at FIC. Autopsies can yield insight into how patient deaths can be prevented in the future.

CARE PROVIDERS HAVE ACCESS TO CURRENT AND PAST MEDICAL RECORDS

Organizational chart

1. Statistical Officer
2. Assistant (Statistical & Development)
3. Record Keeper
4. File Searchers

Duties of the Staff, working in Statistical / Medical Record Department

Record Keeper:
Record Keeper will perform the following duties

1. He / She will maintain the record of in /out files in register/computerized the record of in/out files of wards, deaths, surgeries and discharge files record accordingly.
2. He / She will maintain the record register as serial number, name, Registration Number, Diagnosis, date of Admission, date of discharge, name of ward, age, services.

3. He / She will maintain the expiry record as serial number, name, Registration Number, age Diagnosis, date of Admission, date of death, name of ward, time of death, name of doctor who certified the death and name of consultant.
4. He / She will receive in patient medical files and will ensure that all files are complete and will keep record in chronological order.
5. He / She will keep the medical record in proper shelves / racks / places in chronological order which will issue on Medical Record slip.
6. He / She will maintain the out files register / computerized out files medical record with date and time.
7. He / She will receive in patient medical discharge/ Expiry files and will receive the files with date and time ,if some files are missing He / She will clearly mentioned in the ward discharge/expiry register at the time of receiving.
8. No file will issue without medical record slip duly signed by staff nurse/Head Nurse/DMS (OPD).
9. He / She will identify the medical record slip.
10. He / She will signed the out file register with date and time.
    Any other duty signed by the authority.
    File Searcher:
    1. He / She will keep file in proper shelves / racks in chronological order.
    2. He / She will search out files from racks /shelves

He / She will also enter out files in the out fileregisters as serial number, registration number, name of patient, name of guardian, name of head nurse, name of ward, date of out file, on request/on medical slip, time and signature of the file searcher

THE ORGANIZATION REGULARLY CARRIES OUT REVIEW OF MEDICAL RECORDS

THE MEDICAL RECORDS ARE REVIEWED PERIODICALLY

Policy for Periodical Review of Medical Record

FIC determines the content and format of the patient clinical record and has a process to assess the content and completeness of records. This process is a part of the FIC performance improvement activities and is carried out regularly. Patient clinical record review is based on a sample representing the practitioners providing care and the types of care provided. The review process is conducted by the medical staff, nursing staff, and other relevant clinical professionals who are authorized to make entries in the patient record. The review focuses on the timeliness, completeness, legibility, and so forth of the record and clinical information.

The FIC clinical record review process includes records of patients currently receiving care as well as records of the patients who have been discharged or died in the FIC.

THE REVIEW USES A REPRESENTATIVE SAMPLE BASED ON STATISTICAL PRINCIPLES

Sampling Policy for Record Review

i. Medical records shall be randomly selected using methodology decided upon by the reviewer/s.

ii. Sample size determination is a mathematical process to decide how many subjects are needed in order to make a reasonably sound judgment about a hypothesis.
iii. How the sample size is calculated depends on the statistical tests used in the analyses. Generally, results are reported with Confidence Intervals (CIs) around the summary measure. Therefore, the sample size should be based on the desired CI width (usually 95%).
iv. The formulas for sample size calculations are found in most health research statistics books and automated methods of computing them can be found at a number of Web sites. There are no published recommendations for what proportion of the abstracted data should be randomly checked for accuracy of abstraction. Generally 10% data can be used for review of the record in a small hospital, while 5% data is to be used for large hospitals.

THE REVIEW IS CONDUCTED BY IDENTIFIED CARE PROVIDERS AND HEALTH PROFESSIONALS

Policy on Authorization to Review Medical Record

Access to information is based on needs and defined by job title and functions. Review process has following parameters.

i. Who has an access to information
ii. The information to which an individual has access.
iii. The user's obligation to keep information confidential.
iv. The process followed when confidentiality and security are violated.
v. One aspect of maintaining the security of patient information is to determine who is authorized to obtain a patient's clinical record for review.

THE REVIEW FOCUSES ON THE TIMELINESS, LEGIBILITY AND COMPLETENESS OF THE MEDICAL RECORDS

Policy:

It is important for the FIC management to ensure the legibility of records. Illegibility patterns in patient records should be seriously considered during re-credentialing activities for credentialed and professional staffs.

THE REVIEW PROCESS INCLUDES RECORDS OF BOTH ACTIVE (CURRENT) AND DISCHARGED PATIENTS

Policy:

The review of all the documentation pertaining to patients who are currently in the FIC and of those who are discharged is included in this process.
Review of documents of those patients who are admitted should be done strictly based on a SOP clearly dividing the stay in three stages i.e.

i. On admission
ii. During stay

iii. On discharge

THE REVIEW IDENTIFIES, AND DOCUMENTS ANY DEFICIENCIES IN THE RECORD

Policy regarding Identification Deficiencies in Records

The person who makes the documentation error corrects the error. A single line is drawn through the error, with “error” written above or near the lined-through incorrect entry. The corrected information is written as a separate entry and includes date of the entry, signature (or initials), and title.
There are no unexplained cross-outs, erased entries or use of correction fluid. Both the original entry and corrected entry are clearly preserved. Reviewers must determine method(s) used for correction of documentation errors in computerized records on a case to case basis

APPROPRIATE CORRECTIVE AND PREVENTIVE MEASURES UNDERTAKEN ARE DOCUMENTED

Policy:

The following procedure is obeyed for corrective and preventive measures.

i. The person who made the incorrect entry should change it and initial the correction.
ii. The person making the change should cross out the incorrect entry with a single line, enter the correct information, and enter the date and time of the correction.
iii. If the correction requires more than the available space, a supplement should be prepared and a reference to the supplement should be made in the available space by the erroneous entry.
iv. The original entry should not be obliterated or erased and following should be ensured;

a. Never use pencil to write entries.
b. Never use “white-out”.
c. Do not alter past-dated notes, chart notes/progress notes (e.g., by writing alongside or adding to prior entries)

<u>In-Patients Records</u>

The system must manage following indoor record of the patient

Admission

A unique indoor number must be allotted to a patient on his admission in a ward. This indoor number can be used to track the patient‘s indoor record for a particular admission. If one patient is admitted more than one time the system will allot him a separate indoor number against his unique registration no. in this way the one patient’s indoor history can be studied

separately. at the time of admission the patient ‘s following information must be entered in the system.

- Registration No (Unique Medical Record Number)
- Patient Name , F.Name ,Husband Name, Address
- Age/Sex
- Date and Time of Admission
- Attending Doctor
- Provisional diagnosis
- Consultant
- Brief History/Clinical Symptoms

Plan of Care

Progress Notes

Medication, anesthesia, Surgical, and treatment records

Pathology Lab reports

Inventory Control

The following transactions are involved related to inventory items

- Item coding
- Purchase
- Issuance
- Consumption/Expense
- Sale

Item Coding:

There are three main categories of items in FIC

1) Drugs medicine
2) Surgical & disposables
3) General Store Items

Drugs medicine

The drug medicine has the following attributes

1) Generic Name
2) Strength
3) Dosage Form
4) Unit of Measure
5) Brand name
6) Batch#
7) Manufacturing Date
8) Expiry date

The attribute from 5 to 8 are variable against the receipt of stock from vendor.

Surgical & Disposables

The drug medicine has the following attributes

1) Generic Name
2) Specification
3) Unit of Measure
4) Brand name
5) Batch#
6) Manufacturing Date
7) Expiry date

The attribute from 4 to 7 are variable against the receipt of stock from vendor

Purchase:

The system must cadre the following purchase types

- Purchase against Supply Order
- Purchase against application (Single quotation)
- Local Purchase (LP)

Purchase against Supply Order

The supply order is posted in computer by Purchase department. The stores can enter the stock receipt/delivery challan against the posted supply orders. The receipt qty can not exceed the ordered qty. The system must track the both receipt date time and the due date of the supply order.

One invoice/bill can be processed in system against one supply order.

Issuance:

The medicine stock is issued to different departments of hospital for the purpose of consumption. The sub locations also maintain the stock according to attributes given above.

Sale

The medicine stock is also sold to patients from Retail Pharmacy store. The sales rates must be updated by authorized officers in the system and the sales personnel only submit the patient data and qty of medicines to be sold the system automatically generate the invoice.

Consumption/Expense

The wards and OPD pharmacy record date wise & shift wise the consumption of medicine stock against the patient name and registration.

Data Backups

The system data backup must be scheduled and verified on daily basis. The 6 hourly database back schedule is active currently and data is copied to another machine in the server room. The data backup must also be written on a DVD regularly

System Integration

All the modules must be integrated to each other for sharing common information and applying hospital policies. For example a diagnostic center module should not generate the Notes/ Report of a patient until the payment (if any) is properly posted in billing module. The redundancy of data must be avoided on all stages and system must facilitate the users for accurate and controlled data entry in the system.

Integration Flow