



**DEPARTMENT OF GYNAECOLOGIC ONCOLOGY  
DR B BOROOAH CANCER INSTITUTE**

**Curriculum for MCh in Gynaecological Oncology**

# **GUIDELINES FOR COMPETENCY BASED POSTGRADUATE TRAINING PROGRAMME FOR M.Ch IN GYNAECOLOGICAL ONCOLOGY**

## **Preamble**

Gynaecological Cancers (Cancer cervix, cancer uterus, tubo-ovarian cancers, vaginal and vulval cancers) comprise 25-40% of patient workload in established Departments of Radiation Oncology, Medical Oncology and Surgical Oncology. Whereas specialities such as radiation oncology and medical oncology look after all cancers, there is lack of specialists interested or devoted to the field of “Gynaecological Oncology”.

A subspecialist in Gynaecological Oncology is one who has undertaken formal training in field of Gynaecological oncology and acquires special expertise in the field of Gynaecological Oncology including broad based knowledge in related disciplines such as medical oncology, radiation oncology, gynaecological pathology and palliative management of patients suffering from gynaecological cancers.

## ***SUBJECT SPECIFIC OBJECTIVES***

**The aims of Sub-specialisation in Gynaecological Oncology are:**

- To create a work force of specialists trained in the field of Gynaecological Oncology.
- To improve practice, knowledge and research in the field of Gynaecological Oncology.
- To improve standards of care for patients suffering from gynaecological cancers.
- To encourage close understanding with disciplines such as Radiation Oncology and Medical Oncology involved in the care of women suffering from gynaecological cancer.
- To encourage co-ordinated management of gynaecological cancers as a multidisciplinary approach.

## ***SUBJECT SPECIFIC COMPETENCIES***

**By the end of the course, the student should have acquired knowledge (cognitive domain), professionalism (affective domain) and skills (psychomotor domain) as per details given below:**

## **A. Cognitive domain (theoretical knowledge):**

The post graduate student should acquire knowledge in the following areas by the end of the training programme.

Thorough understanding of:

- Female pelvic anatomy
  - Vascular supply of pelvis
  - Anatomy of female ureter and bladder
  - Lymphatic drainage of female pelvis including vulva
  - Pathology of premalignant and malignant lesions of female genital tract
  - FIGO and other international staging systems for various gynaecological cancers
  - Surgical principles in the management of various gynaecological cancers
  - Postoperative care, including fluid and electrolyte management
  - Surgical management in case of small intestine or large bowel involvement by gynaecological cancer
  - Surgical management in case of ureter or bladder involvement or injury during surgery
  - Prophylaxis against venous thrombo-embolism
  - Management of suspected and established cases of venous thrombo-embolism
  - Concept of Medical and Radiation Oncology management of these cases
- **Writing Research articles :**
    - The trainee should be able to design research protocol, implement the same and interpret the results of the research study
    - The trainee should be able to evaluate the relevant literature critically
    - A candidate would be expected to publish/submit two original articles related to the speciality in an indexed journal.
- **Medical Statistics**

The student should acquire knowledge in the following areas of medical statistics:

    - **Type of data & Sampling**
      - Categorical data (nominal, ordinal)
      - Numerical data (discrete and continuous, the Normal distribution, transformation to Normality)
      - Random sampling

- Standard error of a sample mean and of a proportion, and their differences
- **Principles of statistical inference & comparing groups**
  - Hypothesis testing and estimation
  - Type I and II errors
  - Interpretation of p-values and confidence intervals
  - Statistical and clinical significance
  - T-tests & Chi square with corrections
- **Survival analysis**
  - Types of time-to-event data (survival data, recurrence data)
  - Presentation of survival data
  - Kaplan-Meier and actuarial survival curves
  - Summarizing survival data
  - Comparing groups
    - Logrank test for two or more groups, including ordered groups
    - Use of Cox's proportional hazards regression model
    - Hazard ratios and their interpretation
- **Clinical trials**
  - Phases I-IV of clinical trials
    - Randomization
      - Need for randomization
      - Problems with non-randomized studies and historical controls
      - Methods of randomization (simple, bloc, stratified minimization)
      - Blinding / masking
    - Designs: parallel group, cross-over, factorial
    - Contents of a trial protocol
    - Ethics and informed consent
    - Measures of response
      - Tumour regression, Quality of life, Morbidity, Local and regional recurrence, Distant metastases, Death
    - Principles of sample size calculation
    - Interim analyses & Intent-to-treat analysis

## **B. Affective Domain:**

**The post graduate student:**

1. should be able to function as a part of a team, develop an attitude of cooperation with colleagues, and interact with the patient and the clinician or other colleagues to provide the best possible diagnosis or opinion.
2. should always adopt ethical principles and maintain proper etiquette in dealings with patients, relatives and other health personnel and to respect the rights of the patient including the right to information and second opinion.
3. should develop communication skills to word reports and professional opinion as well as to interact with patients, relatives, peers and paramedical staff, and for effective teaching.
4. During the course of three years the post graduate student will be expected to attend at least one course of one week duration dedicated to communication skills being conducted either in the same institution or by a recognized institution.
5. should effectively communicate to patient and her relatives the nature of disease, the extent of disease, the treatment options available and expected outcome following management of the disease.
6. should be able to execute the planned treatment with the help of other colleagues in the speciality of Gynaecological Oncology.
7. should maintain the highest degree of professionalism in executing treatment of the disease and communication to the patient and relatives.

### **C. Psychomotor domain**

**At the end of the course, the student should acquire following practical and clinical skills, details of which are given under Syllabus:**

- **Cancer cervix:**
  - Surgical management of operable cancer cervix cases
  - Diagnosis and management of pre-invasive lesions of cervix
  - Selection and pre-treatment workup of patients needing radiation therapy and chemotherapy for cancer cervix
- **Carcinoma Endometrium:**
  - Diagnosis and management of carcinoma endometrium
- Management of **ovarian cancers** (primary debulking, interval debulking and secondary debulking)
- Management of **vulval cancers**
- Management of **gestational trophoblastic neoplasia** (GTN)

- Diagnosis and management of rare genital tract cancers such as carcinoma fallopian tubes, sarcoma uterus, carcinoma vagina
- Diagnosis and management of recurrent lesions and metastasis
- Evaluation of patient on follow-up
- Reconstructive Surgery
- Counselling for familial Cancer Syndromes

## ***SYLLABUS***

### **Course contents:**

At the end of three year course in Gynaecological Oncology the post graduate student should have acquired following theoretical, clinical skills and research knowledge.

- Diagnostic techniques and staging of gynaecological cancers
- Surgery for gynaecological cancers
- Principles of radiation therapy for gynaecological malignancies
- Chemotherapy, targeted therapy and Immuno-therapy for gynaecological cancers
- Palliative care for advanced and recurrent cancers
- Pathology of common gynaecological cancers
- Research methodology for clinical trials and statistics
- Writing original papers in reputed national & International scientific journals
- Knowledge related to epidemiology and preventive oncology as applied to Gynaecological Oncology

### **1. Diagnostic techniques and staging**

Objectives :

- The trainee should be able to:-
  - Identify the appropriate diagnostic techniques needed to:-
    - establish the diagnosis
    - establish the extent of disease
    - evaluate co-existing disease which may have an important bearing on selection of and response to treatment
    - evaluate the response of cancer to treatment
  - Stage the cancer according to the current F.I.G.O. classification for gynaecological cancers and the corresponding TNM classification.
  - Acquire sufficient knowledge in colposcopy and have an expert knowledge of the colposcopic evaluation of abnormal cervical or vaginal cytology and

vulval neoplasia and identify abnormal epithelial and vascular patterns involving the cervix, vagina and vulva with the colposcope

- perform cystoscopy
  - perform proctosigmoidoscopy
  - perform hysteroscopy
  - understand the indications for gastrointestinal endoscopy
  - be expert in directed cervical biopsies, cone biopsy, LEEP biopsy of the cervix, endocervical curettage, endometrial biopsy and curettage, vulval and nodal biopsies of pelvic, abdominal and other nodal sites
  - understand the indications and techniques for open and percutaneous biopsies of possible metastatic sites such as lung, liver and spine
  - understand the indications for and be able to carry out trans-vaginal and trans-abdominal needle biopsy for the diagnosis or evaluation of the extent of pelvic cancers
  - understand the use and limitations of cytology in the detection of cancer, and know how to obtain the necessary samples
- The trainee should know the indications for the relative value and interpretation of values, and limitations of the techniques such as:-
    - Radiographic diagnosis:
      - Standard plain film evaluation of heart, abdomen and skeletal system
      - CT Scan and MRI
      - Angiography, pulmonary, renal, pelvic
      - Intravenous and retrograde urography
      - Gastrointestinal and colonic radiography
      - Mammography
    - Radioisotope scanning:
      - PET/CT scanning
      - liver-spleen
      - bone
      - brain
      - kidneys
      - lungs
      - peripheral vascular system
    - Ultrasonography

- Measurement of tumour markers and other humoral markers of cancer and benign tumours
  - serum HCG and beta-HCG
  - serum Alpha fetoprotein
  - Carcinoembryonic antigen
  - Serum CA125
  - Ectopic hormone production (for example-growth hormone, HCG, parathormone)
  - Steroid hormones (oestrogen/androgens/corticosteroids)
  
- Biochemistry
  - liver function tests
  - renal function tests
  - carbohydrate tolerance tests
  - inappropriate ADH secretion
  
- Blood coagulation
  - tests for coagulopathies
  - monitoring of anticoagulant therapy
  - prophylactic and therapeutic use of anticoagulants
  
- Pulmonary function tests (PFT)
  
- Perioperative monitoring
  - central venous pressure and CVP lines
  - pulmonary wedge pressure and Swann Ganz catheters
  - arterial lines
  - ECG
  - the role of HDU/ITU

## **2. Surgery for gynaecological cancers**

### ➤ Objectives

- The trainee should gain expertise in:-
  - preoperative evaluation
  - pre-operative preparation
    - bowel
    - position of ostomy sites
    - fluid restriction



- pulmonary – when indicated
- thromboprophylaxis
- counselling the patient and the family
- obtaining informed consent
  
- choice of treatment – surgical and non-surgical treatment
- surgical anatomy comprising detailed knowledge of the abdominal pelvic anatomy, including genital, urinary and G.I tracts and other areas of relevance, e.g., thigh and neck
- management of complications- To be familiar with common complications associated with commonly performed surgical procedures for gynaecological cancers.
  - intraoperative
    - \* transfusion reaction
    - \* cardiac arrest
    - \* injury to bladder, bowel, ureters, major blood vessels
  
  - postoperative
    - \* atelectasis, other pulmonary complications
    - \* intra-abdominal bleeding
    - \* DVT and pulmonary embolus
    - \* vesicovaginal fistula
    - \* ureterovaginal fistula
    - \* rectovaginal fistula
    - \* renal failure
    - \* congestive heart failure
    - \* jaundice
    - \* pyrexia and sepsis
    - \* respiratory insufficiency
    - \* wound problems – infection, dehiscence, evisceration
    - \* paralytic ileus
    - \* bowel obstruction
  
- The trainee should have sufficient training and experience that the following procedures may be independently and competently performed and their aftercare managed by the completion of the training period.
  - Primary procedures
    - hysterectomy – (a) radical, (b) total abdominal, (c) vaginal
    - pelvic lymphadenectomy

- para-aortic lymphadenectomy
  - radical vulvectomy
  - inguinal and femoral lymphadenectomy
  - debulking surgery for stage III and IV ovarian cancer, fertility sparing surgery for early stage ovarian cancer
  - conservative surgery for early stage ovarian and cervical carcinoma in young patients
  - laparoscopic surgery for carcinoma endometrium, carcinoma cervix
  - Exenteration procedures
- Gastrointestinal procedures related to gynaecological malignancy in collaboration with colorectal surgeons where necessary :
    - small intestine : (a) resection and reanastomosis
    - (b) bypass procedures
    - (c) ileostomy
    - large intestine : (a) resection
    - (b) colostomies
- Urinary tract procedures related to gynaecological malignancy in collaboration with urological surgeons where necessary :
    - bladder :(a) partial cystectomy
    - (b) cystotomy
    - ureter :(a) ureteroneocystotomy
    - (b) end-to-end ureteral reanastomosis
    - (c) ileal conduit
- Evaluation procedures
    - cystoscopy
    - laparoscopy
    - colposcopy
    - Upper GI endoscopy
    - sigmoidoscopy/colonoscopy
- The trainee should at least understand place of :-
    - pelvic exenteration
    - primary colonic anastomosis
    - continent urinary conduits

- vaginal reconstruction
  - plastic reconstruction of the vulva
  - laparoscopic lymph node dissection
  - laparoscopic surgical staging
  - laparoscopic prophylactic salpingo-oophorectomy
  - radical vaginal surgery for cervical cancer
  - insertion of intracavitary radiation applicators
  - feeding jejunostomy / gastrostomy
  - repair of vesico-vaginal fistulae
    - primary closure
    - bulbocavernosus interposition
- Over a 30 months period it is expected that a candidate enrolled for MCh course in Gynaecological Oncology will perform the following number of procedures :-
    - Complete pelvic and para-aortic node dissection - 15
    - Complete ureteric dissections - 12
    - Radical abdominal hysterectomy - 12
    - Radical excisions of vulval cancer including Groin dissection - 05
    - Laparotomies for stage III and IV ovarian cancer - 25
    - Fertility sparing surgery for early gynaecological cancers - 05
    - Type I hysterectomies for carcinoma endometrium - 10
    - Exposure to newer surgical techniques such as HIPEC, robotic surgery
  - To allow assessment of training, the trainee should keep a logbook of cases for discussion at assessment. Suggested minimum data comprises
    - Patient Id (WITHOUT NAME)
    - Date
    - Surgeon or assistant surgeon
    - Tumour and stage
    - Procedure
    - Complications
    - Special features

### **3. Principles of radiation therapy for gynaecological malignancies**

➤ Objectives

The trainee should have sufficient familiarity with the principles and practice of Radiation Oncology in treatment planning, in the execution of intracavitary applications and in the management of irradiation induced complications.

- **Radiobiology and Cell biology**
  - **General principles of Radiobiology**
    - The cell cycle, basic cell kinetics, tumour vasculature and angiogenesis.
    - Cellular systems and their response to radiation
    - Radiation biology models radiation damage at the cellular level.
  - **Techniques in molecular biology**
    - Nucleic acid analysis including electrophoresis, hybridization, blotting, PCR, sequencing, transfection
    - Micro array techniques
    - Transgenic models
  - **The genetics of normal and malignant cells**
    - Normal chromosomal structure and function, normal gene transcription
    - Normal DNA repair mechanisms
    - Polymorphisms, mini and micro satellites
    - Chromosomal and genetic changes in malignancy, point mutations, translocations, deletions, gene amplification and over-expression
    - Oncogenes, proto-oncogenes, tumour suppressor genes.
  - **Normal tissue radiobiology**
    - Normal tissue damage & concepts of normal tissue tolerance
    - The concept of damage (lethal, sub-lethal, potentially lethal) & Repair
    - The cell survival curve as a basis for fractionation
    - Hyper fractionation, accelerated fractionation and hypo fractionation
    - Hypoxic cell sensitizers and protectors
- **Radiotherapy treatment planning**
  - Alpha, beta and gamma rays
  - Inverse square law
  - Immobilization (techniques and accuracy)
  - Tumour localization: direct visual, simulator, CT, MRI, USG, PET
  - Principles of conformal therapy and intensity modulated radiation therapy (IMRT)

- **Radiotherapy Treatment**
  - **External Beam therapy & equipments**
    - Principles of superficial, orthovoltage and megavoltage
    - Principles of the Linear Accelerator & Telecobalt machines
    - Radiation Doses; Radical & Palliative
    - Radiotherapy Techniques: Conventional, 3D-CRT, IMRT & IGRT
  - **Brachytherapy**
    - Types of sources & their construction
    - Principles of clinical use
    - Gynaecological intracavitary brachytherapy systems, source and dose distributions and dose specification, dose to point A & B
    - Principles of after loading (manual, remote, low, medium and high dose rate)
    - Image guided Brachytherapy
  - **Radiotherapy to gynecological sites**
    - Uterine Cervix
    - Corpus Uteri
    - Vagina
    - Vulva
    - Ovaries
    - Fallopian Tube
    - Radiotherapy to uncommon sites
  - **Radiation protection**
    - Radiation risk & Radiation limits
    - Protection mechanisms: time, distance, shielding
    - Monitoring of personnel
    - Dose reporting mechanisms and dose level
  - **Early radiation reactions**
    - Bowel, Bladder, Vaginal & Skin reactions
- **Late Complications**
  - Factors affecting late complications
  - Complication to GI Tract, Urinary tract, Skin, Bone Marrow etc.
  - Managing complications
  - Late radiation induced malignancies
- **Combination of chemotherapy and radiation Therapy (neo-adjuvant, concurrent and adjuvant)**

- To allow assessment of training, the trainee should keep a logbook of case for discussion at assessment. Suggested minimum data comprises  
Patient id (WITHOUT NAME)
  - Date
  - Tumour and stage
  - Procedure (e.g. radiotherapy planning or insertion)
  - Complications
  - Special features

#### 4. Chemotherapy for gynaecological cancers

##### ➤ Objectives

The trainee should understand the pharmacology of the major drugs used in cancer chemotherapy and be able to use them.

- Cell biology including:
  - cell cycle kinetics
  - log kill hypothesis
  - cycle and phase specificity
- Classes of chemotherapeutic agents :
  - Taxanes
  - alkylating agents
  - antemetabolites
  - antibiotics
  - vinca alkaloids
  - hormones
  - miscellaneous agents
- Targeted therapy
- Immunotherapy
- Mechanism of action
- Pharmacology of specific agents
  - routes of administration and absorption
  - distribution
  - biotransformation
  - excretion
  - drug interactions

- pharmacokinetics

- Benefits and limitations of combination chemotherapy
  - Intraperitoneal chemotherapy
  - High dose chemotherapy
  - General guidelines for clinical evaluation including the definitions of complete or partial responses, the concept of phase I, II and III drug trials and adjuvant therapy.
  - Toxicity including :
    - general effects on rapidly proliferating epithelium such as bone marrow, G.I.
    - tract and hair follicles
    - drug specific toxicity
    - management
- Trophoblastic disease
  - Palliative Chemotherapy
    - To allow assessment of training, the trainee should keep a personal logbook of case for discussion at assessment. Suggested minimum data comprises
      - Patient Id (without name)
      - Date
      - Tumour and stage
      - Procedure (e.g. chemotherapy planning or prescription)
      - Complications
      - Special features

## 5. Palliative care for advanced and recurrent cancers

### ➤ Objectives:

The trainee should be able to contribute to palliative care including :-

- Pain relief:
  - non-narcotic analgesics
  - narcotic analgesics
  - co-analgesics
  - WHO ladder
  - understanding the role of anaesthetist – (a) pain clinics, (b) neural blocks
- Anxiety relief :
  - Sedatives and tranquillisers
  - counselling (patient and family)
  - Home care
- nausea and vomiting relief:

- antiemetics
- dietary measures
- Community support roles:
  - General Practitioner
  - district nurse
  - family
  - religion
  - community services, e.g., laundry, social services
  - cancer help groups
- The trainee should have received practical exposure to hospice care.
- The trainee should have teaching in and experience of breaking bad news to patients and relatives.

## 6. Pathology of common gynaecological cancers

### ➤ Objectives:

- The trainee should be able to identify, on the basis of direct visual and microscopic evaluation, lesions that are pre-malignant or malignant and distinguish them from benign disorders. She/he should know what histopathological features are important in disease progression i.e. tumour margins, depth of invasion, lympho-vascular space involvement, grade, node metastases. The candidate should be familiar with immunohistochemistry stains and immunophenotyping, receptor studies as applied to gynaecological tumours
  - Vulva including:
    - neoplastic and non neoplastic disorders
    - warts
    - intraepithelial neoplasia
    - carcinoma
    - sarcoma
  - Vagina including:
    - adenosis
    - warts
    - intraepithelial neoplasia
    - carcinoma
    - sarcoma
  - Cervix including:
    - intraepithelial neoplasia
    - microinvasion
    - carcinoma



- sarcoma
- neuroendocrine tumours
- Uterine body including:
  - cystic hyperplasia
  - adenomatous hyperplasia
  - carcinoma
  - sarcoma
  - trophoblastic hyperplasia
  - carcinosarcoma
- Fallopian tube:
  - carcinoma
- Ovary including:
  - functional cysts
  - serous cystadenoma and carcinoma
  - mucinous cystadenoma and carcinoma
  - Brenner tumour
  - granulosa-theca cell tumour
  - Sertoli-Leydig cell tumour
  - gynandroblastoma
  - cystic teratoma
  - mixed germ cell and gonadal stromal tumours
  - embryonal carcinoma
  - choriocarcinoma
  - endometrioid carcinoma
  - metastatic carcinoma
  - gonadoblastoma
  - mesonephroma

## ***SUBJECT SPECIFIC COMPETENCIES***

### **Cognitive domain (Knowledge Domain)**

**At the end of the course, the student should have acquired following skills and knowledge in the following:**

- ✓ Female pelvic anatomy.
- ✓ Vascular supply of pelvis
- ✓ Anatomy of female ureter and bladder.
- ✓ Lymphatic drainage of female pelvis including vulva.
- ✓ Pathology of premalignant and malignant lesions of female genital tract.
- ✓ FIGO and other international staging systems for various gynaecological cancers.
- ✓ Surgical principles in the management of various gynaecological cancers.

- ✓ Postoperative care, including fluid and electrolyte management.
- ✓ Surgical management in case of small intestine or large bowel involvement by gynae cancer
- ✓ Surgical management in case of ureter or bladder involvement or injury during surgery.
- ✓ Prophylaxis against venous thromboembolism.
- ✓ Management of suspected and established cases of venous thromboembolism.
- ✓ Concept of Medical and Radiation Oncology management of these cases.

### **Affective domain (Attitudes including Communication and Professionalism)**

**At the end of three years course in Gynaecological Oncology a candidate should be able to:**

-

- ✓ Effectively communicate to patient and her relatives the nature of disease, the extent of disease, the treatment options available and expected outcome following management of the disease.
- ✓ execute the planned treatment with the help of other colleagues in the speciality of Gynaecological Oncology.
- ✓ maintain a highest degree of professionalism in executing treatment of the disease and communication to the patient and relatives.

## ***SUBJECT SPECIFIC PRACTICAL COMPETENCIES***

### **Diagnostic techniques and staging**

➤ Objectives :

- The trainee should be able to:-
  - Identify the appropriate diagnostic techniques needed to:-
    - establish the diagnosis
    - establish the extent of disease
    - evaluate co-existing disease which may have an important bearing on selection of and response to treatment
    - evaluate the response of cancer to treatment
  - stage the cancer according to the current F.I.G.O. classification for gynaecological cancers and the corresponding TNM classification.
  - have sufficient knowledge in colposcopy and have an expert knowledge of the colposcopic evaluation of abnormal cervical or vaginal cytology and vulval neoplasia and identify abnormal epithelial and vascular patterns involving the cervix, vagina and vulva with the colposcope

- perform cystoscopy
  - perform proctosigmoidoscopy
  - perform hysteroscopy
  - understand the indications for gastrointestinal endoscopy
  - be expert in directed cervical biopsies, cone biopsy, LEEP biopsy of the cervix, endocervical curettage, endometrial biopsy and curettage, vulval and nodal biopsies of pelvic, abdominal and other nodal sites
  - understand the indications and techniques for open and percutaneous biopsies of possible metastatic sites such as lung, liver and spine and lymph nodes.
  
  - understand the indications for and be able to carry out transvaginal and transabdominal needle biopsy for the diagnosis or evaluation of the extent of pelvic cancers
  - understand the use and limitations of cytology in the detection of cancer, and know how to obtain the necessary samples
- The trainee should know the indications for the relative value and interpretation of values, and limitations of the techniques such as:-
    - Radiographic diagnosis:
      - Standard plain film evaluation of heart, abdomen and skeletal system
      - CT Scan and MRI
      - Angiography, pulmonary, renal, pelvic
      - Intravenous and retrograde urography
      - Gastrointestinal and colonic radiography
      - Mammography
    - Radioisotope scanning:
      - PET-CT scanning
      - liver-spleen
      - bone
      - brain
      - kidneys
      - lungs
      - peripheral vascular system
    - Ultrasonography
    - Measurement of tumour markers and other humoral markers of cancer and benign tumours
      - serum HCG and beta-HCG
      - serum Alpha fetoprotein
      - Carcinoembryonic antigen
      - Serum CA125
      - Ectopic hormone production (for example-growth hormone, HCG, parathormone)
      - Steroid hormones (oestrogen/androgens/corticosteroids)

- **Biochemistry**
  - liver function tests
  - renal function tests - including, creatinine clearance, GFR, urine electrolytes, osmolality, serum electrolytes, osmolality and pH
  - carbohydrate tolerance tests
  - inappropriate ADH secretion
- **Blood coagulation**
  - tests for coagulopathies
  - monitoring of anticoagulant therapy
  - prophylactic and therapeutic use of anticoagulants
- **Pulmonary function tests (PFT)**
- **Perioperative monitoring**
  - central venous pressure and CVP lines
  - pulmonary wedge pressure and Swann Ganz catheters
  - arterial lines
  - ECG
  - the role of HDU/ITU

## **2. Surgery for gynaecological cancers**

### ➤ Objectives

- The trainee should gain expertise in:-
  - Preoperative evaluation
  - Pre-operative preparation
    - bowel
    - position of ostomy sites
    - fluid restriction
    - pulmonary – when indicated
    - thromboprophylaxis
    - counseling the patient and the family
    - obtaining informed consent
  - Choice of treatment – surgical and non-surgical treatment
  - Surgical anatomy comprising detailed knowledge of the abdominal pelvic anatomy, including genital, urinary and G.I tracts and other areas of relevance, e.g., thigh and neck
  - Management of complications-To be familiar with common complications associated with commonly performed surgical procedures for gynaecological cancers.
    - Intraoperative

- \* transfusion reaction
- \*cardiac arrest
- \*injury to bladder, bowel, ureters, major blood vessels

- Postoperative

- \* atelectasis, other pulmonary complications
- \*intra-abdominal bleeding
- \*DVT and pulmonary embolus
- \*vesicovaginal fistula
- \*ureterovaginal fistula
- \*rectovaginal fistula
- \*renal failure
- \*congestive heart failure
- \*jaundice
- \*pyrexia and sepsis
- \*respiratory insufficiency
- \*wound problems – infection, dehiscence, evisceration \*paralytic ileus
- \*bowel obstruction

- The trainee should have sufficient training and experience that the following procedures may be independently and competently performed and their aftercare managed by the completion of the training period

- Primary procedures

- hysterectomy – (a) radical, (b) total abdominal, (c) vaginal
- pelvic lymphadenectomy
- para-aortic lymphadenectomy
- radical vulvectomy
- inguinal and femoral lymphadenectomy
- debulking surgery for stage III and IV ovarian cancer, fertility sparing surgery for early stage ovarian cancer
- conservative surgery for early stage ovarian carcinoma in young patients
- laparoscopic surgery for carcinoma endometrium, carcinoma cervix
- Exenteration procedures

- Gastrointestinal procedures related to gynaecological malignancy in collaboration with colorectal surgeons where necessary :

- small intestine :(a) resection and reanastomosis
  - (b) bypass procedures
  - (c) ileostomy
- large intestine :
  - (a) resection
  - (b) colostomies

- Urinary tract procedures related to gynaecological malignancy in

collaboration with urological surgeons where necessary :

- bladder (a) partial cystectomy  
(b) cystotomy
- ureter (a) ureteroneocystotomy  
(b) end-to-end ureteral reanastomosis  
(c) ileal conduit

- Evaluation procedures
  - cystoscopy
  - laparoscopy
  - colposcopy
  - Upper GI endoscopy
  - sigmoidoscopy/colonoscopy

- The trainee should understand place of :-
  - Pelvic exenteration
  - Primary colonic anastomosis
  - Continent urinary conduits
  - Vaginal reconstruction
  - Plastic reconstruction of the vulva
  - Laparoscopic lymphnode dissection
  - Laparoscopic surgical staging
  - Laparoscopic prophylactic salpingo-oophorectomy
  - Radical vaginal surgery for cervical cancer
  - Insertion of intracavitary radiation applicators
  - Feeding jejeunostomy / gastrostomy
  - Repair of vesico-vaginal fistulae
    - primary closure
    - bulbocavernosus interposition

## ***TEACHING AND LEARNING METHODS***

### **Formal Teaching:**

- a) **Journal Club:** 1 hour duration - Paper presentation/discussion - once per week.
- b) **Seminar:** One seminar every week of one hour duration.
- c) **Lecture/discussion:** Lectures on newer topics by faculty, in place of seminar as per need.
- d) **Case presentation** in the ward. Post graduate students will present a clinical case for discussion before a faculty and discussion made pertaining to its management and decision to be recorded in case files.

- e) **Case conference:** Post graduate students are expected to work up one long case or two short cases and present the same to a faculty member and discuss the management.
- f) **Radiology/Nuclear Medicine Conference:** to be held once a week in which the radiological features of various problems are discussed.
- g) **Surgico-pathological Conference:** Special emphasis is made on the surgical pathology and the radiological aspect of the case in the pathology department. Such exercises help the Orthopaedics/Pathology/Radiology post graduate students.
- h) **Combined Round/Grand Round:** These exercises are to be done for the hospital once a week or twice a month involving presentation of unusual or difficult cases. Presentation of cases in clinical combined / grand rounds and clinical series/research data for the benefit of all clinicians and other related disciplines once in week or fortnightly.
- i) **Emergency situation:** Casualty duty to be arranged by rotation among the M.Ch students with a faculty cover daily by rotation.
- j). Bedside clinical training for patient care management. Daily for half to one hour during ward round with faculty and 1-2 hours in the evening by post graduate students /faculty on emergency duty, bed side patient care discussions are to be made.
- k). Clinical teaching: In OPD, ward rounds, emergency, ICU and the operation theatres.
- l) PG students shall be required to participate in the teaching and training programme of Undergraduate students and interns.
- m) Should have attended two conferences/CMEs/Workshops during tenure.
- n) A postgraduate student of a postgraduate degree course in broad specialities/super specialities would be required to present one poster presentation, to read one paper at a national/state conference and to present one research paper which should be published/accepted for publication/sent for publication during the period of his postgraduate studies so as to make him eligible to appear at the postgraduate degree examination.
- o) **LOG BOOK**

Post graduate students shall maintain a log book of the work carried out by them and the training programme undergone during the period of training including details of

surgical operations assisted or done independently by M.Ch. candidates. Log book shall be checked and assessed periodically by the faculty members imparting the training.

p) The Department should encourage e-learning activities.

**q) Clinical postings: Recommended schedule for three years training**

The post graduate student is required to work full time in the Department of Gynaecologic Oncology and participate in patient care, academic and research activities, as described below.

- First six months
  - Orientation programme including exposure to casualty.
  - Learns bedside history taking in ward, OT exposure, casualty, ICU requirement and their visit to related disciplines.
  - Care of indoor patients and learn techniques.
  - Attends operation theatre and emergency operations for acclimatization (for surgical specialities).
  - Assists ward round and visits other wards with senior colleagues to attend call/consultation from other departments.
  - Participates in the teaching sessions in wards for bedside clinical teaching in the afternoon seminar/journal club and case conferences.
  - Participates in the teaching and training programme of UG students and interns.

**Next thirty months**

Attends two OPDs every week, as delegated by the Head of the Department.

- Discusses problematic cases with consultant (s) in OPD/ward.
- Attends operation room/theatre 3 days in a week.
- Attends 2 morning rounds/week.
- Care of the indoor patients on beds allotted to him/her on daily basis.
- Attends the weekly Journal Club and seminar and presents the same by rotation.
- It is desirable to attend specialty clinics, if available at the institute



- During the two and half years, the post graduate students must attend the combined teaching Programme of the Departments of Gynaecological Oncology i.e. clinical meetings, CPC's of students and staff of the whole hospital.
- Surgico-pathological conference in pathology department, with surgeons.
- Attends 24 hours emergency duty twice a week as per roster of the department.
- Attends lectures by the visiting faculty to the department/college from India/abroad.
- Attends/participates/presents papers in state/zonal national conferences.
- Actively participates/helps in organization of departmental workshop, courses in specialized areas.

**Desirable/optional**

- Two months posting in Medical Oncology
- One month posting in Radiation Oncology
- Two months posting in Pain Clinic and Palliative Care
- Two months in concerned laboratory
- Students should be encouraged for two weeks visit to any higher Centre/tertiary Cancer Care Centre (national or international) dealing with Gynecological Oncology

**During the training programme, patient safety is of paramount importance; therefore, skills are to be learnt initially on the models, later to be performed under supervision followed by performing independently; for this purpose, provision of skills laboratories in medical colleges is mandatory.**

## ***ASSESSMENT***

**FORMATIVE ASSESSMENT, ie., during the training**

**Formative assessment should be continual and should assess medical knowledge, patient care, procedural & academic skills, interpersonal skills, professionalism, self directed learning and ability to practice in the system.**

**Quarterly assessment during the MCh training should be based on:**

1. Journal based / recent advances learning
2. Patient based /Laboratory or Skill based learning

3. Self directed learning and teaching
4. Departmental and interdepartmental learning activity
5. External and Outreach Activities / CMEs

**The student to be assessed periodically as per categories listed in postgraduate student appraisal form (Annexure I).**

**FORMATIVE ASSESSMENT may be carried out but does not carry weightage:**

**Internal assessment: General Principles**

- Personal attributes including Communication skills Ongoing after each clinical posting
- Clinical skills and performance Ongoing after each clinical posting
- Academic activities Ongoing after each clinical posting
- Theory assessment (in house)
- Practical assessment

Clinical skills and performance, academic performance and personal attributes shall be graded on a scale of 1 to 5 (5 being the highest). The academic presentations shall be graded at the time of presentation of the consultant in-charge. Evaluation on clinical skills and personal attributes others shall be done by the Unit in-charge at the end of every semester.

In addition to bedside teaching rounds, formal teaching is necessary. The departments may select a mix of the following sessions:

Journal club and audit	Once a week
Seminars and lectures	Once a week
Case discussions	Twice a week
Inter-departmental case/ seminar	Once a week

Attend accredited scientific meetings (CME, symposia, and conferences)

Additional sessions on basic sciences, biostatistics, research methodology, teaching methodology, medical ethics and legal issues related to the subject are suggested.

**SUMMATIVE ASSESSMENT:**

The summative examination would be carried out as per the Rules given in **POSTGRADUATE MEDICAL EDUCATION REGULATIONS, 2000**.

The summative assessment examination shall include two heads:

- A. Theory examination.
- B. Practical, Clinical examination and Viva-voce.

Theory examination and Practical/Clinical, Viva-voce shall be separate heads of passing.

Theory examination shall comprise of four papers. Passing percentage shall be cumulatively 50% with minimum of 40% marks in each theory paper.

Practical /Clinical examination consisting of at least one long case, three short cases and viva-voce. Passing percentage shall be 50%.

Passing shall be separate for each head and failing shall be common, meaning thereby that clearance at theory and failure at practical / clinical shall amount to failure at Summative examination and vice versa.

The Post Graduate examination shall be in three parts: -

1. **Theory Examination:**

There shall be four theory papers as follows:

- Paper I:** Basic Sciences, Epidemiology & Preventive Oncology
- Paper II:** Surgical aspects in Gynaecologic Oncology
- Paper III:** Medical and Radiation Oncology related to Gynaecologic Oncology
- Paper IV:** Recent advances in Gynaecologic Oncology including Clinical Trials

2. **Practical/clinical and Oral Examination:**

**Practical Examination:**

The practical examination should consist of the following and should be spread over two days (for less than 5 students).

**One long case:** History taking, physical examination, interpretation of clinical findings, differential diagnosis, investigations, prognosis and management.

**Three short cases** from various sections of Gynaecologic Oncology. M.Ch. candidates will also be examined also in surgical procedures.

### **Oral Examination**

- Surgical Anatomy
- Instruments
- Radiology
- Surgical Pathology
- Chemotherapy Drugs/spots
- Ward Rounds

### **Suggested reading material :**

#### ➤ **Books (latest edition) :**

- Clinical Gynaecological Oncology by Berek et al
- Gynaecological Oncology by Hacker et al
- Clinical Gynaecological Oncology by Disia et al
- Cancer
- Telinde's Textbook of Operative Gynaecology
- Novak Textbook of Gynaecology

#### ➤ **Journals:**

3-5 international and two national journals (all indexed)

**Postgraduate Student Appraisal Form  
Clinical Disciplines**

Name of the Department/Unit :

Name of the PG Student :

Period of Training : FROM.....TO.....

Sr. No.	PARTICULARS	Not Satisfactory			Satisfactory			More Than Satisfactory			Remarks
		1	2	3	4	5	6	7	8	9	
1.	Journal based / recent advances learning										
2.	Patient based /Laboratory or Skill based learning										
3.	Self directed learning and teaching										
4.	Departmental and interdepartmental learning activity										
5.	External and Outreach Activities / CMEs										
6.	Thesis / Research work										
7.	Log Book Maintenance										

Publications

Yes/ No

Remarks\* \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**\*REMARKS: Any significant positive or negative attributes of a postgraduate student to be mentioned. For score less than 4 in any category, remediation must be suggested. Individual feedback to postgraduate student is strongly recommended.**

**SIGNATURE OF ASSESSEE    SIGNATURE OF CONSULTANT    SIGNATURE OF HOD**