STANDARD OPERATING PROCEDURES

ANESTHESIA

PROJECT MANAGEMENT UNIT
Primary & Secondary Healthcare Department

DOCUMENT PREPARATION /APPROVAL AUTHORITIES:

Prepared By:	
Sr #	**Name**
1.	**Dr. Raja Sajjad Asghar** Assistant Medical Director / Head of Quality Assurance Fatima Memorial Hospital Lahore.
2.	**Dr. Ibtsam Ijaz** MBBS, MCPS Project Manager Technical, PMU, P&SHD Govt. of the Punjab
3.	**Dr. Ayesha Parvez** MBBS, MPH, Dip. Community Health & Nutrition, Dip. Healthcare & Hospital Management Senior Project Manager (Healthcare Quality Assurance) PMU, P&SHD.

Reviewed By:	
1.	**Dr. Shafqat Ali** MBBS, DPH (Former Medical Superintendent, Jinnah Hospital, Lahore) Senior Health Consultant ` Project Management Unit, P&SHD, Lahore
2.	**Dr. Zafar Iqbal Khan** Medical Superintendent DHQ Hospital Jhang
3.	**Dr. Najeeb Aslam** Additional Medical Superintendent DHQ Hospital Jhang
4.	**Dr. Ilyas Ch** Chief Anaesthetist DHQ Hospital Jhang
5.	**Dr. Asif** Anaesthetist DHQ Hospital Jhang
6.	**Dr. Saeed Malik** Consultant Surgeon DHQ Hospital Jhang
7.	**Mr. Imran Ali** O.T. Technologist DHQ Hospital Jhang
8.	**Kaleem Javed** Quality Assurance Officer DHQ Hospital Jhang

Design & Formatting	
1.	**Mr. Imran Hameed** Project Management Unit P&SHD Govt. of the Punjab
2.	**Mr. Muhammad Saim Waris** Project Management Unit P&SHD Govt. of the Punjab

Please note that this is a first draft, and may be subject to revisions. All information and content in this Material is provided in good faith by Project Management Unit, Primary & Secondary Healthcare Department and is based on sources believed to be reliable and accurate at the time of development.

PROJECT MANAGEMENT UNIT
31-E/1, Shahra-e-Immam Hussain,
Qaddafi Stadium
Lahore

REVISION SHEET

Page #	Rev. #	Date	Reason of Change	Signature

Table of Contents

1 Abbreviations

ASA	American Society of Anesthesiologist
ASA PS	American Society of Anesthesiologist Physical Status
CAHSP	Council of Allied health sciences pakistan
CHF	Congestive Heart Failure
CNIC	Computerized National Identity Card
COP	Care of Patient
COPD	Chronic Obstructive Pulmonary Disease
CPA	Corrective and Preventive Action
CQI	Continuous Quality Improvement
CSSD	Central Sterile Supply Department
DHQ	District Head Quarter
FAQ	Frequently Asked Questions
FCPS	Fellow of College of physicians and Surgeons
GA	General Anesthesia
HCE	Healthcare Establishment
HCP	Healthcare Professional
HIC	Hospital Infection Control
HOD	Head of Department
HRM	Human Resource Management
ICU	Intensive Care Unit
IMS	Information Management System
IV	Intravenous
JD	Job Description
LMA	Laryngeal Mask Airway
MLC	Medico-Legal Case
MOM	Management of Medication
MR	Medical Registration
MRSA	Methicillin Resistant Staphylococcus Aureus
MS	Medical Superintendent
MSDS	Minimum Service Delivery Standards
NPO	Nothing Per oral
OT	Operation Theatre
OTMC	Operation Theatre Management Committee
P&SHD	Primary and Secondary Healthcare Department
PHC	Punjab Healthcare Commission

PACU	Post Anaesthesia Care Unit
PER	Performance Evaluation Report
PMDC	Pakistan Medical & Dental Council
PMU	Project Management Unit
PRE	Patient Right and Education
SH&MED	Specialized Healthcare and Medical Education Department
SOP	Standard Operating Procedure
TB	Tuberculosis
THQ	Tehsil Head Quarter
WHO	World Health Organization

2 Preface

The Government of Punjab is committed to the improvement of healthcare services and has mandated the Punjab Healthcare Commission (PHC) to prepare and prescribe Minimum Service Delivery Standards (MSDS) for various categories of Healthcare Professionals (HCPs), and to get the same implemented in all public and private Healthcare Establishments (HCEs) in Punjab, for grant of license without which no HCE can function. Primary and Secondary Healthcare Department (P&SHD) has been tasked with improving service delivery in the most extensive public healthcare infrastructure revamping in the province.

The goal of these Standard Operating Procedures (SOPs) is to involve more of the personnel working in District Headquarter (DHQ) and Tehsil Headquarter (THQ) hospitals of the P&SHD who have a special interest or expertise in Anesthesia and have been leaders in Anesthesia Departments at DHQ and THQ hospitals of P&SHD. The Government of Punjab has taken another revolutionary step to bifurcate the responsibilities of Health Department into P&SHD and the Specialized Healthcare and Medical Education Department (SH&MED) for the improvement of healthcare services at all levels. P&SHD is implementing multiple initiatives to improve the healthcare standards and ensuring compliance with the MSDS through a comprehensive revamping program.

MSDS for hospitals, prescribed by PHC and approved by the Government of Punjab, are the minimum set of standards that a hospital must comply with while providing healthcare services. The standards can only be complied with if the HCEs have proper infrastructure, and material and human resources to provide the required care. Accordingly, the Project Management Unit (PMU) is currently reviewing and improving the facilities and human resources at its hospitals for the improvement of the services. The development of Anesthesia Manual is a component of the larger effort in this regard.

Anesthesia Department is a vast specialty in medical science with its sub-specialties ranging from preoperative patient care to critical care, trauma care, pain management and palliative care to ensure the safe and proper administering of anesthesia. This manual provides details regarding its Human Resources (HR) to manage the Department including their qualifications and responsibilities, laying out of the sections, SOPs and the maintenance of the Department. All HCEs are required to establish/revamp their respective Anesthesia Departments accordingly.

3 Scope

The Anesthesia Consultant is the head of the Anesthesia Department. Anesthesia Department operates 24-hours-a-day, 7-days-a-week, and is staffed with Anesthesiologists, Anesthesia Technicians and Anesthesia Technologists. Anesthesia Department provides all anesthesia services to patients undergoing surgery. The services rendered by the Anesthesia Department are consistent with patient needs as determined by operative procedure, medical diagnoses, age, and existing medical conditions. One Anesthesia Technician is assigned in every Operating Theater (OT) to assist the Anesthesiologist in all procedures performed during surgeries which include general surgery, urology, orthopedic cases, gynecology, ENT, dental, neurosurgery, ophthalmology, and dermatology cases.

3.1 SCOPE OF PRACTICE:

1. Physicians qualified in the field of Anesthesiology as per PMDC criteria administer all anesthesia.
2. Anesthesia services staff is expected to be abreast with current development in the theory and practice of the discipline.
3. Anesthetist must be duly licensed to practice by PMDC.
    a) Anesthesia Technicians and Technologist must be duly licensed to practice by CAHSP.
    b) All the staff must have current knowledge on pharmacology of anesthetic drugs.
    c) All Anesthesia Department personnel must be familiar with updated current practices on anesthesia and related issues.
4. Anesthesia Department personnel aim at providing quality care and services to the patients undergoing surgical procedures. It is their primary responsibility to ensure patients' comfort and safety when they undergo surgery.
5. Anesthesia staff performs comprehensive patient assessment and continuous patient monitoring during intra-operative and post-anesthesia care.
6. Anesthesia staff provides assistance to Anesthesiologists performing invasive procedures such as intubation/extubation, insertion of arterial lines, insertion of central catheters, and resuscitations.
7. Anesthesia staff is expected to abide by the established standards of professional practice and standards of patient care as guides to legal and ethical practice.

4 Legal and Ethical Considerations

The complex patient care decisions that the Anesthesiologists are confronted with involve complicated decisions in preoperative evaluation, selection of a particular anesthetic technique, and the issues related to postoperative care. As facilitators of perioperative surgical services, Anesthetists often end up engaged in complex professional and ethical situations. More often than not, the Anesthetists are required to provide healthcare to moribund patients who have been urgently rushed to the OT or are confronted with some other emergency situation in a last-ditch effort to 'do-all-that-we-can-do'. Anesthesiologists often find themselves under pressure to make critical decisions in the name of OT efficiency, cost containment, and job security.

The Anesthesiologists are mindful of the fact that the patient-physician relationship involves complex responsibilities for the physician that include taking care of the patient's rights and making patient care decisions above everything else, taking earnest care of the patient and winning his/her trust. An Anesthesiologist's major legal and ethical considerations towards the patients involve the following:

1. Anesthesiologists must consider, respect and protect the patient's prerogative of making an informed decision about his healthcare option. .
2. Anesthesiologists should involve patients, including the incompetent patients or minors, in the process of Informed Consent as per the patient's rights and involve them in medical decision-making about their health that is appropriate to their developmental capacity and the medical issues involved. Anesthesiologists should refrain from all forms of coercion and should prioritize the decisions of the patients whose competence to make informed decisions about their medical conditions can be established..
3. Anesthetized patients are particularly at risk because their cognitive capacities are suspend ned, and the Anesthesiologists should ensure each patient's physical and psychological safety, the right to confidentiality and privacy, comfort and dignity. Anesthesiologists should promote a working environment in which they scrutinize their own professional and ethical conduct of as well as that of their colleagues' to safeguard the anesthetized patient from any disrespectful or abusive behavior.
4. Anesthesiologists are responsible for keeping the personal information and medical records of their patients confidential. This is particularly significant for Anesthesia Department since the patient is the most vulnerable in this department.
5. Anesthesiologists should provide pre-operative evaluation and care, and should educate the patients or their attendants about the anesthesia techniques available to them. This would facilitate the process of Informed Consent on part of the patient..
6. If responsibility for a patient's care is to be shared with other physicians, the patient should be informed about any such arrangement. Even in classes where the Anesthetist has to direct non-physician anesthesia provider, he/she should ensure that the quality of the care, evaluation and counselling remains of the same standard as it must have been when he/she were conducting the process. .

7. When directing non-physician anesthesia providers or physicians in training in the actual delivery of anesthetics, the Anesthesiologists should personally remain engaged in the process of giving directions and supervision. The most demanding aspects of the training and supervision should be directly monitored by Anesthesiologist. .
8. Anesthesiologists should provide appropriate post-anesthetic care to their patients.
9. Anesthesiologists should refrain from participating in exploitative financial practices, particularly in matters related to patient care.
10. Correct identification of patient before surgery is the responsibility of Anesthesiologist.

4.1 Ethical Responsibilities of Anesthesiologists towards Medical Colleagues

1. Anesthesiologists hold an important place in the community of HCPs. They should try and develop professional relationships with their colleagues in the belief that closer cooperation among the HCPs helps in achieving the objective of providing quality healthcare services to patients. They should also be mindful of the professional responsibilities of their colleagues and fellow professionals and should assist and facilitate them as and when they can.
2. Anesthesiologists should provide timely medical consultation when requested and should not hesitate in seeking consultation when the need arises.
3. Anesthesiologists should co-operate with colleagues to improve the quality, effectiveness and efficiency of healthcare services.
4. Since medicine is a practicing professions and there is no guarantee that the practicing skills and abilities of a particular HCP remain the same throughout the lifetime. The HCPs are as susceptible to the physical and psychological pressures as any other human being and there are times when their professional abilities might be compromised because of such a situation. Their ability to practice medicine may be impaired (temporarily or permanently) owing to internal or external pressures. The Anesthesiologists, in such circumstances, carry the responsibility to help their colleagues and fellow HCPs to recover and rehabilitate so that they may return to practice with their full potential. Anesthesiologists are expected to maintain high standards of financial and moral integrity. They may not engage in financial exploitation of fellow professionals and patients. They should honor their verbal and written commitments and contracts and strictly follow highest degree of professional conduct.

4.2 Ethical Responsibilities to HCEs

1. Anesthesiologists working at HCEs and on Specialty Committees should make earnest efforts to review the practice of colleagues and to help develop departmental or HCE level procedural guidelines for the benefit of HCE and all of its patients.
2. All HCPs in general and Anesthesiologists in particular are expected to review and assess the professional conduct and practices of their colleagues and are duty bound to report any potential negligence or malpractice to the concerned authorities so that the welfare of the patients and the integrity of the profession may be safeguarded.
3. Anesthesiologists personally handle many controlled and potentially dangerous

substances. They are under obligation to ensure that these substances are not used in practices and conditions which are legally or ethically incorrect. Anesthesiologists should work within their HCE to develop and maintain an adequate monitoring system for controlled substances.

4.3 Ethical Responsibilities to Themselves

1. The Anesthesiologists should make all possible efforts to achieve, maintain and develop highest levels of professional competence. The improvement in their skill set is not just important for their professional growth but also guarantees upgradation of healthcare services. The practice of quality anesthesia care requires that Anesthesiologists maintain their physical and mental health and special sensory capabilities. If in doubt about their health, the Anesthesiologists should seek medical evaluation and care. During this period of evaluation or treatment, Anesthesiologists should modify or cease their practice.

4.4 Ethical Responsibilities to Community

1. Anesthesiologists share the common responsibility to work for the betterment of the community. This sense of responsibility requires efforts which go well beyond the professional demands.

5 Department

5.1 Physical setting

2. As part of its role to provide pre-operative medical care, the Department of Anaesthesiology directs and supervises the Anaesthesia Pre-Op Clinic. The ultimate goal of the Anaesthesia Pre-Op Clinic is to minimize surgical and anaesthetic risk by assuring that patients are in a state of "best possible condition" with regard to their co-existing disease.

3. Post Anesthesia care unit (PACU) should be attached with OT for vitals monitoring and post-operative pain management etc.

6 Human resources

6.1 Qualification criteria

Job Title	**Anesthesiologist**
Qualification & Experience	1) FCPS , DA or equivalent qualification recognize by PMDC 2) The person having MBBS and Postgraduate training in the relevant field 3) Valid registration with PMDC
BPS	18
Recruitment :	Initial / Transfer
Position Type :	Full Time
Jurisdiction	DHQ
Reports to	MS
Job Title	**Anesthesia Technologist**
Qualification & Experience	1) BSc in Anesthesia Technology 2) Valid registration with CAHSP
BPS	17
Recruitment :	Initial / Transfer
Position Type :	Full Time
Jurisdiction	DHQ
Reports to	Anesthesiologist
Job Title	**Anesthesia Technician**
Qualification & Experience	1) Matric or with diploma in anesthesia 2) Valid registration with Punjab medical faculty 3) Preference will be given to those who have experience of working in anesthesia department.
BPS	12
Recruitment :	Initial / Transfer
Position Type :	Full Time
Jurisdiction	DHQ
Reports to	Anesthesiologist

6.2 Responsibility Matrix Anesthesiologist

6.2.1 Curative / Clinical

1. Carries out pre-anesthesia evaluation of the patients one day before the operation and satisfies himself that they can withstand anesthesia.
2. Writes instructions regarding pre-operative preparation of the patients.
3. Administers anesthesia with the best of skills and care, observing the protocols of the specialty and the medical profession to ensure safe induction and recovery.
4. Provides expert anesthetist cover during and in the post-operative recovery phase.
5. Manages labor room services in relation to anesthesia department e.g., painless delivery.
6. Ensures availability of life saving drugs and equipment round the clock along with emergency trays.
7. Ensures that sufficient stock of life saving drugs is available at all times.
8. Ensures management of Intensive Care Unit (ICU) including staff, equipment and lifesaving drugs for optimum care of acutely ill patients all the time as per standards.
9. Ensures that the SOPs pertaining to ICU are available, properly displayed and complied with.
10. Ensures availability of trained staff round the clock in ICU.
11. Responsible for handling surgical patients and their pain relief during and after the procedure.
12. Attends all emergencies at all hours whenever called upon to do so.

6.2.2 Preventive / Promotive

1. Ensures compliance of SOPs, particularly on Infection Control and Waste Management in the Operation Theatre and ICU.
2. Ensures that instruments/equipment being used in examinations and procedures is properly sterilized.
3. Ensures that all OT staff participating in the procedures is physically well protected by wearing proper dress i.e. gowns, masks, caps, gloves and shoes.
4. Proper sterilization of OT in specified conditions as per instructions of infection control.

6.2.3 Teaching / Supervision

1. Trains medical, nursing and paramedical staff as per departmental/specialty requirements/protocols and work instructions.
2. Conducts Performance evaluation and skills verification of all personnel.
3. Conducts educational activities of the unit.

6.2.4 General

1. Checks the punctuality of the staff attached to his section.
2. Checks the cleanliness of the unit.
3. Ensures the preparation and implementation of the duty roster for his unit.
4. Ensures that responsible staff regularly upkeeps and maintains electro-medical equipment of the unit to ensure their functionality at all the time.
5. Ensures that responsible staff is regular in supply/replenishment of medicines and stores.
6. Provides technical assistance to the management for purchase of new equipment/instruments needed from time-to-time for the unit.
7. Checks that the subordinate staff performs their duties as per JDs, SOPs and SMPs.
8. Writes objective Performance Evaluation Reports (PERs) of subordinate staff.
9. Performs outreach duties to lower facilities as and when required.
10. Performs any other professional duty assigned by the in-charge.

7 Anesthesia Policy and Procedures

All hospitals should follow the policies and procedures for indications, the type of anesthesia and procedure regarding Pre-Anesthesia evaluation, assessment of an anesthesia risk and its scoring. Documentation required during anesthesia, recording of any complication, Post-Anesthesia monitoring requirements, Discharge from Post-Anesthesia/Post-Operative Care (recovery room).

7.1 Pre Anesthesia Assessment

Pre Anesthesia Assessment is a patient assessment done by Anesthesiologist before the scheduled surgery where physical examination, history-taking and review of diagnostic investigations, and referrals to other departments for further evaluation are done, when necessary.

7.1.1 Purpose:

1. To prepare and assess patient before surgery.
2. To do the necessary investigations and consultation prior to surgery.
3. To plan Anesthetic technique and perioperative care
4. To support parenteral nutrition in some cases of tumors. .
5. To prepare blood and its component needed for some surgeries.
6. To help boost the morale of the patient to reduce anxiety and facilitate conduct of anesthesia.
7. To Inform and educate the patient about anesthesia, perioperative care and pain management.
8. To obtain consent for anesthesia.
9. To determine and minimize risk factors for anesthesia.

7.1.2 Responsibility:

7.1.2.1 Department Head:

1. Ensures that all patients undergoing surgeries should be seen by the Anesthesiologist a day before surgery or before sending patient for surgery

7.1.2.2 ***Anesthesiologist****:*

1. Visits or sees the patient before sending patient for surgery.
2. Fills-up the pre-anesthesia record
3. Communicates with the surgeon as to the procedure to be performed and type of anesthesia to the inducted.

7.1.2.3 Anesthesia Technologist/Technician:

1. Assists the Anesthesiologist during pre-assessment visit.
2. Ensures that all Anesthesia records are completely documented

7.1.3 Procedure:

1. Only qualified Anesthesiologist can do Pre-Anesthesia assessment.
2. Pre-Anesthesia assessment of the patient is carried out a day before the scheduled day of operation.
3. Pre-Anesthesia assessment and documentation shall be performed according to the guidelines (Basic Standards for Pre-Anesthesia care described by the American Society of Anesthesiologist)
4. The Pre-Anesthetic assessment may even be carried out prior to admission in case of elective surgeries if required.
5. An appropriate time should be chosen for Pre-Anesthesia assessment before the scheduled surgery to allow adequate preparation of the patient. This also applies to day surgery patients.
6. The Pre-Anesthesia assessment should be performed by the Anesthetist who will conduct the anesthesia .In case the pre-Anesthesia assessment and the conduct of anesthesia are to be carried out by two different HCPs, an effective system should be in place to make sure that the findings of pre-Anesthesia assessment are in the knowledge of the Anesthesiologist who will conduct the process. .
7. An anesthesia plan for the patient is prepared on the basis of the Pre-anesthesia assessment and the same is documented.
8. The anesthesia plan depicts the type of anesthesia (local, general, epidural etc.), monitoring and plan for postoperative analgesia etc.
9. Pre-Operative medication may be prescribed to facilitate the Anesthetic management. The patient's current medication should be reviewed and continued when necessary.

10. Surgeon should be informed of the planned choice of anesthesia for patient after conducting Pre-Anesthesia assessment.
11. For all surgical interventions, results of laboratory, diagnostic investigations and consultations should be attached to the medical record before pre-medicating the patient and should be sent to the OT.
12. Anesthesiologist may seek input and professional advice from other departments in the pre-Anesthesia stage. The decision about patient's fitness to undergo anesthesia or otherwise, however, remains the sole responsibility of the concerned Anesthesiologist.
13. There might arise cases in which immediate emergency surgery becomes unavoidable. In such cases, the Anesthesiologist is still responsible for pre-anesthesia assessment. In case the surgery cannot be delayed and the pre-anesthesia assessment protocols cannot be executed in full, the case should be completely documented for future reference.

7.1.4 Anesthesia Physical Classification System:

1. The anesthesia risk assessment is a compulsory part of safe anesthesia practice.
2. In assessing risk factors and optimizing the patient for anesthesia and surgery, the Anesthetist may need to consider the nature and urgency of the surgery, social and economic factors, or any financial constraints that might have an effect on the patient care. It is imperative that the Anesthetist be knowledgeable and well-informed to make a balanced judgment with regard to the benefit-risk ratio of anesthesia and surgery for the high-risk patient. In such cases, risks associated with anesthesia should be discussed with the surgeon and conveyed to the patient and/or the attendant of the patient. It should also be documented in the consent form and the patient's case notes.
3. Anesthesia Physical Classification System is a way to evaluate a patient's sickness or physical state before selecting the appropriate anesthetic.

7.1.4.1 ASA PS Classification System from the American Society of Anesthesiologist:

ASA PS I

- Normal healthy patient with no systemic disease.
- No organic, physiologic, or psychiatric disturbance; excludes the very young and very old; healthy with good exercise tolerance

ASA PS II

- Patients with mild to moderate systemic disease
- No functional limitations; has a well-controlled disease of one body system; controlled hypertension or diabetes without systemic effects, cigarette smoking without chronic obstructive pulmonary disease (COPD); mild obesity, pregnancy.

ASA PS III

- Patients with severe systemic disease with functional limitation that is non incapacitating
- Has a controlled disease of more than one body system or one major system; no immediate danger of death; controlled congestive heart failure (CHF), stable angina, old heart attack, poorly controlled hypertension, morbid obesity, chronic renal failure; bronchospastic disease with intermittent symptoms

ASA PS IV

- Patients with severe systemic disease that is incapacitating and life threatening.
- Has at least one severe disease that is poorly controlled or at end stage; possible risk of death; unstable angina, symptomatic COPD, symptomatic CHF, Hepato-Renal failure

ASA PS V

- Moribund patients not expected to survive for 24 hours or without surgery.
- imminent risk of death; Multi Organ failure, sepsis syndrome with hemodynamic instability, hypothermia, poorly controlled coagulopathy

ASA PS VI

- A declared brain-dead patient whose organs are being removed for donor purposes

E

- Patient requires emergency surgery (An emergency is defined as existing when delay in treatment of the patient would lead to a significant increase in the threat to life or body part i.e appendectomy, D & C for uncontrolled bleeding)

Referred to Pre-Operative Anaesthesia Assessment attached in ***Annexure-1***

7.2 Informed Consent

7.2.1 Purpose:

To establish guidelines in securing Informed Consent from patient and his/her attendant or any other person designated through the process of law in order to protect patient against unsanctioned practice and to protect hospital against claims of negligence.

Informed Consent – Permission granted in full knowledge of proposed treatment, procedure or act of care with possible risks and benefits which is given by a patient to a doctor.

7.2.2 Responsibility:

Anaesthetist, Anaesthesia Staff, Charge Nurse

7.2.3 Procedure:

1) Consent for the use of anaesthesia must be obtained from all patients planned for surgery in which anaesthesia is in use.
2) Consent shall be written in language that the patient understands.
3) The patient and/or his/her attendant or any other person authorized through the process of law are educated on the risks, benefits, and alternatives of anesthesia by the Anesthesiologist. This is separate from the surgery consent. Prior to the administration of anesthesia, the patient/his/her attendant is informed about the planned anesthetic procedure, risk and benefits involved etc. An informed consent is obtained from the patient by the concerned Anesthetist.
4) Consent may only be given by a person competent enough to do so.
5) All persons are presumed to be competent to give consent, unless there are justifiable grounds for believing otherwise. A judgment that the patient is incapable of giving consent must be supported by **appropriate evidence**, such as that of:
    a. Very young age
    b. Lack of mental capacity
    c. Unconsciousness
    d. Presence of sedative medication.
6) If patient is minor or incapable of giving Informed Consent, the substitute consent-giver should sign the consent form which may be
    a. A decision-maker duly appointed by the patient at such a time that he/she was competent). Ideally this appointment will be in writing and witnessed.
    b. The legal guardian who may either be an individual or an agency can sign the consent document.
    c. An adult relative who has had substantial personal involvement with the patient in the preceding 12 months can sign the consent forms.

The sequence of priority is: Spouse, Father, Mother, Brother, Sister

d. Friends cannot give or withhold consent for the performance of an emergency medical treatment/procedure

7) If no attendant is present for a non-competent patient to give consent, the Deputy Medical Superintendent and the Assistant Medical Superintendent must be informed. The treatment can only proceed if it has been established that the treatment is in patient's best interests, is consistent with the SOPs on the same subject. This must also include efforts on part of the concerned officials and HCPs to ascertain that if the patient was competent to do so, he/she would have given consent to the particular procedure which is being executed. The HCPs will also have justifiable grounds to believe that any further delay in the matter will pose serious threat to patient's welfare or health. In such circumstances, all efforts should be made to seek legal advice and, if necessary, arrange for a legal guardian or substitute consent giver. In either case, appropriate legal advice must be sought.
8) In emergency situation where immediate intervention is necessary to preserve life or prevent serious harm, it may not be possible or sensible to obtain full consent. In such cases, there must be provision of information and discussion of the treatment undertaken with the patient, or his/her attendants or other persons appointed through the process of law, as soon as possible, like

a) There is immediate threat to life or health.
b) Treatment cannot be delayed.
c) The patient is not capable of giving Informed Consent.
d) For minors, the person legally capable of consenting on behalf of the minor is not available.

9) In instances where a language barrier inhibits the ability of a healthcare provider to seek consent, it is the responsibility of the HCE to arrange for a translator/interpreter.
10) It must be recognized that the patient can withdraw the given consent at a later stage which must be respected (e.g. during multiple attempts at regional blockade).
11) If the consent is obtained by telephone two nurses should monitor the call and sign the form which will be signed later by the patient's legal representative on arrival at the hospital. The call may be recorded on an electrical device if possible
12) On duty doctor or nurse must document the fact that all attempts were made to contact a substitute consent giver in the medical record of the patient.
13) In ideal conditions, the Informed Consent should be obtained by the Anaesthesiologist who will be conducting anaesthesia. If the consent has been obtained by someone on his behalf, and it is later discovered to be inadequate, the Anaesthesiologist who will carry out the procedure will be held responsible. In case the Anaesthesiologist responsible for administering anaesthesia does not have adequate time before the procedure, a substitute Anaesthesiologist may interview the patient and obtain consent. However, the Anaesthesiologist administering anaesthesia must ensure that all protocols have been followed by his colleague and there is no ground for him to believe that the consent given

is in any sense inadequate. This assumes critical importance in cases where sedative premedication has to be administered. .

14) Charge nurse/ Anaesthesia technician is responsible to ensure that consent is completely filled up with correct data duly signed by the patient, witnessed by a relative and anaesthetist

7.2.4 Documentation of Consent

1) The extent of documentation may vary but it is wise to record significant details of the consent as part of the patient's notes, including reference to the discussion of relevant material risks and the agreement by the patient to undergo the treatment.
2) First of all, fill up the required data i.e. Patient name, MR number etc.
3) It is primary responsibility of Anesthetist to fill up and to explain the name of anesthesia to be given, complications, risks, benefits and alternatives of anesthesia.
4) Obtain the signature of patient with relative and treating doctor as witnesses:
   a) If the Patient uses thumb-mark, identify which hand side (left or right thumb)
   b) If a relative signs on behalf of the patient, identify relation to the patient.

5) It is the responsibility of ward nurse and OT staff to countercheck the Informed Consent of anesthesia
   a) To verify patient information
   b) To ascertain signatories as required
   c) To verify correct patient for which consent has been taken.

Referred to Anaesthesia Consent attached in ***Annexure-2***

7.3 Anesthesia Plan

7.3.1 Purpose:

To determine the appropriate anesthetic approach.

7.3.2 Responsibility:

Anesthesiologist

7.3.3 Procedure:

1. The plan must include mentioning the pre-medications, type of anesthesia i.e. GA, regional or local, the drugs to be used for induction and the drug to be used for maintenance.
2. It should also mention about other concomitant medications and IV fluids, special monitoring requirements with appropriate and anticipated post-anesthesia care. However, Anesthesia professionals should be responsive to the condition of the patient on the Operation Table and any changes made in the anesthesia plan must be documented with justification.
3. The pre-anesthesia assessment identifies any risks and determines the appropriate anesthetic approach (for example, a patient with multiple back injuries or surgeries might not be a safe candidate for a spinal anesthesia or a patient with chronic obstructive pulmonary disease might not be a safe candidate for inhalation anesthesia).

Referred to Anaesthesia Plan attached in ***Annexure-3***

7.4 Pre-Induction Re-Evaluation

7.4.1 Purpose:

1. To re-evaluate patients immediately before the induction of anesthesia.
2. To compare the findings and management plan in the formal Pre-Anesthesia assessment with the immediate pre-operative anesthesia assessment.
3. To assess the status prior to surgery

7.4.2 Responsibility:

Anesthesiologist

7.4.3 Procedure:

1. This is essentially a Pre-Induction Assessment and is done by the Anesthetist on OT table just before the induction of anesthesia. Any planned changes to the anesthesia plan shall be documented. When anesthesia must be provided on an urgent basis, the Pre-Anesthesia assessment may be performed immediately following one another, or simultaneously**, and is documented separately.**

2. The Pre-Anesthesia Re-Evaluation SOPs include;

a) Review of the medical history, including anesthesia, drug and allergy history.

b) Interview and examination of the patient.

c) Notation of anesthesia risk according to established standards of practice

d) Identification of potential anesthesia problems, particularly those that may suggest potential complications or contra-indications to the planned procedure (e.g., difficult airway, ongoing infection, limited intravascular access).

e) Additional Pre-Anesthesia evaluation, if applicable and as required in accordance with standard practice prior to administering anesthesia (e.g., stress tests, additional specialist consultation).

f) Development of the plan for the patient's anesthesia care, including the type of medications for induction, maintenance and post-operative care and discussion with the patient (or patient's representative) of the risks and benefits of the delivery of anesthesia.

g) The patient's evaluation or re-evaluation must be performed and documented within 48 hours prior to the delivery of first dose of medication(s) given for the purpose of inducing anesthesia for surgery or a procedure requiring anesthesia services.

Referred to Pre-Induction Re-Evaluation attached in ***Annexure-4***

7.5 Monitoring In Anesthesia

7.5.1 Purpose:

To monitor the patient status during anesthesia

7.5.2 Responsibility:

Anesthesiologist, Anesthesia Technologist

7.5.3 Procedure:

1. The following parameters need to be monitored and recorded on the **Monitoring Sheet**
   a) Heart Rate
   b) Cardiac Rhythm
   c) Respiratory Rate
   d) Arterial Blood Pressure
   e) Oxygen Saturation
   f) End Tidal CO2
   g) Airway security and Patency
   h) Level of anesthesia
   i) Evaluation of circulatory function
   j) Temperature (in case clinically significant changes in body temperature are intended, anticipated or suspected)
2. In case of regional anesthesia, instead of end tidal carbon dioxide, the adequacy of ventilation shall be evaluated by continual observation of qualitative clinical signs.
3. The anesthesiologist shall be present throughout the procedure. In addition, certain other parameters may be monitored on a case-to-case basis.
4. The cardiac rhythm may be monitored on a monitor during the procedure, and the rhythm as well as rhythm abnormalities shall be documented.
5. The time based events, any unusual events occurring during the administration of anesthesia and the status of the patient at the conclusion of anesthesia are recorded.
6. Anesthesia Staff also documents the techniques used, dosage of all drugs and agents used, type and amount of all fluids administered, including blood and blood products in anesthesia record sheet.

7.5.4 Basic Anesthetic Monitoring

1. These standards apply to all anesthesia care although, in emergency circumstances, appropriate life support measures take precedence.
2. These standards may be exceeded at any time based on the judgment of the responsible Anesthetist.
3. They are intended to encourage quality patient care, but observing them cannot guarantee any specific patient outcome.
4. They are subject to revision from time to time, as warranted by the evolution of technology and practice.
5. They apply to all general Anesthetic, regional Anesthetic and monitored anesthesia care.
6. This set of standards address only the issue of basic Anesthetic monitoring, which is one component of anesthesia care.
7. In certain rare or unusual circumstances, some of these methods of monitoring may be clinically impractical, and appropriate use of the described monitoring methods may fail to detect untoward clinical developments.

8. Brief interruptions of continual monitoring may be unavoidable.
9. These standards are not intended for application to the care of the obstetrical patient in labor or in the conduct of pain management.

7.5.4.1 Standard-1

1. Due to the rapid changes in patient status during anesthesia, the Anesthetist/qualified anesthesia personnel shall be continuously present throughout the conduct of all general anesthesia and regional anesthesia, monitor the patient and provide anesthesia care.
2. In the event that there is a direct known hazard, e.g., radiation to the anesthesia personnel which might require intermittent remote observation of the patient, some provision for monitoring the patient must be made.
3. In the event that an emergency requires the temporary absence of the person primarily responsible for the anesthetic, the best judgment of the Anesthetist will be exercised in comparing the emergency with the anaesthetized patient's condition and in the selection of the person left responsible for the anesthetic during the temporary absence.

7.5.4.2 Standard-2

During all anesthetics, the patient's oxygenation, ventilation, circulation and temperature shall be continually evaluated.

1. **Oxygenation**
   a) ***Objective***
   To ensure adequate oxygen concentration in the inspired gas and the blood, during all Anesthetic.
   b) ***Measuring***
      i. **Inspired gas:** During every administration of general anesthesia using an anesthesia machine, the concentration of oxygen in the patient breathing system shall be measured by an oxygen analyzer with a low oxygen concentration limit alarm in use.
      ii. **Blood oxygenation:** During all anesthetics, a quantitative method of assessing oxygenation such as Pulse oximetry shall be employed. When the Pulse Oximeter is utilized, the variable pitch pulse tone and the low threshold alarm shall be audible to the Anesthetist or the anesthesia care team personnel. Adequate illumination and exposure of the patient are necessary to assess color.

2. Ventilation
   a) **Objective**
   To ensure adequate ventilation of the patient during all anesthetics.
   b) **Methods**
      i. Every patient receiving general anesthesia shall have the adequacy of ventilation continually evaluated. Qualitative clinical signs such as chest excursion, observation of the reservoir breathing bag and auscultation of breath sounds are useful. Continual monitoring for the presence of expired carbon dioxide shall be performed unless invalidated by the nature of the patient, procedure or equipment. Quantitative monitoring of the volume of expired gas is strongly encouraged.

ii. When an endotracheal tube or laryngeal mask is inserted, its correct positioning must be verified by clinical assessment and by identification of carbon dioxide in the expired gas. Continual end tidal carbon dioxide analysis, in use from the time of endotracheal tube/laryngeal mask placement, until Extubation / Removal or initiating transfer to a post-operative care location, shall be performed using a quantitative method such as capnography, capnometry or mass spectroscopy. When capnography or capnometry is utilized, the end tidal carbon dioxide alarm shall be audible to the Anesthetist or the anesthesia care team personnel.

iii. When ventilation is controlled by a mechanical ventilator, a device that is capable of detecting disconnection of components of the breathing system, the device shall remain in continuous use. The device must give an audible signal when its alarm threshold is exceeded.

iv. During regional anesthesia (with no sedation) or local anesthesia (with no sedation), the adequacy of ventilation shall be evaluated by continual observation of qualitative clinical signs. During moderate or deep sedation, the adequacy of ventilation shall be evaluated by continual observation of qualitative clinical signs and monitoring for the presence of exhaled carbon dioxide unless precluded or invalidated by the nature of the patient, procedure, or equipment.

3. Circulation

a) **Objective**

To ensure the adequacy of the patient's circulatory function during all anesthetics.

b) **Methods**

i. Every patient receiving anesthesia shall have the electrocardiogram continuously displayed from the beginning of anesthesia until preparing to leave the anaesthetizing location.

ii. Every patient receiving anesthesia shall have his/her arterial blood pressure and heart rate determined and evaluated at least every five minutes.

iii. Every patient receiving general anesthesia shall have, in addition to the above, circulatory function continually evaluated by at least one of the following: palpation of a pulse, auscultation of heart sounds, monitoring of a tracing of intra-arterial pressure, ultrasound peripheral pulse monitoring, or pulse plethysmography/oximetry.

4. Body Temperature

a) **Objective**

To aid in the maintenance of appropriate body temperature during all anesthesia.

b) **Methods**

i. Every patient receiving anesthesia shall have their temperature monitored when clinically significant changes in body temperature are anticipated or suspected.

ii. Under extenuating circumstances, the responsible Anesthetist may waive some of the predetermined requirements. It is recommended that when this is done, it should be so stated (including the reasons) in a note in the patient's medical record.

Referred to Intra Operative Anaesthesia Monitoring Sheet attached in ***Annexure-5***

7.6 Identity of the Patient

7.6.1 Purpose:

1. To ensure Patient safety by preventing surgery on the wrong patient.
2. To ensure that the identity of the patient has been established before the administration of anesthesia.

7.6.2 Responsibility:

Anesthesiologist, Anesthesia Technologist, Anesthesia Technician.

7.6.3 Procedure:

1. The following Standard Practices must be complied
   a) Banding
   b) Identification from file record
   c) The Patient should have at least two corroborating patient-identifiers as evidence to confirm identity. The use of multiple patient identifiers helps improve the reliability of the patient identification process. .
2. Patient identifiers include:
   a) Name
   b) Medical Registration number
   c) CNIC Number
   d) Date of birth
   e) Identity Mark on face

The patient's bed number should not be used as a patient identifier at hospital. Bed numbers are not person-specific identifiers, since patients can be moved from bed to bed.

*Referred to Pre-Induction Re-Evaluation attached in **Annexure-4***

7.7 Post-Anesthesia Monitoring

7.7.1 Purpose:

1. To ensure continuity of care from the intra-operative phase to the immediate postoperative phase.
2. To prevent complications that may arise during recovery period
3. To provide appropriate management to post-operative period

7.7.2 Responsibility:

Anesthesiologist, Anesthesia Technologist, Recovery Room Nurse

7.7.3 Procedure:

1. This shall be done in the recovery area/OT and includes monitoring of vitals till the patient recovers completely from anesthesia and shall be done by an Anesthetist. If the patient's condition is unstable and he/she requires ICU care, the same shall be monitored there. All patients who have received general anesthesia, regional anesthesia or monitored anesthesia care receive appropriate post-anesthesia management.
2. Post-Anesthesia Care Unit or PACU, is a vital part of DHQ/ THQ.
3. It is an area attached to OT, designed to provide care for patients recovering from anesthesia, whether it be general anesthesia, regional anesthesia, or local anesthesia.
4. The essential activities of PACU staff include:
   a) Monitoring vital signs (heart Rate, blood pressure, temperature and respiratory rate)
   b) Managing Post-operative pain
   c) Treating symptoms of post-operative nausea and vomiting
   d) Treating post-anesthesia shivering
   e) Monitoring surgical site(s) for excessive bleeding, discharge, swelling, hematoma, redness etc.
5. The following signs should be evaluated and their levels of stability should be verified with anesthesiologist.
   a) Blood Pressure
   b) Pulse Rate
   c) Respiratory Status
   d) Oxygen Saturation
   e) Hemodynamic status
   f) Level of consciousness
   g) Pain
6. Recovery unit staff should conduct comprehensive assessment post-operatively and this would be documented accordingly
7. Hydration status and actual fluid loses should be monitored and recorded:
   a) Urine
   b) Blood
   c) Gastric secretions
   d) Oral feedings, if indicated
8. Patient should be maintained on NPO until further orders by anesthesiologist.
9. Post-operative management should be initiated in the recovery unit
   a) All injectable medications
   b) Intravenous fluid infusions and blood transfusions

c) Analgesics and post-operative pain management

10. Barring any serious complications, most patients will be kept in PACU only for a few hours and will be allowed to return home or to other departments of the HCE.
11. A patient will be accompanied by one of the anesthesia personnel who has complete knowledge of the patient's condition. He/she will continuously assess and monitor the patient during the transportation process and provide healthcare services appropriate to patient's medical condition.
12. The patient is re-evaluated on arrival in the PACU and this re-evaluation report is verbally conveyed to the concerned PACU nurse by the accompanying anesthesia personnel.
13. The patient's status on arrival in the PACU shall be documented.
14. Information concerning the pre-operative condition and the surgical/anesthetic course shall be transmitted to the PACU nurse.
15. Until the PACU nurse assumes charge of the patient and accepts the responsibility of patient care in writing, the accompanying member of the Anesthesia Department will remain with the patient in PACU. **The patient's condition shall be evaluated continually in the PACU.**
16. This re-evaluation will be done keeping in mind the medical condition of the patient. Particular attention should be paid to monitoring oxygenation, ventilation, circulation, level of consciousness and temperature. During recovery from all anesthetics, a quantitative method of assessing oxygenation such as pulse oximetry shall be employed in the initial phase of recovery. This is not intended for application during the recovery of the obstetrical patient in whom regional anesthesia was used for labor and vaginal delivery.
17. The patient's stay in the PACU shall be accurately documented and a report to this effect will be kept for reference. In PACU, the use of an appropriate scoring system will be encouraged for each patient on admission, at appropriate intervals prior to discharge and at the time of discharge.
18. The Anesthesiologist will be responsible for general medical supervision of the patient in the PACU.
19. A physician capable of handling complications and performing cardiopulmonary resuscitation will be present at all times in PACU.
20. The patient will be discharged from PACU on the advice of the physician appointed in PACU.
21. The discharge criteria of the patient must be approved by the Anesthesia Department. They may vary depending upon whether the patient is discharged to a hospital ward, to the ICU, or to home.
22. In the absence of the physician responsible for the discharge, the PACU nurse shall determine that the patient meets the discharge criteria. The name of the physician accepting responsibility for the discharge shall be noted in the record.

Referred to Post Anaesthesia Monitoring Sheet attached in ***Annexure-6***

7.8 Discharge from PACU

7.8.1 Purpose:

To discharge the patient from recovery room after fulfilling the defined criteria.

7.8.2 Responsibility:

Anesthesiologist, Recovery Nurse

7.8.3 Procedure:

1. Every Recovery room should have well-defined criteria for the discharge of patients to the general ward or other clinical areas.
2. If the discharge criteria are not achieved, the patient should be retained in the recovery room and the Anesthesiologist will be informed.
3. As long as there is any patient in the recovery room, the availability of Anesthesiologist in the unit is mandatory.
4. In case there are doubts about patient's recovery to sufficiently validate discharge criteria, or problems have been encountered during patient's recovery period, the Anesthesiologist who administered the anesthesia must assess the patient. In his/her absence, the patient may be assessed by another Anesthesiologist who has been deputed to the recovery room. After medical re-evaluation, if the patient still does not meet discharge criteria, he/she should be moved to ICU.
5. The following criteria must be fulfilled:
   a) The patient is fully conscious without excessive stimulation, able to maintain a clear airway and exhibits protective airway reflexes.
   b) Respiration and oxygenation are satisfactory.
   c) The cardiovascular system is stable with no unexplained cardiac irregularity or persistent bleeding. The specific values of pulse and blood pressure should approximate to normal pre-operative values or be at an acceptable level commensurate with the planned postoperative care. Peripheral perfusion should be adequate.
   d) Pain and Emesis should be controlled and suitable analgesic and anti-emetic regimens prescribed.
   e) Temperature should be within acceptable limits. Patients should not be returned to the ward if significant hypothermia is present.
   f) Oxygen and intravenous therapy, if appropriate, should be prescribed.

Keeping in view these guidelines criteria for patient shifting from PACU (post anesthesia care unit) to ward In DHQ/ THQ is based on Aldreto score.

MODIFIED ALDRETO SCORE			
	2	1	0
CIRCULATION	Blood Pressure within 20% of Pre-Anesthesia Level	Blood Pressure within 50% - 20% of Pre-Anesthesia Level	Blood Pressure 50% or less of Pre-Op level
RESPIRATION	Able to breath and cough freely	Dyspneic, Hyperventilating, Obstructed Breathing	Apnea
COLOR	Pink	Pale, Dusky, Blotchy, Jaundice, Other	Cyanotic
ACTIVITY	Able to move four extremities on command	Able to move two extremities on command	Able to move zero extremities on command
CONSCIOUSNESS	Fully Awake	Arousable on calling	Not responding

Total Score= 10 (8 needed to leave the PACU)

6. Obtain transfer order from anesthesia. Prepare for the following:

a) Explain to the patient that he/she will be transferred back to ward.
b) Check vital signs
c) Disconnect from Cardiac Monitor
d) Empty Urine bags. Record in intake output sheet.
e) Check Laboratory result of any investigation done.

Referred to Post Anaesthesia Monitoring Sheet attached in ***Annexure-6***

7.9 SOPs for Handing Over to Ward staff

1. Patients should be transferred to the ward accompanied by a suitably trained member of staff.
2. Endorse patient to receiving nurse with patient file, pre and post op investigations and specimens(if present)
3. Ward nurse must ensure that Operation Notes and post-op orders are documented in patient file.
4. Receiving nurse must sign in recovery room nursing record.

Referred to Post Anaesthesia Monitoring Sheet attached in ***Annexure-6***

8 Proper Storage and Handling of Anesthetic Agents

This Anesthesia Unit policy and procedure covers the regulations and practices on the proper storage and handling of anesthetic agents.

8.1 Definitions:

Anesthetic Agents substances, chemical or gas, use to induce anesthesia.

Inhalants a gas or liquid with a vapor pressure that is big enough to produce General Anaesthesia when inhaled.

Intravenous Anesthesia A compound that produces a state of anesthesia, amnesia and analgesia when administered intravenously.

Local Anesthesia compound that when applied directly into the mucous membrane or injected into the nerves, produce loss of sensation by inhibiting nerve excitation and conduction.

Neuroleptanalgesics a combination of short-acting synthetic opioids; when administered to the patient, causes drowsiness but elicits responses to verbal commands although analgesia is profound.

8.2 Purpose:

1. To maintain potency of anesthetic agents.
2. To prevent misuse.
3. To provide safety and security of stocks of anesthetic agents. To regulate system of issuance and replenishment.

8.3 Responsibilities:

Anesthesiologist, Anesthesia Technologist, OT Incharge, Head Nurse

8.4 Procedure:

1. Storage security should be provided for all anesthetic agents.
2. Inhalants should be kept inside the refrigerator.
   a. Sevoflorane
   b. isoflorane

3. Muscle relaxants should be kept inside the refrigerator.
   a. suxamathonium
   b. atracurarium
   c. other short inter mediate or long acting muscles relaxanats
4. All intravenous anesthesia agents should be stored in a dry place at room temperature in a safe vault.

a. Fentanyl
b. Pethidine
c. Morphine
d. Dormicum
e. Thiopental
f. Ketamine
g. Heavy Marcaine
h. midazolam

5. A staff that prepares the medication should be the one to administer and labeled it.
6. All emergency medicines should be immediately available during the course of an anesthetic. They should be adequately labelled, and disposed of appropriately if not used.

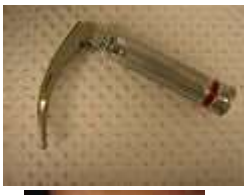
9 Equipment

9.1 Essential Equipment

Continuous-flow anesthetic machine	used to provide a measured and continuous supply of gases (oxygen, nitrous oxide, etc.), mixed with a required concentration of anesthetic vapor to the patient at a required pressure and rate; *video link*
Anesthetic vaporizers	vaporizes the anesthetic
Oxygen mask	to deliver oxygen and/or to administer aerosolized medications
Nasal oxygen set	to deliver oxygen
Guedel airways[3]	hard part of the airway maintenance that connects the mouth part to the pharyngeal part
Yankauer suction tip and suction machine	Suction catheters used to remove secretions from the mouth, oropharynx, trachea and bronchi
Peripheral venous catheter	
Water & sand weight bag	
Artificial resuscitator (Bag valve mask)	manual ventilation
Bain circuit	respiratory maintenance circuit
Laryngoscope	used to view larynx including the vocal cords, the glottis, etc.
Endotracheal tube	a tube introduced into the patient's trachea to maintain a patient to ensure that air reaches the lungs for respiration

Laryngeal mask airway (LMA)	a less stimulating alternative to an endotracheal tube
Endoscope	to look inside the larynx, trachea, bronchi
Eschmann stylet or Gum elastic bougie	a flexible device introduced through the mouth during some intubation procedures; if the stylet is in the trachea, while passing in, gives a sensation of bumps and then finally stops going in at a point, it indicates that it was gliding over tracheal rings and has stopped at one of the bronchi (the patient may even cough during this time); if it goes into the esophagus, it will not bump and neither will it stop going in; used to judge where the endotracheal tube has gone in[4]
HEPA Filter	to filter out dust particles from the gas being given to the patient
Hypodermic needle	for injections, infusions, etc.
Tuohy needle	for epidural catheter insertion
Spinal needle	used for puncturing the spinal canal for injection of medications in spinal anesthesia
Epidural catheter	used to administer medications into the epidural space
Syringe	to inject medications
Mucus sucker	to aspirate any fluid specially mucus from the respiratory passage
Defibrillator	For defibrillation and cardio-version of dysrhythmias
Tracheostomy Tube	For difficult ventilation and for prolonged ventilation









9.2 Departmental Maintenance

- Daily Cleaning of exterior.
- Ensuring pipes and connectors do not leak.
- Replacement of fuse in electrically operated units if one blows out.
- Ensure that all the scheduled tasks and periodic maintenances are up-to-date.

9.3 Biomedical Repair and Maintenance

All electro medical/bio medical equipment needs to be regularly maintained and calibrated to ensure that proper output is achieved. Outsourcing maintenance and repair in case of equipment failure causes time wastage and breakdown in proper functioning of HCE. Bio-Medical Engineer will be mainly responsible for the repair and smooth functioning of hospital equipment.

9.3.1 Bio-Medical Engineer

9.3.1.1 Responsibilities

1. HCE equipment repair and maintenance
2. Ensure scheduled maintenance and calibration of electro-medical/bio-medical equipment.
3. Maintain all the records/repair/checkup history.
4. Installation, repair and maintenance of electro medical equipment in HCE
5. Evaluate the safety, efficiency and effectiveness of biomedical equipment
6. Train clinicians and other personal on the proper use of equipment
7. Any other duties assigned

10 Documenting and Monitoring Of Adverse Anesthesia Events:

10.1 Purpose:

To document and monitor all such events for the purpose of taking corrective and preventive action.

To define the processes for prevention, identification, reporting, disclosure, investigating, analyzing and managing adverse anesthesia events.

10.2 Responsibility:

Anesthesiologist

10.3 Procedure:

1. Upon recognition that a major adverse anesthesia event is in progress or has occurred. **Get help and mobilize according to the protocol**. The Primary caregiver should continue patient care. The only exceptions being that the mental and physical condition of the primary HCP may deteriorate (as a result of the shock or on account of some other factors) that he/she may not retain enough professional competence to give due care to the patient. In such cases, necessary administrative intervention should be made to the effect that the patient care standards do not suffer. **The concerned authority should immediately appoint some senior HCP as the Incident Supervisor to probe the event and take measures to the effect that the patient care does not suffer in the immediate aftermath of the adverse event. He also does the following:**
    a. Takes measures to help ease the adversity of the event and assigns duties to all concerned
    b. Investigates the matter and ensures that the incident has been checked and its effects have been controlled. Also ensures that there are no chances of the recurrence of the adverse event (e.g. correct intubation and ventilation in the prototype example, continued availability of tank oxygen after a central oxygen supply failure, etc.).
    c. Immediately involves all other experienced HCPs, especially the head of Anesthesia Department, or Consultant neurologist/cardiologist to help with care and recovery.
    d. Coordinates with various departments and keeps the communication channels working
    e. Ensures that the settings are not altered or modified to help in investigation. This helps in ascertaining, for instance, if equipment failure of any kind (anesthesia machine ventilator, bubble detector on a rapid infuser or some other machine breakdown or malfunction) has led to the adverse event. This is important because the oversight in such cases may lead to further adverse events of the same nature. Engages all concerned including the bio-engineering department, equipment maintenance personnel and equipment manufacturer, or the legal experts to resolve the situation or take further necessary actions. Since it might not be possible to

replace certain equipment immediately, the Incident Supervisor may make a preliminary decision about continuing the usage of equipment after thorough safety inspection. He will, however, do so with the following considerations:

i. He would discard nothing and preserve even the minutest details in the conditions they were at the time of first inspection. This is done to help the investigations into the cause of the adverse event since minute, often seemingly insignificant details like empty or missing or extra medication vial, may provide a clue to the cause of the adverse event.
ii. The principle of expediency may still be kept in mind. In a busy HCE, it wouldn't be advisable to lockdown the Anesthesia Department for any length of time since it would be required all the time. Similarly, it would not be wise to create panic by withholding necessary information or giving away information carelessly. The MS or some senior administrative officer should communicate with the affected patient or his/her attendants to avoid any untoward situation. This does, by no means, suggest that the adverse event should be pushed under the carpet and that the investigations and the subsequent actions may not be carried out with the intention of making the system error-free.

2. The patient and his/her family/attendants should immediately be taken into confidence and all measures should be taken to console them and restore their confidence in the HCE and its operations.
3. Designate a Follow-up Supervisor (who may or may not be the same as the Incident Supervisor) who will:
    a) Ensure that the investigations and the subsequent corrective measures have been implemented in letter and spirit.
    b) Decides if the follow-up requires a group briefing is needed or not. Also decides if the matter requires legal resource because the implications of an adverse event might result in an MLC.
    c) Ensures that the communication channels remain active throughout the follow up process. Involves all concerned healthcare personnel and patient/attendants in the process to ensure that the incident does not generate negative publicity or affect the morale of the personnel.
    d) Pursues the follow-up by engaging the concerned Quality Assurance Official and seeking guidance from Risk Management System. Will most likely be expected to document his findings, opinions, course of action taken and the recommendations in a written report with all relevant evidence and reports. Will be expected to write an objective inquiry report into the adverse event. Will not try to obscure information or evidence and will record all matters with strict adherence to the principles of objectivity in the larger interest of professional and public well-being. Will also record statements of all concerned for an overall perspective for future reference. In documenting the report, will make sure that

i. States only those facts that he/she can personally verify or that are relevant to the situation
ii. Ensures that he/she is not judgmental and maintains highest standards of professional integrity and objectivity.

4. The involvement of the Follow-up Supervisor with the concerned personnel should not cease if the patient survives any major scare in the aftermath of the adverse event.
    a) The Follow-up Supervisor should talk to the MS and other HCPs to ensure provision of quality healthcare services to the affected patient.
    b) Should remain visible and available to the patient/attendants so that the situation may not aggravate.
5. **Follow-up Investigations:** The HOD shall be informed of each adverse event and will designate who shall supervise the event follow-up and investigation beyond the immediate actions. The follow-up supervisor shall:
    a) Notify all concerned of their roles and duties in the follow-up process.
    b) Ensure that all Risk Management procedures are followed and protocols are implemented to the satisfaction of all concerned.
    c) Guide the anesthesia personnel working with other patients to keep the morale up, guide and instruct to ensure there is no further adverse event and provide assistance when and where needed.
    d) Be responsible for preparing a report on the adverse event and communicating his findings and recommendations to the Quality Assurance Department
    e) in collaboration with and after taking advice from concerned specialists shall make decisions about equipment sequestration
    f) Return the equipment to the Anesthesia Department if it can be ascertained that equipment failure or malfunction was not the cause of adverse event.
    g) Withdraw the equipment from the routine usage in case it is confirmed that the adverse event proceeded from equipment malfunction or breakdown. Will follow the following protocols in such a scenario:
        i. Store any such equipment in a secure location with clear instruction labeled on it to the effect that it will neither be used nor touched. A possible label can be something like DO NOT TOUCH
        ii. Note down the physical identification features of the malfunctioning equipment like its model and make with serial number in the report.
        iii. Will not inspect the equipment in anyway which might hamper or affect further investigation by the specialists.
        iv. Will conduct a thorough investigation of the equipment in the presence of Anesthesiologist, the anesthesia personnel involved in the adverse event, hospital Risk Manager, the representative of the manufacturer, and the counsel of the insurance company and other involved parties.
        v. Continue to monitor and document the healthcare processes in the department in the aftermath of the adverse event.

6. ***Quick go through: Responsibilities for Adverse Event Protocol***
   a) Anesthesiologist/Anesthetist involved in adverse event, if their professional competence has not been impaired, should continue giving care to the patients
   b) Equipment will not be discarded or made dysfunctional until there is sufficient evidence for believing that the adverse event has been caused by the equipment
   c) The details of the adverse event will be recorded in patient's medical record.
   d) The record will not be altered under any circumstances.
   e) Stay visible and available in the follow-up process
   f) Seek help from other departments/consultants as and when needed.
   g) Document and submit a follow-up report. Ensure that the Follow-up Supervisor remains engaged with the Anesthesia personnel and the aggrieved patient/attendant throughout in his/her appointed capacity
   h) Ensure close cooperation between various departments and maintain continuous communication between them.
   i) Contact the hospital administration.
   j) In the event of equipment malfunction, arrange for alternative equipment.
   k) HOD or Clinical Director should directly supervise or delegate responsibility for incident investigation.
   l) Anesthesia equipment manager or an alternate must assure impounding of equipment, if necessary, and determine appropriate disposition of equipment.
   m) In case the evidence points to the involvement of pharmaceuticals or supplies in the adverse event, and there is a chance that these, if used by other patients, may cause danger to their health, the pharmacy, materials management, nursing staff and other concerned should be contacted.
   n) Supervise continuing investigation of equipment or supplied-related issues or contact the manufacturer if appropriate.
   o) The follow-up Supervisor should notify the individuals involved of their responsibilities as defined in this document.
   p) Be responsible for assuring that procedures are followed to the extent necessary, reasonable and possible.
   q) Maintain communication with those who are providing continuing anesthesia care, providing guidance and advice as needed.
   r) Ensure that information regarding the adverse event is communicated through the proper channels to the department Quality Assurance program.

Referred to Adverse Event Register attached in ***Annexure-7***

11 Infection Control Guidelines

11.1 Purpose:

1. To maintain sterility in the entire course of surgical procedure to prevent growth of microorganisms that causes infection of the operated site.
2. To observe sterile techniques in the performance of the surgical operation among all members of the operating team.
3. To prevent transfer of microorganisms to the operated site.
4. To prevent occurrence of infection on the surgical area.
5. To prevent transfer of infection form patient to staff, or vice versa.
6. To minimize infection having blood-borne pathogens from recognized and unrecognized sources.
7. To implement precautionary measures for infection that are communicable, hence prevention of transmission to other patient is attained.

11.2 Responsibility:

Anesthesiologist, Anesthesia Technologist, Infection Control Nurse, OT Incharge, Head Nurse

11.3 Procedure:

1. Anesthesia department staff should follow all appropriate infection control measures.
2. All operating room staff should perform proper hand washing techniques before and after every procedure.
3. Traffic control in the operating theatres should be strictly observed.
    a. Keep operating room closed as much as possible.
    b. Keep number of personnel and conversation in the operating room to a minimum.
    c. Transfers patient to the recovery room without crossing main traffic corridors.
4. Environment control should be strictly maintained.
    a. Maintenance personnel ensure compliance with positive pressure ventilation and adequate air exchanges per hour.
    b. Locates air intake away from any areas of bacterial contamination.
    c. Installs hepa-filter (bacterial filter) for air filtration.
    d. Maintains temperature level of 18-24 degree centigrade.
    e. Maintains humidity to 50-60%.
5. Disinfection and Sterilization processes should be done on all surgical instruments and equipment
    a. Scrub nurse places all used instruments in a sterile receiver to be forwarded to the CSSD decontamination area.
    b. Circulating nurse cleans and disinfects equipment used.
    c. Housekeeping personnel performs after care of the operating room and support areas.

6. Appropriate patient preparation should be done in accordance to Infection control guidelines
    a. Skin preparation by shaving and scrubbing.
    b. Application of sterile drapes on the operative site.
7. Operating team should comply with strict aseptic techniques during the entire surgical procedures
    a. Observe proper hand washing and surgical scrubbing.
    b. Maintains sterility of the operating table.
8. Protective barriers should be worn at all times which include sterile gloves, sterile gown, cap, mask and large sterile body drape etc.
9. Disposable anesthesia patient care supplies should be used, whenever possible. Reusable items must be properly disinfected or steamed and sterilized prior to reuse.
10. Anesthesia machine should be cleaned with anti-septic at the completion of each case and when soiled during a procedure.
11. Patients with active airborne communicable diseases (MRSA, TB, Dengue etc) should be cared for and appropriately isolated, based on the specific organism suspected or diagnosed
12. Standard precautions should be observed at all times and there should not be any direct contact with a patient's blood, body fluids and/or excretions.

12 Safety guidelines

Anesthesia is usually considered a high risk procedure since it can potentially lead to physiological changes which may cause morbidity or mortality.

12.1 Purpose:

To limit patient injury from a specific adverse event associated with anesthesia and to ensure that the causes of the event are identified so that a recurrence can be prevented.

12.2 Responsibility:

Anesthesiologist are responsible for patient safety during operations.

12.3 Procedure:

12.3.1 General Safety Strategies

1) **Prepare Pre-operative Plan of care**
   a) Do Preoperative anesthesia assessment
   b) Prepare Anesthesia plan to deal with possible crisis.
   c) Check Anesthesia machine monitors and other devices
   d) Check backup equipment
   e) Know the location of emergency supplies and equipment.
   f) All drugs should be clearly labelled. Ideally drugs should be drawn up and labelled by the anesthetists who administers them.
2) **Develop Situational awareness**
   a) Systemic approach must be used for scanning of machines, monitors, patient, surgical field and surroundings
   b) If one vital sign is abnormal, quickly assess the other vital signs
3) **Verify Observations**
   a) Cross-check observations
   b) Assess covarying variables
   c) Review it with a second person
4) **Implement compensatory responses**
   a) If something happens wrong, first implementing time-buying measures. e.g., increase the fraction of inspired oxygen when oxygen saturation falls; administer intravenous fluids or vasopressors when hypotension occurs)
   b) Search out any correctable primary cause and treat it possible.
5) **Prepare for crisis**
   If there is any critical events happened (cardiac arrest, malignant hypothermia or difficult intubation), call for help early , then use accepted protocols for emergencies and resuscitation (e.g., advanced cardiac life support, malignant hyperthermia protocols)
6) **Enhance teamwork; communicate**
   To enhance teamwork and communication, address surgeons and nurses early in the case by knowing names. Make requests and delegate tasks clearly and specifically by name.
7) **Compensate for stressors**
   Reduce various stressors: noise, fatigue, interpersonal tension, etc. Optimize the work environment.

8) **Recognize and address production pressures**
Due to patient load in DHQs and THQs, anesthetist should not sacrifice patient safety in order to emphasize production. If there is no adequate preoperative evaluation, preparation, or monitoring, it is unsafe to anesthetize the patient.

9) **Learn from close calls**
Analysis and feedback of adverse events to identify and assess system problems.

12.3.2 Crucial errors to know and avoid

1) **Airway Errors**
Patients receiving GA have no spontaneous respiration due to use of muscular relaxants, their respiration is controlled by machine via Endo-tracheal tube. So we must ensure oxygen supply and avoid Accidental Extubation during surgeries (esp. a prone surgery) and transport. Once it happens, it can cause severe hypoxia and directly threaten the patient life.
How to avoid:
a) Check the system and guarantee it to function well.
b) Verify an Endo-tracheal tube by auscultating for breath sounds bilaterally and by detecting end-tidal CO2
c) Fix the tube solidly
d) Closely observe vital signs

2) **Medication Errors**
a) Administration of undiluted potassium by rapid intravenous infusion can cause ventricular fibrillation and cardiac arrest.
b) Neostigmine given without an anti-muscarinic drug can cause asystole, severe bradycardia and atrioventricular block and can be fatal.
c) Succinylcholine can cause severe hyperkalemia and dysrhythmias, may trigger malignant hyperthermia.
d) Medications to which a patient is allergic can cause anaphylaxis.
e) Administering the wrong blood can cause an incompatibility reaction that can be fatal.
How to avoid
a) Be familiar with the medication you use, know clearly its indications and contraindications
b) Administer the medication strictly according to instructions.
c) Know the patient‘s history of allergy
d) Cross-check blood type.

3) **Procedure Errors**
a) Inadvertent intravascular injection of local anesthetics during a nerve block can cause neurologic and cardiac toxicity, which can be fatal (especially with bupivacaine).
b) Avoidable epidural hematomas may develop when spinal or epidural anesthetics are performed in patients who have coagulopathies.
c) Air embolisms may occur during the placement or removal of central venous catheters and may cause significant hemodynamic instability (recumbent position can avoid it).
How to avoid:
i. Adequate pre-operative evaluation of the patients.
ii. Manipulation according to standards and guidelines
iii. Vigilance

Referred to WHO Anaesthesia Checklist attached in ***Annexure-8***

13 Medical record maintenance

13.1 Purpose:

To establish guidelines and the responsibility of anesthesia discipline who depend on the medical record as the primary tool for communicating information important to patient care.

13.2 Responsibility:

Anesthesiologist, Anesthesia Technologist, Anesthesia Technicians, OT Nurse

13.3 Procedure:

1) Preoperative assessment notes by the anesthesiologist must include the patient's age, sex, and previous anesthetic experiences and pertinent drug history basic physical condition, and risk rating.
2) Anaesthesia consent form must be documented for all patients planned for surgery in which anaesthesia is in use.
3) Intraoperative anesthesia notes must include monitoring of oxygen saturation and vitals of patient during procedure.
4) Post-operative anesthesia notes shall be recorded when the period of anesthesia surveillance has ended, the patient's condition is specified.
5) Medical records must be maintained for every individual who receives anesthesia.
6) Medical record of a particular patient is confidential and his/her right to privacy must be respected at all times.
7) Patient file containing all the medical records will remains in the custody of nursing staff during the entire stay of patient in DHQ Hospital.
8) Every authorized person shall request the nursing staff on duty for patient's file to endorse his/her entry.
9) The author of entry in medical records is identified through signatures, names & designation.
10) The author of entry must make sure that every entry fulfil the following criteria
    a. Date of entry
    b. Time of entry
    c. Authenticated by his/her legible name ,signature and designation
11) After the discharge/death/referral /admission of patient nursing staff on duty shall complete the medical record in all aspects and handover it to Medical Record Section
12) All entries must be legible, accurate, clinically relevant and authenticated.

Referred to Anaesthesia Record Register attached in ***Annexure-9***

14 CQI

14.1 Purpose:

To establish an effective process which leads to measurable improvement in health care services provided to the patient by identifying factors affecting service quality.

14.2 Responsibility:

MS, CQI Coordinator, Quality assurance officer, Anesthesiologist, OT In charge

14.3 Procedure:

1) The CQI Committee comprises of the following individuals:
   a. MS of the HCE,
   b. CQI Coordinator
   c. HOD's Clinical department
   d. Quality assurance officer
2) OTMC in operation theatre comprises of the following individuals:
   a. OT In charge
   b. HOD Anesthesia
   c. HOD Surgery
3) All quality improvement efforts in anesthesia department are guided by following MSDS standards from MSDS reference manual of PHC.
   a. COP 4 - Policies and procedures guide administration of anesthesia
   b. Management of medication MOM
   c. Patient rights and Education PRE
   d. Hospital infection control HIC
   e. Human Resource Management HRM
   f. Information Management System IMS
4) In addition to these, the Anesthesia department shall monitor key performance indicators for:
   a. Percentage of modification of anesthesia plan
   b. Percentage of unplanned ventilation following anesthesia
   c. Percentage of adverse anesthesia events
   d. Anesthesia-related mortality rate.
5) Once in a month CQI meeting will be conducted and all relevant information derived from quality improvement activities shall be shared to administration and concerned area of problem ,so that action can be taken at the right level to solve identified problems and to avoid duplication of effort.
6) Minutes of meeting will include defined agenda, issues discussed, conclusion/ recommendation, target date for action plan and the responsible person.
7) Documentation of review meeting shall be maintained in a confidential file by CQI coordinator. (Refer to CQI Manual for further details)

15 FAQs

15.1 Do Patients have choices about what kind of anesthesia they will have?

The type of anesthesia planned for patients depends upon their medical history and the type of surgical procedure as well as patient choice. Anesthesiologist will prepare the plan of anesthesia on the basis of pre-anesthesia assessment, and if possible, can give the options to patient.

15.2 What is Patient Confidentiality?

Confidentiality is one of the core duties of medical practice. It requires health care providers to keep a patient's personal health information private unless consent to release the information is provided by the patient.

15.3 What is the role of Anesthesia technologist/ technician?

An Anesthesia technician/technologist is a key member of the perioperative team. An anesthesia tech oversees and masters all of the anesthetic equipment the perioperative team uses – from ultrasound machines to monitors that displays critical information about the progress of the procedure and manages the safekeeping , maintenance and troubleshooting of these technologies. More advanced duties might include transporting patients to surgery, explaining procedures to patients and operating equipment, such as electronic and pneumatic devices, that monitors patients who are under anesthesia.

15.4 How long patient can stay in PACU?

Patient will stay in PACU till he completely recovers from anesthesia and condition fulfills the discharge criteria i.e. Aldreto score

15.5 Can Resident Doctors document anesthesia notes?

There is no regulation requiring the attending Anesthesiologist to physically document the services rendered or vitals intra-operatively and post-operatively. Residents can prepare the documentation for the administering anesthesiologist, at his or her direction, but the anesthesiologist administering anesthesia needs to review, approve, and sign the anesthesia notes, thereby validating that all of the information provided by the resident is accurate and complete.

16 ANNEXURES

16.1 Pre-Operative Anaesthesia Assessment **Annexure-1**

PRE-OPERATIVE ANAESTHESIA ASSESSMENT

Name:	Age:	Gender: ☐M ☐F ☐T	MR. No.	Weight:	Anesthesia Assessment Date ...dd.../...mm.../...yy...
Department:	Unit:	Ward No.	Bed No	Emergency/Elective	Date of Surgery ...dd.../...mm./...yy...
Surgeon:	Planned Surgery:		Diagnosis		
Medical History			Surgical History		
Family History of Anaesthesia Complication			Drug History		
			Known Allergies		

Vitals	BP_____ Pulse _____ Temp _____ R/R _____				Operative Site Verification ☐R ☐L ☐N/A			
Systemic	☐ Dyspnea I II III IV ☐ Angina I II III IV	(Encircla Relevant)			ASA Status	I	II	III	IV	V	E	Scoring

☐ MI	☐ IHD	☐ HTN	☐ CCF
☐ Pace Maker	☐ RHD	☐ Dysrhythmia	☐ TB
☐ Asthma	☐ Recent URTI	☐ Productive Cough	☐ Orthopnea
☐ Valve Disease	☐ Gag Reflex	☐ Pneumonia	☐ COPD
☐ Cirrhosis	☐ Bowel Obst.	☐ Hepatitis	☐ Hiatal Hernia
☐ APD	☐ Thyroid	☐ Diabetes Mellitus	☐ CRF
☐ Seizures	☐ CVA/ Storke/TIAs	☐ Neuromuscular	☐ Paralysis
☐ Paresthesia	☐ Headache/↑ICP	☐ Pregnancy	☐ Anemia
☐ Immuno Suppressed	☐ Sickle Cell Disease	☐ Cancer/ Chemotherapy	☐ Recent Steroids
☐ Tobacco Use (..... Packs/Day)	☐ Other		

Significant Investigations

ECG			
CXR			
USG			
Other			

Hb	Platelet	WBC	Blood Group
Na	K	Cl	HCO_3
BSF	BSR	Hepatitis B/C	HIV
PT	APTT	INR	Bilirubin
Urea	Creatinine	SGOT	SGPT
Other			

Auscultation

S1	S2
S3	S4
Murmur	

Mallampatti

Teeth

Dentures ☐Yes ☐No

Jaw Movement

Neck Movement

Theromental Distance	☐ >6.5	☐ <6.5	
Mandibular Protrusion	☐ A	☐ B	☐ C
Atlantoocscipital Ext.	☐ >90	☐ <90	
Mouth Opening (Finger)	☐ 1	☐ 2	☐ 3

Skeleta Review

Any Deformity: Y/N
Infection: Y/N
Previous Surgery: Y/N
Pain: Y/N
Other_____

Anticipated Risks

_____
_____
_____
_____

Anesthetic History

Previous Exposure: ☐YES ☐NO

Detail:

Complication (If Any:)

Pre-Operative Order

☐ Pass I/V Cannula ☐ Provide Hospital Dress / Theatre Gown
☐ Marked Operation Site & Side_____
☐ Shave & Prepare the Area_____
☐ N.P.O from _____AM/PM
☐ Arrange_____ Pints of Blood.
☐ Send all Investigations to the Operation Theater
☐ Send Patient to Operation Theatre at _____AM/PM
☐ Any Other Specific Order: _____
_____

Current Medications

Pre Anaesthesia Orders (Medication & Fluids)

Blood Required	Blood Ordered	Blood Group	X-Match	Whole Blood/ FFP / Platelet

Dr. Name & Sign	Designation	Hosp. ID	Date & Time:
			...../...../..... ..... : ..... AM/PM

16.2 Anaesthesia Consent **Annexure-2**

PRIMARY & SECONDARY HEALTHCARE DEPARTMENT
DHQ / THQ HOSPITAL -

Patient Name:		Father / Husband Name:	MR No:
CNIC/SNIC:		Age:	Gender: ☐ M ☐ F ☐ T
Ward No.	Bed No.	Unit	Diagnosis	Date of Admission: ..... / ..... / .....

اجازت نامہ برائے بے ہوشی / جسم کا سن کرنا

مجھے بتایا گیا ہے کہ مجھے / میرے مریض کو بغرضِ علاج بے ہوش کرنے یا جسم کے کسی حصے کو سن کرنے کی ضرورت ہے۔ ڈاکٹر صاحبان نے ہمیں بے ہوشی / جسم کو سن کرنے کی ضرورت، متبادل طریقہ علاج _____ اور پیچیدگیوں _____ کے بارے میں وضاحت سے بتا دیا ہے جس میں دانت ٹوٹنا، سانس کا رُکنا، خون کی نالیوں میں خون جمنا، ہوا یا پچہ دانی کے پانی کا خود بخود پھیپھڑوں میں چلے جانا حتی کہ موت بھی شامل ہے۔ مجھے یہ بھی بتایا گیا ہے کہ آپریشن کے بعد سانس قدرتی طور پر بحال نہ ہونے کی صورت میں مجھے / میرے مریض کو سانس دلانے کے لیے مصنوعی مشین کی مدد بھی لی جا سکتی ہے۔ میں ان تمام خدشات کے باوجود اپنے / اپنے مریض کو بے ہوش / جسم کے حصے کو سن کرنے کی اجازت دیتا / دیتی ہوں۔

میں مطمئن ہوں کہ میرا / میرے مریض کا علاج قابل ڈاکٹر / سرجن / اینستھیٹسٹ سرانجام دیں گے۔ مجھے ڈاکٹروں کی صلاحیت، قابلیت اور خلوص پر مکمل اعتماد ہے اور میں بے ہوشی / جسم کے سن کرنے کے دوران پیش آنے والی کسی بھی پیچیدگی کی صورت میں میں ہسپتال انتظامیہ، متعلقہ ڈاکٹر یا طبی عملے کے کسی فرد کو قصوروار نہیں ٹھہراؤں گا / گی اور کسی قسم کی قانونی کاروائی عمل میں نہیں لاؤں گا / گی۔ مجھے بتا دیا گیا ہے کہ آپریشن سے پہلے میں اپنے / اپنے مریض کو بے ہوش / جسم کے کسی حصے کو سن کرنے کے طریقے سے مطمئن نہ ہونے کی صورت میں آپریشن سے انکار کر سکتا / سکتی ہوں اور یہ حق مجھے اس فارم پر دستخط کرنے کے بعد بھی حاصل ہوگا۔

مندرجہ بالا تحریر مجھے / میرے مریض کو پڑھ کر سنا دی گئی ہے اور اجازت کے ثبوت کے طور پر میں نے دستخط اور نشان انگوٹھا ثبت کر دیے ہیں۔

مریض کا نام _____ ولدیت _____ نام قریبی رشتہ دار _____ ولدیت _____

MR نمبر _____ مریض کے ساتھ رشتہ _____

عمر _____ ٹیلی فون نمبر _____ عمر _____ ٹیلی فون نمبر _____

پتہ _____ پتہ _____

دستخط _____ نشان انگوٹھا _____ دستخط _____ نشان انگوٹھا _____

مریض کے قریبی رشتہ داروں کی عدم موجودگی میں ڈاکٹر مریض کی حالت کے پیش نظر فوراً اسکا علاج شروع کریں اور مریض کے لواحقین کے آنے پر فارم پر دستخط کروائیں۔

دستخط سٹاف نرس _____ دستخط ایڈیشنل میڈیکل سپرنٹنڈنٹ _____ ڈپٹی میڈیکل سپرنٹنڈنٹ _____

اینستھیٹسٹ / ایم او اینستھیز یا کا بیان

میں نے مریض کو بے ہوش کرنے سے پہلے اس کا بغور معائنہ کر لیا ہے اور بے ہوشی سے پہلے میں نے مریض کو آسان زبان میں بے ہوشی کی ضرورت، طریقہ کار، فوائد اور ممکنہ پیچیدگیوں سے آگاہ کر دیا ہے۔ میں نے مریض کو بے ہوشی سے متعلق اس کے تمام سوالات کے موثر جوابات دے دیے ہیں اور ضرورت کے مطابق ٹیسٹ بھی تجویز کر دیے ہیں۔ مریض نے مخصوص طریقہ کار اور ممکنہ پیچیدگیوں پر اطمینان کا اظہار کیا ہے / نہیں کیا ہے۔ میں نے فراہم کردہ معلومات کی ایک قابل توثیق کاپی مریض کے طبی ریکارڈ میں رکھ دی ہے۔ میں مریض کے علاج کے سلسلے میں اپنی تمام ذمہ داریاں پوری ذہانت اور محنت سے ادا کروں گا اور مریض کے علاج کے سلسلے میں میرا ہر فیصلہ / مشورہ صرف اور صرف مریض کی بہتری اور اسکی صحت کے لیے ہوگا۔

نام و مہر ڈاکٹر _____ دستخط ڈاکٹر _____ تاریخ _____ وقت _____ AM/PM

زبان کی عدم فہمی کی صورت میں ترجمان کا اقرار: میں نے ڈاکٹر اور مریض کے درمیان گفتگو کا ترجمہ اپنی اہلیت کے مطابق کر دیا ہے

نام ترجمان _____ دستخط ترجمان _____ تاریخ _____

16.3 Anaesthesia Plan **Annexure-3**

PROPOSED ANAESTHESIA PLAN		
Type Of Anaesthesia: ☐ GA ☐ Regional		
General Anaesthesia		
Airway Management: ☐ Oral ☐ LMA ☐ Cannula		
☐ Intubation ☐ Ventilator	Gases: O_2_____/L N_2O_____/L	
O_2 Inhalation: ☐ Face Mask ☐ Nasal Cannula ☐ Via Tracheostomy		
Inj Propofol / Ketamine_____mg	Inj. Succinyl Choline____mg	
Maintenance:		
Regional Anaesthesia: ☐ Spinal ☐ Epidural ☐ Combined Spinal Epidural		
Needle Size: Approach: Level:		
Drugs Infiltrated:		
Pre-Anaesthesia Orders (Medication & Fluids):		
Monitoring Plan:		
Post Anaesthesia Care Plan:		
Anesthetist Name, Signature & Stamp	Hosp.ID	Date & Time

16.4 Pre-Induction Re-Evaluation **Annexure-4**

ANESTHESIA PRE-INDUCTION RE-EVALUATION		
Identity of Patient Confirmed / ID Band Applied	☐ Yes ☐ No	
Patient Conscious	☐ Yes ☐ No	
Anesthesia Assessment Review	☐ Yes ☐ No	
ASA Status	☐ Yes ☐ No	
B.P:	Pulse:	
R/R:	Temp:	
Operative Site: ☐ Right ☐ Left	☐ N/A	
NPO Since hrs.	☐ Yes ☐ No	
Any Known Allergy	☐ Yes ☐ No	
Drugs Reviews	☐ Yes ☐ No	
Difficult Air Way / Aspiration Risk	☐ Yes ☐ No	
Does the Patient have a Risk of > 500 ml Blood Loss	☐ Yes ☐ No	
DM, HTN, Co-Morbidity Reviewed	☐ Yes ☐ No	
Anesthesia Plan Reviewed	☐ Yes ☐ No	
Any Specialist Consultation	☐ Yes ☐ No	
Any Change in Anesthesia Plan	☐ Yes ☐ No	
If (Yes), Cause of Change in Anesthesia Plan		
_____		
Modification in Anesthesia Plan		

Anesthetist Name, Signature & Stamp	Hosp.ID	Date & Time

16.5 Intra Operative Anaesthesia Monitoring Sheet **Annexure-5**

INTRA-OPERATIVE ANAESTHESIA SHEET

Name		Age	Gender	Weight	Date
MR. No.	Unit	Ward No.	Bed No.	Blood Group	Given Time
Diagnosis	Surgery	Anesthetist	Surgeon	Pre Medication	
Time	Entry.....:..... Am/Pm	Induction.....:..... Am/Pm	Incision.....:..... Am/Pm	Closure.....:..... Am/Pm	Reversal.....:..... Am/Pm

Preoperative Condition ASA I II III IV V E

☐ I.V Line Maintained

Monitors Applied

☐ $ETCO_2$ ☐ SPO_2 ☐ Pulse Oximeter ☐ ECG ☐ BP

☐ Others.....

■ GENERAL ANAESTHESIA

Airway

☐ Oral ☐ LMA ☐ Nasal

☐ Intubation ☐ Oral ☐ Nasal ☐ Cuffed ☐ Un-Cuffed Size.....

☐ Ventilator

O_2 Inhalation ☐ Facemask ☐ Nasal Cannula ☐ Via Tracheostomy

Gases

O_2 L

N_2 O L

Sevoflurane

Iso Flurane

Reversal & Extubation:

Time Reversal Started..... : ..... AM/PM

Extubation Time: ..... : ..... AM/PM

■ IF REGIONAL ANESTHESIA

☐ Spinal ☐ Epidural ☐ Combined Spinal Epidural (CSE)

ASM: ☐NO ☐Yes **Needle:** Gauge: Type:

Approach: ☐ Median ☐ Para Median

Position of Patient: ☐ Sitting ☐ Lateral

Level: ☐ L2-3 ☐ L3-4 ☐ L4-5 **No of Attempts:**

Drugs: Skin Infiltration:

Intrathecal:

Epidural:

LOR_____cm. Epidural Catheter Fixed at_____cm

Level Acheived:

POSITION OF PATIENT DURING SURGERY ☐ Supine ☐ Prone

☐ Trendelenburg ☐ Lithotomy ☐ Lateral

☐ Other

Eye Protection: ☐ Saline ☐ Goggles

☐ Ointment ☐ Pads ☐ Tape

Course of Anesthesia: ☐ Uneventful

ADVERSE ANAESTHESIA EVENTS

Any Adverse Anesthesia Event ☐ No ☐ Yes, (If Yes Then Specify)

☐ Unplanned Ventilator Support (Bag Mask Ventilation)

☐ Emesis with Suspected Aspiration ☐ Oxygen Saturation <90% for 5 minutes or more

☐ Code Blue Performed ☐ Unplanned Admission of ICU

☐ Reversal Agent Given for LOC<4 ☐ Emesis with Suspected Aspiration

☐ Bradycardia ☐ Death

☐ Prologed Mental or Physical Impairment Resulting from the Sedation of the Procedure

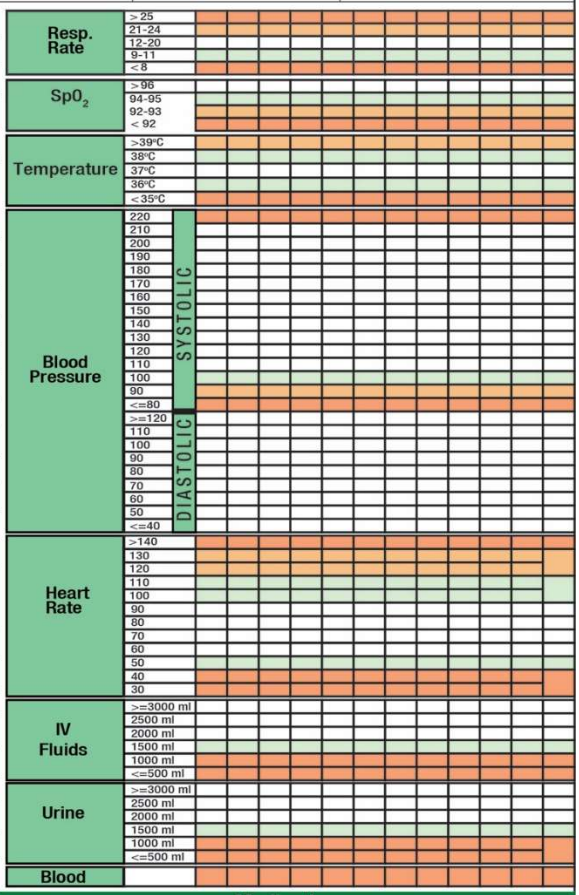
☐ Hypotension Requiring Intervention (i.e. Trendelenburg. IV fluids)

☐ Other

IMMEDIATE POST ANESTHESIA STATUS IN OT

BP	Pulse	R/R
Airway	SPO2	Consciousness
Pain		Temp

Name of Anesthetist | Sign & Stamp | Date ...dd/...mm/...yy... | Time ..... : ..... AM/PM



Medication

Medicine	Ordered by	Given by	Time

Controlled Drugs

Drug Name	Issued	Used	Returned	Provider
Morphine				
Fentanyl				
Pethidin				
Dormicum				Witness
Thiopental				

Remarks:

16.6 Post Anaesthesia Monitoring Sheet **Annexure-6**

POST ANESTHESIA CARE UNIT

Name of Patient:	Age:	Gender: ☐M ☐F ☐T	MR No:
Post-Operative Anesthesia Cover Required for: _____ Hours.			
Time of Arrival in Recovery: ..... : .....AM / PM		Time of Discharge from Recovery: ..... : .....AM / PM	
☐ Oxygen Inhalation:		☐ Check Vitals every:	
Investigation: ☐Hb + HCT _____ ☐Serum Electrolytes _____ ☐ ABGs _____ ☐ ECG Monitor _____			
☐ Other _____			

Anesthetist Notes (Post Op Advice)

☐ Prop up ☐ NPO _____ ☐ O_2 Inhalation _____		Handing Over Statement		
		BP	Pulse	Temp	R/R	SPO2
		Date:...dd.../...mm.../...yy...		Time:..... : ..... AM/PM		
Patient Condition on Shifting	☐ Fully Awake	☐ Drowsy	☐ Easily Arousable			

Medication and Fluid Administration Record

Drug	Dose	Route	Frequency	Advised by	Time Given	Administered by

Vital Records

Date	Time	GCS	Temp	Pulse/Min	B.P	R/R	SPO_2	Pain Score	Intake		Output			Name Sign & ID
									IV	Oral	Urine	Drain	Gastric Secretions	

Shifting Notes

Patient to be shifted when Aldreto's Score is More than 8

Circulation	☐ Blood Pressure 50% of Pre-Anesthesia Level	☐ Blood Pressure+20-50% of Pre-Anesthesia Level	☐ Blood Pressure 20% of Pre-Anesthesia Level	Total
Respiratory	☐ Apnea	☐ Dyspoea, Shallow or Limited Breating	☐ Able to Breath and Cough Freely	
Color	☐ Cyanotic	☐ Pale, Dusky, Blotchy, Jaundice, Other	☐ Pink	
Activity	☐ Able to Move Zero Extremities on Command	☐ Able to Move Two Extremities on Command	☐ Able to Move four Extremities on Command	
Consciousness	☐ Not Responding	☐ Arousable on Calling	☐ Fully Awake	

Anesthetist Name Sign, ID & Stamp	Date: ...../...../.....	Time: ..... : ..... AM/PM
Recovery Room Nurse Name Sign, ID & Stamp	Date: ...dd.../...mm.../...yy...	Time: ..... : ..... AM/PM

PATIENT RECEIVING FROM OPERATION THEATER IN ICU / WARD / ROOM

BP	Pulse	R/R	Temp.	GCS	CVP	Pain

Receiving Protocal			Status of Drains	
Document Received	☐ Yes	☐ No	NG	
IV Line Intact	☐ Yes	☐ No	Foleys	
Biopsy Specimen	☐ Sent	☐ Not Sent	T.Tube	
Blood Transfusion	☐ Advised	☐ Not Advised	Drain 1	
Operation Notes & Post Op Orders Check	☐ Yes	☐ No	Drain 2	
Fluid Balance:			Chest Tube	

Ward Nurse Name		Sign & ID		Reveiving date Date	...../ ...../	Time	.....:..... AM/PM

16.7 Adverse Event Register **Annexure-7**

Yearly / Monthly No	Date	Time	Name	Age / Sex	MR No	Procedure	Type of Anaesthesia	Surgeon Name	Anaesthetist Name	Adverse Event	Management	Outcome	CPA	Remarks / Signature

16.8 WHO Anaesthesia Checklist **Annexure-8**

Anesthesia Safety Checklist

World Health Organization

Before induction of anesthesia

Is an experienced and trained assistant available to help you with induction?

- ☐ Yes
- ☐ Not applicable

Has the patient had no food or drink for the appropriate time period?

- ☐ Yes
- ☐ Not applicable

Is there intravenous access that is functional?

- ☐ Yes

Is the patient on a table that can be rapidly tilted into a head-down position in case of sudden hypotension or vomiting?

- ☐ Yes

Equipment check:

- ☐ If compressed gas will be used, is there enough gas and a reserve oxygen cylinder?
- ☐ Anesthetic vaporizers are connected?
- ☐ Breathing system that delivers gas to the patient is securely and correctly assembled?
- ☐ Breathing circuits are clean?
- ☐ Resuscitation equipment is present and working?
- ☐ Laryngoscope, tracheal tubes and suction apparatus are ready and clean?
- ☐ Needles and syringes are sterile?
- ☐ Drugs are drawn up into labelled syringes?
- ☐ Emergency drugs are present in the room, if needed?

16.9 Anaesthesia Record Register **Annexure-9**

Yearly/Monthly No	Name	Age / Sex	MR No.	Procedure Name	Anaesthesia Type	Date of Procedure	Induction Time	Anaesthesia Time Out	Anaesthesia Recovery Status	Any Adverse Event	Surgeon Name	Anaesthetist Name	Assistant Nurse	Remarks / Signature

17 References

Basic Anesthesia Monitoring
http://www.caa-med.com/wp-content/uploads/2014/07/CAA-Policies-and-Procedures-PDF-7.14.pdf

ASA physical classification
https://www.asahq.org/standards-and-guidelines/asa-physical-status-classification-system

Aldreto score
https://www.researchgate.net/figure/PACU-recovery-and-discharge-scorings-modified-Aldrete-score_tbl1_259781004

WHO Anesthesia safety checklist in annexure
https://www.who.int/surgery/publications/s15980e.pdf

Safety guidelines
https://www.slideshare.net/sumizin/2-safety-in-anesthesia (Dr.lin Cao department of anesthesia, Sun Yat-Sen University

CQI
https://www.phc.org.pk/catI_HCE.aspx