



PROGRAMME

M.Ch GYNECOLOGICAL

ONCOLOGY

(Revised with effect from 2016-2017 onwards)

Table of Contents

AIMS AND OBJECTIVES	3
ELIGIBILITY	7
ADMISSION	7
TYPE OF PROGRAM.....	8
CLINICAL ROTATION.....	9
TRAINING MODULES	10
I Gynecological Oncology Modules	11
II Site-Specific Modules	16
III Allied Surgical Specialty Modules.....	27
IV Allied Non-Surgical Specialties.....	33
EXAMINATION SCHEME(As per MCI rule)	40
Question papers.....	44

AIMS AND OBJECTIVES

The MCh in Gynecological Oncology is designed as a Subspecialty course aimed at training candidates who having obtained a primary MCI-recognized postgraduate qualification in Obstetrics & Gynecology i.e. MS/MD or equivalent (DNB) and desire to pursue a career in the subspecialty of Gynecological Oncology. The M.Ch in Gynecological Oncology has been designed as a comprehensive formal 3-year training program in all aspects of gynecologic oncology. It also includes training in the allied surgical subspecialties of Urological and Gastrointestinal Oncology, as well as Preventive Oncology, Radiation and Medical Oncology and Palliative Oncology.

The candidate will receive comprehensive training in the management of patients with gynecological cancers. The program is designed to provide the candidate with every opportunity to gain proficiency in the principles of prevention and early detection, diagnosis and evidence-based treatment, palliative and terminal care. The program also stresses the importance of clinical and basic research relevant to the Subspecialty.

A candidate who successfully completes the course will be expected to have gained proficiency in the following:

- Ability to function as an independent consultant clinician in Gynecological Oncology
- Understand the epidemiology of gynecological cancers as also the principles underlying screening, early detection and prevention. The candidate should acquire a high level of competency in the performance of colposcopy and LEEP procedures in the management of pre-invasive and micro-invasive lesions of the female genital tract
- Acquire a sound knowledge of gross and microscopic pathology and cytology relevant to gynecological oncology. The candidate should be capable of interpreting

the details of cytopathology and histopathology reports and use this effectively in making decisions regarding treatment and prognosis

- Acquire the necessary skill set and competence to safely perform radical surgery for gynecological cancers including the ability to prevent, recognize and manage any complications arising thereof
- Understand the surgical principles and have the skills necessary to perform appropriate surgical procedures on the GI and Urinary tract as and when required in the management of gynecological cancer and its complications
- Be familiar with principles of management of diseases of the breast
- Be able to perform the following invasive diagnostic procedures i.e. cystoscopy, thoracic and abdominal paracentesis, Fine needle aspiration cytologies , Core biopsies and placement and care of central lines
- Have a detailed knowledge of relevant imaging technologies, (indications and limitations) i.e. Ultrasound, CT, MRI and FDG-PET scans
- Have a sound knowledge of the principles of peri-operative patient care
- Have a sound knowledge of the principles of pain management, palliative care and end-of-life issues
- Acquire an understanding of the principles of radiobiology and radiation physics. Be well informed in the principles and techniques of modern radiation treatments. The candidate must develop the skills necessary to recognize and treat the side-effects and complications of radiation treatment
- Acquire sound knowledge of the clinical pharmacology of cancer chemotherapy and related treatment modalities. The candidate should develop the skills necessary for the appropriate selection of patients for chemotherapy and the practical use of the available chemotherapeutic options used in the management of gynecological cancer patients. The candidate should develop skills in the recognition and management of toxic side effects and acquire the ability to administer them in an independent capacity, if necessary

- Acquire skill in the assessment of the effects of treatment and the care of complications. This includes skill in the assessment of patients after treatment and during follow-up.
- Understand cancer survivorship issues and the principles underlying the management of fertility issues in gynecological cancer patients
- Develop skills in the planning, conduct, reporting and interpretation of research in gynecological oncology
- Understand the psycho-sexual, socio-cultural and economic aspects of cancer management in the Indian setting

Program Outcomes

PO1: Ability to function as an independent consultant clinician in Gynecological Oncology

PO2: Understand the epidemiology of gynecological cancers as also the principles underlying screening, early detection and prevention.

PO3: Acquire a sound knowledge of gross and microscopic pathology and cytology relevant to gynecological oncology.

PO4: Acquire the necessary skill set and competence to safely perform radical surgery for gynecological cancers including the ability to prevent, recognize and manage any complications arising thereof

Program Specific Outcomes

PSO1: Understand the surgical principles and have the skills necessary to perform appropriate surgical procedures on the GI and Urinary tract as and when required in the management of gynecological cancer and its complications

PSO2: Be familiar with principles of management of diseases of the breast

PSO3: Be able to perform the following invasive diagnostic procedures i.e. cystoscopy, thoracic and abdominal paracentesis, Fine needle aspiration cytologies , Core biopsies and placement and care of central lines

PSO4: The candidate should acquire a high level of competency in the performance of colposcopy and LEEP procedures in the management of pre-invasive and micro-invasive lesions of the female genital tract

PSO5: The candidate should be capable of interpreting the details of cytopathology and histopathology reports and use this effectively in making decisions regarding treatment and prognosis

PSO6: Have a detailed knowledge of relevant imaging technologies, (indications and limitations) i.e. Ultrasound, CT, MRI and FDG-PET scans

PSO7: Have a sound knowledge of the principles of peri-operative patient care

PSO8: Have a sound knowledge of the principles of pain management, palliative care and end-of-life issues

PSO9: Acquire an understanding of the principles of radiobiology and radiation physics. Be well informed in the principles and techniques of modern radiation treatments. The candidate must develop the skills necessary to recognize and treat the side-effects and complications of radiation treatment

PSO10: Acquire sound knowledge of the clinical pharmacology of cancer chemotherapy and related treatment modalities. The candidate should develop the skills necessary for the appropriate selection of patients for chemotherapy and the practical use of the available chemotherapeutic options used in the management of gynecological cancer patients. The candidate should develop skills in the recognition and management of toxic side effects and acquire the ability to administer them in an independent capacity, if necessary

PSO11: Acquire skill in the assessment of the effects of treatment and the care of complications. This includes skill in the assessment of patients after treatment and during follow-up.

PSO12: Understand cancer survivorship issues and the principles underlying the management of fertility issues in gynecological cancer patients

PSO13: Develop skills in the planning, conduct, reporting and interpretation of research in gynecological oncology

PSO14: Understand the psycho-sexual, socio-cultural and economic aspects of cancer management in the Indian setting

ELIGIBILITY

The candidate must fulfill the following requirements to be considered eligible to apply for the course:

- Hold the MBBS degree and be fully registered with either the Medical Council of India (MCI) or possess full registration with the Medical Council of the domicile State
- Hold a MCI-recognized postgraduate degree in Obstetrics & Gynecology or any other qualification declared as equivalent i.e. MD/MS, DNB

ADMISSION

Admission to the course at Amrita School of Medicine shall be based strictly on merit and as per the guidelines laid down by the MCI & Amrita School of Medicine.

TYPE OF PROGRAM

The MCh in Gynecological Oncology is a Full time Subspecialty course of three years duration

GENERAL RULES

- The course will be strictly in-service training in nature and the candidate will have all clinical responsibilities including emergency duties
- The candidate will actively participate in the weekly Departmental Academic Program which includes didactic lectures, multi-disciplinary tumor board Meetings, Journal clubs, Case discussions and Grand Rounds
- The candidate will be required to undertake one research project(thesis) and be responsible for the planning, execution, analysis and presentation of the same. The research topic will be provided by the Teacher and should be approved within the first six months of commencing the course. The defense of the same will be required during the viva voce as a separate session. The conclusions of the study should be presented at a forum within the institution and at a suitable National Oncology conference and the same should also be accepted for publication in a peer-reviewed Journal
- The candidate will maintain a daily Training Record/Logbook for recording the following:
 - Clinical attendance
 - Attendance at Departmental/Institutional Meetings
 - Record of case presentations and academic activities.
 - Record of the patients in whose management the candidate has been actively involved.

This record will need to be checked and signed regularly by the Teacher. The Record Book is intended as a means of continuous self-assessment. It is designed to stimulate the Trainee towards greater efforts in areas where the assessment reveals a standard that is below par and also to record progress in skill acquisition made by the Trainee.

- Regular 6-monthly evaluation of the overall performance of the Trainee will be done by the supervisor in consultation with other departmental Faculty, according to the criteria as indicated below (vide infra). The evaluation is to be discussed with the trainee to facilitate improvements and correct deficiencies in the training system
- Additional formal internal assessment will be performed in the form of a written and oral examination conducted at the end of two years. This evaluation is independent of the 6-monthly internal assessments of Trainee performance indicated above
- The leave period sanctioned to a Trainee during the course will be as per Institutional and MCI rules. Absence during the course exceeding the number of days specified will have to be made up by the extra days of work in that particular posting in which the candidate availed of leave prior to the acceptance of the candidate for the examination and the payment of the examination fees

CLINICAL ROTATION

The Trainee will undergo a Clinical Rotation during the 3-years as a MCh Gynec. Oncology Trainee as outlined below:

Gynec. Oncology (Parent Unit) 27 months

Urologic Oncology 01 month

GI Surgical Oncology 02 months

Palliative Oncology 02 weeks

Oncopathology 02 weeks

Radiology 02 weeks

Community preventive oncology 6 weeks

Radiation Oncology 01 month

Medical Oncology 01 month

Molecular Lab 01 month

- The Trainee will spend 27 months of the Course full-time in the Gynecological Oncology unit
- The Trainee will be expected to rotate through the various relevant clinical specialties as outlined above
- The candidate will spend 9 months of his/her training in relevant allied subspecialty units
- The Trainee will be allowed to sit the MCh examination ONLY after completing all the required formalities as specified by the MCI.

TRAINING MODULES

Specific training modules have been designed and it will be the responsibility of the Faculty and Teachers/Mentors to ensure that the Trainee is trained as per the recommendations provided within each module as given below:

I Gynecological Oncology Modules

Module 1: General Assessment of a Gynecological Oncology Patient (M6G01)

Course Outcomes

To train the Trainee in the skills required for appropriate clinical assessments of patients with suspected or known gynecological cancers

1. Obtain detailed clinical history
2. Perform appropriate physical examination
3. Consolidate information received from prior investigations if any
4. Initiate further investigations
5. Communicate clinical plan to patient and relatives

Knowledge Criteria

To Trainee should demonstrate knowledge of the following:

- **Indications/limitations of screening for gynecological cancer**
- Patterns of clinical presentation
- Investigations required for establishing a diagnosis
- Care pathways for suspected/proven gynecological cancer
- Pre-operative investigations (routine/specific) of patients
- Assessment of fitness for surgery

Criteria of Clinical Competence

To demonstrate clinical competency with respect to the following:

- **Counseling patients appropriately about screening and interpreting screening results**
- Taking an appropriate clinical history including family history and genetic susceptibility where relevant
- Correlation of presenting symptoms/co-morbid conditions
- Performance of a detailed clinical examination
- Counseling patients regarding diagnosis, investigations and appropriate treatment options including adverse effects and complications
- Communicating the results of investigations and treatment
- Discussing prognosis

Professional Skills and Attitudes

- Ability to demonstrate clinical competency as indicated above
- Ability to identify the high-risk surgical patients and liaise with colleagues in anaesthesia
- Ability to liaise with colleagues in Radiation and Medical Oncology as also with specialists in palliative care as when appropriate
- **Ability to demonstrate counseling skills with respect to screening tests as also treatment/prognosis-related issues**

Module 2: Pre-, Peri- and Post-operative Care (M6G02)

Course Outcomes

To understand and demonstrate appropriate knowledge, skills and attitudes in relation to patients undergoing surgery for gynecological malignancies

1. Plan appropriate surgery
2. Identify risk factors if any: Surgical and Anesthetic
3. Counsel patients for surgery
4. Demonstrate an understanding of peri-, intra- and postoperative patient management
5. Principles of peri-operative nutrition and Total Parenteral Nutrition (TPN).

Knowledge Criteria

- **Thorough knowledge of the FIGO Staging and TNM staging system (where appropriate) for all gynecological cancer sites**
- Type of surgery appropriate for each gynecological cancer (see separate modules)
- Principles of fluid and electrolyte balance
- Elemental feeding and TPN

Criteria of Clinical Competence

- **Counsel patients regarding diagnosis, management and risks of surgical treatment**
- Assessment of operability/inoperability
- Recognize and appropriately manage intra-operative complications
 - Haemorrhage
 - Unintended visceral injury
 - Planned bowel resection
 - Dealing with unexpected surgical findings
- Post-operative care and management of complications
 - Infection
 - Thrombosis and thromboembolism
 - Bowel obstruction

- Appropriately order and interpret investigations
- Inform patient of results
- Manage peri-operative fluid balance
- Order and supervise appropriate thromboprophylaxis.
- Liaise with nutritional support team and decide when TPN or enteral feeding is appropriate

Professional Skills And Attitudes

- Ability to interpret preoperative investigations and liaise with anesthesia colleagues
- **Ability to counsel patients regarding extent of surgical treatment**
- Ability to select and perform appropriate surgical procedures according to patient's needs and acceptance.
- Ability to manage postoperative care and complications thereof
- Ability to counsel patients and relatives regarding diagnosis, investigations and to discuss treatment options, advantages and disadvantages of each
- Ability to convey decisions of the multidisciplinary team to patients and relatives
- Ability to liaise with colleagues and other health professionals regarding coordinating investigations and management strategies pertinent to individual patients

Module 3: General Surgical Skills In Gynecological Oncology (M6G03)

Course Outcomes

To achieve surgical skills appropriate for a subspecialist gynecological oncology surgeon:

1. Anatomical knowledge
2. Surgical skills

3. Personal audit

Knowledge Criteria

- **Detailed knowledge of the surgical anatomy of the female abdomen/pelvis**
- Working knowledge of anesthesia techniques
- Principles of good surgical technique

Criteria of Clinical Competence

- **Diagnosis and surgical management of gynecological cancers:**
 - Uterine cervix
 - Ovary
 - Uterine Corpus: Endometrium and uterine sarcomas
 - Vulva
 - Vagina
 - Gestational trophoblastic neoplasms
- **Ability to liaise with other speciality colleagues for specialist assistance in complicated cases, when required**

Professional Skills And Attitudes

The candidate should be adequately trained to independently perform the following surgical procedures:

- **Fine-needle aspiration cytology (FNAC)/biopsy of superficial lymph nodes**
- Trucut biopsy
- Simple hysterectomy.
- Radical hysterectomy.

- Pelvic lymph node dissection
- Para-aortic lymph node dissection
- Groin node dissections
- Infracolic and Supracolic omentectomy.

The candidate should also receive training in the ability to perform, with the assistance of other surgical speciality colleagues if necessary, pelvic exenterative surgery and urinary diversion in selected cases.

It is anticipated that the relevant allied surgical skills will be largely imparted during the candidates planned clinical rotation in the relevant Subspecialty services i.e. GI Surgical and Urological Oncology

II Site-Specific Modules

Module 4: Cancer of the Cervix (M6GO4)

Course Outcomes

- Aetiopathology, histogenesis and principles of population screening and prevention of cervical cancer
- Ability to diagnose, investigate, counsel and manage patients with cervical cancer
- Ability to choose the most appropriate treatment approach for a given patient
- Perform appropriate surgery for cervical cancer and manage treatment complications
- Indications and choice of adjuvant treatments
- Plan appropriate follow up
- Diagnosis and management of relapsed disease
- Selection of patients for symptomatic palliation and best supportive care

Knowledge Criteria

- Understanding of the epidemiology and etiology of cervical cancer
- **Understanding of the pathophysiology and management of pre-invasive cervical disease (CIN)**
- Understanding of the role of human papillomavirus /HPV in the etiology and development of CIN and cervical cancer
- Knowledge of the clinical presentation and diagnosis of cervical cancer
- Knowledge of the pathology and staging of cervical cancer
- Knowledge of the management of all stages of cervical cancer
- Detailed knowledge of the surgical anatomy of the female pelvis
- In-depth knowledge of radiotherapy principles of treatment and appropriate application to cervical cancer
- Knowledge of appropriate chemotherapy for cervical cancer
- Knowledge of complications and adverse effects of treatment, short- and long-term
- Knowledge of patterns of disease recurrence and their appropriate management
- Knowledge of the physical and psychosexual morbidity of cancer diagnosis and treatment

Criteria of Clinical Competence

- History taking and physical examination
- To obtain cervical smears, perform colposcopy and colposcopy-directed procedures i.e. cervical biopsy including punch biopsy, loop electrosurgical excision (LEEP) and ablative / excisional therapy in appropriate cases
- Perform clinical staging for invasive cervical cancer
- **Perform appropriate surgery for cervical cancer**

- Counsel patients about the diagnosis, investigations and appropriate treatments for cervical cancer, including adverse effects and complications of treatment
- Communicate results of investigations and treatment to the patient, including prognosis and palliative care
- Interpret results of radiological investigations appropriate to cervical cancer
- Assist in delivery of brachytherapy
- Assist in delivery of chemotherapy/chemoradiation
- Manage adverse effects and recognize complications of treatment
- Diagnose, investigate and manage recurrent cervical cancer
- Select patients for exenterative surgery
- Detect and manage physical and psychosexual morbidity

Professional Skills And Attitudes

- Ability to take history and examination
- Ability to perform colposcopy
- Ability to perform cervical biopsy and LLETZ
- Ability to perform clinical staging, including cystoscopy with biopsy where indicated
- Ability to perform the following surgical procedures relevant to cervical cancer:
 - Hysterectomy (abdominal/vaginal)
 - Class II and III Radical hysterectomy
 - Pelvic lymph node dissection
 - Para-aortic lymph node dissection
- **Ability to assist with execution of relevant radiotherapy procedures and chemotherapy**
- Ability to interpret:
 - Intravenous urograms
 - Pelvic MRI

- Computed tomography scans (CECT)
- FDG-PET
- Ability to perform with the assistance of surgical colleagues where necessary pelvic exenterative surgery, urinary and bowel diversion procedures
- Ability to initiate discussion of management at multi disciplinary team meetings
- Ability to counsel patients and relatives regarding diagnosis, investigations and discuss treatment options and advantages and disadvantages of each
- Ability to convey information regarding prognosis and decisions regarding selection of patients for palliative care
- In units where robotic surgery has been established and is offered as a matter of course, the trainee should be exposed to and be trained in the assisting all robotic surgery procedures. Depending on their skill sets they may be allowed to do some parts of the robotic surgery

Module 5: Ovarian Cancer(M6G05)

Course Outcomes

- To demonstrate appropriate skills and attitudes in relation to clinical work-up and management of patients with all varieties of suspected/clinically overt ovarian cancer
- Initial assessment and investigations of suspected/clinically overt ovarian cancer i.e. epithelial ovarian cancer, germ cell tumors of the ovary, non-epithelial and other variants of ovarian cancer
- Plan subsequent management of patients with a suspicious adnexal mass
- Plan subsequent management of patients with clinically overt ovarian cancer
- Perform appropriate diagnostic or treatment surgery
- Communicate with multi disciplinary team and organize adjuvant treatment

- Plan follow-up

Knowledge Criteria

- Etiology and clinical presentations of ovarian cancer
- Role of population screening for ovarian cancer
- Pathology of ovarian cancer
- **Radiological assessment for preoperative diagnosis and guided biopsy**
- Indications, techniques, limitations and complications of surgical treatment of ovarian cancer
- Clinical work-up of suspected ovarian cancer
- Clinical work-up and treatment selection of clinically over ovarian cancer
- Multi disciplinary team meeting discussions and management planning.
- Role of laparoscopy in assessment
- Case selection for surgery:
 - Fertility conserving surgery
 - Primary cytoreductive surgery
 - Interval cytoreductive surgery
 - Selection of cases for secondary cytoreductive surgery
- Medical management of ascites, pleural effusions and bowel obstruction
- Consideration of all management options including best supportive and palliative care

Criteria of Clinical Competence

- Counsel patient and relatives about:
 - Diagnosis and further therapy
 - Surgical options and complications

- Medical options
- Prognosis.
- **Discuss results of the surgery with patients, relatives and caregivers**
- Communicate with referral doctor/unit and primary care
- Perform appropriate surgery for diagnosis and surgical management of ovarian cancer, including optimal debulking surgery
- Management of recurrent disease
- Discharge from hospital and produce appropriate follow-up plan
- Detect and manage physical and psychosexual morbidity

Professional Skills And Attitudes

- Ability to counsel patients sensitively about available treatment options available and to respect patient confidentially
- **Ability to explain clearly and openly about treatments, complications and adverse effects of surgical treatment**
- Ability to formulate and implement a plan of management and modify if necessary
- Ability to liaise effectively with colleagues in other disciplines, clinical and Non-clinical
- Ability to appropriately stage ovarian cancer
- Ability to perform optimal debulking surgery
- Ability to decide appropriate extent of surgery including resection of bowel and formation of stoma
- Ability to select patients for conservative surgery
- Ability to perform a laparoscopic assessment and biopsy in suspected advanced ovarian cancer to obtain histology
- Ability to counsel patients regarding entry into clinical trials

Module 6: Cancers of the Uterine corpus(M6GO6)

Course Outcomes

- To demonstrate appropriate skills and attitudes in relation to clinical work-up and management of patients with endometrial cancer and other malignant tumors of the uterine corpus
- Understand the principles of management of any comorbid conditions likely to impact choice and delivery of appropriate treatment
- Undertake primary surgical management
- Manage recurrent disease

Knowledge Criteria

- Epidemiology and aetiopathology of cancers of the uterine corpus
- Histological types of endometrial cancer and prognostic factors
- Preoperative investigation of patients, including assessment of fitness for surgery
- Risks of major surgery (surgical and anesthetic)
- Type of surgery appropriate for endometrial cancer
- **Role of radiotherapy and chemotherapy in the treatment of endometrial cancer**
- Risk factors for and patterns of recurrence
- Management options for recurrent disease

Criteria of Clinical Competence

- Take a history, examine and investigate patients with suspected and proven endometrial cancer
- Order and interpret appropriate investigations of endometrial cancer

- Formulate a management plan
- Ability to liaise with anesthesia department
- To counsel patients regarding diagnosis, management and risks of treatment.
- Perform appropriate surgical procedures for endometrial and other uterine cancer
- **Recognize and manage intraoperative complications**
- Postoperative care and complications
- Inform patient of results
- Understand the indications for- and principles underlying choice of appropriate adjuvant treatments
- Planning follow-up
- Recognition of- investigation and management of disease recurrence

Professional Skills And Attitudes

- Ability to take a clinical history and appropriately work-up patients with suspected or proven uterine cancer
- Ability to recognize histological patterns of disease
- Ability to interpret preoperative investigations
- Ability to counsel patients regarding treatment options and histology
- Ability to select and perform the following surgical procedures for endometrial cancer:
 - Total abdominal hysterectomy and bilateral salpingo-oophorectomy
 - Pelvic lymph node dissection
 - Para-aortic lymph node dissection
- Ability to manage postoperative care and complications thereof
- Ability to assign a surgico pathological FIGO Stage

- **Ability to decide need for adjuvant therapy**
- Ability to follow up patients appropriately
- In units where robotic surgery has been established and is offered as a matter of course the trainee should be exposed to and be trained in the use of robotics in endometrial ca surgery including sentinel node biopsy.

Module 7: Cancer of the Vulva (M6GO7)

Course Outcomes

- To diagnose, investigate and manage a patient with cancer of the vulva
- Perform appropriate surgery in a patient with vulva cancer
- Manage complications of treatment

Knowledge Criteria

- Anatomy of the vulva, vagina and the inguino-femoral region
- Epidemiology and etiology of vulval cancer
- Histopathology and patterns of spread of vulval cancer
- Staging of vulval cancer
- Diagnosis and investigations for vulval cancer
- Principles of treatment of all stages of vulval cancer
- Complications of treatment and their appropriate management
- Patterns of recurrence of vulval cancer
- Recognition and management of recurrent cancer of the vulva
- Long-term complications of treatment of vulval cancer
- Knowledge of the psychosexual morbidity of treatment

Criteria of Clinical Competence

- Take an appropriate history and perform appropriate clinical investigations
- Perform vulval biopsies and vulvoscopy in indicated cases
- Perform appropriately tailored surgical procedures for vulval cancer
- Perform sentinel node assessment procedures for vulval cancer
- Liaise with plastic surgeons to select and manage patients requiring major skin flaps to close vulval wounds
- Perioperative management of vulval cancer patients
- Manage recurrences of vulval cancer
- Manage physical and psychosexual morbidity

Professional Skills And Attitudes

- Ability to take a clinical history and to perform appropriate physical examination and plan treatment on an individualized basis
- Ability to investigate and counsel patients regarding treatments
- Ability to select and perform competently diagnostic and therapeutic surgical procedures for vulval cancer
 - Vulval biopsy
 - Wide local excision
 - Skinning vulvectomy
 - Radical vulvectomy
 - Groin node dissection
 - Sentinel node detection.
 - Simple skin flaps.
- Ability to perform major skin flaps with assistance of plastic surgeons
- Ability to manage patient's postoperative care

- Ability to manage complications of treatment

Module 8: Vaginal Cancer (M6GO8)

Course Outcomes

- To diagnose, investigate and manage a patient with cancer of the vulva
- Understand the indications for primary surgical management
- Understand management options to address comorbidity
- Manage recurrent disease

Knowledge Criteria

- Anatomy of the vagina
- Etiology of vaginal cancer, including sarcoma botyroides and metastatic lesions.
- Vaginal infections and benign pathology
- Differentiating between carcinoma and chronic infective conditions of the vagina
- Pathophysiology of vaginal intraepithelial neoplasia (VAIN)
- Multifocal lower genital tract malignancy
- Clinical presentation, investigation and FIGO staging.
- Detailed management of vaginal cancer
- Physical and psychosexual morbidity of cancer
- Understanding the ethical aspects of per vaginal examination

Criteria of Clinical Competence

- Take a history and perform an appropriate examination
- Perform vaginoscopy and vaginal biopsy

- Perform hysteroscopy if required
- Arrange staging and imaging investigations
- Arrange and aid delivery of radio- or chemotherapy
- Perform partial and radical vaginectomy
- Detect and manage physical and psychosexual morbidity

Professional Skills And Attitudes

- Ability to perform vaginal biopsy
- Ability to perform partial (Abdominal/Vaginal) and radical vaginectomy
- Ability to perform radical exenterative surgery when appropriate

III Allied Surgical Specialty Modules

Module 9: Uro-oncological surgery (M6GO9)

Course Outcomes

- To understand the impact of gynecological cancer and its treatment on the renal tract.
- To be aware of possible urological complications associated with gynecological cancers and their management
- To Identify and manage urological complications.

Knowledge Criteria

1. Anatomy and physiology of the female urinary tract
2. Effects of gynecological cancer and its treatment (surgery, radiotherapy and chemotherapy) upon the urinary tract.

3. Ability to request relevant investigations and interpret the results
4. Recognition and management of injury to the urinary tract
5. Principles of repair of injury to the urinary tract
6. Selection of patients who would benefit from intervention surgery involving the urinary tract based on the age, general condition and the co morbidities of the patient.
7. Pre- and postoperative care of patients undergoing a urological procedure

Criteria of Clinical Competence

- Ability to communicate the possible urological implications of gynecological cancer and it's treatment on the urinary tract
- Ability to appropriately investigate and diagnose disorders of the urinary tract in a gynecological cancer setting.
- Ability to liaise with gynecology colleagues or nephrology colleagues for specialist assistance in complicated cases, when required
- Ability to request appropriate investigations in patients with a suspected involvement/injury of the urinary tract and to liaise with the urology team
- Ability to Investigate diseases of urinary tract i.e. UTI detrusor dysfunction, incontinence etc.
- Detailed knowledge of injuries to the lower urinary tract during/after surgery or radiotherapy
- Perform diagnostic cystoscopy / bladder biopsy/placement and removal of ureteric stents
- Surgical repair of intraoperative injury to the bladder and ureters

- Principles of urinary diversion and ability to perform with the aid of a urology colleague, basic urinary diversion surgery i.e. ileal conduit
- Ability to independently perform the above-mentioned urological surgical procedures

Professional Skills And Attitudes

- Effectively manage patients with suspected disorders of urinary tract.
- Request and interpret investigations of urinary tract.
- Appropriate selection of patients for intervention surgery involving the urinary tract.
- Ability to safely perform relevant urological surgical procedures as outlined above
- Ability to manage post operative pain

Module 10: Gastrointestinal/Colorectal surgery (M6GO10)

Course Outcomes

- To understand the impact of gynecological cancer and its treatment on the GI tract.
- To be aware of possible GI complications associated with gynecological cancers and their management
- To Identify and manage GI complications
- To understand the role of fluid balance and nutrition in a patient undergoing major surgery for gynecological cancer
- To understand the indications and principles of bowel resection and repair in the context of gynecological oncology
- Understanding of the ethical aspects of creating a stoma.

- To understand the principles of elective bowel resection in gynecological cancer surgery and the principles of management of an accidental surgical injury to the bowel

Knowledge Criteria

- Anatomy and physiology of the gastrointestinal tract
- Pathophysiology of intestinal function
- Appropriate selection of patients who will benefit from bowel surgery.
- Preoperative preparation required for a patient who may or will have bowel surgery.
- Principles of gastrointestinal surgery, including exposure and handling of the bowel
- Principles underlying repair of surgical bowel injuries
- Principles of resection and repair of intestinal tissues: Primary and secondary surgical repair/bowel diversion
- Indications to perform bowel surgery in a gynecological oncology setting

Criteria of Clinical Competence

1. Counseling patients preoperatively and postoperatively regarding bowel surgery and stoma management, including benefits, risks and complications
2. Order appropriate bowel preparation preoperatively.
3. Select patients preoperatively and intraoperatively who will benefit from bowel surgery.
4. Ability to select an appropriate location for bowel stomas
5. Ability to independently perform:
6. Appendectomy
7. Primary repair of serosal/mucosal injury to the small/large bowel
8. Resection-anastomoses of small/large bowel
9. Diversion stomas: Ileostomy, transverse/end colostomy

10. Mobilization of the colon, sigmoid and rectum
11. Standard sigmoid colectomy, anterior rectal resection, abdomino-perineal rectal resection
12. Laparoscopic approach - appendectomy, cholecystectomy, hernia surgeries
13. Manage postoperative care of patients following bowel surgery.
14. Management of post operative pain

Professional Skills And Attitudes

- Effectively manage patients with involvement of the GI tract in the gynecological oncology setting
- Request and interpret relevant investigations
- Appropriately select patients for intervention surgery involving the GI tract.
- Ability to safely perform relevant GI surgical procedures as outlined above

Module 11: Breast Cancer Surgery (M6GO11)

Course Outcomes

- Understanding the role/limitations of screening for breast cancer
- Clinical care and counseling of women with breast symptoms and breast lumps
- Understanding hereditary breast cancer syndromes, BRCA testing and the implications
- Imaging in breast cancer

- Understanding the principles underlying the multi disciplinary management of breast cancer and evidence-based guidelines
- Understanding principles of treatment in different stages of breast cancer including metastatic breast cancer
- Understanding of the ethical aspects of physical examination

Knowledge Criteria

- Ability to counsel women about screening issues
- Ability to conduct a comprehensive physical assessment of the female breast
- Ability to counsel patients with a breast lump and advise regarding clinical management pathways
- Ability to plan surgical management of breast cancer and be familiar with relevant surgical approaches including principles of breast reconstruction
- Be aware of the different chemotherapeutic regimes used in breast ca and possess the ability to counsel the patient regarding the feasibility of the same.
- Be aware of the radiation therapy planning and execution for breast ca and possess the ability to counsel the patient regarding the feasibility of the same..

Criteria of Clinical Competence

- To have a good overview of the relevant literature of the subject
- Ability to do a comprehensive clinical/diagnostic workup of patients with suspected or clinical breast cancer (including FNAC, Tru-cut biopsy, incision biopsy and excision biopsy)

- Ability to do breast conservation surgeries, axillary dissection, sentinel node biopsy and modified radical mastectomies
- Ability to liaise with plastic surgery colleagues when required
- Ability to liaise with cosmetology colleagues when required
- Ability to discuss management plans with colleagues from medical and radiation oncology units.

IV Allied Non-Surgical Specialties

Module 12: Radio-Diagnostics (M6GO12)

Course Outcomes

- To understand the role of imaging in gynecological cancer.
- To understand the principles underlying selection of different imaging modalities.

Knowledge Criteria

- To have a working knowledge of the theory underlying the main imaging modalities used in gynecological oncology i.e. USG, CECT, MRI, FDG-PET
- Indications and limitations of each of these imaging modalities
- Principles of nuclear medicine in radio diagnostics including scintigraphy
- Indications for Intervention radiology procedures in gynecological oncology: Guided biopsies , per cutaneous nephrostomy/antegrade ureteric stenting

Criteria of Clinical Competence

- Ability to request appropriate imaging tests

- **Ability to assessment and interpret the results with relevance to the clinical scenario**
- Ability to recognize the indications for interventional radiology procedures

Professional Skills And Attitudes

- **Liaising with the radiology team to discuss images with reference to a given clinical scenario**
- **Liaising with the nuclear medicine team to discuss images with reference to a given clinical scenario**

Module 13: Medical Oncology (M6GO13)

Course Outcomes

- To understand the role of chemotherapy in the management of gynecological cancers
- To understand the pharmacology of the major drugs used in chemotherapy.
- To understand the principles underlying the use of chemotherapeutic and newer targeted therapies in the management of gynecological cancers

Knowledge Criteria

- Relevant cell biology including:
 - Cell-cycle kinetics
 - Log kill hypothesis
 - Cycle and phase-specificity
- Classes of chemotherapeutic agents and their mechanisms of action

- Pharmacology of the main agents used in gynecological cancers
- Principles of dose calculation and scheduling
- **Understand the benefits and limitations of single-agent and combination chemotherapy**
- Principles of Phase I, II, and III drug trials in clinical research
- Understand the concepts of neoadjuvant and adjuvant chemotherapy
- Short- and long-term toxicity, both general and drug-specific
- The role of hormonal therapy
- Therapeutic options for recurrent disease
- Role of newer targeted therapies in ovarian cancer

Criteria of Clinical Competence

- Take an appropriate history and perform clinical examination
- Know the indications for chemotherapy
- Principles of response assessment in patients undergoing chemotherapy
- Counsel patients about their chemotherapy regimens including adverse effects/complications of treatment
- **Know when to change or stop treatment – the points to consider are cost-benefit analysis, patient autonomy, benefit of treatment in comparison to palliative measures**
- Ability to recognize, assess and manage acute and chronic toxicity

Professional Skills And Attitudes

- Ability to discuss management at multidisciplinary team meeting, including most appropriate chemotherapy regimen, according to patient's disease and medical status

- Ability to counsel patients about chemotherapy, including adverse effects and complications of treatment with emphasis on prognosis, available alternate treatment methods and potential benefit to the patient.
- Ability to liaise with colleagues and other health professionals regarding management strategies pertinent to individual patients
- **Ability to recognize, investigate and management of toxicity**
- Ability to counsel patients about clinical trials

Module 14: Radiation Oncology (M6GO14)

Course Outcomes

- To be familiar with the principles and practice of radiotherapy in the management of gynecological cancer
- **Knowledge Criteria**
 - Cell-cycle kinetics
 - Principles of radiobiology and radiation effects
 - Principles of tissue repair and recovery
 - Principles of radiation protection.
 - **Radiosensitivity of different organs**
 - Principles of fractionation.
 - Types of radiation sources and techniques
 - Principles of planning standard external beam radiotherapy and brachytherapy
 - Principles of concurrent chemoradiation
 - Side effects and toxicity of radiotherapy

Criteria of Clinical Competence

- Selecting patients for radiotherapy according to disease site, tumor type and stage
- Understand the principles of treatment planning
- **Counsel patients regarding radiotherapy and it's potential side-effects and complications**
- Understand the difference between curative and palliative treatment
- Management of long-term side-effects of radiotherapy.
- Recognition, investigations and management of recurrent gynecological cancer following primary radiotherapy and chemoradiation.

Professional Skills And Attitudes

- Ability to select patients for radiotherapy considering the age, stage of cancer and the comorbidities
- Ability to counsel patients regarding radiotherapy regarding prognosis, available alternate treatment methods and potential benefit to the patient.
- **Ability to plan radiotherapy treatment**
- Ability to counsel patients regarding complications
- Ability to recognize and manage adverse effects of radiotherapy.
- Ability to recognize and manage major complications of radiotherapy in liaison with other colleagues
- Ability to recognize and investigate tumor recurrence

Module 15: Palliative care(M6GO15)

CANDIDATE EVALUATION METRICS

Outlined below is a representative scheme, which could be used while evaluating the trainees during their periodic appraisals:

Metrics

- **Theoretical knowledge of the subject**
- Knowledge of current, relevant evidence-based literature
- Ability to practically apply his/her knowledge to clinical scenarios
- Involvement with patient care
 - Outpatient clinics
 - Inpatients
- Surgical skill set commensurate with seniority
- Keeness and aptitude to learn
- Rapport with peers/colleagues - ability to be a part of a team
- Rapport with Senior colleagues - ability to take criticism constructively
- **Understanding of the of ethics of clinical medicine**
- **Research ability/aptitude**
- **Leadership and people management qualities**

Grades of Evaluation

- Excellent
- Exceeds objectives
- Just meets objectives
- Needs improvement
- Below par

Module 16: Soft Skills (M6GO16) – Elective Course

CO1: Ability to do clinical research.

CO2: Ability to work as a team leader.

CO3: Attitude to be a lifelong learner.

CO4: Knowledge of medical ethics and etiquette.

CO5: Ability to be an effective teacher.

The acquisition of these skills will continue throughout the program . The students will be assessed based on 360 degree evaluation

CANDIDATE EVALUATION METRICS

Outlined below is a representative scheme, which could be used while evaluating the trainees during their periodic appraisals:

Metrics

- Theoretical knowledge of the subject
- Knowledge of current, relevant evidence-based literature
- Ability to practically apply his/her knowledge to clinical scenarios
- Involvement with patient care
 - Outpatient clinics
 - Inpatients
- Surgical skill set commensurate with seniority
- Keenness and aptitude to learn
- Rapport with peers/colleagues - ability to be a part of a team
- Rapport with Senior colleagues - ability to take criticism constructively
- Understanding of the ethics of clinical medicine
- Research ability/aptitude
- Leadership and people management qualities

Grades of Evaluation

- Excellent
- Exceeds objectives
- Just meets objectives
- Needs improvement
- Below par

EXAMINATION SCHEME(As per MCI rule)

The MCh examination in Gynecological Oncology will be conducted as per the norms laid down by Amrita School of Medicine. The examination shall consist of Written paper (theory), Practical(clinical) , viva voce and Thesis Total marks shall be 700 (400+200+100)

Practical

Clinical and viva voce

Long case

Short cases

Viva voce

Criteria for declaring pass

Minimum (separate)

50% for theory (aggregate of four papers)

50% for clinical

50% for viva voce
acceptance of thesis / dissertation

Question Papers (100*4 = 400 marks)

Log Book Format for Mch Gynecological Oncology

No	MRD	Age	Diagnosis	Surgery /Procedure	Done Independently /Done under supervision / Assisted	Additional procedure /Comments	Signature of consultant

<u>Region</u>	<u>Level</u>	<u>No. of Cases</u>	<u>Type of cases</u>
Cervix	Assisted	5	Radical hysterectomy with bilateral PLND, LEEP, Type II modified radical hysterectomy, Minimal access radical hysterectomy
	Done (independently / under supervision)	5	
Breast	Assisted	20	Modified radical mastectomy, breast conserving surgeries, sentinel node biopsies
	Done (independently / under supervision)	5	
Endometrium	Assisted	20	Staging surgery for ca endometrium, both open and minimal access ; Sentinel node in ca endometrium
	Done (independently / under supervision)	10	
Ovarian ca surgery	Assisted	20	Ovarian laparotomy including diaphragm stripping, omentectomy, peritonectomy, pelvic and PA LND, bowel resection
	Done (independently / under supervision)	5	
Vulval and vaginal surgery	Assisted or Done (independently / under supervision)	5	Surgeries like wide local excision, node dissection, and reconstruction, sentinel node biopsies
Radiotherapy	Should have assisted in planning and treatment execution of at least 5 gynaec malignancies including at least two brachytherapy plan.		
Medical	Should be familiar with mode of administration and common side effects of		
M.Ch Gynaecological Oncology	Oncology	chemotherapy regimens used for gynaec malignancy.	

Question papers

Paper 1- Basic Sciences as applied to gynecological oncology

1. What are the properties of normal stem cells(10). Discuss the implications of cancer stem cells for the diagnosis and treatment of cancer (10)

2. Classify chemotherapeutic drugs and mention the phases of cell cycle in which different groups act (10). Write in brief about the main toxicities of cisplatin, cyclophosphamide and paclitaxel(10)

3. Discuss the role of serum tumor markers in oncology under the following headings with examples: for screening and early detection(5); for diagnosis (5); for prognosis and prediction of therapeutic response and for monitoring disease (10)

4. Discuss the components of treatment planning in radiotherapy for carcinoma cervix (20)

5. Short notes on:
 - a) Step ladder pattern of analgesic use in palliative care.(5)

 - b) Management of malignant pleural effusion. (5)

 - c) Principles of safe bowel anastomoses (5)

 - d) Value of MRI in endometrial cancer.(5)

Paper 2. Gynecological Oncology

1. Write in brief about the arguments for and against primary surgery in advanced epithelial ovarian carcinoma (20)

2. Write in detail about nerve sparing radical hysterectomy (10). And complications of radical hysterectomy (10)

3. Briefly discuss the arguments for and against lymphadenectomy in endometrial cancer (10).
Elaborate the role of sentinel lymphadenectomy in endometrial cancer (10)
4. Elaborate the risk assessment in Gestational trophoblastic neoplasia(GTN) (10). Write in detail about the management of high risk GTN(10).
5. Write briefly on treatment for locally advanced cancer of breast (10). Discuss the evolution and current status of conservative surgery in breast cancer (10)

Paper 3. Gynecological Oncology

1. Classify ovarian germ cell tumors and outline the management of dysgerminoma (20)
2. Write short notes on
 - a. neoadjuvant chemotherapy in carcinoma cervix
 - b. Hereditary cancers of the endometrium
 - c. fertility preserving surgery in carcinoma cervix
 - d.) Intraperitoneal chemotherapy in ovarian cancer
 - e) Lymphadenectomy in vulval cancer
 - f) Discuss the role of human Papilloma virus in gynecologic oncology.
 - g) Borderline tumors of the ovary
 - h) Small cell carcinoma cervix

Paper 4 – Recent advances

1. Elaborate the role of minimally invasive surgery in gynecological malignancies
2. Discuss the pros and cons of HPV based cervical cancer screening in India.
3. Discuss in detail the UKCTOCS trial with respect to ovarian cancer screening
- 4 Discuss about angiogenesis inhibitors in the treatment of ovarian cancer
5. In which all situations can fertility be preserved in a patient with ovarian or endometrial malignancies.