INTRODUCTION TO SURGERY
When approaching the patient, introduce yourself with a handshake and let the patient know who you are:

- Always attend the ward at a sensible time and try to avoid disturbing the patients during their rest period.
- Always examine the patient with a colleague or a nurse present.
- Do not carry out intimate examinations such as rectal or vaginal examinations except under strict supervision.
PATIENT’S INFORMATION

- Full name
- Address
- Sex
- Age
- Ethnic group
- Marital status
- Occupation.
The Presenting Complaint.

- Ask what symptoms the patient is complaining of.
- If there is more than one complaint, list them in the order in which they are most troublesome to the patient.
Record the full details of the main complaint or complaints.

Allow the patient to give a full record of complaints relating to a particular system and then ask any remaining questions that you may have about the abnormal system.
Once you are satisfied that you have obtained the full history of the presenting complaint and have asked all pertinent questions about the abnormal system, then you should ask direct questions about other systems.

- **Alimentary system:** Nausea, vomits, appetite, diet, stools
- **Respiratory system:** Cough, dyspnea
- **Cardiovascular system:** Chest pain, dyspnea
- **Nervous system:** Blackouts, headaches
- **Musculoskeletal system:** Pain in joints
- **Genitourinary system:** Urinary frequency, Menstruation

**SYSTEMATIC ENQUIRY**
- Previous illnesses, operations or accidents.
- Diabetes.
- Rheumatic fever.
- Tuberculosis.
- Asthma.
- Hypertension.
- Sexually transmitted disease
FAMILY HISTORY

- Cause of death of close relatives, e.g. parents, brothers and sisters.
- Enquire particularly about cardiovascular disease and malignancy.
- Check for familial illnesses, e.g. adult polycystic kidney disease.
SOCIAL HISTORY.

- Occupation – check fully the details of the occupation and make sure you understand exactly what the patient does.
- Housing.
- Travel abroad.
- Leisure activities.
- Marital status.
- Sexual habits.
- Smoking.
- Drinking.
- Eating habits.
Check the patient’s present medication.

Make particular enquiries about steroids, anticoagulants and contraceptive pill.

Drug abuse.

Ask about allergies, especially to antibiotics.
Informed consent is required for all invasive procedures.

Consent should be obtained by the person who is actually going to carry out the procedure or certainly by somebody who is aware of the full details of the procedure and is capable of carrying it out.

It is a good practice that consent should be obtained for any procedure that can have a complication.
TO GIVE INFORMED CONSENT THE PATIENT MUST UNDERSTAND:

- The procedure
- The reasons for carrying it out
- Any alternative treatments
- Benefits of the procedure
- Adverse effects or complications
- The outcome without any treatment.
The general risks include the risks of anaesthesia and the risks of any operation, e.g. haemorrhage, wound infection, deep vein thrombosis.

Specific complications are

- recurrence after inguinal hernia repair,
- recurrent laryngeal nerve palsy after thyroid surgery,
- facial nerve palsy after superficial parotidectomy.
PHYSICAL EXAMINATION IN SURGERY
VITAL SIGNS

- Pulse
- Breathing rate
- Body temperature
- Blood pressure
WITH THE PERSON BEING EXAMINED IN A SITTING POSITION, THE FOLLOWING SYSTEMS ARE REVIEWED:

- Skin.
- Head. The hair, scalp, skull, and face are examined.
- Eyes. The external structures are observed. The internal structures can be observed using an ophthalmoscope.
- Ears. The external structures are inspected. An otoscope may be used to inspect internal structures.
- Nose and sinuses. The external nose is examined.
- Mouth and pharynx
- Neck. The lymph nodes on both sides of the neck and the thyroid gland are palpated.
- Back a stethoscope is used to listen for breath sounds.
- Breasts and armpits. A woman's breasts are inspected with the arms relaxed and then raised.
THE PERSON BEING EXAMINED SHOULD LIE FLAT FOR AN EXAMINATION OF THE:

- Abdomen. Light and deep palpation is used on the abdomen to feel the outlines of internal organs, including the liver, spleen, kidneys, and aorta, a large blood vessel.

- Rectum and anus. With the person lying on the left side, the outside areas are observed.

- An internal digital examination (using a gloved finger), is usually done for persons over 40 years old. In men, the prostate gland is also palpated. Reproductive organs.
The external sex organs are inspected and the area is examined for hernias. In men, the scrotum and testicles are palpated. In women, the groin area is palpated for the presence of lymph nodes. The joints and muscles are observed.

Musculoskeletal system. With the person standing, the straightness of the spine and the alignment of the legs and feet is noted. Blood vessels. The presence of any abnormally enlarged veins (varicose), usually in the legs, is noted.
THE ABDOMEN
ORGAN PROJECTIONS IN THE ABDOMEN
GENERAL PROCEDURES IN SURGERY
WHEN CHOOSING AN INCISION THE FOLLOWING POINTS SHOULD BE CONSIDERED:

- **Access:** the incision must be appropriately placed, large enough and capable of extension.
- **Orientation:** if possible in the lines of skin tension (Langer’s lines) or skin creases.
- **Healing potential of tissues.**
- **Anatomy of underlying structures, e.g. the avoidance of nerves.**
- **Good cosmetic result.**
ABDOMINAL INCISIONS

- Subcostal
- Transverse
- McBurney
- Groin
- Upper Midline
- Lower Midline
- Paramedian
- Pfannenstiel
Diagnostic laparoscopy.
- For biopsy of lesions; staging of cancers, e.g. gastric and pancreatic.

Therapeutic laparoscopy.
- Widely practiced, the most common operation being cholecystectomy.
- Other procedures include appendicectomy, inguinal hernia repair, division of adhesions, colonic resection,
There is a wide range of suture materials, broadly divided into absorbable and non-absorbable, natural and synthetic, braided and monofilament.

Gauge is the calibre of the suture and is expressed in numbers.

Originally, the finest gauge was ‘1’ and the heaviest ‘4’ but with the development of finer sutures, the gauge used depends on the strength required, number of sutures, type of suture material being used and cosmetic requirements.
Sutures may be:
- interrupted,
- continuous,
- vertical mattress,
- horizontal mattress or
- subcuticular.

The choice depends on the
- site and nature of the operation
- and surgeon’s preference.
The timing is a balance between strength of healing and a good cosmetic result.

Some areas are better vascularized, under less tension, and therefore heal quicker than others.

The following is a rough guide for the time of removal for different areas:

- face and neck (3–4 days)
- scalp (5–7 days)
- limbs (5–7 days)
- hands and feet (10–14 days)
- abdomen (8–10 days).
Drains are used prophylactically to drain anticipated collections, e.g. haematomas, bile leaks, urine leaks, or therapeutically to remove collections of pus, blood or other body fluids.

Most drains consist of latex-based material or silicone.

Drainage may be open or closed, suction or non-suction.
Ileostomy
Urostomy
Colostomy

- A permanent colostomy usually opens onto the anterior abdominal wall in the left iliac fossa (LIF).
- It is flush with the skin and the contents of the bag are usually formed faeces.
- It is most commonly created following an operation for abdominoperineal resection of the rectum.
SURGICAL EQUIPMENT
CLOTHING

- Cap
- Face mask
- Scrubs
- Googles
- Surgical boots
- Disposable wear
A surgical instrument is a specially designed tool or device for performing specific actions of carrying out desired effects during a surgery or operation, such as modifying biological tissue, or to provide access for viewing it.
- Graspers, such as forceps
- Clamps and occluders for blood vessels and other organs
- Retractors, used to spread open skin, ribs and other tissue
- Distractors, positioners and stereotactic devices
- Mechanical cutters (scalpels, lancets, drill bits, rasps, trocars, Ligasure, etc.)
- Dilators and specula, for access to narrow passages or incisions
- Suction tips and tubes, for removal of bodily fluids
- Sealing devices, such as surgical staplers
- Irrigation and injection needles, tips and tubes, for introducing fluid
- Tyndallers, to help "wedge" open damaged tissues in the brain.
- Powered devices, such as drills, dermatomes
- Scopes and probes, including fiber optic endoscopes and tactile probes
- Carriers and appliers for optical, electronic and mechanical devices
- Ultrasound tissue disruptors, cryotomes and cutting laser guides
- Measurement devices, such as rulers and calipers
GENERAL SURGERY INSTRUMENTS

1. SURGICAL BLADES
2. ASPIRATOR HANDLE
3. ASPIRATOR TIP
4. GAUZE
5. SUTURE MATERIAL
6. SURGICAL KNIFE
7. PERIOSTEAL ELEVATOR
8. RONGEUR FORCEPS
9. BONE FILE
10. CURETTES
11. SURGICAL SCISSORS
12. TISSUE FORCEPS
13. TISSUE SCISSORS
14. SUTURE NEEDLE HOLDER
OPERATING ROOM

Preparation Area

Surgical Room

Recovery Room
PROCEDURE IN THE OR
PREPARATION OF THE PATIENT

- Change of clothes
- Fluids
- Medication
- Preparation of the operation field
Is administered to prevent pain from incision, tissue manipulation and suturing.

Based on the procedure, anesthesia may be provided locally or as general anesthesia.

Spinal anesthesia may be used when the surgical site is too large or deep for a local block, but general anesthesia may not be desirable.

Local and spinal anesthesia, the surgical site is anesthetized, but the patient can remain conscious or minimally sedated.

General anesthesia renders the patient unconscious and paralyzed during surgery. The patient is intubated and is placed on a mechanical ventilator, and anesthesia is produced by a combination of injected and inhaled agents.
TYPES OF ANESTHESIA
An incision is made to access the surgical site.

Blood vessels may be clamped to prevent bleeding, and retractors may be used to expose the site or keep the incision open.
The approach to the surgical site may involve several layers of incision and dissection

- Incision must traverse skin, subcutaneous tissue, three layers of muscle and then peritoneum in abdominal surgery
- Cutting the Skull for brain surgery
- Cutting the sternum for thoracic (chest) surgery to open up the rib cage
**TYPES OF SURGICAL PROCEDURES**

- **Excision** - cutting out an organ, tumor, or other tissue.
- **Resection** - partial removal of an organ or other bodily structure.
- Reconnection of organs, tissues, etc., particularly if severed. Resection of organs such as intestines involves reconnection. Internal suturing or stapling may be used. Surgical connection between blood vessels or other tubular or hollow structures such as loops of intestine is called anastomosis.
- **Reduction** - the movement or realignment of a body part to its normal position. e.g. Reduction of a broken nose involves the physical manipulation of the bone and/or cartilage from their displaced state back to their original position to restore normal airflow and aesthetics.
- Ligation- tying off blood vessels, ducts, or "tubes".
- Grafts - may be severed pieces of tissue cut from the same (or different) body or flaps of tissue still partly connected to the body but resewn for rearranging or restructuring of the area of the body in question. An example is bypass surgery, where clogged blood vessels are bypassed with a graft from another part of the body.
- Insertion of prosthetic parts when needed.
- Creation of a stoma, a permanent or semi-permanent opening in the body
- Transplant surgery, the donor organ (taken out of the donor's body) is inserted into the recipient's body and reconnected to the recipient in all necessary ways (blood vessels, ducts, etc.).
- Repair of a fistula, hernia, or prolapse
POST OPERATIVE THERAPY

- May include adjuvant treatment such as chemotherapy, radiation therapy, or administration of medication such as anti-rejection medication for transplants.

- Other follow-up studies or rehabilitation may be prescribed during and after the recovery period.
SURGERY SPECIALITIES AND SUBSPECIALITIES
- General surgery
  - Cardiothoracic surgery
  - Vascular surgery
  - Plastic surgery
  - Paediatric surgery
  - Colorectal surgery
  - Transplant surgery
  - Surgical oncology
  - Trauma surgery
  - Endocrine surgery
  - Breast surgery

- Otolaryngology
- Gynaecology
- Oral and maxillofacial surgery
- Orthopaedic surgery
- Neurosurgery
- Ophthalmology
- Podiatric surgery
- Urology
Acute Abdomen

COMMON SURGICAL PROBLEMS
Acute abdomen can be defined as severe, persistent abdominal pain of sudden onset that is likely to require surgical intervention to treat its cause.

The pain may frequently be associated with nausea and vomiting, abdominal distention, fever and signs of shock.

One of the most common conditions associated with acute abdominal pain is acute appendicitis.
CAUSES OF ABDOMINAL PAIN

- **Traumatic**: blunt or perforating trauma to the stomach, bowel, spleen, liver, or kidney

- **Inflammatory**:
  - Infections such as appendicitis, cholecystitis, pancreatitis, pyelonephritis, pelvic inflammatory disease, hepatitis, mesenteric adenitis, or a subdiaphragmatic abscess
  - Perforation of a peptic ulcer, a diverticulum, or the caecum
  - Complications of inflammatory bowel disease such as Crohn's disease or ulcerative colitis
- Mechanical:
  - Small bowel obstruction secondary to adhesions caused by previous surgeries, intussusception, hernias, benign or malignant neoplasms
  - Large bowel obstruction caused by colorectal cancer, inflammatory bowel disease, volvulus, fecal impaction or hernia

- Vascular: occlusive intestinal ischemia, usually caused by thromboembolism of the superior mesenteric artery
When a physician assesses a patient to determine the etiology and subsequent treatment for abdominal pain, the patient's history of the presenting complaint and physical examination should derive a diagnosis in over 90% of cases.

It is important also for a physician to remember that abdominal pain can be caused by problems outside the abdomen, especially heart attacks and pneumonias which can occasionally present as abdominal pain.
WORK UP

- Blood tests including full blood count, electrolytes, urea, creatinine, liver function tests, pregnancy test, amylase and lipase.
- Urinalysis
- Imaging including erect chest X-ray and plain films of the abdomen
- An electrocardiograph to rule out a heart attack which can occasionally present as abdominal pain
- Computed Tomography of the abdomen/pelvis
- Abdominal or pelvic ultrasound
- Endoscopy
Hospital admission for observation

Traditionally, the use of opiates or other painkillers in patients with an acute abdomen has been discouraged before the clinical examination, because these would alter the examination.