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A CRITICAL ANALYSIS ON PRE OPERATIVE CARE AND MANAGEMENT INDIAN HEALTH CARE – AN ANALYSIS

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ABSTRACT

Healthcare globalization, entry of private players into the healthcare sector including foreign participation there is a see-saw change in healthcare in India. Few decades back healthcare is mainly confined to Govt. hospitals, Primary healthcare centers all under the control of State & Central governments including Government hospitals and medical college hospitals. As mentioned above after the entry of private players in healthcare and the advancements made in healthcare in developed nations with the introduction of technology such as minimum invasive surgeries, robotic surgeries, organ transplantations, and legalizing of the same in majority of the countries, latest medications, though changed the healthcare system, at the same time much dependence on technology made the healthcare professionals more cautious. This article is pertaining to Pre Operative Care/Management is, one of the important things because once a patient is decided that a surgical procedure is necessary by the healthcare professionals, they prepare a charter of Pre Operative Care that is needed to the patient before surgery and preparing the patient for surgery. Surgical Procedures involve physical, emotional, mental strains on the patients. The Pre Operative Care preparation depends on the patient's ailments, present health status, gender difference, age, demography etc. This Pre Operative Care/Management depends on the above categories and the healthcare professionals/surgeons will prepare an evaluation based on the present and pre history of the patient, reports from the clinical departments, physical observation and finally to have a communication with the patient. After the evaluation a detailed planning and program is prepared (Evaluation) on preparation of the patient for the surgery and the precautions that are needed, the medications, observations and any deviations should be taken care of prior to surgery. The evaluation should aim to provide patients with a comprehensive understanding about the surgical procedures the side effects, complications that may arise and also how to treat or overcome those problems. In Pre Operative Care, the healthcare professionals through physical examinations will get all the information regarding patient's drug intake, any allergical problems to medicines/equipments/metallic parts and anesthetic action, cardiac function etc., are thoroughly investigated and the patient is advised whether to discontinue the present medication or continue with knew ones will all be informed. This Pre Operative Care will be looked after under the supervision of the healthcare professionals by the Paramedics/nurses who are personally attending the patient and these people are given not only the evaluation but also a checklist, to be followed in its enterity and record the information in the patient's healthcare record. Any deviations in patient's health till the patient is sent to the theatre are all should be recorded and any difference from the normal functioning of the patient's organs should be immediately intimated to the surgeons and healthcare professionals under whose guidance the patient is, and immediate steps to be taken. Communication is another important aspect at every stage in Pre Operative Care/Management, any breakdown in communication, no communication, partial communication will have adverse impact on the procedure. Hence the surgical team, the anesthesia team and the para medics should have a good communication to reduce or minimize the side effects, complications and procedural irregularities. Finally, the Pre Operative Care ends when a clearance is given to the staff to bring the patient to the theatre that means the Pre Operative Care/Management function starts from, when the patient is admitted to the facility and ends when the patient is handed over to the surgical professionals in the theatre, with all the relevant documents and information and the final healthcare records with full details.

1. INTRODUCTION

In healthcare, Pre Operative Care/Management comes into play when the patient needs surgery for the ailments/ discomfort. Surgery/Healthcare Procedure is one of the most daunting times in a patient's life and at the same time for the healthcare professionals, the task is very risky because the surgery/healthcare procedure should be successful and the patient must be brought to the normalcy safely. It is very difficult to quantify the stress, pre operative surgery can bring and the health care sector has always sought ways to mitigate it at every stage of the process. In surgical procedures, there are different kinds and some are very complex in nature such as brain surgery, valves of the heart replacement, organ transplantations such as heart, kidney, liver and lungs etc., in addition sometimes the procedure is so critical about multi-organ transplantation; normally surgeries involves complex procedures that put physical, mental and emotional stress on patients; at times these stresses continue even after the procedure which is performed successfully by the healthcare professionals but with respect to patients it takes more time to recover from that physical and psychological situation. However, the present healthcare environment is entirely different because of innovations, technology developments such as robotics and latest techniques which minimizes the handling procedure by the healthcare professionals, thus saving the patient strain, recovery period and infections. The procedures are so developed to care a patient at every single stage of the surgical process and it is called preoperative care/management in the process. This kind of pathway namely Pre operative Care and Management has been developed as a means to create safe and accommodating entry and exit strategies for patients undergoing surgeries.

2. Definition of the Pre Operative Care:

Pre Operative Care refers to healthcare provided before a surgical procedure. The aim of Pre Operative care is to do whatever is right to increase the success of the surgery. At some point before the operation, the healthcare provider will assess the fitness of the person whether to have surgery or not. This assessment should include whatever tests that are

indicated but not include screening for conditions without an indication. Immediately before the surgery the patient's body is prepared, perhaps by washing with an antiseptic, and whenever possible their anxiety is addressed to make them comfortable (Wikipedia).

Pre Operative Care given to a patient before surgery when the patient is prepared for operation to withstand the physical and psychological situations according to the individual needs and the surgery that is necessary. The Pre Operative time runs from the time the patient is admitted to the healthcare facility or to the facility where the patient has to undergo surgery to the time the surgery begins.

An healthcare provider conducts Pre Operative Assessment, at some point before surgery conducts Pre Operative Assessment to verify whether the person is fit and ready for the procedure/surgery. Normally in surgeries a person receives either general or local anesthesia for which the assessment may be done either by a Doctor or trained nurse to analyze the position of the patient whether the patient is fit for surgery or not.

3. What is Pre Operative Care?

a. Anxiety: One of the worst experiences for a patient before surgery is anxiety; because he will be thinking about his ailments and procedure of the surgery, time for recovery and the pain involved in it. The entire situation put the patient in an anxiety mood and thinking about the outcome of the surgery. For this purpose sometimes the healthcare professionals give some counseling and eradicate the patients feelings regarding surgery by explaining in simple terms about the procedure etc., and to make the patient understand to prepare himself/herself for the procedure. Sometimes music will be played before surgery which will have some beneficial effect on the anxiety.

b.Recreational substance uses: Healthcare providers (Surgeons) sometimes use some health intervention to modify some risky behaviour of the patient which is associated with complications from surgery.

c.If a patient is an alcoholic and a smoker, the healthcare professional will advise the patient stop smoking & drinking before surgery from a particular period and also advice them to avoid drinking alcohol before and after surgery; but in some cases, if a patient cannot desist from drinking alcohol, intense interventions that direct a person/patient to quit using alcohol have been proven to be helpful in reducing complications from surgery.

d. In the case of children who are at normal risk of pulmonary aspiration or vomiting during anesthesia, there is no evidence showing that denying oral liquids before surgery/procedure improves outcomes but there is evidence showing that giving liquids of health interventions prevent anxiety.

4. Pre Operative Evaluation:

I. The aim and ultimate goal for a surgery to be successful:

Pre Operative evaluation of the patient is most important. This Pre Operative evaluation differs from patient to patient, age, sex and the ailment and the surgery that is being conducted and it is case specific.

The Pre Operative evaluation/ assessment before surgery is to reduce the patient's surgical and anesthetic preoperative morbidity or mortality and to bring the patient to desirable and acceptable functioning as early as possible. One should realize that the Pre Operative evaluation in which *"risk is multi-factorial and a function of the Pre Operative Health condition of the patient, the invasiveness of the surgical procedure and the type of anesthesia administered".*

The Healthcare professional should follow the Pre Operative Evaluation and preparation as mentioned below:

a. Documentation of the patient's healthcare (history) for which surgery is needed/decided.
b. To assess the patient's overall health status/stage.
c. The uncovering of the hidden conditions that could cause problems if they are not detected and analysed before surgery, could cause problems or unforeseen circumstances during and after surgery.
d. Determination of Pre Operative risk.
e. Optimization of patient's health condition in order to reduce the patient's surgical and anesthetic Pre Operative morbidity or mortality. Since the condition of the patient and the surgery needed are different from patient to patient and case specific appropriate Pre Operative Care and Evaluation is necessary.
f. Counseling of the patient in appropriate manner for the patient to understand, a language suitable to him/her about surgery, anesthesia, intra Operative Care and Post Operative Pain followed by treatments to reduce anxiety and for faster recovery.
g. While deciding the surgery/procedure the healthcare professional should always keep in mind, cost, hospitals stay, reduction of cancellations and finally increase of '***patient satisfaction***'.

ii. Assessment of general health of the patient:

One of the most important aspects in Pre Operative Care, Assessment/ Evaluation to understand the past history of the patient and find out the important components from the history for the purpose of Pre Operative Evaluation that means the patient's past and present medical/healthcare condition such as any previous surgeries undergone by the patient, family history of the patient that are useful for chronic ailments (genetic problems), social history of the patient (use of tobacco, alcohol and illegal drugs). A history of allergies, current and resent drug therapy, unusual reactions or responses to drugs that are administered and any problems or complications associated with previous anesthesia (if any). Sometimes it is also necessary for the healthcare professional to know and understand, family history of adverse reactions associated with anesthesia could also be obtained. In the case of children, the history of the patient should also include birth history, focusing on risk factors such as premature birth, pare natal complications and congenital chromosomal or anatomic mal - informations, history of recent infections such as upper and lower respiratory tract infections. While examining the history of a patient the healthcare professional, should make a complete review of systems to look for undiagnosed problems or inadequately controlled chronic diseases; in particular for anesthesia and surgery it is necessary to examine diseases related to cardio vascular and respiratory systems.

iii. Physical examination:

Physical examination of the patient before surgery/ procedure should build on the information gathered from the history with a focus on Pre Anesthesia Physical examination that includes an assessment of the airway, lungs and heart with documentation of vital signs; any unexpected abnormal findings during physical examination should be thoroughly investigated before any elective surgery.

iv. Specific Pre Operative Tests:

a. Complete blood count – if it is a major surgery, such as Chronic cardio vascular, Pulmonary, Renal, Hepatic disease or Malignancy, known or suspected anemia, bleeding diathesis or milo-suppressions, less that 1 year of age.

b. International Normalized Ratio (INR), activated partial thromboplastime (a.PTT):
Anticogulant therapy: bleeding diathesis, liver disease

c. Electrolytes and Creatine:

Hypertension, Renal disease, Diabetes, Pitutory or Adrenal disease.

Dignoxin or Diuratic therapy or drug therapies effecting electrolytes

d. Fasting Glucose:
Diabetes (should be repeated on the day of surgery)

e. Electro cardio graph
Heart disease, hypertension, diabetes
Other risk factors for cardiac disease (may include age) Sub arachnoids or intracranial hemarage, cerebro vascular accident, head trauma

f. Chest Radiograph
Cardiac or Pulmonary disease, Malignancy

v. Drug history

5. Implementing a Pre Operative checklist to increase patient safety:

Before surgery it is necessary to conduct and implement Pre Operative checklist to increase patient safety. On the day of surgery the nurse or attending any healthcare professionals who are having the pre operative checklist of the patient they will examine the patient and make sure that all the requirements for the preparation of surgery are in line with the list on hand. Following are some of the examples:

i. Identification of patient

ii. The attending nurse/healthcare professionals will put a question to the patient regarding name, birth date and the identification tag/bracelet put to the patient for identification and compare the same with the records on hand. This is necessary because sometimes it so happen similar name with similar ailments may play havoc unless true identification of the patient on that day for surgery should be confirmed.

iii. Consent for surgery: If the signature on consent form is by the patient itself the attending healthcare professional will check the same on the consent signature of the patient. If the signature is by other person on the behalf of the patient, it must be checked with the person who gave the signature.

During the course of conversation the attending healthcare professional will assess you're the patient's knowledge about the surgery and its after meth and encourage the patient to put questions regarding the procedure of the patient. If necessary the attending healthcare professional will call the physician/surgeon/anesthetist to answer the questions to the satisfaction of the patient.

iv. The performing surgeon will document the medical history of the patient completely with physical examination and by going through the healthcare records of the patient, past/present. Normally this checklist is done a day before the surgery or on the date of surgery. In this regard it is necessary and important that the patient should inform the concerned healthcare professional, if there is any changes in health condition when checklist was completed and after that and before surgery. For example, Flu or any small injury, fever, cough etc.,

v. Surgical site signature; means the surgeon will sign the site of the patient's surgery to accurately identify the area of the surgery of the patient. Such site surgical signature is necessary only in such surgeries to indicate right or left location; such as left or right leg, left or right arm, left or right eye, left or right kidney etc.,

vi. Blood group: By taking the blood sample from the patient, the nurse/technician must check the patient identification and compare the same against the blood label to make sure there is a correct match.

vii. X-Ray: All the X-rays should be checked with the label that matches correctly with the patient's identification.

viii. Interaction by the nurse with the patient: The attending nurse who will be with the surgery team will assess the situation of the patient before surgery by putting many relevant questions. Sometimes the attending healthcare professional/nurse will repeat the questions to ascertain the answer.

ix. Interaction by the anesthesiologist with the patient: The anesthesiologist will have an interaction with the patient before surgery and the patient is encouraged to put questions regarding anesthesia and how the pain will be managed or to put any such relevant questions for clarification. In this regard, the anesthesiologist should answer all the questions patiently by removing the doubts to relieve the patients from the stress.

x. List of medications: It is necessary that the patient should inform the surgical team/surgeon the list of medications, doses and how they are being used by the patient. The patient should give all the details not only the allopathic medicines but other medicines like herbs and others, cocaine etc., should be informed to the surgeon. The nurse attending will examine all these medications with the records and inform the surgeon, which is necessary.

xi. Allergy: The patient should inform the physician, the surgeon, the anesthesiologist, and the nurse regarding the allergy to any medication that causes itchness, redness, hives, or any such discomfort. When such medicines are taken.

xii. Devices: The patient should inform the nurse any devices that are being used at home, like insulin, pain devices including pace maker, automatic internal compression device etc., which are necessary to know before surgery.

The above checklist is general in nature and for any specific surgery the checklist will change accordingly. The other checklist namely operating room checklist also known as *"timeouts"*, provides a second opportunity for the correctness of the information,

"World Health Organization (WHO) has recommended universal checklists and also required by the "Joint Commission Universal Protocol", which is independent governing body responsible for hospital accreditation. This protocol which was developed in 2004 to prevent wrong side, wrong procedure and wrong person surgery. Presently the protocol includes conducting Pre-Procedure verification process, marking the procedure site, and performing --- . The Preoperating room/Operation Theatre includes verifying any required ----- , radiologic reports or test results, and any special equipment required for the procedure. Confirmation of the radio tracer should have been identified. The surgical team will encourage the patient to be involved in the process before surgery whenever it is possible. All these things will be completed in the Pre Operative area or just after the patient has entered the Operation theatre and before anesthesia".

xiii. Pre Operative Instructions to the patient before surgery: This is necessary because any changes/deviations in the health of the patient, the surgery has to be postponed for which following are some of the reasons:

a. Patients with delayed stomach emptying: The patient has been instructed not to eat or drink anything after midnight prior to surgery.

b. Patient without delayed stomach emptying:

i. The Patient have been instructed not to have any solid food to eat after midnight prior to the surgery – including smoking.

ii. The patient is allowed to drink small amounts of clear liquids up until 2 hours prior to surgery.

iii. Clean liquids includes water, fruit juice without pulp, carbonated beverages, electrolyte beverages, clear tea, black coffee, etc.,

xiii. If the patient is prescribed any inhalers, he/she can take them to the hospital and any medications as per the instructions of the doctors on the morning of surgery can be taken with sips of water.

xiv. If the patient is an outpatient an accomplice who can stay for twenty four hours with the patient should be available.

xv. If the patient is having obstructive sleep, apnea and on a CPAP/BIPIP machine, the patient can bring mask, tubing and machine on the day of surgery.

xvi. Medication stoppages: Unless otherwise the surgeon advices differently the patient should stop medications seven days prior to surgery or as directed by the surgeon.

xvii. If the patient is taking any blood thinners, the patient should discuss the same to the surgeon whether or not should stop them before surgery or continue them. It is also important for the patient to ask the surgeon when to resume the medicines.

xviii. In case the patient is diabetic: The patient should strictly follow the instructions/diabetic guidelines according to surgeon's instructions prior to surgery and after surgery.

xix. Finally, the patient should be in the healthcare facility as per the schedule time else the surgery will be postponed for various reasons.

6. Some of the examples of Pre Operative Management:

a. Female Patient:

In Pre Operative Management and care before surgery of women patient who are about to undergo gynecologic surgery is one of the challenging procedure. The present system of patient Pre Operative Care and Management before surgery are involving issues like, quality of care, professional liability, availability of information through internet, patient input into her care etc., due to technological advancement that has changed the shape of surgery in laparoscopy, robotics, female pelvic medicine, reconstructive surgery and rapid introduction of surgical devices have brought conflict between surgeons desire to provide the most current care and raising healthcare cause. Due to changes in habits, surrounding environments, cultural activities are causing effect on the administration of care of women in gynecologic surgery. As this surgery involves different groups of women such as young, healthy group, increasingly larger group bariatric patients, many with chronic diseases like obesity, late marriages, and such other chronic ailments, causing difficulty in Pre Operative care and management.

The purpose of Pre Operative Care and Management in female patient is to assist the gynecologic surgeon in the preparation of their patients for surgery and includes patient evaluation, satisfaction of risk and risk factor modification. If the surgeon protocols regarding Pre Operative Care and Management in female patients, he/she can reduce delays in the preparation phase, increase patient safety, to recognize and treat complex medical problems, to reduce evaluation cost and minimize case delays and cancellations.

a. Pre Operative Management of female patients:

I. History and physical examination findings
ii. Hospital and Clinical health records.
iii. appropriate latest test results
iv. educating the patient regarding the necessity for surgery, complications and the outcome. It should also include anesthetic plan and available options in surgery and anesthesia and the associated risks.

v. Preparation of medication instructions to develop appropriate anesthetic plan

The above said information of the evaluation of the patient should be informed to the patient, surgeon, physician and anesthesiology team.

The evaluation of Pre Operative and the purpose is a general screening examination. In this Pre Operative Care and Management the patient should receive written and oral instructions and allowed to ask questions. This counseling and instructions mainly depends on the health condition of the patient. In case of complicated patients this evaluation should be carried out even before few hours of surgery and requires additional evaluation and procedure before surgery.

Following are some of the evaluation issues

i. General history of the patient
a. medications,
b. allergies to medications, food & environmental allergies
c. Previous hospitalization and anesthetic illness:

ii. System review
a. Cardio vascular diseases, congenital conditions, ischemia, valvular failure, dysthythmia, peripheral vascular process.
b. Endocrine disease
c. Gastro intestinal disease
d. Neurologic conditions – cerebrovascular, peripheral or central neurologic process
e. Hematologic conditions – anemic and coagulopathic process

iii. Obstetric and gynecologic history:
a. Menstruation – Menstrual pattern – Cycle interval – duration – amount of flow – molyminal symptoms, dismonorhea – inter menstrual bleeding.
b. Menarche
c. Lost menstrual period
d. if post menopausal – age of menopause, resent vaginal bleeding, vasomotor symptoms, hormone replacement therapy history.
e. gravidity – description of each pregnancy
f. birth control – sexually active, current methods, past methods, if sterilized, date and method.
g. Infertility – difficulty becoming pregnant, evaluation or treatment of infertility.
h. Infection – Vaginal discharge, previous vaginal infections, sexually transmitted diseases, pelvic inflammatory disease.
i. Pelvic relaxation – prolapsed, vaginal splinting to deficate, urinary retention, urinary inconvenience
j. Breast disease – Masses, discharge, pain, past problems, family history of breast cancer, past surgery if any

iv. Social history:
a. Marital/Relationship status
b. Occupation
c. Education
v. Family history – includes any of the following ailments in the family members
a. Cancer
b. Diabetes mellitus
c. Austeoporisis
d. Cardiovascular disease
vi. Other familiar disorders

vii. Health habits:
a. Tobacco
b. Alcohol

c. drugs,
d. diet
e. exercise
f. seat belt use

All the above mentioned conditions should be recorded, availing information from the patient and the family members. In addition a physical examination of the patient to identify the medical condition and the medical disease present at the time of examination. The physical examination includes,

a. Vital science such as blood pressure, pulse, respiratory rate, body temperature, height and weight
b. General signs such as body habitués and physical appearance.
c. Head, ears, eyes, nose and throat problems – any abnormalities of the same including airway
d. Lungs – asculatation for equal bilateral breath sounds and presence of rales, rhonchi, wheezes
e. Heart – asculatation for regularity of rate and rhythm and presence of gallops, rubs and murmurs,
f. neurologic – mental status, chranial nerve function and sensorimotor ability

In addition the female patient should be thoroughly examined about abdominal and pelvic conditions which is an important component of physical examination. Before surgery the surgeon should discuss with the patient about the necessity of surgery, procedure, the type of surgery, the incision planned and variations in technique depending upon the intra operative findings.

7. Informed consent:
All these above material and the history of the patient, and the discussions thereon with the patient and family members should be documented so as to make the patient and the family members to know the disease and process of surgery and the recovery time and improvement etc., After recording all these things the healthcare professional should take a written consent from the patient (if the patient is in a position to do so or from any authorized person of the patient).

In addition the Pre Operative indications of laboratory tests includes specific tests for hemoglobin/hematotrict, white blood cell count, platelet count, blood glucose level, electrolytes, blood urea and nitrogen/creatinine, liver function tests, medication levels, urine analysis, pregnancy testing (with consent) and finally illicit drug screening in addition the following tests such as chest radiography, electrocardiography is also taken.

With all the essential information during pre operative consultation the surgeon and the team of healthcare professionals including anesthest to diagnose the disease, beside the procedure and anesthesia requirement and type of anesthesia. Finally the surgeon, the physician and the anesthesiologist and the surgical team will also finalize organ system of the body and the possible rejections and the appropriate procedure thereon.

To conclude in gynecology patients huge of anticoagulants poses additional problems because of the risk of preoperative or post operative hemerage.

8. Pre Operative Evaluation and Preparation for Anesthesia and Surgery:
The American college of cardiology and the American Heart Association published a report on guidelines for Peri Operative Cardio Vascular Evaluation for Non Cardiac Surgery. The important of this report is to provide a framework for considering Cardiac Risk in Non Cardiac Surgery in different patients and different operative situations; because for any surgery of this type the factors that include and guide for decision making of the patients Cardio Vascular Risk and functional capacity and the surgery specific risk.

"The patient's risk factors are subdivided into three categories such as a. major, b. intermediate and c. minor. In applying elective anesthesia in such surgeries of a patient with history of Asthma, Asthmatic condition, which should be under control and the patient should be of weezing, with a peak flow of 80% or more of predicted. Also pre operative morbidity and mortality are in the high side in diabetic patients than non diabetic in suh cses the patient need surgery it is important that he/she is more likely to be harmed by neglect of long term complications than from the short term control of blood glucose levels. In all these circumstances pre operative management of anticoagulation surgery in the anticoagulation patient is necessary".

The recent technological development of regional anesthesia in anti coagulated patient is the choice for many surgical procedures. However, in regional anesthesia the fear of anesthesia problems arises in such patients because of some impairment of hemostatic system. For example a pregnant patient with preeclampsia and thrombocytopenia, an orthopedic patient or vascular surgery patient who are often completely anti coagulated intra operatively

Table 1. *American Society of Anesthesiologists' Classification of Physical Status*

Status	Disease State
ASA class 1	No organic, physiologic, biochemical, or psychiatric disturbance
ASA class 2	Mild to moderate systemic disturbance that may or may not be related to the reason for surgery *Examples*: Heart disease that only slightly limits physical activity, essential hypertension, diabetes mellitus, anemia, extremes of age, morbid obesity, chronic bronchitis
ASA class 3	Severe systemic disturbance that may or may not be related to the reason for surgery, *(does limit activity)* *Examples*: Heart disease that limits activity, poorly controlled essential hypertension, diabetes mellitus with vascular complications, chronic pulmonary disease that limits activity, angina pectoris, history of prior myocardial infarction
ASA class 4	Severe systemic disturbance that is life-threatening with or without surgery *Examples*: Congestive heart failure, persistent angina pectoris, advanced pulmonary, renal, or hepatic dysfunction
ASA class 5	Moribund patient who has little chance of survival but is submitted to surgery as a last resort (resuscitative effort) *Examples*: Uncontrolled hemorrhage as from a ruptured abdominal aneurysm, cerebral trauma, pulmonary embolus.
ASA class 6	A declared brain-dead patient whose organs are being removed for donor purposes
E	An "E" is added to the status number to designate an emergency operation

Table 2. *Patient-Related Predictors for Risk of Perioperative Cardiac Complications*

Major clinical predictors (markers of unstable coronary artery disease)
Myocardial infarction <6 weeks
Unstable or severe angina (class III-IV)
Decompensated congestive heart failure
Significant arrhythmias (e.g., causing hemodynamic instability)
Severe valvular disease (e.g., aortic or mitral stenosis with valve area <1.0 cm^2)
CABG or PTCA <6 weeks
Intermediate clinical predictors (markers of stable coronary artery disease)
Previous myocardial infarction >6 weeks and <3 months (>3 months if complicated) based on the history or the presence of pathologic Q waves
Mild angina (class I-II)
Silent ischemia (Holter monitoring)
Compensated congestive heart failure, ejection fraction <0.35
Post CABG or PTCA >6 weeks and <3 months, or >6 yr, or with anti-anginal therapy
Diabetes mellitus
Renal insufficiency
Minor clinical predictors (increased probability of coronary artery disease)
Familial history of coronary artery disease
Age >70 yr
ECG abnormalities (arrhythmia, LVH, left bundle branch block)
Low functional capacity
History of stroke
Uncontrolled systemic hypertension
Hypercholesterolemia
Smoking
Post infarction (>3 months), asymptomatic without treatment
Post CABG or PTCA >3 months and <6 yr, and no symptoms of angina nor anti-anginal therapy
CABG= coronary artery bypass grafting, PTCA= percutaneous transluminal coronary angioplasty, LVH=left ventricular hypertrophy

Table 3. *Surgery-Related Predictors for Risk of Perioperative Cardiac Complications*

High risk procedures (cardiac complication rate >5%)
Emergency surgery
Aortic and major vascular surgery
Prolonged surgical procedures with large fluid shifts or blood loss
Unstable hemodynamic situations
Intermediate risk procedures (cardiac complication rate 1-5%)
Abdominal or thoracic surgery
Neurosurgery
ENT procedures
Minor vascular surgery, including carotid endarterectomy
Orthopedic surgery
Prostatectomy
Low risk procedures (cardiac complication rate <1%)
Breast surgery
Superficial surgery
Eye surgery
Endoscopic procedures
Plastic and reconstructive surgery
Ambulatory surgery

9. Standard Pre Anesthesia Care:

(Approved by the ASA House of Delegates on October 14, 1987, and last affirmed on December 13, 2020)

The following standards and practice parameters applied to all patients who received anesthesia care at the time of procedure/surgery. However, if any minor changes or deviations or modifications are needed in exceptional cases, the anesthesiologist should document the deviations from the normal standards and the reasons thereon. An anesthesiologist shall be responsible in determining the healthcare status of the patient and to develop a suitable plan of anesthesia care to that patient.

Following are the responsibilities and care of anesthesiologist in delivering anesthesia to a patient before procedure.

1. Thorough examination and reviewing the health records that are available on hand of the patient.
2. Have a discussion with the patient with reference to the surgery that is going to be applied on the patient to know,

a. discuss the healthcare history including previous anesthetic experiences and medical therapy, if any.
b. assess such aspects of the patient with respect to present physical condition that might affect decisions regarding periopertive risk and management.

3. Review all the present available test reports and consultation with the surgery team and the physician to decide and plan delivery of anesthesia care.
4. Directing appropriate pre operative medications.
5. Ensure that a written consent has been obtained for the anesthesia care.
6. Documentation fall in the above facts in the case history.

Table 1. American Society of Anesthesiology Physical Status Classification

Physical Status	Patient Category
I	A normal, healthy patient
II	A patient with mild to moderate systemic
	disease (e.g., anemia, morbid obesity)
III	A patient with severe systemic disease that
	limits activity but not to the point of
	incapacitation (e.g., healed myocardial
	infarction, diabetes with vascular complications)
IV	A patient with incapacitating systemic
	disease that is life threatening (e.g., ad-
	vanced hepatic or renal insufficiency)
V	A moribund patient who is not expected to
	survive (e.g., major cerebral trauma,
	massive pulmonary embolus)

(American Society of Anesthesiology physical status classification. Anesthesiology 49:239, 1978)

Table 2. Goldman's Correlates Predicting Cardiac Risk

Correlate	Points
1. Age greater than 70 years	5
2. Myocardial infarction in the previous 6 months	10
3. S3 gallop or jugular venous distention	11
4. Important aortic stenosis	3
5. Rhythm other than sinus or premature atrial contraction	7
6. More than five premature ventricular contractions per minute documented anytime before the operating room	7
7. Poor general medical condition (e.g., elevated blood urea nitrogen, bedridden patient)	3
8. Intrathoracic, intraperitoneal, or aortic operation	3
9. Emergency operation	4

(Multifactorial index of cardiac risk in non-cardiac surgical procedures. N Engl J Med 297:845, 1977)

Four risk categories were then condensed from these risk factors and assigned to a numerical class (Table 3). Serious cardiac or other morbidity was correlated with the point system.

Table 3. Goldman's Risk Index

Class	Points	Cardiac Deaths or Life-ThreateningComplications (%)
1	0 to 5	0.9
2	6 to 12	7
3	13 to 25	14
4	greater than 26	78

Pre Operative Management Approach to gynecologic patients who undergo surgery: These patients who are in need of surgery/procedure, poses many problems and challenges because the arena in which surgeons operate is to be set with problems involving the delivery of quality care, safety, accommodation of patient input, healthcare cost etc., The critical aspect of the preoperative assessment of the patient depends on surgical procedures on the female genital tract conflicting feelings about feminity in patients. The patient concerns about successful outcome and the patients worry about physical rehabilitation cosmetic result, impairment in social functioning and their return to well being. So the preoperative evaluation must address all these problems in a positive and realistic way and it should aim to provide patient with a comprehensive understanding of the procedure but at the same time the said backs that are encountered must be anticipated and discussed with the patient and family members because of the present legal system. In the case of gynic patients thorough physical examination such as abdominal and pelvic examinations are critical to the preoperative procedural care. The team of healthcare professionals should assure the patient after examination that organ system functional evaluation is satisfactory and surgery can be undertaken without much difficulty.

The following observations are necessary for gynec patients who need surgery

1. Hyper tension and Anti Hyper tension medication
2. Considerations involving the respiratory tract
3. Considerations involving the hematopoietic system
4. Considerations involving the gastro intestinal and urinary system.
5. A brief look at electrolyte problems.
6. Nutritional status of patients
7. Psycologic considerations
8. Role of routine testing
9. Increasing role of an outpatient settings
10. In preoperative management and care it is an evolving and dynamic process in which the patient and the healthcare professionals are inter dependent and it is a process that is constantly aimed at enhancing the outcome as such it should be thorough, streamlined, educational and cost effective. However, the final goal is the satisfaction of the patient and the healthcare professionals.

10. Pre Operative Medical Negligence:

The daunting task during surgery for an anesthesiologist is due to increased preoperative work load; Any major procedure is not possible without anesthesia to make the patient unconscious and pain free but at the same time their vital functions including blood pressure, breathing and heart rate and rhythm remain stable throughout the procedure. Due to dearth of anesthesiologist/anesthest the team is forced to take care of more patients but maintaining patient safety. A report by team of researchers for this operations it was observed that,

"identified patients with similar demographics and health status who underwent surgical cases of various types, including general, gynecologic, neurologic, otolaryngologist (surgical management of head and neck),

Orthopedics, Urologic and Vascular procedures. For each patient they calculated the average number of concurrent surgeries that were managed by that patient's anesthesiologist during the patients procedure. They then compared instances where the anesthesiologist was directing one, between one to two, two to three, or three to four cases at a time."

Anesthesiologists have been saying for a long time that covering four rooms is possible but should be reserved for situations where we think it is safe.

We now have evidence to support that idea increasing overlapping responsibilities may have some potential downsides that balance the advantages of potential cost savings and access to care.

11. The policy and procedure on the Veni puncture:
Veni Puncture is,

"the act of drawing blood from the circulatory system through an incision or puncture in a vein with a needle in order to obtain a sample for any therapeutic purpose, including hematological, biochemical or bacterial analysis and diagnosis".

Veni Puncture is one of the most common invasive procedures carried out in healthcare facilities, for which the para medical staff/healthcare workers must be well trained in performing the procedure competently. In Veni Puncture when the blood is drawn from the vein it breaches the circulatory system as such standard infection control measures should be adhered to by the staff to minimize the risk of injury/infection to both patient and attending staff.

The purpose of procedural guidelines for the para medical staff is to provide a proper guidance for the staff (nurses) on veni puncture and client safety. All the para medical staff that are doing this procedure should have a clear picture on the roles and responsibilities of all levels of nursing in terms of training and safety compliance. The personnel should wear protective equipment such as gloves, to reduce serious work place injuries and illness during veni puncture procedures. The para medical staff/nurses shall follow infection control measures including hand hygiene, personnel protective equipment and careful disposal of the equipment used to minimize the risk to staff and patients.

12. The role of nurses and nursing in Pre Operative Assessment of a patient:
Pre Operative Nursing Care and the assessment is most crucial in Surgical Procedure to a patient and it should be considered as *"a critical dimension of care transition"*. The contribution of nurses to this transition of care in the Pre Operative environment and also to identify and assess the Pre Operative needs is very important. This Pre Operative Assessment is growing because the use of most modern technology in surgical procedures and also quality intensive information is to be assessed mostly by the nursing staff because based on this information surgical procedures are developed and decided. Any communication breakdown, loss of information, increased work load and competing tasks pose the greatest threats to Pre Operative safety, in addition partial communication, improper communication, no communication will adversely affect the Pre Operative Evaluation.

It is noteworthy to mention that 234 million surgical procedures are performed universally. The complexities introduced with the growing elderly population and advanced surgical technologies makes the surgical procedure challenging in providing safe & quality Pre Operative Care. The nursing Pre Operative Assessment is most useful in identifying and defining patient's risk factors and vulnerabilities. The other important aspect being as mentioned above the communication gaps that exists will increase the risk factor and safety of the patients. In surgical procedures to reduce vulnerabilities of risks, it is essential to the entire Pre Operative team mainly nursing staff to plug the vulnerable points and brought those points to the healthcare professionals for their scrutiny and corrective measures for implementation because nothing can be done during surgical procedure or after procedure such things that can be avoided before procedure if the risk factors are identified by the nursing team. It is also important for the nursing staff while they are talking with the patient to understand about the patient and the existing patient vulnerabilities.

According to Meli's transition theory,

"it is important to identify patient's vulnerabilities or risk factors for surgery and concludes that we must recognize the different ways in which these vulnerabilities may manifest with the context of the Pre Operative Environment".

The important aspect in nursing communication in both ways, namely inform the patient about the surgical procedure, the patients health condition and how the healthcare professionals are taking care of each aspect, and the other way is to communicate the entire assessment of the patient and the health conditions to the healthcare professionals. There is no yard stick or thumb rule to assess such factors by the nursing staff because the condition of each patient is different, the surgical procedure is different and it is case specific.

Hence the nursing staff and the healthcare professionals together will make out the chart to get the necessary information from the patient and their accomplice, and most wanted to identify and decide the surgical procedure with less risk and more safety. In one study the nurses mentioned about the pre operative assessment as,

"taking extra step and connecting the disconnected for patients, because nurses are navigating the environment far more frequently and, spend the most time with patients, they understand and have a working knowledge of the complexity of the patient care environment that others do not".

13. Pre Operative care of Neonatal:
The most crucial and critical Pre Operative Assessment and care is assessment of neonatal patients before surgery. In Pre Operative Care for neonatal surgical procedure the following observations are necessary,

1. Continuous monitoring and recording on hourly basis of the following are required.
a. Respiratory, b. Blood Pressure, C. SPo2, D. Skin Temperature (temperature should be recorded from the date of joining till the neonatal is transferred to the theatre. Every four hours temperature is to be recorded.
2. Arterial Blood Gas/Catilary Gas, FBC, Group and Cross Match, and U&E's are taken and recorded.
3. Check the two correct identification bands that are on the Neonatal baby.
4. Ensure baby is nill by mouth prior to surgery and the lost feed to the baby is six hours prior to surgery and perceiving clear liquids two hours prior to surgery.
5. Administering IV fluids as advised by the Healthcare professional and if an Arterial line is present, IV fluids must be continued during transfer to theatre.
6. It is to be made mandatory that the parent (mother/father) or the babies guardian accompanies the baby to theatre.
7. If the parent of the baby is unable to be present a member of the NIC team familiar with the patient, who can identify the patient well, need to accompany the neonatal baby to the theatre.

8. Obtaining written consent before taking the baby to the theatre is mandatory from the parents/guardian.

14. The following instructions are to be followed by the nursing staff and theatre staff who are assisting the neonatal surgery.

1. Information should be given to the ward supervisor/ administrator regarding time and number of nurses for attending the neonatal baby in the theatre.
2. It is mandatory to measure the temperature prior to leaving NICU and prior to leaving theatre.
3. The nursing staff should not leave the baby in NICU until the baby is transferred to the theatre after receiving a call from the theatre.
4. The theatre will inform over phone or by messenger to NICU where the baby is ready and then only the baby from NICU with an escort will be transferred to theatre to avoid any waiting time/loss of time.
5. This time factor is important because neonatal surgical procedure is most crucial because every symptom has to be identified by the attending nurses and the healthcare professionals because the neonatal baby cannot express.

15. Documentation of neonatal surgical procedure.

1. Before the surgical procedure the below mentioned forms should be filled with all necessary information including the signatures.

a. Anesthesia record, b. Pre Operative checklist, c. Nursing surgical care plan checklist, d. NICU in anesthesia medical handover form, e. babies requiring urgent surgery outside normal theatre hours also need an acute surgical booking form, f. return of body tissue/part form.

All these information and the forms should be kept in the case history of the baby in the NICU.

16. Pre Verification Checklist of Neonatal Baby before surgical procedure:

1. The nurse/nursing staff who are attending the neonatal baby in the NICU should complete for identification of the baby, name and birth day, checking identification bracelet and compare with the same existing records.

2. The nurse must witness the surgical consent and the signature on the form by the parents of the neonatal baby.

3. Normally the surgeon/healthcare professional will complete the documentation of the history and physical examination of the neonatal baby one day before the surgery and the attending nurse should be familiar with the documentation and should inform the surgeon any changes that may occur after examination and before surgery.

4. The attending nurse should be familiar with the surgical site signature identified by the surgeon on the patient's body to ensure that there will not be any lapse or misidentification at the time of surgery; because the attending nurse of the neonatal will be in the theatre and has to observe whether the site signature is correctly identified or not.

5. While taking the blood sample of the baby the nurse must check the identity of the baby on the record and same thing should be labeled on the bottle before sending it to the laboratory and while receiving the bottle and the test report after testing.

6. Same is the case of identification by the nurse with the X-Ray films. The nursing baby and the parent/guardian who will be in the theatre should get all the information regarding the anesthesia and the after affects and how long the affect of anesthesia, with the anesthesiologist and also it is necessary to the parent or guardian of the patient to bring all the medications that are in use prior to surgery and other medication details to the nurse for verification and delisting and relisting of medicines.

7. The nurse should get the information regarding allergy to the neonatal for any medical or equipment or any material.

17. Pre Operative Assessment in elective shoulder surgery:

It is necessary that Pre Operative Assessment is required to any major surgical procedures, to make sure that the patient is fit to undergo surgical procedure and at the same time the healthcare professionals mainly the surgical team and anesthesiologist should identify the issues that may need to be identified and necessary for both the teams because as mentioned above every case is specific and especially in orthopedic surgery because after the surgical procedure that part of the patient body is to be brought near normal movement else the very purpose of surgical procedure will gets nullified. Hence it is obligatory on the part of the healthcare professionals and the surgical team and anesthesia team to make sure that the patient needs surgery, though it is risky, they are confident the patients movement of that particular part of the body can be brought to near normalcy if not fully so that the patient after Post Operative Surgery and Care and Rehabilitation can lead a life as before without any difficulty.

18. CONCLUSION:

In healthcare, surgical procedure is one of the most daunting times in a patient's life and also to the healthcare professionals because before the surgery to prepare the patient for surgical procedure with no or less complications and side effects. In addition the development of technology and technological surgical procedures though brought the things near to perfection but at the same time planning such procedures and taking care of Pre Operative, Peri Operative and finally Post Operative Care is a real test for the healthcare professionals. Surgical procedure is case specific and each procedure differs from others and depends upon the nature of ailment, intensity suffering gender difference, age of the patient the past history of the patient etc., will make all the difference. In this article few examples such as Pre Operative Care in neonatal babies, elderly persons, Orthopedic Procedures and also the role of Paramedics and their responsibilities in Pre Operative Care or discussed to the extent possible. The main aim is to give a comprehensive idea about the Pre Operative Care (in general) that is to be observed by the attending Para Medics under the guidance and instructions of surgeons and attending doctors to make the patient fit for surgical procedure. In this case, the healthcare professionals namely the surgical team, the anesthesia team and the Paramedics who are attending the patient before the surgical procedures should have good communication without any break so that the procedure will take place in accordance with the plan, and the procedure will be successful. Hence every professional who is involved in this procedure right from the date of admission till the patient is transferred to the theatre for surgical procedure according to the situation of the preparation of the patient with planned medication and such other evaluation methods as proposed by the healthcare professionals/surgeons should be followed. From the evaluation of the patients health condition at the time of admission before the procedure, the preparation of the patient to be fit to surgical procedure with medications and such other procedures should be adopted by the paramedics who are attending the patients under the guidance and evaluation methods suggested by the surgical and anesthesia team. That is why all the healthcare professionals involved in surgical procedures have to plan the procedure and the Pre Operative Care and the Peri Operative Care and finally the Post Operative Care including rehabilitation if any meticulously and should be communicated to all the healthcare professionals and others involved and at every stage verification of each step should be conducted with the

help of the checklist prepared and all the operations and procedures should be documented in detail including their observations and the decisions taken instantly for a safe & quality procedure in the patient's healthcare records for future healthcare. Finally the Pre Operative care/ management is the most crucial stage because from a situation where the patient is feeling uneasiness because of the ailment, discomfort, tension and restlessness should be made stable with medications and such other procedures and evaluated and suggested by the professionals; so that the pre operative stage the patient will be made to go for surgical procedures with minimum or no complications and side effects. Hence all the healthcare professionals i.e, surgical team, anesthesia team and the paramedics on the jobs should have a good communication and not only among themselves but with the patients and their accomplice so that to prepare the patient for surgical procedure will be done in accordance with the planned procedure. Hence in healthcare facility/procedure the care givers should meticulously plan the procedure with a checklist at every point. So that the patient can be successfully operated with minimum or no side effects and complications.

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